

# Governance of Sustainable Mining in Arctic Countries: Finland, Sweden, Greenland & Russia

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*Finland, Sweden, Greenland and Russia are all partly or fully Arctic countries that are seeking to develop new possibilities for mining and for promoting the regional economy in their respective northern territories. Even though mining can spur economic development and create new wealth within previously undeveloped regions, there is also the potential for causing negative environmental effects and irrevocably shaping the social dynamics of Arctic communities and indigenous ways of life. In this article, we will compare the national policy strategies, regulation and tools for sustainable Arctic mining. In addition, we will also review questions related to social acceptance, coexistence with indigenous people and traditional livelihoods as well as the state of corporate social responsibility. The four countries share the goal of sustainable mining at a strategic level and are influenced, to some extent, by global trends in mining, but the concrete governance of sustainable mining has evolved very differently in each country-specific context.*

## Introduction and background

Over the past decade governments, private investors and mining companies have begun to regard the Arctic as a promising source of mineral wealth with significant deposits of gold, diamonds, platinum, nickel kimberlite and other precious stones (Howard 2009). To some extent this interest reflects the increase in the market price of minerals, driven mainly by a massive growth in demand from China and other rising economies through increasing urbanization and population growth. The impact of climate change is also playing its part in creating new opportunities for the mining sectors. Vast new areas of land are becoming more accessible during longer periods of time during the year, thereby extending the working and exploration season by several weeks. Northern territories, which were previously unattainable, or where the costs of operation were too high to warrant development, are now becoming economical. This trend in the “opening” of the Arctic is expected to continue into the future.

Mining and other natural resources industries are key economic drivers for Arctic countries and create new opportunities for development in their northern regions. In Finland and Sweden, for example,

there has been a large growth in the mining sector over the recent decade. The Russian Arctic already has well-established industries, such as oil and gas production, mining and ore processing which are concentrated in these areas (*Fundamentals...* 2008; *Development Strategy ...* 2013).

Mining, as with oil and gas and other natural resource developments, has the potential to not only spur economic development and create new wealth, but also to harm the environment and irrevocably shape the social dynamics of Arctic communities and indigenous ways of life (Affolder 2011: 526–527; Haley et al. 2011). Mining development in the Arctic can be further complicated by its extreme climate, remote locations, lack of infrastructure as well as limited labor supply.

There is also a real concern related to socio-economic impacts of mining in these regions, where new development could negatively impact the already established informal economy, consisting primarily of subsistence hunting, fishing, and herding, which are a crucial cultural component, and are essential to the quality of life of local inhabitants (AHDR 2004). As a result of the many drawbacks and negative impacts shown to be connected to mining, there has been growing discussion of the sustainability, responsibility and acceptance of mining, together with changes in how these issues can be governed and evaluated (e.g. Azapagic 2004; Whitmore 2006).

Extractive industries are primarily based on non-renewable resources and are inherently unsustainable activities. A “strong sustainability” principle requires that current human activities do not eliminate future options and would therefore rule out mining as a sustainable development strategy. The “weak sustainability” principle, however, posits that different forms of capital, such as natural, human, social and produced, are substitutable. According to this, mining could promote sustainable development if “it gives rise to long-term benefits (environmental, social, and/or economic) that equal or exceed the values that existed prior to exploitation” (Amezaga et al. 2011: 21). Therefore, despite extractive non-renewable resource industries, such as mining, being inherently unsustainable activities, if done responsibly they could give rise to improved social conditions, quality of life and promote further economic development.

The social component of sustainable development, which includes community relations and social acceptance, is a critical yet difficult concept to grasp (Suopajarvi 2013). Conflicts over the development of resources, and the distribution of impacts and benefits, are often significant in socio-political and socio-economic terms.

In this article, we shall compare the national policy strategies, regulations and tools of Finland, Sweden, Greenland and Russia for sustainable mining in the Arctic. In addition, the paper reviews the current state of social acceptance of mining, coexistence with indigenous people and traditional livelihoods and the state of corporate social responsibility policies for mining in the Arctic. We argue that sustainable governance in the Arctic, especially for mining, requires a multifaceted approach to policy contents and policy tools. The article is based on an analysis of formal policy documents, legislation and earlier research.

The countries being compared herein represent very different types of institutional societies and have varying levels of mining experience throughout their histories but overall are representative of how the mining industry operates in the Arctic. Russia is a traditional mining country with a socialist-state

ideology and a mining industry still dominated by state owned companies. Today Russia mainly struggles with a lack of institutional capacities for governance. Finland and Sweden are Nordic welfare states, with strong state institutions that have experienced a recent mining boom, mostly dominated by international companies, and have had to adjust with recent and extensive regulatory changes. Finland, for example, throughout its mining history has been until now dominated by state-owned companies; with the introduction of international companies came also recent changes to mining and environmental regulations. Greenland has some history of mining, mostly controlled by Denmark, but now is an emerging mining country that recently received larger resource management autonomy and has had to develop its own governance framework.

Finland, Russia and Sweden are some of the key metal and mining producing countries in the European Arctic (Kokko 2014, *Government offices of...*2013). In 2011, Sweden accounted for 80-90% of iron ore in the EU (SveMin 2012: 3). The Russian Arctic zone is a traditional mining region producing a vast range of mineral commodities (Dobretsov & Pokhilenko 2010; Kaminsky et al. 2014; Matveev 2015). It is ranked among the world's leading producers of nickel (12% of total world output), aluminum (8%), copper (6%), diamonds (29%), and gold (8%) (EU Mineral Statistics 2013). While Greenland does not currently have operating mines, it has vast mineral reserves that have drawn increasing interest both globally and from the EU. Greenland has ambitious plans to expand their mining industry (*Government of Greenland* 2014).

