

ARCTIC STEWARDSHIP



ARCTIC STAR

**Arctic Stewardship –
promoting sustainable
development of the
Arctic**

**October
2019**

This report has been written and edited by Anders Blom, in cooperation with the Saami Council and the Protect Sápmi Foundation



Index

1.0 Introduction.....	4
2.0 Stewardship in the Arctic.....	5
2.1 <i>What is Stewardship</i>	5
2.2 <i>Systems for Stewardship in corporations</i>	8
2.2.1 <i>Forest Stewardship Council, FSC</i>	13
2.2.2 <i>PEFC</i>	16
2.2.3 <i>Maritime Stewardship Council, MSC</i>	18
2.2.4 <i>Aquaculture Stewardship Council, ASC</i>	20
2.2.5 <i>Towards Sustainable Mining, TSM</i>	22
2.2.6 <i>The OECD guidelines</i>	24
2.2.7 <i>International Finance Cooperation, IFC, Guidelines</i>	28
2.2.8 <i>United Nations Guiding Principles on Business and Human Rights</i>	30
2.2.9 <i>United Nations Global Compact</i>	33
2.2.10 <i>ISO 26 000 international guidance standard on social responsibility</i>	35
2.2.11 <i>International Council on Mining and Metals, ICMM</i>	36
2.2.12 <i>IPIECA, The Global Oil and Gas Industry Association for Environmental and Social Issues</i>	39
2.2.12 <i>Aspen Principles of Arctic Governance</i>	41
2.2.13 <i>The Polar Code</i>	42
3.2.14 <i>IUCN, the International Union for Conservation of Nature</i>	46
2.2.15 <i>The Global Sustainable Tourism Council (GSTC)</i>	48
2.2.16 <i>World Economic Forum – Global Agenda Council on the Arctic</i>	51
3. The development of an Arctic Stewardship.....	54
3.1 <i>Certifications Systems</i>	54
3.2 <i>ISEAL</i>	55
3.3 <i>Accreditation</i>	57
3.4 <i>Ideas for the design of an Arctic Stewardship</i>	58
4. Arctic Stewardship – the Arctic Star.....	60
5.1 <i>Principles and criteria</i>	61
4.2 <i>Identify Companies certification schemes or guidelines for corporate governance</i>	65
4.3 <i>GAP analyse; Compare and analyse Companies certification schemes or guidelines for cooperate governance with Arctic Star Principles and Criteria</i>	66
4.4 <i>Example of Arctic Star certification processes</i>	69
4.5 <i>Implementation of the Arctic Star</i>	71
Annex; Arctic Stewardship – promoting sustainable development of the Arctic.....	72
1.0 The Arctic.....	72
1.1 <i>Boundaries and geography</i>	72
1.2 <i>Who owns the Arctic Ocean?</i>	75
1.3 <i>Regional co-operation within the Arctic</i>	78
1.4 <i>Arctic peoples</i>	79
1.5 <i>Indigenous Peoples of the Arctic</i>	83
1.5.1 <i>Rights of Indigenous Peoples</i>	86



1.6 Arctic climate change	91
1.7 Arctic environment and biodiversity	95
1.8 Protection of areas	103
1.9 Arctic infrastructure.....	105
1.10 Resources in the Arctic	108
1.10.1 Oil and gas in the Arctic	109
1.10.2 Mining and minerals.....	114
1.11 Shipping	116
1.12 Fishing and aquaculture	118
1.13 Tourism in the Arctic.....	123
1.14 Forestry.....	Fel! Bokmärket är inte definierat.
1.15 Traditional industries/business	129



1.0 Introduction

The Saami Council (SC) has since the inauguration of the Arctic Economic Council in Iqaluit, Canada in September 2014, been a supporter of AEC. The Saami Council has nominated members to the AEC. As of 2019, Anders Blom and Anders Oskal are, via their company/organizations, representing SC in AEC.

The founding principles of the AEC's work were approved at the AEC's inaugural meeting in 2014. The overarching themes of the organization's work focus on improved market access both between the Arctic states, but also between the Arctic and the global markets; the need for stable rules and regulations; promotion of public-private partnerships as a model for infrastructure development; the need for improved collaboration between businesses and academia; and in embracing traditional indigenous knowledge, stewardship and small business.

Already in 2014, the Saami Council, in cooperation with the Protect Sápmi Foundation, initiated a project in full coherence with the founding principles, with the object to focus on responsible and sustainable business development in the Arctic. A working group was set up within AEC under the title: Traditional Knowledge, Stewardship and Small/Medium Business Development. In October 2015, Anders Blom presented a first draft for a business-oriented certification system to be applied in the Arctic. The work to develop the first draft was financed by the Swedish Ministry for Foreign Affairs.

The work within the work group "Traditional Knowledge, Stewardship and Small/Medium Business Development" was not well appreciated within AEC, and the work group was more or less closed down in 2016. Since then, the developed ideas concerning a certification system for business in the Arctic has never been formally discussed within the AEC.

The Saami Council and the Protect Sápmi Foundation are still convinced that the future industrial development of the Arctic calls for a robust and market-oriented stewardship system. Policy documents are not sufficient to safeguard the fragile environment and the livelihoods of the indigenous peoples of the Arctic. In this document an idea of an Arctic stewardship system is presented – the Arctic Star. In the initial parts, the ideas concerning the Arctic Star are presented, and background information concerning the Arctic and indigenous peoples is presented in the Annex.



2.0 Stewardship in the Arctic

2.1 What is Stewardship?

The word stewardship comes from the Greek word *oikonomous*, which means somebody who manages a household. A person that does not own the household but manages it. Stewards in the ancient world were trusted with everything from seeing that the floors were clean, to the finances, and to the public face of that household.

Stewardship is often referred to in Christian liturgical texts. With the essence, that Stewardship is caring for what belongs to God. It is rooted in a recognition that everything we have is from God and everything we have is God's.

In parallel to the Christian definitions, Stewardship is also present in the political and management agenda with theories of stewardship management. Winston Churchill's definition of Stewardship combines theology with politics. "We make a living of what we got, but we make a life by what we give".

Environmental stewardship refers to responsible use and protection of the natural environment through conservation and sustainable practices. Aldo Leopold (1887–1949) championed environmental stewardship based on a land ethic "dealing with man's relation to land and to the animals and plants which grow upon it."¹

Resilience-Based Ecosystem Stewardship emphasizes resilience as a basic feature of the changing world as well as ecosystems that provide a suite of ecosystem services rather than a single resource, and stewardship that recognizes resource managers as an integral part of the systems they manage.² Resilience refers to the ability of a system to absorb disturbance and still maintain its basic function and structure.

In the international standard ISO 20121, stewardship is defined as "*responsibility for sustainable development shared by all those whose actions affect environmental performance, economic activity, and social progress, reflected as both a value and a practice by individuals, organisations, communities, and competent authorities.*"³

In simple terms, ISO 20121 describes the building blocks of a management system that will help any event related organisation to:

- Continue to be financially successful
- Become more socially responsible
- Reduce its environmental footprint

¹ Leopold, Aldo. 1949. *A Sand County Almanac*. Oxford University Press, New York

² Chapin, F. Stuart III, Gary P. Kofinas, and Carl Folke (eds). 2009. *Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World*. Springer

³ ISO 20121 is a management system standard that has been designed to help organisations in the events industry improve the sustainability of their event related activities, products and services.

When we are discussing Stewardship in this paper, we are using the definitions inspired from ISO 20121.

An Arctic Stewardship is an approach and a system that combines financial success with, social and environmental responsibility. A system for cooperate citizenship, an approach that is based on common and shared values and practiced by all those companies with an interest in the Arctic.

A general assumption might be to believe that most decent companies and company owners would share a conviction in practicing Stewardship in general, which also includes to respect human rights and to safe-guard environmental values. Unfortunately, the facts of the world are pointing in another direction.

In 2014 an Indigenous Rights Risk Report ⁴ was published by the international organisation First People Worldwide. The Indigenous Rights Risk Report is a quantitative assessment of one of the most pressing social risks to the extractive industries – Rights of Indigenous Peoples.

The report analysed the securities filings of a great number of mining, oil and gas companies listed on the Russell 1000 Index (a stock market index representing the 1,000 largest publicly held companies in the US) and identified which of their projects overlap with or potentially impacted Indigenous Peoples. In that report 52 oil and mining companies was evaluated, 330 international projects where studied. The risk exposure to indigenous community opposition or violence of Rights of Indigenous Peoples were on an unacceptable level. 35 % of all projects demonstrated a high risk for violation of human rights, 54 % demonstrated a medium risk and only 11 % showed a low risk.

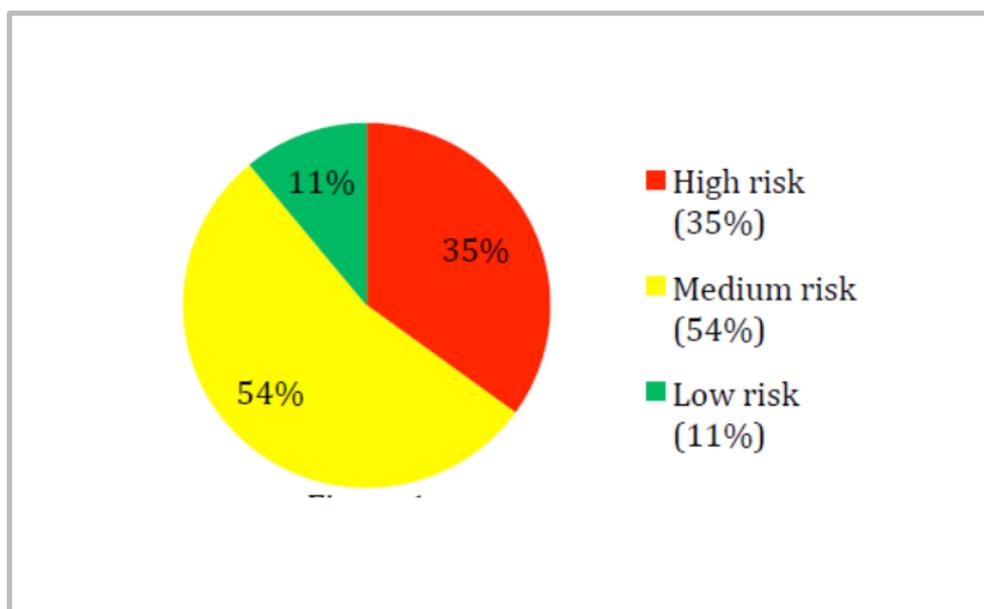


Figure 1: Risk exposure to Indigenous community opposition or violations of Indigenous Peoples' rights,

⁴ Indigenous Rights Risk Report; November 2014; First Peoples Worldwide (FPW)

From a business point of view, this is not beneficial for the companies or for their owners. In modern business literature the concept of (Social) Licence to Operate has become an often-cited concept; The degree to which a corporation and its activities meet the expectations of local communities, the wider society, and various constituent groups. The License to operate is granted by stakeholders based on the credibility of a company and the type of relationship that companies develop with the communities. To act without a license must be regarded as a big unacceptable business risk in conflict with a good stewardship.

Losing a (social) license to operate is a very real and potentially a very expensive risk to a business. Research shows that community conflicts over environmental and social concerns can incur costs up to US \$ 20m a week in lost value for large-scale operating mines.⁵ The challenge for operators is balancing immediate stakeholder demands and the inherent value in being a socially and environmentally reliable operator with controlling costs, lost production time, reputational damage and overflow impacts to other operations.

In 2019, Ernst & Young elevated the license to operate to the first place on its list of the greatest business risks to mining industry.⁶

MINING & METALS

Top 10 business risks facing mining and metals

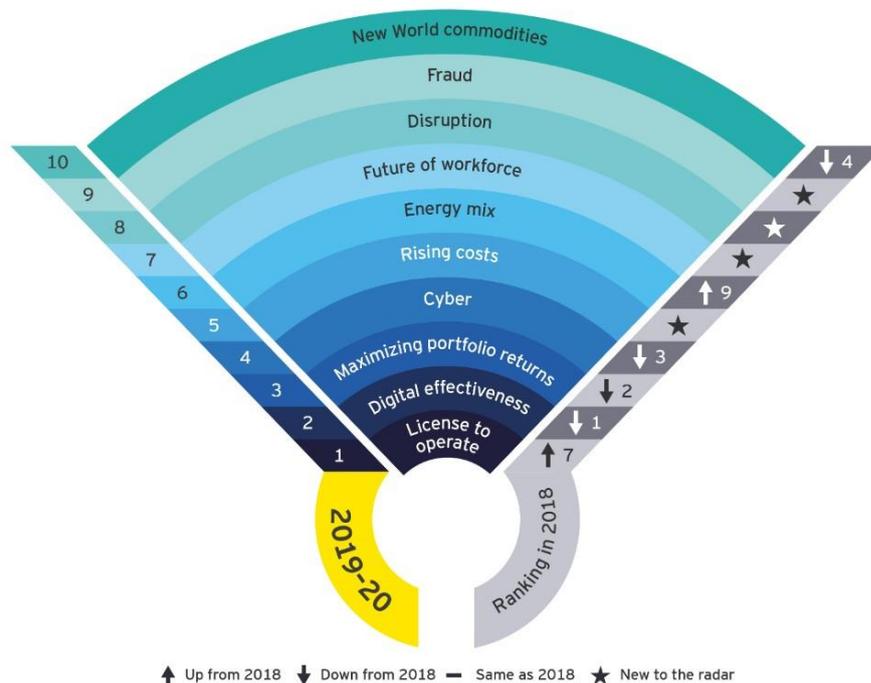


Figure 2; Risk radar for mining and metals Top 10 business risks

⁵ “Cost of Company-Community Conflict in the Extractives,” Harvard Kennedy School, 2014.

⁶ The top risks facing mining and metals in 2019-20, Ernst & Young



“A narrow, legacy focus on license to operate may be the strategy that puts you out of business. Applying just the social and environmental lenses, seeing it as a soft issue or allocating it to one section of the business will directly threaten your ability to operate. The stakeholder landscape is shifting. There is more information, bigger platforms and more at stake than ever before. Underestimating the power of each and every single stakeholder would be a mistake. The issue of license to operate is now an issue that is broad with far-reaching implications and should be at the top of the agenda of CEOs, their executive teams and boards.

The evolution of license to operate will continue to evolve as a number of critical changes are redefining stakeholders’ expectations, and miners need to ensure they are proactively and strategically managing this. These include:

- An increase in societal participation (beyond local communities): The expectations of society have increased, and social media and the internet are now able to move information quickly, which rallies issues-based stakeholder participation en masse.*
- The rise of minority voices: The increase in societal participation in the sector has not only brought into focus the rights of groups, such as indigenous communities, but has also allowed for the amplification of these voices through the combination of smaller groups.”⁷*

From research, we can learn that extractive companies do not typically identify and aggregate the full costs arising from conflict with local communities into a single number that would catch the attention of senior management or Boards. Centre for social responsibility in mining at the University of Queensland and Harvard Kennedy School stated recently in a report: *“most extractive companies do not currently identify, understand and aggregate the full range of costs of conflict with local communities”*

Additionally, a report by the McKinsey Global Institute expressed the need for *“a new approach to the changing resource landscape...as exploration and production increasingly shift to developing countries and frontier markets, companies that can reframe their mission from simple extraction to ongoing partnership with host governments in economic development are likely to secure a real competitive advantage.”⁸*

The question we have to find an answer to in an Arctic concept is if companies can reframe their mission from simple extraction/exploration to ongoing partnership. Can we within the Arctic create a discourse encompassing to develop a true Arctic Stewardship? A Stewardship that is not only based on ethical values but is eager to show its full responsibility in action.

2.2 Systems for Stewardship in corporations

There is today a number of systems/schemes for corporate Stewardship. Some of them are based on national or international law; most of them are voluntary for the corporations, based on market driven mechanisms. Some are a mixture of both. In some cases, the Stewardship

⁷ Ernst & Young 2019

⁸http://www.mckinsey.com/insights/energy_resources_materials/reverse_the_curse_maximizing_the_potential_of_resource_driven_economies

is built on a certification scheme. In most cases the fundament is a voluntary moral obligation to follow rules for sustainability. In short, the systems could be divided in:

1. Legally/political driven systems for Stewardship
2. Market driven systems for Stewardship

A graphical description of the two categories of Stewardship systems can be illustrated in the following way:

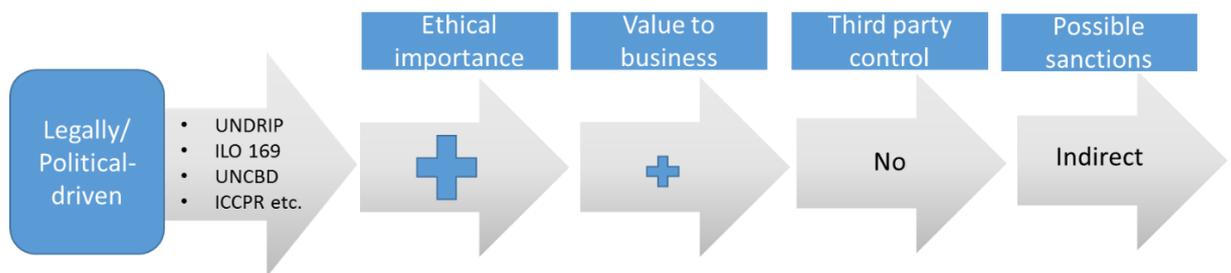


Figure 3: The structure in legally/politically driven systems

The ethical importance is on a higher level than the added business value, there is often no third-party control of compliance and the sanctions, as a response to breaching the rules, are indirect and difficult to follow up for stakeholders.

The market driven mechanisms for Stewardship are roughly divided into two subcategories – those based on a certification program and those based only on a declared acceptance from the companies. In the first subgroup, the ethical importance surpasses the added business value; in the latter case, the situation is reversed. Stewardship by certification has in most cases third party control by auditors accredited by independent bodies such as Accreditation Services International (ASI).

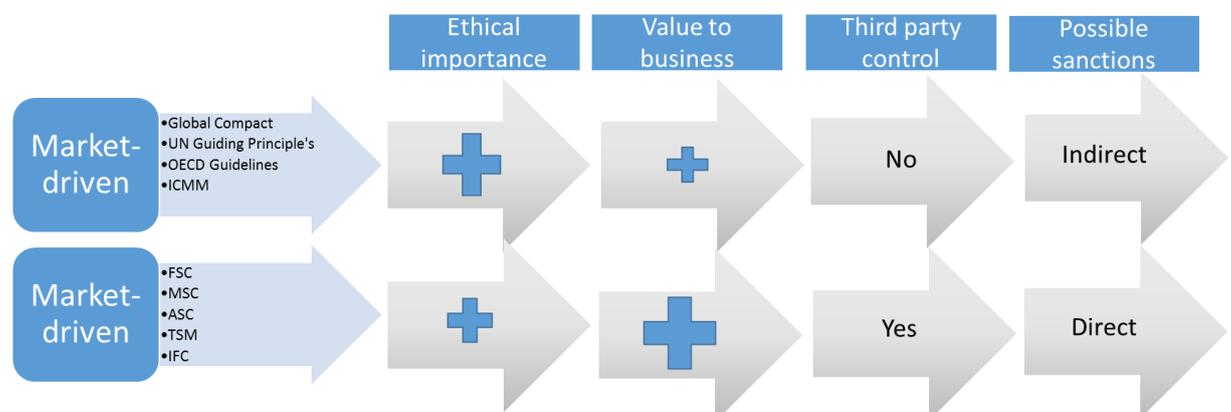


Figure 4: The Structure in market driven systems

There are a number of guidelines and standards present in an Arctic context. No one of them are fully covering the specific need and demands for a fully reliable Arctic Stewardship. The politically/legally based schemes are covering general aspects of a sustainable company behaviour but with no special reference to the Arctic. The market driven systems are in most cases industrial branch specific but with limited references to the Arctic.

In order to develop a credible and reliable system for an Arctic Stewardship it will be necessary to analyse present systems and to form a special Arctic guideline or a special Arctic certification scheme that can offer the solutions that the present system lack.



Figure 5: Some guidelines and standards for Stewardship.

There are many different approaches in different types of Stewardships systems.

- Systems connected to a brand mark used on final products. For example, FSC, MSC, ASC⁹
- Systems with different kind of compliance control:
 - No control
 - Self-control
 - Regula third party control
 - Control after stakeholder notification

⁹ Forest Stewardship Council. Maritime Stewardship Council, Aquaculture Stewardship Council



- Systems based on dominating ethical values, e.g. United Nations Guiding Principles on Business and Human Right etc.
- Systems based on ethical values in combination with economic incentives, e.g. different kinds of certification programs
- Branch specific systems; e.g. forestry, mining, tourism etc
- Geographically/environmentally based systems, e.g. Rainforest protection, WWF etc



Figure 6: Some of the international instrument for sustainable development

The main reasons for gaining and maintaining a market driven Stewardship scheme, especially when it comes to certification-based schemes are client demand, potential markets and partners, and holding on to existing clients. In the latest market report from Forest Stewardship Council, FSC, ¹⁰a significant amount of the certificate holders from 95 countries completed a survey where 82% of the FSC certificate holders say that client demands are the reason for them to become FSC-certified and where 56 % of certificate holders say that FSC label gives them a competitive advantage on the market.

The substantial economic added value of this certification scheme is on a very high level. Big multinational companies such as IKEA and Tetra Pak bear witness that certification

¹⁰ Forest Stewardship Council® | Global Market Survey Report 2018

schemes are integrated in their long-term strategic business models. Today the importance on the market for this kind of Stewardship systems cannot be overestimated.

There is of course also an ethical aspect in the implementation of systems for stewardship, it is not cynical but realistic to conclude that system/scheme with the greatest total impact is the system that can combine ethical values with increased market value.



“We love wood because it’s durable, renewable, recyclable and beautiful. As one of the largest users of wood in the retail sector, we always look for ways to use it wisely and to source it according to high set standards. Our long-term goal is that all wood will come from more sustainable sources, defined as recycled or FSC® certified wood, by 2020.

We’re promoting the adoption of sustainable forestry methods. We do this in order to influence others and also to contribute to the important work of ending deforestation”

- Mikhail Tarasov, Global forestry manager IKEA

Figure 7: The market value of a certification scheme such as FSC.¹¹

FSC is one example with the roots in forestry; there are of course other examples of sustainability certification for greater impact in other industrial branches. Centre for Social Responsibility in Mining, University of Queensland, Brisbane presented in June 2015 an analysis of the design characteristics of 15 sustainability certification schemes in the mining industry.¹² The report is describing 15 schemes in the mining industry - there are more schemes to be found, for examples the Canadian Towards Sustainable Mining, which was not represented in the study.

- Aluminium Stewardship Initiative (ASI);
- Bettercoal Code (BC);
- Conflict-Free Gold Standard (CFGs);
- Conflict-Free Smelter Program (CFSP);
- Development Diamonds Standards (DDS);
- Fairmined Standard for Gold and Associated Precious Metals (Fairmined);
- Fairtrade Standard for Gold and Associated Precious Metals (Fairtrade);
- Initiative for Responsible Mining Assurance (IRMA);
- International Cyanide Management Code (ICMC);
- International Standards Organization 14001 (ISO 14001);
- ITRI Tin Supply Chain Initiative (iTSCi);
- Kimberley Process (KP);

¹¹ <https://www.ikea.com/gb/en/this-is-ikea/about-us/were-big-fans-of-wood-pubd4deffde>

¹² Mori Junior, R., Franks, D.M. and Ali, S.H. (2015). Designing Sustainability Certification for Impact: Analysis of the design characteristics of 15 sustainability standards in the mining industry



- Mineral Certification Scheme of the International Conference on the Great Lakes Region (ICGLR);
- Responsible Jewellery Council Code of Practices (RJC); and
- Responsible Steel Stewardship (RSS).

The result of the study showed the complexity in building reliable and transparent schemes:

- 40% of the schemes do not define minimum requirements of compliance and establish consequences and sanctions for situations of non-compliance
- Only 20% of the schemes had a mechanism for periodic evaluation of the effectiveness of the schemes in place
- 80% of schemes used third-party assurance process to ensure compliance in addition, 67% accredited the assurance providers
- Only 1 scheme had its annual report audited by an external auditor
- 87% of schemes cross-reference other standards within their own standards or guidelines
- 40% of the schemes make available to the public the assurance statements or the results of the assurance process
- 60% incorporated the concept of chain of custody within their scope.

In the following is described some of the mechanisms for cooperate citizenship or cooperate Stewardship with relevance for the Arctic.

2.2.1 Forest Stewardship Council, FSC

Forest Stewardship Council, FSC	
Area of Interest	Forestry
Market driven	Yes
Legally/political driven	
Certification scheme	Yes
Third party control	Yes
Accredited controllers	Yes
Direct possibilities to sanctions for non-compliance	Yes
Indirect possibilities to sanctions for non-compliance	



Control/governance of the system	The system is governed by members representing economic, environmental and social stakeholders.
Trademark/Logo	<p>Yes</p> 

FSC is an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests. FSC has 37,000 certificate holders (including chain of custody certificate) in a total of 124 countries worldwide. FSC work with smallholders around the world and are increasingly working with indigenous groups around the world. In 2013, FSC formed the Permanent Indigenous Peoples' Committee (PIPC) to ensure that indigenous people have a say in the way forests are managed. In 2018 FSC initiated the FSC Indigenous Foundation with the object to deepen the work with Indigenous People all over the world.

The Forest Stewardship Council mission is to promote environmentally sound, socially beneficial and economically prosperous management of the world's forests.

The vision is that FSC certified forests can meet the current needs for forest products without compromising the health of the world's forests for future generations.

To achieve the mission and vision, FSC has developed a set of 10 principles and 57 Criteria that apply to FSC-certified forests around the world. The Principles include the following:

PRINCIPLE #1: COMPLIANCE WITH LAWS AND FSC PRINCIPLES

- Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory and comply with all FSC Principles and Criteria.

PRINCIPLE #2: WORKERS RIGHTS AND EMPLOYMENT CONDITIONS

- Forest management operations shall maintain or enhance the social and economic wellbeing of workers.

PRINCIPLE #3: INDIGENOUS PEOPLES' RIGHTS

- The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected. International law such as ILO 169 and United Nations Declaration of Indigenous Peoples are mandatory to follow

PRINCIPLE #4: COMMUNITY RELATIONS

- Forest management operations shall maintain or enhance the long-term social and economic wellbeing of local communities.

PRINCIPLE # 5: BENEFITS FROM THE FOREST



- Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

PRINCIPLE #6: ENVIRONMENTAL VALUES AND IMPACT

- Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

PRINCIPLE #7: MANAGEMENT PLAN

- A management plan — appropriate to the scale and intensity of the operations — shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.

PRINCIPLE #8: MONITORING AND ASSESSMENT

- Monitoring shall be conducted — appropriate to the scale and intensity of forest management — to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

PRINCIPLE # 9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS

- Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

PRINCIPLE # 10: IMPLEMENTATION OF MANAGEMENT ACTIVITIES

- Management activities conducted by or for the certificate holder for the management unit* shall be selected and implemented consistent with companies economic, environmental and social policies and objectives and in compliance with the Principles and Criteria of FSC collectively.

All ten principles and criteria must be applied in any forest management unit before it can receive FSC certification. The Principles & Criteria apply to all forest types and to all areas within the management unit included in the scope of the certificate. The P&C are applicable worldwide and relevant to forest areas and different ecosystems, as well as cultural, political and legal systems. This means that they are not specific to any particular country or region.

Accredited certification bodies are checked regularly to make sure they operate in line with FSC rules.

Accreditation Services International (ASI) is responsible for checking certification body compliance with FSC rules and procedures through a combination of field and office audits. All FSC accredited certification bodies must meet the FSC accreditation requirements.

FSC has developed a dispute resolution mechanism for stakeholders to submit and track complaints and appeals online. Stakeholders may use the online form to submit a complaint about the operation of the FSC certification system, the FSC Network, the FSC accreditation program or the performance of FSC accredited certification bodies.



In the first instance complaints against certificate holders shall be forwarded in writing to the relevant certification body who shall undertake the investigation of the complaint.

Companies/certification holders with a non-compliance in their forestry operation can lose their certificate.

2.2.2 PEFC

Area of Interest	Forestry
Market driven	Yes
Legally/political driven	
Certification scheme	Yes
Third party control	Yes
Accredited controllers	Yes
Direct possibilities to sanctions for non-compliance	To some extent
Indirect possibilities to sanctions for non-compliance	
Control/governance of the system	PEFC is an international membership association representing a wide range of forestry stakeholder interests.
Trademark/Logo	Yes 

The Programme for the Endorsement of Forest Certification (PEFC) is an international non-profit, non-governmental organization dedicated to promoting Sustainable Forest Management (SFM) through independent third-party certification.

PEFC works throughout the entire forest supply chain to promote good practice in the forest and to ensure that timber and non-timber forest products are produced with respect for the highest ecological, social and ethical standards.

PEFC is an umbrella organization. It works by endorsing national forest certification systems developed through limited multi-stakeholder processes and tailored to local priorities and conditions.

PEFC claim they are the world's largest forest certification system. Their standards seek to transform the way forests are managed globally – and locally - to ensure that all can enjoy the environmental, social and economic benefits that forests offer.



The core values in PEFC are:

1. Respect for all forest ownership structures, and the social, cultural, environmental and economic values they provide.
2. Respect for the social infrastructures of forest-based communities.
3. Belief in co-operation, openness and transparency.
4. Respect for the tenets of federalism.
5. Belief in free and fair market systems.
6. Belief in multi-stakeholder participation.
7. Commitment to excellence and continuous improvement.

The principles for the PEFC standards:

- Maintenance, conservation and enhancement of ecosystem biodiversity
- Protection of ecologically important forest areas
- Prohibition of forest conversions
- Recognition of free, prior and informed consent of indigenous peoples
- Promotion of gender equality and commitment to equal treatment of workers
- Promotion of the health and well-being of forest communities
- Respect for human rights in forest operations
- Respect for the multiple functions of forests to society
- Provisions for consultation with local people, communities and other stakeholders
- Respect for property and land tenure rights as well as customary and traditional rights
- Compliance with all fundamental ILO conventions for worker rights
- Working from minimum wage towards living wage levels
- Prohibition of genetically modified trees and most hazardous chemicals
- Exclusion of certification of plantations established by conversions, including conversions of ecologically important non-forest lands (e.g. peatlands)
- Climate positive practices such as reduction of GHG emissions in forest operations

To ensure that PEFC requirements are consistently applied at regional, national and sub-national level, all forest certification systems applying for PEFC endorsement go through a comprehensive and thorough independent assessment and quality assurance process. This process takes on average nine months to complete, and includes the following elements:

1. An independent assessment that evaluates compliance of the system with PEFC requirements and includes a global public consultation;
2. A quality assurance process;
3. After a system has successfully passed the assessment and quality assurance process, the PEFC General Assembly votes on its endorsement.

The members in PEFC are predominantly representing forest interests and organisations in close connection to forestry. There has been criticism against PEFC regarding their lack of engagement from environmental organisations and social organisations. The WWF and organisations such as the Swedish Reindeer Herders Association have been critical to the PEFC standards. Indigenous Peoples do not have a clear voice within PEFC and the standard has not sufficiently been supporting Rights of Indigenous Peoples.

2.2.3 Maritime Stewardship Council, MSC

Area of Interest	Fishing
Market driven	Yes
Legally/political driven	
Certification scheme	Yes
Third party control	Yes
Accredited controllers	Yes
Direct possibilities to sanctions for non-compliance	Yes
Indirect possibilities to sanctions for non-compliance	
Control/governance of the system	The MSC is governed by a Board of Trustees of up to 15 members. In addition, a Technical Advisory Board and a Stakeholder Council advise the Board. The structure of these bodies involves a wide range of stakeholders with different views so that decisions reflect many sectors and interests
Trademark/Logo	Yes 

The Marine Stewardship Council (MSC) is an independent non-profit organization which sets a standard for sustainable fishing. Fisheries that wish to demonstrate they are well managed and sustainable compared to the science based MSC standard are assessed by a team of experts who are independent of both the fishery and the MSC. Seafood products can display the blue MSC ecolabel only if that seafood can be traced back through the supply chain to a fishery that has been certified against the MSC standard.

The MSC's mission is to use its ecolabel and fishery certification program to contribute to the health of the world's oceans by recognizing and rewarding sustainable fishing practices, influencing the choices people make when buying seafood, and working with partners to transform the seafood market to a sustainable basis.

The MSC was founded in 1996, inspired by the Grand Banks cod fishery collapse. In 1999 it became independent of its founding partners, the WWF and Unilever. MSC has a staff of



around 120 spread across the HQ in London, regional offices in London, Seattle, Singapore and Sydney, and local offices in Edinburgh, Berlin, The Hague, Paris, Cape Town, Tokyo, Reykjavik, and the Baltic region.

The MSC program is open to all fisheries regardless of size, scale, location and intensity and runs a Developing World Program to ensure equal access to the program.

In December 2016, 296 fisheries in 35 countries are certified as sustainable to the MSC Fisheries Standard. As of March 2013, there are over 18,000 seafood products available with the MSC ecolabel, sold in 100 countries around the world. Nearly 200 fisheries have been independently certified as meeting the MSC's environmental standard for sustainable fishing and over 100 are currently undergoing assessment. Over 2,000 companies have met the MSC Chain of Custody standard for seafood traceability (link to chain of custody section of site). The MSC works in partnership with a number of organisations, businesses and funders around the world but is fully independent of all.

The MSC environmental standard for sustainable fishing was developed over two years through a consultative process involving more than 300 expert organizations and individuals around the world. It is consistent with the 'Guidelines for the Eco-labelling of Fish and Fishery Products from Marine Wild Capture Fisheries' adopted by the UN Food and Agriculture Organization (FAO) in 2005.

The MSC standard consists of three core principles that each fishery must demonstrate it meets:

Principle 1: Sustainable fish stocks

The fishing activity must be at a level which is sustainable for the targeted fish population. Any certified fishery must operate so that fishing can continue indefinitely and is not overexploiting the resources.

Principle 2: Minimising environmental impact

Fishing operations should be managed to maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends.

Principle 3: Effective management

The fishery must meet all local, national and international laws and must have a management system in place to respond to changing circumstances and maintain sustainability.

Under the three principles are a total of 28 performance indicators that a fishery is scored against by an independent team of experts. The minimum passing score for each of the 28 performance indicators is set at a level which gives a good level of assurance that the productivity of all key elements of the ecosystem on which the fishery has an impact are not compromised. The MSC system therefore not only takes into account the impact of the fishery on the target stock, but also other vital components of the wider ecosystem, such as habitat structure, productivity and biodiversity. This minimum level equates to a score of 60 and if the fishery scores below 60 on any one of the 28 Performance Indicators it is an automatic failure. However, achieving only the minimum, 60 performance level is not adequate to become certified against the MSC standard; average scores of at least 80 for the Performance Indicators under each of the three principles must be achieved. As a result,



every fishery certified against the MSC standard is operating at a very high level of precaution. This means the fishery is more resilient to potential changes such as natural stock fluctuations, and better able to secure its long-term sustainability.

Fisheries that want certification and to use the ecolabel pay a consultancy fee to an independent, for-profit contractor/third party control that assesses the fishery against the MSC standard and determines whether to recommend certification. The assessors are independently accredited to perform MSC assessments by Accreditation Services International (ASI). After certification, fisheries undergo annual audits and are recertified every five years.

2.2.4 Aquaculture Stewardship Council, ASC

Area of Interest	Aquaculture
Market driven	Yes
Legally/political driven	
Certification scheme	Yes
Third party control	Yes
Accredited controllers	Yes
Direct possibilities to sanctions for non-compliance	Yes
Indirect possibilities to sanctions for non-compliance	
Control/governance of the system	ASC is a foundation governed by an executive board and a supervising board.
Trademark/Logo	Yes 

Founded in 2010 by WWF and IDH (Dutch Sustainable Trade Initiative) the Aquaculture Stewardship Council (ASC) is an independent not for profit organisation with global influence.

ASC aims to be the world's leading certification and labelling programme for responsibly farmed seafood. The ASC's primary role is to manage the global standards for responsible aquaculture, which were developed by the WWF Aquaculture Dialogues.

ASC works with aquaculture producers, seafood processors, retail and foodservice companies, scientists, conservation groups and consumers to:



- Recognise and reward responsible aquaculture through the ASC aquaculture certification programme and seafood label.
- Promote best environmental and social choice when buying seafood.
- Contribute to transforming seafood markets towards sustainability.

ASC has the Vision:

A world where aquaculture plays a major role in supplying food and social benefits for mankind whilst minimising negative impacts on the environment.

And the Mission:

To transform aquaculture towards environmental sustainability and social responsibility using efficient market mechanisms that create value across the chain.

The ASC system is made up of 3 components:

1. Aquaculture Farm Standards

The ASC works with independent third-party certification organizations that provide certification services for aquaculture operations that grow one or more of the species for which the Standards (8) have been, or are being, developed by the Aquaculture Dialogues. These 8 standards cover 12 species' groups: salmon, shrimp, tilapia, pangasius, trout, abalone, bivalves (oysters, mussels, clams and scallops) and seriola/cobia

The species groups were chosen because of their potential impact on the environment and society, their market value and the extent to which they are traded internationally or their potential for such trade. The species covered include abalone, bivalves (clams, oysters, mussels and scallops), cobia, freshwater trout, pangasius, salmon, seriola, shrimp, and tilapia. Through the Aquaculture Dialogues more than 2,200 people have participated in the development of the ASC Standards including fish farmers, seafood processors, retailers, foodservice operators, NGOs, government agencies and research institutes. Universal, open and transparent, the Aquaculture Dialogues focused on minimising the key environmental and social impacts of aquaculture. Each Dialogue produced standards for one or a range of major aquaculture species groups. The Standard creation process followed guidelines of the ISEAL Alliance the ISEAL Code of Good Practices for Setting Social and Environmental Standard. This code of good practice complies with the ISO/IEC Guide 59 Code of good practice for standardization, and the WTO Technical Barriers to Trade (TBT) Agreement Annex 3 Code of good practice for the preparation, adoption and application of standards. The Standards are science-based, performance-based and metrics-based and will apply globally to aquaculture production systems, covering many types, locations and scales of aquaculture operations.

2. Independent 3rd Party Audits Conducted by accredited Conformity Assessment Bodies

(CAB)

Farms that seek ASC certification hire a CAB (conformity assessment body) that has been accredited by Accreditation Services International GmbH. (ASI). Only farms that are certified by a CAB accredited by ASI are eligible to sell certified product into a recognized chain of custody and have that product eligible to carry the ASC logo.



Accreditation is the process by which CABs are evaluated to determine their competency to provide certification to the ASC Standards. The accreditation process includes annual evaluations of each accredited CAB and the ASC audits they perform. ASC has exclusively appointed ASI to provide accreditation services for ASC. ASI is fully independent of ASC. ASI is based in Bonn, Germany and also provides accreditation services to Forest Stewardship Council (FSC) and Marine Stewardship Council (MSC). Despite similar sounding names, all of these organizations are independent of ASC.

The independence of ASC, ASI and the CAB ensures that high quality, objective audits and certification decisions are performed without bias for all clients around the world.

3. MSC Chain of Custody Certification and the ASC logo

The ASC logo has been developed for use by certified and licensed farms, processors and distributors so that all parts of the value chain and especially consumers can easily identify ASC certified product(s). The use of the ASC logo can be applied only to products that are sold through a consecutive, certified chain of custody that ensures traceability of certified products from production to final point of sale. For ASC, chain of custody is certified through application of the MSC chain of custody system, to which ASC CoC requirements have been added as a scope, to ASC certified aquaculture products

There are several other schemes for Aquaculture Certification such as GLOBALG.A.P Aquaculture Module and BAP Salmon Farm Standards. Compared to these standards ASC Salmon Standard performs well in comparison to GLOBALG.A.P Aquaculture Module and BAP Salmon Farm Standard in environmental and social matters, but do not specifically address animal welfare and food safety. The standard of GLOBALG.A.P and BAP contain to larger extent minimum requirements, and depend more on local regulation. The ASC certification program is a viable scheme to address future challenges in term of environmental and social issues and to guide the salmon aquaculture industry towards sustainable development.¹³

2.2.5 Towards Sustainable Mining, TSM

Area of Interest	Mining
Market driven	Yes
Legally/political driven	
Certification scheme	No
Third party control	To some extent. Annual self-control and external control every third year
Accredited controllers	Independent but not accredited

¹³ Challenges and Potential of the Aquaculture Stewardship Council Standard for Salmon Fish Farming; The Norwegian University of Science and Technology, 2014



Direct possibilities to sanctions for non-compliance	
Indirect possibilities to sanctions for non-compliance	Yes
Control/governance of the system	Mining Association of Canada, MAC
Trademark/Logo	No,

Towards Sustainable Mining (TSM) is the Mining Association of Canada's (MAC) commitment to responsible mining. It is a set of tools and indicators to drive performance and ensure that key mining risks are managed responsibly at the MAC members' facilities.

Adhering to the principles of TSM, MAC members are supposed to demonstrate leadership by:

- Engaging with communities
- Driving world-leading environmental practices
- Committing to the safety and health of employees and surrounding communities

The program was established in 2004 and its main objective is to enable mining companies to meet society's needs for minerals, metals and energy products in the most socially, economically and environmentally responsible way. The program's core strengths are described as:

Accountability: Participation in TSM is mandatory for all MAC members. Assessments are conducted at the facility level where the mining activity takes place. This provides local communities with a meaningful view of how a nearby mine is faring.

Transparency: MAC members commit to a set of guiding principles and report their performance against the program's 23 indicators annually in MAC's TSM Progress Reports. Each facility's results are publicly available and are externally verified every three years.

