Symbolic Responsibility
A Pathway analysis of the Swedish Mineral Strategy
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1. Introduction

Mining has often a great impact on local societies in terms of environmental degradation, landscape changes which in turn may affect both lifestyle of individuals and the possibility to employ other activities such as reindeer husbandry, fishing, and agriculture, but also outdoor recreation. (Beland Lindahl et.al 2016, p. 2) In addition, establishing mines entails great risks and causes conflicts, one extreme example, the expansion of the underground mine in the city of Kiruna in northern Sweden which have forced politicians to relocate the entire city. The potential establishment of future mines in other parts of Sweden e.g. the municipalities of Jokkmokk and Storuman, have also led to enduring local conflicts between those in favour of a mine, often local politicians in leading positions, and those against, e.g. supporters of the environmental movement and Sami organisations (Beland Lindahl et.al 2017, p. 9). Because of the impact on indigenous Sami land rights, the Sami parliament – Sametinget - have decided to oppose any future mineral exploration until Sweden have ratified the ILO 169 for indigenous rights (https://www.sametinget.se/73597).

These conflicts over natural resources may be understood or interpreted through as different pathways to sustainability (Beland Lindahl et.al 2017) Stakeholders are rarely against sustainability, but the understanding and ideas to implement the concept is often divided. Different stakeholder has different pathways to achieve sustainability based on their preferred development, these different views challenge each other and causes conflict (Beland Lindahl et.al 2017, p. 399). Mining sceptics argues that local development is dependent on a functional environment, where environmental interests is prioritised over economic interests, while mining advocates argues that economic development is necessary for local development and the possibility to achieve or sustainability, arguing that some trade-offs between ecology and economy as well as special aspects must be accepted (Beland Lindahl et.al 2017, p. 3).

While research has been conducted on the divided attitude towards mining expansions (e.g Beland Lindahl 2017; Sehlin Macneil 2017), no research has been conducted on the Swedish mineral policy – or how the policy either manage to mitigate between the opposing attitudes or if it for example, deliberate or undeliberate promotes one or the other side of the conflict when the policy is implemented. As mentioned above the Swedish mineral policy has provided diverse results with both harsh conflicts in for example the municipality of Jokkmokk. However, there are also examples of when actors at different levels have managed to either solve or avoid conflict through the set-up of a compromise. This was the case when the
Kaunisvaara mine in Pajala was established. Although the mining company, Northland Resources Inc, went bankrupt after two years of mineral extracting, leaving damaged surroundings, the fact that conflict was avoided in the establishment of the Kaunisvaara mine proves that the project had some success. Where other projects failed, the case of Pajala can provide knowledge of conflict management in cases of handling natural resources and the role policies play in managing dissensions. Future knowledge of the Swedish mineral policy and if it promotes sustainability is therefore necessary, to find if there is a gap between the policy and its implementation.

1.1 Problem statement
Sustainable development was described in the Brundtland-report from 1987 as; “the development that meets the need of the present without compromising the ability of further generations to meet their own needs.” (WCED 1987, p. 16). Mining can at a first glance be considered the opposite of sustainability due to the impact on climate and nature where mineral extracting disrupts the resilience of the ecosystem (Mudd 2010, p. 98). Contributing to social issues (like health effects, revenue invested in local societies and effects on outdoor recreation) where negative impacts on indigenous rights is the most notable (Sehlin McNeal 2017), together with the heavy environmental effects, one can question if sustainability is the appropriate term in the context of mining (Kirsch 2010, p. 88). Arguing that sustainable development is only achieved if the current natural resources are conserved. This view makes it impossible for mines to be sustainable (Whitmore 2006). On the other hand, mining has brought major social and economic development to societies, not alone through the provision of minerals, metals, and energy, but also by providing employment and training, taxes, and royalties, vital infrastructure, and providing minerals necessary for a low carbon economy (Han Onn, Woodley 2014, p. 116). These different perspectives on the possibility of sustainable mining divides the research field, where on one hand researchers describes sustainable mining as an oxymoron (Krisch 2010), and on the other hand portraying it as determinant for future promotion of sustainable development (e.g. Mutti 2010).

Since the Earth Summit in 1992 have intense pressure been put on, especially multi-national cooperation, to promote Sustainable Development and corporate social responsibility. The effects of mineral extracting have caused conflicts world-wide, provoked not only by the environmental impacts, but also by the industrial accidents, health and safety issues, impact on local livelihood, and violations of human rights. Operating in already vulnerable societies have
caused mining corporations to accept responsibility, and become leading in producing environmental impact reports and industry codes (Mutti et.al. 2012, p. 212-213). Land rights, land usage, and the lack of corporate social responsibility have cause civil groups establishing artisanal small-scale mines, with dangerous conditions and human rights violations, as a response of lacking gains of local communities from the official mineral extraction. Proving that further pressure on the industry is necessary (Moomen 2017, p. 86).

The association to environmental and social issues have forced the mining industry to report more of their efforts of sustainability rather than singularly focusing on economic development (Mudd 2010, p. 99). Because of the financial security that mineral extraction has produced since before the industrial age (Han Onn, Woodley 2014, p. 116), the common opinion is that an ongoing availability of resources is necessary, but a healthy environment in both current and former mining sites must be attained, emphasising the importance of sustainable mining (Mudd 2010, p. 99). Sustainable mining is the ambition to balance economic, environmental, and social concerns, to become safe, leading in environmental management, leading in community engagement, economic robust, and efficiently manage the mineral resource (Laurence 2011, p. 284).

This ambition can also be found in Sweden, represented in The Swedish Mineral Strategy that promote mineral extracting in a sustainable manner (Näringsdepartementet 2013, p. 8). Guided by inclusiveness and dialog it seems to be aware of sustainable mining. However, implementing the Swedish mineral strategy have had diverse results, both complex conflicts, e.g. the plans of establishing a mine in the municipality of Jokkmokk (Sehlin Macneil 2017; Beland Lindahl et.al 2017), and avoiding conflict when establishing a mine in the municipality of Pajala. To gain further knowledge of the Swedish mineral policy it is necessary to explore if there is a gap between the policy and its operationalisation. A relevant question is therefore; does the Swedish mineral strategy promote sustainable mining?

1.2 Aim
The aim with this thesis is to explore which pathways to sustainability that is promoted in the Swedish mineral strategy. More specifically, and based on the STEPS Pathway approach and frame analysis, the aim is to analyse the framing of different procedure when establishing mines in Sweden. The establishment of the Kaunisvaara mine in Pajala by Northland Resources is used to analyse the implementation of the Swedish mineral strategy and if sustainable mining is promoted. The questions guiding this thesis are:
1.3 Delimitations
Analysing governmental policies of mining presents a variety of alternatives. Because of the limitations of a master thesis and the abundance of possible empirics, I have been forced to restrict the empiric material to grasp the core of the Swedish mineral politics and its implementation. Current research lack in comprehending the completeness of this process, this thesis provides therefore a first attempt to fill this gap. I have decided to limit my material to the Swedish mineral strategy and the Environmental Impact Assessment (EIA) conducted in Pajala. I argue that these documents enable me to fulfil my aim since they represent the aim of Swedish mineral politics and its most recent implementation. In addition, the EIA represents the management of sustainability handling expected environmental and social concerns, which grasps the views of sustainable mining.

1.4 Previous Research
With mineral extraction, there are often a development of local conflicts that erupts and complicates the operation. Social legitimacy provides the opportunity for the extraction to continue without disruption and local actors experience they have been involved in the process in a meaningful way (Prno et.al 2012, p. 348). The emergence of the concept sustainable mining has developed from these conflicts, although the concept divides researchers. If sustainable mining is possible to achieve, is decided by the view on Sustainable Development, with consideration towards economic, social, and environmental dimensions. Can economic and social capital that is generated from natural resources be considered sustainable regardless of the environmental effects, or is sustainable development only promoted if natural resources are conserved (Hojem 2014 p. 9)?

As previous mentioned, researchers disagree if sustainability is within the possibilities of mining. Andy Whitmore argues that mining industries causes effects on the environment to a degree that makes economic compensations irrelevant. To claim that mining can be sustainable is to diminishes the concept of sustainability and eliminate the possibility of an honest dialogue. According to Whitmore, the concept of sustainable mining is being used as a tool for the industry to legitimise their own operation and pose their use of land as more important than
local activities (Whitmore 2006, p. 313). Like Whitmore, Stuart Kirsch argues that scarred and ruined environments are results from mineral extracting, therefore the claim that mining is sustainable is not just contradicting, it overwrites the fundamental environmental aspects of sustainability (Kirsch 2010, p. 92). Kirsch elaborates by describing the continued process of diminishing the concept of sustainability towards a market centred approach that overrides the fundamental values of justice. Effected mining communities are therefore dependent on the competence and moral commitment of the corporates instead of policies promoting actual sustainability (Kirsch 2010, p. 89-90). Though mining is the source of major environmental harm, problems occurs if the industry is excluded from any possibility of developing processes that stimulates increased sustainability. Other researchers argue that while mining has severe effects on the environment, it also provides important resources for our society which we are dependent on to have continued access to when developing a green economy. Excluding mining from the discussion of sustainable development serves no purpose since a sustainable mine would benefit us all. Sustainability in the context of mineral extracting, demands an adjustment of the concept Sustainable Development, where achievable actions for the industry is promoted (Hilson Murck 2000, p. 231-233).

Adisa Azapagic highlights the severe environmental effects that mineral extracting has in hopes of enabling a system that can provoke a more sustainable development in economic, social, and environmental aspects that the mining industries are struggling with. Azapagic argues that providing corporates with the tools to measure their level of sustainability can contribute to a development where corporates are given the opportunity to compare their levels to each other which increases the possibility for accountability demands from civil society (Azapagic 2004, p. 645-647).

David Laurence presents conditions for sustainable mining; efficiently extract minerals; safety; demonstrates leading practices in environmental management and community engagement; and is economically robust. Laurence argues that only including economic, environmental, and social dimensions towards sustainable mining is not representative of the industry, to only focus on these three dimensions prevents development of vital dimensions of mining, namely safety and efficiency that are necessary for furthered economic, social, and environmental development (Laurence 2011, p. 282-284).

According to Gavin Mudd is achieving sustainable mining in policy possible, but it will always require vigilance from all included actors. Mining will always include mineral extraction of
finite resources (Mudd 2010, p. 115). Wellmer and Becker-Plate argues in a similar spirit that since the demand for mineral resources and for renewable resources increases with more awareness of environmental issues together with increased global standard of living, policies to encourage sustainability, awareness, and responsibility is key for the survival of future generations (Wellmer, Becker-Platen 2001, p. 742-744). According to Gordon et.al we should not exclude mining from the discussion of sustainability, since it is vital for our current society. However, future policies must be aware that mining handles limited resources, hence the necessity of diverse policy that encourage the search for future solutions that does not rely on the resources we are dependent on today (Gordon et.al 2006, p. 1213-1214).