## **Arctic mining industry in the national context**

### ***Finland***

During the 2000s, the mining industry in Finland experienced a new “boom” (Kokko 2014). The previous prosperous era of mining in Finland ended in the late 1980s and was led by the state-owned mining company Outokumpu. In 1994, Finland joined the European Economic Area (EEA) and the Finnish mining sector was opened up to international actors, but it was not until the beginning of 2000s that the country really began to draw the interest of international mining companies (Hernesniemi et al. 2011: 137). Today international companies dominate the mining sector (Kokko 2014: 15).

Geographically speaking, mining activities are concentrated in the Eastern and Northern parts of Finland, which typically suffer from a declining population and a lack of economic opportunities. In 2013, there were 12 metal ore mines in operation in Finland, with the primary products consisting of chrome, zinc, nickel, cobalt, gold and silver. Major mining projects located north of the Arctic Circle include Kittilä, Pahtavaara and Kevitsa. In addition, Anglo American Ltd plans to open a mine in Sodankylä. The Kittilä gold mine, operated by Agnico Eagle, is the largest gold mine in Europe. At Pahtavaara gold mine production was halted in 2014 when the mining company Lappland Goldminers AB, filed for bankruptcy. Of the mines in Finland, Kevitsa copper and nickel mine has been evaluated as the mine providing most employment and with the vastest impact on the regional economy (Laukkonen & Törmä 2014).

In 2012, mining production value contributed to 0.6 % of the Finnish GDP (ICMM 2014). The annual turnover of metal ore and industrial minerals in 2013 was over EUR 1.5 billion and exports in the minerals industry amounted to around EUR 126.5 million. In 2013, the mining industry directly employed approximately 3,000 people and indirectly 7,500 to 10,500 people through subcontractors (Kokko 2014).

### **Sweden**

Mining has been an important part of the Swedish economy for centuries. In 2012, mining production value contributed to 1% of the GDP (ICMM 2014). In the end of 2012 there were 16 ore mines in operation (*Government Offices of...* 2013). Swedish mining accounts for about 11% of all exports and provides direct employment to approximately 10,000 people and indirectly 35,000 people in the country (SveMin 2012: 5). Sweden has a globally competitive minerals cluster with a leading position as a manufacturer of mining equipment (SveMin 2012: 5). The Swedish mining industry's most important product is iron ore, but it is also an important producer of copper, zinc, lead and silver within the EU (*Government Offices of...*2013: 11).

Some of the most significant mines in Sweden are located north of the Arctic Circle. Kiruna is the largest underground iron ore mine in the world (LKAB 2015a), and is also known for the massive relocation project of the city of Kiruna. Malmberget is the second largest underground iron ore mine in the world (LKAB 2015b). Aitik is the largest copper mine in the country (Boliden 2015). Other Arctic mining projects in Sweden include Rakkuri, located near Kiruna, and Gruvberget.

The iron ore industry was long dominated by the state-owned mining company called LKAB, until 20 years ago when Sweden allowed entry of private-sector interests in the mineral resources industry (Walker 2011). By the late 1990s, a number of large-scale international companies entered Sweden and in 2004, the commodity price boom encouraged increasing interest in explorations (ibid; Ejdemo & Söderholm 2011). There is still potential for extensive increases in the mining sector particularly in Northern Sweden (SveMin 2012).

In order to further develop mining, Sweden will have to increase its labor supply, improve its infrastructure, develop a more competitive energy supply market and ensure an effective permitting process (SveMin 2012). Specifically the transportation capacity issue is one that is vital to the expansion of the mining industry and is being currently looked at as collaboration between Sweden and Finland (see Rantala et al. 2012).

### **Greenland**

Planning of exploration and mining activities in Greenland has dramatically increased during the 2000s. With vast resources such as zinc, lead, iron ore, gold, platinum, uranium, rare earth elements and coal (*Statistics Greenland* 2013), Greenland has recently drawn the interest of several international actors. Greenland has perceived the development of mining as a tool for gaining a more independent position from the rule of Denmark (Nationalia 2013; *Government of Greenland* 2011: 8; Guardian 2013). Greenland seeks to turn mining into a major contributor into the national economy, whereas currently fishing and the annual block grant from Denmark are the main sources of income (Statistics Greenland

2013). Greenland made a final push in 2009 with the adoption of the Act on Self-Government (Act no. 473) under which it receives greater rights to self-govern including mineral resource developments (*Statsministeriet* 2009; *Government of Greenland* 2009: 7).

Current mining activities in Greenland are mainly composed of exploration activities but a number of mining projects are approaching an advanced stage (*The Ministry of Finance...* 2013: 9). In 2014, there were six exploitation licenses in force (*Mineral License and...* 2014: 11). The number of applied and granted mineral licenses in the country increased steadily between 2002 and 2012 (*Government of Greenland* 2012: 13). At the same time, investments in exploration have grown significantly and in 2011 it reached nearly DKK 700 million (*Government of Greenland* 2012: 14). In 2010, the industry turnover was DKK 24.1 million (*Statistics Greenland* 2013: 21).

### **Russia**

Russia's mining industry is the country's most important sector after oil and gas. The extractive industry – including oil, gas and mining – is a key driver of economic growth with a widespread effect throughout other sectors of the economy (Federal book 2011; Rosstat 2013). In 2012, mining production value contributed to 4.4% of the GDP (ICMM 2014).

