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Erik Gómez-Baggethun and Tor Arve Benjaminsen, NMBU

# **Mining or traditional use? Conflicts in the Northern Norwegian copper frontier**

**Anders Vieth Rør**

Master of Science in International Environmental Studies

Faculty of Landscape and Society



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Anders Vieth Rør

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[anders.vieth.ror@nmbu.no](mailto:anders.vieth.ror@nmbu.no)

Noragric

Department of International Environment and Development Studies

The Faculty of Landscape and Society

P.O. Box 5003

N-1432 Ås

Norway

Tel.: +47 67 23 00 00

Internet: <https://www.nmbu.no/fakultet/landsam/institutt/noragric>

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I, Anders Vieth Rør, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

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## Abstract

There is a growing global material and energy extraction and consumption. Especially mineral extraction of metals such as copper has increased by 25 times during the last century thus pushing the extraction frontiers into new territory. Copper extraction increasingly expands into Northern Norway with new project proposals. One such project is Nussir ASA's suggested copper mine in Kvalsund in Finnmark county. The planned project conflicts with local small-scale fishers' and indigenous Sámi reindeer pastoralist's interests. As resource extraction expands in the northern regions, the question of environmental justice and who experiences the benefits and costs arises. The thesis adopts an environmental justice framework to discuss this conflict and the process to establish the mine, in terms of recognition and participation, and the project's cost-benefit distribution. Data was collected through in-depth interviews with key stakeholders and participants, through a survey consisting of face-to-face questionnaires among 110 residents, fishers, and reindeer herders, as well as 35 respondents through an online survey published in social media. The project reveals conflicting narratives. Some actors see the process to establish the mine as open and inclusive, recognizing all values and uses. They present the mining project as a clear win-win case of local development and meeting the global copper demand. In contrast, others find the process to conflict with their values, resource uses and indigenous rights, and expect the burden of costs to be carried by fisheries, reindeer herders and recreational activities. The costs are anticipated through disposing mining waste as sea tailings in the Repparfjord and copper extraction in reindeer calving and grazing areas, which again could lead to dispossession of traditional land use and further marginalization of primary production in the area, particularly those with a strong Sámi identity. The conflict reveals incommensurable traditional values versus industrial values, the power asymmetry in the decision-making process, the shortcomings of consultation as a participation method, the potential violation of laws and rights, and the disputes over mining impacts for development, on the environment and on stakeholders. The conflict has not been resolved due to the local and national government's strong political will to expand mining extraction in Northern Norway. As a result, the process to establish the Nussir mine is a case of procedural injustices, while the expected cost-benefit distribution from the mine is unjust as costs can be shifted upon impacted stakeholders.





## Sammendrag

Det er stigende utvinning og forbruk av materialer og energi på et globalt nivå. Spesielt utvinning av metaller som kobber har økt 25 ganger det siste århundret. Dette skaper et behov for å starte nye gruveprosjekter. I Nord-Norge er det økende politisk press for å åpne nye kobbergruver. En slik pågående etablering er Nussir ASAs foreslåtte kobbergruve i Kvalsund i Finnmark fylke. Den planlagte gruva er i konflikt med lokale interesser, som sjarkfiske og samisk reindrift. Med ekspanderende ressursutvinning i nordlige områder følger spørsmål om miljørettferdighet, og hvem som bærer fordelene og kostnadene. Denne masteroppgaven anvender rammeverket for miljørettferdighet for å diskutere konflikten, i form av anerkjennelse og deltakelse, og fordelingen av fordeler og kostnader. Datagrunnlaget kommer fra dybdeintervjuer med sentrale aktører, dør til dør spørreundersøkelser gjennomført med 110 innbyggere, fiskere, og reineiere, samt 35 besvarelser fra en elektronisk undersøkelse distribuert på sosiale medier. Gruveprosjektet har skapt motstridende oppfatninger. Noen aktører ser på etableringsprosessen som åpen og inkluderende, og mener prosjekter tar hensyn til alle verdier og ulike brukerhensyn. De presenter gruveprosjektet som et klart vinn-vinn-prosjekt. Prosjektet vil ifølge forkjemperne bidra med vekst og lokal utvikling, samt bidra til å møte den økende globale kobberetterspørselen. På den andre siden mener motstanderne at prosjektet strider mot deres verdier, ressursbruk, og urbefolkningsrettigheter, og de forventer at kostnadene skyves spesielt over på fiskerne, reindrifta, og friluftslivet. Motstanderne mener kostnadene gjennom sjødeponi i Repparfjorden og utvinning i reindriftas kalve- og beiteområde kommer til å fortrenge tradisjonell bruk av områdene og marginalisere primærbruket, spesielt de med en sterk samisk identitet. Konflikten dreier seg om avveining mellom tradisjonelle og industrielle verdier, ujevne maktforhold i etableringsprosessen, svakheter ved konsultasjon som deltakelsesmetode, potensielle brudd på lover og rettigheter, og uenigheten om gruvas påvirkning for utvikling, på miljøet, og for aktørene. Konflikten har ikke blitt løst på grunn av den sterkt dominerende politiske viljen til å øke mineralutvinningen i Nord-Norge. Resultatet er at prosessen er urettferdig, og den forventende distribusjonen av fordeler og kostnader er urettferdig.



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## List of Acronyms

CEO - Chief Executive Officer

CMC - carboxyl methyl cellulose

CBA - Cost-Benefit Analysis

e.g. – For example

EIA – Environmental Impact Assessment

EJ – Environmental Justice

ES – Ecosystem Services

EU – European Union

EUR – Euros

FeFo – The Finnmark Estate

FPIC – Free, Prior, and Informed consent

GDP – Gross Domestic Product

HANPP – Human Appropriation of Net Primary Production

IA – Impact Assessment

i.e. – That is

ILO – International Labour Organization

MIBC - methyl isobutyl carbinol

NEA – Norwegian Environmental Agency (Miljødirektoratet)

NOK – Norwegian Kroners

PNS – Post-Normal Science

RH – Reindeer herders

SDG – Sustainable Development Goals

SSB – Statistics Norway (Statistisk Sentralbyrå)

TK – Traditional Knowledge

TEK – Traditional Ecological Knowledge

UN - United Nations



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# 1. Introduction

During the last decades the global economy has experienced rapid growth (World Bank, 2018). Since the 1950s real gross domestic product (GDP), energy use, transportation, and telecommunications have increased between five to seven times compared to its 1950 level (Steffen *et al.*, 2015). Economic growth has contributed to human welfare. However, it also creates challenges (Krausmann *et al.*, 2009; Steffen *et al.*, 2015). Economic growth demands an increasing energy and material input creating a larger waste output, a process known as social metabolism (Fisher-Kowalski & Haberl, 2007; Martinez-Alier, 2002, 2009; Marx, 1867). To produce new cell phones or construct new buildings more materials and energy must enter production. Thus, this is demanding more resources to be extracted and included in goods production to increase economic output.

Mineral resources have been vital to increased technological development and economic growth since early 15th century capitalist production (Martinez-Alier, 2001; Moore, 2000). Mineral extraction has grown exponentially during the last century, especially over the last 50 years. Globally, metal and industrial minerals extraction have increased by 26.7 times, and construction minerals extraction by 34.4 times between 1900 and 2005 (Krausmann *et al.*, 2009). Increased mineral metabolism pushes the geographical extractive areas into new territory, labelled commodity frontiers (Moore, 2000). Commodity frontiers are new extractive and productive areas where resources are becoming incorporated into global economic production (Moore, 2000, 2003). New resources are required because current resources are becoming degraded and cannot sustain increased economic growth. To solve this issue production must expand into new areas where resources are available (what Harvey, 1982, 1985, 2001 calls 'Spatial Fix', see section 2.1.2).

Mining was central to early capitalist expansion and has a long history of changing the social and ecological conditions of mined areas (Moore, 2003). Globally, many rural areas have been developed due to mineral resources and the infrastructure growth that extraction brings, including the earliest mining towns in North and South American colonization (Moore, 2003). Currently, mining projects contribute to local development through job creation and income generation, as seen in Southern Greenland (Dale *et al.*, 2018). However, often it also leads to conflict (Bebbington *et al.*, 2008a, 2008b). These frontiers push into less economically exploited areas where people's livelihoods tend to be more coupled with natural resources, particularly indigenous territories. Indigenous areas are routinely considered marginal until

the resources become vital for economic growth (Eide, 2009). The competing land use between existing users and new mining development can lead to conflict (Martinez-Alier, 2009). Social movements opposing environmental and social costs are especially evident around subsoil resource extraction, because mining has the potential to degrade the ecosystem the current population depend on and enclose their land through water pollution, soil erosion, community reallocation, and loss of productive agricultural land (Bebbington & Bury, 2013; Bebbington, 2012; Bebbington *et al.*, 2008, 2009). According to Martinez-Alier (2001), the injustice experienced by affected parties from mineral extraction “come about because economic growth means an increased use of the environment” (p. 153). Likewise, Harvey (1996) places emphasis on the economic processes as fundamental to conflicts. According to Kapp (1978) the economic processes produces socio-environmental costs that are not accounted for in the economic system and hence are shifted upon a third group such as labourers, the environment, general population, future generations, and others because they are not seen as costs in the first place. When a third group experiences these costs the group often oppose the cost-benefit distribution deriving from resource extraction, what Martinez-Alier (1995, 2001) calls ecological distribution conflicts. The conflicts are also rooted in the right to land (Martinez-Alier, 2002). Thus, ecological distribution conflicts have been intensified with increased economic growth and social metabolism, especially characterized by conflicts with extractive industries on indigenous lands (Gordon, 2010; Martinez-Alier, 2001, 2002; Martinez-Alier *et al.*, 2010, 2016).

In ecological distribution conflicts actors fight for respect of local values and land uses (Martinez-Alier, 2002), as well as environmental and indigenous rights (Agyeman *et al.*, 2002; Eide, 2009). The social movements arising from ecological distribution conflicts have been labelled environmental justice movements (Schlosberg, 2007). Environmental justice is an established academic field studying the underlying processes that lead to uneven distribution of environmental goods and burdens. For Schlosberg (2004, 2007) environmental justice struggles involve three concerns; recognition, procedural justice, and distributive justice. Firstly, actors struggle for cultural recognition in policy-making, often through human or indigenous rights language. Secondly, actors seek participation possibilities through democratic means and to affect decision-making. Thirdly, actors often oppose cost-benefit distributions from economic development or landscape change, sharing a different view of a just distribution vis á vis the government or the extractor. When citizens don't find processes

to establish extraction projects or the outcome to be legitimate, it can create conflicts over environmental justice (Vatn, 2015).

Institutional and economic processes are important factors in shaping ecological distribution conflicts and outcomes (Martinez-Alier *et al.*, 2010). Ecological economics and political ecology study the relationship between the economy, the society, and the environment. Ecological economics study the economy as imbedded in the natural environment (Common & Stagl, 2005). Thus, the economic choices humans make have implications for sustainability, distribution, justice, and valuation (Costanza & Daly, 1987). Especially the link between a growing social metabolism and environmental impact has been in focus in ecological economics (Martinez-Alier, 2009). Political ecology studies conflicts over resources and their distribution (Robbins, 2012). A key concern for political ecologists is power distribution between actors in ecological distribution conflicts (Benjaminsen & Svarstad, 2017). Ecological economics and political ecology have a common interest in environmental justice and mining conflicts. According to Martinez-Alier *et al.* (2010) these fields together provide an outstanding framework to study ecological distribution conflicts by “combining the analysis of social metabolism and procedural power in valuation processes” to understand why conflicts appear and how they play out (p. 157).

### 1.1 The aim of this thesis

Both subsoil extraction and environmental justice (outside North America) have been to a large extent studied in the global South (see e.g. McNeish; 2016. Perrault, 2013; Robbins, 2012). However, there is a growing trend of political ecology heading ‘home’ to the North (McCarthy, 2005; Schroeder *et al.*, 2006). Benjaminsen & Robbins (2015) argue for an increased understanding of environmental conflict in the North through a political ecology lens because the themes studied resemble those of the global South. Secondly, they argue that as commodity frontiers push further into the Arctic these should be studied with a focus on landscape change and power. Bebbington and Bury (2013) also argue for an increased interest in extractive industries, such as mining, in political ecology. For example, Johnsen (2016) uses political ecology to study two mining cases in Northern Norway. As political ecology expands research in the North, the interest in subsoil extraction and mining conflicts could accompany the expansion due to the similarities of these conflicts with studies in the South (Rør, 2017). Political ecology’s focus on power can also strengthen the environmental justice framework, which is frequently used to study mining cases (Svarstad & Benjaminsen, in prep). Mining has become a key concern for environmental justice scholars being the second

largest source of conflict and injustice according to the EJAtlas produced by Temper, del Bene, and Martinez-Alier (2015). For an ecological distribution conflict overview see <https://ejatlas.org/>.