As earlier mentioned, the research on sustainable mining is divided, while some argue that sustainable mining is to stretch the understanding of sustainability (e.g. Kirch 2010, Whitmore 2006), others argue that it is necessary to involve mining in the discussion of sustainability because of our dependency on minerals in a green economy (e.g. Mutti 2010, Gordon et.al 2006, Wellmer & Becker-Plate, 2001). However, it is important to remember that both perspectives are promoting sustainability, the difference between these perspectives is their promoted pathway (Baker 2016, p. 42). While the sceptics argue that conserving natural resources is necessary to promote sustainable development, the proponents argue that some tradability is necessary. Pathways to sustainability have therefore great impact on the development of policies (Beland Lindahl et.al 2017, p. 46).

The Swedish mineral strategy (2013), pronounces that Sweden aims for strengthen its leading position within EU of mineral extraction, with the ambition to conduct mining in accordance with environmental, natural, and cultural values. Arguing that Sweden possesses a specific competence and knowledge making it attractive for the industry, concluding that Sweden can only gain from encouraging increased interest in extracting minerals within its borders. (Näringsdepartimentet, 2013). The Mineral industry will therefore probably grow in Sweden posing issues concerning of increasing future local conflicts resulting from divided views of Pathways to sustainability. Though issues of conflict caused by divided views on sustainability is well researched (Beland Lindahl et.al 2015; Beland Lindahl et.al 2017; Sehlin Macneil 2017), limits can be found in analyses of the Swedish mineral policies and its implementation concerning sustainability. In this thesis, an analysis of the Swedish mineral strategy and how it is implemented will give further knowledge of its coherence and promotion of sustainable mining, to find which pathway to sustainability is promoted.
2. Analytic Framework

2.1 STEPS Pathway-Analysis

The Pathway analysis that will be used in this thesis, is developed from the framework described in the article “Pathways to Sustainability” authored by Beland Lindahl et.al (2017). The developed framework focuses on four overreaching questions that aims for increase the understanding of problem formulation, policy goals, implementation strategies and assessment of outcome (Beland Lindahl et.al 2016, p. 70). Using the STEPS Pathway Approach created by Leach et.al (2010) to analyse the four dynamic properties of sustainability and how it is thought about in the policy, asking how does governance plan to handle challenges or changes? The aim with this framework is to analyse an entire policy process from the beginning idea to the resulting outcome (Beland Lindahl et.al 2016, p. 70). Using the Pathway analysis, demands understanding the nature of environmental policy, I will therefore use Leach et.al (2010) understanding as it is included in the framework presented by Beland Lindahl etl.al (2017) and Beland Lindahl et.al (2017). According to Leach et.al (2010) the importance lie in policies to “broaden out” the inputs, including different actors and perspectives. “Opening-up” the output, is referring to increasing the range of different options. The opposite action is to “closing down”, allude highlighting restricted possible actions or policy choices (Leach et.al 2010, p. 122). Using these concepts allows to highlight principal differences in policy input and output in the making of trade-offs found in the studied governmental system (Leach et.al 2010, p. 105). Which Means that to achieve both a broad input and an open output, is strong mechanisms necessary, where different opinions have similar possibilities to participate and affects the results (Beland Lindahl et.al. 2017, p. 74). To estimate the policy broadness and its implementations openness, is inclusiveness an important concept, thus how actors are included in the implementation. (Beland Lindahl et.al 2017, p. 46)

Beland Lindahl et.al (2017) uses this theoretical approach to compare seven governance models of regional forest managements, to finds alternative, possible competing, pathways to sustainability (Beland Lindahl et.al 2017, p. 70). A pathway should be understood through its inclusion of the activities that are a result from the established frame, it is a strategy for action based on the worldview produced by the frames. It tends to exclude other pathways with a different approach to sustainability. A pathway is thus a theme found when combining different frames (Beland Lindahl et.al. 2017, p. 46). While the authors use this theoretical approach to compare how different governance models respond to similar global trends and analyse the
different variations of pathways to sustainability (Beland Lindahl et.al 2017, p. 71), in this thesis will the framework be used to analyse the Swedish policy regarding mineral extraction and which pathway to sustainability is promoted, using the case of Pajala to analyse if the success to establishing the mine in Kaunisvaara is an illustration of this pathway to sustainability described in the Swedish mineral strategy. In this thesis will the Input and Output model presented by Beland Lindahl et.al (2017) be used, focusing mainly on Input, where the Swedish mineral strategy will be analysed. Then continue by describing the implementation strategies of the policy (the throughput), and later describing the case of Pajala through the Output, mainly focusing on the EIA (Environmental Impact Assessment) conducted through its implementation frames. Adjusting the model since the documentation did not document any outcomes or specific actions before Northland Resources Inc went bankrupt. The analyse will focus on the strategies for implementation presented in the EIA, by analysing how Northland Resources adopted the Swedish mineral strategy in their process and if sustainable mining is promoted. The case of Pajala will be used since it is the latest example of where the Swedish policy has been enforced and since it provides a case where conflict was avoided. Below is a model that concludes the model of the pathway approach created by Beland Lindahl et.al (2017).

*Figure 1: Pathway-Analysis*

<table>
<thead>
<tr>
<th>Input</th>
<th>Policy frames</th>
<th>Meta frames</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Problem formulation</td>
<td>How are future challenges addressed?</td>
<td>Is there an overarching organizing idea, recurring argument, or logic that motivates/justifies the policy response?</td>
</tr>
<tr>
<td>2. Goals</td>
<td>How are goals presented and organized?</td>
<td>As above</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output</th>
<th>Implementation frame</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Implementation</td>
<td>How is the implementation process described and justified?</td>
<td>What actions are taken?</td>
</tr>
<tr>
<td>4. Outcome</td>
<td>How are the outcomes described?</td>
<td>What actions are taken to monitor, adjust and improve performance?</td>
</tr>
<tr>
<td></td>
<td>Are goals met?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are there strategies to monitor, adjust and improve performance?</td>
<td></td>
</tr>
</tbody>
</table>
Conducting a Pathway analysis demands an analytical tool to answer the questions presented in the model above. I will use frame-analysis to analyse my material as it is used by Beland Lindahl et.al (2017). Below is the presentation of the complexity and variety in understandings of frames and which understanding will be used in my analysis.

2.2. Frame

Few other theoretical constructions have such diverse understandings as Frames or Framing. With a history in cognitive psychology (Bartlett 1932) and anthropology (Bateson 1955/1972) it later developed within disciplines such as; sociology (Goffman 1974), public policy analysis (Rein 1983; Rein & Schön 1977; Schön 1979/1993; Schön, Rein 1994, 1996; van Hulst, Yanow 2016), social movement studies (Gamson 1992; Morris, Mueller, 1992; Snow, Benford, 1988;), behavioral economics (Kahneman, Tversky 1979), linguistic (Fillmore 1982; Tannen 1979; Cienki 2007), communication studies (D’Angelo 2002; de Vreese 2012; Entman 1993), and conflict resolution (Dewulf et.al 2009; Gray 2004; Putnam, Holmer 1992). Because of this variety of understandings and usage in a range of cognitive, linguistic, and cultural processes with the variety of contexts, tying the concept to its specific discipline becomes necessary, since concepts that have no distinction constructs a confusion when it loses its ability to distinguish from other social phenomena (Rothstein 1996, p. 145). To avoid conceptual confusion, I will divide the understandings of frames in three separate levels inspired by Cornelissen and Werner (2014). As suggested, the presentation of the distinction between different levels of frames is an effort to tie my understanding of frames to its specific discipline and explicitly explain which understanding will be used and why.

The cognitive perspective argues that to understand individual frames of reference, is to understand the screen used to filter them. Individuals are members of social organisations with similar frames of references as their own, the groups reinforcement establishes frames of reference by providing a filtering screen (Cornelissen, Werner 2014, p. 186). According to William Starbuck, regularities are created by the social organisation that is detected by its members who compresses these regularities to less complex frames of reference, that guide their perceptions, interference, and behaviour. Rules and codes helps members to adopt themselves to the organisation (Starbuck 1983, p. 93). Sara Kaplan argues that when a frame is activated within an organisational structure, it guides interpretations. The cognitive frames guide individual action in creating a favourable outcome. (Kaplan 2008, p 736). The cognitive perspective focuses on individual perspectives of frames, which is not the aim in this thesis.
The interactional contractions of frames argue that human interaction, the usage of language and other symbols that creates meaning creates human behaviour. The subjective meaning that we prescribe social events, is governed by principals of social organisations. Frames are therefore products of social constructions of assigning meaning and interpreted principals to organising. Frame and framing are distinguished from each other, where framing is the way one use language and symbols to reinforce existing frames or creating new (Tannan, Wallat 1987, p. 206-207). Framing is therefore a top-down process, where a speaker uses framing towards the listeners, which makes it distinguishes from the view of framing as a joint activity (Cornelissen, Werner 2014, p. 199).

Dewulf et.al (2009) argues that previous interactions create our understanding of the world, thoughts, feelings, associations, visualisations, and language is a result of interactions. Our cognitive understandings are directly connected to the interactive processes where they are produced. Individuals may move towards a common framing in the interactive level, but in a situation of threat individuals do not only stay with their frames, they reinforce them (Dewulf et.al. 2009, p. 182-184). By using the cognitive frame as a tool of understanding the actors starting point in negotiation, and the process of negotiation as the process of producing interactive frames, the field of conflict resolution and meditation can gain major explanatory value (Dewulf et.al 2009, p. 183). However, this perspective on frames is more relevant when analysing negotiations. Thus, conducting interviews of how stakeholders perceived the negotiation would be more fitting. This understanding of frames will therefore not be used in this thesis.

Within the institutional perspective of frames, argues Donald Schön and Martin Rein that in any issue terrain, there are always a variety of frames competing over meaning and resources. The contest over meaning results in economic and social resources. Policy controversies are created when this contest of meaning and resources reaches deeply symbolic meaning within society, where compromising over public policy becomes increasingly foreign. However, this is the foundation of democracy where reasonable pluralism is encouraged. Identifying these different frames are part of the analysis, these frames are not free floating but rather connected to a specific institution with official, established, and recognised interest groups (Rein, Schön 1996, p. 95). However, in this thesis is not communities of interest, but rather governmental institutions. Therefore, is this thesis understanding of frames gathered from Perri 6. Adopting an institutional perspective, Perri 6 provides an understanding that describes how frames are
established, how they can change, and how actors move between them. According to Perri 6, frames is understood as products of solidarities or institutional styles of social organisations developed from institutions which provides a clear account of the existing frames. Perri 6 provides a theoretical explanation of why there are confined ways of sanely thinking of issues or problems, contradicting the postmodern view. Arguing that the persuasion between different views is limited and rooted in the primary social organisation (6 2005, p. 112-113).