Credibility: TSM includes ongoing consultation with a national Community of Interest (COI) Advisory Panel. This multi-stakeholder group helps our members and communities of interest foster dialogue, improve the industry's performance and shape the program for continual advancement

TSM Guiding Principles:

MAC member demonstrate leadership worldwide by:

- Involving communities of interest in the design and implementation of our Towards Sustainable Mining initiative;
- Proactively seeking, engaging and supporting dialogue regarding our operations;
- Fostering leadership throughout our companies to achieve sustainable resource stewardship wherever we operate;
- Conducting all facets of our business with excellence, transparency and accountability;



- Protecting the health and safety of our employees, contractors and communities;
- Contributing to global initiatives to promote the production, use and recycling of metals and minerals in a safe and environmentally responsible manner;
- Seeking to minimize the impact of our operations on the environment and biodiversity, through all stages of development, from exploration to closure;
- Working with our communities of interest to address legacy issues, such as orphaned and abandoned mines;
- Practicing continuous improvement through the application of new technology, innovation and best practices in all facets of our operations.

In all aspects of our business and operations, MAC members will:

- Respect human rights and treat those with whom we deal fairly and with dignity.
- Respect the cultures, customs and values of people with whom our operations interact.
- Recognize and respect the unique role, contribution and concerns of Aboriginal peoples (First Nations, Inuit and Métis) and indigenous peoples worldwide.
- Obtain and maintain business through ethical conduct.
- Comply with all laws and regulations in each country where we operate and apply the standards reflecting our adherence to these Guiding Principles and our adherence to best international practices.
- Support the capability of communities to participate in opportunities provided by new mining projects and existing operations.
- Be responsive to community priorities, needs and interests through all stages of mining exploration, development, operations and closure.
- Provide lasting benefits to local communities through self-sustaining programs to enhance the economic, environmental, social, educational and health care standards they enjoy.

2.2.6 The OECD guidelines

Area of Interest	Corporate Social Responsibility, CSR
Market driven	Limited
Legally/political driven	Yes
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	Yes



Control/governance of the system	A membership with 34 countries managed by a Secretary General
Trademark/Logo	No

The mission of the Organisation for Economic Co-operation and Development (OECD) is to promote policies that will improve the economic and social well-being of people around the world.

The OECD provides a forum in which governments can work together to share experiences and seek solutions to common problems. OECD work with governments to understand what drives economic, social and environmental change.

The OECD Guidelines for Multinational Enterprises (the Guidelines)¹⁴, is one of the the most comprehensive set of government-backed recommendations on responsible business conduct in existence today. The governments that adhere to the Guidelines aim to encourage the positive contributions (Multinational enterprises) MNEs can make to sustainable development and to minimise the difficulties to which their various operations may give rise.

The Guidelines are a set of recommendations on responsible business conduct addressed by governments to MNEs operating in or from adhering countries. They are supported by the representatives of business, worker organisations and non-governmental organisations through the OECD Business and Industry Advisory Committee (BIAC), the OECD Trade Union Advisory Committee (TUAC), and OECD Watch.

The Guidelines are a part of the 1976 OECD Declaration on International Investment and Multinational Enterprises, a policy commitment by adhering governments to provide an open and transparent environment for international investment and to encourage the positive contribution MNEs can make to economic and social progress. The Guidelines clarify adhering government expectations on responsible business conduct and aid MNEs to ensure their operations are in harmony with government policies. Balancing an open investment climate with the responsibilities of enterprises is key.

The Guidelines are the only existing multilaterally agreed corporate responsibility instrument that adhering governments have committed to promoting in a global context. They express the shared views and values of countries, including major emerging economies, that are the sources and the recipients of a large majority of the world's investment flows and are also home to a majority of MNEs. The Guidelines cover all major areas of business ethics. Their recommendations are set out in 11 chapters and cover topics such as information disclosure, human rights, employment and labour, environment, anti-corruption, and consumer interests.

According to the manual enterprises should:

1. Contribute to economic, environmental and social progress with a view to achieving sustainable development.

¹⁴ <http://www.oecd.org/corporate/mne/48004323.pdf>



2. Respect the internationally recognised human rights of those affected by their activities.
3. Encourage local capacity building through close co-operation with the local community, including business interests, as well as developing the enterprise's activities in domestic and foreign markets, consistent with the need for sound commercial practice.
4. Encourage human capital formation, in particular by creating employment opportunities and facilitating training opportunities for employees.
5. Refrain from seeking or accepting exemptions not contemplated in the statutory or regulatory framework related to human rights, environmental, health, safety, labour, taxation, financial incentives, or other issues.
6. Support and uphold good corporate governance principles and develop and apply good corporate governance practices, including throughout enterprise groups.
7. Develop and apply effective self-regulatory practices and management systems that foster a relationship of confidence and mutual trust between enterprises and the societies in which they operate.
8. Promote awareness of and compliance by workers employed by multinational enterprises with respect to company policies through appropriate dissemination of these policies, including through training programmes.
9. Refrain from discriminatory or disciplinary action against workers who make bona fide reports to management or, as appropriate, to the competent public authorities, on practices that contravene the law, the Guidelines or the enterprise's policies.
10. Carry out risk-based due diligence, for example by incorporating it into their enterprise risk management systems, to identify, prevent and mitigate actual and potential adverse impacts as described in paragraphs 11 and 12, and account for how these impacts are addressed. The nature and extent of due diligence depend on the circumstances of a particular situation.
11. Avoid causing or contributing to adverse impacts on matters covered by the Guidelines, through their own activities, and address such impacts when they occur.
12. Seek to prevent or mitigate an adverse impact where they have not contributed to that impact, when the impact is nevertheless directly linked to their operations, products or services by a business relationship. This is not intended to shift responsibility from the entity causing an adverse impact to the enterprise with which it has a business relationship.
13. In addition to addressing adverse impacts in relation to matters covered by the Guidelines, encourage, where practicable, business partners, including suppliers and sub-contractors, to apply principles of responsible business conduct compatible with the Guidelines.
14. Engage with relevant stakeholders in order to provide meaningful opportunities for their views to be taken into account in relation to planning and decision making for projects or other activities that may significantly impact local communities.

15. Abstain from any improper involvement in local political activities

Enterprises are encouraged in the guideline to:

1. Support, as appropriate to their circumstances, cooperative efforts in the appropriate fora to promote Internet Freedom through respect of freedom of expression, assembly and association online.
2. Engage in or support, where appropriate, private or multi-stakeholder initiatives and social dialogue on responsible supply chain management while ensuring that these initiatives take due account of their social and economic effects on developing countries and of existing internationally recognised standards.

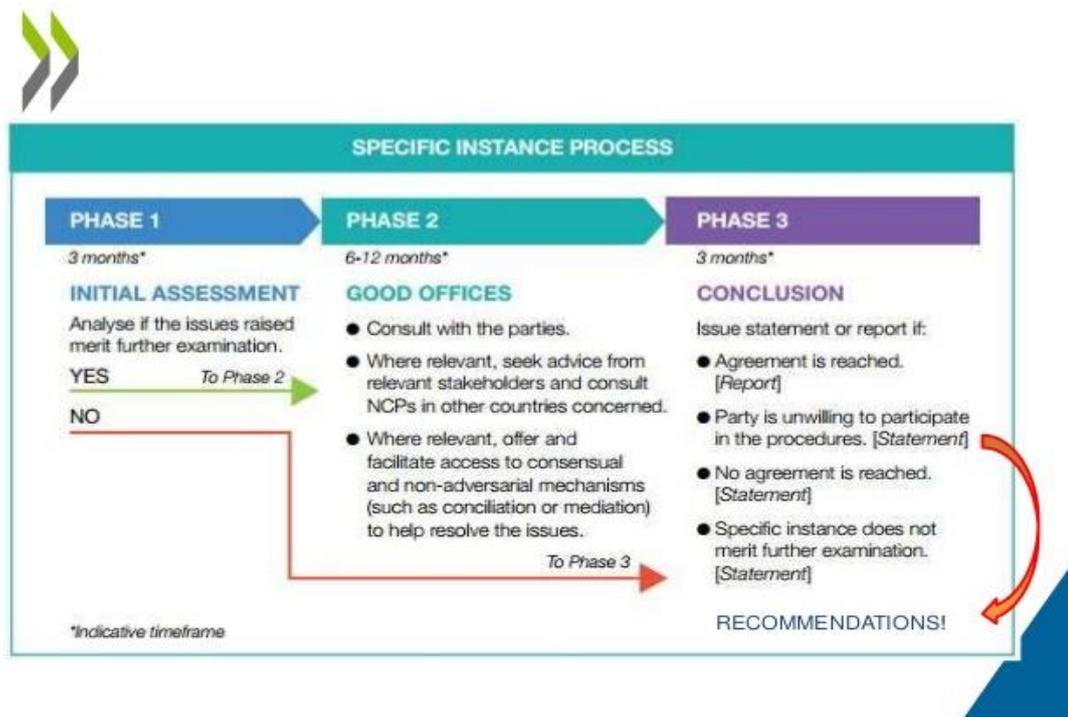


Figure 8: The complaint process, handled by the National Contacts Points

Adhering countries have flexibility in how they organise their NCPs as long as such arrangements provide an effective basis for dealing with the broad range of issues covered by the Guidelines and enable the NCP to operate in an impartial manner while maintaining an adequate level of accountability to the adhering government.

NCPs rely on multi-stakeholder input and are committed to developing and maintaining relationships with representatives of the business community, worker organisations, NGOs and other interested parties that are able to contribute to the effective implementation of the Guidelines.



2.2.7 International Finance Cooperation, IFC, Guidelines

Area of Interest	
Area of Interest	Investments and asset management
Market driven	Yes
Legally/political driven	Yes
Certification scheme	No
Third party control	No, internal control
Accredited controllers	
Direct possibilities to sanctions for non-compliance	Yes
Indirect possibilities to sanctions for non-compliance	Yes
Control/governance of the system	Company owned by 184 countries with executive leadership
Trademark/Logo	

The International Finance Corporation (IFC) is an international financial institution that offers investment, advisory, and asset management services to encourage private sector development in developing countries. The IFC is a member of the World Bank Group and is headquartered in Washington, D.C., United States. It was established in 1956 as the private sector arm of the World Bank Group to advance economic development by investing in strictly for-profit and commercial projects that purport to reduce poverty and promote development.

The IFC's object is to create opportunities for people to escape poverty and achieve better living standards by mobilizing financial resources for private enterprise, promoting accessible and competitive markets, supporting businesses and other private sector entities, and creating jobs and delivering necessary services to those who are poverty-stricken or otherwise vulnerable.

The IFC is owned and governed by its member countries but has its own executive leadership and staff that conduct its normal business operations. It is a corporation whose shareholders are member governments that provide paid-in capital and which have the right to vote on its matters. An independent evaluator assesses the corporation each year.

IFC are working with a number of guiding standards¹⁵. IFC's Environmental and Social Performance Standards define IFC clients' responsibilities for managing their environmental and social risks. The 2012 edition of IFC's Sustainability Framework, which includes the

¹⁵ <http://www.>

https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards/



Performance Standards, applies to all investment and advisory clients whose projects go through IFC's initial credit review process after January 1, 2012.

Together, the eight Performance Standards establish standards that the clients is to meet throughout the life of an investment by IFC:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

Implementing the Performance Standards helps companies identify and guard against interruptions in project execution, legal claims, brand protection, and accessing international markets. IFC believes that meeting the Performance Standards helps clients improve their bottom line. Implementation of the Standards can help optimize the management of inputs such as water and energy, and minimize emissions, effluents, and waste, leading to a more efficient and cost-effective operation.

In addition, the Standards help clients find ways to maximize local development benefits and encourage the practice of good corporate citizenship. This often results in greater acceptance of the project by local communities and governments, allowing companies to acquire a social license to operate. Enhanced brand value and reputation may also be attractive to new investors or financiers.

The “Equator Principles,” which have been adopted by more than 70 of the world’s leading investment banks in developed and developing countries are based on IFC’s Performance Standards. These principles are estimated to cover nearly 90% of project financing in emerging markets.

Monitoring of compliance to the performance standard occurs on two levels:

- Site visits from IFC staff.
- Submission of the client’s Annual Monitoring Report on progress in meeting the E&S terms of the investment agreement.

Engagement between the client and Affected Communities should be ongoing. IFC will disclose the client’s progress against the ESAP (Environmental and social action plan).



During monitoring, IFC and the client may identify opportunity for project enhancement through IFC Advisory Services.

IFC’s Compliance Advisor/ Ombudsman (CAO) may also provide additional oversight. The CAO is an independent office that impartially responds to E&S concerns of Affected Communities and aims to enhance IFC accountability and outcomes.

2.2.8 United Nations Guiding Principles on Business and Human Rights

Area of Interest	CSR
Market driven	To some extent
Legally/political driven	To some extent
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	Yes
Control/governance of the system	United Nations, Human Rights Council
Trademark/Logo	

The UN Guiding Principles on Business and Human Rights were proposed by UN Special Representative on Business & Human Rights, John Ruggie, and endorsed by the UN Human Rights Council in June 2011. In the same resolution, the UN Human Rights Council established the UN Working Group on Business & Human Rights. The Guiding Principles seek to provide an authoritative global standard for preventing and addressing the risk of adverse human rights impacts linked to business activity.¹⁶

The principle pillars of the UN Guiding Principles on Business and Human Rights are grounded in recognition of:

- (a) States’ existing obligations to respect **protect** and fulfil human rights and fundamental freedoms;
- (b) The role of business enterprises as specialized organs of society performing specialized functions, required to comply with all applicable laws and to **respect** human rights;
- (c) The need for rights and obligations to be matched to appropriate and effective **remedies** when breached.

¹⁶ <http://business-humanrights.org/en/un-guiding-principles>

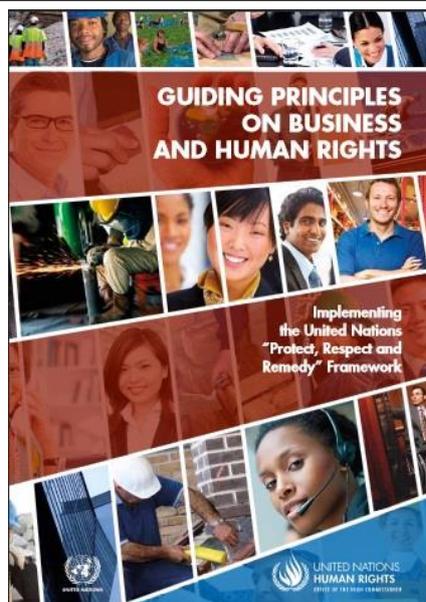


Figure 9: The UN Guiding Principles on Business and Human Rights

The first pillar of the Guiding Principles is the state’s duty to protect against human rights abuses by third parties, including business enterprises, through regulation, policymaking, investigation, and enforcement. This pillar reaffirms states’ existing obligations under international human rights law, as put forth in the 1948 Universal Declaration of Human Rights. While states are not responsible for human rights abuse by private actors, they may be in breach of their international human rights law obligations when they fail to take proper steps to prevent or punish abuses by the private sector (referred to as positive obligations

The corporate responsibility to respect human rights indicates that businesses must act with due diligence to avoid infringing on the rights of others and to address negative impacts with which they are involved. The second pillar offers a process for companies to both "know and show" that they are meeting this responsibility, by which they become aware of, prevent, and address their adverse human rights impacts.

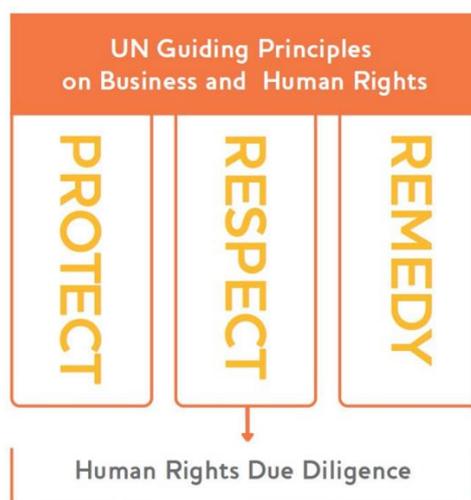


Figure 10; The pillars of UN Guiding Principles of Human Rights



The third pillar addresses both the state's responsibility to provide access to remedy through judicial, administrative, and legislative means, and the corporate responsibility to prevent and remediate any infringement of rights that they contribute to. Having effective grievance mechanisms in place is crucial in upholding the state's duty to protect and the corporate responsibility to respect.

The Guiding Principles apply to all States and to all business enterprises, both transnational and others, regardless of their size, sector, location, ownership and structure.

The Guiding Principles should be understood as a coherent whole and should be read, individually and collectively, in terms of their objective of enhancing standards and practices with regard to business and human rights so as to achieve tangible results for affected individuals and communities, and thereby also contributing to a socially sustainable globalization.

Nothing in the Guiding Principles should be read as creating new international law obligations, or as limiting or undermining any legal obligations a State may have undertaken or be subject to under international law with regard to human rights.

The UNGP have enjoyed widespread uptake and support from both the public and private sectors, and several companies have publicly stated their support for the Guiding Principles. For example, the Coca-Cola Company "strongly endorsed" the UNGPs, calling them "a foundation and flexible framework for companies like ours", and General Electric wrote that the UNGPs "helped to clarify the distinct interrelated roles and responsibilities of states and business entities in this area" and that they would "no doubt serve as a lasting beacon for businesses entities seeking (to) grow their service and product offerings while respecting human rights".

However, some stakeholders questioned whether the UNGPs set a sufficiently high standard for businesses, arguing that the private sector should have an "obligation" to realize rights, rather than simply a "responsibility". Others argued that the UNGPs needed an overarching accountability mechanism that could make the framework legally enforceable. Supporters, however, defend the UNGPs for creating far more consensus than any previous attempt at creating a global business-human rights standard.

As a response to questions concerning the implementation of the UNGP an UN Guiding Principles Reporting Framework has been developed. This is the first comprehensive guidance for companies to report on human rights issues in line with their responsibility to respect human rights. This responsibility is set out in the UN Guiding Principles on Business and Human Rights, which constitute the authoritative global standard in this field. The UNGP Reporting Framework was launched in February 2015¹⁷.

The Reporting Framework provides a concise set of questions to which any company should strive to have answers in order to know and show that it is meeting its responsibility to respect human rights in practice. It offers companies clear and straightforward guidance on how to answer these questions with relevant and meaningful information about their human rights policies, processes and performance.

¹⁷ <http://www.ungpreporting.org/about-us/#sthash.4V9X1ayj.dpuf>



The Reporting Framework has been developed through the Human Rights Reporting and Assurance Frameworks Initiative (RAFI). RAFI is co-facilitated by Shift and Mazars through an open, global, consultative process involving representatives from over 200 companies, investor groups, civil society organizations, governments, assurance providers, lawyers and other expert organizations from all regions of the world. Consultations took place in Addis Ababa, Bangkok, Jakarta, London, Manila, Medellin, New York and Yangon.

2.2.9 United Nations Global Compact

Area of Interest	CSR
Market driven	To some extent
Legally/political driven	To some extent
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	Limited
Control/governance of the system	United Nations
Trademark/Logo	

The United Nations Global Compact is a United Nations initiative to encourage businesses worldwide to adopt sustainable and socially responsible policies, and to report on their implementation. The UN Global Compact is a principle-based framework for businesses, stating ten principles in the areas of human rights, labour, the environment and anti-corruption. Under the Global Compact, companies are brought together with UN agencies, labour groups and civil society. Cities can join the Global Compact through the Cities Programme¹⁸

The UN Global Compact is the world's largest corporate citizenship initiative with 10000 corporate participants and other stakeholders in over 130 countries with two objectives: "Mainstream the ten principles in business activities around the world" and "Catalyse actions in support of broader UN goals, such as the Millennium Development Goals (MDGs)."

The UN Global Compact was announced by then UN Secretary-General Kofi Annan in an address to the World Economic Forum on January 31, 1999 and was officially launched at UN Headquarters in New York on July 26, 2000.

¹⁸ <https://www.unglobalcompact.org/>



The UN Global Compact's Ten Principles are derived from: The Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption

Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

Labour

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labour;

Principle 5: the effective abolition of child labour; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

The UN Global Compact is not a regulatory instrument, but rather a forum for discussion and a network for communication including governments, companies and labour organisations, whose actions it seeks to influence, and civil society organizations, representing its stakeholders. The UN Global Compact says that once companies declared their support for the principles "This does not mean that the Global Compact recognizes or certifies that these companies have fulfilled the Compact's principles."

The UN Global Compact's goals are intentionally flexible and vague, but it distinguishes the following channels through which it provides facilitation and encourages dialogue: policy dialogues, learning, local networks and projects



Many civil society organizations/stakeholders believe that without any effective monitoring and enforcement provisions, the Global Compact fails to hold corporations accountable. Moreover, these organizations argue that companies can misuse the Global Compact as a public relations instrument for "bluewash", as an excuse and argument to oppose any binding international regulation on corporate accountability, and as an entry door to increase corporate influence on the policy discourse and the development strategies of the United Nations. The Global Compact contains no mechanisms to sanction member companies for non-compliance with the Compact's principles, a corporation's continued participation is not dependent on demonstrated progress;

2.2.10 ISO 26 000 international guidance standard on social responsibility

Area of Interest	
Area of Interest	CSR
Market driven	Yes
Legally/political driven	
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	?
Control/governance of the system	ISO
Trademark/Logo	ISO 26000

ISO 26000 provides guidance on how businesses and organizations can operate in a socially responsible way. This means acting in an ethical and transparent way that contributes to the health and welfare of society.

ISO 26000:2010 provides guidance rather than requirements, so it cannot be certified to unlike some other well-known ISO standards. Instead, it helps clarify what social responsibility is, helps businesses and organizations translate principles into effective actions and shares best practices relating to social responsibility, globally. It is aimed at all types of organizations regardless of their activity, size or location.

The standard was launched in 2010 following five years of negotiations between many different stakeholders across the world. Representatives from government, NGOs, industry,

consumer groups and labour organizations around the world were involved in its development, which means it represents an international consensus.

ISO 26000 provides guidance for all types of organization, regardless of their size or location, on:

1. Concepts, terms and definitions related to social responsibility
2. Background, trends and characteristics of social responsibility
3. Principles and practices relating to social responsibility
4. Core subjects and issues of social responsibility
5. Integrating, implementing and promoting socially responsible behaviour throughout the organization and, through its policies and practices, within its sphere of influence
6. Identifying and engaging with stakeholders
7. Communicating commitments, performance and other information related to social responsibility



Figure 11: Social Responsibility according to ISO26000

2.2.11 International Council on Mining and Metals, ICMM

Area of Interest	Mining
Market driven	Yes
Legally/political driven	No
Certification scheme	No
Third party control	Yes



Accredited controllers	No. Assurance providers should refer to the good practice guidelines set out in existing global assurance and auditing standards
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	Possible
Control/governance of the system	ICMM, The Council is ICMM's principal governing body
Trademark/Logo	

The International Council on Mining and Metals (ICMM)¹⁹ was founded in 2001 to improve sustainable development performance in the mining and metals industry. Today ICMM bring together 25 mining and metals companies as well as 36 national and regional mining associations and global commodity associations to address core sustainable development challenges.

ICMM is a membership organization, led by the CEOs of many of the world's largest mining and metals companies and associations. ICMM is committed to driving social, economic and environmental progress.

The vision of ICMM is one of leading companies working together and with others to strengthen the contribution of mining, minerals and metals to sustainable development.

The ICMM has developed 10 principles to which member companies must adhere. These considerations resulted from a survey of concerned parties both within and outside the council. They seek to comply and reinforce guidelines established by organizations including the OECD and the World Bank.

1. Apply ethical business practices and sound systems of corporate governance and transparency to support sustainable development
2. Integrate sustainable development in corporate strategy and decision-making processes.
3. Respect human rights and the interests, cultures, customs and values of employees and communities affected by our activities
4. Implement effective risk-management strategies and systems based on sound science and which account for stakeholder perceptions of risks.
5. Pursue continual improvement in health and safety performance with the ultimate goal of zero harm.
6. Pursue continual improvement in environmental performance issues, such as water stewardship, energy use and climate change.
7. Contribute to the conservation of biodiversity and integrated approaches to land-use planning.

¹⁹ <http://www.icmm.com/>



8. Facilitate and support the knowledge-base and systems for responsible design, use, re-use, recycling and disposal of products containing metals and minerals
9. Pursue continual improvement in social performance and contribute to the social, economic and institutional development of host countries and communities
10. Proactively engage key stakeholders on sustainable development challenges and opportunities in an open and transparent manner. Effectively report and independently verify progress and performance.

In combination with the 10 principles, reporting to the public regarding the activities of ICMM as well as independent appraisal of those activities helps ensure compliance.

ICMM's Council of CEOs has adopted a number of position statements that give greater clarity to some of the commitments contained in the 10 principles:

- ICMM Principles for climate change policy design (complements principles 4 and 6) - June 2011
- Mining: Partnerships for Development Position Statement (complements principle 9) - January 2010
- Transparency of Mineral Revenues Position Statement (complements principle 1) - July 2009
- Mercury Risk Management Position Statement (complements principles 4, 6 and 8) - February 2009
- Indigenous Peoples and Mining good practice guide – October 2015 (complements principle 3) - May 2013
- Mining and Protected Areas Position Statement (complements principles 6 and 7) - September 2003

The Cross-Sector Biodiversity Initiative (CSBI), a partnership between ICMM, IPIECA and the Equator Principles Association, has 2015 released A Cross-Sector guide for Implementing the Mitigation Hierarchy²⁰. This good practice guide focuses on managing biodiversity using the mitigation hierarchy - a framework for limiting the negative impacts of development projects on biodiversity and ecosystem services.

The guidance was, in part, developed in response to the challenges in implementing the International Finance Corporation (IFC) Performance Standard 6 (PS6) and aims to balance conservation needs with development priorities to aid in the sustainable management of living, natural resources.

Developed by biodiversity practitioners working in, or with, extractive industries and financial institutions, the guidance offers a step-by-step approach and practical examples of how the mitigation hierarchy can be applied to address biodiversity challenges.

ICMM member companies are required to implement the three elements of the framework which includes a public commitment to transparent and accountable reporting practices. In May 2008, member companies committed to publicly report on their sustainable development performance on an annual basis, in line with standards set by the Global Reporting Initiative (GRI). In 2013, member companies reaffirmed their support of GRI by

²⁰ www.icmm.com/document/9460



committing to prepare their sustainability reporting in accordance with the core option of GRI's G4 Guidelines.

Since 2008, ICMM members have been required to obtain independent third party assurance of their sustainability performance. This means an independent auditor must review and assess the quality of their reports, systems and processes in line with ICMM's Assurance Procedure. The procedure for the assurance process is described in a special manual.

2.2.12 IPIECA, The Global Oil and Gas Industry Association for Environmental and Social Issues

Area of Interest	CSR
Market driven	Yes
Legally/political driven	No
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	No
Control/governance of the system	IPIECA
Trademark/Logo	

The International Petroleum Industry Environmental Conservation Association (IPIECA) was established in 1974 following the establishment of the United Nations Environment Programme (UNEP). IPIECA provides one of the industry's principal channels of communication with the United Nations. IPIECA is the single global association representing both the upstream and downstream oil and gas industry on key global environmental and social issues. IPIECA's programme takes full account of international developments in these issues, serving as a forum for discussion and cooperation involving industry and international organisations. IPIECA aims to develop and promote scientifically-sound, cost-effective, practical, socially and economically acceptable solutions to global environmental and social issues pertaining to the oil and gas industry. IPIECA is not a lobbying organisation but provides a forum for encouraging continuous improvement of industry performance.

IPIECA's membership includes:

- 39 companies, comprising all 6 supermajors and 7 national oil companies



- 25 associations, forming a network who represent over 400 oil and gas companies IPIECA members account for over half of world's oil production.
- 5 Associate members

The vision of IPIECA is an oil and gas industry that successfully improves its operations and products to meet society's expectations for environmental and social performance.

The mission is described as:

- Developing, sharing and promoting sound practices and solutions
- Enhancing and communicating knowledge and understanding
- Engaging members and others in the industry
- Working in partnership with key stakeholders

IPIECA members are committed to:

- contribute to sustainable development by providing safe and reliable energy in an environmentally and socially responsible manner
- conduct their operations and activities in accordance with applicable law related to environmental and social issues and ethical business practices
- seek to improve their performance in addressing environmental and social issues
- develop, share and promote implementation of sound practices and solutions with others in industry
- engage with stakeholders, taking into account their expectations, concerns, ideas and views, and work with government and non-government organizations

IPIECA have been working with a number of working groups and seminars which focus on the following areas:

- Biodiversity and ecosystem services:
- Climate change
- Fuels and products
- Health
- Oil spill preparedness
- Reporting
- Social responsibility
- Human right
- Water

IPIECA has produced a number of publications and voluntary recommendations used by the industry in various issues.

IPIECA formed a Social Responsibility Working Group (SRWG) in 2002 to share good practice on social responsibility issues including human rights, local content, indigenous peoples and social investment.

The Social Responsibility Working Group gives IPIECA members a forum in which to share information and coordinate responses to some of the social responsibility issues and challenges surrounding the oil and gas industry.



Oil spill preparedness and response has always been an element in IPIECA’s work. In 1987 IPIECA formed an oil spill working group to help improve oil spill contingency planning and response around the world and began a long-standing partnership with the International Maritime Organization (IMO) in 1990. This was formalised in 1996 by the creation of the Global Initiative on Oil Spill Preparedness and Response, implemented by IPIECA and IMO, to reduce the risk of oil spills around the world and to improve the capacity of national governments and industry to prepare and respond to them.

The Global Initiative has continued to build on its existing programmes in the Caspian, Black Sea and Central Eurasia (OSPRI) and West, Central and Southern Africa (GI WACAF). It continues to expand into new regions including South East Asia and China where crowded shipping routes and new projects present increased risk. IPIECA and the IMO are currently building on established national and regional arrangements to strengthen preparedness and response in these regions.

2.2.12 Aspen Principles of Arctic Governance

Area of Interest	CSR
Market driven	Yes
Legally/political driven	No
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	No
Control/governance of the system	The Aspen Institute
Trademark/Logo	

The Aspen Institute is an educational and policy studies organization based in Washington, DC. Its mission is to foster leadership based on enduring values and to provide a nonpartisan venue for dealing with critical issues. The Institute has campuses in Aspen, Colorado, and on the Wye River on Maryland’s Eastern Shore. It also maintains offices in New York City and has an international network of partners.

The Aspen Commission on Arctic Climate Change has identified the following initial Principles of Arctic Governance as forming the foundation and the standards by which future



governance and sustainable management of human activities in the Arctic should be measured.

Specifically, governance and sustainable management of human activities in the Arctic should seek to:

1. Optimize ecosystem resilience, integrity and productivity by maintaining food-web (trophic) structure and protecting and restoring biodiversity and available habitat.
2. Maintain the full suite of Arctic ecosystem services to support human well-being on a continuing basis.
3. Promote investment in scientific research and related infrastructure necessary to ensure sustainable development and environmental protection.
4. Avoid exacerbating changes that may be difficult or impossible to reverse in temperature, sea-ice extent, pH, and other key physical, chemical and biological ecosystem parameters.
5. Assess, monitor and manage multiple human activities using an integrated, adaptive, ecosystem-based management system that takes into account risks and cumulative and interacting effects.
6. Apply ecosystem management processes based on science and traditional knowledge. New and expanded human activities are subject to prior assessment. Prudent measures to reduce or eliminate impacts are to be taken when there are reasonable grounds for concern that such activities will, directly or indirectly, bring about hazards to human health, harm living resources and ecosystems, damage amenities or interfere with other legitimate uses.
7. Fully respect the rights, including human rights, of Arctic residents and Arctic indigenous peoples, and maximize participation in and transparency of decision-making for all interested stakeholders.
8. Link global policy discussions to the need to conserve and manage Arctic ecosystems and dependent communities.
9. Promote cooperation among Arctic States to arrive at appropriate standards for managing activities in the Arctic to meet the special conditions of the Arctic region, while promoting sustainable development.
10. Inform, in a timely manner, national and international decision-makers as well as the public of the consequences of climate change impacts in the Arctic, and needed actions required to meet the above noted principles.²¹

2.2.13 The Polar Code

Area of Interest	Shipping
Market driven	No
Legally/political driven	Yes

²¹ <https://assets.aspeninstitute.org/content/uploads/2011/10/Aspen-Climate-Change-Report-v221r-3.29.11-FINAL.pdf>



Certification scheme	Yes
Third party control	Government control
Accredited controllers	
Direct possibilities to sanctions for non-compliance	Yes
Indirect possibilities to sanctions for non-compliance	
Control/governance of the system	IMO/Flag states
Trademark/Logo	

In 2009 the foreign ministers of the eight member states of the Arctic Council approved the Council's Arctic Marine Shipping Assessment (AMSA) and called upon the International Maritime Organization to formulate and adopt mandatory international standards for ships operating in Arctic waters, called the Polar Code.

The AMSA report and the ministers stressed that the new Polar Code must protect not only the ships, their crews, passengers and cargo from the unique dangers of Arctic shipping but also protect Arctic peoples and the environment from the risks of shipping.

The IMO began working on the mandatory Polar Code in 2010, primarily through its Subcommittee on Design and Equipment. The committee has focused almost exclusively on issues relating to ship design and construction and very little on the impacts of ships and shipping on Arctic peoples and the Arctic marine environment.

IMO²² has now adopted the International Code for Ships Operating in Polar Waters (Polar Code) and related amendments to make it mandatory under both the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL).

The Polar Code entered into force on 1 January 2017. This marks an historic milestone in the Organization's work to protect ships and people aboard them, both seafarers and passengers, in the harsh environment of the waters surrounding the two poles.

The Polar Code and SOLAS amendments were adopted during the 94th session of IMO's Maritime Safety Committee (MSC), in November 2014; the environmental provisions and MARPOL amendments were adopted during the 68th session of the Marine Environment Protection Committee (MEPC) in May 2015.

The Polar Code is intended to cover the full range of shipping-related matters relevant to navigation in waters surrounding the two poles – ship design, construction and equipment; operational and training concerns; search and rescue; and, equally important, the protection of the unique environment and eco-systems of the polar regions.

²²IMO – the International Maritime Organization – is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships.

The Polar Code covers the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the inhospitable waters surrounding the two poles.

The Polar Code includes mandatory measures covering safety part (part I-A) and pollution prevention (part II-A) and recommendatory provisions for both (parts I-B and II-B).

The Code will require ships intending to operating in the defined waters of the Antarctic and Arctic to apply for a Polar Ship Certificate, which would classify the vessel as Category A ship - ships designed for operation in polar waters at least in medium first-year ice, which may include old ice inclusions; Category B ship - a ship not included in category A, designed for operation in polar waters in at least thin first-year ice, which may include old ice inclusions; or Category C ship - a ship designed to operate in open water or in ice conditions less severe than those included in Categories A and B.

The issuance of a certificate would require an assessment, taking into account the anticipated range of operating conditions and hazards the ship may encounter in the polar waters. The assessment would include information on identified operational limitations and plans or procedures or additional safety equipment necessary to mitigate incidents with potential safety or environmental consequences.

Ships will need to carry a Polar Water Operational Manual, to provide the Owner, Operator, Master and crew with sufficient information regarding the ship's operational capabilities and limitations in order to support their decision-making process.



Figure 12: The Polar Code



Policy Implications and Challenges of the IMO Polar Code

- The mandatory IMO polar Code is a historic new regime for the polar oceans that will establish binding and enhanced international standards for new and existing commercial ships operating in Arctic and Antarctic waters. Ratification of these measures will herald a new era of protecting Arctic people and the Arctic marine environment. A number of policy and practical challenges await the full implementation of the IMO Polar Code:
- Beginning in May 2015, all maritime states will have the challenge of implementing the Polar Code in their national legal systems by 1 January 2017.
- The Arctic states, having forcefully called for a mandatory Polar Code within the work of the Arctic Council, share the challenge and responsibility of showing leadership in the Code's implementation phase and articulating to a global community the importance and immediacy of international safety and environmental rules for polar ships.
- The process for gaining a Polar Ship Certificate is developed by the national maritime authorities of the flag states and the ship classification societies so that it is operational by 1 January 2017.
- The global maritime community will be challenged to develop the appropriate Polar Water Operational Manual for every ship that might voyage in polar waters at the time of the Polar Code's coming into force.
- There are few qualified polar mariners in today's global maritime workforce. It will take some time for many of the flag states to use existing ice navigation training facilities and develop their own training options in the decades ahead.
- It remains unclear how large passenger ships will meet the many standards of marine safety equipment, ships training and mariner competency standards required by Category C ships under the Polar Code.
- The ship classification societies and marine insurance industry are key players in evaluating the future risks of ships operating in polar waters. The new Polar Code provides both industries with a set of uniform, international rules and regulations and a policy framework for enhanced marine safety and environmental protection in the maritime community.
- Enforcement of the IMO Polar Code will be the responsibility of the flag states and also the port states in certain circumstances. The ship classification societies will certify that polar class ships meet the new rules, and the marine insurance industry will have a role in insuring only ships that meet these new standards. IMO will have no direct enforcement role, but the Arctic states as both flag and port states will be influential in making sure all ships operating in Arctic waters adhere to the Polar Code rules and regulations.
- Commercial ships voyaging and operating in remote polar waters place a premium on ship monitoring and tracking. Sharing Arctic marine traffic data among the flag and port states may require a new binding agreement among the Arctic states. This information could provide new data on the effectiveness of the IMO Polar Code and how the



3.2.14 IUCN, the International Union for Conservation of Nature

Area of Interest	
Area of Interest	Environment
Market driven	Partly
Legally/political driven	Partly
Certification scheme	Partly
Third party control	Yes
Accredited controllers	Yes
Direct possibilities to sanctions for non-compliance	
Indirect possibilities to sanctions for non-compliance	Yes
Control/governance of the system	The IUCN Council is the principal governing body of IUCN
Trademark/Logo	

IUCN is the world’s oldest and largest global environmental organization, with almost 1,300 government and NGO Members and more than 15,000 volunteer experts in 185 countries. IUCN’s work is supported by almost 1,000 staff in 45 offices and hundreds of partners in public, NGO and private sectors around the world.

Conserving biodiversity is central to the mission of IUCN. To demonstrate how biodiversity is fundamental, to addressing some of the world’s greatest challenges such as climate change, sustainable development and food security. To deliver conservation and sustainability at both the global and local level, IUCN builds on its strengths in the following areas:

- **Science** – 11,000 experts setting global standards in their fields, for example, the definitive international standard for species extinction risk – the IUCN Red List of Threatened Species™.
- **Action** – hundreds of conservation projects all over the world from the local level to those involving several countries, all aimed at the sustainable management of biodiversity and natural resources.
- **Influence** – through the collective strength of more than 1,200 government and non-governmental Member organizations, IUCN influences international environmental conventions, policies and laws.

Over the past decades, IUCN had widened its focus beyond conservation ecology and now incorporates issues related to gender equality, poverty alleviation and sustainable business in its projects. Unlike other international NGOs, IUCN does not itself aim to mobilize the



public in support of nature conservation. It tries to influence the actions of governments, business and other stakeholders by providing information and advice, and through lobbying and partnerships.

IUCN has recently developed The IUCN Green List of Protected Areas, a global standard for protected areas in the 21st Century. The IUCN Green List of Protected and Conserved Areas is the first global standard of best practice for area-based conservation. It is a programme of certification for protected and conserved areas – national parks, natural World Heritage sites, community conserved areas, nature reserves and so on – that are effectively managed and fairly governed.

In line with IUCN's core mission of 'A just world that values and conserves nature' the objective of the Green List of Protected Areas is to improve the contribution that Protected Areas make to sustainable development through the conservation of nature and provision of associated social, economic, cultural, and spiritual values.

The fundamental premise of the programme is that it will be able to recognize success in achieving conservation outcomes, as well as measure progress in, and impact of, equitable governance and effective management of Protected Areas.

Based around this ability the GLPA Programme will be able to:

- Inspire and motivate managers, staff and stakeholders to achieve success
- Reward successful management and managers
- Strengthen support for Protected Areas governance and management
- Provide IUCN members and partners with new tool to motivate and enhance the performance of Protected Areas
- Generate new and additional funding for Protected Areas management
- Encourage and promote the fair sharing of the costs and benefits of conservation in Protected Areas
- Improve the effectiveness of Protected Areas management worldwide
- Highlight progress and improved performance of Protected Areas management, over time.

IUCN, through the Global Protected Areas Programme and supported by Accreditation Services International (ASI), will develop and maintain a credible and cost effective GLPA Assurance Process that adheres to the International Social and Environmental Accreditation and Labelling Alliance (ISEAL Alliance) code of best practice. The Assurance Process will measure the extent to which applicant Protected Areas meet the GLPA Standard's criteria.

The IUCN 'Green Listing' of Protected Areas will:

- Demonstrate and promote the potential for successful Protected Area management to policy makers, funders, investors and the public.
- Reward managers and protected area agencies, through public and peer recognition of their success.
- Create opportunities to promote examples of successful protected area management to visitors and other interested parties.



By identifying successful conservation outcomes and supporting as well as measuring progress towards these outcomes through effective management and equitable governance, IUCN will encourage new investment in Protected Area management.

Sites join the IUCN Green List by committing to achieving its standard. They become certified once they demonstrate a high bar of environmental and social performance. The IUCN Green List Standard addresses four themes: good governance, sound design and planning, effective management, and positive conservation outcomes.

The process from application to certification can take up to five years. During that time, sites are regularly evaluated and reviewed against a set of demanding criteria. Enrolled sites therefore benefit from expert guidance on how to improve their performance and impacts. They also become part of a network, fostering exchange and learning among conservation practitioners.

2.2.15 The Global Sustainable Tourism Council (GSTC)

Area of Interest	Tourism
Market driven	Yes
Legally/political driven	
Certification scheme	Yes
Third party control	Yes
Accredited controllers	Yes
Direct possibilities to sanctions for non-compliance	
Indirect possibilities to sanctions for non-compliance	Yes
Control/governance of the system	IUCN and their board
Trademark/Logo	

The Global Sustainable Tourism Council (GSTC) is a multi-stakeholder global tourism organization. Born as a strategic coalition of partners under the umbrella of the United Nations (UN), and the strong support of the UN Foundation, the UN Environmental Program and the World Tourism Organization (UNWTO), the GSTC brings together businesses, governments, non-governmental organizations, academia, individuals and communities engaged in and striving to achieve best practices in sustainable tourism. Established as a membership council, the GSTC serves as the international body for promoting education, understanding and adoption of global sustainable tourism practices. The GSTC compiles,



reviews, adapts and develops tools and resources to foster sustainable tourism practices and increase demand for sustainable tourism products and services.