Martinez-Alier *et al.* (2010) suggest a five-step approach to studying ecological distribution conflicts (simplified), while in line with the environmental justice framework a sixth approach is added:

1. Study conflicts as a result of social metabolism
2. Investigate the contested interpretations
3. Classify actors
4. List the actors' views on values and participation
5. Analyse the decision taken, how values were incorporated and how power played out
6. Analyse the (expected) distribution of socio-environmental costs and benefits

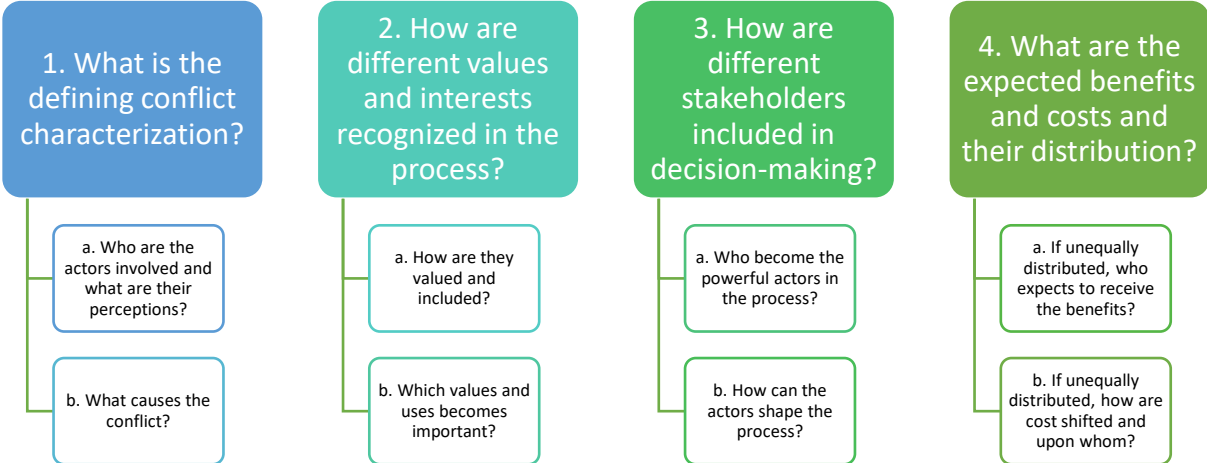
One of the essential minerals for the technological development and economic growth that has taken place during the last century is copper. Copper extraction has increased by 25 times over the last century, currently being the third most extracted mineral (Martinez-Alier, 2001). Copper is used in infrastructure, telecommunications, and other electronic devices as it is an excellent electric conductor (Kabwe & Yiming, 2015). Global copper demand grows annually by 2.7% (Statista, 2018), and is expected to increase the next decades due to anticipated urbanization, technological development, and electronic goods consumption. The top 5 copper producing countries are Chile, China, Peru, USA, and the Democratic Republic of Congo. However, the growing copper demand from increased social metabolism pushes extraction into new territories in both the Global South and North (Martinez-Alier, 2009; Martinez-Alier *et al.*, 2010). Northern Norway is home to several new resource developments such as oil and gas, aquaculture, and mining. According to the Norwegian government the largest development possibilities in Northern Norway lie in mineral extraction, especially of copper (Ministry of Trade and Industry, 2013). In 2017, 13 out of 16 new mining concessions in Northern Norway were on copper reserves (Direktoratet for Mineralforvaltning, 2018).

Due to the Arctic commodity frontier's relevance in global mineral extraction (Dale *et al.*, 2018), this thesis discusses the conflict that has resulted in the proposed Nussir copper mining project in Finnmark county, Northern Norway. The conflict is studied through the environmental justice framework, while building on the academic disciplines ecological

economics and political ecology. The Nussir mining project combines reopening an old and establishing a new mining shaft. The project will take place on reindeer herding land, a livelihood exclusive to the indigenous Sámi population in Norway. The project will require between 1-2 million tonnes of excessive rock to be disposed as sea-tailings in the Repparfjord, home to a small-scale Norwegian and Sámi fishery sector and a ‘National Salmon Fjord’. This has created conflict between stakeholders.

This thesis’ overall objective is twofold. Firstly, the thesis seeks to characterize the conflict around the suggested Nussir copper mine, the drivers of conflict, and who the main actors are. Secondly, the thesis aims to analyze environmental justice in the Northern Norwegian commodity frontier, through recognition, participation, and distribution in the process to establish the Nussir mine in Kvalsund and the expected outcomes. The objectives are addressed through four research questions as seen in Figure 1.1.

Figure 1.1 The research questions



The thesis is structured as follows. Chapter 2 outlines the interdisciplinary field of ecological economics and the environmental justice framework, which both have topics overlapping with the overarching political ecology discipline. The chapter presents the theory to understand how economic growth leads to increased resource extraction, and how this in turn leads to ecological distribution conflicts. Chapter 3 provides an account of the growing copper industry and the background information on expanding extraction in Northern Norway. The chapter also provides a short account of environmental justice in Norway and presents the case-study. Chapter 4 presents and discusses the research methods. This thesis builds on literature review, several in depth-interviews, and field surveys. Chapter 5 presents the

research results on the proposed Nussir copper mine. This chapter provides the conflict characterization, and the conflicting views on recognition, the process, and the expected distribution of socio-environmental benefits and costs. Chapter 6 discusses the results in relevance to broader theory and related studies. Chapter 7 draws a conclusion of the case study and makes remarks about the implications for the Northern Norwegian mineral frontier expansion.



## 2. Theoretical framework

This thesis' theoretical framework builds on ecological economics, political ecology, and environmental justice literature. Key concepts used in the thesis and their definitions are provided in table 2.1.

*Table 2.1 Key concepts used in the thesis and their definitions, as well as the main contributors to the work on these concepts*

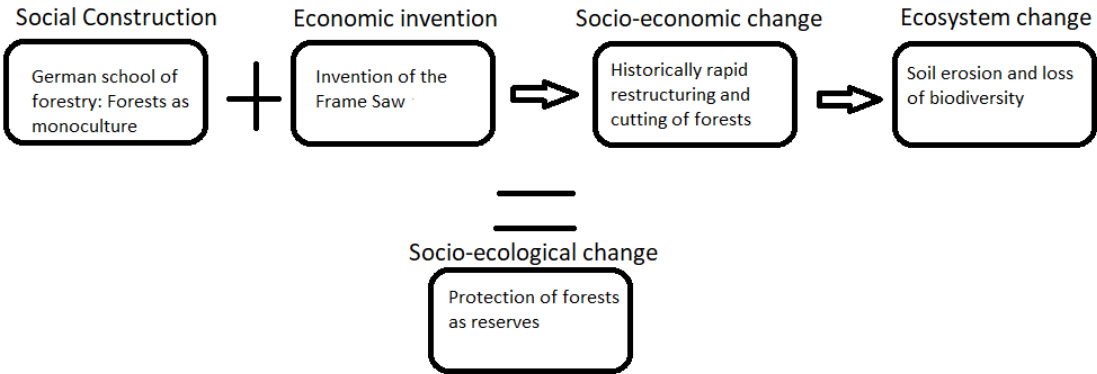
<b>Key Concepts</b>	<b>Definition and main contributors</b>
Social metabolism	The materials and energy that are used by the human productive system, and the residues and waste produced (Fisher-Kowalski, 1998; Fischer-Kowalski & Hüttler, 1999).
Commodity frontiers	The new extractive and productive areas that are included when the economic area expands due to the need for more resources (Moore, 2000, 2003).
Ecological distribution conflicts	Conflicts over land use change and ecological impact distributions (Martinez-Alier, 2002).
Environmental justice	Studying ecological distribution conflicts in terms of i) recognition - recognizing actors and values in the process, ii) procedural justice – inclusion of stakeholders through participation, and iii) distributional justice – the cost-benefit distribution from changed environmental landscapes (Bullard, 1993; Agyeman <i>et al.</i> , 2002, 2004; Martinez-Alier, 2002; Schlosberg, 2004,2007; Walker; 2009a, 2009b).
Socio-environmental cost-shifting	The costs that arise from economic activity that are experienced by third parties such as the environment and its users (Kapp, 1978).
Sacrifice zones	Areas chosen for industrial development with polluting activities because the population in these areas don't have the means to oppose it (Lerner, 2010).

### 2.1 Ecological economics

Traditionally the fields of ecology and economics have been concerned with different studies; ecology studying the natural world as ecosystems without humans, and economy studying the interactions between humans without the natural world (Costanza, 1996). Ecological economics rose as an interdisciplinary field that combines these sciences. The larger ecological economics claim is that human interaction and the economy cannot be understood without placing them within the larger social system (institutions, governance forms), which must be placed within the natural world (the biosphere) (Binder *et al.*, 2013). Ecological economics studies the world as a complex adaptive system, where elements cannot be reduced

to singular parts, but must be studied as interacting and interdependent parts making the ‘whole’ (Costanza, 1996). In this integrated system there are feedbacks, for example, technological innovation (the socio-economic dimension) leads to a more ‘productive’ resource extraction (the economy), but this more rapid and larger scale extraction that can take place changes the ecological conditions for that natural resource (the biosphere), and ultimately the conditions for life-supporting processes. This triggers institutional changes to alter the dynamics between the economy and the ecological foundations (Vatn, 2015), as seen in figure 2.1.

Figure 2.1 Norwegian forestry between 17th and 21th century as an example of integrated socio-economic-ecological change



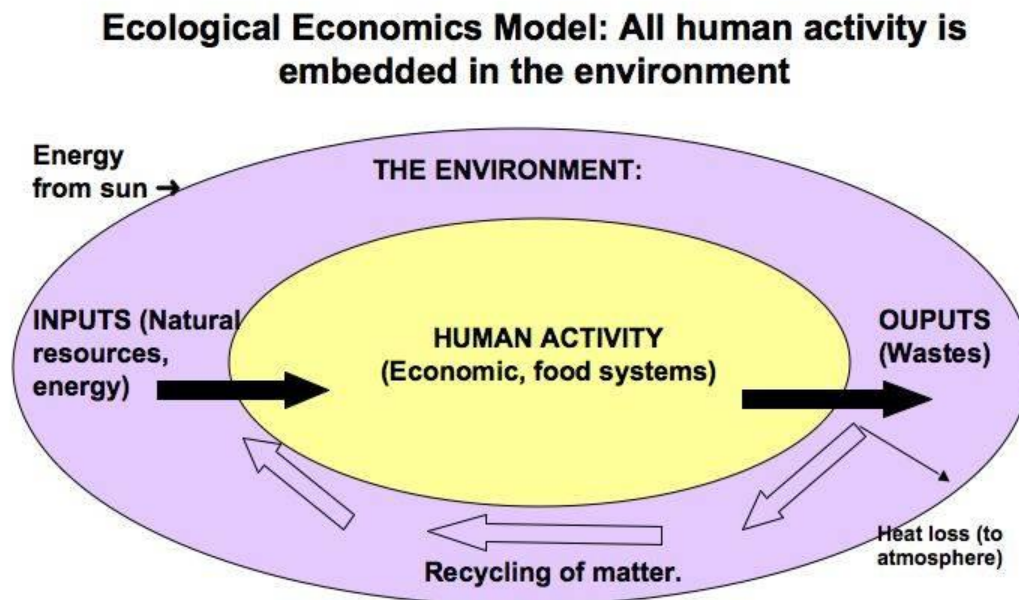
Sources: Robbins, 2012;  
Berntsen & Hågvar, 2010

Thus, a key interest area for ecological economics is understanding how extracting energy and materials for human activity changes the ecology, and how these materials and degraded energy goes back into the biosphere as waste (Swaney, 1985), as shown in figure 2.2. Placing the economic system within the biosphere is also necessary to tackle questions such as ‘what is the role of natural capital in sustainability?’ (Costanza & Daly 1992). Natural capital is understood as the stock of materials available in the biosphere:

*We can differentiate two broad types of natural capital: (1) renewable or active natural capital, and (2) nonrenewable or inactive natural capital. Renewable natural capital is active and self-maintaining using solar energy. Ecosystems are renewable natural capital. They can be harvested to yield ecosystem goods (such as wood) but they also yield a flow of ecosystem services when left in place (such as erosion control and recreation). Nonrenewable natural capital is more passive. Fossil fuel and*

*mineral deposits are the best examples. They generally yield no services until extracted. (Costanza & Daly, 1992, p. 38).*

*Figure 2.2 The foundation for ecological economics is the placement of human activity within the environment. Source: Santone (2010)*



Adapted from Herman Daly. "Introduction to the Steady-State Economy." In *Economics, Ecology, Ethics: Essays Toward a Steady-State Economy*. Herman Daly, editor. San Francisco: W.H. Freeman. 1980

Ecological economics also place emphasis on ecosystem services that human-welfare depends on (Costanza *et al.*, 1997). Ecosystem services are divided into four categories: provisioning (wood, minerals), regulating (climate regulation, water regulation), cultural services (recreation, aesthetics), and supporting services (soil formation, biodiversity) (De Groot *et al.*, 2002). Aspects such as natural capital and ecosystem services become important for creating economic impact models and understanding sustainability (Bockstael *et al.*, 1995). There are 5 core sustainability principles to keep in mind, adapted from Santone (2010):

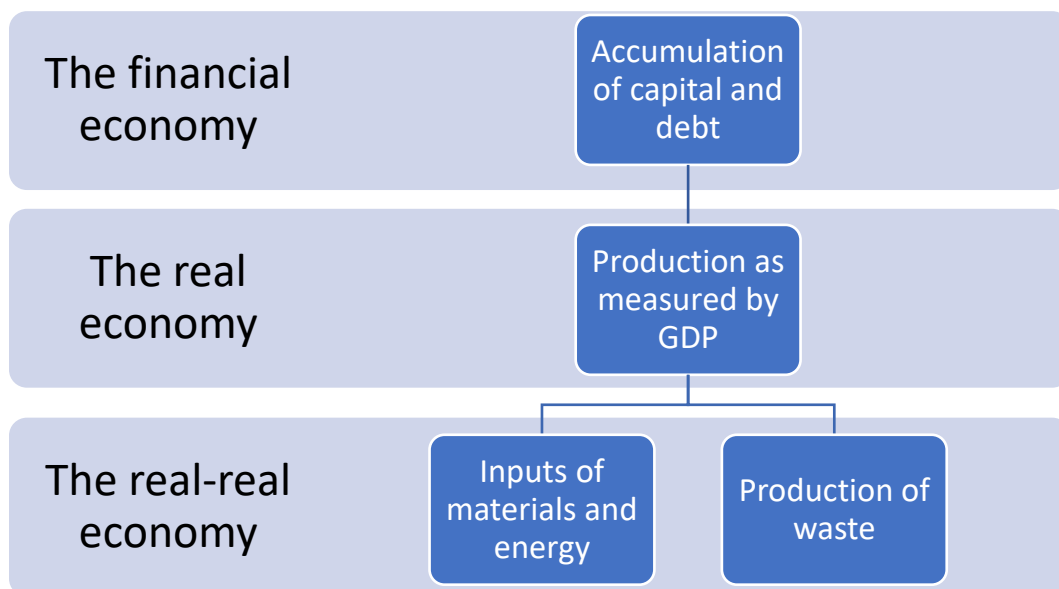
1. All materials come from the environment, e.g. iron used to produce steel
2. Economic activity involves natural material transformation, e.g. paper production requires wood to be transformed to pulp
3. The environment is the final "sink" into which all wastes go, e.g. oil combustion creates gases that end up in the atmosphere
4. There is no away (First and Second Law of Thermodynamics- energy cannot be created or destroyed, entropy cannot decrease over time), e.g. we cannot create or

destroy the energy in oil, it will transform into other forms when used, such as carbon dioxide, thus the quality changes

5. The environment provides critical life-sustaining services, e.g. ecosystem services such as soil formation to grow crops

In ecological economics, the economy can be further divided into three elements as seen in Figure 2.3 on the economic pyramid based on Martinez-Alier (2012). This leads us to materials and their use, which is the lowest level and creates the growth in the two upper layers.