Perri 6 suggest that the understanding of frame analysis is grounded in Neo-Durkheimian institutionalism rejection of functionalism, dismissing that different frames competes against each other to create the strongest possible organisation. This view on frames also rejects relativism by dismissing the view that there is no reality that can be studied. The view of the world is determined by the social organisation that the individual place their solidarity (6 2005, p.97-98). The social organisation creates frames that reproduces their view of the world, which does not threat their understanding of it (6 2005, p.98). Frames should be understood as an organiser of social interactions, lived practises and not just abstracted ideas. They are derived from institutions that generates clusters of frames organised to understand different problems. (6 2005, p. 97).

The social organisations world view is connected its institutional formation. These formation is only reproduced in the conflict with the other formations (6 2005, p.100). The fears of the organisation determine what is views upon as an issue, which decides what is relevant to be concerned about which provide frames where high and low priorities of social fears are represented. These frames determine the view of how issues should be handled. The view of the social and natural world decides what treatment the world is responsive to (6 2005, p.101).

Social organisation is the most important causal factor, above worldview or psychological type. This makes is hard for one individual to live in total consistency of different social contexts, some contradictions between work, home and local community are expected. The primary location, the belonging to a specific social organisation, their long term, underlying position that they belong to in relations to a major institutionalised force. The primary location is an individual basic system of accountability. However, an individual is also consisting of secondary locations, where different frames are presented in an attempted to persuade a shift of frames. Where different information is presented under a specific institutional sphere, where the own primary location converses with others who have their solidarity with another organisation, if the situation have temporary pressure to recognise others primary locations,
there may be reason to modify personal thinking. Often, they reverse back to the primary location, but sometimes the surprise or incontrovertible information that are presented undermines the frame in such a way that the primary location is changed (6 2005, p.100-101).

The theoretical approach of Perri 6 will allow me to find which pathways to sustainability is promoted, since it presumes that frames are connected to institutions and that there are not indecisively many ways to sanely understand issues. As earlier mentioned, will the frames be categorised in overreaching themes to find the promoted pathway. A frame is always connected to a social organisation. However, to understand if these pathways promote sustainable mining will another theoretical tool that can distinguish different approaches of sustainability be used. Therefore, is the approach of ideal types used in this thesis.

2.3 Ideal Types
In relations to environmental policies, there are two main frames promoting sustainability. I will use ideal types to categorise the frames found in my analysis, to understand how promoting sustainability is represented in the material. Ideal types are an analytical tool which can help researchers to grasp the complexity of reality. Political science has always struggled with realities complicated diversity, and to what degree simplification is possible without overlooking the complexity. Max Weber argues that scientific knowledge can never be objective, all knowledge is culturally bounded and the knowledge that science provide about society is connected to that specific social context, hence it does not exist objective laws about society (Boglind et.al 2014, p 172-172). Therefore, to grasp the complex reality, Weber used “ideal types”, a tool to understand reality in a systematic manner. It is a tool for scientific research to gain knowledge of restricted phenomenon through pre-existing explanatory theories (Boglind et.al 2014, p. 174-176), to streamline complex manners, and help to sort different formulations and to help define the material in coherence with the research quest (Bergström, Boréus 2012, p. 150). Ideal types are not ideals of how something should be, neither a model of reality, they should rather be understood as providers of a utopia that are reached through emphasising specific elements of reality. It is an identity of the specific context that is constructed to make the phenomenon understandable and perspicuous in a pragmatic fashion, they are refined versions of reality. Ideal types are a collection of individual phenomenon that through a specific viewpoint becomes a unity with explanatory value, hence, it provides the tool to grasp a complex and abstract reality (Boglind et.al 2014, p. 174-176).
In this thesis, I will use ideal types to systematically categorise my findings from the analysis to understand how the Swedish mineral strategy aims at promoting sustainable mining and which effects this promotion have on the EIA. The ideal types are created through the understanding of Sustainable Development and Ecological Modernisation. I will now present my theoretical understanding of Ecological Modernisation and Sustainable Development which is the foundation of the ideal types used in this thesis.

2.3.1 Sustainable Development and Ecological Modernisation

The difference between the concepts Sustainable Development and Ecological modernisation lies in the different framing of environmental policy, the different view of Sustainability. Even though there are some similarities of these concepts, the difference is their view of necessary changes for sustainability (Langhelle 2000, p. 303-304). Ecological modernization is characterised by its belief that current political, economic, and social institution can internalise care for the environment. There is an industry for environmental care where technology and social organisation are tools to meet present needs without the ability for future generations to meet theirs (Langhelle 2000, p. 310). If a resource is vital to society, its value of usage determines its continued usage, does the gains outweigh the costs? The environmental impact of continued usage decides if its defensible, giving nature a market price (Baker 2016, p. 41). Ecological modernisation has developed through three steps, beginning with the emphasis on technological development as the solution of environmental issues, the developed to emphasised the relationship between ecological transformation and the market, to later focus on the dynamics between developed and lower developed economies (Mol 2000, p. 46). Ecological Modernisation should be understood as a political concept where environmental problems have a solution in environmental innovations, therefore are political promotions of market solution important, for instance with natural resources that are scarce is it rational for the industry to seek new resources and solutions to substitute the scarce. Policy development should be conducted in a manner of supporting technological innovations, creating standards and market opportunities for industries that meet them (Jänicke 2008, p. 558-559). State regulation can create innovative environments that stimulates completeness to reduce ecological impact of industries, though many criticise the view of ecological modernisation for providing technological solutions to political issues. Critics argue that ecological modernisation conducts an optimistic view of efficiency, when all evidence points at overconsumptions as the larges problem (Barry 2010, p. 114-115). However, as a strategy of reform, ecological
Modernisation provides distinctive advantage to advance industrial society, stressing to steer business towards eco-efficient practices without undermining completeness, therefore it have become the chosen policy approach to implement goals of sustainable development (Baker 2016, p. 57).

Sustainable Development was defined in the World Commission on Environment and Development (WCED) from 1987, which was chaired by Gro Harlem Brundtland, the Norwegian prime minister (Baker 2016, p. 23). Brundtlands definition of Sustainable Development became the dominant concept since it offers a way of reconciling conflicting societal goals of economic, social, and environmental protection, further the definition was presented in a time where environmental concerns were high on the political agenda, and the definition also supported developing countries in economic and social development (Baker 2016, p. 25). There are some tendencies of presenting Sustainable Development as it is defined by Brundtland, as an empty shell, to be filled with whatever appropriate economic, social, and environmental variable. Baker however argues that the Brundtland definition challenges the industrial world to keep consumption patterns within boundaries of what is ecologically possible and on a level where all can reasonably aspire (Baker 2016, p. 59). The Brundtland definition promotes technological development, but also promotes building a fundamental process of change, which includes technical and institutional change as well as addresses social, economic, cultural and lifestyle transformations (Baker 2016, p. 32). Natural resources that can be exchanged to technology should be exchange, e.g. exchanging oil to solar panels. Environmental protection is dominant economic development, where necessary economic development is balanced by reducing growth elsewhere (Baker 2016, p. 42-43).

The different meaning attached to Sustainable Development effects the policy produced, but Sustainable Development can also be used as a symbolic measure to vocalise a political ideal. While promotion of Sustainable Development cannot be achieved by promoting ecological modernisation, since it encourages growth to the ecological crisis. The Brundtland definition advises fundamental processes of change of the high consumption society that is funded on the acceptance of unlimited growth (Baker 2007, p. 304). Baker argues though that EU have presented Sustainable Development as a building block in the European Identity while the actual policies are developed from Ecological Modernisation. Describing the union at a meta-level in measures of Sustainable Development, but in actions finding its representation in a more capitalistic market compatible view. This have given EU a normative power that opposite
other powers which have helped to shape the EU identity influenced by Sustainable Development (Baker 2007, p. 312-313).

Figure 2: Comparison Ecological Modernisation & Sustainable Development

<table>
<thead>
<tr>
<th>Ecological Modernisation</th>
<th>Sustainable Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Capitalism can handle the ecological crisis.</td>
<td>- Fundamental changes of high consumption societies are necessary.</td>
</tr>
<tr>
<td>- Technological development is the solution.</td>
<td>- Keeping consumption patterns to what is ecologically possible.</td>
</tr>
<tr>
<td>- Policies promotes technological innovations, standards, and market opportunity for industries to meet.</td>
<td>- Policies promoting social, cultural, economic and lifestyle transformation is the solution.</td>
</tr>
<tr>
<td>- Natural capital competes at the capitalistic market.</td>
<td>- There is no critical natural capital that cannot be substituted to new technology.</td>
</tr>
</tbody>
</table>

2.4 Sustainable Mining
As described above, Sustainable Development and Ecological Modernisation have different impacts on policy implementation. When concerning the sustainability of mines, these concepts have a specific understanding. The challenges of Sustainable Mining as presented in the report “Breaking new Ground” (2002) conducted by the Mining, Minerals, and Sustainable Development Project (MMSD) will be adopted to distinguish if sustainable mining is promoted. Using these challenges will increase the understanding of the mineral strategies promotion of sustainability, and its connection to either Sustainable Development or Ecological Modernisation. There are originally nine challenges, but since the challenge of “Artisanal and Small scale mines” is not relevant in a Swedish context, it will be excluded. The eight remaining challenges will be described below together with their connection to Sustainable Development or Ecological Modernisation.

1. Viability of the mineral industry.

In order of contribution to Sustainable Development, companies must survive and succeed. Mines are expected to provide safety, health, educated and committed work forces, capital, a social licence to operate, the ability to attract and maintain good managerial talent, and the opportunity to return investment. A sustain mine provides its benefits in a long-term perspective, and have the fundamentals of sustainable development embedded in the culture of
the mining company (MMSD 2002, p. 25). To increase viability must the mineral industry increase the importance of external gains that is not associated with direct internal growth (MMSD 2002, p. 115). Placing economic growth aside for social and environmental development, where the obsession with never-ending growth of today is questioned, is strongly connected to Sustainable Development (Baker & Eckerberg 2008 p. 227).