The Global Sustainable Tourism Council (GSTC) establishes and manages global sustainable standards with the aim of increasing sustainable tourism knowledge and practices among public and private stakeholders. All of the GSTC programs and activities work toward this central mission. The GSTC is independent and neutral, serving the role of managing its global baseline standards for sustainability in travel and tourism. It is mostly a volunteer organization, consisting of experts in sustainable tourism and supported by organizations and individuals with a passion for ensuring that meaningful standards are available globally for sustainability in travel and tourism. Financial support from donations, sponsorship, and membership fees are critical to our own sustainability.

At the heart of this work are the Global Sustainable Tourism Council's Sustainability Criteria. There are two sets of GSTC Criteria:

- Destination Criteria (GSTC-D) and
- Hotel & Tour Operator Criteria (GSTC-H&TO).

These are the guiding principles and minimum requirements that any tourism business or destination should aspire to reach in order to protect and sustain the world's natural and cultural resources, while ensuring tourism meets its potential as a tool for conservation and poverty alleviation. Sustainability is imperative for all tourism stakeholders and must translate from words to actions.

The CSTC Criteria serve as the global baseline standards for sustainability in travel and tourism.

They are the result of a worldwide effort to develop a common language about sustainability in tourism. Focusing on social and environmental responsibility, as well as the positive and negative economic and cultural impacts of tourism, the criteria are organized into four pillars:

- Sustainable management; Consists of 13 criteria
- Socioeconomic impacts; Consists of 9 criteria
- Cultural impacts; Consists of 6 criteria
- Environmental impacts (including consumption of resources, reducing pollution, and conserving biodiversity and landscapes); Consists of 12 criteria

The GSTC Criteria have been built on decades of prior work and experience around the world, and they take into account the numerous guidelines and standards for sustainable tourism from every continent. During the process of development, they were widely consulted throughout the globe, in both developed and developing countries, in several languages. They reflect our goal in attaining a global consensus on sustainable tourism. The process of developing the Criteria was designed to adhere to ISO codes of conduct and the



standards-setting code of the ISEAL Alliance²³, a global leader in providing guidance for the development and management of sustainability for all sectors.

The Criteria are the minimum, not the maximum, which businesses, governments, and destinations should achieve to approach social, environmental, cultural, and economic sustainability. Since tourism destinations each have their own culture, environment, customs, and laws, the Criteria are designed to be adapted to local conditions and supplemented by additional criteria for the specific location and activity.

Based on these sets of criteria any tourist organisation may develop their own standard and/or certification program.

In developing their own standards two approaches are currently available the applying tourist organizations:

1. The organization can apply for “GSTC-Recognized”. This means that a sustainable tourism standard has been reviewed by GSTC technical experts and the GSTC Accreditation Panel and deemed equivalent to the GSTC Criteria for sustainable tourism and is administered by a standard owner that meets GSTC requirements. Once a standard is recognized by the GSTC, it can be marketed as GSTC-Recognized and made available for certification, verification, or use as an internal company standard.
2. The other option is to apply for “GSTC Approved”. This means that a certification program is using a GSTC-recognized standard and is following processes and procedures that have been reviewed and approved by the GSTC. In broad terms it means that the GSTC has recognized that the standard used for certification is aligned with the Global Sustainable Tourism Criteria (GSTC-Recognized) and that the certification procedures largely meet international standards for transparency, impartiality, and competence.

In line with the GSTC objectives and 2014 strategic plan GSTC seeks to strengthen its accreditation processes by phasing out the “GSTC Approved” option. To assist in this objective GSTC has appointed ASI (Accreditation Service International) as its accreditation partner for an initial development phase. During this development phase GSTC will continue to be responsible for review and approval of “GSTC-Recognized” standards and oversight of the accreditation process. However, ASI shall be responsible for the evaluation and assessment of Certification Bodies (CABs) against GSTC accreditation requirements.

There are tourist organisations within the Arctic working in accordance with GSTC²⁴.

²³ <http://www.isealalliance.org/>

²⁴ Adventure Green Alaska (AGA)



2.2.16 World Economic Forum – Global Agenda Council on the Arctic

Area of Interest	Investments in the Arctic
Market driven	Yes
Legally/political driven	
Certification scheme	No
Third party control	No
Accredited controllers	No
Direct possibilities to sanctions for non-compliance	No
Indirect possibilities to sanctions for non-compliance	No
Control/governance of the system	No
Trademark/Logo	 

The World Economic Forum’s (WEF) Network of Global Agenda Councils was the world’s foremost interdisciplinary knowledge network dedicated to promoting innovative thinking on critical global issues, regions and industries, and incubating projects, campaigns and events for the public good.

In 2014 WEF initiated a Global Agenda Council on the Arctic. The ultimate objective for the Council has been to encourage sustainable and responsible economic development throughout the Arctic.

A large, diverse group of people and organizations have been/are working together on a solution to Arctic development needs:

- Norwegian Labour Party
- UCLA
- Trade and Development Canada
- University of Oxford
- Sapinda
- Tschudi Shipping
- Norwegian Polar Institute
- Pt Capital
- Guggenheim Partners
- University of Alaska Fairbanks
- The Polar Journal
- COSCO



- Statoil
- Ministry of Foreign Affairs, Republic of Korea
- Ministry of Justice, Japan
- Barclays
- Royal Dutch Shell
- CSIS
- Norwegian Shipowners' Association
- New Eurasia Foundation
- Greenpeace
- Protect Sápmi

There are several work streams within the Council but the one relevant in this context is divided into three steps:

Step 1: The Arctic Investment Protocol

Step 2: The Arctic Infrastructure Inventory

Step 3: The Arctic Permanent Investment Vehicle.

The Arctic Investment Protocol was presented and endorsed by the annual WEF meeting in Davos in January 2016.

The Protocol, in its present stage, was addressing an appeal from the council members to anyone with interests to invest in the Arctic:

“As members of the global community wishing to see responsible and sustainable development in the Arctic, we encourage citizens and organizations throughout the world to support the six broad principles of the Arctic Investment Protocol.”

“1. Build Resilient Societies through Economic Development

- Take a long-term investment view
- Promote the long-term sustainability and economic diversification of projects and communities
- Create job opportunities and skills for residents, developing human capital that can serve to grow and diversify regional economies
- Promote development of civil societies through economic growth
- Openly discuss active partnerships with Arctic communities through investment opportunities

2. Respect and Include Local Communities and Indigenous Peoples

- Respect the rights of, and mitigate adverse impacts on traditional practices of indigenous and local people
- Consult with established local authorities, indigenous governance structures and relevant community authorities
- Before any activity which might have an adverse impact on the traditional practices and livelihood of local communities and indigenous peoples, develop a consultation process that seeks agreement and is in concert with domestic laws
- Promote capacity-building in local communities and with indigenous peoples in order to enable active participation in processes concerning the land, territories or resources

3. Pursue Measures to Protect the Complex, Diverse Environment of the Arctic

- Investment opportunities should be reviewed by balancing economic benefits with environmental and climate goals, incorporating environmental and social concerns into investment analysis
- Recognize the close linkages between the biophysical environment and society in the Arctic and approach impact analysis in a holistic manner. Responsibly engage local communities in pursuit of measures to protect the Arctic environment with an ecosystem-based management approach where such an approach is required by relevant national and international law



- *Pursue technically- and financially feasible measures that minimize the potential for adverse environmental and health impacts*
 - *Where project impacts are unknown or difficult to assess, investors and developers should take measures to manage project impacts by implementing strong mitigation procedures and following a scientific and knowledge- based approach*
- 4. Practice Responsible and Transparent Business Practices**
- *Conduct all business in a fair, legal, and transparent manner and actively fight against corruption*
 - *Evaluate, report as required, and address impacts on and benefits for communities and environment at all stages*
 - *Encourage the development of a grievance process for local communities and indigenous peoples, and other Arctic stakeholders, consistent with domestic laws*
- 5. Consult and Integrate Science and Traditional Ecological Knowledge**
- *Pursue rigorous scientific research working towards understanding the impact of investment projects and on the broader effects of commercial activity in the Arctic*
 - *Develop an overall foundation to investment that integrates rigorous science with traditional/local ecological knowledge to ensure adequate environmental, social, and economic impact assessment*
 - *Adhere to accepted research norms for baseline data and impact monitoring pursued in conjunction with investments*
- 6. Strengthen Pan-Arctic Collaboration and Sharing of Best Practices**
- *Encourage private/public partnerships and collaboration where appropriate*
 - *Recognize that the Arctic is a diverse and distinct environment with large geographical, demographic, seasonal and climatic variations which will determine the optimal regulatory framework and approaches across regions and situations*
 - *Promote cross border dialogue to adopt common standards and best practices to maximize the environmental, social, and financial benefits of development while remaining within the relevant national and international laws."*

While the World Economic Forum's Global Agenda Council on the Arctic ceased to exist in 2016, the World Economic Forum wanted to see the work on the AIP taken forward. The AEC²⁵ decided to endorse the intent of the AIP at its Annual Meeting in 2017, and the AIP was transferred to the AEC in 2018.

The AEC enforcement of AIP has not been done without discussions and criticism from AEC members. The Saami council was not in favour of endorsing the document based on factors such as:

- The AIP has no mechanism for following up compliance with the principles
- That the AIP only seeks to commit investors in the Arctic to a standard that falls below their obligations vis-à-vis indigenous peoples and communities under international law is further underlined when the Protocol Article 2.3 explicitly merely calls on such investors to comply with national (and thus e contrario not with international) law. This is a serious weakness in the AIP, as it is well known that no Arctic state has adopted national laws that comply with international standards when it comes to regulating the relationship between Arctic indigenous peoples and the industry.

²⁵ AEC; Arctic Economic Council; <https://arcticeconomiccouncil.com/>



3. The development of an Arctic Stewardship

No single present system for sustainable business behaviour, or Corporate Citizenship, is sufficient to cover the complex situation in the Arctic. However, some of the present systems has content and solutions that partly can be regarded as raw models.

There are some important decisions to make whether an Arctic Stewardship should be:

- Mainly market driven or mainly ethically driven
- Voluntary or not
- Third party controlled or not
- Based on a certification scheme or not

Before answering the above questions, some clarifications might be necessary.

3.1 Certifications Systems

Certification refers often to the confirmation of certain characteristics of a product, service, person, or organization. This confirmation is often, but not always, provided by some form of external review, education, assessment, or audit. Lately international certification standards for sustainability has rapidly been developed.

Sustainability standards²⁶ and certifications are voluntary, usually third party-assessed, norms and standards relating to environmental, social, ethical and food safety issues, adopted by companies to demonstrate the performance of their organizations or products in specific areas. There are over 400 of such standards in the world and the pace of introduction has increased in the last decade. The trend started in the late 1980s and early 90s with the introduction of Ecolabels and standards for Organic food. In recent years, numerous standards have been established and adopted in the food industry in particular. Most of them refer to the triple bottom line of environmental quality, social equity, and economic prosperity.

A standard is normally developed by a broad range of stakeholders and experts in a particular sector and includes a set of principles and criteria for how a crop should be sustainably grown or a resource should be ethically harvested. This might cover, for instance, responsible fishing practices (MSC) that do not endanger marine biodiversity, or respect for human rights and the payment of fair wages in forestry (FSC).

Normally sustainability standards are accompanied by a verification process - often referred to as "certification" - to evaluate that an enterprise complies with a standard, as well as a traceability process for certified products to be sold along the supply chain, often resulting in a consumer-facing label. Certification programmes also focus on capacity building and working with partners and other organisations to support smallholders or disadvantaged producers to make the social and environmental improvements needed to meet the standard.

²⁶ https://en.wikipedia.org/wiki/Sustainability_standards_and_certification



The basic premise of sustainability standards is twofold. Firstly, they emerged in areas where national and global legislation was weak but where the consumer and NGO movements around the globe demanded action. Secondly, leading brands selling to both consumers and to the B2B supply chain may wish to demonstrate the environmental or organic merits of their products, which has led to the emergence of hundreds of ecolabels, organic and other standards. A leading example of a consumer standard is the Fairtrade movement, exhibiting huge sales growth around the world for ethically sourced produce. An example of a B2B standard which has grown notable in the last few years is the Forest Stewardship Council's standard (FSC) for forest products made from sustainably harvested trees.

However, the line between consumer and B2B sustainability standards is becoming blurred, with leading trade buyers increasingly demanding Fairtrade certification and consumers increasingly recognizing the FSC mark. In recent years, the business-to-business focus of sustainability standards has risen as it has become clear that consumer demand alone cannot drive the transformation of major sectors and industries. In commodities such as palm oil, soy, farmed seafood, and sugar, certification initiatives are targeting the mainstream adoption of better practices and pre-competitive industry collaboration. Major brands and retailers are also starting to make commitments to certification in their whole supply chain or product offering, rather than a single product line or ingredient.

With the growth of standards and certification as the major tool for global production and trade to become more sustainable and for the private sector to demonstrate sustainability leadership, it is essential that there are ways to assess the legitimacy and performance of different initiatives. Company and government buyers, as well as NGOs and civil society groups committed to sustainable production, need clarity on which standards and ecolabels are delivering realistic social, environmental and economic results.

The ISEAL Alliance has emerged as the authority on good practice for sustainability standards and its Codes of Good Practice represent the most widely recognised guidance on how standards should be set up and implemented in order to be effective. By complying with these Codes and working with other certification initiatives, ISEAL members demonstrate their credibility and work towards improving their positive impacts.

3.2 ISEAL

The ISEAL Alliance is the global membership association for sustainability standards. ISEAL is a non-governmental organisation whose mission is to strengthen sustainability standards systems for the benefit of people and the environment. Its membership is open to all multi-stakeholder sustainability standards and accreditation bodies that demonstrate their ability to meet the ISEAL Codes of Good Practice and accompanying requirements and commit to learning and improving. Through membership in ISEAL, standards systems show a commitment to supporting a unified movement of sustainability standards. ISEAL also has a non-member, subscriber category to engage with governments, researchers, consultants, private sector organisations, non-profit organisations and other stakeholders with a demonstrable commitment to the ISEAL objectives.

The four goals of ISEAL Alliance are to:

- Improve the impacts of standards
- Define credibility for sustainability standards
- Increase the uptake of credible sustainability standards
- Improve the effectiveness of standards



Figure 13: The principles of ISEAL

At the heart of the ISEAL Alliance is a set of Credibility Principles that represent the core values upon which effective standards are built. Businesses and governments are increasingly looking for clarity around certification systems. There are so many different standards and labels in the market and stakeholders wish to know which are credible. ISEAL’s Credibility Principles were finalised in mid-2013 after a year-long multi-stakeholder consultation on five continents, led by an expert Steering Committee that engaged more than 400 individuals from NGOs, governments, businesses, producer groups, consumer organisations and certification systems.

Sustainability

Standards scheme owners clearly define and communicate their sustainability objectives and approach to achieving them. They make decisions that best advance these objectives.

Improvement

Standards scheme owners seek to understand their impacts and measure and demonstrate progress towards their intended outcomes. They regularly integrate learning and encourage innovation to increase benefits to people and the environment.

Relevance

Standards are fit for purpose. They address the most significant sustainability impacts of a product, process, business or service; only include requirements that contribute to their objectives; reflect best scientific understanding and relevant international norms; and are adapted where necessary to local conditions.

**Rigour**

All components of a standards system are structured to deliver quality outcomes. In particular, standards are set at a performance level that results in measurable progress towards the scheme's sustainability objectives, while assessments of compliance provide an accurate picture of whether an entity meets the standard's requirements.

Engagement

Standards-setters engage a balanced and representative group of stakeholders in standards development. Standards systems provide meaningful and accessible opportunities to participate in governance, assurance and monitoring and evaluation. They empower stakeholders with fair mechanisms to resolve complaints.

Impartiality

Standards systems identify and mitigate conflicts of interest throughout their operations, particularly in the assurance process and in governance. Transparency, accessibility and balanced representation contribute to impartiality.

Transparency

Standards systems make relevant information freely available about the development and content of the standard, how the system is governed, who is evaluated and under what process, impact information and the various ways in which stakeholders can engage.

Accessibility

To reduce barriers to implementation, standards systems minimise costs and overly burdensome requirements. They facilitate access to information about meeting the standard, training, and financial resources to build capacity throughout supply chains and for actors within the standards system.

Truthfulness

Claims and communications made by actors within standards systems and by certified entities about the benefits or impacts that derive from the system or from the purchase or use of a certified product or service are verifiable, not misleading, and enable an informed choice.

Efficiency

Standards systems refer to or collaborate with other credible schemes to improve consistency and efficiency in standards content and operating practices. They improve their viability through the application of sound revenue models and organisational management strategies.

When a standard has been set up, in many cases manifested by a certification program, there will be a need to verify the standard and the compliance to the standard.

3.3 Accreditation

Accreditation is when an organization (control body) that provides certification, testing and inspection services is assessed by a third party (independent auditors) against an internationally recognized standard. It demonstrates the control body's competence, impartiality and performance capability and is the key to reducing risk and ensuring that consumers, suppliers and purchasers can have confidence in the services provided.

To ensure the independence of standard-setting and evaluation, most certification schemes appoint a third-party accreditation body to assess the suitability and qualification of certification bodies for their system.

There are several accreditation bodies Accreditation Service International, ASI, is one of them. ASI is the sole provider of accreditation services to the Forest Stewardship Council (FSC), the Marine Stewardship Council (MSC), the Aquaculture Stewardship Council (ASC), the Roundtable of Sustainable Palm Oil (RSPO), the Roundtable of Sustainable Biomaterials (RSB) and the Global Sustainable Tourism Council (GSTC)

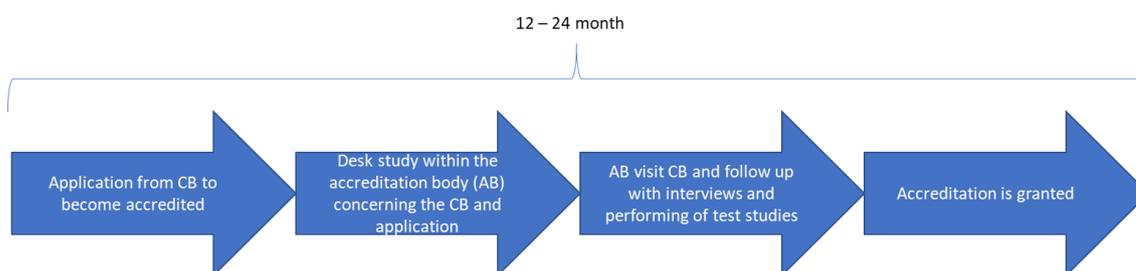


Figure 14: Process for accreditation

The accreditation process involves a sequence of steps. Organisations with the object to act as Certification Bodies/Auditors (CB) apply for accreditation. Once an accreditation body, such as ASI, has received an application, they will conduct an initial desk study to verify that the applicant has robust systems to ensure impartiality and balanced decision making and is able to operate in line with the requirements of the specific standard. The accreditation body will then perform steps like visiting the applicant’s organisation and staff, undertake controlled test studies and control that correct procedures are being followed in the auditing process. The process for accreditation is time consuming and usually takes about 12-24 months, depending on the readiness of the applicant

The accreditation body regularly evaluates the competence of a certification body. Normally the head office undergoes an office assessment; affiliate offices are assessed at a regular time, often at least every five years. In addition, a small sample of all audits is supervised through a witness assessment.

In case a nonconformity has been detected, the accreditation body follows up to ensure that corrective action is been implemented.

Each accreditation is valid for a limited time of years if the results of the annual surveillance audits are in general satisfactory. If the accredited CB cannot demonstrate conformity to the rules of the certification a suspension procedure is due to start.

3.4 Ideas for the design of an Arctic Stewardship

To develop an organized, reliable, robust and truthful solution for an Arctic Stewardship is a massive challenge.



There are at least three ways to solve the problem:

1. Develop a completely new Stewardship scheme, specially designed for the Arctic conditions. A standalone system that preferably is the basis for a third-party certified system. The system would be based on geography rather than industrial branch.
2. Develop a new Stewardship system, an umbrella, which encompasses the best of present systems with cross-references to them, a system that fills the gap where the present systems fail to safeguard the Arctic interest. The system would preferably be the basis for a third-party controlled system with a brand of its own – could be “The Arctic Star”.
3. Develop a protocol that describe coherence and endorsement to some well-defined cooperate governance instruments for companies, working in the arctic to sign. A protocol of that kind might demonstrate a lack of following up the degree of compliance.

To develop a completely new Arctic Stewardship standard is a massive challenge; it will need big resources and will take a long time to develop. It is also questionable if the consumer market or the B2B market is ready to comprehend and accept a new system.

The suggested solution for an Arctic Stewardship is mainly based on point two above.

The first suggested step will be to develop principles and criteria (P & C) that reflects the meaning of true sustainability in the Arctic. With the P & C as a beacon for good Arctic company governance, a method will be developed in order to make cross references to existing systems for sustainable corporate governance, systems that many companies already have endorsed and adjusted to. This gap analysis will determine whether the corporate governance system/stewardship system/systems that a specific company has endorsed is sufficient for the Arctic with its fragile societies and environment.

There will be existing systems that probably will pass without any comments – such as FSC- but there will also be systems that do not sufficiently live up to the P & C for an Arctic Stewardship. In those cases, the companies will be recommended to voluntarily make improvements to their sustainability work. Companies that can prove compliance to the Arctic P & C will, through a certification process, be awarded the right to use the brand “Arctic Star”.

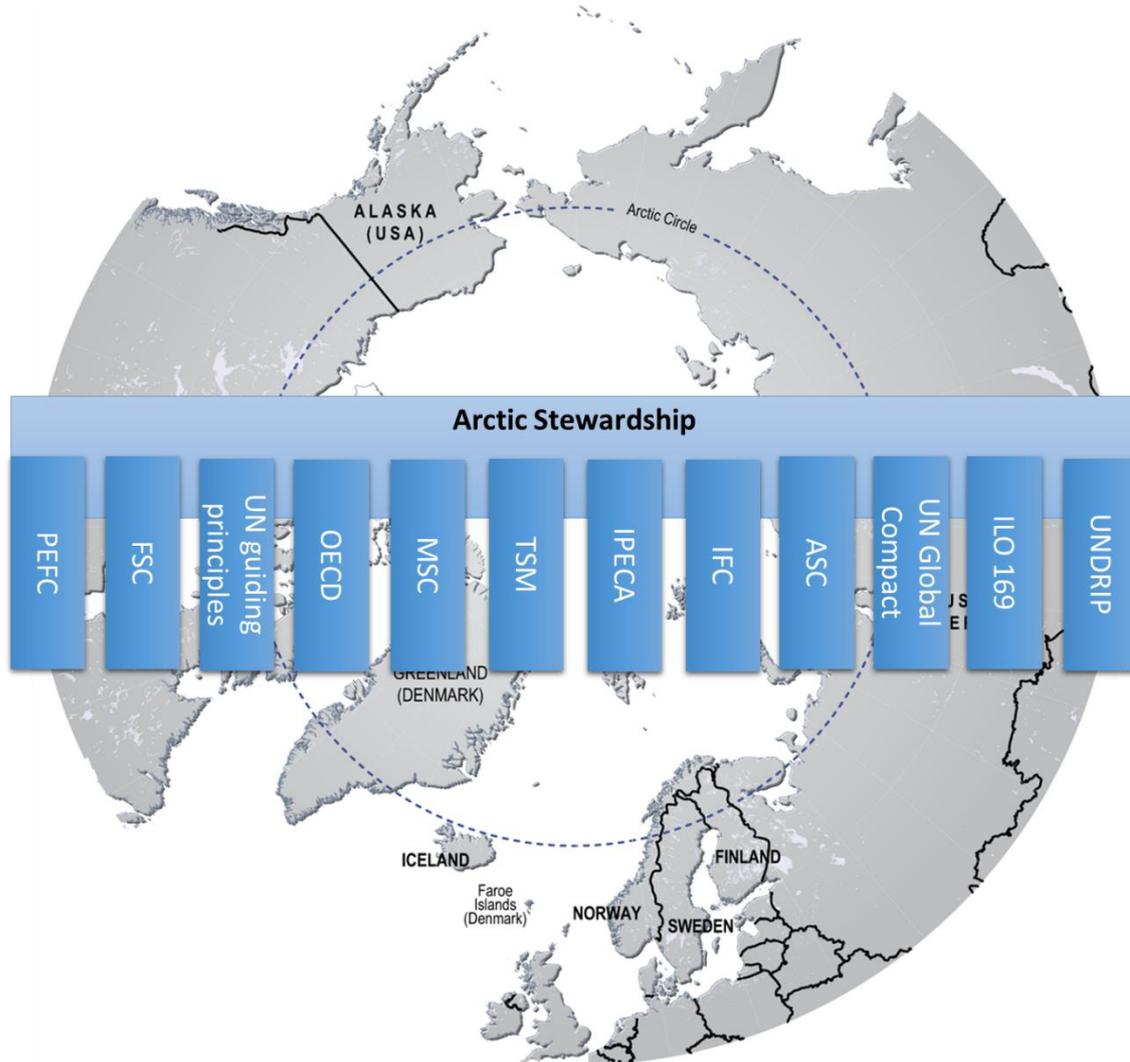


Figure 15: The Arctic Stewardship System, an umbrella over present systems

To develop an Arctic Stewardship is an invention. Most certification schemes are built up in order to cover a specific branch; forestry, fishing, mining etc. The Arctic Stewardship will be a geographical certification scheme, which is something very rare. There is today internationally a discussion for the need of a new approach in certification based on regions and geography but there are so far no concrete examples of success in this area. In for instance rainforest areas, such as in Indonesia and Malaysia, numerous certification schemes with different intentions, credibility and focus areas, create confusion and make it difficult to assess which scheme to choose to achieve a specific goal.

The Arctic Stewardship is an attempt to bridge all branch specific, ethical/market driven instruments to a consensus on the true meaning of a responsible sustainable corporate governance in the Arctic.

4. Arctic Stewardship – the Arctic Star

There are several steps in the development of an Arctic Stewardship. They all have to be developed following the guidance of a solid process following credible practices and

procedures for setting standards in order for the standard to result in measurable progress towards the sustainable objectives, without creating unnecessary barriers to international Arctic trade.

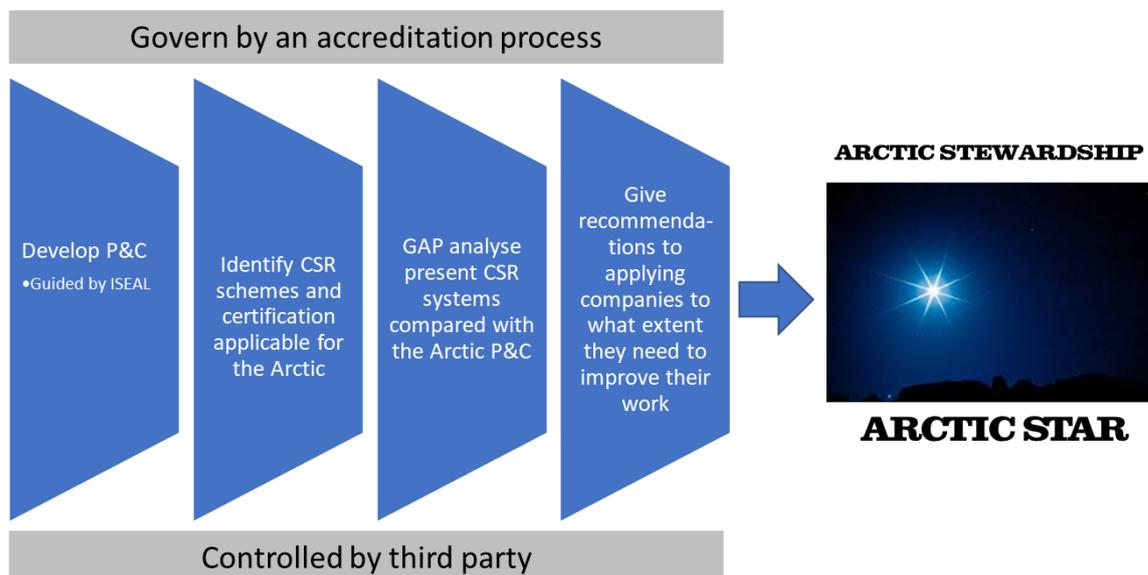


Figure 16: The Steps in developing an Arctic Stewardship – The Arctic Star

5.1 Principles and criteria

To design P & C for a certification scheme is a thorough work that need a lot of engagement from different stakeholders with interest in the area. This is often done in work groups consisting of a number of experts and stakeholders. Standard setting practices should be based on relevant international normative documents and codes of good practice, where appropriate. The ISEAL Code of good practice, the WTO Technical Barriers to Trade (TBT) Agreement, the ISO/IEC Guide 59 Code of good practice for standardization are relevant international normative documents to study.

There are also other initiatives besides the above mentioned that have a normative function in the creation of global standards for corporate governance. G20 Leaders endorsed 16/11 2015 in Turkey the G20/OECD Principles of Corporate Governance. A new global standard on corporate governance that will help policy makers to evaluate and improve their national corporate governance frameworks with a view to promote market-based financing and to boost long-term investment²⁷.

The G20/OECD Principles of Corporate Governance represent a shared understanding with respect to corporate governance standards and practices in areas such as transparency, disclosure, accountability, board oversight, shareholder rights and the role of key stakeholders. They also provide recommendations for national policymakers on executive remuneration, the behaviour of institutional investors and how stock markets should function.

²⁷ <http://www.oecd.org/corporate/principles-corporate-governance.htm>



In order to give an idea and inspirations for the development of principles and criteria in an Arctic context a starting proposal is presented below. The proposal **is not a final proposal**. In order to become final, it has to be discussed, changed and endorsed by a representative working group covering all interests in the Arctic.

When developing the examples of P & C for the Arctic inspiration has been sought in existing certification schemes such as FSC.

Principle 1: Compliance with Laws

The company²⁸ shall comply with all applicable laws, regulations and nationally ratified international treaties, conventions and agreements.

1.1 The Company shall be a legally defined entity with clear, documented and unchallenged legal registration with written authorization from the legally competent authority for specific activities.

1.2 The Company shall have legal rights to operate in the Arctic which fit the legal status of The Company and shall comply with the associated legal obligations in applicable national and local laws and regulations and administrative requirements. The Company shall pay the legally prescribed charges associated with such rights and obligations.

1.3 The Company shall publicize a commitment not to offer or receive bribes in money or any other form of corruption and shall comply with anti-corruption legislation where this exists. In the absence of anti-corruption legislation, The Company shall implement other anti-corruption measures proportionate to the scale and intensity of management activities and the risk of corruption

Principle 2: Workers Rights and Employment Conditions

The Company shall maintain or enhance the social and economic wellbeing of workers

2.1 The Company shall uphold the principles and rights at work as defined in the ILO Declaration on Fundamental Principles and Rights at Work (1998) based on the eight ILO Core Labour Conventions.

2.2 The Company shall promote gender equality in employment practices, training opportunities, awarding of contracts, processes of engagement and management activities.

²⁸ Company are defined as:

1. An association or collection of individuals, whether natural persons, legal persons, or a mixture of both. Company members share a common purpose and unite in order to focus their various talents and organize their collectively available skills or resources to achieve specific, declared goals.
2. An association or collection of individuals who are planning to pursue business in the Arctic with an aim of gaining a profit



2.3 The Company shall implement health and safety practices to protect workers from occupational safety and health hazards. These practices shall, proportionate to scale, intensity and risk of management activities, meet or exceed the recommendations of the ILO Code of Practice on Safety and Health.

Principle 3: Rights of Indigenous Peoples

The Company shall identify and uphold the legal and customary Rights of Indigenous Peoples to ownership, use and management of land, territories and resources affected by Companies activities.

3.1 The Company shall identify the Indigenous Peoples that exist within the Company area of operation or are affected by the Companies activities. The Company shall then, through engagement with these Indigenous Peoples, identify their rights of tenure, their rights of access to and use of natural resources and ecosystem services, their customary right and legal rights and obligations that apply within the area of operations

3.2 The Company shall recognize and uphold the legal and/or customary rights of Indigenous Peoples to the extent necessary to protect their rights, resources, lands and territories. Delegation by Indigenous Peoples of control over their rights, resources, land and territories requires their Free, Prior and Informed Consent.

3.3 The Company shall uphold the right of Indigenous Peoples to protect and utilize their traditional knowledge and shall compensate Indigenous Peoples for the utilization of such knowledge and their intellectual property. The Company shall stimulate, and support an active participation of Indigenous Peoples in activities that might create economic growth by benefit sharing and capacity building

Principle 4: Community Relations

The Company shall contribute to maintaining or enhancing the social and economic wellbeing of local communities

4.1 The Company shall provide reasonable opportunities for employment, training and other services to local communities, contractors and suppliers proportionate to scale and intensity of its management activities.

4.2 The Company shall implement additional activities, through engagement with local communities, that contribute to their social and economic development, proportionate to the scale, intensity and socio-economic impact of the Company activities.

4.3 The Company through engagement with local communities, shall take action to identify, avoid and mitigate significant negative social, environmental and economic impacts of its Company activities on affected communities. The action taken shall be proportionate to the scale, intensity and risk of those activities and negative impacts.



Principle 5: Benefits for the Arctic

The Company shall efficiently manage the range of multiple products and services of the Company to maintain or enhance long term economic viability and the range of environmental and social benefits.

5.1 The Company shall demonstrate through its planning and expenditures proportionate to scale, intensity and risk, its commitment to long-term economic viability.

5.2 The Company shall identify, produce, or enable the production of, diversified benefits and/or products, based on the range of resources and ecosystem services existing in the Company activities in order to strengthen and diversify the local economy proportionate to the scale and intensity of management activities.

5.2 The Company shall encourage private/public partnerships and collaboration where appropriate

Principle 6: Environmental Values and Climate Change

The Company shall maintain, conserve and/or restore ecosystem services and environmental values within their operations and shall avoid, repair or mitigate negative environmental impacts. The Company shall proactively work in order to reduce their impact on the climate change.

6.1 The Company shall assess environmental values and climate change in their area of operations and those values outside that area potentially affected by management activities. This assessment shall be undertaken with a level of detail, scale and frequency that is proportionate to the scale, intensity and risk of management activities, and is sufficient for the purpose of deciding the necessary conservation measures, and for detecting and monitoring possible negative impacts of those activities on environment and climate.

6.2 Prior to the start of site-disturbing activities, The Company shall identify and assess the scale, intensity and risk of potential impacts of Company activities on the identified environmental values and ongoing climate change.

6.3 The Company shall identify and implement effective actions to prevent negative impacts of Company activities on the environmental values and on the climate change, and to mitigate and repair those that occur, proportionate to the scale, intensity and risk of these impacts.

Principle 7: Management Planning

Companies shall have a management plan consistent with its policies and objectives and proportionate to scale, intensity and risks of its management activities in the Arctic. The management plan shall be implemented and kept up to date based on monitoring information in order to promote adaptive management. The associated



planning and procedural documentation shall be sufficient to guide staff, inform affected stakeholders and interested stakeholders and to justify management decisions.

7.1 The Company shall, proportionate to scale, intensity and risk of its Company activities, set policies (visions and values) and objectives for management, which are environmentally sound, socially beneficial and economically viable. Summaries of these policies and objectives shall be incorporated into a management plan and make publicly available.

7.2 The Company shall have and implement a management plan for the Company which is fully consistent with the policies and objectives as established according to Criterion 7.1. The management plan shall describe the natural resources and/or income generating services/products that exist in the Company area of operations and explain how the plan will meet any certification requirements or company governance guidelines. The management plan shall include verifiable targets by which progress towards each of the prescribed management objectives can be assessed.

7.3 The Company shall update and revise periodically the management planning and procedural documentation to incorporate the results of monitoring and evaluation, stakeholder engagement or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances

Principle 8: Monitoring and Assessment

Companies shall demonstrate that, progress towards achieving the management objectives, the impacts of management activities, are monitored and evaluated proportionate to the scale, intensity and risk of management activities, in order to implement adaptive management.

8.1 The Company shall monitor and evaluate the environmental and social impacts of the activities carried out through the Company activities. The Company shall have and implement a tracking and tracing system proportionate to scale, intensity and risk of its Company activities.

8.2 The Company shall analyze the results of monitoring and evaluation and feed the outcomes of this analysis back into the planning process.

8.3 The Company shall make publicly available a summary of the results of monitoring free of charge, excluding confidential information.

4.2 Identify Companies certification schemes or guidelines for corporate governance

Any company with interest in becoming an “Arctic Star” has to present its present engagement in certification schemes and endorsement of guidelines for corporate government.



This is a responsibility for any company with the ambition of embracing an Arctic Stewardship.

Most serious companies have a corporate social responsibility plan or a vision and a mission document concerning corporate governance.

To identify the company certification schemes or guidelines for corporate governance is a first step in an assurance process. This process also has to be designed in accordance with a transparent assurance code. An assurance code is a framework for assurance that supports standards systems to achieve their social, environmental and economic objectives and to improve the effectiveness of their assurance model.

Within sustainability standards systems there are many different models of assurance that can be credible and appropriate for specific purposes. Different models of assurance will fulfil the principles of assurance in different ways, depending on the needs of the users in the standards system. The ISEAL²⁹ Assurance Code is one good example of the basic principles behind a credible assurance system.

It still has to be discussed who will be the receiver of the company specific information concerning corporate governance. The most probable solution is an independent auditor/controlling body (CB) accredited by the standard accreditation body. Examples of CB are SGS, De Norske Veritas, Lloyds, Bureau Veritas etc. The standard accreditation body could be a company like the Accreditation Service International, ASI.³⁰

4.3 GAP analysis; Compare and analyse Companies certification schemes or guidelines for cooperate governance with Arctic Star Principles and Criteria

When you make a GAP analysis you compare the information given from the companies concerning their company certification schemes or guidelines for corporate governance with the P & C.

There are tools to help in this GAP analysis. One of them are developed by WWF and is called the Certification Assessment Tool (CAT)³¹. The CAT can be seen as an example of how to approach the task to evaluate and compare different standards and, certification schemes and guidelines for corporate governance with the Arctic Star decided P&C.

The CAT is a formalized methodology to evaluate and compare standards and certification schemes. It assesses standard requirements and a scheme's governance, rules and procedures. The outcome is a better understanding of a certification scheme's strengths and weaknesses. CAT has been used by WWF in assessments to help identify areas for improvement so these can be addressed as part of a scheme's efforts to further refine and strengthen their systems. CAT assessments can be applied to all sectors. So far, WWF has developed the CAT for terrestrial commodities (agriculture and forestry). Of 160 questions

²⁹ See chapter 3.2

³⁰ See chapter 3.3

³¹ <http://wwf.panda.org/?246871/WWF-Forest-Certification-Assessment-Tool-CAT>



in total, 150 apply to all sectors, while the remaining 10 questions address sector specific issues for forestry or agriculture.

The CAT evaluates the requirements of a certification scheme’s standard. The CAT also evaluates the rules and procedures that regulate how the standard is implemented, assessed and governed. This is called “system strength”. It includes standard development, certification, accreditation, verification and grievance procedures, chain of custody and labelling issues, together with a transparent governance system that includes balanced multi-stakeholder participation.

The strength of a standard’s overall system is crucial for the implementation of its requirements. Therefore, the CAT gives equal weight to the standard requirements and the system strength of a scheme. This can best be illustrated with a hypothetical case: imagine a scheme where comprehensive standard requirements exist, but no measures are in place to implement these or to verify their implementation. Such a scheme would not be credible and would likely be perceived as “greenwashing”.

The CAT is solely based on the study of documents, thus it cannot directly assess implementation of better production practices and resulting reduction of negative social and environmental impacts in practice. However, the indicators to assess a standard’s system strength can be seen as proxies for likelihood of field level implementation of a scheme’s requirements.

To be credible, schemes should have strong verification systems. A scheme largely based on legal rules, procedures and enforcement, may be valid in countries with strong and functioning law enforcement, but could potentially be damaging in countries where this is not the case.

The result of a CAT evaluation of, for example, a forest management certification scheme will highlight the strengths in spider diagrams.

CERTIFICATION ASSESSMENT TOOL (CAT) V3

Forest Stewardship Council (FSC)

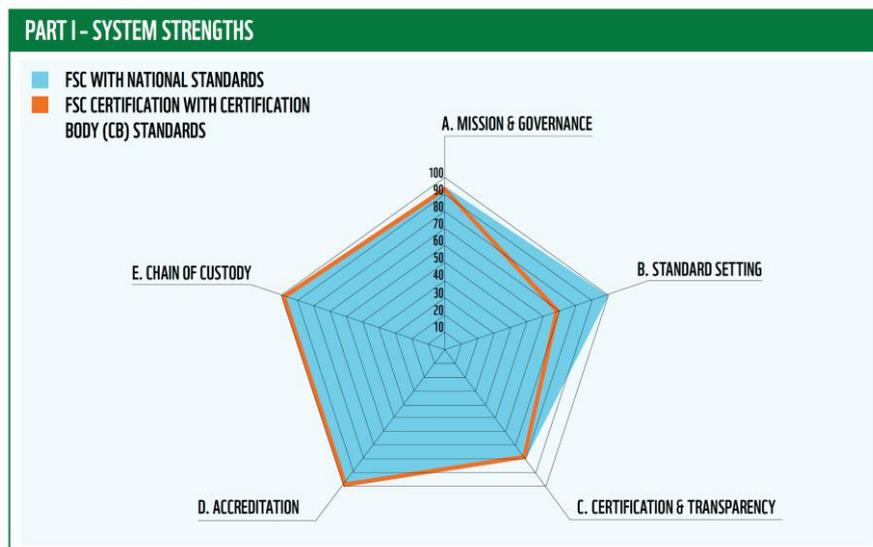


Figure 17: Principles for monitoring a CAT evaluation³²

In an Arctic Star context any delivered company information concerning corporate governance schemes will be compared with the P & C of the Arctic Stewardship. If WWF allow using their system, the system can be developed and adapted to the Arctic Star standard. In the diagram below is demonstrating a fictive monitoring of a fictional standard compared to the AEC proposed P & C. The discrepancies between the blue and the orange line show where improvements have to be done in order to fulfil the expectation for sustainability within the AEC Arctic Stewardship.