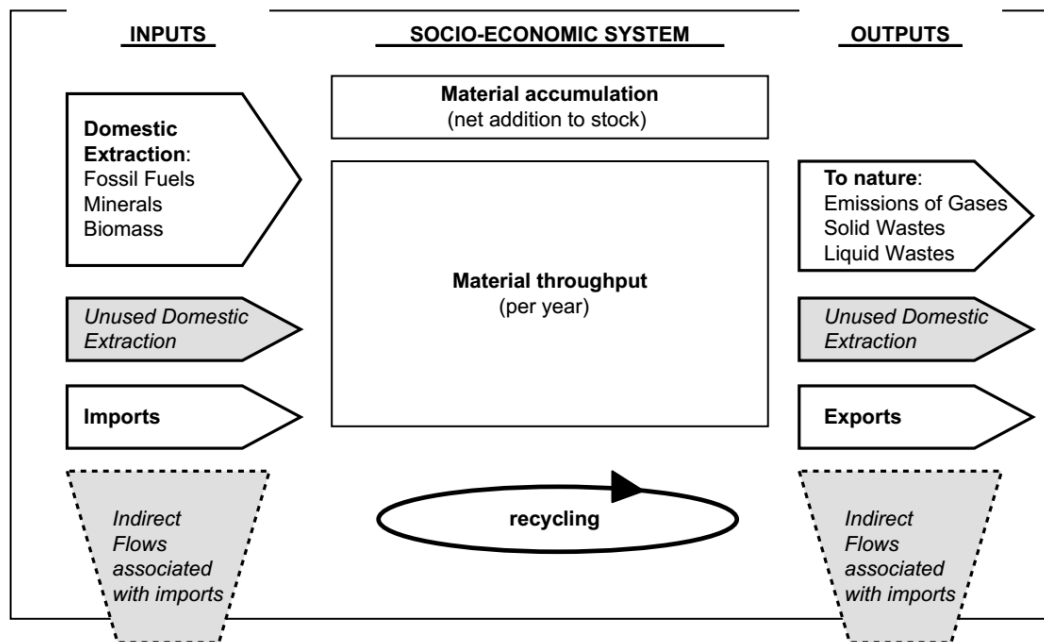
Figure 2.3 The Economic pyramid divided in three layers; financial, real, and the real-real economy



### 2.1.1 Growth and social metabolism

Inadequately placing humans and our economy within the natural system misses the relationship between human activity and nature (Costanza & Daly, 1987; Fischer-Kowalski, 1998). The social metabolism concept has evolved to understand how the human economy is part of a closed and interlinked system. Social metabolism is a structural approach that includes material and energy flows both into the production system as resources, and out of it as waste (Fischer-Kowalski, 1998; Fischer-Kowalski & Hüttler, 1999) as seen in Figure 2.4. The concept builds upon the early work of Marx (1867) on nutrient exchange in industrialised agriculture, and on Lotka (1922, 1956) and Georgescu-Roegen (1971) on energy flows' role in biology and the economy.

Figure 2.4 The social metabolism of a country can be understood as the material and energy flows into and out of the socio-economic system. This model excludes air and water. Source: Martinez-Alier (2009, p. 65)



In mainstream economics many necessary environmental goods required for human activities are considered free goods derived from material stocks. Goods like water and air are between 85 and 90% of the input material into the economic system (Fischer-Kowalski & Hüttler, 1999). Virtual water and the Human Appropriation of Net Primary Production (HANPP) has become methods to calculate the hidden recourses going into production, labelled “rucksacks” as they are not evident in common measurements (Martinez-Alier, 2009), as seen in Table 2.2.

Table 2.2 Two social metabolism accounting examples

Topic:	HANPP	Virtual water
Example:	Humans consume 23.8% of NPP	Import and export of water intensive products such as soy beans
Areas of concern:	Global	Argentina, Israel, Japan, USA
Sources:	(Haberl <i>et al.</i> , 2007)	(Allan, 2002; Hoekstra & Hung, 2005; Martinez-Alier, 2009)

Increased economic growth means more materials and energy must be consumed to provide the necessary goods and services to society, and thus also the residues and waste increases, and landscape alterations as seen by the HANPP. Throughout history, society’s social

metabolism has increased as we have moved from different development stages, Krausmann *et al.* (2008) calls these stages sociometabolic regimes. For example, the move from the agrarian society to an industrialized society meant a transition to a new sociometabolic regime with a much larger metabolic profile due to the growth of the economy and material and energy consumption (Krausmann *et al.*, 2008). During the last century the material consumption has increased by eight times in accordance with GDP growth at 22.8 times and population at 4.1 times 1900 level (Krausmann *et al.*, 2009). This growth is especially evident since the so called Great Acceleration since the 1950s (Steffen *et al.*, 2015). However, the increased social metabolism is not shared equally among people, in industrialized nations<sup>1</sup> the per capita material and energy use is five to 10 times higher than in developing countries (Krausmann *et al.*, 2009). Furthermore, they estimate that with continued economic growth the global metabolic profile towards 2050 will be two to three times the current level, which they argue will further create environmental problems such as increased pollution and resource depletion. Excluded in these calculations are aspects such as overburdens from mining, estimated to be at 75 to 80% of removed materials in metal ore extraction, because they do not create any economic value that can be accounted for. The global material consumption growth during the last century is shown in table 2.3.

The table demonstrates minerals' role in increased social metabolism and economic growth. Furthermore, GDP increases faster than material use, arguing for a relative decoupling of growth from material use. However, absolute decoupling is not likely and only took place during large recessions (Behrens *et al.*, 2007; Krausmann *et al.*, 2009). These authors also point out that increased social metabolism in the Global South results from increased population, while in industrialized countries from economic growth. Industrialized nations are responsible for 30-50% of material extraction while representing 15% of the global population, excluding the consumed materials that are imported from the global South, in which case the figure would be much higher (Krausmann *et al.*, 2009; Wiedmann *et al.*, 2015).

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<sup>1</sup> Industrialized nations in Krausmann *et al.*'s (2009) analysis refer to the following 26 nations: Canada, United States of America, Australia, New Zealand, Finland, Iceland, Norway, Sweden, Belgium, Luxembourg, Denmark, France, Germany, Italy, Malta, Netherlands, Portugal, Switzerland, United Kingdom, Austria, Greece, Ireland, Spain, Israel, Japan, and South Africa

Table 2.3 Overview of the global growth in material use during the period 1900-2005 as found in Krausmann et al. (2009)

<b>Compartment:</b>	<b>Materials accounted for:</b>	<b>Growth in use, and composition:</b>
Total material use	All the following compartments	8.4-fold
- Per capita material use		2-fold
- Construction minerals	Crushed stone, sand, and gravel	34.4-fold, share of cement is 75%, sand and gravel between 10 and 15%, other materials about 17%.
- Ores/Industrial minerals	44 types of ores and 33 types of industrial minerals, such as copper, lead, gold, zinc, silver, nickel, iron, bauxite, and uranium	26.7-fold, iron most important metal (85% of extracted metals), followed by alumina (7%) and copper (2%).
- Fossil energy	Coal, petroleum, natural gas, and peat	12.2-fold, share of coal has decreased to 50%
- Biomass extraction	Harvested primary crops, grasses and grazed biomass, and wood extraction	3.6-fold, increase in share of primary crops to 35%, decline in share of roughage and wood to 30% and 11%

### 2.1.2 Commodity frontiers

Increased social metabolism requires more materials and energy for production supplied by expanding extraction and production geographically into new areas, so-called commodity frontiers (Moore, 2000, 2003). Moore (2000) explains how early 15<sup>th</sup> century capitalist sugar cane and silver mining frontier expansion was a socio-ecological process. His work builds on Hopkins and Wallerstein's (1986) 'world-system concept of the commodity chain' to explain how social conditions (inequality, poverty, marginalization) and ecological conditions (ecosystem services, natural capital) are changed in commodity creation. Moore (2000) demonstrates that ecological exhaustion was a result of *as well as* the reason sugar cane production had to expand due to soil erosion, deforestation, and pollution in cultivated areas. Furthermore, building on Marx's (1867) theory of 'metabolic rift' (see also Foster, 1999), Moore (2000, 2003) shows how commodity frontiers exhaust the ecological conditions in rural areas while moving materials to urban areas where they end up as waste after consumption. Thus, commodity frontiers change the socio-ecological conditions in the core and the periphery. The result is that there is a strengthened core which accumulates materials and capital, and a degraded periphery with lost ecological opportunities and social

marginalization due to issues such as deforestation and soil erosion. These impacts degrade the ecosystem services humans depend on.

Furthermore, Moore (2000, 2003) shows how one commodity frontier expansion leads to another, e.g. sugar frontier expansion led to expansion of wood extraction frontiers and other agricultural frontiers for subsistence production. Copper production was not central to earlier mineral frontier expansions, which was mainly for silver, gold, and later iron. However, as Krausmann *et al.* (2009) demonstrates, copper's importance as a mineral has increased in the last century, especially during the last 70 years, due to its importance for technological development. Note for example, that wider societal electrification did not take place before the turn of the 20<sup>th</sup> century. In table 2.4 historical and contemporary copper frontier examples are exhibited and their conflict characterization. Many corporations commencing new copper extraction are foreign to the land they operate in. According to Harvey (1982, 1985, 2001) and Moore (2003) commodity frontiers result from 'spatial fix': capital overaccumulation in the core lead to devaluation of capital, thus to secure capital's value, investments must find new productive places where resources are available. Moore (2000) argues that "ceaseless spatial expansion is the product of a system based on ceaseless capital accumulation" (p. 428). The search for new areas result from reallocating capital in the upper level of the economy pyramid, the financial economy, as seen in figure 2.3. But copper frontier expansions result not only from replacing capital investments, which Gordon (2010) argues is why Canadian companies such as Corriente and Ascendant Copper expands production to Latin America (see table 2.4). Copper frontier expansion in Latin America is also due to increased consumption in the EU and Japan, while their domestic extraction has decreased (Muradian *et al.*, 2004). To allow further increase in the second level of the economic pyramid, the increase in GDP, more materials and energy are required. There is a finite material and energy supply of sufficient quality that can be extracted within current geographical extractive areas. Thus, the increased social metabolism and the need to invest accumulated capital in new production push commodity frontiers into new areas.



Table 2.4 Examples of historical and contemporary copper frontiers and the nature of the conflicts that arose in 5 continents

Frontier Area	Nature of Conflict	Cases and year, with references
Americas		
- Peru	Pollution of pasture lands, air, and waterways by heavy metals.	Cerro de Pasco Copper Corporation, 1920-30s Southern Peru Copper Corporation, 1950-60s Manhattan Minerals, 2000s (Bebbington & Williams, 2008; Martinez-Alier, 2001; Muradian <i>et al.</i> , 2004)
- Ecuador	Threatening local small-scale agriculture and eco-tourism through pollution, deforestation and climate change, violence by para-military groups towards protestors, reallocation of families.	Ascendant Copper, 1990s, 2000s Corriente/Ecacorriente, 2000s Mitsubishi 1990s (Bebbington <i>et al.</i> , 2008b; Gordon, 2010; Muradian <i>et al.</i> , 2004)
- Chile	Toxic runoff from tailings, water and air pollution, spills from disposal dams.	Carmen de Andacollo/Canadian Aur Resources Inc, 1990s-2000s La Escondida/BHP Billiton 1990s Las Juntas 2000s (Muradian <i>et al.</i> , 2004)
Asia		
- Japan	Pollution from heavy metals damaging health and crops, land use change.	Ashio copper mine 1907 (Martinez-Alier, 2001).
Africa		
- The Democratic Republic of Congo	Illegal exportation, war crimes.	Anvil Mining, 2000s (Gordon, 2010)
Oceania		
- Papua New Guinea	Destruction of sacred land, water pollution, violent confrontations.	Rio Tinto 1970s Grasberg/Freeport McMoran 2000s (Martinez-Alier, 2001)
Europe		
- Spain	Heavy metal pollution, massacre of peasants.	Rio Tinto 1888 (Martinez-Alier, 2001)

### 2.1.3 Ecological distribution conflicts and cost-shifting

As seen in table 2.3, commodity frontier expansion can lead to conflict because these areas that become subject to capitalist production are seldom “pristine” or “wilderness” areas where

people do not use the environment. This has led Martinez-Alier (1995, 2001, 2002, 2009) to term these as ecological distribution conflicts as the actors' opposition usually start with the uneven cost-benefit distribution from ecological change. These conflicts are also about livelihoods, human and indigenous rights, valuation, and justice. Martinez-Alier (2009) sees ecological distribution conflicts as a causal relationship: the need for increased growth leading to higher social metabolism, requiring commodity frontier expansion, and the result is often conflict. What he further points out is that when conflicts appear the people use different 'languages' to oppose landscape changes, such as in Kerala, India where fishermen's struggle to protect their own livelihoods were combined with efforts to protect vulnerable olive ridley turtles (*Lepidochelys olivacea*) and mangroves. Commonly groups oppose resource extraction on their land to protect local livelihoods and values, and not for environmentalism or conservation. Though, despite different means the end is similar. To understand ecological distribution conflicts environmental justice discourse is frequently used to cover the conflict varieties, to be discussed in the second part of this chapter.