Russia is a globally significant producer of a vast range of mineral commodities, including aluminum, arsenic, cement, copper, magnesium compounds and metals, nitrogen, palladium, silicon, and vanadium (EU Mineral Statistics 2013). Russia has the world's second biggest proven coal reserves and it has been dubbed as the "Saudi Arabia of coal." Currently the country accounts for 4.5% of global coal production (Multanen 2013).

There are 7425 officially opened mining spots, of which 1909 are in use (Petrov 2010). The main mining region is located in the Russian Arctic, with 10% of the world's proven nickel reserves, about 19% of the world's platinum group metals, 10% of titanium, as well as gold, zinc and cobalt (Bortnikov et al. 2015). The most significant Arctic mining deposits are located in Sakha region, Kola Peninsula, Norilsk area and East Siberia. Domestic private corporations and state-owned companies dominate the industry (Minerals Yearbook 2012).

Currently the Russian extractive industry is undergoing growth of mining activities (Rosstat 2013). However, positive economic results were reached mainly because of supplementary exploration of existing mines and revaluation of the resources (Federal Book 2010). Until 2009, about 80% of mining production came from "old deposits" opened up in Soviet times (*ibid*). The industry seriously lacks investments on geological exploration of new mining deposits (Natalenko 2015).

### **Sustainability in national mining strategies**

Being member countries of the Arctic Council, Finland, Sweden, Greenland (through Denmark) and Russia, have acknowledged the importance of sustainable use of natural resources and sustainable business for the future of the Arctic (*Kiruna Declaration* 2013). This means that they should promote sustainability also in the extractive sector and in national mining policy.

All four countries have recently established national mining strategies. The countries point out the importance of sustainability or sustainable development but with slightly different focuses. None of the countries has a specific strategy for Arctic mining but in addition to mining strategies, Finland, Sweden and Russia have national Arctic strategies.

Finland's Minerals Strategy (2010) aims to make the mining industry a cornerstone of the national economy and to make the country a global leader in sustainable mining by 2050. The Finnish Strategy focused on the industrial development of mining and responsible mining. The three main objectives of the Strategy are to promote domestic growth and prosperity, solutions for global mineral chain challenges and mitigating environmental impact. At the same time as the Strategy, Finland also modernized its mining regulations with the aim of ensuring there are sustainability targets for the mining industry. During 2010-2012, a few serious incidents involving mining water in Talvivaara mine initiated major public debate on the sustainability of the mining industry. The action paper for Finnish mining sector from government and other stakeholders was launched under the title "Making Finland a leader in the sustainable extractive industry – action plan" (MEE 2013). Based on the guidelines defined in the round-table discussions between wide range of stakeholders, the plan proposed 35 measures for mining sector to operate environmentally, socially and economically sustainable manner.

Finland has a subsection dedicated to the mining industry in the national Arctic Strategy (*Valtioneuvoston kanslia* 2013). The Strategy envisions Finland at the forefront of sustainable Arctic mining and stresses environmental aspects and social sustainability. Technologically sustainable solutions are perceived as a business opportunity for the country (*ibid*: 9). Overall, the focus of the Strategy is primarily on operational conditions such as the increasing need for transportation infrastructure and the importance of securing enough labour, resources and competent supervising authorities (*ibid*: 29-30).

The Sustainable Mining Network launched by Sitra serves as a forum for discussion between the mining sector and its stakeholders. The working groups include the development of independent activities, social responsibility, the prevention and decrease of adverse environmental effects as well as the development of local operation models ([www.kaivosvastuu.fi](http://www.kaivosvastuu.fi)).

In all these Finnish strategies and initiatives the notion of sustainable mining in the Arctic is left unaddressed and they only briefly state that the complexity and sensitivity of the environment are to be considered (see Kokko 2014: 61).

The Swedish Minerals Strategy was published in 2013 and highlights the need for growth of the mining sector but with a strong emphasis on sustainability (*Government Offices of ...* 2013). The Strategy does not assess Arctic mining as such but identifies the North as an important region for the mining sector but also with notable natural and cultural values. Coordination and dialogue among the various industries, including reindeer husbandry, is promoted.

The Swedish Minerals Strategy identifies five general strategic objectives for the mining industry: 1) a mining and minerals industry in harmony with the environment, cultural values and other business activities; 2) dialogue and cooperation to promote innovation and growth; 3) framework conditions &

infrastructure for competitiveness & growth; 4) an innovative mining and minerals industry with an excellent knowledge base; and 5) an internationally renowned, active and attractive mining industry.

The Swedish Arctic Strategy identifies mining, together with petroleum and forestry, as an economic opportunity for the country (*Government Offices of...* 2011: 32). The expansion of resource extraction is pointed out to increase the risk for local emissions and the need for transportation infrastructure, which is again perceived as an economic possibility (*ibid*: 15; 27). The Strategy states that future extraction should be conducted sustainably. Accordingly, the especially sensitive areas are to be protected from extraction, more environmental assessments are needed and that the State will work for long-term transportation solutions to promote sustainability. Sustainability is not addressed in regard to the social dimension as such but it concludes that Sweden will seek to bring forth and manage the negative social impacts of natural resources development all while utilizing, as much as possible, the problem solving tools that consider the Arctic context more actively (*ibid*: 41). The Russian Mineral Strategy, the so-called Geological Strategy, was adopted in 2010 (Russian Mineral Strategy 2010). Among the strategic objectives are improvements to the mining legislation, increasing investing attractiveness and strengthening mining Research & Development. The Strategy highlights the importance of mining activities for the country and the need to “move on to the new stage”, based on sustainable use of natural resource, reduction of negative environmental and social impacts as well as minimization operational risks. The Strategy was of great importance in guiding the new decision-making process however, it lacks legislative support (*Parliament hearings on ...*, 2010). The majority of the current mining legislation was established in 1990s during different economic and social times and still requires updating.