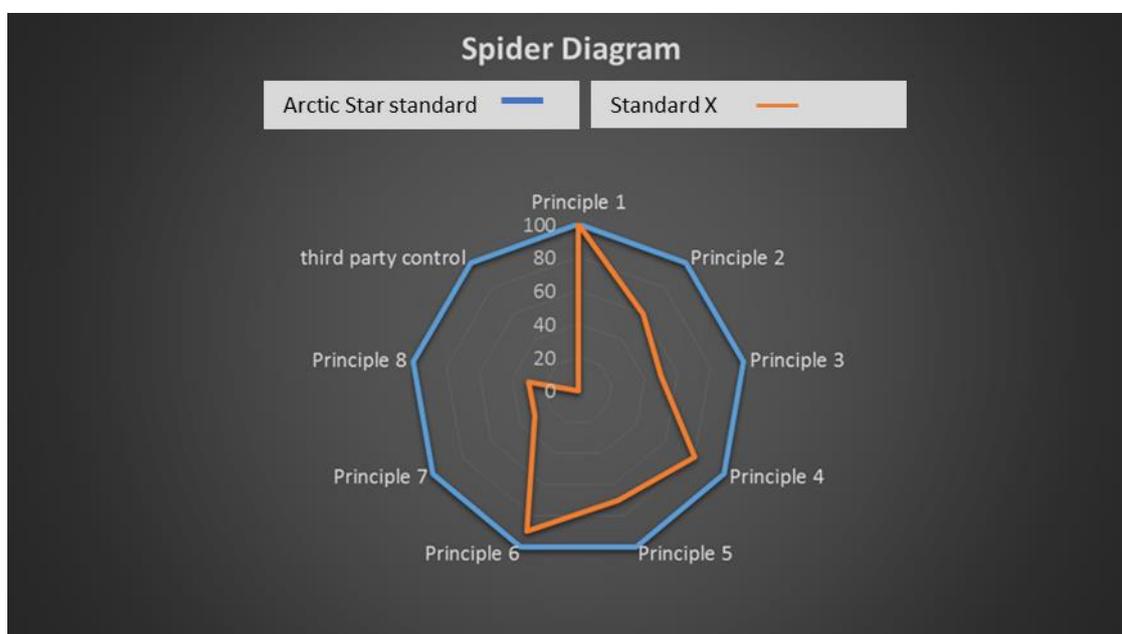


Figure 18: Spider diagram comparing av standard (X standard) with the AEC P & C.

In due time extensive experience and information concerning different instruments for corporate governance will be gathered as the company certification process precede. The results of a CAT analyse of different schemes for corporate governance compared to the Arctic Star standard can be presented in a matrix where different colours indicate whether the standard is sufficient for an Arctic Star or not. The examples in the figure are fictive and is only demonstrating the idea.

³² https://d2ouvy59p0dg6k.cloudfront.net/downloads/cat_fsc_14_5_15_final.pdf



	FSC	MSC	ASC	Polar-code	TSM	IFC	IPECA	GSTC	IUCN	WEF-GAC	UNGC
Principle 1: Compliance with Laws	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Principle 2: Workers Rights and Employment Conditions	Green	Orange	Orange	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Principle 3: Indigenous Peoples' Rights	Green	Red	Orange	Orange	Yellow	Green	Orange	Orange	Orange	Orange	Yellow
Principle 4: Community Relations	Green	Yellow	Orange	Yellow	Orange	Green	Yellow	Yellow	Yellow	Yellow	Orange
Principle 5: Benefits from the Arctic	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Orange	Yellow	Yellow
Principle 6: Environmental Values and Impacts	Green	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Orange	Orange	Yellow
Principle 7: Management Planning	Green	Orange	Orange	Orange	Orange	Green	Yellow	Orange	Yellow	Yellow	Yellow
Principle 8: Monitoring and Assessment	Green	Orange	Orange	Orange	Orange	Yellow	Orange	Yellow	Yellow	Yellow	Orange
Mechanism for compliance verification and control (third party)	Green	Orange	Orange	Orange	Orange	Orange	Red	Orange	Red	Red	Red

Not sufficient	Sufficient with major adjustments	Sufficient with minor adjustments	Sufficient	Not applicable
----------------	-----------------------------------	-----------------------------------	------------	----------------

Figure 19: Matrix illustrating different corporate governance instrument compared to the fictive Arctic Star standard

4.4 Example of Arctic Star certification processes

In order to demonstrate the process for an applicant/company that apply for becoming a Arctic Star the following two cases describes a possible work stream.

4.5.1 Examples; The forest company

Company	Arctic Forestry
Country of origin	Sweden
Present certifications and corporate governance guidelines	Forest Stewardship Council, FSC Un Global Compact
Presence in the Arctic	Working in the Swedish county of Norrbotten – a part of the Swedish Arctic

Process for Arctic Star certification:



Step 1	Arctic Forestry contact one of the Arctic Star accredited certification bodies (CB). To give a first estimate regarding cost and time needed the CB will need some basic information about the company operation. The CB will provide information about the requirements for AEC certification. Based on this information Arctic Forestry decides to continue with an AEC certification.
Step 2	In order to make an GAP analyse concerning the company's present certifications and corporate governance guidelines compared to the Arctic Star policy & criteria's the CB need all information and documents concerning those schemes including information that ensures traceability of certified products from production to final point of sale - chain of custody.
Step 3	The CB will perform a GAP/CAT analyse comparing the standard and quality of Arctic Forestry's present corporate governance system with the Arctic Star Standard.
Step 4	The CB make a statement based on the GAP/CAT analyse where they recommend Artic Forestry to be certified according to the Arctic Star standard as the FSC certification has an equal quality as the Arctic Star standard. The UN Global Compact would not have been a sufficient qualifier for the Arctic Star standard. The most serious critics is that it lack a third party control.
Step 5	The recommendation is sent to the caretaker of Arctic Star where a certifying group, consisting of stakeholders and experts, are making a decision based on the CB report. Artic Forestry becomes certified according to the Arctic Star standard and can use the Arctic Star logo in its market communications.
Step 6	Arctic Star certificates are valid for five years. The Arctic Statr accredited certification body will conduct annual surveillance audits to verify a continued compliance with Arctic Star certification requirements.

Spider Diagram

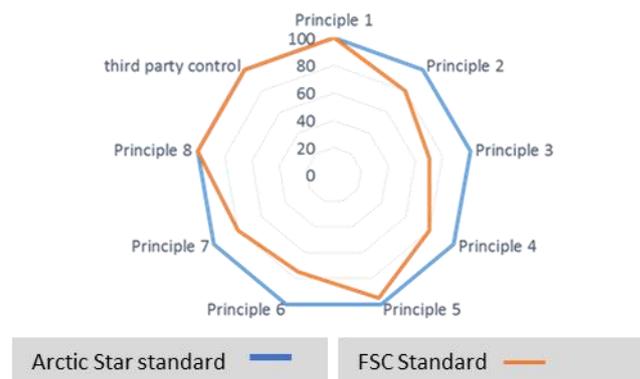


Figure 18; Gap illustration between Arctic Star Standard and FSC

Spider Diagram

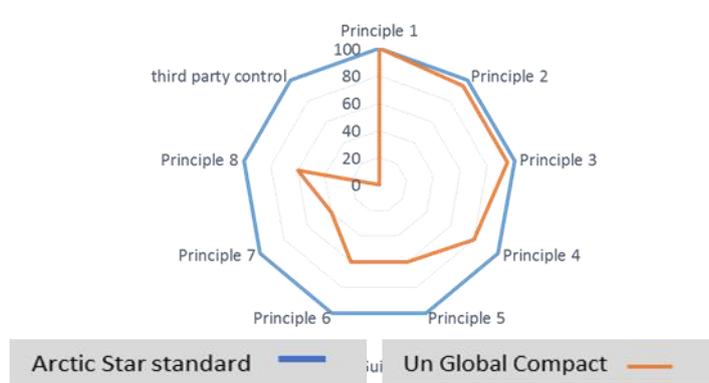


Figure 18; Gap illustration between Arctic Star Standard and UN Global Compact

4.5 Implementation of the Arctic Star

The concept of the Arctic Star was initially developed to be implemented within the Arctic Economic Council, AEC. As that ambition did not find full appreciation among the AEC Governing bodies the proposal is today regarded as an orphan suggestion. As with all orphan subjects or individuals, adoption can always be an option. The Saami Council and the Protect Sápmi Foundation do not alone have the capacity to further develop, maintain and implement the suggested program. If this is going to be a successful development, there will be a need for more than one parent in this adoption. The ideal situation would be a supporting body consisting of economic, social and environmental organisations. In this context the Arctic Council, The Arctic Economic Council and other with an undisputed interest in a sustainable development of the arctic are welcome to take part. Let this be the first step on a voyage where we still do not see the final stop. However, before we start the journey we have to discuss:

- Is a third party-controlled certification system a good way of practicing stewardship in the Arctic?
- Are there any volunteers in order to develop the Arctic Star further?
- Who will take the lead and provide capacity for the coming work?
- What kind of organization is needed in order to maintain and support the Arctic Star stewardship system?
- Do we dare leave the Arctic without a solid specially designed system for a sustainable stewardship in the Arctic?

Sometimes you have to do things you dare not, otherwise you are not a human being but just a little shit.” (Astrid Lindgren, famous Swedish author of children’s books)

Annex; Arctic Stewardship – promoting sustainable development of the Arctic

1.0 The Arctic

1.1 Boundaries and geography

The word “arctic” is derived from the Greek word arktikos, which means “near the bear,” in reference to the constellation known as Ursa Major, or the Big Dipper. The two stars on the end of the Big Dipper point to Polaris, or the North Star.

The Arctic has fascinated people for a long time. Even before Europeans knew what was to the north, they speculated what might be there as this Mercator map of 1595 shows below. It was drawn from existing maps, journeys of English explorers and Mercator's theories on the location of the magnetic north pole.



Figure 1: Mercator's map of 1595

The Arctic may be considered a single region, but it can be defined and delineated in many different ways. In the strictest sense, the Arctic is all of the Earth north of the Arctic Circle, which is located at 66 degrees, 32 minutes North Latitude. However, there are other



definitions to suit specific scientific or political interests. For instance, the U.S. Congress has decreed that all of the Bering Sea, which extends southward to about 53 degrees North Latitude, is part of the Arctic for internal U.S. planning and budgeting purposes. Others make use of such markers as the southernmost extent of winter sea ice for oceanic boundaries of the Arctic, or the treeline for terrestrial boundaries.

In order to establish the geographic limits of their work, the working groups of the Arctic Council began to create boundary lines on the circumpolar map that were relevant for their particular mandate. For example, the Arctic Monitoring and Assessment Program (AMAP), created its 'AMAP area' as the territory where it would carry out environmental monitoring under the Arctic Environmental Protection Strategy. The 'AMAP area' essentially includes the terrestrial and marine areas north of the Arctic Circle (66°32'N), and north of 62°N in Asia and 60°N in North America, modified to include the marine areas north of the Aleutian chain, Hudson Bay, and parts of the North Atlantic Ocean including the Labrador Sea.

Other Arctic Council bodies have established differing boundaries or adapted the AMAP boundaries for the Arctic based on criteria that are relevant to their respective remits. They include the Emergency Prevention, Preparedness and Response Working Group (EPPR), the Conservation of Arctic Flora and Fauna (CAFF) and the Arctic Human Development Report (AHDR).

While it may seem odd to have several different boundaries within even the Arctic Council, the different scopes of each working group make it difficult to have a 'one-size-fits-all' solution. For example, the CAFF boundary largely follows the treeline in order to include the ecosystems that are the focus of its activities. Similarly, the Arctic Human Development Report needed to be based largely on northern political units, as that is how the majority of socio-economic data and information on northern societies is organized.

The recently published AHDR-II employs the same definition of the Arctic, as did the first AHDR in 2004. As in the first report, in some cases authors have needed to diverge from the common geographical boundaries, due to data availability and other reasons;

...” we consider the Arctic a distinctive region... we also underscore the great sub-regional differentiation across this territory. Students of the Arctic often note that there is not one Arctic, but several. We acknowledge this heterogeneity...Still, Arctic residents do face many of the same challenges across the entire region.³³

In this report we have chosen to follow the definitions made by AHDR. When defining and discussing Stewardship in the Arctic, that discussion will be relevant within the Arctic Areas as defined by AHDR.

³³ Arctic Human Development Report
Regional Processes and Global Linkages, TemaNord 2014:567

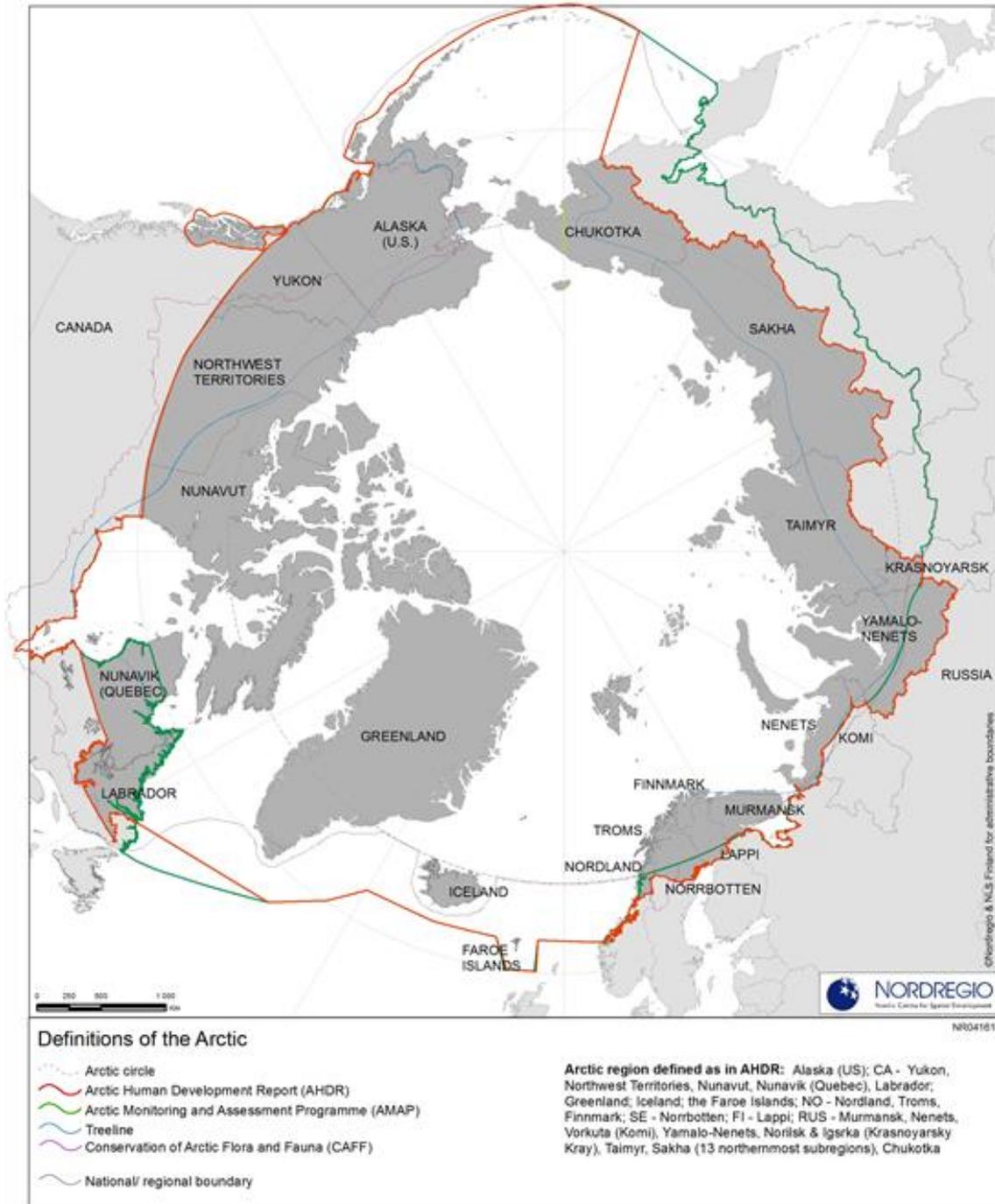


Figure 2: Arctic Boundaries, (Source; Nordregio, Nordic Centre for Spatial Development)

The Arctic is not only an area where eight nations have their terrestrial borders and claims. The Arctic is also the Arctic Ocean. In the Arctic Ocean there is also borders and claims.



1.2 Who owns the Arctic Ocean?

This question has enormous economic significance. The United States Geological Survey estimates that up to 25% of the world's remaining oil and natural gas resource might be held within the seafloor of the Arctic Region. Significant quantities of other mineral resources might also be present. Control of Arctic resources within the seafloor could be an extremely valuable asset, especially as these resources become more accessible as global warming melts the sea ice and opens the region to commercial navigation.³⁴

In a historical perspective, since the seventeenth century, a "freedom of the seas" doctrine was accepted by most nations. This doctrine limited a nation's rights and jurisdiction to the narrow area of sea along the nation's coastline. The remainder of the oceans was considered as common property that could be used by anyone. This was long before anyone had the ability to exploit offshore resources.

The doctrine of the freedom of the sea gradually become obsolete, during the mid-1900's, in the wake of long-distance fishing fleets with ambition to deplete coastal fish stocks. When oil companies became capable of drilling in deep water and ideas for the seabed mining of manganese nodules, diamonds and tin-bearing sands started to seem possible, then many nations desired a greater control of their coastal waters.

In 1945, the United States announced that it assumed jurisdiction of all-natural resources out to the edge of its continental shelf. This was the first nation to depart from the freedom of the seas doctrine and other nations quickly followed. Nations began making unilateral claims to seafloor resources, fishing grounds and exclusive navigable zones.

The United Nations sought to bring order and equity to the diversity of claims being made by nations around the world. In 1982 a United Nations treaty known as "The Law of the Sea"³⁵ (UNCLOS) was presented. It addressed navigational rights, territorial waters limits, exclusive economic zones, fishing, pollution, drilling, mining, conservation and many other aspects of maritime activity. With over 150 nations participating it was the first attempt by the international community to establish a formal agreement on how the seas can be used. It also proposes a logical allocation of ocean resources.

Under the Law of the Sea, each country receives exclusive economic rights to any natural resource that is present on or beneath the sea floor out to a distance of 200 nautical miles (230 miles / 371 kilometres) beyond their natural shorelines. In the Arctic, this gives Canada, the United States, Russia, Norway and Denmark (Greenland) a legal claim to extensive sea floor areas that might contain valuable resources. Though the treaty came into force in 1994, many industrialized nations, most famously led by US President Reagan, refused to join. In particular, these nations opposed the regime for deep seabed mining, which required transferring mining technology and redistributing mining royalties to less developed member states.

To accommodate these concerns, which governs deep seabed mining, the UNCLOS was renegotiated. First, the renegotiated sections removed transfer of seabed mining technology

³⁴ <http://geology.com/articles/who-owns-the-arctic.shtml>, Hobart King

³⁵ http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm

to less developed member states. Second, the U.S. was given a permanent seat on the ISA (International Seabed Authority) with budgetary veto authority to determine how mining royalties are distributed. Since renegotiation ended in 1998, 166 nations, including every other industrialized nation except U.S., has signed, ratified, or acceded to UNCLOS.

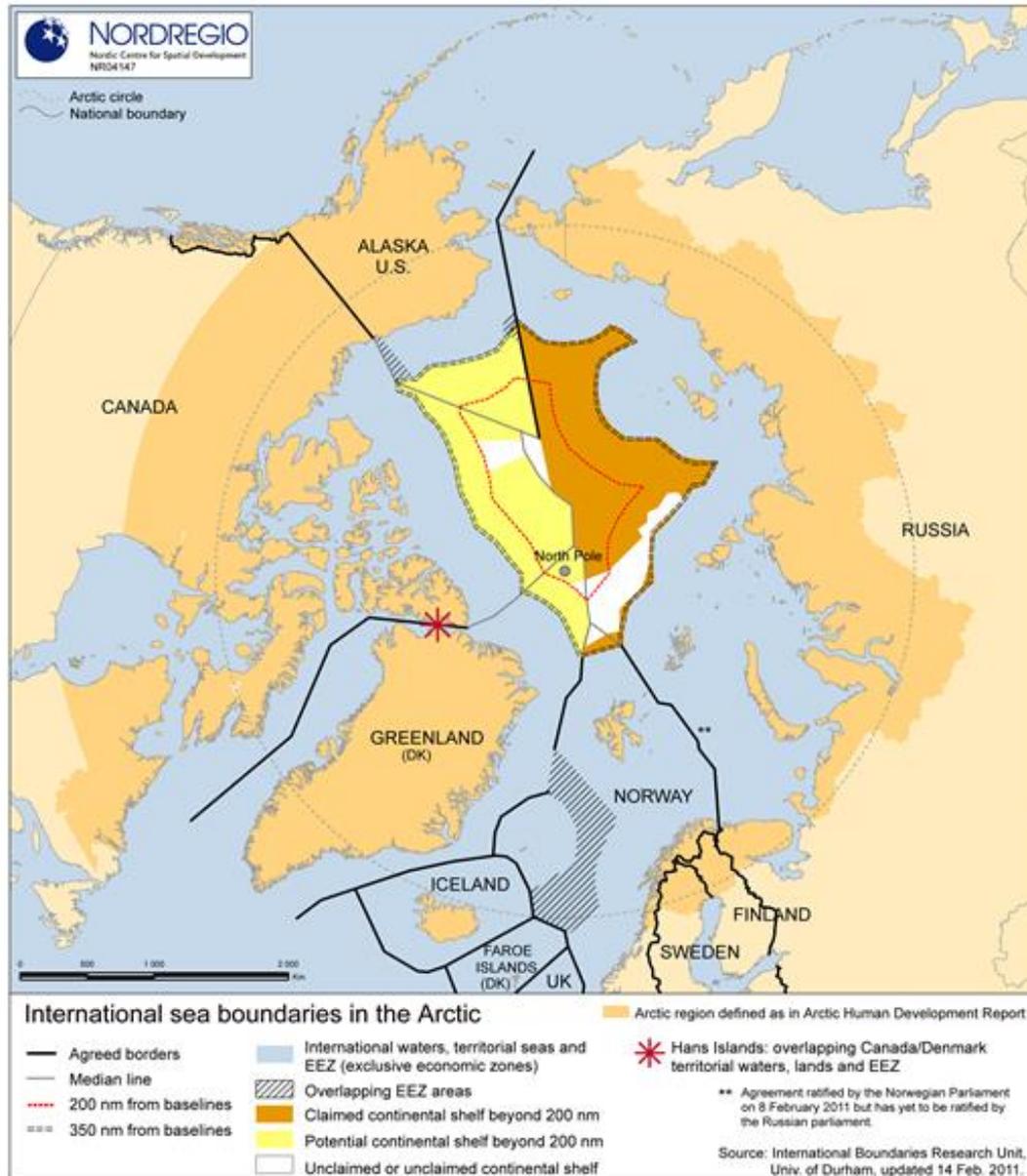


Figure 3: International Sea boundaries in the Arctic

In addition to the 200 nautical mile economic zone, each country can extend its claim up to 350 nautical miles from its shoreline for those areas that can be proven to be an extension of that country's continental shelf. To make this claim, a nation must acquire geological data that documents the geographic extent of its continental shelf and submit it to a United

Nations committee for consideration. Most countries with a potential claim to the Arctic are currently mapping the seafloor to document their claim.

One feature of the Arctic Ocean that is of special note is the Lomonosov Ridge, an underwater ridge that crosses the Arctic Ocean between the New Siberian Islands and Ellesmere Island. Russia is trying to document that the Lomonosov Ridge is an extension of the Asian continental shelf, while Canada and Denmark (in regard to Greenland) are trying to document that it is an extension of the North American continental shelf. Any country that can successfully establish such a claim will gain control of a vast amount of seafloor resources in the central portion of the Arctic Ocean.

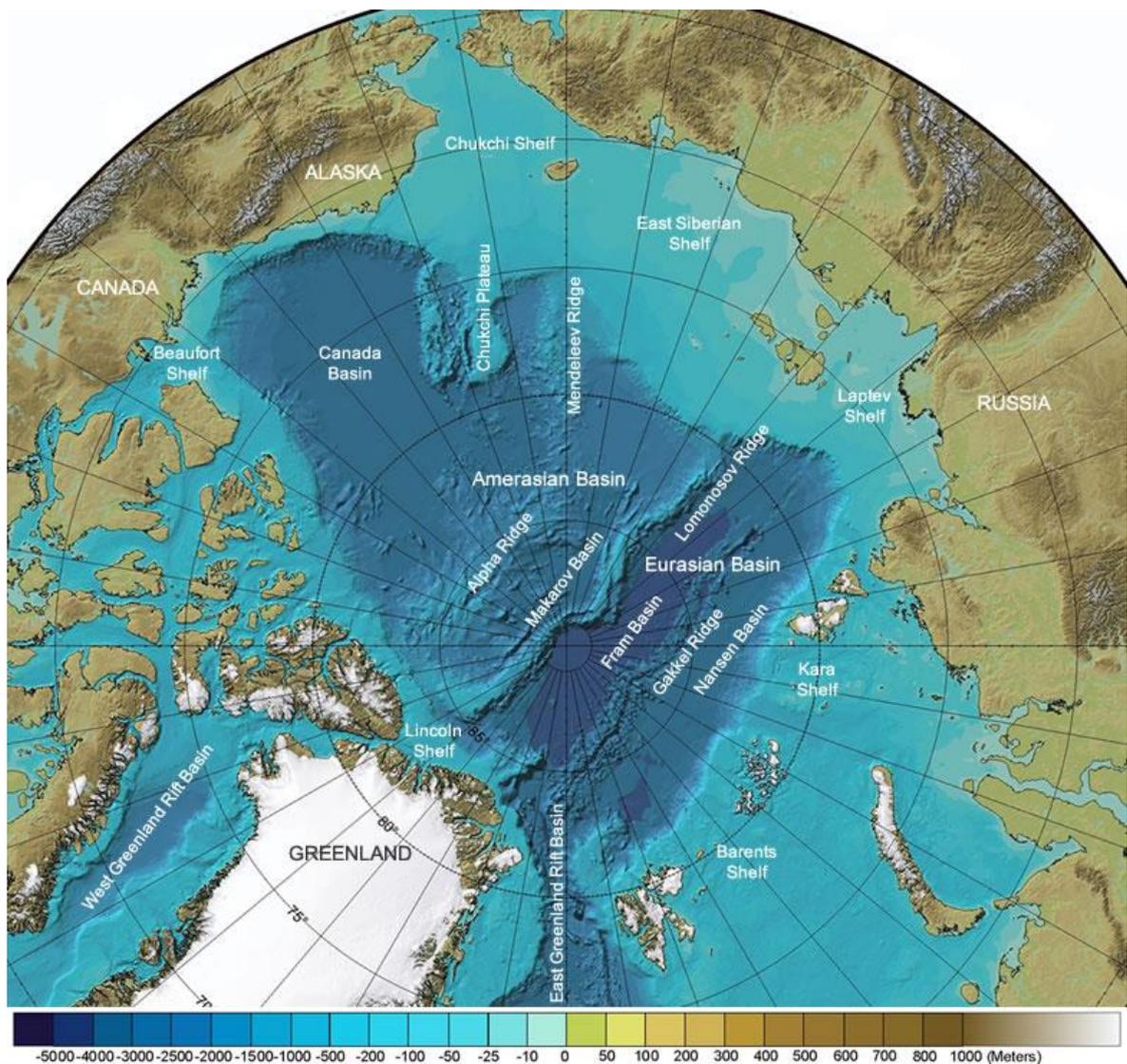


Figure 4: Arctic ocean Seafloor

1.3 Regional co-operation within the Arctic

International cooperation within the Arctic is constantly going on in different constellations – on governmental and non-governmental levels, in forums with varied status and composition.

Only in the European part of the Arctic, there is a number of politically decided organizations:

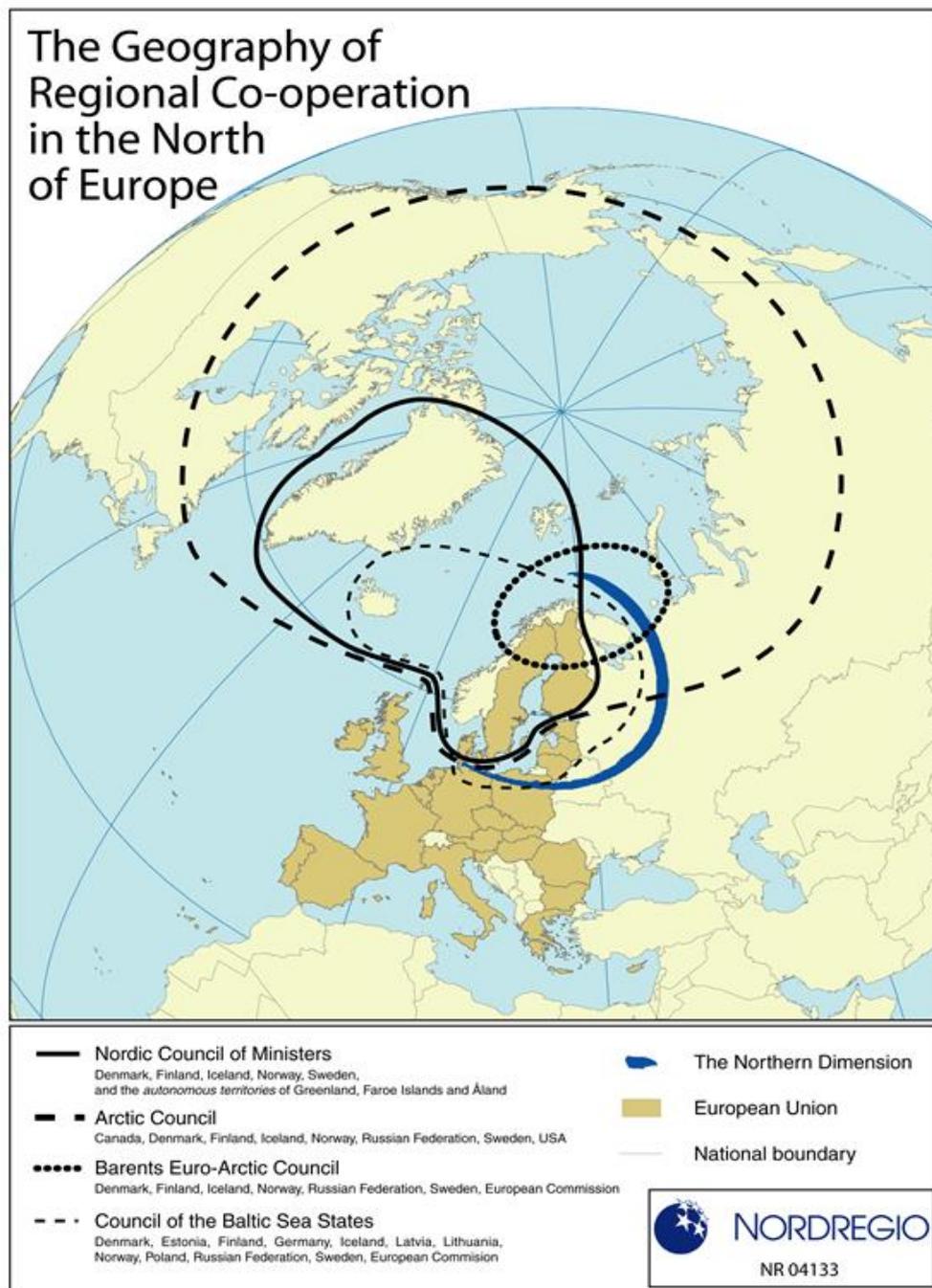


Figure 5: The Geography of Regional Cooperation in the North of Europe. Source: NORDREGIO

1.4 Arctic peoples

In 2013, there were 4,053,055 inhabitants living in the Arctic. This is a decline of 55,982 since 2000, or 1.4%. This is largely due to the continued decline of the population of the Russian Arctic, which now contains less than half of the Arctic population. The fact that the overall Arctic population has remained roughly the same over this period, masks considerable regional variation in population change among Arctic countries, regions, and settlements.³⁶

The population of the Arctic is ethnically complex. It consists of peoples, whose ancestors have resided in the region for millennia and who are indigenous to the region. It also encompasses non-indigenous groups, who migrated to the region, or whose ancestors migrated to the region, from the non-Arctic regions of Arctic states to work in resource extraction, military, fishing, or government administration. Finally, the Arctic consists of people of mixed ethnicity, and more recently, significant numbers of people who have migrated to the Arctic from non-Arctic states.

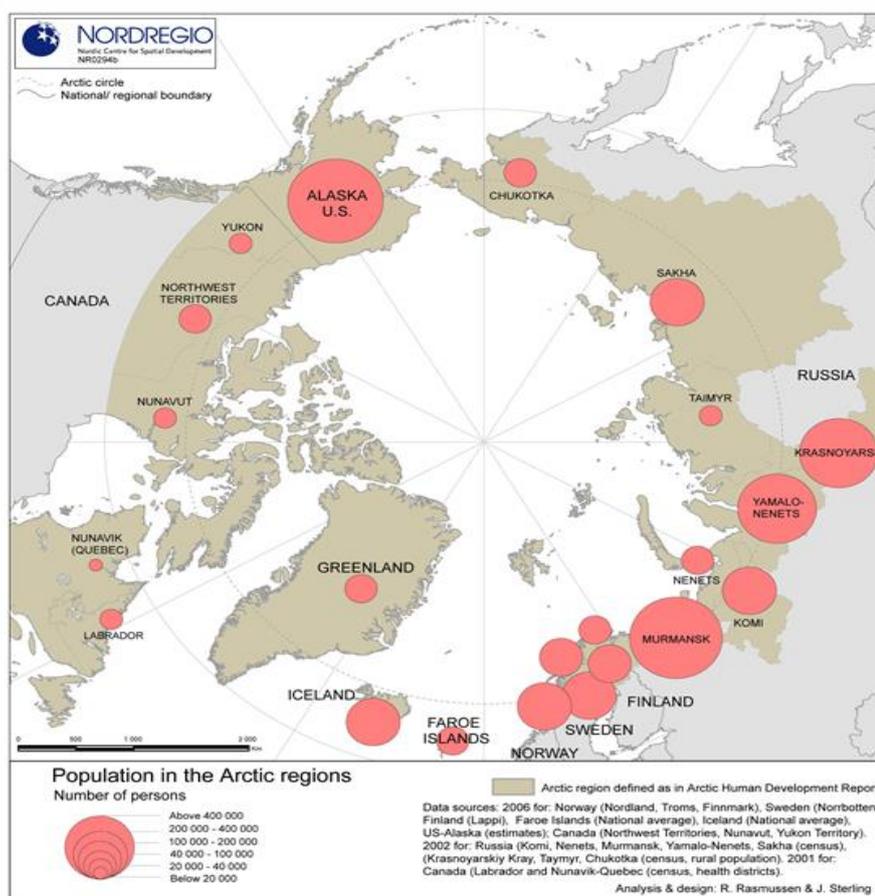


Figure 6: Population in the Arctic Region (2006). Source: NORDREGIO

The map shows the size of total population in the Arctic regions indicated by the size of the circles, registering the highest figures in Alaska (US) and the Russian regions of Murmansk,

³⁶ Arctic Human Development Report, AHDR
Regional Processes and Global Linkages, TemaNord 2014:567

Yamalo-Nenets and Krasnoyarsk, as well as Iceland followed by the Nordic regions, if considered all together.

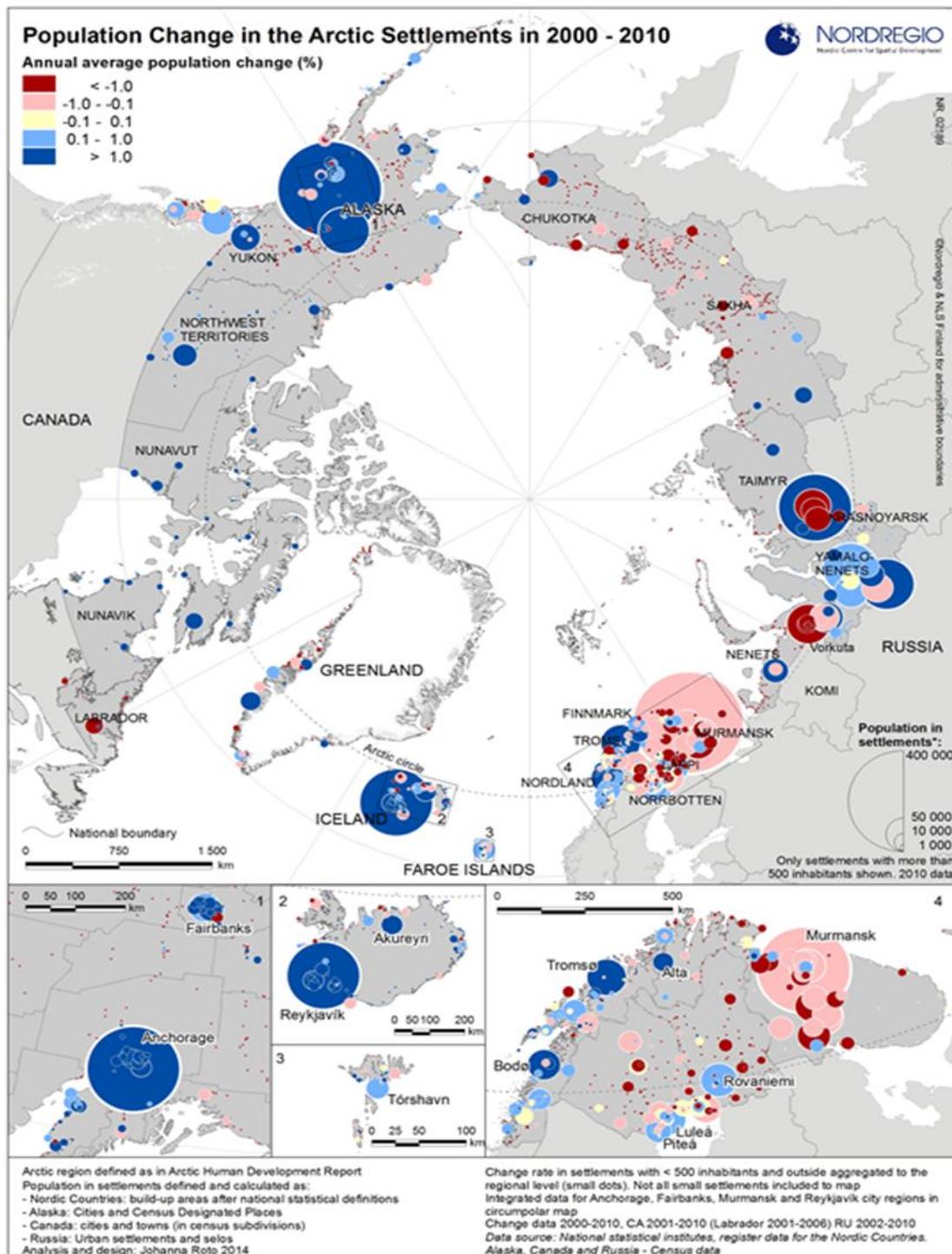


Figure 7: Population changes in the Arctic Settlements. Source: NORDREGIO

All settlements with less 500 inhabitants are shown as dots, while settlements with 500 or more inhabitants are shown as circles with an area equivalent to the population number.

The colours indicate the changes, with yellow showing places where no changes have taken place, while red indicates those places with a declining population, and blue places with a population increase.

Most of the smaller places in Fennoscandia and Russia have been declining markedly in size while a substantial number of the larger places have also suffered the same fate. Places, which have experienced major growth in Fennoscandia and North-West Russia, are places where educational opportunities are available. Similar patterns are shown in the North Atlantic region where Torshavn, Nuuk, Sisimiut and Torshavn have been the big receivers. In the Circumpolar maps the different settlements in the larger city regions has been merged (Anchorage, Fairbanks, Murmansk, greater Reykjavík) but are shown individually in the zoom-in maps.