However, first the cost-shifting concept shall be explained. Kapp (1978) demonstrates that through economic activity there are costs that are shifted or imposed on third parties that are not recognized or accounted for in the economic system. These costs vary from costs such as injuries to the worker, to soil degradation from intensive cultivation. In Marxist discourse the former is known as the first contradiction of capitalism: capitalism's tendency to undermine worker conditions, and the latter as the second contradiction of capitalism: capitalism's tendency to undermine the environmental conditions for its functioning (O'Connor, 1988; Robbins *et al.*, 2014). Kapp (1978) saw these social and environmental costs resulting from the economic system. He argues that this should be considered a 'cost-shifting success' as the business model is developed for companies to seek highest possible revenue and not to pay for the costs that are implicit in their activity. He was especially concerned with the environmental costs of pollution, from air to water pollution from industrial production. For Polanyi (1944), dealing more with social costs than environmental ones (despite not framing these issues as social costs, see Swaney & Evers, 1999), argued these costs result from a 'disembodied economy', an economy that makes land and labour commodities for sale in a market system. This, he argued, leads to disregarding the foundation for human interaction. The point can be extended to the relationship between humans and ecosystems. When ecosystem services are traded for economic value, the degradation of these ecosystem services through extraction can create costs for those that depend on these services. This concept has

been further expanded upon in the ecological economics literature. Mainstream economics argue that natural capital can be substituted with manufactured and human capital, e.g. mineral extraction for buildings and culture. However, this implies that the costs associated with natural capital degradation are shifted upon other actors (Costanza & Daly, 1992). Examples can be derived from table 2.3 on the copper frontier, where natural capital depletion is considered a substitute for manufactured capital. However, copper extraction can create socio-environmental costs borne by local users, such as soil erosion, water pollution, deforestation, and land enclosure.

Sometimes the conflict that arises when a copper mine is suggested leads to the community stopping the project due to anticipated socio-environmental costs, such as the Mitsubishi case in Ecuador in the late 1990s (Bebbington *et al.*, 2008; Muradian *et al.*, 2004). In this case the local community together with an NGO mobilized to destroy company equipment and managed to avoid conflict and court cases. Other times the costs are recognized, and the companies lower their impact. For example, CODELCO in Chile that reduced their sulphur dioxide emissions with technological improvements (Muradian *et al.*, 2004). However, what Muradian *et al.* (2004) and Bebbington *et al.* (2008) also argue is that resistance appears where the new mines pose a risk to community inhabitants, given that they have the structural position to mobilize. Furthermore, what is excluded in Kapp's (1978) analysis is benefit distributions, which is as important as cost distributions in ecological distribution conflicts, evident in the cost-benefit language used in extraction (Martinez-Alier, 2009). When these conflicts over cost-benefit distribution take place, they are frequently in the environmental justice language, knowingly or unknowingly (Martinez-Alier, 2002). Martinez-Alier (2009) sums up the nature of ecological distribution conflicts in his conclusion:

*we may say, "shrimp exports [or copper or bauxite mining] is a valuable item of world trade," and also, that "valuable ecosystems and valuable local cultures are destroyed by shrimp farming [or copper or bauxite mining]." (p. 86-87).*

We now turn to outline the environmental justice framework used to study these conflicts.

## 2.2 Environmental justice theory

The environmental justice (EJ) concept came to prominence with an activist movement in the U.S. in the 1980s raising awareness about disproportionate distribution of toxic waste in colored communities (Cutter, 1995). The movement quickly lead to extended research in the U.S. finding evidence for purposive distribution of environmental burdens to less powerful

communities and classes (Bullard, 1993; cf. Bowen, 2002). For example, Boyce *et al.* (1999) found that power inequality in income distribution and ethnicity determined environmental degradation levels among U.S. states. Research was thus followed up in other countries, such as the U.K. (Agyeman & Evans, 2004), and in regions such as the EU (Laurent, 2001). However, Martinez-Alier (1995, 2002) argues that the environmental justice movement started earlier, under different names, in various local movements against changing land use and environmental consequences. For example, indigenous groups opposing mining projects in the Andes in the 1800s or the Chipko movement in India in the early 1970s. The Alta-dam case in Norway (see box 3.1) also predates the environmental justice movement in the U.S. However, this depends on whether one sees environmental justice just as the concept that emerged in the U.S in the 1980s, or as environmental conflicts over recognition, participation, and cost-benefit distributions.

As research has expanded EJ has become an established academic field and a world-wide movement. Building on the initial merge between “environmental, social equity and civil rights movements” in the U.S (Cutter, 1995, p. 113), the field now incorporates many different analyses in space and time from local to global issues (Walker & Bulkeley, 2006).<sup>2</sup> Different notions of what environmental justice entails have been developed, and there is no universal definition. The perception has dominantly been concerning an equitable environmental cost-benefit distribution (Bullard, 1993). However, the concept has expanded. Starting with issues such as waste facilities’ location, it now incorporates everything from water pollution, food security, resource extraction, to climate change (Agyeman & Evans, 2004.). The environmental justice framework originally built on Rawl’s theory of distributive justice, see Box 2.1. However, over time it has evolved to build on Fraser’s more inclusive justice concept to incorporate recognition and procedural justice by the work of Schlosberg (2004, 2007, 2013). This has meant a transition from a liberal to a radical environmental justice theory. Following Walker’s (2009a) argument, the environmental justice framework outlined here builds on the now global environmental justice research that has developed from spatial analysis of environmental burdens, to include a wider analysis building on involved actor’s perceptions.

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<sup>2</sup> For more information on the origins of environmental justice see Agyeman *et al.*, 2002; Boyce *et al.*, 1999; Bullard, 1993; Cutter, 1995; Portney, 1993; Taylor, 2000

*Box 2.1 The different principles of distributive justice, by Vatn (2015, p. 167).*

Different principles of distributive justice

- 1 **Strict egalitarianism:** each individual should have the same level of material goods and services.
- 2 **The difference principle (Rawlsian principle):** each person has an equal claim to a fully adequate scheme of equal basic rights and liberties. Social and economic inequalities are acceptable under two conditions:
  - a) they are to be attached to positions and offices open to all under conditions of fair equality of opportunity; and
  - (b) they are to be to the greatest benefit of the least advantaged members of society.
- 3 **Resource-based principles:** each individual should have access to the same amount of resources – equal opportunity.
- 4 **Welfare-based principles:** social welfare should be maximized. This implies some way of summarizing individual welfare. Hence, a priori definitions of how welfare of each individual should count is necessary – that is, the definition of a social welfare function.
- 5 **Desert-based principles:** people should be rewarded according to their ‘effort’ – be it input of work, capital or loss of income (e.g., as an effect of protection of a biotope).
- 6 **Libertarian principles:** just outcomes appear as the result of free individual choice.
- 7 **Feminist principles:** equal status for all. ‘The private is political’ – referring to the observation that liberal theories of justice have been unable to treat injustice in the (protected) private sphere.
- 8 **Compensatory justice:** the poor have to carry a non-proportionate amount of environmental costs. This demands ‘overcompensation’ to correct for historical/systemic injustice

According to Schlosberg (2004) building on the work of Fraser (1995, 1998, 2000) environmental justice has three core dimensions: recognition, procedural justice, and distributive justice, and all three are required to create a ‘just’ situation. To some authors procedural justice has meant eliminating environmental costs at the source, and not referring to decision-making processes (see Faber, 1998). Procedural justice, including recognition, concerns recognizing all values, interests, persons, and cultures, and all actors’ participation (Schlosberg, 2004). Contrary to many authors who have evaluated the distributional aspects only, Schlosberg (2004, 2007) argues that recognition and procedural justice are elements of justice itself. Furthermore, Harvey (1996) argues that justice comes from “confronting the fundamental underlying processes (and their associated power structures, social relations, institutional configurations, discourses, and belief systems) that generate environmental and social injustices” (p. 401, quoted in Schlosberg, 2004, p. 534).

Environmental justice has become key to understand social justice as the relationship between humans and the environment provides the foundation for relations between humans (Schlosberg, 2013). For Agyeman *et al.* (2002) environmental justice is linked to sustainability, arguing that sustainability “should be to ensure a better quality of life for all and that this should be done in a just and equitable manner, whilst living within the limits of supporting ecosystems.” (p. 78). However, they see the unsustainable production system to impose socio-ecological costs: “Thus, in the US, Europe and around the world, it is the least politically powerful and most marginalised sectors of the population who are being selectively victimised to the greatest extent by environmental crises.” (p. 79). They point to examples such as locating industry in the Mississippi Chemical Corridor, a minority community, which is the trend in the U.S (Cutter, 1995), and industry moved to Third World countries with less stringent environmental policies as shown by Torras and Boyce (1998). They argue, that key to a just outcome is access to policy and decision-making for all people, in line with Kapp and Polanyi (Swaney & Evers, 1989). However, the narrative portrayed in policy is equally important. Despite the increased talk of sustainability (or sustainable development) in governmental policy such as in the UK Sustainable Development Strategy (1999),

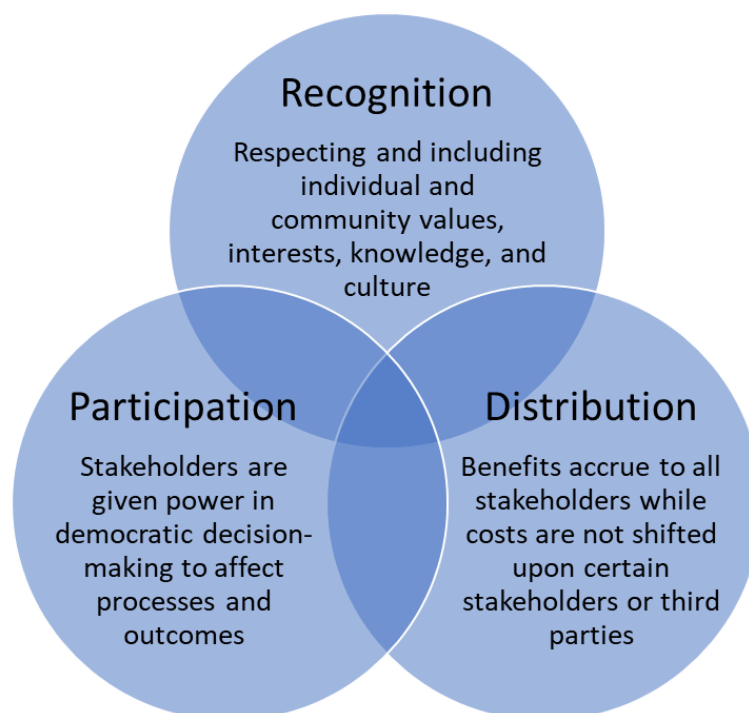
*few, if any, recognize the importance of placing this within a context of social justice, equity and human rights. The need to ensure that public policy – environmental or otherwise - does not disproportionately disadvantage any particular social group, and affords opportunity for all, must be a precondition for the move toward just and sustainable societies.* (Agyeman & Evans, 2004, p. 163).

Their perspective is a critique to the mainstream sustainability theory, which is based on the Brundtland Commission’s Report ‘Our Common Future’ (1987) definition: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. Development is seen in this definition as economic production and growth. However, economic production produces socio-environmental costs such as water pollution (Kapp, 1978). To Agyeman and Evans (2004) this cannot be just as someone has to bear the burden of that water pollution. As seen in the United Nations (UN) Sustainable Development Goals (SDGs) (UN, 2015), both reducing inequality and securing economic growth are among the 17 goals, which many authors argue are contradictory as economic growth imposes socio-environmental costs on society that are unequally distributed (Krausmann *et al.*, 2008). Or that economic growth is unsustainable because the materials it depends on is finite (Costanza, 1993; Sorman & Giampetro, 2013).

Furthermore, the SDG that address inequality is only referring to social inequality as measured by access to resources, not environmental costs, which is the point Agyeman and Evans (2004) make: understanding justice is missing in sustainability discourses. While there is little room for expanding this discussion, it is important to mention as it has become central to the environmental justice discussion.

The remains of this chapter will present the three core environmental justice dimensions as understood by Schlosberg (2004, 2007, 2013). The overall environmental justice framework is displayed in figure 2.5.

*Figure 2.5 The three overlapping concerns of the environmental justice framework*



### 2.2.1 Justice as recognition

Following Schlosberg (2004, 2007), Walker (2009a) argues that “Place stigmatisation and misrecognition are not however just the *product* of siting decisions, but also underlie the processes through which certain spaces get to be chosen for development in the first place” (p. 36, original emphasis). By ‘place stigmatization’ Walker means the reasoning behind choosing project locations. This point follows mostly from the idea that polluting activities have been in marginalized areas, such as toxic waste placement in Afro-American communities in the U.S. (Cutter, 1995). However, the argument logic can be extended to any

activity that causes environmental degradation (or risk/harm if you like). Lerner (2010) has labelled these areas “sacrifice zones” as they are chosen for environmental polluting activities because the impacted people do not have the political means to oppose the project.