Several issues related to Arctic mining are reflected in the Development Strategy of the Arctic Region of Russia, issued in 2008. It identifies Russian national interests in the Arctic as being strongly linked to resource development. Arctic mining development is also discussed in regional policies of the Russian northern regions which address the issue in a more detailed manner (see Fundamentals of Sakha’s regional policy 2012; Development Strategy of Murmansk region 2013).

Greenland updated its mining policy document in 2014 and while being highly growth-oriented, the Oil and Minerals Strategy highlights the importance of sustainability (*Government of Greenland* 2014). The Strategy of 2009 focused on increasing exploration activity and aims to have at least five to ten active mines in Greenland in the long term (*Government of Greenland* 2014: 7). One of the focuses of the document is to ensure that the benefits of mining are felt within the Greenlandic society in the form of employment and increased income. It also specifies certain priorities for sustainable development such as environmental protection, labor market and employment, training and citizens, local community and stakeholders. However, notable attention is paid also to the needs of the mining industry in terms of operational conditions. In addition, the Greenlandic government has undertaken various legal reforms to further encourage mining development in the country.

### **Regulatory frameworks and policy tools for sustainable mining**

One of the state level challenges for environmental sustainability in mining is how to establish an efficient and trustworthy regulatory framework that minimizes the potential harmful environmental

effects of the industry (UNEP 2002; Bastida 2002: 5). In practice, the key regulatory framework for mining includes mining laws, which constitute the general framework, and are supported by environmental policies and regulations, as well as environmental impact assessment (EIA) and land use planning systems. In addition to the 'hard law' instruments governing the mining industry, countries and companies have also developed their own 'soft law' instruments such as sustainability principles and CSR practices. In addition, all four countries have introduced a variety of guiding principles and best practices to be followed. For example, Finland and Sweden have recommendations regarding exploration and mining activities in areas with particular environmental, cultural or other interests. In Finland, there is also guidance for stakeholder engagement in exploration and for practices supporting environmental regulation and socially sustainable mines in the north (Eerola 2013; Kokko et al. 2013).

In Finland, the central mining regulations are the Mining Act, the Environmental Protection Act and the Act on Environmental Impact Assessment Procedure (468/1994). The new Mining Act has been perceived as an improvement in terms of environmental governance, participation possibilities of local communities (Pölonen 2012) and rights of Sami People (Pettersson et al. 2015: 238). In 2011, the Finnish Environment Institute published a guide on the best environmental practices for metallic mineral mines (Kauppila et al. 2011). In 2013, some changes were made to environmental legislation and extra tests were required for mining sites because of the water pollution problems at the Talvivaara mine (Tiainen et al. 2014).

In Finland, the EIA has two stages: an assessment program and an assessment report. The Finnish EIA typically involves two hearings; one in each stage of the process (Pettersson et al. 2015: 246-247; 251). In Finland, the social impacts are to be considered during the EIA. A special guidance for EIA in mining was published just recently which should improve the management of local mining conflicts (TEM 2015). Recently, Finland has examined the possibilities for streamlining the EIA process with the permitting process (Tarasti et al. 2015).

In Sweden, mining activities are regulated under the Minerals Act (1991:45) and the Minerals Ordinance (1992: 285) (SGU 2007). The environmental aspects are under the Environmental Code (1998: 808) (Michanek 2008). In addition, a set of other regulations such as the Reindeer Husbandry Act and the Planning and Building Act are of relevance. The Swedish legal framework has somewhat conflicting purposes between the two major laws, as the Minerals Act simply promotes exploitation and the Environmental Code sustainable development (Pettersson et al. 2015: 251).

In Sweden, the specific requirements for the EIA can vary depending on if the environmental impacts of the project are potentially significant (Legislative Bill 2005: 53). The process frequently involves one hearing (Pettersson et al. 2015: 251). Social Impact Assessment (SIA) is not required by law and typically, the social impacts of mining are overlooked though some companies voluntarily undertake SIA (Pettersson et al. 2015: 238). The Swedish practices are seen as inadequate at properly considering the so called "zero-option," cumulative impacts and lack true discussions on a project's alternative contents (Longueville & Carlman 2013; Oscarsson 2006; Pettersson et al. 2015: 214). At the same time, some of the current provisions on EIA under the Environmental Code have been criticized for being overly complex and difficult to apply. To reduce the bureaucracy associated with mining, the

Swedish Government has tried to coordinate and simplify the EIA and narrow down the number of authorities involved in mining issues. In addition, the Strategy states that a manual on mining activity assessment for the industry shall be compiled (*Government Offices of...* 2013: 33-35.) According to the national Arctic strategy, Sweden will also promote greater use of EIA in the Arctic for example in mining (*Government Offices of...* 2011: 27).

In Greenland, the Mineral Resources Act (2010) forms the basis for the regulation of mineral resources and mining activities. The Mineral Act brought along changes in regard to public participation and impact assessment. The Large-Scale Law regulates the possibilities for using foreign workforce in mining (Hannibal 2013). While in principle, the Act prioritizes Greenlandic workforce, the mechanisms for ensuring local employment are unclear (*Committee for Greenlandic...* 2014). The amendments in the Mineral Resources Act in 2012 strengthened the regulations that promote or require agreements on social sustainability such as Impact and Benefit Agreements (IBA). The amendments in 2014 brought along changes in regard to public participation in impact assessment by introducing the pre-public consultation. A noteworthy renewal towards improved sustainability was the new division of responsibilities between mining authorities in 2014 (*Government of Greenland* 2014: 12). In Greenland, the effectiveness and clarity of the legal framework will be demonstrated in the future when the mining operation starts in practice. Still today, the authorities lack expertise on mining matters in general and are still relying heavily on external consultants.