2. The control, use, and management of land.

Problems with land claims of indigenous people, compensation, resettlement, and protected areas, are often a result from poor planning or framework to balance and manage possible uses of the land. Balancing national and local-level interests demanding inclusiveness of all stakeholder affected by the result (MMSD 2002, p. 25). Assuring the establishment of no-go zones for the industry, conducting an early detailed estimation of the economic gains in establishing a mine, and to balance the power structures to create equality in negotiation is important implementations that MMSD promotes (MMSD 2002, p. 169). Promoting social rights over economic growth is important aspects of Sustainable Development. In this challenge is the strengthening and participation of the civil society an important aspect which is driven from ideas of Sustainable Development (Baker & Eckerberg 2008, p. 7).


It is important to find lasting ways to manage and capture mineral wealth to ensure that it is invested to provide lasting benefits for local, national, and regional development. This is mainly applicable for developing countries but should also be considered in other cases, e.g. sustainable development is ensuring that local workforce and competence is used throughout the whole process (MMSD 2002, p.26). The importance of the economic gains from the extraction process presented in this aspect, highlighting the importance of the current system of continued growth and consumption, which reconciles this aspects with Ecological Modernisation (Baker 2016, p. 54-55).

4. Local communities and mines.

Ensuring that social and economic activity will endure in local communities after a mine close, demands high level of planning and commitment. This involves using local businesses, local workforce, local suppliers, and distributors to educate and build human resources. This also includes local actor involvement in all parts of the process (MMSD 2002, p.26). By promoting
the importance of economic development, giving the natural capital a value at the capitalistic market, this aspect is connected to the views of Ecological Modernisation (Pepper 1998, p. 2).


Extracting minerals causes environmental impact, these impacts needs to be managed more efficient, including waste management, planning for future closing, what environmental legacy is left, conducting a serious and well investigated EIA, and managing impact on biodiversity (MMSD 2002, p.26-27). The question to ask is if the impacts of mineral extracting are beyond self-correcting capacity of the ecosystem? Is the duration of the impact short-term or long-term, and if the impact is long-term is it revisable or irreversible? Lastly, is extracting worth in other capital accumulations (MMSD 2002, p. 232)? A natural capital, that can be exchanged in a capitalistic market economy, is an argumentation strongly connected with ecological modernisation. Where the environmental impact can be defended through the economic gains (Baker 2016, p. 41).

6. An integrating approach to using minerals.

Promoting collaboration in developing future recycling, reuse, remanufacturing, substitution, and, in some cases, avoid usage of minerals. A consistent assessment of costs and benefits of continued usage of some minerals, needs to be addressed (MMSD 2002, p 27). This aspect is strongly connected to Sustainable Development, where critical natural capital is denied and should be substituted by technological advances when possible (Baker 2016, p. 42).

7. Access to information.

Assuring inclusiveness in the process demands easy access to correct information, it is also key to build support and cooperation (MMSD 2002, p.27-28). Communication is key in managing issues that the industry is facing, especially distrust and conflicts, thus making information and communication prioritised (MMSD 2002, p. 293). As argued by Baker and Eckerberg (2008)
are new governmental approaches with increased engagement of different actors, the combination of an active engaged local civil society and committed leadership, steered by local and national government and international authority, can generate the needs for delivery of outcomes. In pursuing promotion of sustainable development, is these governmental practices one important factor (Baker & Eckerberg 2008, p. 227).

8. Sector governance roles, responsibility, and instruments of change.

Governments have the responsibility to provide policies, framework, regulations, and enforcement that promotes sustainability, and to defining roles, rights, and responsibilities for all involved actors. Governments needs to simplifying voluntary involvement in managing post-mining sites and environmental legacy (MMSD 2002, p.28). Promoting the importance of governmental responsibility is reconciled with Sustainable Development. Governmental promotion of societal changes that promotes sustainability is important in changing the high-consumption society to transform to a sustain-conscious society (Baker 2016, p. 32).

3. Operationalisation

3.1 Pathway- Analysis
To find which Pathway to sustainability that is promoted by the Swedish mineral strategy, I will apply the Pathway analysis as it is presented in the article authored by Beland Lindahl et.al (2016), where the ambition is to follow the policy from its beginning idea and goal description, to the implementation. However, since I will use Pajala as an example of the realisation of the strategy, and the mine in Kaunisvaara went bankrupt before any documentation about the results was done. I will therefore mainly focus on the Input, the Swedish mineral strategy, how the policy is realised in the throughput. In the out-put analysis I will analyse the beginning implementation, where what strategies for implementing the Swedish policy framework will be analysed through the EIA conducted in Pajala. Presenting the planning for the establishment of the mine. Outcomes and actions will not be analysed because of the lack of documentation. The trade-off between the goal, production, and usage, will visualise the separation between ideas, institutions, actors, and outcome to analyse how governance system handles the policy input, output, and the task of creating trade-offs (Beland Lindahl, et.al 2017, p. 69-70). I will apply the analytical framework and answer the question presented in the model below.
3.2 How the frame analysis will be conducted

The frames found in the analysis will be categorized to find a combining theme, a pathway. Themes found described in the materials will be analysed and organised through the ideal types to find if Ecological Modernisation or Sustainable Development is promoted. The analysis will be conducted in four steps; familiarisation, initial thematic framework, creating index and sorting, and reviewing data extracts (Ritchie et.al 2014, p. 297). Familiarisation will be done by gaining an overview of the material with research question and objectives in mind. Finding interesting frames for future analysing, constantly checking relevance for the research objectives and themes (Ritchie et.al 2014, p. 297). Constructing an initial thematic framework with a connection to the pre-existing pathways, aiming at organising the material and link frames to each other and the pathways (Ritchie et.al 2014, p. 298; Bryman 2011, p. 528). Indexing the material, refers to reading the material in detail and deciding what it manage, to determine which pathway is applicable. Connections between different pathways and frames can be detected (Ritchie 2014, p. 300). When indexing is completed the data needs to be sorted so that material with similar frames can be viewed. Assuring that data is not removed from its context is important to avoid altering the obvious understanding. This presents the opportunity
to view the findings within their categorisation, presenting further understanding of the dominant frames. I will also return to the material that have not been indexed to find if important frames have been missed (Ritchie 2014, p. 303). I will end with overlooking the frames to find a combining theme, the pathway. The pathway describes the approach to sustainability promoted in the mineral strategy and if there is any gap between the strategy and the EIA.

Using ideal types together with Perri 6 understanding of frames can be perceived as limiting which frames that are possible to find. However, in this thesis is the ideal types used as a tool to discover frames, which are assumed to be inspired by sustainable development or ecological modernisation. This assumption is based on that these theoretical understandings are the main approaches of sustainability. Limiting the possible ideal types to ecological modernisation and sustainable development is both logical and simplifies the delimitation of the analysis naturally.

3.3 Challenges of Sustainable Mining
To draw conclusion on if the Swedish mineral strategy is promoting sustainable mining, will the MMSD challenges presented earlier be used to identify aspects of sustainable mining. Many frameworks that seeks to measure sustainable mining, aims for quantitative variables that can measure a level of sustainability to compare with other corporates (e.g Azapagic 2004; Marnika, Christodoulou & Xendis 2014; Castilla-Gómez & Herrera Herbert 2014). However, since sustainability includes many social factors that can be hard to grasp with statistical methods. The MMSD challenges will help me to detect if the Swedish mineral strategy promotes sustainable mining.

The understanding of Sustainability in this thesis refers to a dynamic concept, that concludes a state-of-mind rather than reaching an end-state, where promoting, rather than achieving sustainability is possible (Baker 2016, p. 9). The connection to sustainable mining is closely connected to the Brundtland definition of a sustainable industry where promotion of efficient production, ecological modernisation, accepting environmental responsibility, tighter controls for hazardous material and waste, continued flow of wealth for human essential needs, and reorienting technology and management risks (Baker 2016, p. 34). Brundtland also argues that meeting the human basic need includes to improve quality of life to meet the aspiration towards achieving better life. Consumption is though expected to be held within ecological capacity to be considered sustain. Industries are expected to stimulate technological development for achieving more sustain processes, but Brundtland argues that if sustainability is promoted, representation from a wider set of actors with a deeper set of values is needed to avoid leaving
the industry with the singular responsibility (Baker 2016, p. 59). Meaning that sustainable mining through this understanding of sustainability is only achieved if the responsibility for sustainability includes a variety of actors with different agendas and interests, to avoid leaving corporates with the final responsible for sustainable practices. Promoting Sustainable Mining is achieved through managing these eight challenges in a conscious manner, where the managements should avoid becoming narrowed to singular aspects of the challenges, instead aiming at acknowledging the complexity.

3.4 Material
In this thesis is the Swedish mineral strategy and The EIA conducted in Pajala, used as the main empiric material. The Swedish mineral strategy represents the Swedish mining politics, since it presents the strategy of how the mineral sector will be governed, resembling the political view and standpoints on the Mineral sector. The political views on mining is the main interest in this thesis, therefore is the strategy a more fitting document to grasp these political issues, rather than other legal frameworks such as the mineral act or the environmental code.

The EIA was conducted 2008 while the strategy was presented in 2013. Although these documents were developed in parallel, one is not the effect of the other, but rather represents an expression of one another. It is however important to remember that the frames found in the mineral strategy did not first appear in 2013, instead the strategy represents a documentation of already existing ideas of mining in Sweden. Pajala is the most recent case of the implementation of Swedish mineral policies that resulted in an established mine and is therefore an important case for understanding the pathways promoted by Swedish mineral policies. However, it is important to remember that the EIA is not developed from the strategy but rather an externalisation of it.

3.4.1 Swedish Mining Legislation and Environmental Impact Assessment
There are two main legislatives that govern the permitting process of mines in Sweden, the Mineral Act, and the Environmental Code. The Mineral Act regulates the exploration and the exploitation of deposits of minerals, and the Environmental Code applies on potential harmful environmental activities (Poelzer 2015, p. 45).

To be granted permission for exploitation special competence is needed, where financial and technical capacity is necessary, which is why the Mineral act have the mandate to decide upon this matter regardless of land owner. Three types of permit are essential for development of
new mines, exploration, exploitation concession and environmental permit. Exploitation concession is a mining permit issued by the Mining Inspectorate, environmental permit is issued by the Environmental Court who tries the permit under the Environmental code. Before there can be any production the company needs to secure both an exploitation concession and an environmental permit.

Next step in the process is to submit an EIA, this is included in the application of exploitation concession from the Mining Inspectorate. The application should contain economic viability of the deposit, and ensures that safety standards are met, including identifying any competing land uses. The Mining Inspectorate decides if the project complies with the Environmental Code where the regulation of land management and water area is managed. If the activity is near or within a “Natura-2000” area is a special permission necessary which is issued by the county government before the land uses can be permitted (SGU 2013, p. 7).