A key concern for many environmental justice scholars is cultural identity (Schlosberg, 2004). The ways different cultural interpretations are included in the process, and the people whose cultural identity is seen to be strengthened or weakened. Furthermore, they’re concerned with how actors position themselves as culturally different to other actors, and how this is recognized in the process. This concerns both individuals, and communities. Recognition is not limited to a single entity, one is not either a woman, or an indigenous community member, one must be recognized as both (Fraser, 1995). As Nightingale (2006) shows, aspects such as gender operates in combination with aspects such as caste, ethnicity, class etc, and thus highlights that one should study the intersectionality of how different cultural characteristics affect your position in society.

Schlosberg’s (2004, 2007) discussion of recognition builds primarily on the work of Taylor (1994), Honneth (1992, 2001) and Fraser (1998, 2000), the first two seeing recognition as a psychological issue, the latter as a social issue. The psychological dimension concerns whether any action has respected their uniqueness or suppressed a person’s ability to feel dignity (for Taylor), or violated the body, denied rights, and disrespect their way of life (For Honneth). For Fraser, the focus lies on the institutional process: cultural domination, nonrecognition/exclusion patterns, or routinely being disrespected. Combining these approaches to recognition provide powerful analytical tools for studying recognition as justice. For example, through oil production in Alberta’s Tar Sands in Canada, the socio-economic costs of water contamination, deforestation, soil erosion, and decline in the threatened woodland caribou (*Rangifer tarandus caribou*) are borne by the indigenous tribes, e.g. the Beaver Lake Cree First Nation (Black *et al.*, 2014). The decline in caribou is compromising the tribe’s ability to continue their traditional hunting practices in the area. This is both a psychological issue, as they feel their dignity is being suppressed and their way of life is being disrespected. And it is a social issue, their culture is not being recognized by the mining sector or the government and thus is not important in decision-making.

Furthermore, Martinez-Alier (2001) argues that central to understanding recognition is which values and interests are included in decision-making. Values should be seen both as a concept of what is good and as something desired, while interests are “the position of a person or group in a societal structure” (Vatn, 2015, p. 261). Martinez-Alier (2001) further argues that



recognition is about which valuation languages are used: “Environmental conflicts are expressed as conflicts on valuation, either inside one single standard of valuation, or across plural values.” (pp.21-22). The problem arises in his view because values are incommensurable, they operate on different levels and cannot be measured by the same metric, for example a mineral’s economic value cannot be measured to the cultural value of intact landscape (Martinez-Alier *et al.*, 1998). Reducing values to the same metric, commensurability, has become omnipresent in modern society because it facilitates action. Most decisions taken by public officials are done through commensuring values to the same metric, specifically through cost-benefit analyses (Espeland & Stevens, 1998). A cost-benefit analysis compares a project’s expected benefits and costs to evaluate whether the benefits outweigh the costs. If they do, the project should be carried forward. The problem arises then that most economic decisions within current institutional settings are taken by cost-benefit analyses and thus do not allow counting value multiplicity (compared e.g. to a multi-criteria analysis) (Vatn, 2015). Martinez-Alier (2009) further problematizes this and argues that through such methods only monetary values are given weight:

*The reduction of all goods and services to actual or fictitious commodities, as in cost-benefit analysis, can be recognized as one perspective among several. Who then has the power to simplify complexity, imposing a particular standard and procedure of valuation? (p. 87).*

With fictitious commodities Martinez-Alier refer to the work of Polanyi (1944) who argued that the capitalist economy makes goods that people don’t view as commodities into tradeable goods in the market.

Monetary value dominance is as a fundamental problem with recognizing different environmental uses and values in decision-making (Vatn, 2015). Sometimes the losses experienced by impacted stakeholders in land-use change are compensated in monetary terms. In distributive justice terms, a new mining project can be just by following the Pareto improvement principle (Martinez-Alier, 2001). The Pareto improvement principle states that any economic activity should be carried out if it improves someone’s situation without worsening others’ situation (Vatn, 2015). In some cases, the argument is that if somebody is left worse off, this can be corrected by the Kaldor-Hicks rule which ‘corrects’ the worsening of one’s situation by compensation from those that are left better off (Martinez-Alier, 2001). Martinez-Alier (2009) further argues that this logic is wrong, and that one cannot compensate for livelihood or biodiversity loss or compare the value of land to a community with other

means such as economic income. A just outcome is only possible through recognizing the values important to these actors.

Some scholars have also studied environmental justice in relation to ecosystem services (Ernstson, 2013). For example, how does people's different social position affect their ability to enjoy the cultural services by an urban park? Or how does an urban park's placement affect the ecosystem service distribution? Evaluating how actors argued for or against project locations and why/why not thus remains central to understanding environmental justice.

### 2.2.2 Justice as participation

There is no universal rule for how 'participatory' a process ought to be - to be considered acceptable to an environmental justice discourse, nor to succeed to a just outcome. According to Schlosberg (2004) democratic participation is a prerequisite for obtaining just outcomes, as well as a justice element. There are many scholars who theorize the role of democracy and participation (Vatn, 2015). For example, both Polanyi and Kapp saw participatory-democratic planning as a method to prevent social and environmental costs (Swaney & Evers, 1989).

In environmental governance participation can be characterised as a ladder with different participation levels (Arnstein, 1969; Pretty, 1995). Defining the rungs differently, Arnstein (1969) and Pretty (1995) differentiate between forms of nonparticipation (manipulative forms), degrees of tokenism (stakeholders are heard), and degrees of citizen power (stakeholders are given different levels of power in decision-making). Both define strategies such as consultations to be inadequate to satisfy participation requirements, while forms of interaction between decision-makers and other stakeholders can satisfy participation requirements if power is delegated to stakeholders. Ultimately, only self-mobilization through citizens self-initiative to launch a mining project can ensure power redistribution and full participation between stakeholders.

Access to information and decision-making is central for participation (Walker, 2009a). Without adequate means of accessing the decision-making arena actors will not be heard in the process, and as their views are excluded they would be treated unjust, and the outcome would be unjust (Lake, 1996). Then the question arises: who should participate? Demarcating who are to be counted as the stakeholders involved, and to which degree the public has a say becomes important in ecological distribution conflicts. Furthermore, actors might have limited ability to participate as public officials tend to exclude counter-voices and participants are predefined with little room for those considered outsiders to enter the arena (Barnes *et al.*, 2003).

Furthermore, responsibility for creating the conditions for participation, in other words who holds power to shape the process and decide the outcome, is central to understanding justice. For Harvey (1996) it is about the power to influence, and power should not be limited to political power or economic power. According to Wolf (2001) and Dean (2012) there are four dimensions of power, building on the work of Lukes (1986) and Foucault (2008):

1. The capability/capacity of a person to reach a desired end.
2. Ability of an ego to impose its will on an alter in social action; person A making person B do as person A wants.
3. Power that controls the settings in which people may exhibit their potentialities and interact with others; shaping people's perceptions and preferences.
4. Structure the possible field of action of others – to govern, creating the conditions to be governed.

Benjaminsen and Svarstad (2017) and Svarstad *et al.* (Forthcoming) see these four power dimensions to fit into three categories of how power is studied in political ecology. Firstly, the two first dimensions concerns the actor-oriented view on power. These dimensions focus on the relation between actors. Secondly, the third and fourth dimension build on both Marxist oriented views on power through focusing on how economic domination and exploitation shapes fields of action, and thirdly they build on post-structuralist views on how the settings for exercising power is defined. Power is essential in deciding justice and equality outcomes.

According to Fraser (1990) social inequality is a hindrance for public participation and participatory democracy. Unequal power distribution will strengthen certain stakeholders' ability to assert their preference in the process. As Bryant (1998) argues (quoting Schmink and Wood, 1987, p. 51), ecological distribution conflicts are struggles over meaning: "Ideas are never innocent but either 'reinforce or challenge existing social and economic arrangements'" (p. 87). For example, power assertion manifests itself through discourses. Discourses are knowledge regimes: a "shared meaning of a phenomena" (Adger *et al.*, 2001, p. 683). A discourse includes "assumptions, claims, and arguments" created through human communication (Benjaminsen & Svarstad, 2017, p. 68). As such they are social constructions, producing a certain topical view. Included in discourses are often narratives, portraying the perceived problems, the actors, and the solutions to problems of human interest. When problems cause intervention, then a narrative identifies the villains – those who cause the problem, the victims – those who bear the problem, and the heroes – those who may solve the

problem. Both wider discourses and specific narratives become true because of power. Thus, the question, as Martinez-Alier points out, is which actors become powerful in the process to shape the desired outcome.

Case-specificity also determines the extent of participation. Civil rights are central to environmental justice - independently of ethnicity, culture, or gender, people should not be treated differently, e.g. in terms of exposure to environmental burdens and access to environmental goods. Though, recognition requires certain groups to be recognized for their difference in relation to other groups in society (Schlosberg, 2007). In cases where indigenous populations have been central to conflict, indigenous rights have been in focus (Westra, 2008). Westra argues that international and national laws have been inadequate to ensure just outcomes for the world's indigenous population, who frequently become primary victims to environmental degradation. Nation-states who have ratified the International Labour Organization's (ILO) convention 169 seem to rarely follow Prior and Informed Consent (FPIC) principles (see also Hannah & Vanclay, 2013). As such, Bodley (2015) argues indigenous peoples are the victims of modernization. Based on Moore's (2000, 2003) commodity frontier concept, indigenous people are located where capitalist production is continuously expanding as they tend to live in areas where economic development has not yet reached its full potential. This is due to the resources becoming necessary to both sustain economic growth by increased metabolism (Martinez-Alier, 2009), and as capital must be relocated to areas where it can create revenue (Harvey, 1982, 1985, 2001, 2004). Thus, indigenous peoples' role in the contemporary environmental justice movement has been central (Martinez-Alier *et al.*, 2016). This will be expanded upon in chapter 3 for the case studied.

Struggles for recognition and participation overlap, people must be included in decision-making to assert values and interests. There are several concepts used to study the differences in knowledge and value, and how that translates to participation. In a waste management case in Italy, D'Alisa *et al.* (2010) demonstrate how excluding different perspectives and values, and limiting participation "oversimplified a complex crisis and obscured different emergent perspectives and values. Ultimately, denying the will of a large part of the population caused increased social unrest." (p. 239). They use a Post-Normal Science (PNS) perspective, including a larger community not limited to a scientific one, to allow multiple perspectives in analyzing wider recognition and participation struggles. To some this is embodied in deliberative democracy (Vatn, 2015). Other researchers have focused extensively on the role

of traditional knowledge (TK), indigenous knowledge (IK), and traditional ecological knowledge (TEK) for affecting the knowledge base to which decisions are made. From now on referred to as TK, using TK as a more holistic concept. Eythorsson & Thuestad (2015) evaluate the use of TK in Environmental Impact Assessments (EIA) in Norway with experience from their research on conflicts in Sámi areas. The role of TK has also been studied in Norwegian salmon management and research (Rybråten & Gómez-Baggethun, 2016). For Agyeman *et al.* (2010) TK has been important for indigenous struggles in Canada, from opposing Tar Sand's environmental impacts to protecting land rights. For example, the indigenous Mi'kmaq tribe's struggle for recognition of their traditional fishing grounds in Eastern Canada.

### 2.2.3 Justice as distribution

Environmental justice theory has from the beginning been concerned with environmental cost-benefit distributions, from who benefits from green space in urban areas, to who bear the costs of a waste facility. The most influential work on distributive justice has been Rawls (1971) and his 'Veil of Ignorance' concept, to find a fair and just goods distribution in society. Rawls' idea was that if a person is put in a situation where they do not know their position in society, the person will be able to come up with a social goods distribution that benefit everyone. This idea has been extended in the environmental justice discourse to include the distribution of burdens as well. However, the concept must be extended to include not simply the size of a 'burden' or 'good' experienced by actors, but how it can affect them differently, and how their perception of what is an environmental 'burden' or 'good' differ (Walker, 2009a). This should also concern social goods and burdens, such as access, or lack of access, to social services. Therefore, hereon benefits and costs shall be used to cover both social and environmental aspects.

There are studies that discuss the uneven environmental cost-benefit distribution in communities, within and between states, and on an international level (Bullard, 1993; Cutter, 1995; Terrace & Boyce, 1998; Boyce *et al.*, 1999). For example, locating most polluting industries in coloured communities in the U.S, or in countries with higher poverty rates and less strict environmental management. There are also many studies that discuss the distributional aspects from specific extraction projects seen in table 2.3 on the copper frontier (See also Martinez-Alier's work; Bebbington, 2012, Bebbington & Bury, 2013; McNeish, 2016, Perrault, 2013; and other work cited here). For example, Perrault (2013) discusses how the water contamination from heavy metals and toxins from mining in the Huapuni River

Valley in Bolivia are experienced by the local community through both health issues and ecological issues. Meanwhile, as they are dispossessed of their land through enclosure, they do not receive or reap employment benefits in the mine.

Building on both Schlosberg (2004, 2007) and Walker (2009a), what are characterized as socio-environmental benefits and costs depend on the actors involved, and thus the framework shall not be limited to a fixed understanding of benefits and costs. Especially as they impact people differently, what is a benefit to some might not be a benefit to others, and what can potentially be a cost in one place might not be that in another. For example, cultural eutrophication from human induced nitrogen pollution is a problem in southern Norway as it decreases biodiversity and fish production, while on the coast of Finnmark in Northern Norway it has the potential to increase fish production due to lack of nutrients (Arild Vatn, personal communication, 08.02.2018).