The Greenlandic framework requires both an environmental impact assessment (EIA) and a social impact assessment (SIA) to be conducted before a license for development may be negotiated. Greenlandic authorities have established guidelines for both EIA and SIA processes (BMP 2011; BMP 2009). The SIA guidelines propose certain issues, related to the special characteristics of Greenlandic society, to be treated with particular attention (BMP 2009: 5). SIA serves as the basis for the negotiations of an Impact Benefit Agreement (IBA) (BMP 2009). In Greenland, the IBA is an important tool for ensuring that benefits of individual mining projects are directly invested back into social development (*Government of Greenland* 2014: 93). IBA is a formal contract involving the mining company, associated municipalities and the national government (*Government of Greenland* 2013: 7). IBA is seen as central for ensuring provision of skills-development projects and working opportunities at the local level (The Ministry of Finance and Domestic Affairs 2013: 42). According to the recently introduced pre-hearing process, if a project has notable social or environmental impacts, the applicant must arrange a public pre-consultation before the contents of the EIA and the SIA are determined (The Mineral Resources Act unofficial translation 2009: § 87a).

In Russia, mining is regulated by the Russian Federal Law on Subsoil Resources issued in 1992 (*Subsoil Law* 1992) and the Russian Federal Law on Production Sharing Agreement (*Federal Law on ...* 1995). It sets out a framework for contract negotiations between the state and investors on the extraction of mineral resources for production revenue sharing. According to Russian legislation, the Russian state owns all subsoil resources. The state may hire an investor as a contractor for the extraction of minerals, but it retains ownership of the resources (*Federal Law on ...* 1995). The Russian licensing system is based on the Subsoil Law, which requires companies with user rights to the land to consider certain obligations, such as the prevention of industrial waste and complying with particular technological and

environmental quality standards (Söderholm et al. 2015). In general, while Russia has established major revisions to its legal framework, the changes have remained minor in practice (Pettersson et al. 2015). In the Russian context, the lack of predictability of the regulatory system, the absence of coordination between the authorities and vagueness of competence across levels of authority are creating problems (Söderholm et al. 2015).

In Russia, the conditions on EIA are defined under the Federal Law on environmental Protection, published in 2002, and the Federal Law on environmental expert review (or Law on Environmental Expertise 1995). According to Russian legislation, mining projects need to pass environmental expertise to prevent possible environmental impacts. In Russia the EIA (or so-called OVOS procedure) is one of the main components of the Environmental expert process, and assesses the impacts of a potential development, while the Environmental expertise is a process of reviewing the results and documentation of the assessment (Solodyankina & Koepfel 2009; Cherp & Golubeva 2004). Guidelines for EIA are determined in the Act on implementation of Environmental Impact Assessments (2000). Public participation is considered as an integral part of the EIA process. In 2006, the law was amended so that the definition of an environmental impact no longer includes 'related social, economic and other project impacts' (Wilson & Swiderska 2009). The demand from civil society to take part in the decision making process is quite insignificant (Fifka & Pobizhan 2014; Polishchuk 2009; Riabova & Didyk 2014). The relative scarcity of people's activity and undeveloped mechanisms of interaction has led to the formal implementation of the public participation processes.

### **Social acceptability of mining**

The growing emphasis on social acceptability<sup>1</sup> is an integral part of achieving sustainable mining (Prno & Slocombe 2012). In the mining industry participation and empowerment are understood to be more likely to lead to approved and supported mining projects than more closed practices.

Finland and Sweden are internationally recognized as being stable operational and investment environments for the mining and ranking consistently at the top of the Fraser Institute's mining survey (McMahon & Cervantes 2012; Jackson 2014).

In Finland, the public acceptability of mining was underlined as a challenge in the 2010 Minerals Strategy (Finland's Minerals Strategy 2010: 13), mostly due to the environmental problems encountered at Talvivaara (MEE 2013). Talvivaara spurred environmental organizations, the media, the civil society and individual politicians to take part in a heated public debate around mining and the associated environmental issues (Tiainen et al. 2014). In general, water management has been a reoccurring theme in the Finnish mining debate (Wessman et al. 2014). Since Talvivaara, the role of open and transparent dialogue between the various actors has been more strongly emphasized in the Finnish mining policy. During the recent years, several policy programs, cooperation bodies, working groups and academic works have targeted the socio-environmental issues of mining. Nonetheless, a recent attitude survey indicated that in Lapland the general acceptance of mining is slightly stronger than in other mining regions of Finland (Jartti et al. 2014; Jartti et al. 2012), but they were slightly more critical towards international companies, favoring state ownership in mining.

In Greenland the public debate has challenged the acceptability of the mining industry on the basis of weak government mining policy and poorly conducted public participation (Arctic Journal 2013b; Arctic Journal 2013c; Jacobsen 2014). Historically, the aim of mining expansion is nothing new in Greenland but the Self Government Act of 2009 stimulated further anticipations towards mining. By the end of 2013, various legal and political reforms such as the abolishment of the zero-tolerance policy on uranium mining and allowance of hiring the foreign workers for mining projects have generated heated public debate. One of the primary concerns has been the lack of public participation in the decision-making around mining. The government has sought to enhance the situation by introducing a pre-hearing process and a fund to support the participation of various stakeholders in the impact assessment processes (Government of Greenland 2014: 90-94).