The Mining Inspectorate recommends conduction of stakeholder consultation, but this is not formally required at this stage of the process, except if reindeer herding is conducted in the area, then there is required to be an impact assessment conducted. The environmental code requires though anyone who intends to apply for an environmental permit to conduct stakeholder consultations with the county administration board and private individuals that would be effected. This must be conducted before preparing the environmental impact statement (Poelzer 2015, p. 46).

When permission is issued according to the environmental code, is the configuration of the mining establishment finished. But to begin extracting the land that is claimed for the extracting must be designated according to the environmental act, by applying to Bergsstaten land allocation. A building permission is also necessary before the extraction begins which is issued by the municipality (SGU 2013, p. 7).

3.4.2 The Swedish Mineral Strategy

A strategy is a direction of development that aims at steering the efforts towards a common goal. It should provide structure for long-term undertaking as well as flexibility to allow adjustments. It is a tool for governance to grasp a complex issue in a stepwise process (Fredriksson 2011, p. 80-81). A strategy is an intervention to change the future from decision-making rather than just chance. It is both a political project and an intellectual project because it both aims at mobilising attention and creating new understandings to sustain the political
project (Fredriksson 2011, p. 93-94). The Swedish mineral strategy is a tool for the industry and actors who contributes to or are affected by mines, to strengthen the Swedish position on the market in a sustain matter (Näringsdepartimentet 2013, p. 4). The Swedish mineral strategy is developed with inspiration from the EU-2020 strategy for growth, that was developed after the 2008 financial crisis and is a strategy to stimulate development within the union. It concerns education, increased employment, increased resource efficiency, decreased greenhouse gases emissions, and an increased investment in research and innovation. EU 2020 visualise the objectives of the union and though it does not represent a method for the members, it represents objectives that are relevant for all members (EU.KOM 2010, p. 10-11). The objectives presented in the EU 2020 strategy is therefore like the objectives of the Swedish mineral strategy (Näringsdepartimentet 2013, p. 15). The Mineral Strategy is developed through five strategic areas, eleven action areas and nineteen promoted actions. The function of the five strategic areas is highlighters of important aspects for achieving the vison presented by the strategy (the through-put), where Sweden maintains the position as the leading mining-nation within EU and where the mineral deposit is sustainably extracted wit respect towards ecological, social, and cultural dimensions to conserve nature and cultural environments (Näringsdepartementet 2013, p. 4-5).

3.4.3 Environmental Impact Assessment
If the strategy represents the Swedish mineral politics, the EIA represents the attitude towards sustainability presented by Northland Resources and how demands of sustainability is approached. The EIA represents how issues presented in the mineral strategy is realised. It is the document where environmental impacts and concerns are managed and are therefore affected by the strategy elucidated concerns.

The short time-frame of the process in Pajala, is the reason for the lack of documented goals and actions. These documents that describe the planned operation, provides more information of how the mining govern of Sweden influences the industry. Since the interest of the thesis is in the impacts of the Swedish mineral politics in issues of sustainability, analysing the EIA offers the understanding of how environmental issues are planned to be manged, providing both the view of corporation responsibilities and governmental influences. Further it also provides corporations perceives local actors concerns since the assessments is conducted through consultations where these issues are managed, where the EIA shall answer these concerns. In the EIA conducted in Pajala are eleven appendixes included; Maps of the area, (Appendix 1)
4. Analysis

4.1 Background
Northland Resources began their research for possible mineral extraction in Kaunisvaara 2006 (Northland Resources Inc 2008, p. 2). In 2008, they released a Preliminary Economic Assessment (Ejdemo, Söderholm 2011, p. 15) and consultation meetings were conducted between September 2007 and June 2008, these meetings are also used as the foundation of the later authored EIA. (Northland Resources Inc 2008, p. 1). The project was approved in late 2008 and the construction of the industrial area began in 2010 (Lahti 14/12-10). The extraction began in 2012 with an expectation of making profit by 2013 (Nordlund, Leijon 18/10-12). Because of the unexpected falling iron prices, Northland as a relative small mining company had difficulties to maintain the extraction without any profit, declaring bankrupt in 2014, leaving a functional but shut down industrial area behind (Naess 8/12-14). The Reindeer husbandry community, Muonio, suffered from this development, since they agreed on a confidential agreement with Northland with full inclusiveness and cooperation in future development to minimise effects on the herding since the mine was located on the autumn seasonal pastoral (Rosengren 8/10-14). Further complicating the reindeer herding activities with the heavy iron transportation effecting the natural reindeer movement and their safety (Ekenberg 2008, p. 21). The official agreement between Northland and Muonio was yearly concessions of future development to minimise the effects on the herding activities (Bergsstaten 2008, Dnr 22-359-2008). The agreement was however tied to Northland, meaning that Muonio lost their seasonal herding land and the compensation for the mines effects on their herding activities, when Northland went bankrupt. If any new corporation
would buy the industrial area and continue extraction, they have no obligation to fulfil Northlands agreement with the Reindeer Husbandry Community (Rosengren 8/10-14).


Muonio reindeer husbandry community is a concession community, meaning that they do not own the land they are herding on, instead they apply for a specific permission to conduct their herding activities (https://www.sametinget.se/samebyar). Concession communities does not have any specific hunting or fishing rights, making reindeer herding an important cultural distinction (Ekenberg 2008, p. 5). Muonio is one of eight concession communities in Sweden, there is 51 reindeer husbandry communities in total within Sweden. The other types of communities are mountain and forest communities (https://www.sametinget.se/samebyar).

4.2 Input: The Swedish Mineral Strategy

The input analysis will be presented through the two main frames found in the analysis, “maintaining interest in the Swedish mineral deposit” and “dialog”. This section will end with presenting the pathway found through the analysis of the Swedish mineral strategy.

4.2.1 Maintaining Interest in Swedish Mineral Deposit

The interest and importance of the Swedish mineral deposit is explained through the industries impact on Swedish growth and development, the unique bedrock whit accessible minerals paired with a stable democracy, and with the world-wide economic development, have increased the demand for minerals. While environmental impacts of mineral extracting are illustrated lightly, the main issue of the Swedish mineral strategy concerns economic,
competence, and technologic development where the aim is for Sweden to gain international recognition (Näringsdepartementet 2013, p. 8).

Effective processes and stimulating competence are recurring issues throughout the document. According to the strategy is Sweden viewed as an attractive mining nation, and the aim is to maintain this view. When other nations are prioritising similar ventures are refinement of the process promoted as necessary (Näringsdepartementet 2013, p. 21-22). An efficient process contributes to more transparency and legal certainty, which brings less conflicted processes where dialog and communication is prioritised. According to the Mineral Strategy is a prioritised issue for the Swedish parliament to implement and investigate possible measures that makes the process more efficient to minimise the time of administration (Näringsdepartementet 2013, p. 31-32).

*An important basis for the Environmental examination is that the examination should not be more complicated than necessary to refer to protect the environment and human wellbeing.*

*To abridge the examination is a highly-prioritised issue for the government* (Näringsdepartementet 2013, p. 32).

In the promotion of efficient processes is challenge number eight of sustainable mining represented, “Sector governance roles, responsibility, and instruments of change” and challenge number five, “Mining, Minerals, and Environment” where political responsibility for efficient and thorough investigation of environmental impacts is addressed. However, the representation lacks in diversity, mainly concentrating on recycling as the solution (Näringsdepartementet 2013, p. 25). Other environmental considerations like impact on biodiversity, environmental legacy, and waste management is never discussed. Reducing the discussion, which as mentioned earlier, needs to acknowledge the dynamics and complexity of sustainability to promote sustainable mining.

In the strategy is five strategies areas described to present how the strategy will be implemented. However, none of these strategies is concurring the environmental impact of mineral extracting and how they can be limited or managed. The first strategy has environment in the title, but lacks any actual strategy promoting sustainability other than recycling (Näringsdepartementet 2013, p. 4). This shortcoming is an example of how sustainability is promoted in a symbolic way, avoiding specifying which environmental impacts is expected, contributing to simplifying the complexity of sustainability.
Everyone conducting, or with purpose of conducting, extraction must respect the standards of carefulness that is needed in preventing, ob structure, or discourage causes of harm towards human health or environment as a resulting of extraction (Näringsdepartementet 2013, p. 18).

Mineral extracting is important for the Swedish economy, and it contributes to the development of rural areas that have suffered from urbanisation. The development of mines equals jobs, taxes, population, and services which can be vital for these areas struggling with decreasing population (Näringsdepartementet 2013, p. 8). The number of mines active in Sweden is expected to increase because of the international interest in the Swedish mineral deposit and the secure political context, together with developed infrastructure. Sweden is therefore one of the most attractive regions for investment in prospecting and mining activity (Näringsdepartementet 2013, p. 11-12). Promoting efficient processes, investment in infrastructure, supporting research project, supporting competence development, encourage investment, and to increase representation on international gathering, is all an effort to maintain this position (Näringsdepartementet 2013, p. 5).

*It is important to maintain attractiveness in the competition that occurs when other nations conduct corresponding investments to strengthen their mining and mineral industry* (Näringsdepartementet 2013, p. 22).

Except the promoted efficiency described above, is strong devotion to increase and stimulating the development of competence presented by promoting research and innovation through investment in industry-requested education areas (Näringsdepartementet 2013, p. 37). 205 million Swedish kronor are invested in research programs of mining, mineral and steal research to increase the competence and the ability to recruit world leading researchers to Swedish universities (Näringsdepartementet 2013, p. 38). In collaboration with local and national government, the industry, and actors at different levels, is stimulation of promoted mineral industry interests an effort to increase future competence. This is necessary with the expected growth presented in the strategy and to secure the Swedish world-leading position (Näringsdepartementet 2013, p. 39-41).

*Each Mining Region shall have the possibility to grow with their specific circumstances.*

*Mining regions and municipalities shall attract, maintain, and develop businesses, competence, companies, and capital for long-term and competitively contribute to the national growth* (Näringsdepartementet 2013, p. 29).
Usage of strengths to adopt challenges and possibilities to stimulate future development, are efforts aiming at maintaining the leading position of mining within the EU (Näringsdepartementet 2013, p. 22). The strategy is also presenting an effort to improve the investment climate in Sweden to sustain the international interest, and stimulate the view of Swedish-mineral-expertise internationally. Participation in international gatherings, and increased export of Swedish mining technology (equipment, recycling technology, and underground mining technology) is also promoted (Näringsdepartementet 2013, p. 45-46). This consolidates the importance of the industry in the Swedish economy, and the continued long-term stimulation. Promoting innovation within the industry which is acting as consideration of the dependence on mining in future society, reinforcing the importance of the industry is where possible replacements are diminished.