According to Walker (2009b) the distributional aspect still has to have a normative foundation: why is the lack of benefits to an individual or a community, or experiencing costs, considered unjust? Furthermore, the researcher should acknowledge the normative foundation for different justice definitions (Holifield, 2001). As such, Walker (2009b) argues that Schlosberg's (2007) work on including capabilities can provide a better understanding of why a certain distribution is unjust. Building on Sen (1988) the capabilities approach to environmental justice argues that if a person or a community's capabilities are disrupted, for example their functioning as a community or their capability to sustain their livelihood, then that is unjust. In other words, if a person's well-being is jeopardized by a cost created by resource extraction, then that extraction is imposing costs onto other actors and cannot be considered just. However, as previously discussed, Agyeman *et al.*'s (2002) just sustainability concept can be interpreted in more radical ways, arguing that any sort of unsustainability will be unjust because one cannot always determine how costs will be borne by different people, especially future generations. This also hinges upon the sustainability concept that is used. Understanding these costs is difficult, which is why the framework will build on the idea that any costs created by resource extraction that is borne by a third party to the resource extraction should be considered unjust, as seen by Kapp (1978). The issue is further enhanced if a third-party claim that they are likely to experience only costs, and not any benefits. Important benefits and costs in this framework are represented in table 2.5, but are not limited to these preset definitions.

*Table 2.5 Main benefits and costs used in the environmental justice framework of this thesis*

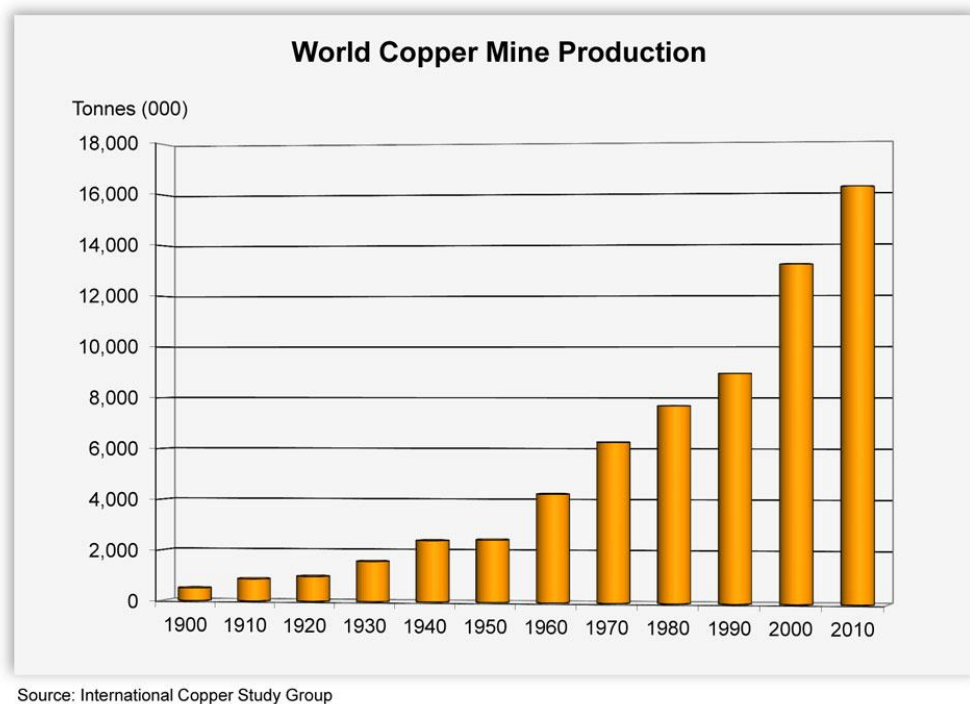
<b>Benefits</b>	<b>Costs</b>
Job creation and employment	Unemployment
Income	Lost income
Copper for consumption	Lack of copper to supply demand
Compensation	Loss of possibility to continue livelihoods
Environmental protection	Environmental pollution, e.g. heavy metal pollution in water sources
Enhancing ecosystem services	Loss of ecosystem services
Strengthened social services	Lack of access to social services
Land use rights	Dispossession

### 3. Background information

#### 3.1 The growth in copper extraction and consumption

Growth in GDP and population has meant a 26.7-fold growth in use of ores and industrial minerals (Krausmann *et al.*, 2009). This growth has especially been evident since the 1950s, the period termed the Great Acceleration (Steffen *et al.*, 2015). Between 1980 and 2002 metals was the largest growing extracted material and is becoming more important than ever in global economic growth (Behrens *et al.*, 2007). Copper is the third most important mineral in terms of extracted quantity, after iron and alumina. Between 1900 and 2000s, copper extraction increased by 25 times (Martinez-Alier, 2001) as seen in Figure 3.1. In 2018, it accounts for about 2% of all minerals extracted and totals 19,7 million metric tonnes per year (Statista, 2018). In the last seven years extraction has increased more than the previous decade, showing an exponential growth curve.

*Figure 3.1 World copper mine production. Source: Copper Development Association Inc. (2018).*

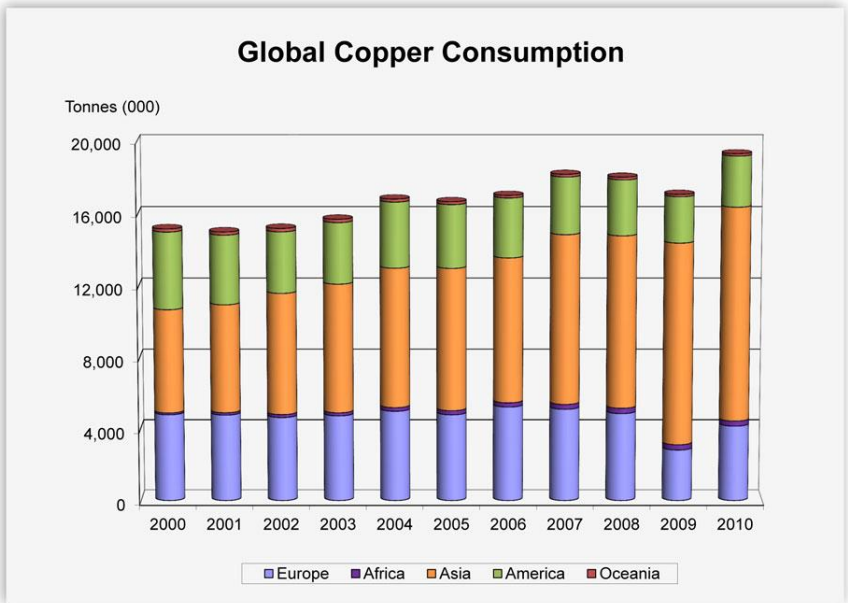


Copper extraction and consumption has increased because it is vital for the technological development and urbanization that has taken place (Kabwe & Yiming, 2015). Approximately 46% of all copper is used in construction, but a growing need for copper in technological development has shifted the copper industry's focus (Copper Development Association Inc., 2018). However, copper consumption is not equally distributed (Krausmann *et al.*, 2009), as



shown in Figure 3.2. European countries consume 20% of globally extracted metals, while supplying 3 % of the extraction (Ministry of Trade and Industry, 2013). In 2014 the average annual per capita mineral consumption in Norway was 14 tonnes (Neeb *et al.*, 2015). Future urbanization in China and India together with global technological goods consumption will increase copper demand further (Kabwe & Yiming, 2015). Copper demand is growing at 2.7% annually, and about 29% of the copper consumed is recycled. Thus, increasing demand cause expanding copper frontiers. Increased production either comes from increased extraction at each operating mine, or from geographical expansion. Increased extraction in current mines holds limited possibilities as reserves ultimately run out or the ore is degraded and becomes economically unviable to extract. Thus, geographical expansion becomes necessary to increase copper production. Copper frontier expansion the last 30 years has especially taken place in Chile, Peru, and China as the world’s three largest copper producers, but also in other areas such as Canada, Australia, and parts of Europe. In the last 10 years, the increased copper price, as seen in Figure 3.3 has created optimism in the extractive sector. However, the copper price is volatile due to oversupply, changing gold prices, and speculation (Domm, 2017; Martinez-Alier, 2002). See facts about the copper industry in figure 3.4. Additionally, revisit Table 2.3 in section 2.1.2 to see how copper extraction creates conflicts over socio-economic costs.

*Figure 3.2 Global copper consumption by region. Source: Copper Development Association Inc. (2018).*



Source: World Bureau of Metal Statistics

Figure 3.3 Global copper price in USD/t over the last 29 years. Source: InfoMine.com



Figure 3.4 Facts about the global copper industry

Global copper mine production: 19 700k t/yr
Global copper refinery production: 23 000k t/yr
Chile's copper mine production: 5 330k t/yr
Largest company: Codelco (Chile): 1 827k t/yr
Global copper demand rate: 2.7%/yr
Global copper consumption: 21 849k t/yr
Current copper price: 5.76 EUR/t
Dominant uses: building construction, electronic products, power generation, vehicles

### 3.2 The Northern Norwegian Copper Frontier

Since 1990, natural resource exploitation has increased in Norway's three northern counties: Nordland, Troms, and Finnmark (excluding Svalbard). New oil and gas fields have opened or are under concession (Lydersen *et al.*, 2017), new aquaculture facilities have been constructed and new concessions have been granted (Berge, 2014), and new mining projects are on the

rise (Nærings og Fiskeridepartementet, 2009). As such, the oil and gas, aquaculture, and mining frontiers are being pushed further into Arctic Norway by revitalizing old and establishing new projects.

While the current mines in Northern Norway are dominantly extracting raw building materials, natural stone and industrial metals, the largest potential for new mines lie in metallic minerals as seen in figure 3.5. As of 2018, there are only two mines extracting metallic minerals (Fe, Au, Cu...) in Norway: Titania AS producing ilmenite, and Rana Gruber producing iron. The latter is in Nordland county. The only active metallic mineral mine in Finnmark, Sydvaranger Gruve AS, was closed in 2015. The company, which originally closed production in 1997, re-opened extraction with rise in mineral prices in 2009, but with the price fall after 2010 the company went bankrupt. However, Northern Norway is a natural resource rich area, especially of minerals, thus providing opportunities for exploitation. In 2013 there were accounted for 19 459 mineral deposits in Norway (Need *et al.*, 2014). In total, the domestic production turnover was 10,2 billion NOK (1,1 billion EUR) in 2016 (Direktoratet for Mineralforvaltning, 2017). The largest potential for expansion lies in Northern Norway. There are many running mines and new concession in Northern Norway, as shown in table 3.1 and figure 3.6. The government estimated that the possible value of metallic mineral reserves in Norway to be 1,400 billion NOK (130 billion EUR) in 2013 (Ministry of Trade and Industry, 2013; Neeb *et al.*, 2014). Most metallic and industrial minerals are exported as little refinery takes place in Norway. The process from receiving a concession to an operating license in Norway is quite long, and thus the rise in active new mines will increase over the years. Many have however criticized the optimism in Norwegian mining, as Norway is a high cost country and mining can only take place when mineral prices are high enough. Economists such as Erik Reinert thus point out that the 1,400 billion NOK value of the Norwegian mineral reserves were estimated at an all-time high, see figure 3.3 above (Klassekampen, 2015). This creates economic risks in mineral extraction as companies can go bankrupt, such as Sydvaranger AS, but also poses a risk for society at large as the cleanup and unemployed workers' reallocation become a social matter.

Table 3.1 Overview of the mining industry in Northern Norway. Sources: Direktoratet for Mineralforvaltning (2017, 2018).

County:	No of active mines	Revenue in million NOK	Employment in Full-Time Equivalents	Dominant type of mineral extracted	No of new concessions in 2017/2018
Nordland	118	1 123	624	Metallic minerals	6
Troms	67	180	102	Raw building materials	4
Finnmark	80	664	332	Industrial minerals	6
Total in Northern Norway:	265	1 967	1058	Raw building materials and industrial minerals	16

Figure 3.5 Metal minerals of national importance in Northern Norway in 2013. Adapted from Ministry of Trade and Industry (2013).