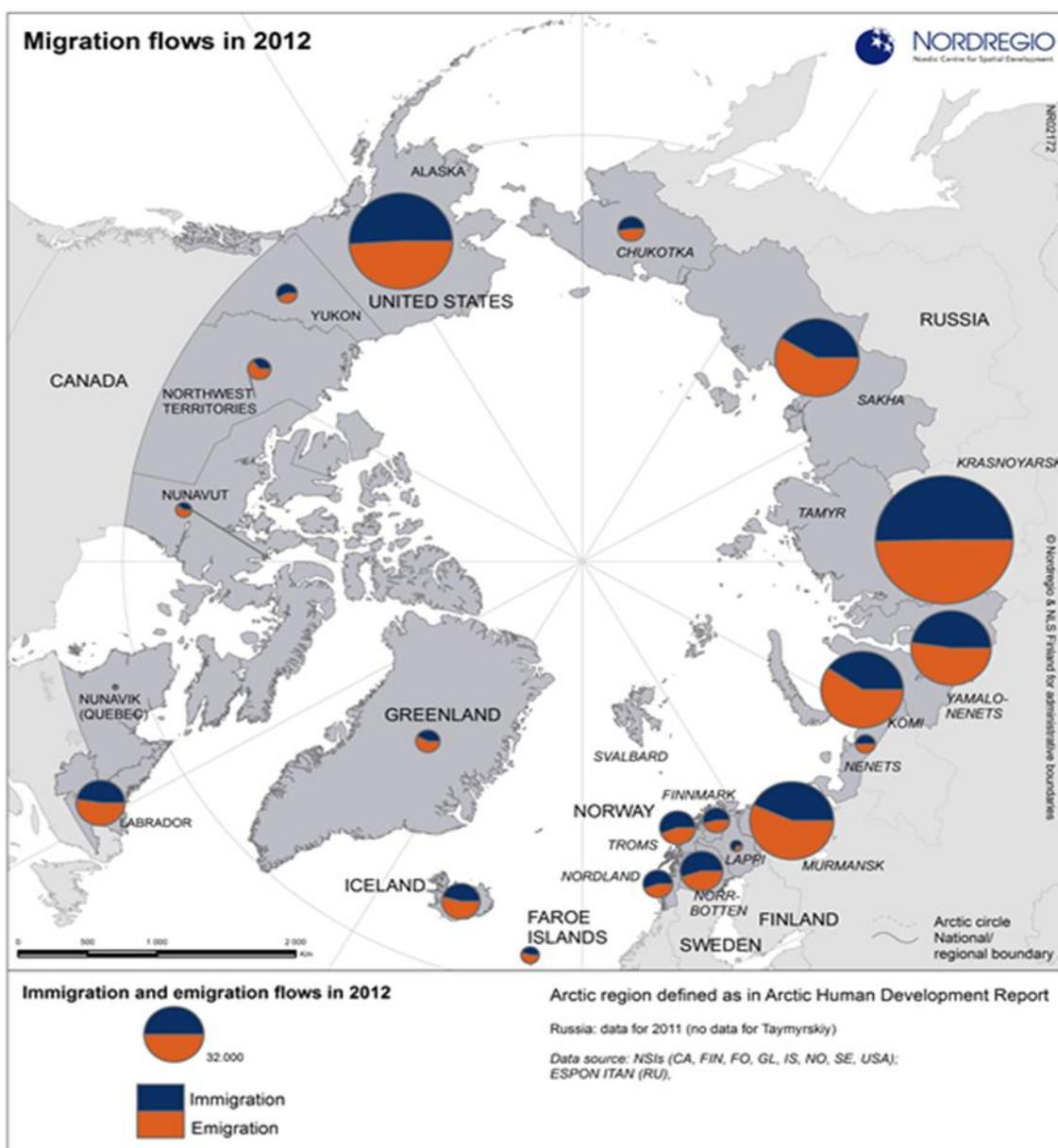


Figure 8: Migration flows in the Arctic. Source: NORDREGIO

The map highlights the immigration and emigration flows in the sub-regions of the Arctic in 2012 (as defined in the Arctic Human Development Report). The map highlights that the largest flows can be found in the Russian part of the Arctic, as well as in Alaska.

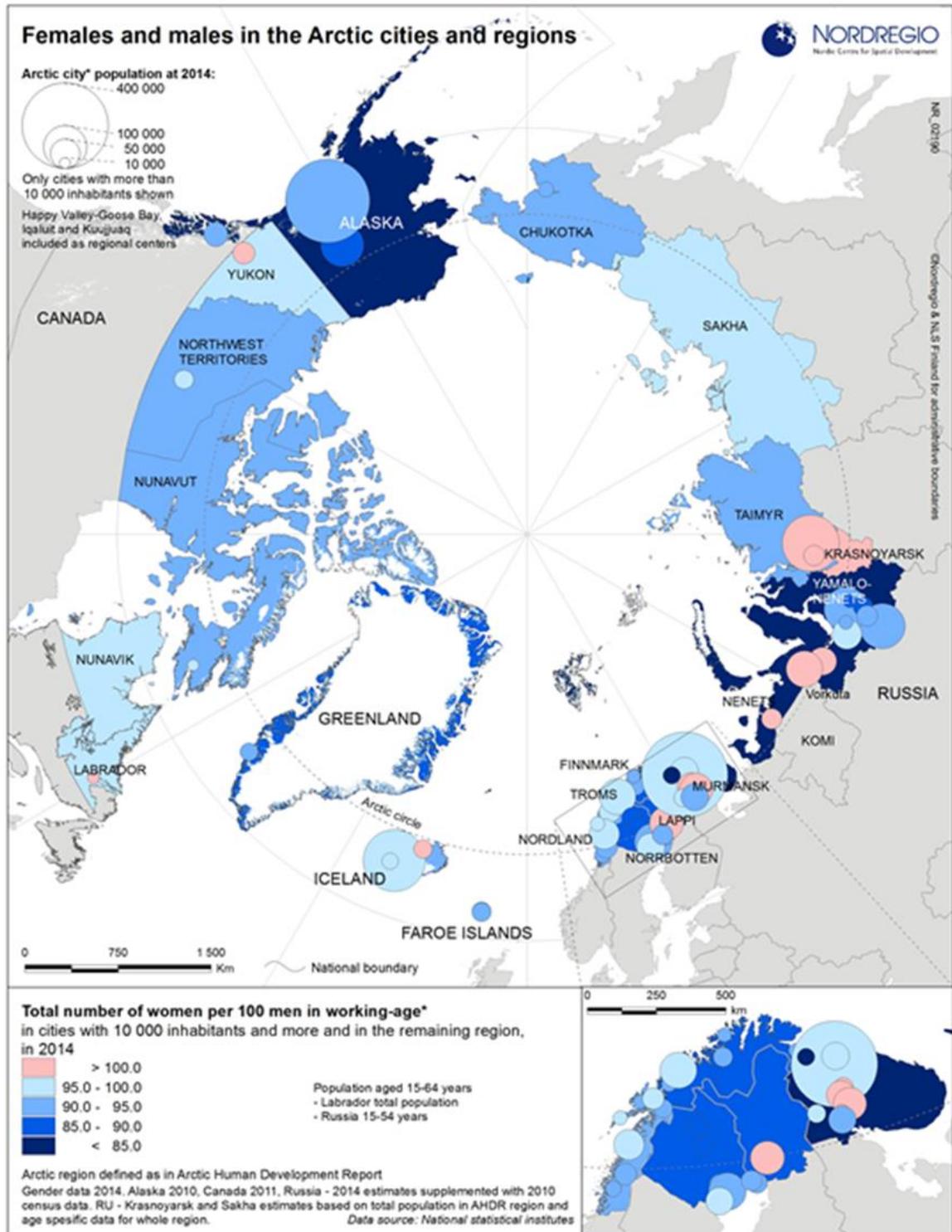


Figure 9: Female and males in the Arctic cities and regions. Source: NORDREGIO



Because the Arctic economy is heavily based on resource extraction and fishing, the region has a relatively high male gender ratio. The reason for the high male gender ratio is now day also due to recent high female out-migration.

Regions marked with dark blue in Figure 9 are those where there are less women per 100 men in working aged population while pink coloured regions represent a female surplus. Traditional gender-based division of labour in the Arctic is disappearing, and is, step by step, being replaced by a situation where the social and economic role of the inhabitants is increasingly determined by individual interest and qualification. Young and middle-aged males in search of employment and income opportunities have chosen to become migrant workers, leaving their communities for either a shorter or a longer period of time in the process. Seldom, however, have they left the community permanently. However, females consider, and also now tend, to migrate more permanently than males, away from their home community and region from smaller to larger communities with better opportunities better fitting their qualifications.

1.5 Indigenous Peoples of the Arctic

Indigenous peoples have inhabited the Arctic for thousands of years. The proportion of indigenous peoples is estimated to be about 10 percent of total population living in the Arctic, e.g. some 400 000 inhabitants.

There are over 40 different indigenous peoples living in the Arctic. Arctic indigenous peoples include for example Sámi, inhabiting Norway, Sweden, Finland and North-West Russia, the Nenets, Khanty, Evenki and Chukchi in Russia, Aleut, Yupik, Athabascans and Inuit (Iñupiat) in Alaska, Inuit (Inuvialuit) in Canada and Inuit (Kalaallit) in Kalaallit Nunaat (Greenland). All of the Arctic states, except Iceland, have indigenous peoples living within their Arctic territory. Official statistics do not necessarily recognize indigenous populations separately, although differences occur. The number of indigenous people is not accurate because of differing definition of indigenouness and because some countries, like the Nordic countries, have prohibited ethnical registers.

The highest shares, where the indigenous population constitutes a majority, are in Greenland, Nunavut, and Nunavik in Northern Quebec. The lowest percent indigenous peoples, compared to the population as a whole, are in Murmansk Oblast, Nenets Autonomous Okrug, and Yamal-Nenets Okrug in Russia. All three destinations with large numbers of Slavic migrants, who moved to these regions to work in resource extraction and large-scale industry.

The right to self-determination and the right to a nationality are core elements in international legislation on Rights of Indigenous Peoples, with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007) and the ILO Convention No 169 as the most prominent ones. Arctic states have adopted quite different approaches to the categorization of all peoples, including those in the Arctic. Hence, implementation of these rights, also in statistical and legal terms, varies across Arctic countries.

The United States classifies people based on race, a trait based mostly on phenotypes or observable characteristics, and since 1970, whether the person is Hispanic or not, which is considered their ethnicity. People of Hispanic ethnicity can be of any race. A category for



American Indian was added in 1870 and Alaska Natives were included in this category. In 2000, the category was expanded to read ‘American Indian or Alaska Native’, though they are tabulated together as a combined group. People who check this category are asked to indicate their enrolled or principle tribe.

Canada classifies people based on ethnic origin. This includes three groups of aboriginal peoples – Inuit, Métis and First Nations. The first Canadian census to include the entire territory and all northern aboriginal peoples was in 1891 (Hamilton and Inwood, 2011).

In Kalaallit Nunaat, inhabitants are categorized based on place of birth, the main distinction being *in Greenland* or *outside Greenland*. This distinction can be roughly thought to be Native Greenlanders or non-Greenlanders, or Inuit or non-Inuit.

Norway, Sweden, and Finland are considered together because there is only one indigenous people in the Nordic Region, the Sámi, and the treatment in censuses and statistical registers is similar. The three states ceased recording ethnicity in the censuses after World War II, in part because of the role that ethnicity played in some of the WW2 atrocities. The Sámi people spreads across those three Nordic countries and the Russian Federation inhabiting the Sámi homeland called Sápmi, stretching from Femunden (a four-hour drive north of Oslo), through Sweden and Finland, to the shores of the White Sea in the Russian Federation. Traditional business and trade (entrepreneurship?), such as fisheries, reindeer husbandry and agriculture are essential for the livelihood, culture and existence of the Sámi people, and depend on access to pastureland and renewable resources, such as fish stocks.

When the Bolsheviks came to power after the 1917 revolution, they needed to make sense of the multi-national empire they were presiding over. They settled on the concept of ‘*natsionalnost*’ (nationality), as the term used to divide people into different groups, a concept still used in post-Soviet Russia (Hirsh, 1997; Hirsh, 2005). They used the results of the first all-union census after creation of Soviet Union in 1926 to demarcate ethnic homelands, including those of the Arctic and Siberian peoples. In the post-Soviet period, many of the various Arctic and Siberian groups are classified belonging to a legal category titled *korennye malochislennye narody*, which translates directly to *numerically small Native peoples*, referring to populations less than 50,000 individuals. In the 2010 census, 46 groups were classified as Small-numbered Indigenous Peoples of the North, Siberia and Far East. Thus, in the Arctic and Siberia, there are both numerically small peoples of the North, and larger groups such as Yakuts (Sakha Republic, formerly Yakutia), Komi (Komi Republic), and Karelians (Republic of Karelia).³⁷

There are significant demographic differences among the various Indigenous Peoples residing in the Arctic in terms of size, urban-rural residence, household size and composition, fertility levels, mortality levels and migration patterns. There are also significant differences among the Indigenous Peoples in terms of lifestyle, economic status, political situation, depending on the situation in the national state and how Rights of Indigenous Peoples are respected (and implemented) in the national states.

³⁷ AHDR 2, 2014

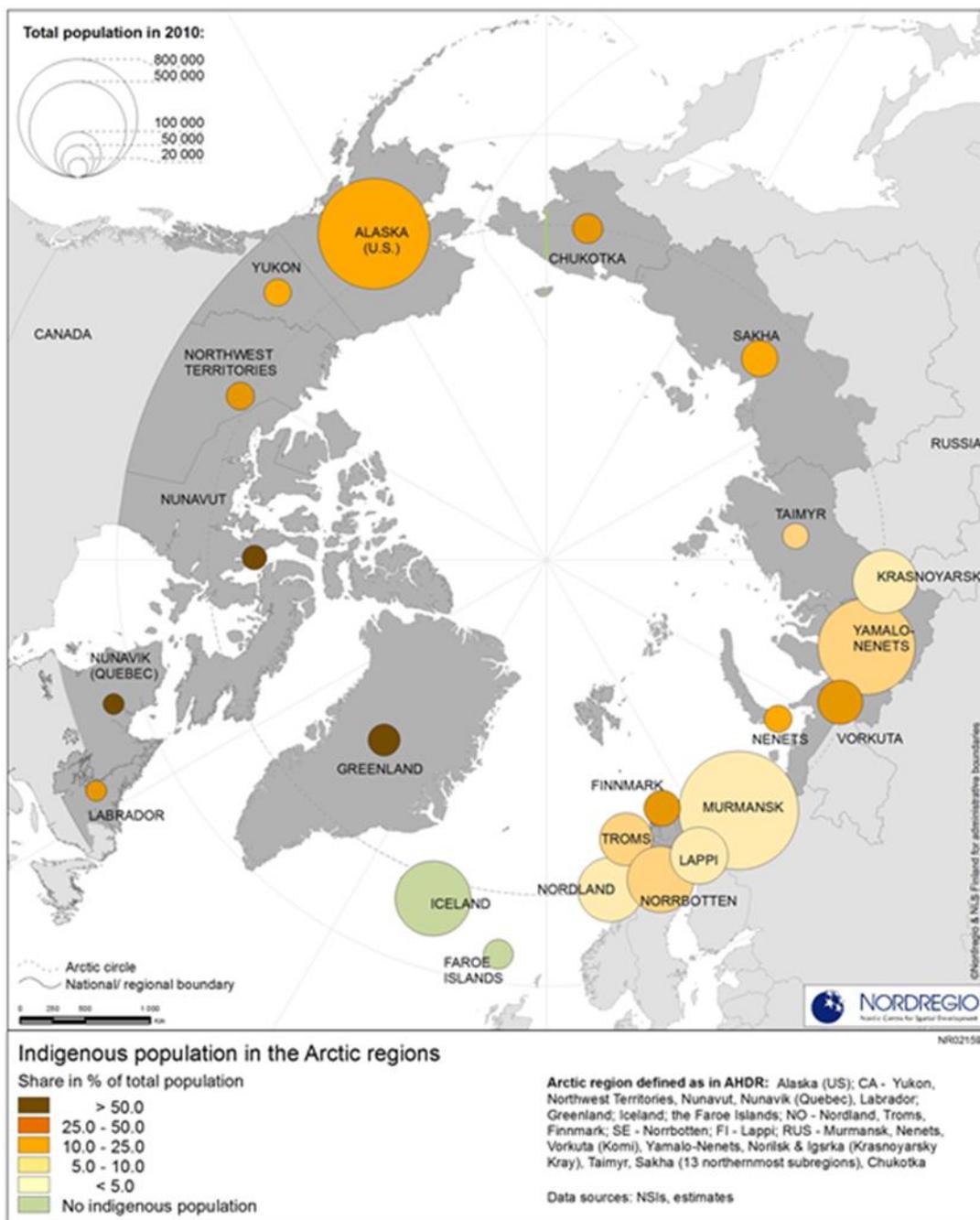


Figure 10: Indigenous peoples in the Arctic. Source: NORDREGIO

The question on how to define Indigenous Peoples is constantly on the agenda. There is no single definition. However, UN has through the acceptance and signing of UNDRIP³⁸ and through the UN special rapporteur for indigenous issues provided more comprehensive definitions,

“Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those

³⁸ United Nations Declaration on the Right of Indigenous Peoples



territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal system.

This historical continuity may consist of the continuation, for an extended period reaching into the present of one or more of the following factors:

- a) Occupation of ancestral lands, or at least of part of them;*
- b) Common ancestry with the original occupants of these lands;*
- c) Culture in general, or in specific manifestations (such as religion, living under a tribal system, membership of an indigenous community, dress, means of livelihood, lifestyle, etc.);*
- d) Language (whether used as the only language, as mother-tongue, as the habitual means of communication at home or in the family, or as the main, preferred, habitual, general or normal language);*
- e) Residence on certain parts of the country, or in certain regions of the world;*
- f) Other relevant factors.*

On an individual basis, an indigenous person is one who belongs to these indigenous populations through self-identification as indigenous (group consciousness) and is recognized and accepted by these populations as one of its members (acceptance by the group). This preserves for these communities the sovereign right and power to decide who belongs to them, without external interference”.

1.5.1 Rights of Indigenous Peoples

Rights of Indigenous Peoples in the Arctic is a complex matter, covering national and international law, treaties and agreements. In some places, like in Greenland, parts of Alaska and in Nunavut, the Rights of Indigenous Peoples are based on land titles, comprising surface and subsurface values. In other parts of the Arctic, such as Sweden, the Rights of Indigenous peoples are based on customary rights, but with no land titles attached.

In Alaska, for example, the 1971 Alaska Native Claims Settlement Act (ANCSA) helped establish 13 regional, for-profit corporations to facilitate the transfer of property and monetary compensation. The size and value of these Native corporations should not be underestimated. The Arctic Slope Regional Corporation (ASRC), for instance, has annual revenues, which exceed \$2.7 billion. It is no surprise then that ASRC is the largest Alaskan-owned company with approximately 10,000 employees worldwide. It owns title to nearly 20,000 square kilometres of land on Alaska's North Slope which contain a high potential for oil, gas, coal and base metal sulphides as well as subsurface rights to certain lands and has surface rights to other lands (as quoted on its webpage).

NANA (Alaska Native Corporation), likewise owns 9,000 square kilometres of the NANA region. It also includes ownership of both surface and subsurface acreage and has annual revenues, which exceed \$1 billion.



In Canada, the Nunavut Act (Nunavut Land Claim Agreement, 1993), amongst other Inuit land claims agreements, established Inuit autonomy over all marine areas adjacent to the coastlines of the islands of the Arctic Archipelago, including the waters of the Northwest Passage. Nunavummiut have also obtained title to lands (including mineral rights and the right to harvest wildlife), three new national parks, equal co-management of those lands, capital transfer payments and 5% royalties from the development of crown lands. This includes the right to negotiate with industries for impact mitigation, as well as economic and social rights pertaining to the development of non-renewable resources.

When it comes to Greenland, while no individual is able to own land, the 2009 Self-Rule Act gave Greenland the right to develop its subsurface minerals, minerals which were determined belong to Greenland. Thus, Greenland achieved total control over its renewable and non-renewable resources.³⁹

Regardless of the legal position, companies with interest in exploring natural resources in areas inhabited and used by Indigenous Peoples, are obliged to receive their consent to the planned operations. When it comes to many indigenous communities in the Arctic, indigenous inclusion is not a discussion about consultation, but rather a discussion about who actually owns the Arctic, who has the legal title to the land, its resources (surface and subsurface), and to coastal waters. However, in many parts of the Arctic, the right of indigenous communities to their ancestral land is being questioned. Therefore, in such situations, it is of utmost importance for any company with ambition to demonstrate a cooperate citizenship, to receive an agreement/consent from the community in question, *before* any planned action takes place.

Free, Prior and Informed Consent, referred to as FPIC, is a core principle in international legislation on Rights of Indigenous Peoples. No company with ambitions can by-pass Free, prior and informed consent, not in the Arctic, not in any other place.

FPIC derives primarily from ILO Convention No.169 and the UN Declaration on the Rights of Indigenous Peoples, focusing mainly on the role of the State. The statements of UN Treaty Bodies and regional human rights courts also provide evidence of the growing international support for the right of Indigenous Peoples to give, *or withhold*, free, prior and informed consent to any development project affecting their livelihood and/or community.

International law first introduced the right of Indigenous Peoples to give, or refrain from giving, free, prior and informed consent in ILO Convention No. 169, *Concerning Indigenous and Tribal Peoples*.⁴⁰ Of the Arctic states, the ILO 169 convention has been ratified by Denmark and Norway. For these States, the Convention is binding, although, depending on their national legal structure, the elements of the Convention may only become fully effective if they pass implementing legislation. The Convention is not binding on States that are not parties to the Convention, but it is a persuasive authority for the global community with respect to FPIC.

The most important recent legal development was the UN Declaration on the Rights of Indigenous Peoples, adopted by the UN General Assembly in September 2007, with 143 votes in favour, 4 States in opposition, and 11 abstentions. The four countries opposing the

³⁹ Who owns the Arctic: An introduction by Jessica Shadian. The Arctic Journal, November 2, 2015

⁴⁰ Indigenous and Tribal Peoples Convention, 1989



UNDRIP were Canada, USA, New Zealand, and Australia. Since 2009, Australia and New Zealand have reversed their positions, and support the Declaration, while the United States and Canada have announced that they are going to support the UNDRIP.

The Declaration on the Rights of Indigenous Peoples articulates the Rights of Indigenous Peoples in a number of circumstances. Of greatest interest for extractive industry⁴¹, it calls on States to consult with indigenous peoples through their representative institutions to gain their free, prior and informed consent “*prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources.*” States may delegate this responsibility to companies, in a manner similar to the delegation of the Crown duty to consult and accommodate with Aboriginal peoples in Canada.

The Declaration is soft law, not a treaty, and thus is not legally binding on States. Whether the Declaration is hard or soft law matters, but only up to a point. The Declaration gradually starts to affect the domestic legal framework and social expectations within which companies operate, it becomes a factor companies may need to take into consideration as part of their risk mitigation process. This is particularly important given the risk that some countries may apply the principle retroactively, which would affect existing company concessions.⁴² Furthermore, the Declaration provides an important normative basis for and gives traction to the claims of Indigenous Peoples, who are likely to become more assertive after the long battle at the United Nations moving the Declaration through the General Assembly. Soft law standards can be linked to practical implications for those who violate them. In the area of business and human rights, such standards can have concrete effects because national law incorporates them, socially responsible investors use them to screen companies, and advocates utilize the standards to shame wrong doers.⁴³

ILO 169 and the UNDRIP are two important legal frameworks relating to Rights of Indigenous Peoples, but there are also other conventions/instruments with importance for companies with ambitions to explore the Arctic. The Covenant on Civil and Political Rights (ICCPR) is one of them. In this covenant, the article 27 is probably the most interesting.

“In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language”

⁴¹ 17 The Declaration also specifies that FPIC is required for relocation; before adopting and implementing legislative or administrative measures that may affect indigenous peoples; and for storage or disposal of hazardous materials in the lands or territories of indigenous peoples. The Declaration provides for redress with respect to their cultural, intellectual, religious, and spiritual property taken without their free, prior, and informed consent or in violation of their laws, traditions, and customs, and for the redress, by means that can include restitution or, when this is not possible, just, fair, and equitable compensation, for the lands, territories, and resources which they have traditionally owned or otherwise occupied or used, and which have been confiscated, taken, occupied, used, or damaged without their free, prior, and informed consent. U.N. Declaration on the Rights of Indigenous Peoples, supra note 12.

⁴² For instance, the diamond mining company Alexkor was required to give back land to the Richtersveld people in South Africa, who had been forcibly removed more than 90 years before

⁴³ Implementing a Corporate Free, Prior, and Informed Consent Policy: Benefits and Challenges; Amy K. Lehr and Gare A. Smith, Foley Hoag.

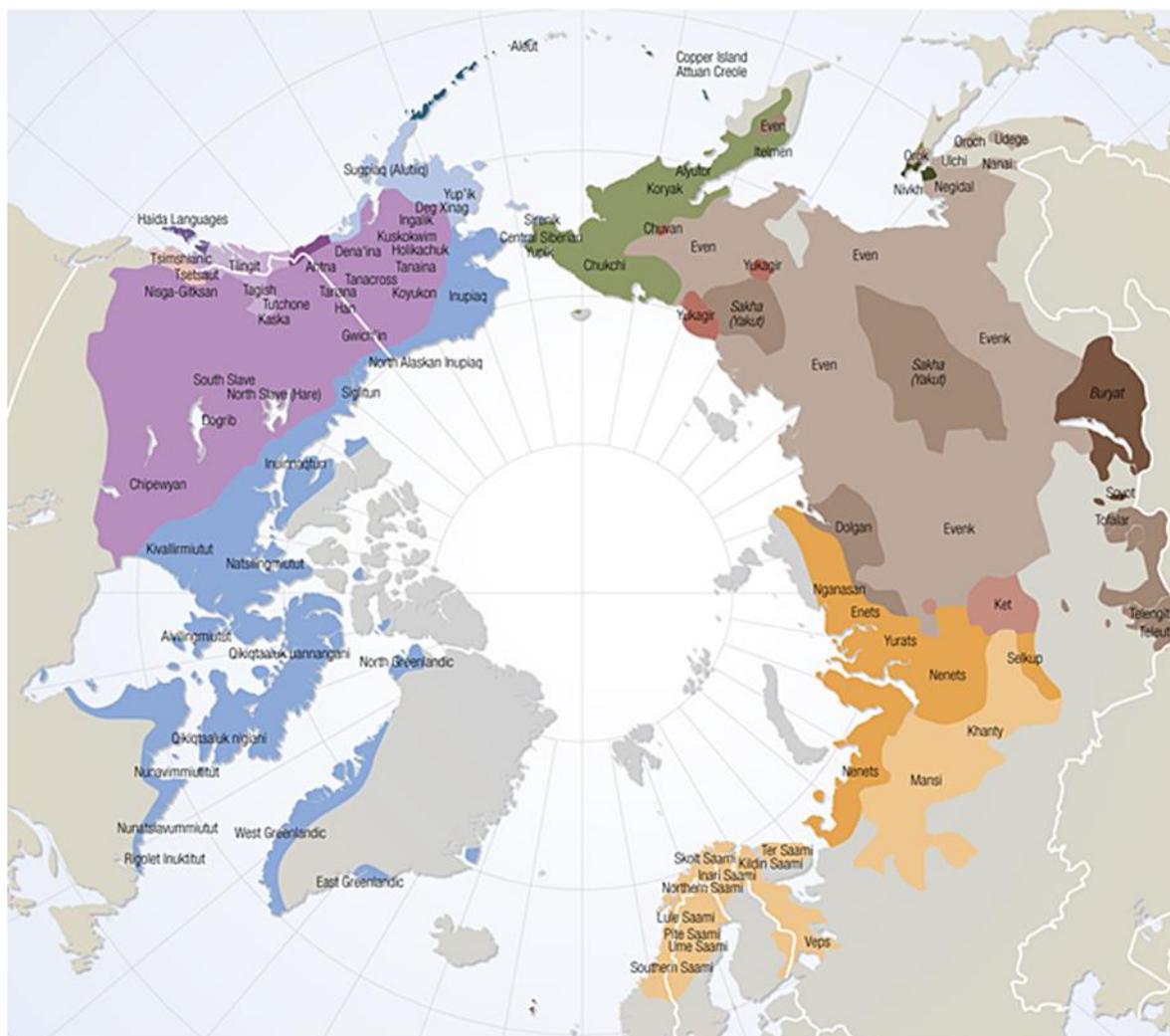


The United Nations Human Rights Committee (UNHRC) supervises ICCPR. The Committee's decisions are not legally binding, but the International Court of Justice has declared that statement from the Committee should have great weight:

In a general comment No. 23 to article 27 from 1994, UNHRC declare that the wording in the article is requesting the governments to secure the fundament for the culture(s) of Indigenous Peoples.

“With regard to the exercise of the cultural rights protected under article 27, the Committee observes that culture manifests itself in many forms, including a particular way of life associated with the use of land resources, especially in the case of indigenous peoples. That right may include such traditional activities as fishing or hunting and the right to live in reserves protected by law. The enjoyment of those rights may require positive legal measures of protection and measures to ensure the effective participation of members of minority communities in decisions which affect them.”

Language is one of those features of ethnicity closely tied to issues of identity and Rights of Indigenous Peoples. This map presents the original languages of the respective Indigenous Peoples, regardless of number of current speakers.



Na'Dene family

- Athabaskan branch
- Eyak branch
- Tlingit branch
- Haida branch

Indo-European family

- Germanic branch

Eskimo-Aleut family

- Inuit group of Eskimo branch
- Yupik group of Eskimo branch
- Aleut group

Uralic-Yukagirian family

- Finno-Ugric branch
- Samodic branch
- Yukagirian branch

Altaic family

- Turkic branch
- Mongolic branch
- Tunguso-Manchurian branch
- Chukotko-Kamchatkan family
- Ket (isolated language)
- Nivkh (isolated language)
- Tsimshianic (isolated language)

Figure 11: Original languages of the respective indigenous peoples.

Source: GRID Arendal (Hugo Ahlenius, Nordpil)

When considering Rights of Indigenous Peoples, it is not sufficient to make the impact assessment based on a narrow perspective, you also have to consider the cumulative impacts of an indigenous society. The questions of cumulative negative impacts have been lifted up by the UNHRC in the communication concerning the case Jouni v. Finland (1996)

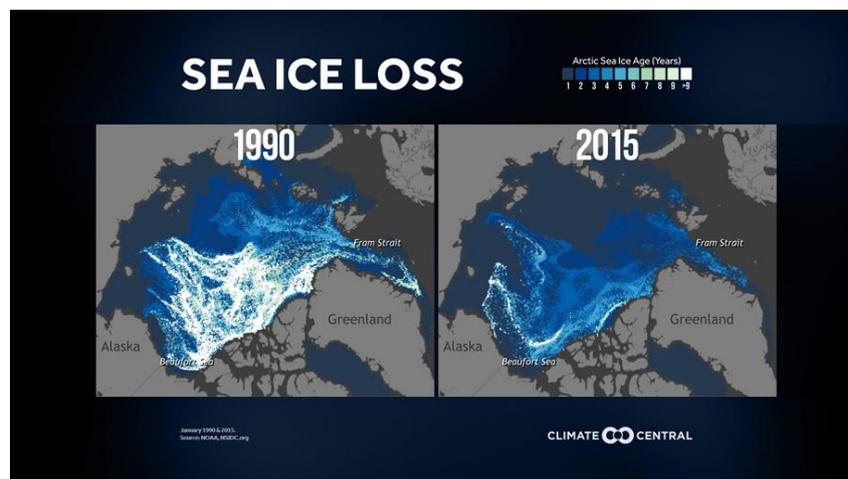
“10.2. ... In weighing the effects of logging, or indeed any other measures taken by a State party which has an impact on a minority's culture, the Committee notes that the infringement of a minority's right to enjoy their own culture, as provided for in article 27, may result from

the combined effects of a series of actions or measures taken by a State party over a period of time and in more than one area of the State occupied by that minority.”

1.6 Arctic climate change

Scientists have long warned that the amount of carbon dioxide in the atmosphere should remain below 450 parts per million, to avoid potentially catastrophic climate change. In 2016, the hottest year on record, the concentration crossed 400 parts per million, and was increasing by about two parts per year. The Paris Agreement on climate change came into force that year and aims to limit warming to well below 2°C above pre-industrial levels by having countries voluntarily reduce emissions of carbon dioxide and other greenhouse gases. In 2018, the Intergovernmental Panel on Climate Change warned of punishing environmental impact if emissions are not curtailed sufficiently to prevent even 1.5°C of warming.⁴⁴

Climate change is warming the Arctic region faster than any other place on Earth, creating dramatic consequences for everyone. Arctic sea ice fell to a record low in July 2019, and by 2050 as much as 45% of existing Arctic infrastructure will be at high risk due to permafrost thaw - which is also releasing carbon and methane that accelerate global warming through “climatic feedback.” The changing climate has unlocked economic opportunities tied to oil, gas, mineral resources, and increasingly accessible shipping routes - placing added stress on the region’s biodiversity and people. As these emerging challenges are addressed, it must be done in a way that ensures benefits are shared with local communities.



⁴⁴ the World Economic Forum’s Expert Network

Average Monthly Arctic Sea Ice Extent September 1979 - 2018

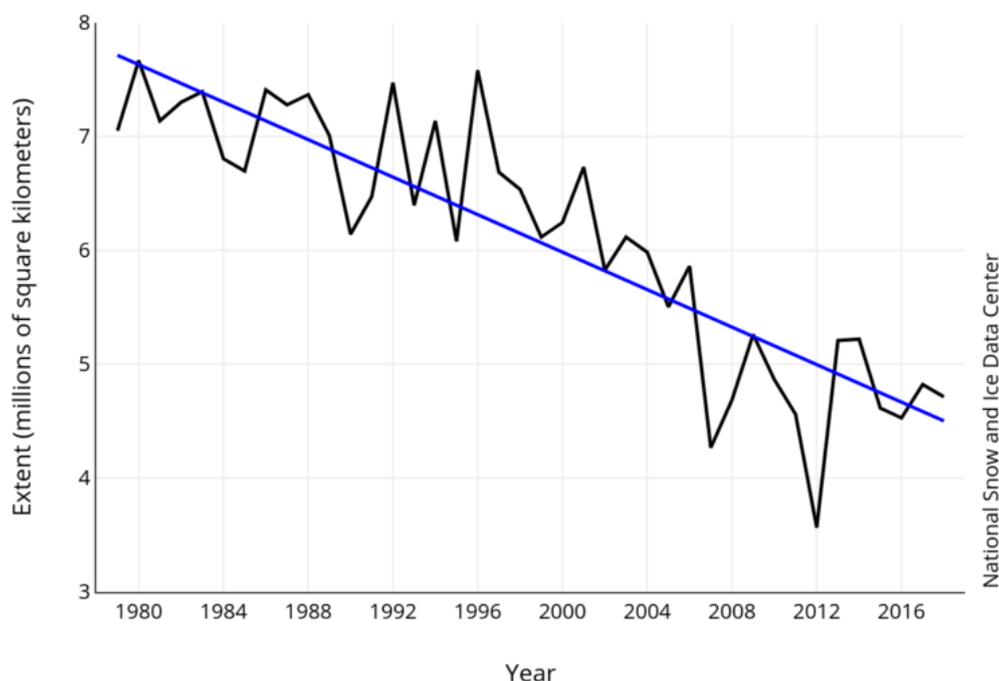


Figure 12: Statistics from National Snow and Ice Data Center

Earth's average surface temperature has risen by 1°C since the 1880s, driven largely by man-made greenhouse gases. And the world keeps on warming: the past five years have, collectively, been the hottest on record, according to NASA figures.

The Arctic is feeling the effects more than anywhere on Earth. While this is providing scientists with a wealth of information to help in their fight against climate change, it's also having some strange consequences.

Here are some ways our warming world is affecting the Arctic region:

- Arctic Indigenous Peoples witness culture slipping away as sea ice vanishes⁴⁵
- Reindeer husbandry in the Sápmi region experience difficulties when reindeers cannot feed them self, due to (multiple layers of) ice crust covering the important ground-based lichen. Climate change has created severe changes in the winter weather.⁴⁶

⁴⁵ <https://www.theguardian.com/environment/2016/dec/19/alaska-sea-ice-vanishing-climate-change-indigenous-people>

⁴⁶ <https://www.theguardian.com/world/2019/jul/30/deaths-of-200-reindeer-in-arctic-caused-by-climate-change-say-researchers>



- Starving polar bears are travelling vast distances to Russian cities due to the melting sea ice⁴⁷



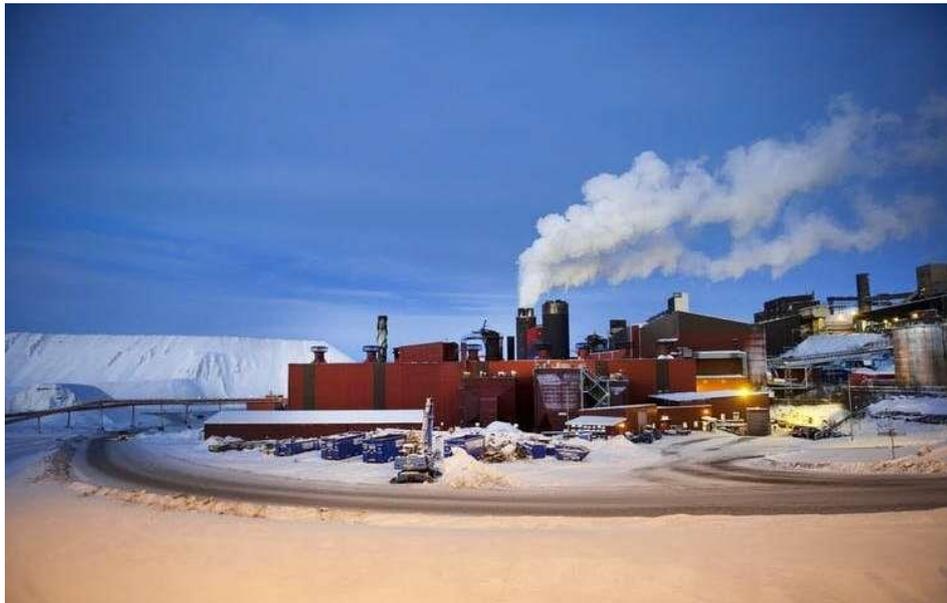
- Wildfires are choking Alaska as Alaska for the first time in 100 years are experiencing average June/July temperatures above freezing⁴⁸ in combination with growing number of thunderstorms.

⁴⁷ <https://siberiantimes.com/ecology/casestudy/news/starving-polar-bear-can-hardly-move-say-residents-of-norilsk/>

⁴⁸ <https://twitter.com/AlaskaWx/status/1148804291840237568>



- Permafrost in the Arctic is melting 70 years ahead of schedule⁴⁹ according to recent Arctic research with negative effects on gas emission and creating new opportunities for extractive industry



- With Shrinking Arctic Sea Ice comes increased human activities in the Arctic and as an effect of that heightened national security concerns. This increased human activity in the Arctic has led to more national security concerns from both a traditional and non-traditional point of view. For the U.S., national security in the Arctic is for instance shielding the nation from potential threats to the northern border.⁵⁰

⁴⁹ <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019GL082187>

⁵⁰ <https://www.nesdis.noaa.gov/content/shrinking-arctic-sea-ice-comes-heightened-national-security-concerns>



1.7 Arctic Environment and biodiversity

The Arctic is home to a diverse array of plants and animals. They are adapted in various ways to a region that is often cold, experiences prolonged daylight in summer and equally lengthy darkness in winter, and includes habitats that range from ice caps to wetlands to deserts, from ponds to rivers to the ocean. Some of the Arctic's species are icons, such as the polar bear, known throughout the world. Some are obscure, with many yet to be discovered. Arctic peoples, too, have adapted to this environment, living off the land and sea in keeping with the cycles of the seasons and the great migrations of birds, mammals and fish. Many birds, for example, spend the summer in the Arctic and are absent in winter, having flown to all corners of the Earth, thus connecting the Arctic with every region of the planet.⁵¹

In 2013 Arctic Council/CAFF⁵² produced the Arctic Biodiversity Assessment, Status and trends in Arctic biodiversity. The report was presenting the result of almost 300 researchers efforts concerning biodiversity in the Arctic.

The purpose of the ABA, as endorsed by the Arctic Council Ministers in Salekhard, Russia, in 2006 is to Synthesize and assess the status and trends of biological diversity in the Arctic ... *as a major contribution to international conventions and agreements in regard to biodiversity conservation; providing policymakers with comprehensive information on the status and trends of Arctic biodiversity (CAFF 2007)*. The intent is to provide a much-needed description of the current state and recent trends in the Arctic's ecosystems and biodiversity, create a baseline for use in global and regional assessments of Arctic biodiversity and a basis to inform and guide future Arctic Council work. The ABA provides up-to-date knowledge and identifies gaps.

ABA report shows a lot of fundamental changes in the Arctic. Climatically, ecologically, culturally, socially and economically:

The Arctic climate is warming rapidly (ACIA 2005)⁵³. Summer sea ice extent has diminished greatly in recent years, more of the Greenland ice cap is melting than before, and permafrost is thawing (AMAP⁵⁴2009a, 2011a, 2011b). All of these changes affect Arctic ecosystems, The Arctic Council, in cooperation with the International Arctic Science Committee (IASC) produced in 2005 the Arctic Climate Impact Assessment (ACIA), which compiled into one document the information available at that time concerning the changing climate of the Arctic and the resulting effects on the cryosphere, ecosystems and human activities.

Since that time, the Arctic Council has contributed to updates concerning various aspects of climate change in the Arctic. This recent information shows that the projections of the ACIA were, if anything, conservative (AMAP 2009a). Newer updates now include biological

⁵¹ Arctic Biodiversity Assessment, Status and trends in Arctic biodiversity. Arctic Council/CAFF 2013

⁵² CAFF is the biodiversity working group of the Arctic Council and consists of National Representatives assigned by each of the eight Arctic Council Member States, representatives of Indigenous Peoples' organizations that are Permanent Participants to the Council, and Arctic Council observer countries and organizations. The CAFF Working Group operates by the Arctic Council Rules of Procedures.

⁵³ ACIA 2005. Arctic climate impact assessment. Cambridge University Press.

⁵⁴ Arctic Monitoring and Assessment Program, Oslo.

information, which will allow better monitoring and reporting of the effects of climate change on biodiversity.

Within living memory in many parts of the Arctic, local societies and economies have become ever more connected with the wider world through telecommunications, trade, travel and other influences and interactions. Today, monetary economies, national and regional governmental institutions, formalized educational systems, modern health care and new forms of communications are among the many factors shaping the lives of Arctic residents. While some changes have been highly beneficial, as seen in longer life expectancy and decreased infant mortality, other changes have disrupted traditional ways of life and contributed to environmental degradation.

The ABA report is summarized in nine key findings:

Key finding 1

Arctic biodiversity is being degraded, but decisive action taken now can help sustain vast, relatively undisturbed ecosystems of tundra, mountains, fresh water and seas and the valuable services they provide.