In Sweden, the question of acceptability has not received much attention yet. A recent study examined the practices of Swedish mining companies in gaining social acceptance. It indicated that the mining companies with a long history in Sweden have, over the time, gained the acceptance of the surrounding society whereas the newer companies face criticism even with extensive efforts to gain social acceptance (Tarras-Wahlberg 2014). Typically, the mining conflicts in Sweden are related to land use, reindeer herding and environmental values (e.g. Local 2013; BBC 2014). However, the absence of intense public discussion on mining may be partly explained by the characteristics of Sweden as a country of interest group politics where political activity rarely takes place in the form of open public debate (Lundqvist 2004). Also, there have not been major incidents in the Swedish mining sector during the recent years to trigger a more heated conversation.

Despite the large number of mining areas and activities in Russia and the low number of observed company-community conflicts, the social acceptance of mining in Russia is not of big concern or debate (Polishchuk 2009; Riabova & Didyk 2014; Walker 2011). Historically, and also due to social and political reasons, mining companies in Russia are not facing big challenges in getting social acceptance (Riabova & Didyk, 2014). First, local people traditionally accept mining activities in the northern region. During Soviet times, the Arctic communities were settled near industry, often in close proximity to a mineral deposit (see Bolotova & Stammeler 2010). Many Russians moved to the North following the establishment of industrial enterprise in the territory. After the collapse of the Soviet Union, a number of industrial-based towns have disappeared, however many still exist and enjoy some of the new opportunities for socio-economic development and employment. Secondly, the Russian civil society remains quite weak and SLO has not risen to the public agenda in a similar way as in the Nordic countries.

### **Coexistence with indigenous people and traditional livelihoods**

The pressure on land use in the European Arctic is increasing because of economic and environmental reasons (*Strategic Assessment of...* 2014a). In the Finnish and Swedish mining strategies, coexistence of mining with other land uses and livelihoods is an important issue (Finland's Minerals Strategy 2010: 13; MEE 2013; *Government Offices of...* 2013). Northern parts of Finland and Sweden have a number of competing land use interests including recreational use, mining, environmental protection, reindeer husbandry, and energy production (*Strategic Assessment of...* 2014b; *Government Offices of...* 2013: 26-27).

In northern Finland, mining projects are often located nearby tourist destinations and nature protection areas. Studies indicate that the perceived impacts of mining on the image of a region vary on case by case, but for some destinations the impacts may be significant (Jokinen 2014).

In Greenland and Russia, there is no similar pressure in regard to land use because of the vastness of their territories. However, in Greenland effects on fishing and other traditional livelihoods as well as questions concerning housing for mining workers will become significant issues in the future (Carlsen 2011).

In Arctic mining areas, reconciling the interests of mining with the traditional livelihoods of the local people such as reindeer herding and indigenous people's rights are central issues in mining development.

In Finland, there is not yet mining on Sami Homeland areas but there has been a significant discussion about the potential conflict with future developments (Näkkäljärvi 2015). The new Mining Act improved the position of the Sami in resource development and a guide was recently published on best practices for exploration activities in protection areas, Sami homeland and reindeer herding areas (TEM 2014). Indigenous Sami Homeland areas are 'protected areas' in which mining activities require special permits. The Reindeer Husbandry Act (848/1990) stipulates that in the reindeer husbandry area, activities that may significantly hamper the conditions for reindeer herding are prohibited.

In Sweden, conflicts have emerged between mining companies and the Sami that have drawn significant attention to the issue of land use (Langston 2013; Mines and Communities 2011). The Sami have also reached out to UN to stop mining projects from proceeding (Saami Council & Minerals Policy Institute 2012). The Minerals Strategy states that a manual for consultation between reindeer husbandry and the mining industry should be drafted (*Government Offices of...* 2013: 27). In the Swedish legal framework, reindeer husbandry is protected under the constitution and regulated by the Reindeer Husbandry Act (1971: 437). In cases where activities disturb their reindeer operations, the Sami communities are entitled to compensation. The Environmental Code also provides reindeer husbandry a protected status as a national interest, however mineral deposits can also constitute a national interest. In cases when an area is of national interest for several conflicting uses, priority is given to the purpose which is best for the long-term management of the land (Liedholm Johnson 2010: 65).

In Russia federal legislation grants to the 'small-in-number' indigenous peoples (number of ethnic community is under 50,000 persons; 46 different groups) of the North, Siberia and Far East special rights with regard to land and the preservation of traditional ways of life. However, obstacles are often encountered in the exercising of these rights (Prina 2014; Fondahl 2014). In many cases, local land users, in designated industrial areas, are not given land rights, a factor that hinders effective impact assessment and regulation of industrial activity (Wilson & Swiderska 2009). Russian activists and academics have promoted legislative reform relating to the concept of *etnologicheskaja ekspertiza* (ethnological – or anthropological – expert review) (see Wilson & Swiderska 2009; Murashko 2008). The law 'On guaranteeing the rights of indigenous peoples' contains a reference to the anthropological

expert review (in referring to indigenous peoples' right to take part in ecological and anthropological expert reviews).

### **CSR in mining**

Currently, the majority of mining companies operating in the Arctic are following some international standards, frameworks or guidelines in order to address their own responsibility towards sustainable development.

In Finland, there are vast differences in how mining companies have perceived the need to develop their CSR policies. In the beginning of the mining boom until 2010s, the Finnish general political atmosphere and mining industry was passive towards social responsibility strategies (Rytteri 2012). In 2010, the National Mineral Strategy did not give real attention to social responsibility issues. The attitudes changed dramatically after the Talvivaara mine issues which prompted the public to have very negative views towards mining (Tiainen et al. 2014). After that, some international mining companies operating in Finland decided to implement public engagement strategies (Rytteri 2012) as well as the Finnish Government has become active in this dialogue. In 2012, the Government approved a decision-in-principle to put Finnish enterprises and administration in a position of leadership in CSR (MEE 2012). In 2013, the action paper for Finnish mining sector (MEE 2013) proposed CSR as one of the main approaches for future development.