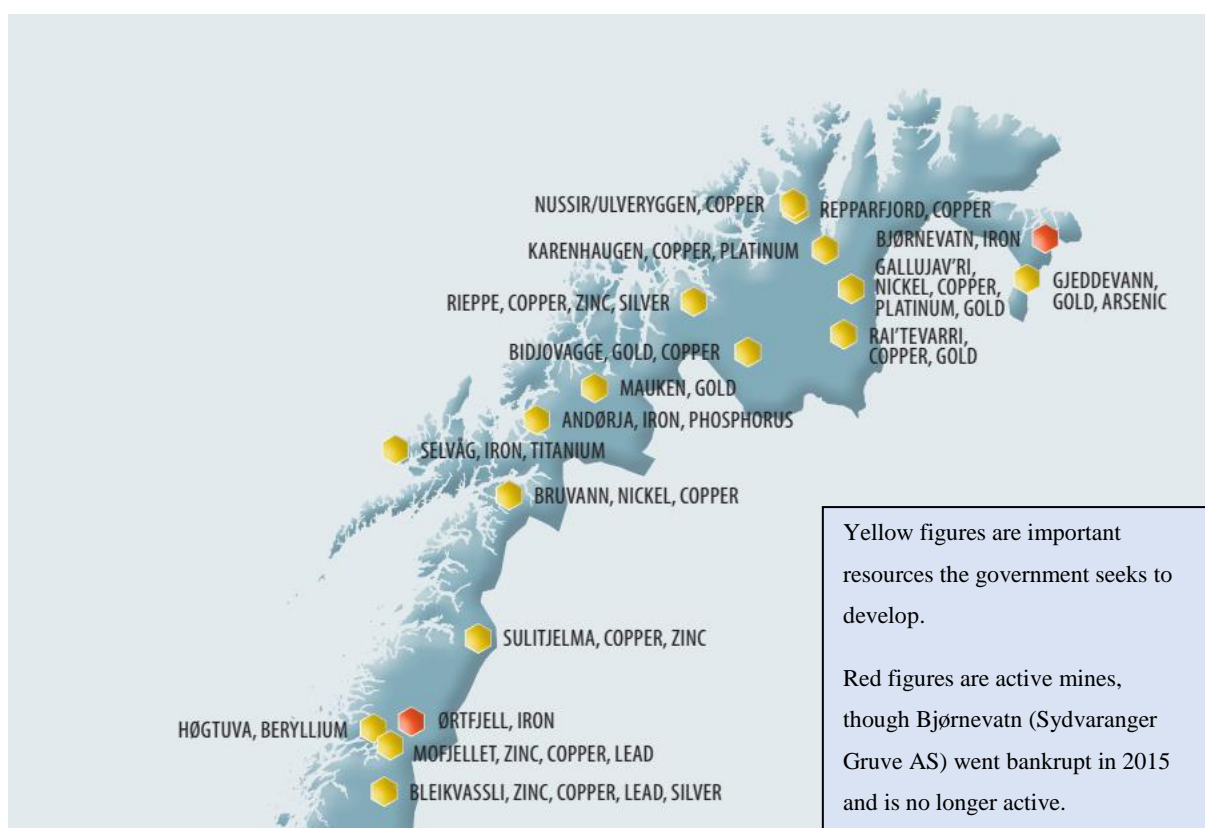
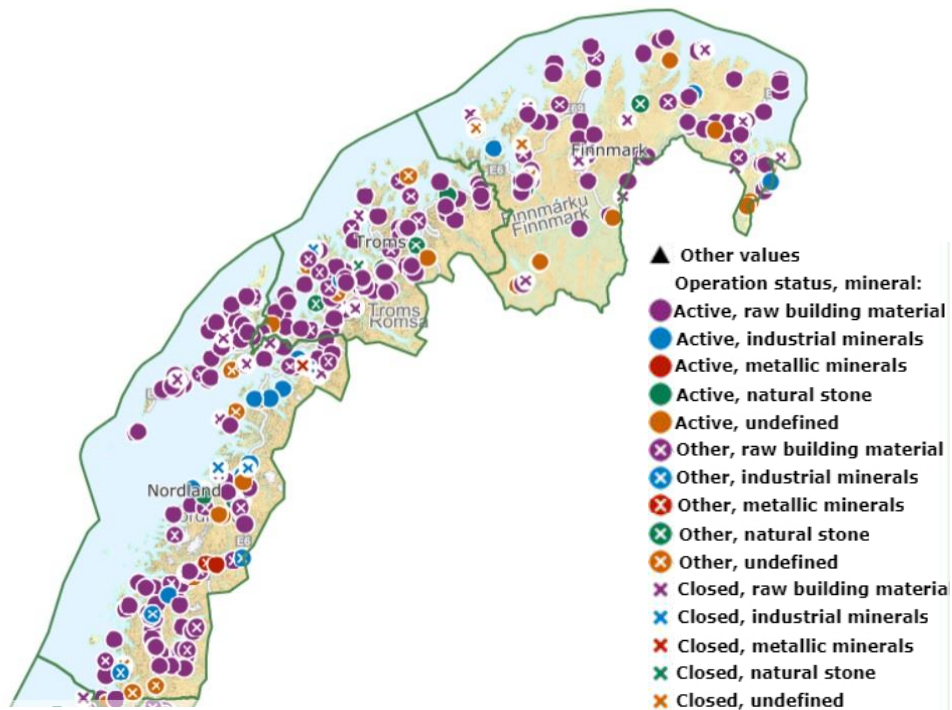
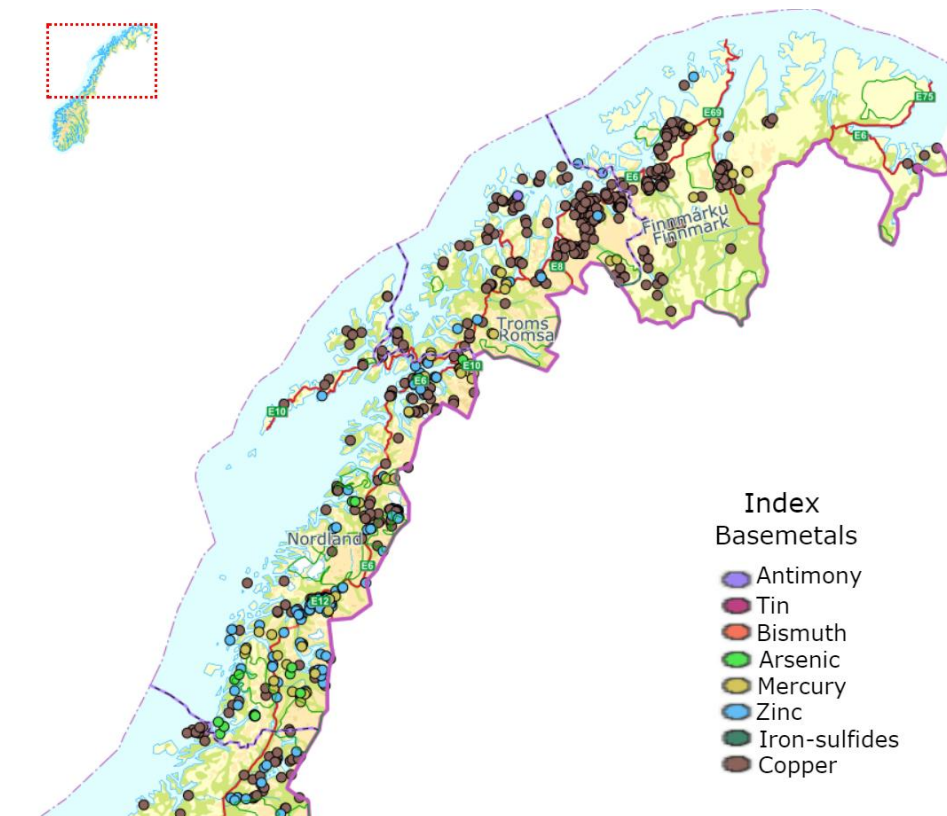


Figure 3.6 Map of current and potentially upcoming mining projects in Northern Norway. Adapted from Direktoratet for Mineralforvaltning (2018).



The largest reserves in Northern Norway are on iron metals (Fe) and base metals. Copper is the dominant base metal located in reserves in Northern Norway, as seen by the dark dots in Figure 3.7 and the metal reserves of national importance in Figure 3.4. All new concessions in Finnmark in 2017/2018 are on copper reserves, sometimes mixed with gold, three of the new concessions are on copper in Troms, and four of the new concessions in Nordland.

Figure 3.7 Overview of base metal reserves in Northern Norway, adapted from Norges Geologiske Undersøkelse (2018).



There has not been established a new mine for metallic minerals in Norway in 30 years mostly due to low prices and lack of political will. However, the price of metallic minerals such as copper increased up until 2012 and political will has turned. Both the current government (2013-2017, 2017-2021) and the previous government (2005-2009, 2009-2013) are keen on expanding mineral production in Northern Norway (Ministry of Trade and Industry, 2013). Former minister of Industry and Trade, Trond Giske, praised the mineral industry as key to job creation in the North, to contribute to Europe’s mineral self-sufficiency, and to lift people out of poverty in a growing global population (NRK Sápmi, 2012). Through increased funding for activities in the Arctic the Norwegian government is hoping for an increased extraction and revenue. As of 2015, 115 million NOK (12,8 million euros) have been granted for geological surveys and 17,5 million NOK (2 million euros) for mapping mineral resources (Ministry of Foreign Affairs, 2015). The focus lies on Northern Norway and the Arctic as they hold “some of the world’s largest ore and mineral reserves” (NGU, 2015, own translation). The government seeks to map 75% of Arctic Norway to facilitate companies in commencing new extraction. In 2016, 18.6 million NOK (2 million euros) were spent on mapping mineral resources in Norway (Direktoratet for Mineralforvaltning, 2017).

New will to invest increases new project proposal and muting (test-drilling). The Government claims rights to mineral resources on any property if they are above 5µm (micrometre) (Mineral Act, 2009). Both the government and the mining industry see mining expansion as vital for sustainable development as different minerals are necessary in renewable energy production (Direktoratet for Mineralforvaltning, 2016). For example, copper is used in solar panels, windmills, and electric cars. The move towards renewable energy from a carbon-based economy is labelled the ‘green shift’. However, the government also emphasize the need for minerals in consumer goods, economic growth, and employment (Ministry of Trade and Industry, 2013, p. 12):

*The mineral industry produces numerous commodities that are necessary for society. The mineral industry provides employment, creates positive local and regional ripple effects and produces tax revenues for the community. Norway is rich in mineral resources and their development will open new opportunities for the mineral industry in Norway. The Government’s objective is a profitable mineral industry with strong value creation and good growth. The Norwegian mineral industry shall be among the world’s most environmentally-friendly and must actively seek forward-looking solutions.*

As mineral extraction expands in Northern Norway new conflicts arise. For example, the Bidjovaggi case in Kautokeino in 2013, where the Municipality turned down the proposed impact assessment on the suggested gold and copper project with concerns for its potential impact on reindeer herding (Johnsen, 2016; Espiritu, 2015). In 2008 the company Store Norske Gull test drilled several new plots in Karasjok municipality, Finnmark. The activity impacted reindeers’ grazing patterns and thus created conflict with the herders (Vistnes & Nellemann, 2010). The government acknowledges the potential conflicts but prioritizes the need for minerals (Ministry of Trade and Industry, 2013, p. 13): “Conflicts over land use may lead to valuable mineral resources being sterilised for the sake of other uses. Considerations related to mineral resources must be safeguarded in municipal and regional area planning in order to secure society’s future needs for mineral resources”, while simultaneously emphasizing co-existence: “It is of great importance to create a basis for coexistence between the mineral industry, Sámi interests and other affected industries and interests. Emphasis will be placed on finding solutions for coexistence based on good dialogue and a shared understanding of the challenges to be met.”.

### 3.3 Environmental Justice in Norway

#### 3.3.1 Sápmi – a colony?

Sápmi is the territory of the Sámi, spreading from central Norway and Sweden, to Northern Finland and the Kola Peninsula in Russia. The colonization of Sápmi by the Norwegian state shows many similarities to the overseas colonization of indigenous or native land by imperialist nations such as Great Britain, Spain, and Portugal (Ravna, 2008). While half of Norway was traditionally Sámi land, Finnmark has become the heart of contemporary Sámi territory (Berg-Nordlie & Gaski, 2018). Land ownership in Finnmark has been up to the Finnmark Estate establishment in 2006 considered State Property as managed by the state company Statskog SF (FeFo, 2018). The Finnmark Estate is a co-owned property owner managed by the Finnmark County administration and Sámi parliament, who both elect three members to the board. During Norway's colonization of Finnmark between the 16<sup>th</sup> and 19<sup>th</sup> century the right to own private land in Finnmark was given to settlers as the 'primitive' nomadic Sámi were not considered rightful land owners (Ravna, 2008). Only 5% of Finnmark is private property, as the Finnmark Estate owns 95% of the land. Between 1850 and 1960 the Sámi and Kven (settlers with Finnish ethnicity) were victims of the Norwegian state's assimilation politics, attempting to eradicate Sámi culture and language by 'Norwegianization' (Eriksen, 1979; St. meld. Nr 55, 2000-2001; Ravna, 2008, 2012). Up until the 1960s, the Norwegian government forbid the Sámi language in schools as a tool to eradicate both Sámi language and culture (Todal, 1998). Furthermore, missionaries attempted to force Christianity on Sámi. According to Minde (2003) the assimilation was due to nation states' necessity, especially in the 19<sup>th</sup> century, to establish their sovereignty over colonized areas. This was also evident in prohibiting herders' migration over the Norwegian-Swedish-Finnish border to control the internal Sámi populations within Norway (Reinert, 2016). The assimilation politics were more successful on coastal Finnmark than in inland Finnmark, where Sámi language and culture has remained strong especially due to agriculture and reindeer herding traditions. The Norwegian government has made efforts to reconcile previous assimilation policies, though Minde (2003) points out that the government allocates about the same resource amount in the national budget today to strengthen the Sámi community as it did to assimilate them between 1850 and 1960.

According to Reinert (2016), Finnmark (or Sápmi) is an internal colony, which influence the way politics concerning Sámi matters such as reindeer herding are conducted. He argues that the state-led financial control of the herding industry makes them dependent on state



subsidies, ensuring a patrimonial relationship. According to Schroeder *et al.* (2006) such internal colonies can represent what is characterized in mainstream politics as “a third world” within, or a “South in the North”. Gordon (2010) discusses this at length in Canada, showing how indigenous areas are becoming targets for commodity frontiers and spatial fix as they represent ‘underdeveloped’ areas. Lerner (2010) suggests such areas can be discussed as ‘sacrifice zones’, where environmental burdens are more acceptable due to inhabitants’ political marginalization. In Norway, Finnmark is discussed as politically marginal, meaning that local people are excluded from decision-making (Blaikie & Brookfield, 1987). Lately, the merger between Troms and Finnmark as part of the Norwegian government’s administrative centralization policies illustrates the regional discontent with participation in policy-making in Finnmark. For example, on deciding the new name (both in Norwegian and Sámi) and the new regional management centre’s location (Larsson & Guttorm, 2018; Trovåg *et al.*, 2018). The social unrest resulting from what many in Finnmark see as a forced decision from the national government has lead Sámi actors to suggest that Finnmark would be better off as an own state (Trovåg & Pedersen, 2018). Dale *et al.* (2018) use the sacrifice zones concept to discuss mineral activities in the Arctic. Furthermore, Reinert (Forthcoming) writes about the proposed Nussir project as a projected sacrifice zone. This might also be why the previous focus on environmental justice in Norway has been dominated by focusing on this area, see for example Box 3.1.