Arctic species today enjoy large areas of habitat that support a full range of ecological processes and interactions. But climate change, industrial development, pollution, local disturbances and invasive alien species are affecting the Arctic, and their impacts are increasing.

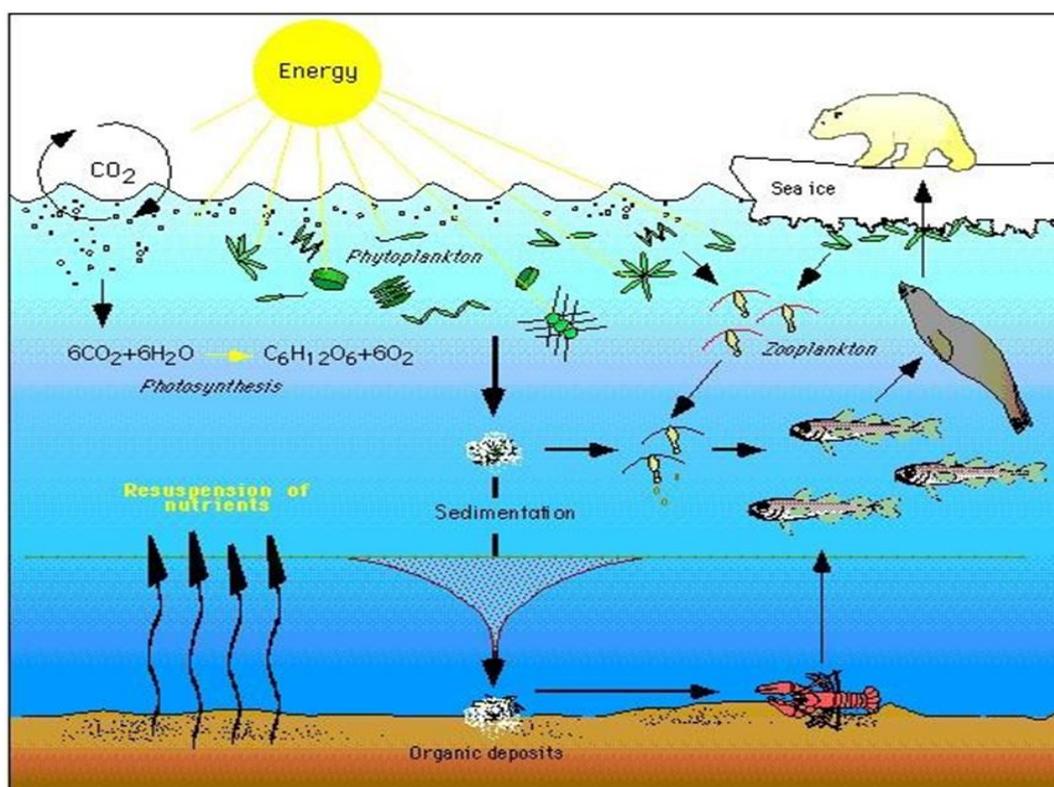


Figure 13: The Arctic food web is complex. The loss of sea ice can ultimately affect the entire food web, from algae and plankton to fish to mammals. Source: [NOAA \(2011\)](#)

The most visible changes in the Arctic are those to the physical environment, including warming temperatures, the loss of sea ice and an increasing collective footprint from industrial activities. The resulting ecological impacts are often much harder to see. Yet these changes are important to consider now, since impacts being felt today may take years or decades to show their full effect. Stressors do not act in isolation, and often exacerbate one another, leading to greater cumulative impacts than expected from individual activities or stressors. The world has seen many examples of long-term ecological damage due to increasing human activity. This assessment has demonstrated that, in the Arctic, we still have an opportunity to act before it is too late.

Globally, habitat loss and degradation pose the main threats to biodiversity. The relative well-being of many Arctic ecosystems today is largely the fortuitous result of a lack of intensive human encroachment, thanks to the extreme climate and long distance from major population and economic centres. This history does not guarantee a healthy future. It does, however, provide humankind with a rare opportunity to create spaces where ecosystems and species can evolve naturally, and indigenous cultures can continue to practice traditional ways of life. Conservation of Arctic biodiversity will no longer happen by default. It is possible only if decisive actions are taken now, to conserve for posterity the Arctic legacy that enriches the world today.

Key finding 2

Climate change is by far the most serious threat to Arctic biodiversity and exacerbates all other threats.

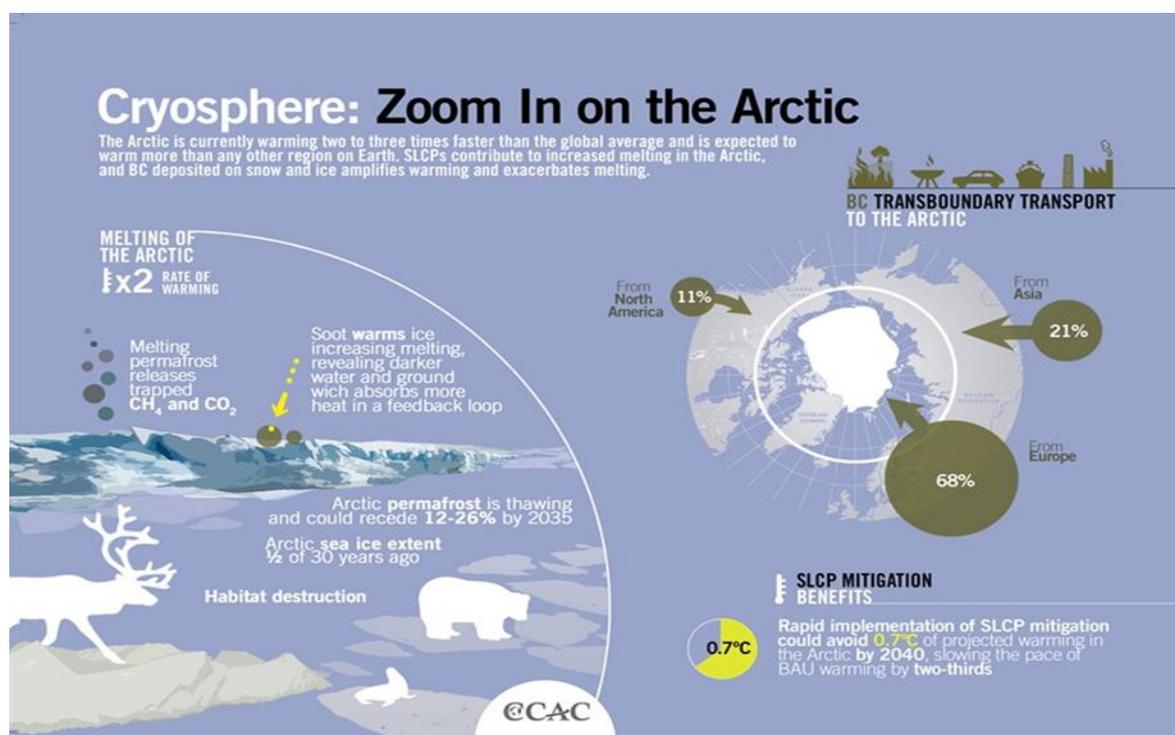


Figure 14; The warming up of the Arctic. Source GRID-Arendal. (GRID-Arendal a centre collaborating with the United Nations Environment Programme (UNEP), supporting informed decision making and awareness-raising)

Summer temperatures in the Arctic during recent decades have been warmer than at any time in the past 2000 years, and the region is warming twice as fast as the rest of the planet.



Within this century, temperatures in the Arctic are projected to increase by several degrees further from the 1980-2000 average. Changing combinations of high temperatures, winds and precipitation are likely to give rise to very different climates in the Arctic. Arctic summer sea ice cover – and particularly the amount of multi-year ice – is decreasing at an accelerating rate. The years since 2007 have seen less summer sea ice than any previous year in the satellite era, and 2012 set another record low. The ocean is expected to become ice free in summer within a few decades. The increased carbon dioxide concentrations in the atmosphere are also leading to acidification of ocean waters worldwide, especially in colder Arctic waters that can dissolve more carbon dioxide. Warming is also causing loss of permafrost and glaciers, affecting hydrology, vegetation, erosion patterns and other features of terrestrial ecosystems.

The distribution of flora and fauna is shifting northwards as the Arctic continues to warm. On land, shrubs are growing taller and spreading, boreal species and ecosystems are already moving into what is now the low Arctic, and the treeline is expected to move north. While low Arctic species are expected to move into the high Arctic, some high Arctic species and ecosystems are expected to disappear or remain only as isolated fragments in high mountain areas. In the ocean, loss of sea ice is already affecting the timing and patterns of primary production, altering food webs and reducing the availability of sea ice to walrus and ice seals for resting, molting, breeding and rearing young. The total loss of some key habitats such as multi-year pack ice is expected. In the process of rapid change and transitions, new combinations of species are altering Arctic ecosystems.

By increasing the accessibility of the Arctic to humans, climate-induced changes will facilitate increased industrial activity such as oil and gas exploration and marine shipping. These changes will in turn bring other stressors to the region. For example, ships discharging ballast water into Arctic seas may introduce invasive species that may outcompete and displace resident species. The stress of climate change does not act in isolation, but works in conjunction with other stressors, yielding even greater risks to Arctic biodiversity.

Key finding 3

Many Arctic migratory species are threatened by overharvest and habitat alteration outside the Arctic, especially birds along the East Asian flyway.

Overharvest and habitat loss and degradation threaten some Arctic migratory species throughout their global ranges. The Eskimo curlew has likely gone extinct as a result of overharvest outside the Arctic, and the spoon-billed sandpiper faces extinction now due in part to overhunting in its wintering areas in southeast Asia. Loss of staging and wintering habitat for waterfowl and shorebirds, for example, is occurring at an alarming rate in many areas, especially in East Asia around the Yellow Sea. The loss of coastal and intertidal habitat is expected to increase considerably with sea level rise and increasing development. Some migratory marine mammals that occur in the Arctic during part of their migration are also experiencing habitat loss or degradation outside the Arctic as well, but these alterations are poorly documented at present.

Threatened migratory species require protection throughout the year, across their full migratory range and across multiple international boundaries. Effective management in one region can be undermined by harmful actions elsewhere. Arctic birds migrate far and wide,



so Arctic migratory bird conservation is a truly global issue, of great importance to ecosystems and overall biodiversity in the Arctic and beyond.

Key finding 4

Disturbance and habitat degradation can diminish Arctic biodiversity and the opportunities for Arctic residents and visitors to enjoy the benefits of ecosystem services.

Roads, noise, pipelines, dams, drilling and mine sites, destructive fishing practices and other forms of direct and indirect damage to habitats and species are putting increasing pressure on the Arctic environment in some areas. Some commercial fishing techniques such as bottom trawling have the potential to damage sensitive seafloor habitats and their ecological communities. Construction of roads and pipelines has led to fragmentation of landscapes, permafrost degradation and changes in vegetation and hydrology. Noise from offshore seismic exploration and drilling affects the behaviour of bowhead whales and other species.

Although reindeer grazing can benefit biodiversity in several ways and could be instrumental in counteracting some of the effects of climate change, grazing has caused degradation locally in the Arctic in particular in regions where their habitat has been fragmented. The majority of these stressors currently result from oil, gas and mineral exploitation on land.

Offshore oil and gas exploration and production are in their early stages in the Arctic region, but are expected to increase in the coming decades, producing impacts from noise and/or another habitat disturbance. These effects may persist long after the activity ceases. Where the causes of habitat degradation have been removed, recovery is typically slow in the Arctic. To date, most of the impacts have been relatively localized, although the activities are taking place in many regions of the Arctic and are expected to increase.

The extent of the effects that these human disturbances can have in displacing species from important habitats is often closely related to their spatial needs and specific behaviors. Species that require large areas of undisturbed habitat, such as caribou and reindeer, are sensitive to habitat loss and fragmentation from development activities such as road construction in and around calving grounds. Populations that are heavily hunted are often more easily displaced by human activity. Intensive land- and seascape planning could minimize harmful effects from localized disturbances and ensure that increases in human populations and industrial activity are managed in ways that sustain a rich biodiversity.

Key finding 5

Pollution from both long-range transport and local sources threatens the health of Arctic species and ecosystems.

Pollution can affect the health of individual animals and, in severe cases, the productivity and functioning of an ecosystem. Relatively high levels of contaminants have been documented in several Arctic animals, including polar bears, beluga whales and some seabirds, but there is as yet little scientific evidence that these have had an effect at the population level. Climate change affects the pathways of contaminants in the environment, including the release of contaminants previously captured by ice and permafrost. Increasing industrial activity in the Arctic will also lead to more potential local sources of pollution as well.



Persistent organic pollutants and heavy metals such as mercury, lead and cadmium from sources far to the south reach the Arctic by air and water. Once there, they accumulate through the food web and affect the health of individual animals and humans. Some contaminants such as DDT and PCBs are decreasing following concerted international action such as the Stockholm Convention on Persistent Organic Pollutants, but other existing and newly developed contaminants are still widely used. In addition, ozone-depleting chemicals in the stratosphere can lead to increasing exposure to ultraviolet light, potentially harming living organisms.

Mining, oil and gas activities, Arctic settlements and legacy sites such as military bases are current and potential sources of pollution, litter, sewage and black carbon within the Arctic. The risk of major oil spills is a serious threat for marine ecosystems, particularly those associated with sea-ice, because response can be difficult and spilled oil is likely to persist for a long time. Oil spills are a lesser, but still very important, threat for terrestrial and freshwater systems. Legacy contaminants and radioactivity from past military and other human activity have impacted and will continue to impact biodiversity in the region. Arctic communities often have an impact in their local area and reducing those impacts will benefit the local environment and contribute to global efforts to reduce pollution.

Key finding 6

There are currently few invasive alien species in the Arctic, but more are expected with climate change and increased human activity.

Globally, invasive non-native species are considered the second most important threat to biodiversity after habitat loss. These are species introduced by human activity that may flourish and spread in their new environment, threatening native species and ecosystem functions. Although some known invasive non-native species are found in the Arctic, the problem has been less acute than in other regions of the world. To date, invasive alien plants have reached the low Arctic in Alaska. Over a dozen terrestrial invasive non-native plant species are known from the Canadian low and high Arctic. Even on the high Arctic Archipelago of Svalbard, nine non-native plant species have been found to reproduce. The Nootka lupin, introduced to control erosion in Iceland, has invaded sub-Arctic heathland vegetation in almost all of Iceland. It has also been found in southwest Greenland, though it is not yet known to have spread into tundra vegetation there. The status of aquatic invasive non-native species in the Arctic and sub-Arctic is even less well known, but benthic communities in northern Norway and the Kola Peninsula are already facing disturbance from the introduced Pacific red king crab.

In the future, many non-native terrestrial species already present in sub-Arctic ecosystems may become invasive and move north, aided by climate change, human settlement and industrial activity. Similarly, Arctic shipping and increasing development may allow invasive non-native marine organisms into the Arctic in unmanaged ballast water or on ship hulls and drilling rigs. Pathogens and disease vectors, too, may arrive with other invasive species. Combating invasive species is extremely difficult. Prevention is the best option if the Arctic is to be spared the severe impacts seen from this threat elsewhere in the world.

Key finding 7

Overharvest was historically the primary human impact on many Arctic species, but sound management has successfully addressed this problem in most, but not all, cases.

Small-scale, traditional harvest of mammals, birds and fish has provided the foundation for Arctic societies since humans first arrived in the region and continues to do so today for many people in the Arctic. During the last few hundred years, the arrival of newcomers to the Arctic, and the introduction of modern hunting technologies resulted in some mammals experiencing severe population declines such as bowhead whales and walrus in large parts of the Arctic. The Steller's sea cow and great auk went extinct in the mid-eighteenth and mid-nineteenth century. At the same time, previously sustainable traditional harvest practices were often ignored or disrupted. In some cases, local harvest has also resulted in population declines, as is the case with some seabirds in Greenland in the 20th century.

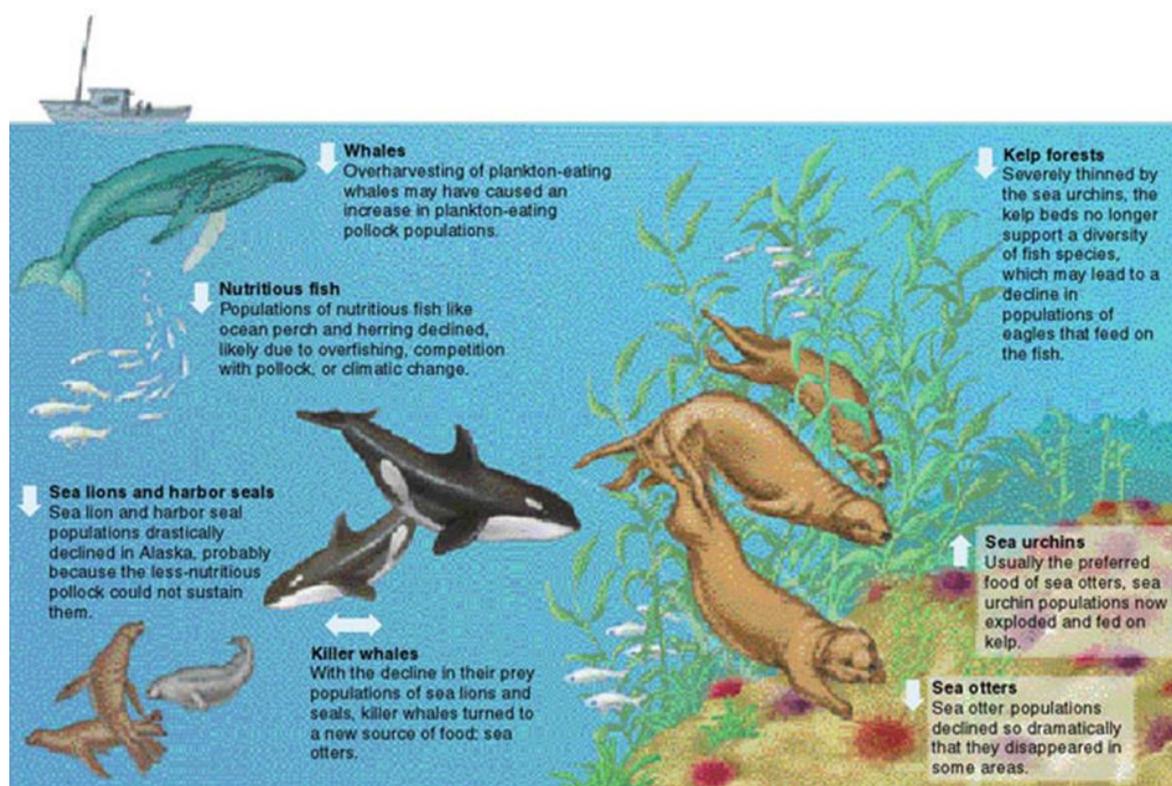


Figure 15: Disruption of the kelp forest ecosystem. Overharvesting by commercial whalers altered the balance of fish in the ocean ecosystem, inducing killer whales to feed on sea otters, a keystone species of the kelp forest ecosystem. Source:

http://www.mhhe.com/biosci/genbio/tlw3/enhancement_chapters/conservation.html

Continued human immigration, population growth technological advances and commercial markets for wildlife products resulted in increased harvest pressure on some wildlife populations. Populations of some depleted species, such as bowhead whales, muskox, some fish stocks and many migratory birds that declined sharply, have subsequently recovered or are showing signs of recovery.

Even though overharvest was the most significant recent historical pressure on many Arctic wildlife species, it is also the most manageable. In most areas, hunting and fishing activities that might threaten fish, mammal and bird populations are now regulated for species where



there is conservation concern. As a result, the historical pressure from overharvest has been largely removed as a major threat for most species. Nevertheless, some areas where overharvest occurred still have the legacy of diminished wildlife populations and hunting opportunities, for example for walrus and thick-billed murre. Improved management and conservation actions are based on greater understanding of the potential for harm to species and ecosystems, better regulation and enforcement, and in many cases on greater engagement with Arctic peoples. The incorporation of traditional values, practices and knowledge can help improve both management and enforcement.

At the same time, new harvest ventures bring new risks of overharvest. There is increasing concern that the global demand for seafood outside the Arctic combined with increasing accessibility of Arctic seas as a result of sea-ice loss creates the potential for increased risks to poorly known fish and crustacean stocks. This risk can be reduced by effective regulation and enforcement that respect principles and practices for sustainable management.

Key finding 8

Current knowledge of many Arctic species, ecosystems and their stressors are fragmentary, making detection and assessment of trends and their implications difficult for many aspects of Arctic biodiversity.

Effective, targeted conservation actions require reliable, up-to-date, easily accessible information. For example, successes in addressing overharvest stem in large part from accurate data on population size, reproduction rates and other parameters. International negotiations to reduce some contaminant emissions succeeded in large part because of strong scientific evidence for the worldwide transport of these substances and their uptake and impacts in biological systems, including humans.

From the present assessment, the overall status of Arctic biodiversity is clear in general terms. It is equally evident, however, that important knowledge about the majority of Arctic biodiversity remains to be documented. While the distributions of many mammals, birds and vascular plants are known, large gaps exist in knowledge about even the distribution of most other species—not to mention the many species likely remaining to be discovered. When it comes to population densities, sizes and trends, the knowledge gaps grow significantly larger. Even some commonly harvested species of mammals, birds and fish are not monitored adequately to ensure accurate and early determination of population trends. Most species that are not harvested or of direct value to humans are not monitored at all. Even for the few species where adequate, ongoing monitoring exists, the mechanisms that drive these population trends are in most cases poorly understood at best.

If decisions regarding human activity in the Arctic are to be supported with adequate, timely and up-to-date biodiversity information, there is a need for concerted efforts to collect, analyze and make readily available those data. Improved inventories, baselines, monitoring and research are needed, involving Arctic peoples and their knowledge. Key indicators of ecosystem structure and function should be identified to contribute to ecosystem-based approaches to monitoring and management, as in the case of CAFF's Arctic Marine Biodiversity Monitoring Plan. Filling gaps in our knowledge is particularly crucial for important aspects of invertebrates, microbes, parasites and pathogens. These organisms are vital for ecosystem functioning but are all too often overlooked in the documentation and assessment of biodiversity and ecosystem health.



Key finding 9

The challenges facing Arctic biodiversity are interconnected, requiring comprehensive solutions and international cooperation.

Climate change affects the physical environment, with consequent impacts on ecosystems and species as well as the mobilization of contaminants. Human activity in the Arctic may increase due to improved access and rising global demand for resources. Risks from pollution such as oil spills will increase as Arctic development proceeds. Pathways for invasive species to reach the Arctic will become more numerous as more ships travel north and more roads are built. More activity also means a greater potential for habitat degradation. And more activity may mean more people, who may increase fishing and hunting pressures.

Individually, each of these challenges puts stress on Arctic biodiversity, as outlined in previous key findings. Together, they create a web of stresses and impacts that cannot be successfully addressed in isolation from one another. Both in the Arctic and globally, biodiversity must be conserved in a holistic fashion, so that efforts to reduce one stressor do not unintentionally make the effects of another stressor worse.

The habitat needs of migratory species, long-range transport of persistent contaminants, global shipping lanes and the geography of ecosystems do not follow political boundaries. Thus, international cooperation is increasingly needed to fully address the conservation challenges that face Arctic biodiversity now and, in the decades to come. The recommendations that follow recognize the interconnected and transboundary nature of the challenges to biodiversity conservation in the Arctic and beyond.

1.8 Protection of areas

Protected areas have long been viewed as a key element for maintaining and conserving Arctic biodiversity and the functioning landscapes upon which species depend. Arctic protected areas have been established in strategically important and representative areas, helping to maintain crucial ecological features, e.g., caribou migration and calving areas, shorebird and waterfowl staging and nesting sites, seabird colonies, and critical components of marine mammal habitats. Also, there is currently much work ongoing by IUCN and the Arctic Council with regards to identifying Marine areas of heightened ecological and cultural significance in light of changing climate conditions and increasing multiple marine us.

The first protected areas dataset for the Arctic was created by CAFF in 1994 and was last updated in 2010. This dataset now comprises the Arctic component of the United Nations

Environment Programmes (UNEP) World Protected Areas Dataset (WDPA). Data on protected areas and sensitive marine areas will be made available here as it is developed.

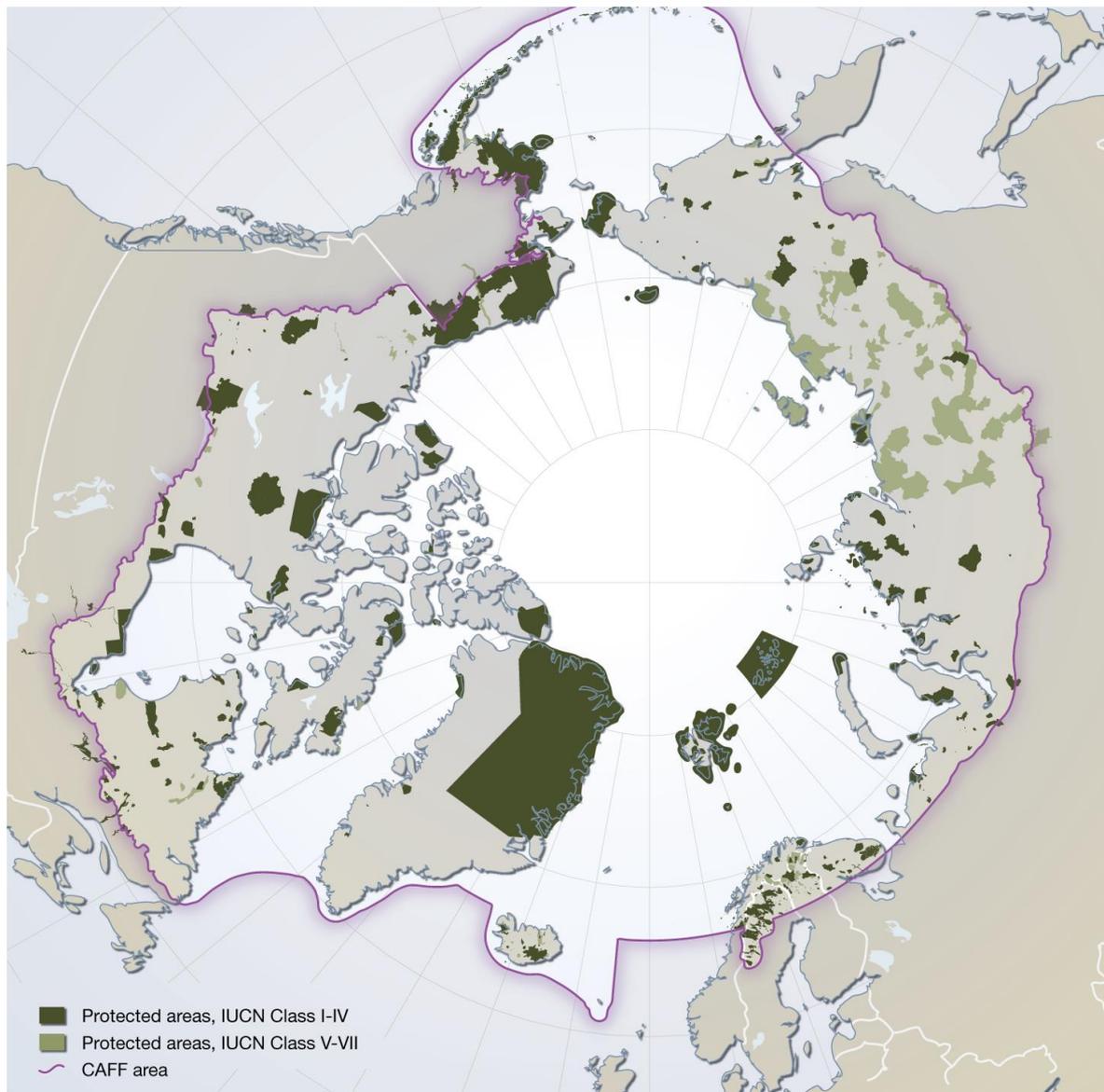


Figure 16; Protected Areas, IUCN (International Union for Conservation of Nature)

Another tool to protect Arctic Areas are Multilateral environmental agreements (MEAs) are - a main component of international environmental governance. Multilateral Environmental Agreements (MEAs) play a critical role in the overall framework of environmental laws and conventions. Complementing national legislation and bilateral or regional agreements, MEAs form the over-arching international legal basis for global efforts to address particular environmental issues. The number of MEAs created in response to global environmental challenges has risen steadily since the UN Conference on the Human Environment (UNCED) in 1972.

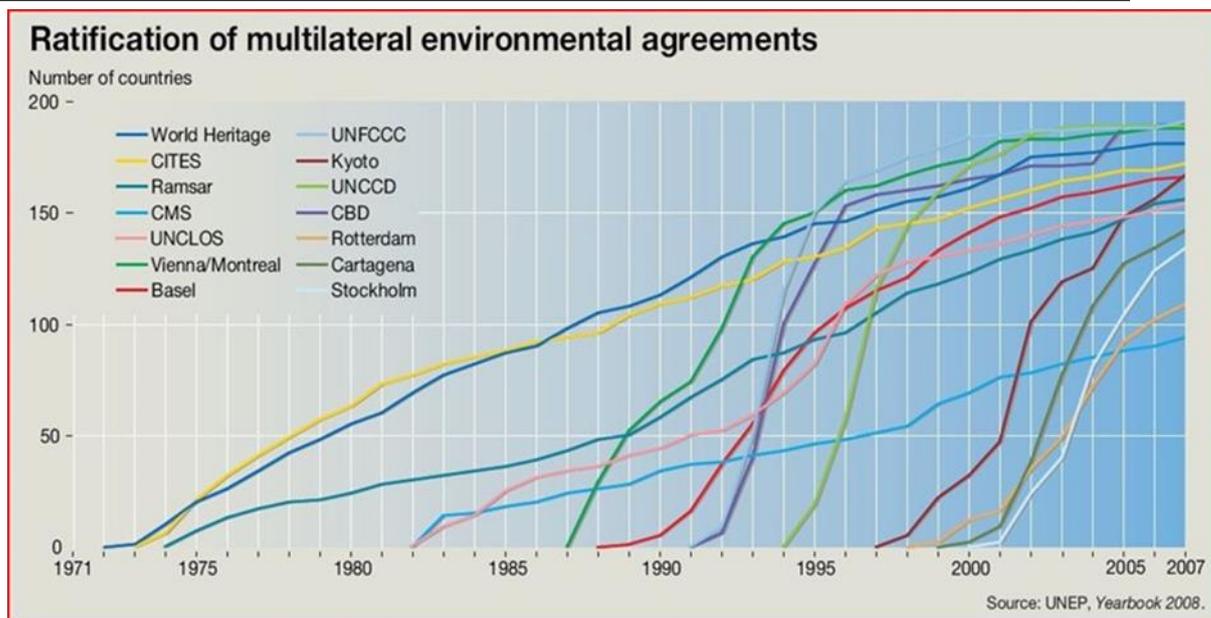


Figure 17: Multilateral environmental agreements. Source: UNEP

1.9 Arctic infrastructure

The Arctic region of Europe (including W Russia) benefits from good overland links with southern areas and ship routes that are open throughout the year. The arctic regions of Asian Russia and North America depend on isolated overland routes, summertime ship routes, and air transportation. Transportation of oil by pipeline from arctic Alaska was highly controversial in the early 1970s, with strong opposition from environmentalists and this is still a big issue⁵⁵. Because of the extreme conditions of the Arctic, the delicate balance of nature, and the slowness of natural repairs, the protection and preservation of the Arctic have been major goals of indigenous peoples and conservationists, who fear irreparable damage to the natural environment from local temperature increases, the widespread use of machinery, the interference with wildlife migration, and oil spills. Global warming and the increasing reduction in the permanent ice cover on the Arctic Ocean has increased interest in the region's ocean resources.

There are several regional initiatives within the Arctic. The Barents Euro-Arctic Pan-European Transport Area (BEATA) was established in 1997 as a framework for transport cooperation in the region. BEATA shall contribute to the development of an efficient transport system that facilitates increased mobility across the borders of the Barents Region. Norway, Finland, Sweden, Russia and the EU Commission are the members of BEATA.

An Expert Group within BEATA has developed a Joint Barents Transport Plan.⁵⁶ The Expert Group has defined 14 multimodal border-crossing transport corridors, which are important from a Barents perspective. In comparison, the EU has defined the TEN-T network with a broad European perspective. Transport in the Barents Region must have a denser network and enough efficient transport corridors to improve the competitiveness of trade and

⁵⁵ https://www.ran.org/the-understory/extreme_energy_injustice/

⁵⁶ Joint Barents Transport Plan

Proposals for development of transport corridors for further studies, Sept 2013.

industry, and to ensure that the Barents Region will be attractive for both people and business. Therefore, the Expert Group has defined several corridors in addition to those defined in the TEN-T2 network.

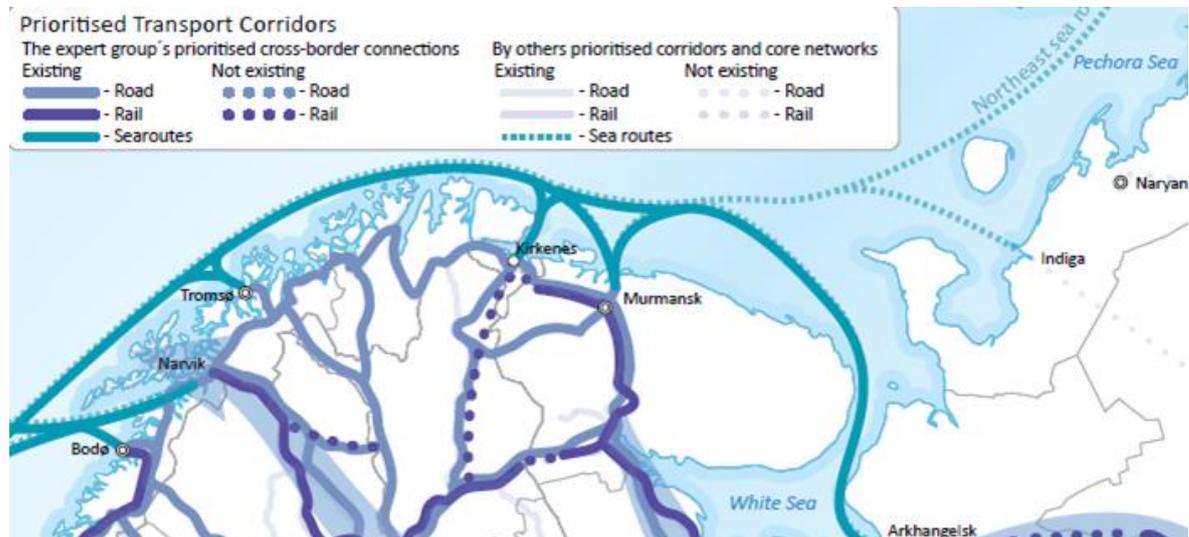


Figure 18: Prioritized transport network according to BEATA.

The motive for the Transport Plan as it is described in the plan:

“The Barents Region is Europe’s richest region as far as natural resources are concerned. The global demand for ores, metals and minerals is increasing rapidly and the Barents Region is one of the very few areas of Europe where there is a potential to find and develop new occurrences. The area holds rich deposits of iron ore, base metals (copper, zinc, lead, tin and aluminium), industrial minerals, precious metals and special metals including rare earth metals. The metal industry has good conditions for growth because of its proximity to the mines and the rising demand for steel.

Large quantities of fish and shellfish are produced in the Barents Region, both wild-caught and farmed. The production mainly takes place in Norway, which is one of the world’s largest producers of seafood. In the Barents Sea, Russia and Norway together administrate one of the world’s richest areas for cod and other marine species.

The forest industry is of great economic and sociocultural importance in the Barents Region, especially in Russia, Finland and Sweden. There is a growth potential as large areas of forest in the eastern parts of Barents have not yet been harvested due to lack of transportation. It is estimated that global climate change will increase forest productivity by some 20 – 50% in the future. Further refining of products in the industry may also lead to growth.

The Norwegian Sea, the Barents Sea, the Kara Sea and the Timan-Pechora province in Nenets and Komi are areas of rich oil and gas resources. Russia and Norway are both major exporters of oil and gas and are planning for an increase in petroleum industry in the Barents Region that is expected to have a positive economic impact on regional

development. Barents Sea south-east is an area with great opportunities for Norwegian-Russian cooperation and industrial development.

Tourism is a rapidly growing industry, and nature-based tourism is increasing the most. The entire Barents Region has large and untapped resources in this sector. The northern lights, the midnight sun, arctic climate and wilderness are selling points all over the region. To take advantage of the growing market, increased international access to the area is needed”.



Sources:

United States Geological Survey (USGS); AMAP 1997, 1998 and 2002; CAFF, 2001; UNEP/ World Conservation Monitoring Centre (WCMC); United States Energy Information Administration (EIA); International Energy Agency (IEA); Barents Euro-Arctic Council (BEAC); Comité professionnel du pétrole (CPDP), Paris; Institut français du pétrole (IFP), Paris; National Oceanic and Atmospheric Administration (NOAA); The World Bank; Alaska Department of Environmental conservation, Division of Spill Prevention and Response; United States Coast Guard (USCG); ESRI Data & Maps 2000.

Figure 19: Infrastructure of the Arctic; Source: GRID-Arendal

1.10 Resources in the Arctic

In the Arctic are found a variety of natural resources, but many known reserves are not exploited because of their inaccessibility. The arctic region of Russia, the most developed of all the arctic regions, is a vast storehouse of mineral wealth, including deposits of nickel, copper, coal, gold, uranium, tungsten, and diamonds. The North American Arctic yields uranium, copper, nickel, iron, natural gas, and oil.

This map shows the different gas, oil, and mining resources in the Arctic. The map also depicts the consistent retreat of ice cover over the Polar Sea during the last few decades. Receding ice cover will influence accessibility to mineral and energy resources both on land and in the Continental Shelf in the future. This map also shows both existing and potential sites of mineral and energy resources in the Arctic region.

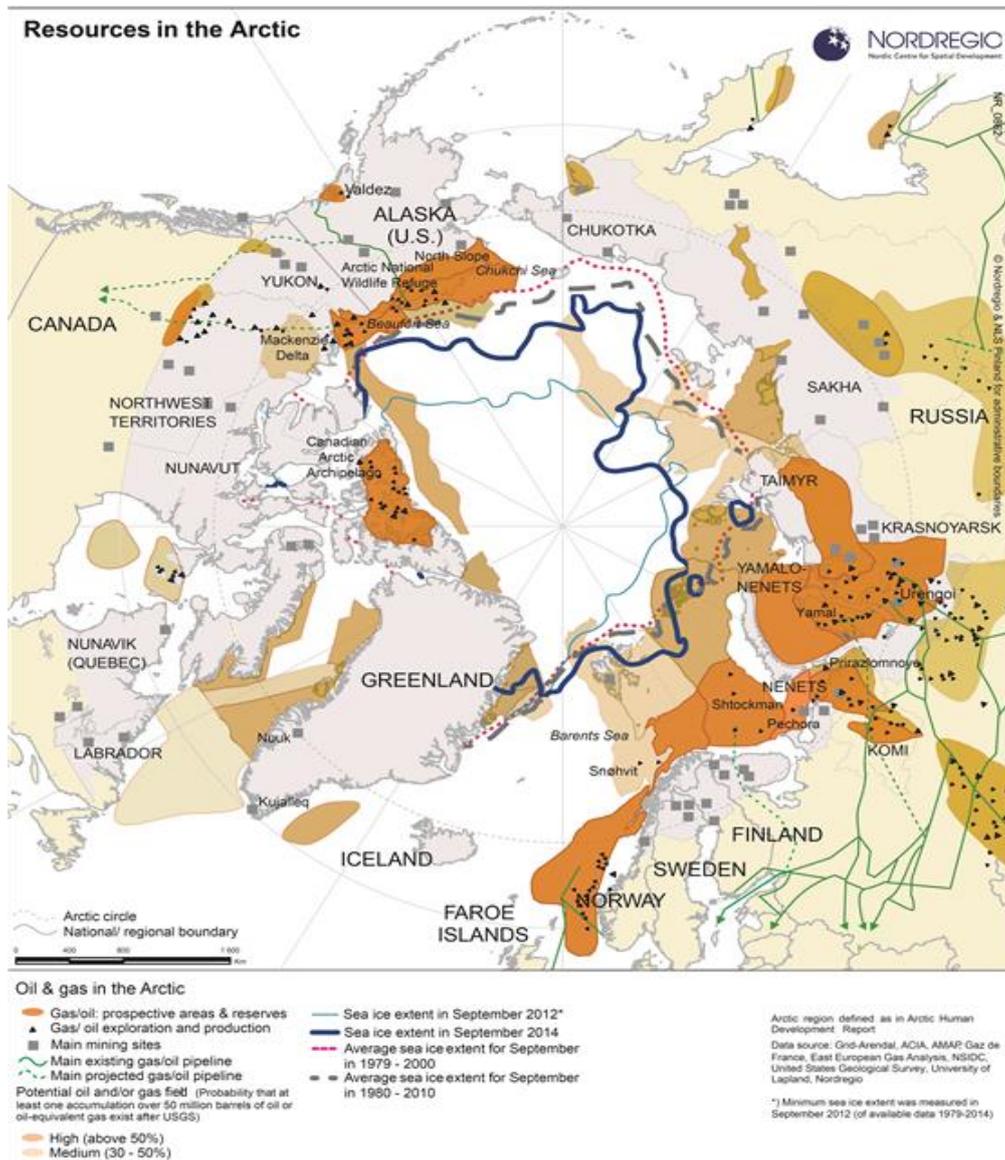


Figure 20: Resources in the Arctic. Source; Nordregio

1.10.1 Oil and gas in the Arctic

The United States Geological Survey estimates that the Arctic contains approximately 13 percent of the world's undiscovered conventional oil resources and about 30 percent of its undiscovered conventional natural gas resources. This makes the Arctic an incredibly rich area. It is about the same geographic size as the African continent - about 6% of Earth's surface area - yet it holds an estimated 22 percent of Earth's oil and natural gas resource.