Challenge three of sustainable mining is addressed, “Minerals and environmental development” where how local and national community will benefit from the mine is managed when the strategy discusses how rural areas will gain from increased mineral extractions. The sixth challenge can also be found, “An integrating approach to using minerals”, since promotion of collaboration within the industry on different challenges is presented, like participating in international conferences and gatherings. Sweden aims at increasing their international representation, but also take responsibility to increase responsible business in developing countries and provide services for a sustainable development in these countries (Näringsdepartementet 2013, p. 45). Observing though prioritising of maintaining Sweden as the leading mining nation, since it is presented as three of five strategic areas. These three strategic areas are addressing Swedish competition, competence and to supporting international well-known, attractive, and active mineral- and mining business (Näringsdepartementet 2013, p. 5). Sending the message of primarily concerning over the industry growth rather than sustainability responsibilities, where the acknowledgement of the challenges promoting sustainable mining is not fully achieved. Instead is a symbolic recognition of specific areas of challenges presented, which fails to admit responsibility. This is found in the shortcoming of acknowledging environmental responsibilities in the throughput, the five strategic areas of action that the strategy presents. Of five strategic areas is only one including environmental effects of mining, though the discussion of these effects is never specified but rather simplifying the issue to mainly concern recycling. (Näringsdepartementet 2013, p. 25)
4.2.2 Dialog

Poor communication and information is often pointed out as the root cause to conflicts and slow processes. Dialog is presented as the solution to civil discontent, conflict over land uses, different level of governance responsibility, creating inclusive processes, and respect to other local businesses (Näringsdepartementet 2013, p. 22, 26, 29, 31). Consultation processes as prevention and conflict resolving method is promoted, establishing venues for information and concerns (Näringsdepartementet 2013, p. 31-32). Reindeer husbandry is conducted in areas where major mineral findings are located, further complications for herding is expected since the mineral sector expected to be expanding. Information and communication is promoted as the solution, since the mineral extraction is dependent on developing where the minerals deposit is located, which largely affects the herding. Mobility of mines are limited compared to herding. When competing-businesses have interest in the same land is the strategy promoting synergy and dialog, advocating cooperative solutions (Näringsdepartementet 2013, p. 26-28).

Mineral Extraction shall be conducted with respect and collectively with other businesses. If competitive usage over land occurs should dialog be conducted in early stages and consensus solutions be found. Cooperation with other businesses should be sought (Näringsdepartementet 2013, p. 26).

However, it is important to highlight the fact that searching for minerals on Swedish soil is legal, even without the landowner permission because of the “right of public access”, the right to move freely in nature. Landowners lack any legal power to oppose a development of a mine on their own land (SGU 2013, p. 11), which disrupts the power structures in the promoted dialog, leaving the prospector supported by the legal framework while other stakeholders are left dependent on the prospector moral obligations. The strategy does not mention these power structures, instead it talks broader of conflicting interests addressed through promoting early implemented dialog and cooperation with stakeholders. By promoting inclusiveness in the planning of the mining area, is the aim to achieve coherence between mining and other businesses (Näringsdepartementet 2013, p. 27). However, if the power structure in the legal framework remains, what effects will further dialog have? Preventing conflict through dialog demands equality of all parts. Imbalance between participants will not give a successful result in the collaborative governance model (Ansell & Gash 2007, p. 551).

When promoting increased dialog, the Swedish mineral strategy manages the second challenge of sustainable mining, “The control, use, and management of land”. Inclusiveness and open processes are promoted, where communication is represented to be a key solution in handling
local conflicts and apprehension. Although the second challenge is not fully achieved, since the power structure creates skewed premises where mining is clearly prioritised over other activities. The seventh challenge “Access to information” is expressed in the strategy and are clearly managed through the promotion of dialog and cooperation, that promotes innovation and growth. Dialog and cooperation is presented as the second strategic area, the throughput (Näringsdepartementet 2013, p. 4). Offering venues and channels for dialog and vocalising concerns are promoted, which makes inclusiveness and dialog the main conflict prevention measure presented (Näringsdepartementet 2013, p. 31-32). Although dialog and participation is promoted, no premises for a successful process is presented, rather providing a symbolic effort to manage conflicts. The actual pathway promoted is to stimulate and increase the industry, putting opposed stakeholders who promotes a different pathway in a future diminished position.

4.2.3 Pathway: Symbolic Responsibility
After completing the analysis of the Swedish mineral strategy, I have found that challenge one (Viability of the mineral industry) and four (Local communities and mines) of sustainable mining is missing from the Swedish mineral strategy, and the fifth challenge (Mining, minerals, and the environment) is not fully handled. The fourth challenge, “Local communities and mines”, aim is to protect local community through all steps of mineral extraction, including reassuring that local communities will survive post-mine. The strategy discusses management of mining-truism and maintaining cultural heritage (Näringsdepartementet 2013, p. 28), and how to increase rural areas attraction to increase the population (Näringsdepartementet 2013, p. 29), however, never including any discussion of how these societies should survive without an active mine and how the strategy can promote long-term mining. Also, the eight challenge, concerning governmental responsibilities, is not fully handled, ignoring to promote policies for more sustainable practises and instead focusing on increasing investment in industry interest. Overall failing to respect the complexity in Sustainable Mining presented by the MMSD challenges.

Preserving and maintaining the international reputation and interest in the Swedish mineral deposit is a recurring argument. It reappears in every promoted solution where some variation of the phrase; “preserving the international reputation” is presented. It recurs in both promotion of increased dialog as an effort to maintain the attraction, through avoiding lengthy and
conflicted processes (Näringsdepartementet 2013, p. 29), as stimulate innovation and competence (Näringsdepartementet 2013, p. 38).

*The Aim with the Swedish mineral strategy is for Sweden through the usage of our strengths to adopt challenges and take advantage of the opportunity to continue to develop as the leading mining nation of EU* (Näringsdepartementet 2013, p. 22).

Although increasing dialog and promoting innovation are goals presented, the main goal of the strategy is clearly to strengthen the Swedish market position. This goal is connected to the ideal type; Ecological Modernisation, arguing that the importance lie in continued mineral extraction (Näringsdepartementet 2013, p. 14-15), where the increased mineral extraction provides an economic development that enables sustainable development. Mineral extracting is also promoted as necessary to continue producing green technologies such as wind turbines, solar cell, low energy-bulbs, e.tc, arguing that minerals are an unreplaceable resource for a sustainable society (Näringsdepartementet 2013, p. 8). The strategy avoids managing minerals as finite resources and that future replacement will be necessary, mainly discussing technology development as a tool for increased extraction efficiency rather than a replacement of minerals. Clearly encouraging mineral interests and avoids questioning any aspect of the business, leaving the strategy failing to demand sustainable responsibilities and accountabilities. With this singular interest of the mineral industry, the strategy avoids promoting a sustainable industry with higher demands on sustainable practices. A Pathway with connection to Sustainable Mining had presented a possibility to enables a long-term perspective on Swedish economy that is not dependent on finite resources which also promotes sustainable development. This is however overlooked for the present demand of minerals which Sweden could meet, but simultaneously fails to present a long-term perspective of future decreased demands for minerals and which development is necessary in those changes for the Swedish economy.

The aim of the strategy is to promote development of the mineral industry in Sweden, and to encourage increased interest in the Swedish mineral deposit. This aim influences the main goal for the strategy, “Maintaining the role and interest in the Swedish mineral deposit” to mainly promote economic development and stimulating industry interests. Resulting in promoting the pathway; Symbolic Responsibility. In the strategy is concerns of sustainability described broadly with simplifying solutions, such as the promoted solutions dialog and recycling. Failing in representing the dynamic and complexity in promoting sustainable mining and the limits of
the current policy context. The complexity presented in the MMSD report is not found in the strategy, which fails to emphasise the importance of sustainability and is instead presenting a detailed strategy for promoting economic and technologic development, while environmental protection is vaguely described. By mentioning environmental protection without presenting any strategies for implementation, is the strategy appearing to be more aware of sustainability, though no demands on the industry to promote sustainable mining is presented. It is therefore a symbolic responsibility, where the actual interest is to encourage increased non-regulated exploitation in Sweden. Responsibility for sustainability is never a demand but always a vaguely defined idea, where the interests of the mineral industry are prioritised above promoting sustainable mining. Below are the frames summarised in the STEPS input model.

Figure 4: Pathway-Analysis Input

<table>
<thead>
<tr>
<th>Problem Formulation</th>
<th>Policy Frames</th>
<th>Meta-Frames</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>World-Wide Growing Demand</td>
<td>Ecological Modernisation: Mining development as a solution</td>
</tr>
<tr>
<td></td>
<td>Slow, Inefficient Process</td>
<td>Maintaining International Influence</td>
</tr>
<tr>
<td></td>
<td>Economic Dependence</td>
<td>Competence</td>
</tr>
<tr>
<td>Goals</td>
<td>Supporting innovation</td>
<td>Poor Communication</td>
</tr>
<tr>
<td></td>
<td>Increasing dialog</td>
<td>Respect for Existing Local Activities</td>
</tr>
<tr>
<td></td>
<td>Stimulating the industry development</td>
<td>Symbolic Responsibility: Sweden Depend on Mineral Extraction</td>
</tr>
</tbody>
</table>

| Maintaining the role and interest in the Swedish Mineral Deposit |

4.3 Output: Environmental Impact Assessment

The analysis of the EIA is here presented through the main frames found in the analysis, “Production”, “Social responsibilities” and “simplifying sustainability”. The section ends with a summary discussion of the findings.

4.3.1 Production

Presenting production plans is essential in these documents, since a well-managed plan will calm most concerns. Northland mainly presents the character of the deposit and how it will be extracted and enriched, how the decay production will be managed and recycled, and expected production. The main concern of sustainable practices involves water usage and protecting
water-quality. (Northland Resources Inc 2008, p. 18-19) Discussing important issues, but fails to present a diversity in the discussion of sustainability concerning production practices.

Intercepting trenches will be constructed around the opencast to minimise the amount of surface- and ground water to the mine. Because of the position of the deposit under a mire, must complete drainage be conducted before any extraction can begin. To minimise surface- and ground water drains to the mine and to avoid damages or major changes (currently) in surrounding mire, shall the entirety of the opencast be surrounded by interception trenches and a barrier to achieve intended effect (Northland Resources 2008, p. 16).