In Sweden CSR has become an established concept in business in general (De Geer et al. 2009: 272). The Minerals Strategy of Sweden states that the country is actively involved in international forums to develop CSR and business ethics (*Government Offices of Sweden* 2013: 46), but does not talk about CSR in the national context or the expectations towards the companies. Mining companies have been slow to develop active policies for improving social acceptance and local communication, though differences between the companies exist (Tarras-Wahlberg 2014). A case study on Boliden, a big Swedish mining company suggests that the company needs a more systematic approach to dealing with community issues (Ranängen & Zobel 2014). A similar finding was made by Knobbloch (2013: 165). Nonetheless, there are some signs of a shift in conduct with the companies (mainly new international ones) striving to engage a wider spectrum of stakeholders in consultation and improving the quality of EIAs (Tarras-Wahlberg 2014: 145-146).

In Greenland, mining is still in its beginning phase and so the CSR practices have not yet been tested. There is an active history of companies supporting local communities and practicing CSR in general (Arctic Journal 2013a.) and the expectations towards the mining industry in terms of education and training are rather significant. It has been argued that initiatives such as Transparency International and UN Global Compact are important for guiding companies' CSR practices (Broman Jensen 2012; Rasche 2012). It remains to be seen how the general tradition of CSR in Greenland and international mining companies will influence the development of new CSR practices in the country.

In Russia, the concept of CSR has been under development for the past fifteen years. Large mining companies operating in Russia have started to incorporate international ideas of CSR since the early 2000s. In 2004, the move to social responsibility was firmly pronounced at the governmental level, as companies were urged to become "better corporate citizens", with the aim of shifting some social

functions from the state to the private sector (Fifka & Pobizhan 2014; WWF 2007). Mining corporations considered CSR as a tool that would enable them to operate and to compete as well as to increase trust among international investors (Humphreys 2011; Kuznetsov & Kuznetsova 2012). By contrast with other international instruments for responsible mining, the concept of CSR has been naturalized into the Russian socio-political environment with some country-specific interpretations. CSR in Russia is mostly focused on charitable activities, donations and company philanthropy (Fifka & Pobizhan 2014; Polishchuk 2009). From Soviet times, large companies inherited the responsibility of taking care of the surrounding communities. Being the major tax payers in the region they were the main producers of social services (Fifka & Pobizhan 2014; Riabova & Didyk 2014). This practice is still in force today. Within social programs, companies repair roads, build new schools, invest in sport as well as health and youth projects of the region. Relations between the municipalities and large resource-based companies are often framed by bilateral, trilateral or multilateral agreements on socio-economic partnerships between the company, municipality and/or regional government (ibid).

## Conclusions

In this article, we have analyzed and compared the national strategies and policy tools, and reviewed questions related to social acceptance as well as aspects of policy content for sustainable mining in four Arctic countries: Finland, Sweden, Greenland and Russia. A summary of the comparative results can be seen in the Table 1.

The social dimensions and geographical setting in the Arctic as well as the national contexts in each country are quite different and greatly influence their individual sustainable mining policies. Mining in the Arctic faces particular challenges due to the sensitive socio-environmental characteristics of these regions.

It seems that in all four countries, there is a need to develop mining policies concerning indigenous people's rights, sensitive environmental values, challenging infrastructure development and economic opportunities. Arctic regions, in general, lack infrastructure and have multiple and competing land uses to contend with. For mining in particular, Finland and Sweden are focused on transportation infrastructure (roads and railroads) development in the Arctic, while Greenland is considering a public-private partnership model to fund some of the new infrastructure development projects (*Government of Greenland* 2014), but financing still poses a notable challenge for mining development in the country.

All countries have recently established national mining strategies. In these, the Arctic is not taken as its own special issue, but as part of the general policy approaches. The countries point out the importance of sustainability but with slightly different focuses. Finland and Sweden consider the role of technical innovations and research as well as the mine lifecycle approach as being central for encouraging improved environmental performance. In Sweden and Finland, mining strategies have a strong regional focus. Greenland, on the other hand, sees mining as a tool for social development as a whole by stimulating local economies as well as increasing local employment through skills development and training.

**Table 1.** Comparison of key strategies, policy tools and social acceptance promoting sustainability of mining by country.

|  | <b>Finland</b>  | <b>Sweden</b>   | <b>Greenland</b>  | <b>Russia</b>  |
|--|---|---|---|--|
| <b>2012 production value (% of GDP) / Ranking in Fraser 2014</b> | 0.6%<br><br>1   | 1.0%<br><br>12  | (no production)<br><br>41   | 4.4%<br><br>61   |
| <b>Mining strategies</b>   | National Mining Strategy 2010<br>New mining act 2011<br>Action plan 2013  | National Mining Strategy 2013   | National Oil & Mineral Strategy 2014-2018   | Mineral Strategy of Development until 2030   |
| <b>Main interests of mining strategies</b>                       | Economic growth, regional development, attract intern. investors, mining cluster, innovations for environment and technology, public acceptance | Economic growth, national companies and investors, mining cluster, innovations for environment and technology, public acceptance          | Economic growth, local employment and education, national sovereignty, community acceptance           | Economic growth, support of national economy, national control of resources, coordinate common targets, improvement of legislation |
| <b>Acceptance of mining</b>                                      | In Lapland acceptance good, Talvivaara influenced negatively, policies for improving the situation  | General acceptance high, some conflicts rising  | Mining is high political issue, critique towards government policy and participation practices        | General acceptance high, some conflicts with indigenous people, civil society not active.  |
| <b>Environmental regulation</b>                                  | Standards at good level, problems in water pollution, renewed regulation  | Standards at good level.  | Recent revisions in the legal framework, no experience yet  | Recent revisions in the legal framework, some problems in implementation   |
| <b>EIA</b>   | Obligatory, includes SIA & participation  | Obligatory, includes participation, SIA not well developed  | Obligatory, includes participation, separate SIA required (basis for IBA)                             | Obligatory, includes participation, implementation problems, no SIA  |
| <b>CSR</b>   | Active development of CSR after problems, government and international companies active, what is Nordic concept for CSR?                        | Slow development in local CSR, big national companies have own practices, international companies active, what is Nordic concept for CSR? | CSR under development, historical examples from other businesses, international standards play a role | CSR under development, Soviet traditions influence current CSR practices   |