Petroleum Province	Crude (billion barrels)	Oil Natural Gas (trillion cubic feet)	Natural Gas (billion barrels)	Total (oil equivalent in billions of barrels)
West Siberian Basin	3.66	651.50	20.33	132.57
Arctic Alaska	29.96	221.40	5.90	72.77
East Barents Basin	7.41	317.56	1.42	61.76
East Greenland Rift Basin	8.90	86.18	8.12	31.39
Yenisey-Khatanga Basin	5.58	99.96	2.68	24.92
Amerasia Basin	9.72	56.89	0.54	19.75
West Greenland-East Canada	7.27	51.82	1.15	17.06



Figure 21: Arctic area mean estimated undiscovered technically recoverable, conventional oil and natural gas resources for the seven largest Arctic basin provinces. These seven provinces account for about 360 billion barrels oil equivalent or over 87% of the total undiscovered Arctic area resource.

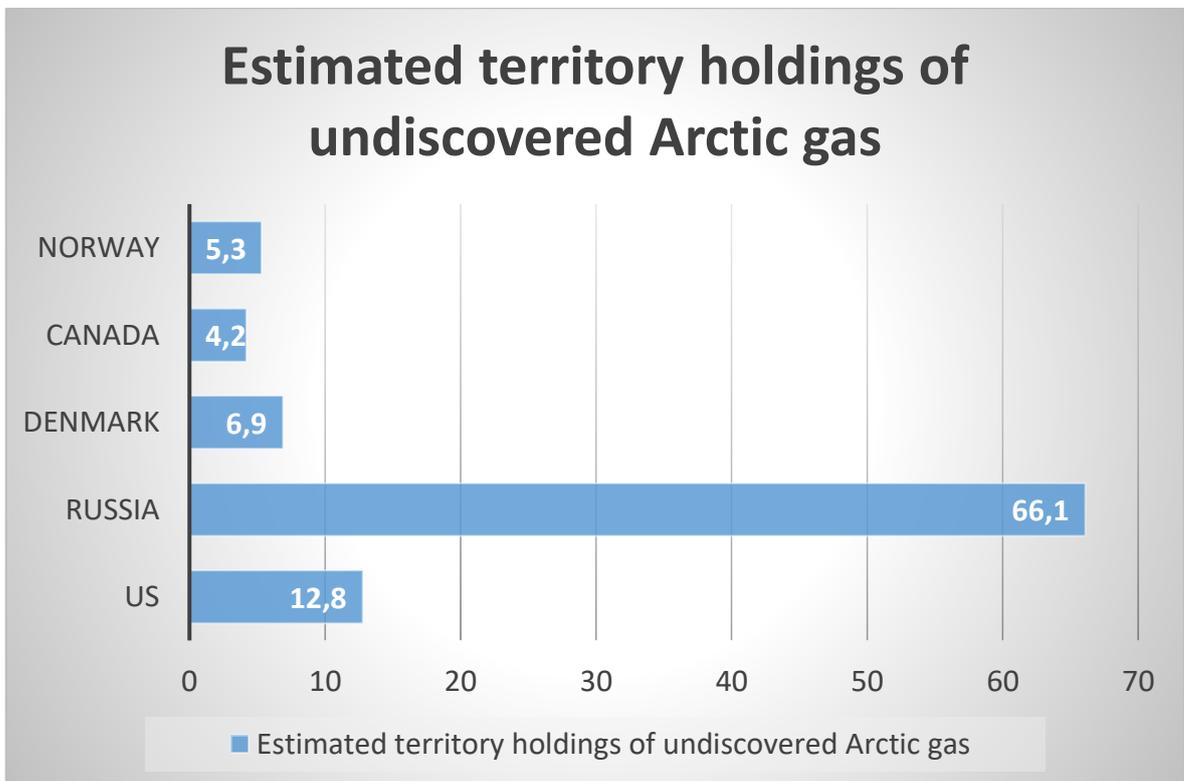
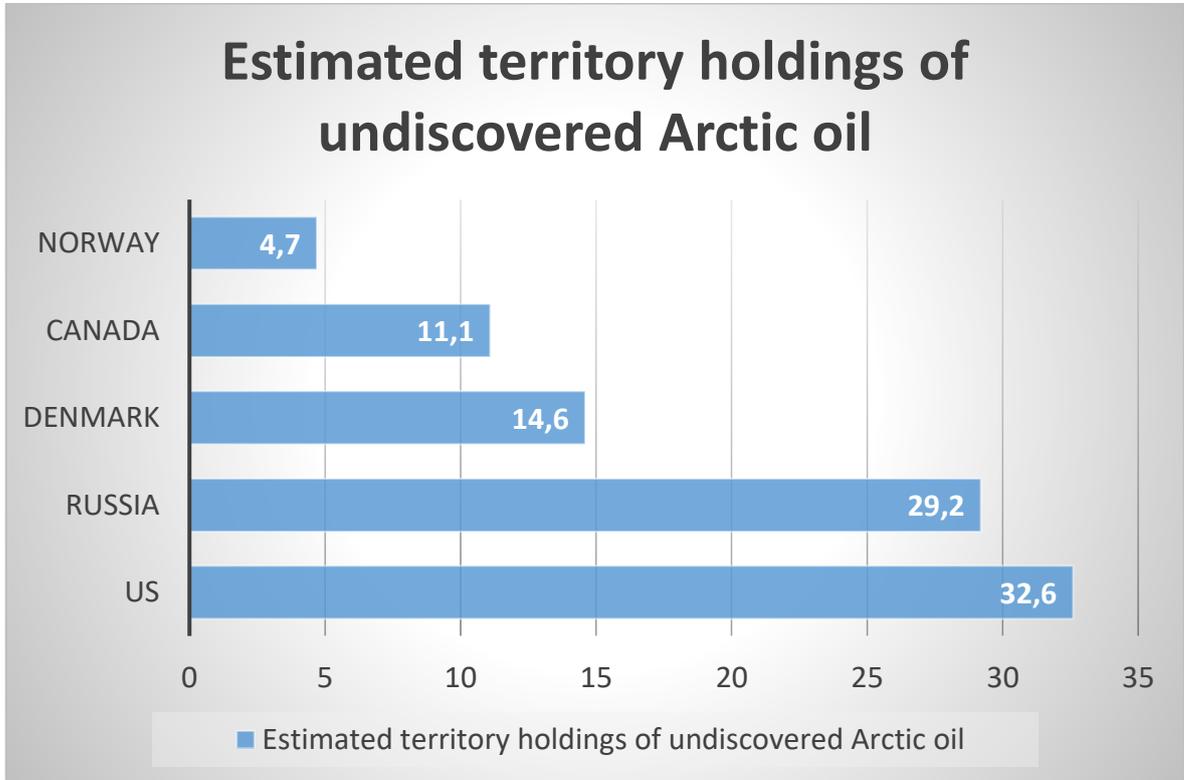


Figure 22: Estimated territory holding of undiscovered oil & gas. Source; George Mason University

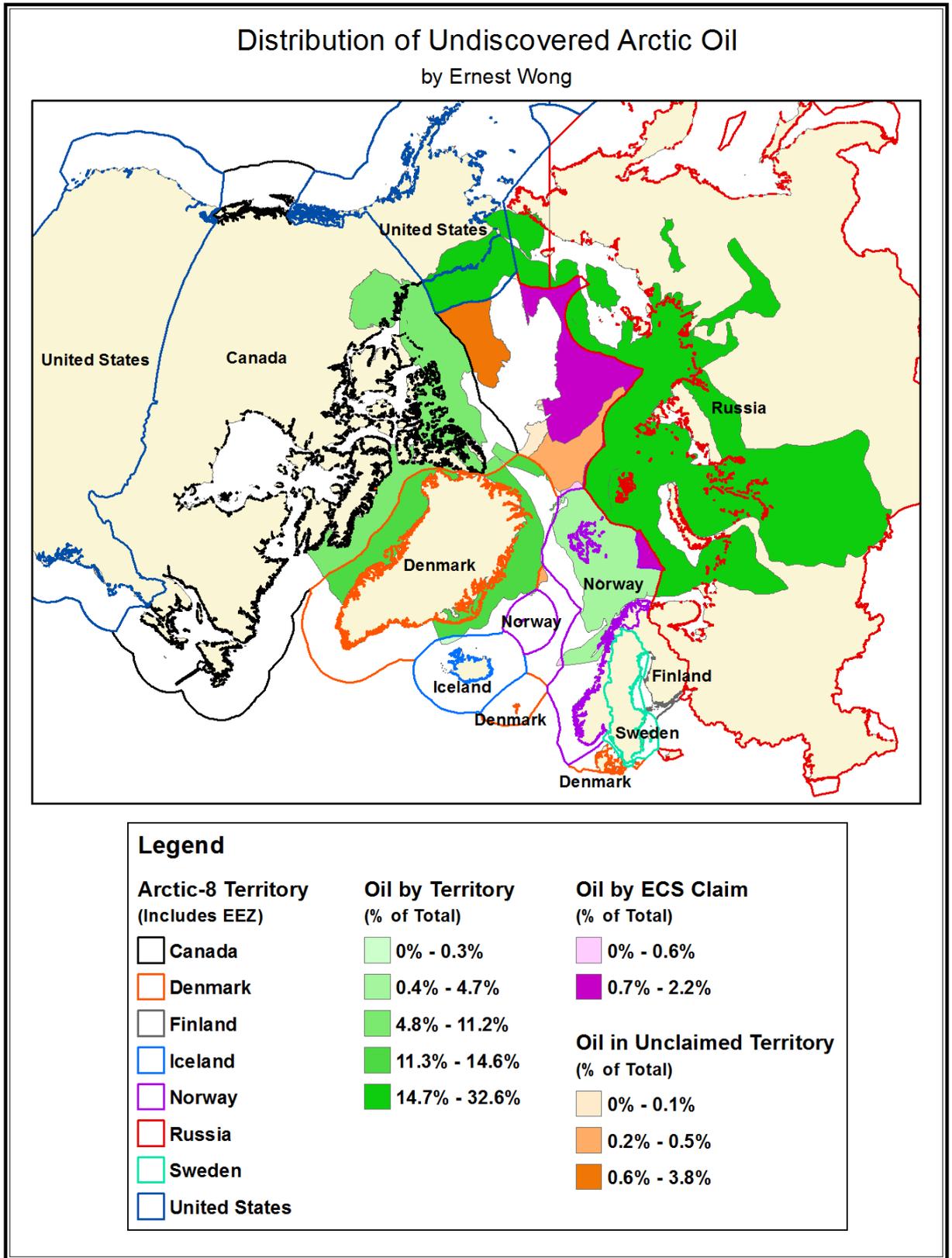


Figure 23: Distribution of undiscovered Arctic oil. Source; Geroge Mason University

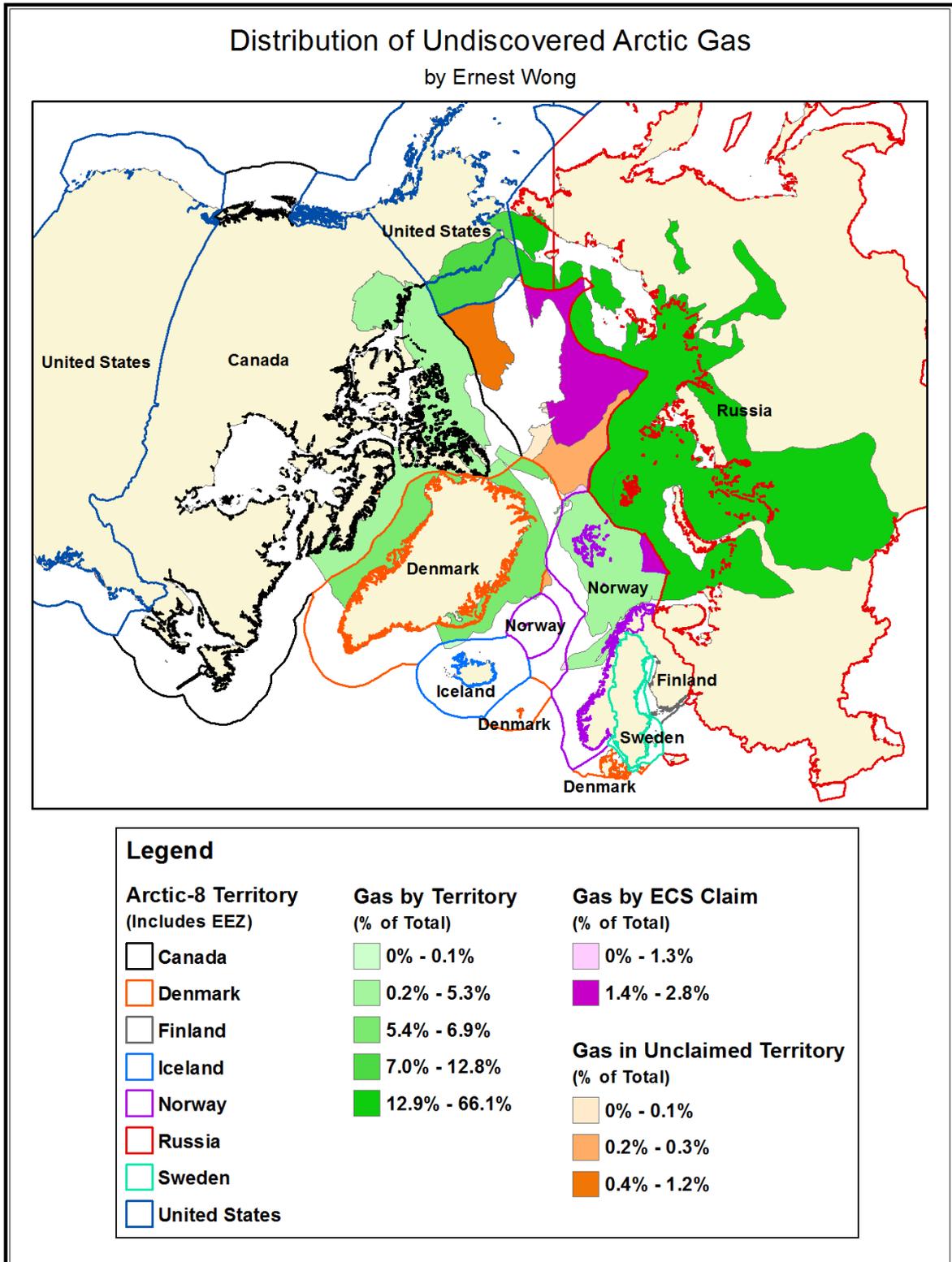


Figure 24: Distribution of undiscovered Arctic gas. Source; Geroge Mason University

The present production of oil and gas in the Arctic's is only a fraction of the total potential.

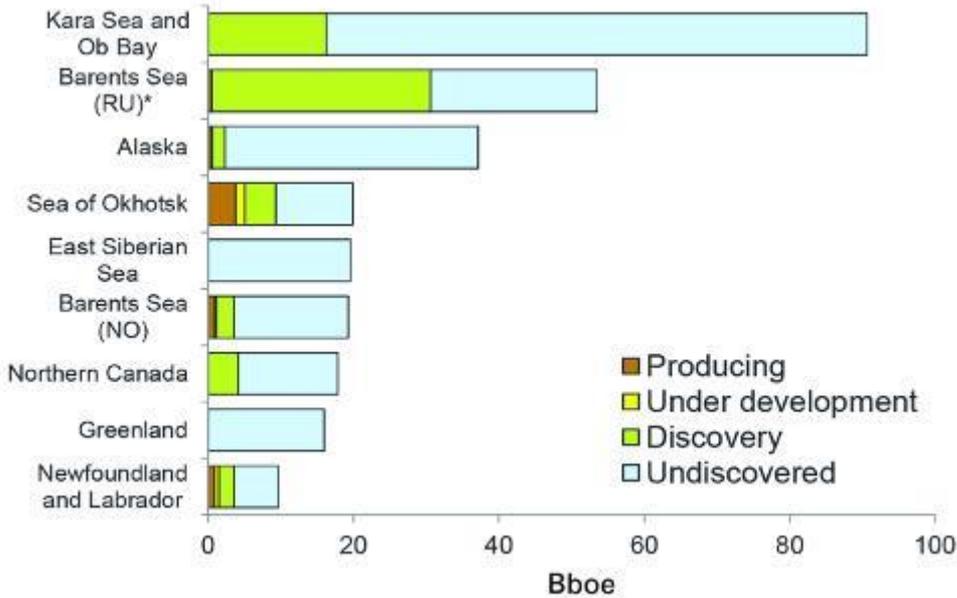


Figure 25: The remaining resources in Arctic offshore provinces by life cycle shown in Bboe (*includes Pechora Sea). Source: Rystad Energy



Figure 26: Arctic Oil and Gas Provinces and Basins, Showing Existing and Pending Production in the Arctic Ocean Worldwide (adapted from AMAP 2008a and Anderson 2010)

1.10.2 Mining and minerals

The Arctic holds abundant mineral resources, and mining has played an important role in industrial and economic development in many parts of the region. As in other mineral-rich parts of the world, exploration has intensified in the past decade, driven mainly by high international, but volatile, mineral prices and expectations that demand will continue to increase.

The Arctic holds large quantities of minerals, including phosphate, bauxite, iron ore, copper, and nickel. These are of pervasive use in industrialized economies. Russia produces an average of 11 M tons of phosphates, 8% of the global output. Phosphates are used as fertilizers in agriculture, with other uses including water treatment, flame-retardant materials, and corrosion protection. In 2010, Russia also extracted and processed bauxite into 3.85 M tons of aluminium, constituting 9.3% of the global production and making it the second-largest producer in the world after China. It also mined 100 M tons of iron ore, 6.25% of the global production.

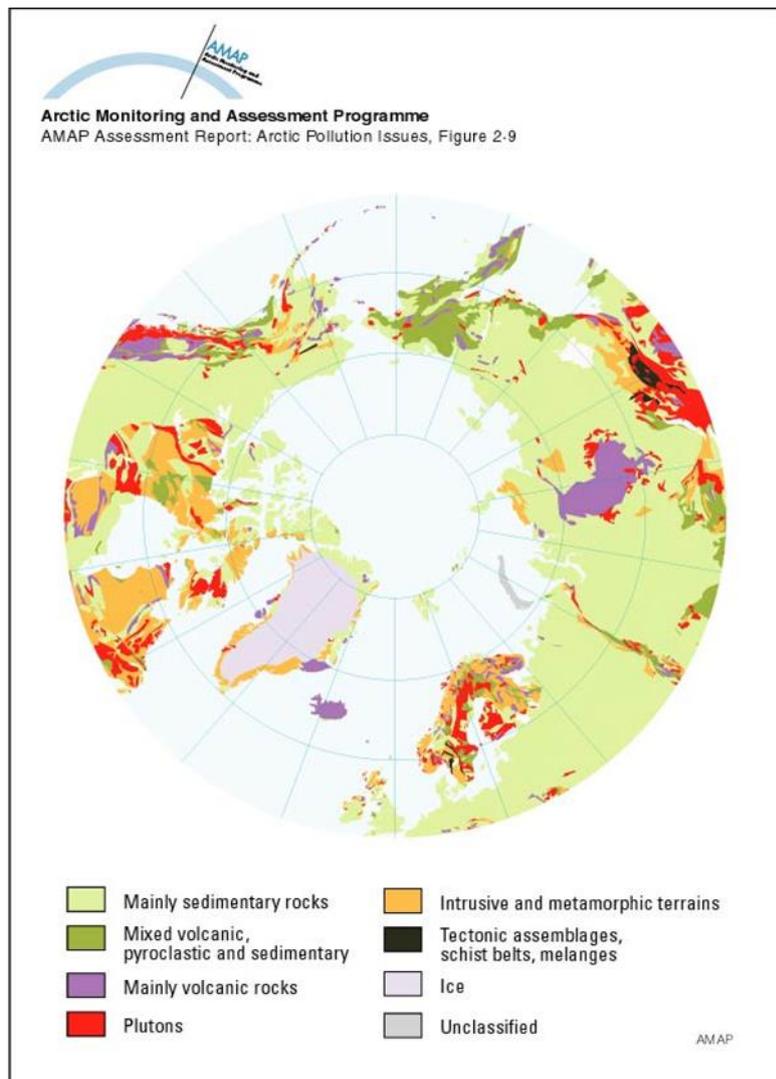


Figure 27: Bedrock geology of the Arctic. Source; Geological Survey of Canada

The largest Russian mining company Norilsk Nickel MMC leads the world's production of nickel and palladium as a by-product. Nickel is an important metal used in the production of steel and other industrial, commercial, and consumer goods. Worldwide production of nickel was of 1.5 M tons in 2011, out of which 297,000 tons was mined by Norilsk Nickel MMC, holding 5.8 M more in proven reserves (2010 figures). Palladium is mostly used in engines as a catalyst converting 90% of highly harmful exhaust gasses into less harmful ones. The company is also a major producer of copper (mining 389,000 tons out of 8.7 M tons worldwide), platinum, rhodium, and cobalt.

Large Arctic mines include Red Dog mine (zinc) in Alaska, Diavik Diamond Mine in Northwest Territories, Canada, LKAB in northern Sweden (iron), Aitik Mine in northern Sweden (copper) and Sveagruva in Svalbard. Large mines under development are Baffinland Iron Mine in Nunavut, and Isua Iron Mine in Greenland.

Gold mining in Alaska is widespread. Fort Knox Gold Mine is the largest producer of gold in the history of Alaska.



Figure 28: Mining sites registered as active by US Geological. Some mines may have closed, and some may be opened since the map was drawn.

The impacts of mining activity are felt differently on different scales. Mining can be an important source of revenue for national governments, and a local provider of jobs and income, but it can have highly visible effects on the local environment, and repercussions for other economic activities such as reindeer herding. At the same time, mining activity is

highly uncertain, vulnerable to global factors, particularly market dynamics, which can force mines to close.

1.11 Shipping

Arctic shipping routes are the maritime paths used by vessels to navigate through parts or the entirety of the Arctic. There are three main routes that connect the Atlantic and the Pacific oceans: The Northeast Passage, the Northwest Passage, and the Transpolar Sea Route. In addition, two other significant routes exist: The Northern Sea Route, and the Arctic Bridge.

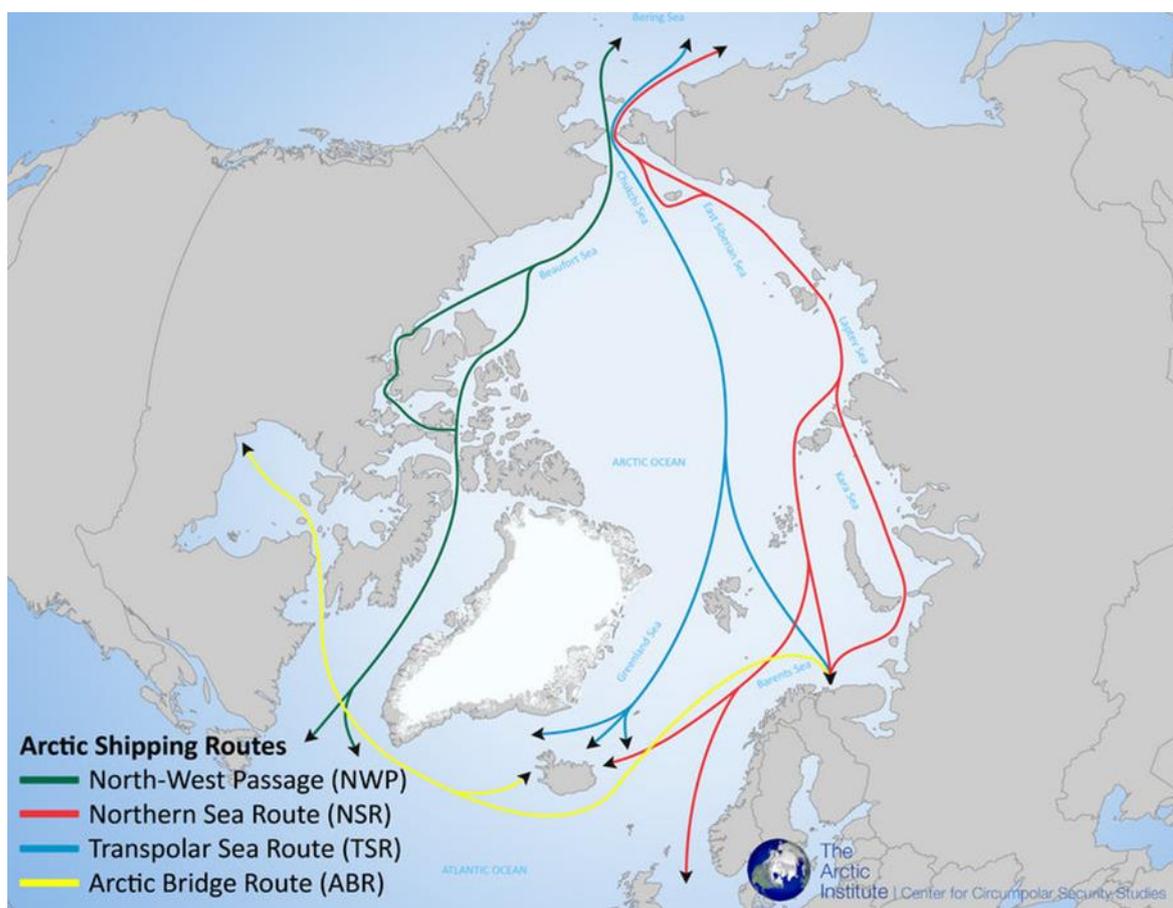


Figure 29: Arctic Shipping Routes. Source; The Arctic Institute

To connect the Atlantic with the Pacific, the Northwest Passage goes along the Northern Canadian and Alaskan coasts, the Northeast Passage follows the Russian and Norwegian coasts, and the Transpolar Sea Route crosses the Arctic through the North Pole.

The Arctic Bridge is an internal Arctic route linking Russia to Canada, and the Northern Sea Route trails the Russian coast from the Bering Strait to the East, to the Kara Sea to the West.

The main difference between the NSR and the NEP is that the latter comprises the Barents Sea and provides access to the port of Murmansk, the largest Russian Arctic port, and to the Atlantic. Given that the NSR constitutes the majority of the NEP, some sources use the terms NSR and NEP interchangeably.



Cargo shipping volume through the Northern Sea Route is rising as Arctic ice melts. Recently as the early 1990s the Arctic was virtually impossible for shipping because of sea ice, but that there is still enough variability in ice conditions to make it difficult for shippers to forecast how long the routes will stay open each year. The uncertainty of the ice conditions makes it questionable for global cargo where you need to book months ahead.

The opening up of the Arctic for commercial cargo offers a faster route for some shipments between Europe and Asia and holds the promise of increased trade for once icebound ports in the High North of Arctic countries such as Russia, Norway and Canada.

However, much of the new traffic through the Northern Sea Route is one-way shipments of fossil fuels from Northern Europe to Asia or is between Russian ports.

According to a report by the Arctic Institute in Washington⁵⁷. Development in the Arctic is happening, and shipping numbers are indeed increasing. But both scientific and public debates and reporting need to be directed into a more nuanced and differentiated discussion about the region's general future and the potential of shipping along northern routes.

The Arctic Institute report analysed data from the Northern Sea Route Information Office, which is run by the Norway's non-profit Centre for High North Logistics.

The route, also known as the Northeast Passage, hugs Russia's northern border and typically is easier to navigate and has less ice build-up than the Northwest Passage, another Arctic route that gets fewer ships and lies closer to Canada. Both routes are only traversable during a short season from late summer to early fall before freezing up again, though that season has lengthened because of climate change. The Northern Sea Route, above Siberia, and Northwest Passage, above the US and Canada, has been estimated to be open for a total of 125 days a year by 2050. Currently, the waterways are only clear of ice for around 50 days a year.

A realistic perspective suggests that currently the NSR is intended as a Russian sea route. International shipping and potential revenues derived from the NSR are generally welcome but most likely Arctic shipping will not change major global trading routes. Consequently, while it is of regional relevance and potential importance as a niche route for a number of goods, the NSR's geopolitical and geo-economic relevance, especially in the sense of global trade patterns, is rather limited.

Of the international cargo-bearing voyages using the Northern Sea Route, the Arctic Institute's report said 67% involved shipments of oil products. More goods were shipped from Europe to Asia than the other way around, with more ballast than cargo heading from Asia to Europe, it said.

That Arctic route shaves close to two weeks off a typical voyage from China to Europe—a trip that usually requires sailing through the Suez Canal. Companies whose ships plied the Northern Sea Route between Asia and Europe 2013, include Nordic Bulk Carriers, a unit of

⁵⁷ The Myth of Arctic Shipping - Why the Northern Sea Route is Still of Limited Geo-Economic Importance, sept. 2013

Newport, R.I.'s Pangea Logistics Solutions Ltd., and Athens-based Tsakos Columbia Ship Management SA, according to the NSR Information Office.

2013, a coal-laden cargo ship became the first bulk carrier to traverse the Northwest Passage through Canadian Arctic waters. That journey cut four days of travel time from a trip between Vancouver, British Columbia, and Pori, Finland. Canada has been eager to assert its sovereignty over the waterway and requires registration for all ships weighing more than 500 tons that use the route.

There are still many challenges remaining before the Arctic shipping routes can become a default solution for transports in the region of the Arctic. What is obvious is on the one hand a relatively dense network of ports and sea routes, and on the other, the vast areas not connected by roads, or only road connections open for transport during winter time, just as railroads are only available in very few parts of the Arctic. Land-based transport lines mainly run North-South, providing limited connections across the regions. Connections, therefore, are rather unequally distributed and thus travel and shipment of any sort remains a challenge.

1.12 Fishing and aquaculture

Global fish production has grown steadily in the last five decades, with food fish supply increasing at an average annual rate of 3.2 percent, outpacing world population growth at 1.6 percent. World per capita apparent fish consumption increased from an average of 9.9 kg in the 1960s to 19.2 kg in 2012 (preliminary estimate). This impressive development has been driven by a combination of population growth, rising incomes and urbanization, and facilitated by the strong expansion of fish production and more efficient distribution channels.⁵⁸

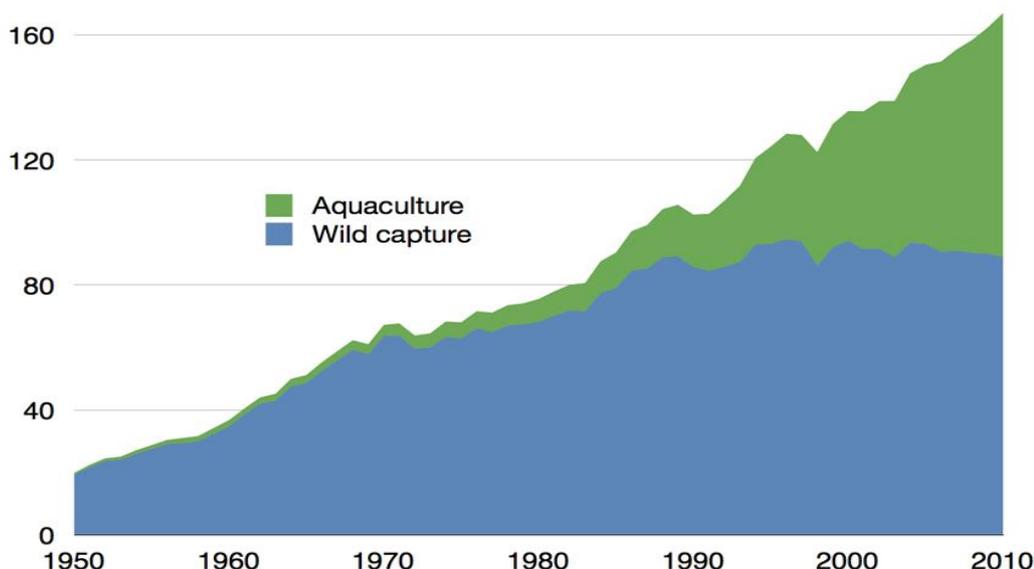


Figure 30: Global fish production; Source: FAO

⁵⁸ FAO WORLD REVIEW OF FISHERIES AND AQUACULTURE, 2014

The relatively biggest growth is to be found in the Aquaculture industry. In a country like Norway the increase of aquaculture industry in the Arctic part of Norway has been comprehensive.

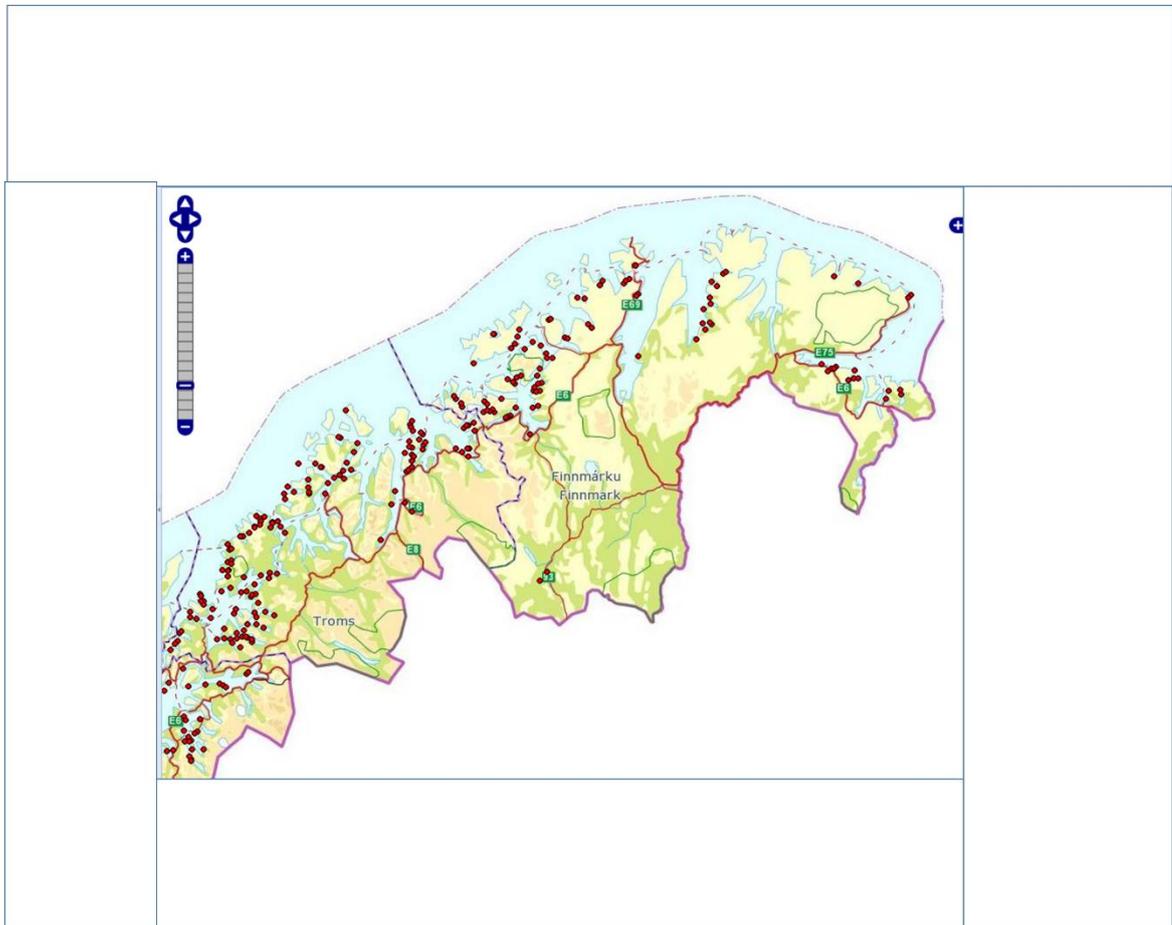


Figure 31: Aquaculture industry in the Norwegian Arctic

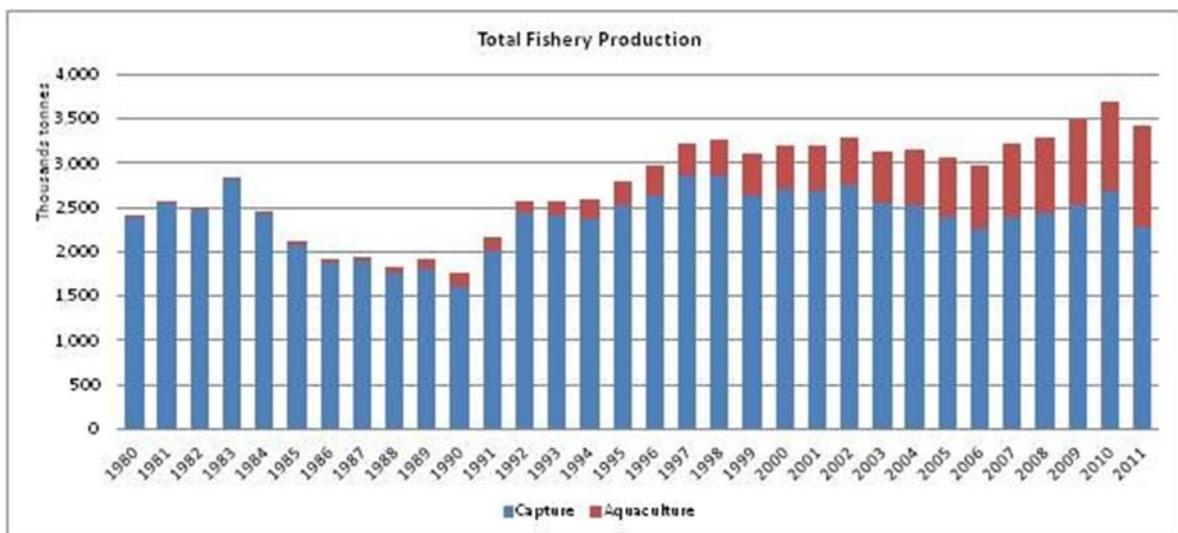


Figure 32: Total fishery production in Norway

Many of the major fish producer countries are Arctic countries. There is of course an interest in those countries to further increase the fishing activities within the Arctic part of those countries - the Exclusive Economic Zones (EEZs) - of the Arctic rim nations.

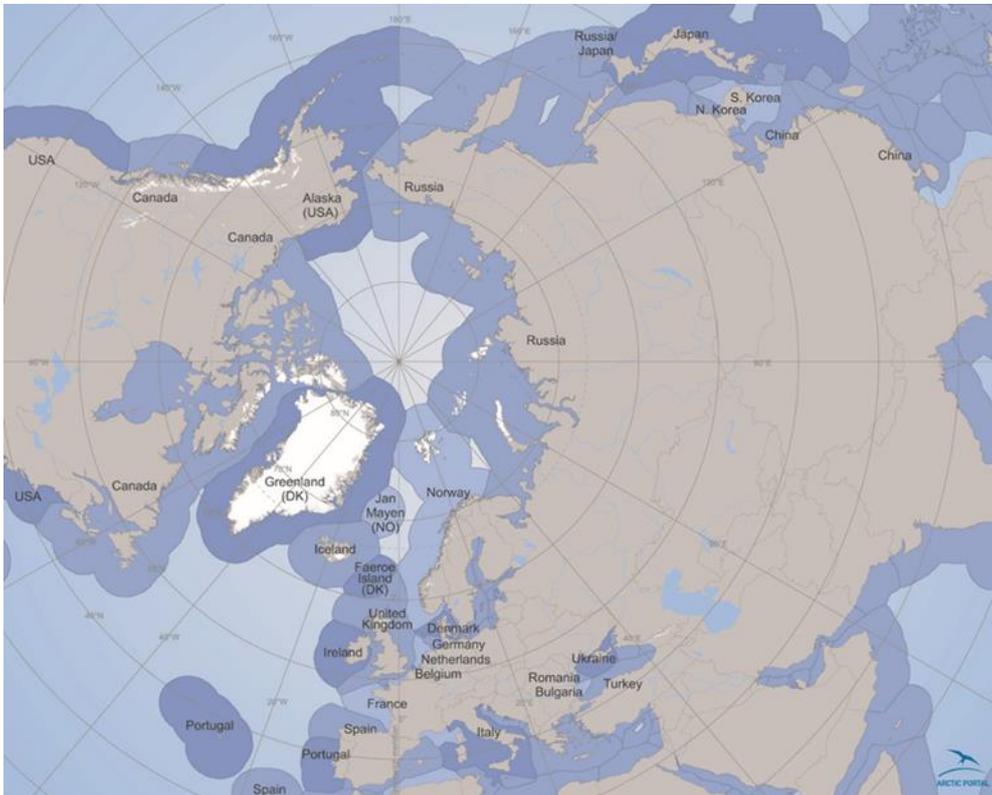


Figure 33: The Exclusive Economic Zones (EEZs) of the Arctic rim nations

The Arctic Ocean is one of the planet's most pristine marine regions. New maps show its permanent ice is diminishing due to climate change, opening the international waters of the Central Arctic Ocean to commercial fishing. These waters encompass an area as big as the Mediterranean Sea and has not until 2015 been governed by any international fisheries agreements.

The Arctic Ocean is encircled by five coastal states, but there is a significant portion of the central Arctic Ocean that lies outside the Exclusive Economic Zones (EEZs) of the Arctic rim nations. These international waters are not at present governed by any specific international fisheries agreements or regulations besides the Oslo declaration from July 2015. Until recently, the region has been covered with sea ice throughout the year, creating a physical barrier to fisheries.

Northern policy solutions provide models for action in the Central Arctic Ocean. For example, the U.S. recently closed its Arctic waters to commercial fishing until scientific research can assess the rapidly evolving environment. Canada currently is drafting its own fisheries plan for the adjoining Beaufort Sea to respond to the possibility of industrial fishing.