The implementation strategies as well as the planned implementations, are mainly managing recycling, water, and transportation. A strong connection between the mineral strategy and the EIA can be found here where similar issues and solutions is presented, for instance the pronounced importance of recycling in the mineral strategy is also preserved in the EIA. There is a tendency of simplifying the environmental responsibility of the industry to singularly concern recycling, ignoring other more difficult and costly efforts, like investment in innovation and technology. Although recycling is an important issue, there are several other important issues missing concerning sustainable mining. The EIA does not manage cost versus benefits of continued extraction, it also avoids managing estimations of future demands of minerals, local development, and future revenue for local society. There is no discussion of expected production, which is important since only long-term mines can be considered sustainable. Stimulating production is pressed upon in the strategy which influences the EIA to attain these expectations. Suggesting that the deprioritising of sustainability within the national policies which resulted in a pathway of symbolic responsibility in the mineral strategy, is also found in the EIA conducted by Northland Resources. The missing issues can be perceived as above the responsibility of individual corporations, especially when these issues are not managed in national policies. However, an important factor of sustainable mining is for corporations to exceed expectations in their promotion of sustainability. Concerning production responsibilities are Northland Resources mainly submitting to the demands presented in the strategy, although the EIA is where issues of sustainability are supposed to be managed. Additionally, the MMSD challenges emphasises the importance of implementing a corporation attitude of sustainable mining in the EIA (MMSD 2002, p. XXI). The importance of pressure from the policy framework is evident here.
4.3.2 Social Responsibilities

A social impact assessment is conducted where the Sami-population history, land usage, effects on lifestyle, concerns and possible solutions are assessed. The document is conducted through empirical studies and interviews with officials from the county government in Norrbotten and Västerbotten, the Sami parliament, SSR, the Sami council, and with close collaboration and consultation with the Muonio Reindeer herding community (Ekenberg 2008, p. 3). The largest issue presented here is the mines position on one of the seasonal pastures, effecting the reindeer-herding, the number of animals, the movement between seasonal pastures, economic losses, risks for the movement of reindeers, and the overall health of the reindeers. Affecting the Reindeer herding community both economically and culturally (Ekenberg 2008, p. 20-21).

Muonio concession reindeer herding community have unlike other reindeer herding communities no special rights concerning hunting and fishing. The members of the concession reindeer herding community do not differ from other Swedish citizens. Therefore, is the Reindeer-herding very important as a cultural caret. Potential threats against the reindeer-herding becomes potential threats against the Reindeer herding community, the sami culture, and the traditional way of life (Northland Resources, Ekenberg, p. 10).

Muonio reindeer herding community are willing to be involved in the establishment and continued process, avoiding inhibit the process by suggesting solutions to every concern. The most common suggestion is increased consultation with the reindeer herding community and to increase their involvement. Other strategies are financial compensation, investment in research, creating security assurance around specific areas to protect the reindeers, and new reindeer-care-pastures (Ekenberg 2008, p. 25-29). Arguing that if the Sami-representations are involved in the planning of the placement and development, they can provide information and knowledge to minimize harm on the herding.

The Muonio reindeer herding community are aware of that the development is hard to stop and are therefore willing to consult to minimise the effects of the intrusion on nature. This means that the reindeer herding community should be involved in planning, production and post-production. To be meaningful should that kind of involvement learned as a natural part to the transparency and impact. It should therefore be scheduled through the years of mining activity and post-production (Ekenberg 2008, p. 25).
This document is thorough in its description of concerns and effects of mining. It includes different aspects, like financial, social, cultural, and environmental issues, which gives the report credibility. Suggested strategies and solution is included to every issue presented. It achieves inclusiveness through the interviews and consultations, highlighting the issues and concerns of Muonio. By providing information and creating an arena for vocalising concerns, is the seventh challenge achieved concerning the reindeer herding community. Included in the EIA, is also a summary of subjects managed in every consultation meeting conducted, were other stakeholders have raised their concerns answered by Northland Resources. It was also a demand of Bergsstaten that yearly consultation was held with the reindeer husbandry community concerning future developments to minimise effects on the herding activities (Bergsstaten 2008). Prioritising long-term relationships to different stakeholders seems important for Northland. In combination with the positive attitude towards the mine, the prioritised dialog with local community seems to be a reason conflict was avoided.

The social impact assessment represents the concerns of the reindeer herding community, and their suggested solutions. Which measures that are taken by Northland Resources to meet these concerns are not included. Muonio had a confidential agreement with Northland Resources including economic compensations for implications on the herding. (Norberg Juuso 30/8-13) The compensations of the land usage were tied to Northland Resources, which means that the reindeer herding community cannot collect it since the corporation went bankrupt. (NSD 12/10-14) Other information of any agreement is not presented in the EIA.

Other issues managed in the EIA is ancient remains and important historical inventories. These documents are foremost a compilation, that do not provide any strategies or planning of how these would be managed and conserved. These documents figure as evidence of that Northland Resources is aware of the ancient remains in the area and they also provide a cultural context of Pajala.

4.3.3 Simplifying Sustainability

There are several documents that report different aspects of the environmental impact. Biodiversity, water quality, decay production, recycling, impact on surrounding, well-inventories, and mining waste. Most of these documents consists of tables, maps, and technical terms of chemical substances, they are also reports rather than strategies or plans. However, when planning for managing natural and climate impacts, there are two main concerns; how to
increase recycling, and water management. The EIA presents plans for production waste to be reused to build infrastructure within the industrial area, and future waste can also be sold for infrastructural usage (Northland Resources Inc 2008, p. 12). Water used in the production will circulate through the system to be cleansed and reused continually to avoid unnecessary effects on surrounding water-sources. Building trenches to avoid usage of surface- and ground-water is also prioritised (Northland Resoures Inc 2008, p. 16). Water quality are an important responsibility for mining corporations to manage, however, to singularly focus on one issue while ignoring protection of other environmental effects of mining is problematic. Like the strategy, is the EIA failing to present a dynamic and complex issue where continued responsibility for ever-changing issues. Although the focus on water quality, was Northland Resources after the bankruptcy in 2015 accused of three different environmental violations, one of these accusations were that in the process of draining the mire was the flow of water erroneously estimated, which lowered the groundwater levels with 16 meters, effecting protected arts in that area (De Lima Fagerlind & Sundkvist, 23/6-15). These prosecutions were later dismissed because of the difficulties in investigating the issue (Vikström 2/5-16).

By focusing on recycling is expansive promotion of innovation avoided, complicated issues such as environmental technology, questioning mineral usage, and impact evaluation is never managed, which is where this EIA fails to promote sustainable mining. Issues of mining durability and sustainability responsibilities is not managed. Managing local economic development, environmental responsibilities, and future sustainability issues is also missing in the EIA. The excessive management of recycling overlooks other important challenges of sustainability. The EIA only focus on handling two of the MMSD challenges; “control, use, and management of land” and “access to information”. The complexity of environmental impacts when extracting minerals is never discussed. Instead is the responsibilities of issues concerning sustainability simplified in a similar manner as in the strategy. Although the EIA is the main document managing the planning of sustainable practices, and the importance of the EIA to manifest sustainable corporation practises according to the MMSD challenges (MMSD 2002, p. XXI), these issues is not included in the EIA conducted by Northland. The lack of planned management of possible environmental impacts is concerning. While investigations of the impacts of mineral extractions is included, actual responsibility of limiting these impacts is restricted to recycling and water quality. Limiting responsibility of impacts effects the accountability of Northland concerning sustainability. The pathway of symbolic responsibility
found in the strategy is also represented in the EIA, where symbolic responsibility is presented but avoids actual accountability of a dynamic environmental responsibility.

4.3.4 Summary of the Output analysis

When considering the challenges of sustainable mining, this analysis shows that Northland Resources in their EIA, mainly focuses on the social aspects of the concept, ignoring sustainability, innovation, and local development. Presenting similarities to the mineral strategy when concerning recycling as the only solution to sustainability and the promotion of dialog as the main tool for social recognition. Both documents fail to promote the necessary understanding of sustainability as a dynamic and complex issue. The main difference of Northland Resources managing water and waste recycling instead of waste, metal, and mineral recycling which the mineral strategy is promoting. The EIA is a document planning for the implementation of sustainable production, where final solutions is not yet reached. However, the EIA is supposed to be the main presentation that manage sustainability, and is the answers to local concerns of environmental impacts. Promoting sustainable mining demands mining corporations to go beyond what is asked of them. The EIA is also presented by the MMSD challenges as an important tool to plan for sustainability in every-day practices, to implement a mindset of sustainable mining (MMSD 2002, p. XXI). This analysis is an example of that Northland Resources in their EIA never considered sustainable mining, but rather discussing sustainability in a symbolic measure where actual accountability is avoided. The EIA promotes an obedience towards similar demands presented in the strategy were sustainable responsibilities are deprioritised. The policy obedience of the EIA, is found in the similarities with the strategies discussion of environmental responsibilities and the simplifying descriptions of environmental issues. The symbolic responsibility found in the strategy is also found in the EIA where actual responsibility, in terms of minimising environmental degradation, is avoided. This shows the importance of policies representing the complexity of sustainable mining to influence sustainability awareness in new projects. Suggesting that promoting policies with specific actions to influence responsibility of sustainability is important. While the MMSD promotes corporations to exceeding expectations, the results from this analysis shows the importance of policies pressing environmental responsibilities to influence corporations. The EIA fails to promote sustainable mining, only managing two of eight challenges; “control, use, and management of land” and “access to information”, presenting an obedience towards the pathway to sustainability found in the strategy. The frames found are presented below.
4.4 Pathways to Sustainability
The policy compliance presented in the EIA, does not achieve the dedication to sustainability that sustainable mining demands, which is a result from ignorance towards environmental responsibilities in the strategy. Economic aspects of the three frames found in the Mineral Strategy; “World-Wide growing demand”, “Slow inefficient processes”, and “economic dependence”, and the two frames of innovations found; “Maintaining international influence” and “competence”, are both connected to the frames found in the EIA of; “Production Efficiency” and “Simplifying Sustainability”, with similar ideas of increasing and promote continued extraction in Sweden. When aspects of environmental impacts are manged, it is in a broader sense with an acknowledgement that they occur, avoiding decomposing the issue. In contrast, the strategies focus is represented through the frames; “World-Wide Growing Demand”, “Slow Inefficient Processes”, “Economic Dependency”, “Maintaining international Influence” and “Competence”, where the main issue is the Swedish ability to maintain and reinforce the position as the EU Mining-Nation, which results in the Pathway; Symbolic Responsibility. Sustainability is managed vaguely with broad concepts while economic development is prioritised, connecting the results with a week Ecological Modernisations perspective, were belief in the capitalistic systems ability to solve the environmental crisis through promoting industry-driven sustainability-changes;

*Sustainable Development should be industry-driven, but the government encourage corporations to follow OECDs directions for multi-national businesses, UN directional principals for businesses and human rights, and UN Global Compact (Näringsdepartementet 2013, p. 24).*
Using the terminology of Leach et al. (2010) shows evidence that the input of the Swedish policy is rather broad, particularly evident with the frames that are focused on increased dialog and participation. However, the skewed power structures discussed in the analysis of the strategy, and the dominant agenda of Ecological Modernisation found in both documents, together with the weak mechanism provided to promote sustainability, results in the throughput providing a close-downed output. Although a variety of representation of different attitudes is found in the process, their actual ability to affect the development is limited. Therefore, is the strategy and the EIA mainly representing mining positive attitudes with a non-problematic approach towards mining. The closed downed output is resulting from the pathway of the strategy, where a symbolic responsibility is presented of inclusion while the actual policy framework prohibits this and provides instead the closed-down output which mainly representing mining positive attitudes. The gap is not found as initial expected, between the input and output, but rather the pathway of the input and the actual throughput. The closed down output is a result of failing to prioritise sustainability in the strategy, and mainly include pro-mining perspectives. If the pathway of symbolic responsibility found in the strategy had concluded in actual demand of sustainability in the throughput, maybe more environmental efforts or consciousness had been found in the EIA. Instead is a symbolic responsibility presented where accountability of sustainability is avoided based on the lack of an explicit expressed demand of such responsibility in the strategy.