In addition, pro-mining policy has been linked with Greenland's push for greater independence from Denmark. The Russian strategy considers mining as a source for economic development and support for the national economy. Social aspects of mining are discussed in terms of socio-economic regional

development, but not as local community issues. Russia has also emphasized the need to increase technological as well as research and development within the industry.

There has been active public discussion on the social acceptability of mining, but the themes have been slightly different in each country. In Finland, the social acceptability of mining was somewhat assumed until 2011 when water issues were raised to the public domain due to the environmental accidents at the Talvivaara mine. Economic growth and employment also play a role in Finnish mining policy but, similarly to Sweden, it is from the perspective of regional development rather than purely national economic growth. In Greenland, the main issues concerning the public acceptance have been employment and economic benefits as well as the need for a more transparent and inclusive decision-making processes. Compared with the other case countries, Russia stands apart with the social acceptance of mining not being a particularly political issue.

Considering the responsibilities and roles of different actors in promoting sustainable Arctic mining, the Finnish policy acknowledges the role of both the private and public sector. Correspondingly, the Swedish policy sees that sustainable development is to be business-driven. Greenland places more emphasis on the role of industry in comparison with Finland and Sweden, by having stricter regulatory tools for ensuring direct benefits of mining to the society. In Russia, business actors are likely to take on enhanced responsibilities in promoting sustainable development on the regional level. During the past decade, the Russian government has emphasized the need for closer cooperation between industry and local authorities in implementing various social projects, shifting part of the responsibility for regional socio-economic development from the state to private actors.

Compared to Finland and Sweden, Russia is more unstable from a regulatory perspective, especially in the development and implementation of environmental policies. Greenland is still in the process of developing its policy framework and therefore the functioning of the process cannot yet be compared to the other countries. But in all countries, the EIA is an obligatory process for acquiring a permit for mining. Also alike, public participation is a key aspect of the procedures concerning EIA. SIA is most actively developed in Finland and Greenland.

CSR in the mining sector is under development in all four focus countries and even more notably in their Arctic regions. The historical contexts in each country also make differences in how CSR is being developed and implemented in each jurisdiction. It appears that the role of the state or government influences the practices and expectations of CSR. The Nordic welfare states seem to have a different perspective than Russia and Greenland on CSR. In Finland, the mining industry and the Government have placed emphasis on the development of responsibility strategies after the incidents at the Talvivaara mine. The increased presence of international companies has also contributed to the development. In Sweden, the industry has been slow to address issues related to social acceptance and local communication. There has not been nation-wide critical debate on mining as in Finland. Often, companies with a long history in Sweden have gained the social acceptance over time and are only starting to face pressures for new types of responsibilities in terms of communication and social aspects. However, Finland and Sweden share the trend of international companies bringing new practices, and in both countries, there is a need to modify CSR to fit the Nordic welfare state model.

Greenland does have a tradition of CSR but once mining establishes itself, the future practices of social responsibility will manifest themselves over time. Nonetheless, the legal requirement for conducting a SIA and the model of IBA have already been established, suggesting that government policy perceives the consideration of the local communities to be an important issue. The mining industry in Greenland is expected to take on different responsibilities than in Finland or Sweden, including education and training activities. This reflects the vastly divergent social priorities of our focus countries, but the trend remains that with international companies, global standards will likely impact each country's CSR policies.

In Russia, the practices of CSR are slightly different from the other case countries. The traditions of CSR in Soviet times are still evident. Many big companies have chosen a philanthropic method of CSR implementation by donating money for regional welfare and development projects. However, international practices and interpretations are also emerging. This has been partly due to the actions taken at the governmental level as well as by the companies' move towards new type of responsibility motivated by their desire to gain trust among international investors.

In these four Arctic countries, the national mining policies for Arctic areas emphasize economic growth but try to develop sustainability at the same time more actively than before. The rising importance of a social acceptance of mining has been reflected in the recent changes in national governance. Often pushed by criticism from the civil society and international pressures, the national governments are forced to acknowledge that the traditional benefits of mining development for a nation state, such as employment and economic growth, are not enough. The sustainability targets are taken more seriously today as concerns mount in preserving environmentally and socially sensitive Arctic areas. National mineral strategies and the development of policy tools are being updated to reflect these changes in each country but at varying extents. While in Finland, the questions of public acceptability of mining are high on the political agenda, in Sweden and Russia the questions have not been so politicized, as of yet. In Greenland, mining development is closely linked to aspirations for economic and administrative independence, and the detailed demands and expectations from civil society have made mining a very political issue.

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## **Notes**

1. In international debate, the term Social License to Operate (SLO) is increasingly used to refer to social acceptability of mining. In this article, we use only the concept of social acceptance.

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