Marine capture fisheries: major producer countries

2012 Ranking	Country	Continent	2003	2011	2012	Variation	
			(Tonnes)			(Percentage)	
1	China	Asia	12 212 188	13 536 409	13 869 604	13.6	2.4
2	Indonesia	Asia	4 275 115	5 332 862	5 420 247	27.0	1.7
3	United States of America	Americas	4 912 627	5 131 087	5 107 559	4.0	-0.5
4	Peru	Americas	6 053 120	8 211 716	4 807 923	-20.6	-41.5
5	Russian Federation	Asia/ Europe	3 090 798	4 005 737	4 068 850	31.6	1.6
6	Japan	Asia	4 626 904	3 741 222	3 611 384	-21.9	-3.5
7	India	Asia	2 954 796	3 250 099	3 402 405	15.1	4.7
8	Chile	Americas	3 612 048	3 063 467	2 572 881	-28.8	-16.0
9	Viet Nam	Asia	1 647 133	2 308 200	2 418 700	46.8	4.8
10	Myanmar	Asia	1 053 720	2 169 820	2 332 790	121.4	7.5
11	Norway	Europe	2 548 353	2 281 856	2 149 802	-15.6	-5.8
12	Philippines	Asia	2 033 325	2 171 327	2 127 046	4.6	-2.0
13	Republic of Korea	Asia	1 649 061	1 737 870	1 660 165	0.7	-4.5
14	Thailand	Asia	2 651 223	1 610 418	1 612 073	-39.2	0.1
15	Malaysia	Asia	1 283 256	1 373 105	1 472 239	14.7	7.2
16	Mexico	Americas	1 257 699	1 452 970	1 467 790	16.7	1.0
17	Iceland	Europe	1 986 314	1 138 274	1 449 452	-27.0	27.3
18	Morocco	Africa	916 988	949 881	1 158 474	26.3	22.0
Total 18 major countries			58 764 668	63 466 320	60 709 384	3.3	-4.3
World total			79 674 875	82 609 926	79 705 910	0.0	-3.5
Share 18 major countries (percentage)			73.8	76.8	76.2		

Figure 34: Marine capture fisheries, major producer countries. Source: FAO

Russia and the U.S. faced a comparable problem in the 1980s when fishing by other countries in the nearby international waters of the Bering Sea “Donut Hole” severely depleted pollock stocks. Russia and the U.S. persuaded other countries to sign the Central Bering Sea Pollock Agreement that closed this area to fishing until scientific data and management measures could ensure a sustainable fishery. Unfortunately, the damage was done, and the area remains closed to fishing today.

The five countries surrounding the Arctic Ocean agreed in Oslo, July 16, 2015, that they will not start commercial fishing in the Central Arctic Ocean—the international waters beyond these nations’ 200-mile exclusive economic zones (EEZ)—unless and until science-based fishery management measures are in place. However, the Arctic Fishery Declaration is not a binding international agreement joined by other major fishing entities such as the European Union, China, Iceland, Japan and South Korea.

In the Declaration the following interim measures were decided:

- *We will authorize our vessels to conduct commercial fishing in this high sea area only pursuant to one or more regional or sub-regional fisheries management organizations or arrangements that are or may be established to manage such fishing in accordance with recognized international standards.*

- *We will establish a joint program of scientific research with the aim of improving understanding of the ecosystems of this area and promote cooperation with relevant scientific bodies, including but not limited to the International Council for the Exploration of the Sea (ICES) and the North Pacific Marine Science Organization (PICES).*
- *We will promote compliance with these interim measures and with relevant international law, including by coordinating our monitoring, control and surveillance activities in this area.*
- *We will ensure that any non-commercial fishing in this area does not undermine the purpose of the interim measures, is based on scientific advice and is monitored, and that data obtained through any such fishing is shared.*

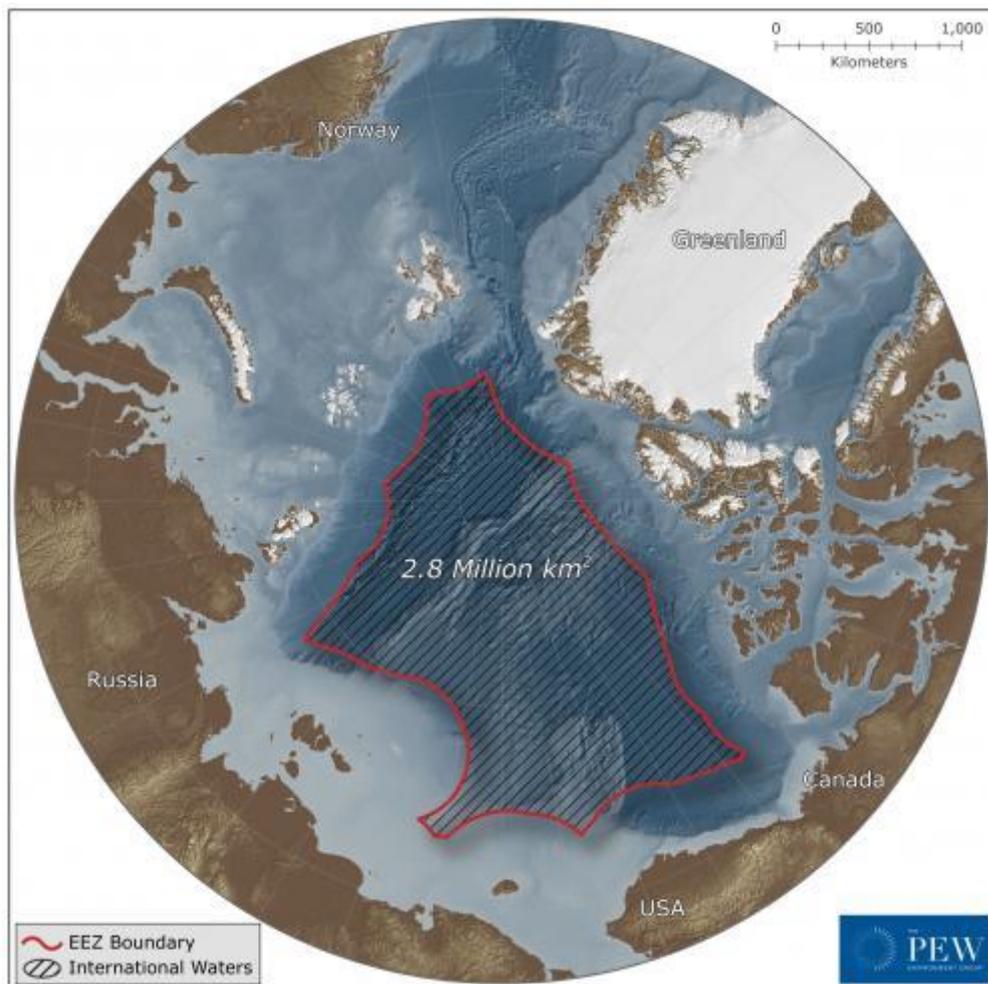


Figure 35: Central Arctic Ocean international waters, Source: PEW Trust

1.13 Tourism in the Arctic

The Arctic has attracted tourists since the early 1800's. The earliest Arctic tourists were individual anglers, hunters, mountaineers, and adventurers attracted to abundant fisheries, exotic wildlife species, and remote regions

Mass tourism in the Arctic has thrived since the mid-1800's when steamships and railroads aggressively expanded their transportation networks providing access to numerous destinations throughout the Arctic.

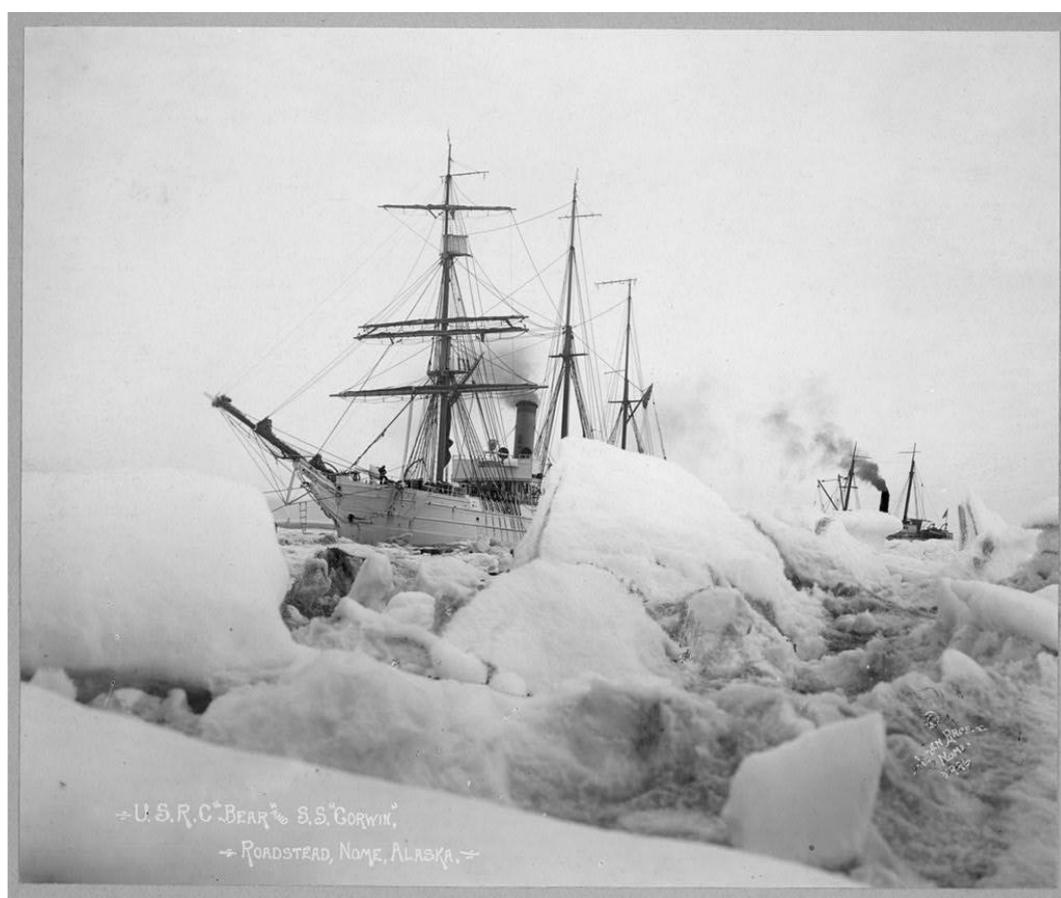


Figure 36: USRC Bear

During the past two centuries, advances in transport technologies have contributed to the steady growth of Arctic tourism. At the present time, advanced ship technologies together with improved marine charts and navigational aids have allowed cruise ship travel to increase exponentially. Collectively, these improved transport technologies not only added numbers of tourists, but also expanded the seasonal and geographical reach of Arctic tourism.

Arctic tourism is now a mature industry providing diverse experiences. The Arctic tourism industry is enticing an increasing clientele with expanding numbers of attractions, recreational activities, international destinations, and visitor accommodations. A regularly



scheduled excursion travel is provided to the Arctic, year-round tourism has become a reality.

Arctic tourism is not a single, monolithic industry, but rather a collection of diverse specialty markets that appeal to an equally diverse clientele. Each of these distinct markets is growing and expanding for an obvious reason – they appeal to tourists who are willing to pay for the unique experiences they offer.

The Norwegian based GRID-Arendal centre in collaboration with the United Nations Environment Programme (UNEP), has divided the Arctic tourist market in to five segments⁵⁹. The five highly specialized market segments currently dominating the polar tourism economy are best defined in terms of their primary attractions and the ways in which those attractions are experienced. The five market segments are:

- The mass market comprised of tourists primarily attracted to sightseeing within the pleasurable surroundings of comfortable transport and accommodations.
- The sport fishing and hunting market, with participants who pursue unique fish and game species within a wilderness setting.
- The ecotourism market, consisting of tourists who seek to observe wildlife species in their natural habitats, and experience the beauty and solitude of natural areas. These tourists are also concerned with conserving the environment and improving the well-being of local people.
- The adventure tourism market, providing a sense of personal achievement and exhilaration from meeting challenges and potential perils of outdoor sport activities.
- The culture and heritage tourism market, a very distinct market comprised of tourists who either want to experience personal interaction with the lives and traditions of indigenous people, learn more about a historical topic that interests them, or personally experience historic places and artefacts.

The common picture of the increase of mass tourism through cruise ships is not yet really matching the statistics. So far, the biggest increase has been seen in connection to Svalbard. However, the potential for a future rapid growth is closely connected to the decrease of the polar ice cap.

There are serious concerns that tourism is promoting environmental degradation in the Arctic by putting extra pressures on land, wildlife, water and other basic necessities, and on transportation facilities. According to the Arctic Council Working Group on the Conservation of Arctic Flora and Fauna (CAFF), the main environmental impacts of tourism in the Arctic are the following:⁶⁰

⁵⁹ <http://www.grida.no/publications/tourism-polar/page/1421.aspx>

⁶⁰ (CAFF 1997, 1998, 2001):



- The transport of tourists to the Arctic, in itself, increases the volume of ship and airplane traffic. In addition to the impacts on climate by long distance air and water traffic, increased ship traffic in these waters could lead to increased risks of groundings and other accidents, the results of which can include oil spills and other environmental consequences.
- Many visitors want to see areas of great beauty or richness, such as bird colonies, marine mammal haul-outs, and caribou aggregations. Because there are relatively few places where such sights are accessible and reliable, tourist traffic is often concentrated. Arctic vegetation is typically unable to withstand repeated trampling, and paths of bare ground have appeared in some heavily visited spots.
- Helicopters, used sometimes for recreational purposes, are noisy and produce a variety of sounds that are disturbing to seabirds. Helicopters cause panic flights and can lead to egg loss particularly in birds.
- In the forest-tundra areas of the Arctic, tourism, including sport hunting and fishing, attracts moderate though increasing numbers of visitors. This places additional pressure on the region's resources, sometimes leading to conflicts between local and visiting hunters. The forest-tundra in general has a low tolerance for trampling. Even the temporary presence of humans often leaves a lasting impact.
- Visits to Arctic seabird colonies by tourists are rapidly growing. Currently cruise ships visit or sail by colonies in the low and high Arctic of Canada, west Greenland, Iceland, Norwegian coast and Svalbard, eastern Russia, and the US (Alaska). Colonies chosen for visitation tend to be large and spectacular and usually are home to species such as murre, puffins, kittiwakes, and fulmars. During a colony visit, passengers typically board smaller boats from the larger ships, and cruise by colonies observing the seabirds and taking pictures. Occasionally passengers make landings at suitable colonies and view the seabirds from above or below the cliffs.
- Recreational activities, such as boating and fishing, cause local disturbance at bird colonies in several Arctic countries. In the Russian far-east, coastal and lowland species such as ducks, gulls, terns and Spectacled Guillemots are frequently disturbed by visitors.
- Garbage, waste, and pollution are significant problems for many tourism operations, especially as decomposition is slow and waste remains visible atop the permafrost in many Arctic areas.

Growing public and private resource commitments to promote and further develop tourism demonstrate strong intentions to strengthen tourism's economic role in the Arctic. Given these circumstances, economic impacts, both positive and negative, include the following⁶¹:

- Many Arctic people seeking economic security perceive tourism as a positive means for improving economic stability. From their perspective, reliance on predictably arriving tourists offers a more stable and complementing economic outlook than exhausting finite natural resources to meet the boom and bust needs of world markets.
- Arctic communities generally appreciate the economic benefits resulting specifically from the angling, hunting, and nature tourism market because most tourist expenditures remain in the community. Tourists employ local guides, pilots, charter

⁶¹ <http://www.grida.no/publications/tourism-polar/page/1421.aspx>

boat captains and crews, outfitters, and suppliers. They use local transport, stay in local accommodations, and eat in local establishments.

- The cost of building, operating, and maintaining tourism infrastructure is a huge economic burden for Arctic communities and governments. Support facilities and services of all types are built and maintained to serve relatively large numbers of persons that exceed the resident population. Transport facilities, law enforcement, medical services, other emergency services, water and wastewater utilities, and waste collection and disposal incur capital and operating costs, require advanced work force skills, spare parts, and need specialized supplies in order to sustain these functions. Tourism normally occurs for a few months of the year, but the infrastructure must be maintained under adverse conditions for the entire year.
- The economic and human costs of providing emergency services deserve special attention. Highly trained personnel, many of whom are volunteers, risk their lives in search and rescue operations. Expensive transport and medical equipment and supplies are required to evacuate victims and treat their injuries. Law enforcement resources must respond to large populations visiting their communities and need specialized equipment to patrol backcountry regions. Fire suppression service faces similar challenges.
- The cost of responding to environmental hazards is included in the budgets of all Arctic nations but may not be sufficient. Oil spill containment and recovery, hazardous materials handling and storage, and hazardous waste disposal all represent substantial costs. Adequate funds and the availability of specialized equipment, trained personnel, and essential supplies may or may not be sufficient to respond to events.
- And Finally, the question of who benefits economically from large-scale Arctic tourism is a very sensitive issue. Many of the transport, tour and hotel corporations conducting tourism in the Arctic are headquartered outside the region. Consequently, much of the money paid by polar tourists to those non-resident corporations escapes the Arctic people.

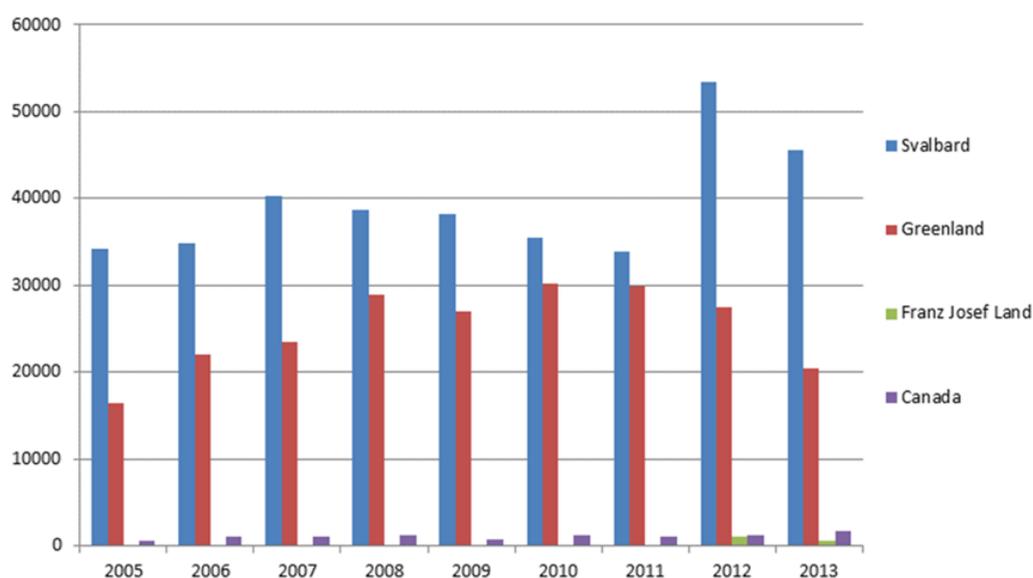


Figure 37; Cruise passengers - Svalbard, Greenland, Franz Josef Land, Canada
Sources: Governor of Svalbard, Greenland Statistics and AECO. Numbers for Canada are based on an estimate by researchers from University of Ottawa and Lakehead University.

The Arctic environment is not merely a setting inhabited by a rich diversity of Indigenous Peoples, but rather it encompasses the essential resources upon which the lives and culture(s) of the Indigenous Peoples depend. Consequently, any events that endanger those resources place Indigenous Peoples at grave risk.

The ways in which Arctic communities allow their natural and cultural resources to be used affects the character of these communities. As Arctic communities continue to achieve self-determination, they will increasingly decide how their natural and cultural resources will be utilized and this will ultimately determine how those resources are managed. Arctic communities and Indigenous Peoples must determine how tourism will, or will not, occur and how natural and cultural resources should be used and safeguarded, guided by good management practices that are relevant to their objectives. However, the final decisions regarding natural and cultural resource uses must be made locally. Any other solution would be yet another example of intrusion from the “outside” – a pattern established by colonial values.

1.14 Forestry

The Boreal forest is the world's largest land-based biome. Spreading over continents and covering many countries, the Boreal plays a significant role in the planet's biodiversity and even its climate. The biome is known as boreal in Canada, but is also known as taiga, a Russian word. Taiga is most commonly used to refer to the biome's more barren northern locations while boreal is used for the more temperate, southern area.

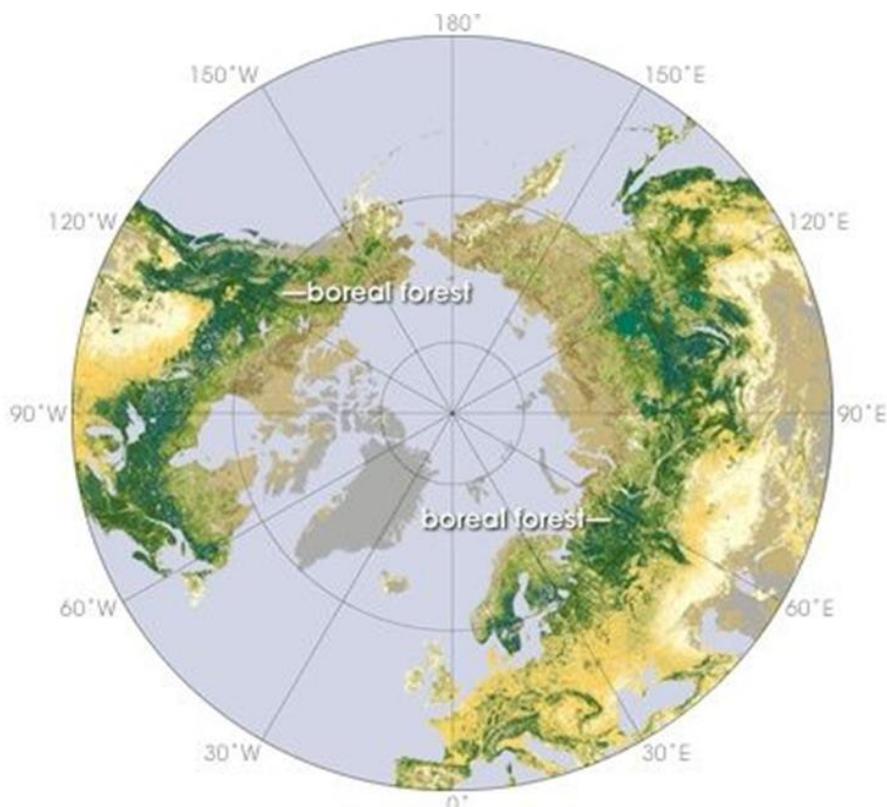


Figure 38: Boreal forests (in green) in the northern hemisphere



The boreal covers most of inland Canada and Alaska, most of Sweden, Finland and inland Norway, much of Russia, and the northern parts of Kazakhstan, Mongolia and Japan. In an Arctic context the Scandinavian countries, Russia and Alaska are the habitat of the Boreal forests.

The zone of latitude occupied by the boreal forest has seen some of the most dramatic temperature increases, especially in winter and especially during the last quarter of the 20th century. The warming trend threatens to transform the boreal forest area into grassland, parkland or temperate forest, introducing a significant shift in species of both plants and animals.

The boreal forest stores enormous quantities of carbon, and possibly more than the temperate and tropical forests combined, much of it in peatland. To date, only 12% of boreal forest is protected around the globe - and over 30% has already been designated for logging, energy and other development.

The Boreal forests in Sweden, Norway, Finland and parts of Russia are also part of the homeland for the reindeer herding Indigenous Peoples; such as the Sámi, the Nenets, the Chukchi.

Reindeers are well adapted to the Arctic climate and have the capacity to cope with long, cold winters. Their abilities are due to their physiological structure and unique characteristics. Reindeer have the capacity to absorb so much nutrition from summer grazing that they can survive a tough winter, when food is scarce. But this presupposes that the reindeer succeed in accessing nutritious grazing throughout the summer and find sufficient amounts of lichen during the winter period. It is therefore important that reindeer are not disrupted by unnecessary activities during summer grazing period. Reindeer have a highly developed sense of smell which helps them to find food in winter.⁶²

In winter lichen is their main diet but they also eat other plants under the snowpack as well as lichens that hangs from trees. Reindeer is a ruminant and has a unique ability to absorb lichens, which are highly nutritious. Another advantage of the reindeer is that it has a good ability to adapt its behavioural patterns to pasture availability. If it is able, it takes only the best parts of the pasture. However, a ruminant will have difficulties to survive if pastures are suddenly altered because the micro-organisms in the stomach need a certain amount of time to switch to new pastures. If a reindeer starves, it may have a negative effect on its ability to digest food even if it gets enough food after a period of starvation.

In the seasonal reindeer herding the forest is the place where lichens are to be found. Modern forestry has changed the landscape by vast areas of clearcutting – destroying the lichens and severely reducing the winter grazing lands. Every year some 100 000 hectares of grazing land are impacted by forest operations only in the Swedish Boreal forests. To restore lichen is complicated as lichens have a slow, only 10 percent annual growth. Tree pendent lichens require old and undisturbed forest types, with spruce in the first place, but pine and birch are also important. The best tree pendent lichen feed is found in 120 - 210-year-old spruce forests.

⁶² <http://reindeerherding.org/herders/what-is-reindeer-husbandry/4/>

Logging releases large amounts of money and is a tremendous economic opportunity for the forest owners. Under normal circumstances, a profit of roughly \$ 10,000 per hectare is expected. The gross value of logging only in Sweden, in 2011, was \$ 3,5 billion, and most of that income has its origin in the Boreal forest.

1.15 Traditional industries/business

1.15.1 Reindeer husbandry⁶³

Reindeer (*Rangifer tarandus*) belongs to the species Cervidae. The species is a natural part of Northern ecosystems and is resident in the northern parts of Europe, Asia and North America. The reindeer has several sub-species of which one of them is Caribou. Reindeer are also divided into mountain reindeer and forest reindeer. There are 7 different sub-species of *Rangifer tarandus* and some of them called reindeer and some caribou:

Reindeer herding is when reindeer are herded by people in a limited area. Currently, reindeer are the only semi-domesticated animal which naturally belongs to the north. Reindeer herding is conducted in 9 countries; Norway, Finland, Sweden, Russia, Greenland, Alaska, Mongolia, China and Canada. A small herd is also maintained in Scotland. There are about 30 reindeer herding peoples in the world and 3,4 million semi-domesticated reindeer. The intimate connection between humans and animals is perhaps best embodied by this relationship as reindeer husbandry represents a connection ancient in origin and practiced almost identically wherever it is found.



⁶³ This section is based on information from The International Centre for Reindeer Husbandry, Katokeino, Norway (<http://reindeerherding.org/herders/what-is-reindeer-husbandry/>)

**Figure 39:** Parts of the Arctic where Reindeer herding is conducted

Climate and environment have always determined the conditions by which reindeer herding is practiced, and since the development of nation states, various regulatory bodies have evolved that determine many aspects of how reindeer herding is practiced. As a result, although the practice of reindeer husbandry has more similarities than differences, the management regimes they operate under are quite different. Reindeer herding has since time immemorial been of economic importance for reindeer herding peoples. Reindeer herding creates a lot of employment and reindeer meat is in great demand, most particularly in Scandinavia. However, the importance of the livelihood goes beyond mere employment. Reindeer herding has also always been important both culturally and socially and is a vigorous and central part of many indigenous peoples' cultures. Reindeer can be owned by both individuals and nation states. In Scandinavia for example, only individuals can own reindeer, whereas in Russia the state owns the majority of reindeer.

Every country where reindeer herding is conducted has regulations which state how reindeer herding is to be organized. Norway, Sweden and Finland for example have specific reindeer herding legislation which handles the rights and obligations of districts, Sámi villages and individuals, but also how external interests should be taken into account when reindeer herding is impacted. There are wide variations in legislation related to reindeer husbandry in all countries where it is practiced. Reindeer herding can usefully be divided into tundra region and taiga region reindeer herding. 'Tundra' refers to long migrations between winter and summer pastures.

In the summer, reindeer and herders migrate to coastal or mountain areas to flee insects and access better pastures. Winter pastures are primarily located in the interior where the climate is more stable and where lichens are found. Tundra herds tend to be large, up to several thousand and migration routes are long, often many hundreds of kilometres. In recent history, tundra reindeer herding has a focus on meat production. Taiga reindeer husbandry is geographically widespread, is characterised by smaller herds and much shorter migration routes in forested or mountainous areas. Animals are primarily used for transportation and milk production. In both tundra and taiga reindeer husbandry, reindeer provide food, clothing, shelter and transportation.

Reindeer need extensive, undisturbed areas the whole year round where they can find quiet. Both reindeer herders and many researchers have stated that intrusions – or loss of pastures – are the primary challenge that reindeer and reindeer herding faces in the future. National parks, military activities, mining activities, cottage areas, pipelines and wind power expansion are examples of common intrusions. All the time, new types of activities occur and the number increases. Intrusions often lead to a massive loss of pastures for all time. This together with high levels of predators and climate changes constitute major negative threats to reindeer herding.

Reindeer herders with good access to markets, such as in Scandinavia, have created a meat-based economy for reindeer, and this has also been a positive outcome of the recent oil and gas related boom in parts of the Yamal Peninsula and the Nenets Autonomous Okrug. However, in the majority of reindeer herding areas, especially in Russia, the poor state of the local economy and the lack of access to markets has meant a very low standard of living

for reindeer herders. In such areas, recruitment into the livelihood has been a challenge and this has threatened the long-term future of reindeer husbandry.



Figure 40: Encounter between the Nenets and the Russian company Gazprom on the Yamal Peninsula

1.15.2 Fishing and hunting

Indigenous peoples throughout the Arctic maintain a strong connection to the environment through hunting, herding, fishing, and gathering renewable resources. These practices provide the basis for food production and have endured over thousands of years, with cultural adaptations and the ability to utilize resources often associated with or affected by seasonal variation and changing ecological conditions.

Climatic variability and weather events often greatly affect the abundance and availability of animals and thus animals for food, clothing, and other purposes. Many species are only available seasonally and in localized areas and indigenous peoples' cultures have developed the capacity and flexibility to harvest a diversity of animal and plant species. Indigenous peoples' cultures have, in many cases, also shown resilience in the face of severe social, cultural, and economic change, particularly in the last 100 years.⁶⁴

The significance of hunting, herding, fishing, and gathering has wide cultural ramifications. Seal hunting, for example, is not only an occupation and a way of life, but also a symbolic part of Inuit culture. The cultural role of activities relating to the use of living marine and terrestrial resources is not only of concern to those who depend economically on these activities, but also to those who live in towns and are involved in occupations with no direct

⁶⁴ http://www.acia.uaf.edu/PDFs/ACIA_Science_Chapters_Final/ACIA_Ch12_Final.pdf

attachment to hunting, fishing, and herding. Yet whatever the importance for social identity and cultural life, the primary need for, and use of animals is based purely on a need for survival.



Figure 41: Inuit hunters spear fish for salmon in a river in the early 1900's. —Credit: Frank and Frances Carpenter Collection/Library of Congress.

Arctic communities have experienced, and are experiencing, stress from a number of different forces that threaten to restrict harvesting activities and sever these relationships. Those threats range from climate changes, extractive industry, and tourism to environmental protected areas.

The Indigenous Peoples of the north, and their ecosystem, is vulnerable to "bio-accumulation," a process wherein pollutants and pesticides that enter from distant regions become concentrated in the arctic as they move upward through food chains—from plankton to fish to large marine mammals. At each stage the pollutants become more concentrated, especially in the fat of the animals—a highly valued food of many northern peoples.

The species most commonly harvested by the indigenous peoples of the Arctic are marine mammals such as seals; walrus (*Odobenus rosmarus*); narwhal (*Monodon monoceros*); beluga (*Delphinapterus leucas*), fin (*Balaenoptera physalus*), and minke (*Balaenoptera acutorostrata*) whales; polar bear (*Ursus maritimus*), land mammals such as caribou (*Rangifer tarandus*), reindeer (*Rangifer tarandus*) and muskox (*Ovibos moschatus*); and fish such as salmon (*Oncorhynchus* spp.), Arctic char (*Salvelinus alpinus*), northern pike (*Esox lucius*), as well as other species, such as whitefish (*Coregonus* spp.). Many of these species are used as food, and for clothing and other products, as well as figuring prominently in the cash economy of local households and communities.

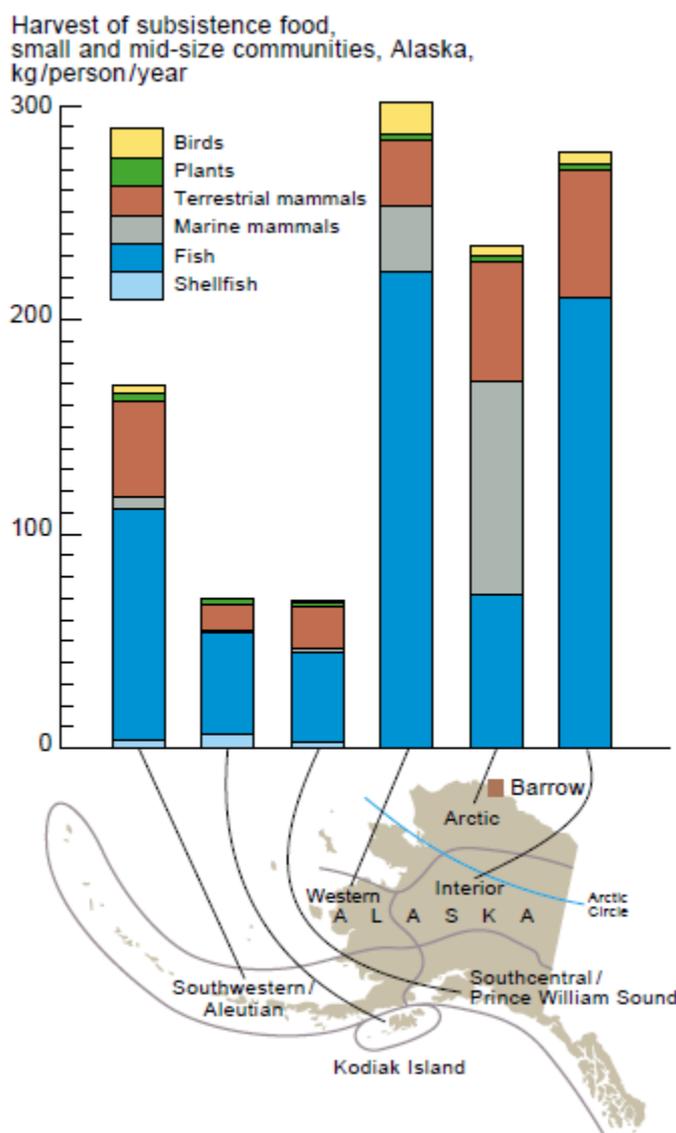


Figure 42; Harvest of subsistence food, small and mid-size communities, Alaska. Source AMAP

Ringed seals (*Phoca hispida*), bearded seals (*Erignathus barbatus*), and hooded seals (*Cystophora cristata*) are widely hunted in Greenland and Canada. Harp seals (*Phoca groenlandica*) and harbour seals (*Phoca vitulina*) are also used locally. Smaller toothed whales like the beluga and the narwhal are hunted in many areas of Canada and Greenland and are prized for their mattak (skin) and meat. Baleen whales like bowhead (*Balaena mysticetus*), minke, fin, grey (*Eschrichtius robustus*), pilot (*Globicephala melaena*), and other larger whales are also a valued source of food. Walrus are also commonly taken in Inuit areas, especially in the Bering Strait region and in the Canadian Arctic

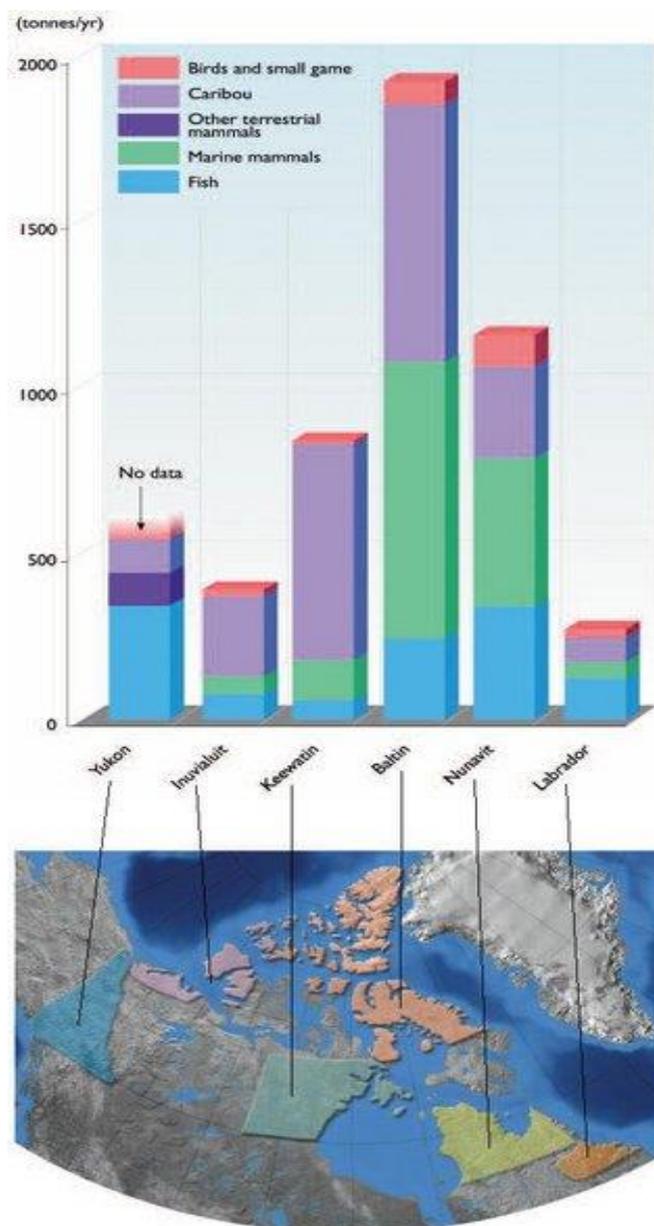


Figure 43: Fig. 12.1. Average annual indigenous subsistence production in arctic Canada (based on AMAP, 1998).

A summarize of the importance of fishing hunting and gathering for the Indigenous Peoples of the North⁶⁵:

- Indigenous peoples around the Arctic maintain a strong and vibrant connection to the environment through hunting, herding, fishing, and gathering renewable resources.

⁶⁵ http://www.acia.uaf.edu/PDFs/ACIA_Science_Chapters_Final/ACIA_Ch12_Final.pdf



- Hunting, herding, fishing, and gathering activities provide the primary means for obtaining and producing food in indigenous communities. These practices have endured over thousands of years, with cultural adaptations and the ability to utilize resources often associated with or affected by seasonal variation and changing ecological conditions.
- Hunting, herding, fishing, and gathering remain important for maintaining social relationships and cultural identity in indigenous societies. Hunting, herding, fishing, and gathering activities link people inextricably to their histories, their contemporary cultural settings, and provide a way forward for thinking about sustainable livelihoods in the future
- Rapid social and economic change, resource development, trade barriers, and animal-rights campaigns have all impacted upon hunting, herding, fishing, and gathering activities, illustrated by oil development, poaching, clearcutting and mining.
- Climate change cannot be understood in isolation from other environmental changes, rapid social and cultural change, and globalization. Arctic communities have experienced, and are experiencing, stress from a number of different forces that threaten to restrict harvesting activities and sever these relationships.

1.15.3 Tourism

Tourism in the Arctic, in relation to Indigenous Peoples, is historically influenced by colonial values and Social-Darwinist interpretations. The people of the north were to be studied and regarded as objects rather than subjects.

The practice of putting 'exotic' people on display began in Europe in the early modern period, when European explorers made their way to every corner of the globe. Sailors brought people with them from the newly explored areas, much as they might present foreign objects, plants and animals to prove the exoticism and wealth of previously unknown countries. These 'exotic' people were then exhibited by their 'discoverers' at royal courts or public fairs.

In 1874, Carl Hagenbeck (1844–1913) in Germany organized the first major 'Völkerschau'⁶⁶, which would become the model for all those that followed. The 'Laplander Exhibition' not only showed the people of this region, but also put them into the context of their native living conditions. Hagenbeck procured livestock, such as reindeer, original tents, tools and sledges, in order to make the exhibition as authentic as possible. His spectacle enjoyed great success in other countries, for example in France, where elements of the 'Völkerschau' were an essential part of the 1889 Paris World Exhibition.⁶⁷

Tourism development and tourist activities – in the Arctic– are still influenced by values earlier displayed by Carl Hagenbeck and his followers. In the Finnish town of Rovaniemi a stereotyped presentation of the Sámi people is currently presented giving an image of the

⁶⁶ "People Exhibit"

⁶⁷ <http://ieg-ego.eu/en/threads/models-and-stereotypes/the-wild-and-the-civilized/anne-dreesbach-colonial-exhibitions-voelkerschauen-and-the-display-of-the-other>

Sámi people as a mysterious, shamanistic people who live in a sort of teepee, transporting them self around "Lapland" with sledges pulled by reindeers and practising all kinds of rituals in every possible occasion.



Figures 44: Advertisement for “Völkerschau” by Carl Hagenbeck.

As a reaction to the stereotypical story telling of the Indigenous Peoples of the north, there is now day a de-colonisation trend when it comes to the development of tourism in traditional Indigenous areas of the Arctic. This could also be described as a development towards sustainability and self-determination.

Tourism in the Arctic becomes sustainable when a business is not only concerned about its economic success, but also looks at environmental and social aspects of its activities. This means in practise that tourism activities and business development should be respectful of and in agreement with local people and indigenous cultures - and preferably managed by Indigenous Peoples themselves.

In the Arctic, peoples’ livelihoods are still very closely connected to nature and “sustainability” is not a new concept. The fragile Arctic environment and the unique cultures of the indigenous peoples – the main tourist attractions of the Arctic - need to be treated respectful and on their premises.

There is today a trend in Arctic tourist development where the Indigenous Peoples, through indigenous peoples’ organisations, strive to take an increased control of the storytelling and the development of sustainable tourist products. Well handled, this can lead to increased incomes for indigenous communities as well as increased self-determination.