Dialog have been conducted and there is involvement from different stakeholders, however their effects on the process have been limited as well as the variation of stakeholders, where the included stakeholders are mainly representative from official agencies (Northland Resources Inc 2008). A vague image of openness and inclusiveness is presented while the actual processes are rather closed and hard to affect, mainly because of the earlier discussed power structures that are favouring the industry. To achieve more open processes is changes needed in the possibilities of mining-critics to affect the outcome of the process. The strategy provides an image of wanting the process to become more open, while the actual framework prevents this development with singularly promoting the pro-mine-perspective. Presenting a contradiction between the discussion of inclusiveness and the promoted actions.

The strategy and the conducted EIA is discussing similar issues and presents similar solutions to these issues. Demonstrating a coherence rather than a gap between the documents. The similarity in the frames found is evidence of the impact of the strategy, where the goals found
are similar to the implementation strategies found in the EIA. Showing that promoting sustainable mining demands strengthened promotions and demands of environmental responsibilities, where symbolic effort is not enough.

Figure 6: Pathway Analysis Complete

## 5. Discussion

Sustainable mining is a conflicting concept, there are different opinions if it is achievable, or just an oxymoron (e.g. Kirsch 2010, Mudd 2010). Sustainability of mines considers functioning regulations, compensation, innovation, and constant awareness, which inevitable stretches the boundaries of sustainability. The MMSD challenges used in this thesis, demands the industry to exceed expectations in their promotion of sustainability. Although Northland Resources achieves the social challenges raised by MMSD, the lack of environmental concerns managed in the mineral strategy is reflected in the EIA. The broad input found in the strategy, delivers closing-down output in the EIA, where the accentuated issues of the strategy is mirrored in the issues discussed by the EIA. This influence suggests that the frames of the strategy influences what is discussed as important in its implementation, presenting a connection between the strategy and the EIA rather than a gap. For instance, recycling and dialog is managed in a similar
manner which indicates that there is a connection between the policy-frames and the EIA. The expected gap is instead found in the symbolic efforts presented in the strategy and its throughput, where no concerns of sustainability is found. To clearly advocate for actions that promotes Sustainable Mining in policy seems to be important to promote attitudes of sustainability among those implementing the policies. To be honest with the policy problems, goals, and implementation procedures that challenges the mineral industries management of sustainability issues. The results presented in this thesis suggest that corporations obey the policy demands, demonstrating the importance of policies promoting sustainable mining.

Sustainable mining understood as active promotion of innovation, implementing sustain practises and a corporate-spirit of sustainability, to constantly performing above expectations (e.g Mudd 2010, Gordon, Bertram and Graedel 2006). I am questioning if these expectation on growth dependent corporations is reasonable when the governmental demanded accountability is this modest? Governmental pressure on sustainable mining may provide a more effective result then putting the responsibility on corporations. There may be need for a specific framework concerning mining and sustainability which grasp these issues in a satisfying manner, which the strategy fails to do.

The Pathway found in this thesis of the mineral strategy; Symbolic Responsibility. Framing mining development as the solution to issues of the industry, this summarises the general attitude towards mining, the advantages of mining are always presented as larger than the disadvantages, and those disadvantages that are problematic is given solutions that all aims at maintaining the role and interest in the Swedish mineral deposit. The strategy lack any problematisation concerning different environmental impacts of mining, mainly encouraging recycling as the solution. Proven by the five strategic areas, where three of these are connected to industry development and economic growth, while none is accented on managing environmental impacts. Resulting in an EIA emphasising production efficiency, with recycling as the main sustainable measure. Confessing to the great environmental impact of mineral extracting, provides the ability to manage these issues and promote development which would not prohibit the ambitious to enlarge the industry, but rather give the strategy recognition. Mudd (2010) argues that recognising the limits to growth in mining can provide important development that can be vital for the survival of the industry. Recognising that minerals are a finite resource can provide technological development, while continuing with the mindset of business as usual provides no solutions (Mudd 2010, p. 114-115). If the goal is to increase
interest in the Swedish mineral deposit there are benefits in acknowledging the obstacles of sustainability.

Similarities can be found in the EU perspective presented by Baker (2007), where symbolic politics for Sustainable Development through strategies of Ecological Modernisation is promoted to determent the direction for future development within EU. Signs of efforts of symbolically promote sustainability without pressing demands on the industry is found in the mineral strategy, suggesting that a similar perspective of sustainability as presented by Baker. Although the strategies found in the throughput of the mineral strategy cannot be considered to promote a future of sustainable development, rather a future of an increased attitude of “business as usual”.

In this thesis, I have found that the mineral strategy with its attentions towards the benefits of mineral extraction, avoids managing infected issues that is the source of local conflicts. Can mining-related conflicts be expected to decrease when continued prospecting with an adhered system is promoted? As discussed in the analysis is skewed power-structures ignored by presenting an illusion of a broad and open process that in contrary is closing it down. By promoting increased dialog and continued development of consultation does not change the skewed power-structures, where stakeholders are dependent on corporation moral.

The pathway “Symbolic Responsibility” found in the mineral strategy, seems to have great impact on the EIA and which issues it emphasises. the EIA conducted in Pajala presents an attitude of obedience, rather than exceeding expectations which is necessary to promote sustainable mining according to the MMSD challenges. The mine in Kaunisvaara where never affected by local conflict and the unified opinion facilitated the process. However, in other future processes, where the local opinion is more polarised, is deeper disagreements expected because of the favourable outset for the industry provided by the mineral strategy, creating disadvantaged conditions. The circumstances established by the strategy creates a dependency of stakeholders on mining corporation and their benevolence towards acknowledging their opinions. Questioning if avoiding conflicts in Pajala was a result of a successful process or rather a result of local acceptance of mines? Avoiding conflict where there are no conflicting opinions is not a challenge. Future research can answer this question by investigating the local frames in Pajala and if these differ from other conflicted processes, which cannot be grasped using the analytical framework presented in this thesis. This pathway approach can provide knowledge of gaps between policy and implementation, but lack in providing information on
different opinions. Conducting interviews can provide knowledge of avoiding conflict in Pajala was determined by a successful process or unified opinions.
6. Källor


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7. Appendix 1: Original quotes.

Swedish Mineral Strategy:

En viktig utgångspunkt för miljöprövningen är att prövningen inte ska vara mer komplicerad än vad som krävs med hänsyn till skyddet för miljön och människors hälsa. Att förkorta handläggningstiderna är en högt prioriterad fråga för regeringen. (p. 32)

Alla som bedriver eller avser att bedriva en verksamhet måste vidta de försiktighetsmått som behövs för att förebygga, hindra eller motverka att verksamheten medför skada eller olägenhet för människors hälsa eller miljön. (p. 18)

Det är viktigt att bibehålla attraktiviteten i den konkurrens som uppstår då också andra länder genomför motsvarande satsningar för att stärka sina gruv- och mineralnäringer. (p. 22)

Varje gruvregion ska ha möjlighet att växa med utgångspunkt i sina specifika förutsättningar. Gruvregioner och gruvkommuner ska attrahera, behålla och utveckla verksamheter, kompetenser, företag och kapital så att de långsiktigt och konkurrenscraftigt bidrar till den nationella tillväxten. (p. 29)

Mineralutvinning ska bedrivas med respekt för och i samklang med andra näringar. Vid konkurrerande användning av mark ska dialog ske i tidiga faser och samförståndslösningar ska sökas. Synergier med andra näringar ska eftersträvas. (p. 26)

Syftet med den svenska mineralstrategin är att Sverige genom att använda sina styrkeområden ska kunna anta utmaningar och ta tillvara de möjligheter som ges så att vi fortsätter utvecklas som EU:s ledande gruvnation. (p. 22)

Hållbar utveckling ska vara företagsdriven men regeringen uppmanrar företag att följa OECDs riktlinjer för multinationella företag, FN:s vägledande principer för företag och mänskliga rättigheter samt FN:s Global Compact. (p. 24)

Environmental Impact Assasment Northalnd Resources

Avskärande dikning skall utföras runt dagbrottet för att minska mängden yt- och grundvatten till gruva. I och med att fyndigheten är belägen under en myr, måste omfattande avvattning utföras innan bergbrytningen kan påbörjas. För att minska yt- och grundvattenavrinning till gruva samt undvika skador eller större förändringar (av nuläget) i omgivandet myrmark, skall
hela dagbrottet omges av ett avledningsdike och en skyddsvall för att uppnå avsedd effekt. (p. 16)

Muonio koncessionssameby saknar de fisk och jakträttigheter som andra samebyar besitter. Det innebär att samebys medlemmar räknas som vilken medborgare som helst. Samebyn har avsagt sig denna rätt vid en eventuell omvandling till skogssameby. Detta innebär dock inte att samebymedlemmarna inte jagar och fiskar. De anser snarare att det är en viktig del av den livskvalitet som det innebär att leva i Pajala kommun och Muonio sameby. (p.10)

I Muonio sameby är man dock medveten om att utvecklingen är svår att stoppa och vill därför samverka och på så sätt göra så att intrånget gör så liten åverkan på naturen som möjligt. Detta innebär att samebyn bör vara delaktig i planering, drift och efterarbete. En sådan delaktighet bör om den ska upplevas som meningsfull erfaras som en naturlig del till insyn och påverkan. Den bör därför också vara schemalagd under gruvans driftår men också i efterarbetet. (p. 25)