### 3.3.2 Indigenous rights, reindeer herding, and Sámi fisheries

Understanding environmental justice in Northern Norway where the indigenous Sámi population is involved must include indigenous rights. The Sámi are considered an indigenous group and an ethnic minority in Norway (Lile, 2013). Up to the 18<sup>th</sup> century Sápmi was considered an own nation covering half of what is today Norway, Sweden, and Finland, as well as the upper North-Eastern corner of Russia. Traditionally, Sámi livelihoods consisted of reindeer herding, fishing, hunting, farming, and other forms of resource use. Today, few Sámi in Norway depend on these professions, reindeer herding produces about 950 full-time employments, but it remains important to Sámi culture (Ravna & Benjaminsen, 2017)<sup>3</sup>. There are also more reindeer owners than those employed in the industry, as many own reindeer

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<sup>3</sup> As of 2017, there are about 3000 reindeer owners in Norway and 16 958 listed in the Sámi electoral census (Ministry of Agriculture and Food, 2017; Sámi Parliament, n.d.). However, the latter is not a precise number of Sámi in Norway which is difficult to determine. For example, there are pastoralist Sámi reindeer owners who are not listed in the census due to political contestations (see Bjørklund, 2013). In 2012, Slaastad (2012) estimated that there are approx. 40 000 Sámi in the area North of Saltfjellet in Nordland.

under the *siida*-share (share of a herding group) of a permanent herder. For example, in Finnmark there were 2370 reindeer owners in 2014 (who had their own ear mark), but only about 664 full-time employments in the industry (Aslaksen, 2014). Finnmark thus also hosts the largest reindeer herding sector in Norway.

In Finnmark especially, indigenous rights in relation to mining have been extended, and are included in the following legal acts (Nygaard, 2015; Skogvang, 2013):

1. International agreements and laws, for example: Norway was the first country to ratify International Labour Organization's (ILO) convention 169 in 1990. ILO 169 provides indigenous groups with the right to Free, Prior and Informed Consent (FPIC). The UN Declaration on the Rights of Indigenous Peoples of 2007 (instrument, not legally binding) provides rights to property, culture, and self-determination. And the covenant on Social, Economic and Cultural Rights, and the covenant on Civil and Political rights of 1966 remain important. These covenants are explicit in the Norwegian Human Rights Law of 1976.
2. The Finnmark Act of 2005 provides laws and guidelines for resource use and land rights in Finnmark County, also with explicit rights for Sámi use. With it came the Finnmark Estate (FeFo) that owns 95% of land in Finnmark and both the County and the Sámi Parliament elects 3 members each to the FeFo board.
3. The Mineral Act of 2009 which provides the legal framework for consultations and protection of Sámi interests in mining projects between the government, developer, and Sámi.
4. The Plan and Building Act of 2009 requires Sámi interests and rights protection.
5. The Reindeer Herding act of 2007 provides exclusive rights to this industry against land-use change.
6. The Biodiversity Act of 2009 includes that nature and its biological and ecological processes are protected through sustainable use and conservation, also as the foundation for Sámi culture.

In short, these rights provide Sámi with the right to participate in decision-making, the right to their land and resources for livelihoods, the right to practice their language, the right to be free from discrimination, the right to self-determination and the right to be consulted in decision-making. However, international laws and conventions applicable to Sámi have not been adequately incorporated in Norwegian law, and enforcement of Norwegian laws fall short (Bjørklund, 2013; Brattland, 2010; Davis & Jentoft, 2001; Koivurova *et al.*, 2015a; Nygaard,

2015; Ravna, 2008, 2011, 2012, 2014, 2015, 2016; Skogvang, 2010, 2013; Søreng, 2007, 2013). For example, Davis & Jentoft (2001) argue that the present quota allocation in the fisheries sector privilege large vessels and reduce small-scale fishers' possibilities, both Sámi and Norwegian. This, they argue, is in violation of indigenous rights on self-determination. Brattland (2010) thus argues for the Norwegian government to fulfil obligations for positive measures to enhance Sámi rights to marine resources more knowledge of marine resource use is needed. In relation to mining, Skogvang (2013) argues that Sámi rights are not clearly defined, and thus mineral extraction is granted without adequate rights to free, prior, and informed consent. Consent has also been a discussion in Norwegian law, as the Mineral Act of 2009 does not include consent, but instead includes consultation and thus weakens Sámi's position vis-à-vis mining. Furthermore, Skogvang (2013) argues that Sámi are not included in the government's sustainable development policies, as Sámi's sustainable development is sacrificed for the development of society at large. This can be seen in relation to Agyeman and Evans' (2004) argument concerning lack of justice in sustainability policies, as mentioned in section 2.2.

Norwegian management and civil society hegemonically view the herding industry as economically inefficient and overstocked.

Dominant views argue herders degrade grazing areas in Finnmark, in the well-known 'Tragedy of the Commons' hypothesis (Hardin, 1968; see for example Riseth, 2003, 2005; Riseth & Vatn, 2009). However, the scientific foundation for the argument discussed at length in Benjaminsen *et al.* (2015), Benjaminsen *et al.* (2016), and Benjaminsen & Svarstad (2017) is found to be contrary to overgrazing claims. For example, lichen coverage has not decreased since systematic pasture monitoring started in 1998, the herd sizes vary with the climatic fluctuations, and calving weights fluctuate, but have generally not decreased.

### Box 3.1 The Alta dam case.

The Alta Dam case was a hydro-electric dam built on the Alta-Kautokeino river in Finnmark in the late 1970s and early 80s. The conflict evolved around both environmental issues and Sámi use of the area and their rights, and stood in contrast to previous environmental conflicts concerning conservation in Norway. Briggs (2007, p. 149) argues that the case:

*Illustrate[s] how state control of information may result in environmental injustice through a process of closed decision-making and political marginalization. By closing the decision-making process and related research from stakeholders, a state can attempt to insulate itself from criticism and contrary opinion, even if such practices run contrary to the traditions of inquiry.*

Briggs thus argues that the case represents a conflict of environmental injustice through misrecognizing and excluding local values and knowledge, excluding local actors in the process, and shifting costs onto local users (mainly reindeer herders) and the environment. Establishing the Sámi Parliament, two commissions on Sámi rights, and finally the Finnmark act was a direct result of the Alta Dam case (Broderstad, 2006).

The resulting management policies and enforced herd reductions are marginalizing herders and their self-determination. The forced herd downscaling has also increased inequality among herders (Aslaksen, 2014). Research on Sea-Sámi fisheries has also concluded that Sámi fishers become marginalized and lose rights to fishing grounds, especially vis-à-vis large scale commercial fishing (Brattland, 2010; Davis & Jentoft, 2001). Traditional Sámi livelihoods hold marginal political power in Norway and was thus central to one of the first environmental justice struggles in Norway as seen in Box 3.1.

### 3.4 Case study: The Nussir copper mine project in Northern Norway

Two mining cases have been of special interests for researchers in Northern Norway: i) the proposed gold mining project by Arctic Gold in Kautokeino municipality (Eastern Finnmark, bordering Finland), which the municipality turned down, ii) and the proposed Nussir copper mining project in Kvalsund municipality. These account for two of the first three proposed metallic mines in Norway in 30 years and starting the new mining industry expansion (Bjørklund, 2013; Johnsen, 2016).

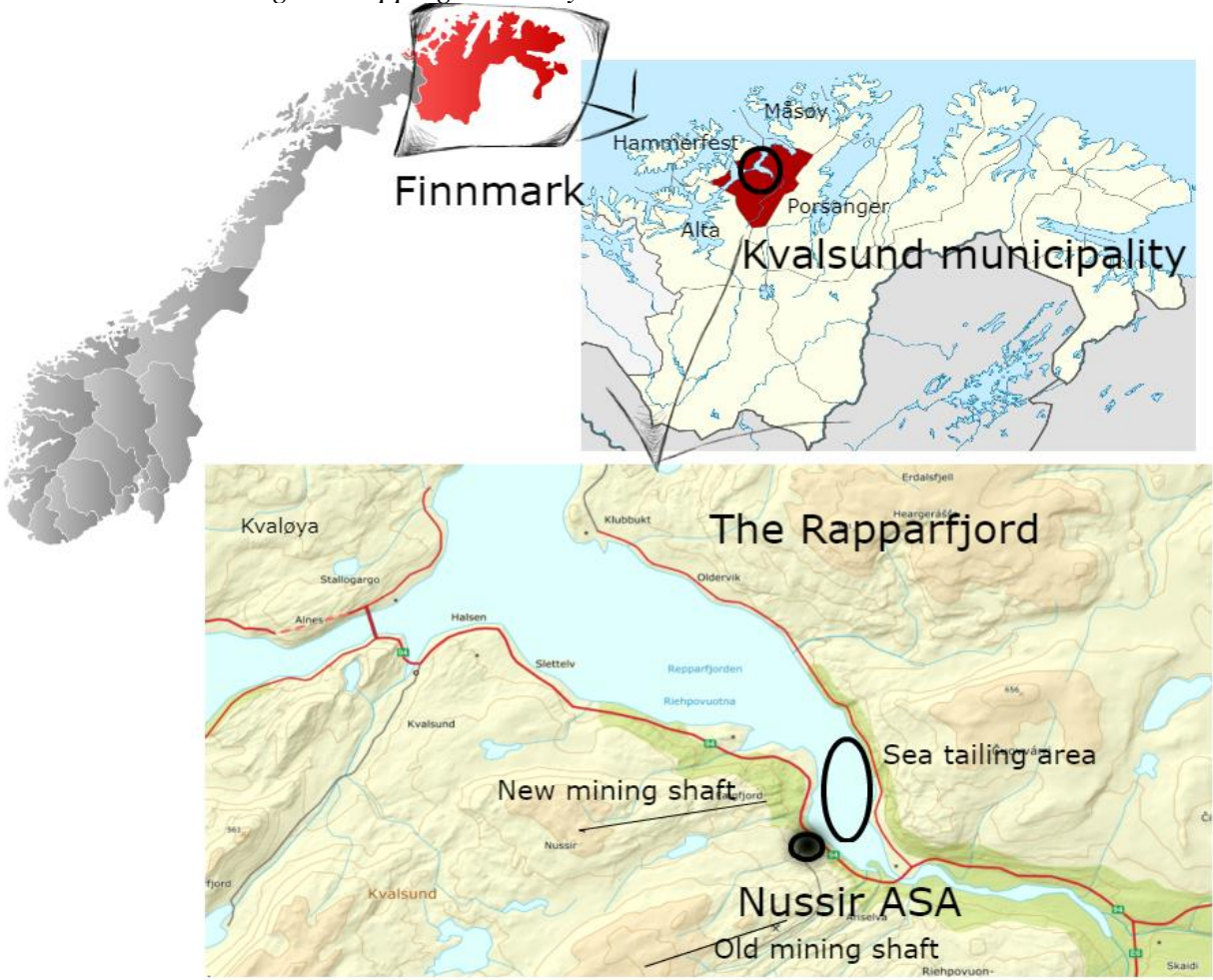
The upcoming Nussir copper mine project is located in Kvalsund municipality, Finnmark county, northern Norway as seen in Figure 3.8. Kvalsund is situated on the west coast of Finnmark, neighboring Hammerfest (soon to be merged with Kvalsund), Alta, Måsøy and Porsanger municipalities. With its 1034 inhabitants (SSB, 2017) it is a small municipality, though covering 1 747 km<sup>2</sup> of terrestrial land (0.59 persons/km<sup>2</sup>). Most of the local population is situated along the coast towards Kvaløya, around Skaidi in the inner Repparfjord, and in Kokelv in the neighboring fjord to the North.

The copper deposits in the inner Repparfjord are the largest known copper deposits in Norway, estimated at 74 million tonnes of copper ore, located under the surface of the mountains Ulveryggen (Sámi: Gumpenjinni) and Steinfjellet (Sámi: Nussir) (Figure 3.9). The Repparfjord is a naturally protected fjord east of Kvaløya. Mining in Kvalsund is not new. Previous mining activity has taken place at Ulveryggen between 1972 and 1978 by the company Folldal Verk (the company that operated the mines in Folldal, southern Norway), but the extraction ended due to bankruptcy. Old mining activity is visible with the old tunnel, open pits, infrastructure, buildings, and old rusted mining equipment<sup>4</sup>.

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<sup>4</sup> Folldal Verk also disposed the excess waste from the open-pit mining as sea tailings in the Repparfjord during the 1970s. The marine effects are still disputed today.

Figure 3.8 The location of the proposed Nussir mining project. Adapted from Wikimedia Commons and Norwegian Mapping Authority.



The mining company Nussir ASA was established in 2005 and bought the rights to the mineral claims at both Ulveryggen and Steinfjellet. In 2007, the company started muting (test-drilling) for copper reserves in the Steinfjellet area with All-Terrain-Vehicles (ATVs) and larger drilling machines. After test drilling and a long process of receiving authorizations and establishing precedence, the company is lacking the operating license and expected a green light by 2018 (Mortensen & Bendixen, 2017). However, conflict with the Finnmark Estate over Sámi rights and the Finnmark act of 2009 is still unresolved as the Sámi parliament has voted against the project.

Figure 3.9 Overview of Repparfjorden and the Nussir project, source: Miljødirektoratet (2015)



Currently, the corporation Nussir ASA receives permission to extract 50 000 tonnes of copper concentrate annually for 25 years through sub surface mining and refining (Miljødirektoratet, 2015). Silver and gold will be bi-products of the mining process. There will be two operating shafts, the old at Ulveryggen for at least seven years, and a new shaft at Steinfjellet for at least 25 years. The extracted rocks will be transported by trucks to the processing plant. The refining will take place either at the old process plant (Folldal Verk) or on the proposed new industry site (Markoppneset) – (see figure 3.9 above). The refining will include possibly three chemicals to ensure that the copper is retrieved, though the company currently only receives permission for using two: carboxyl methyl cellulose (CMC) and methyl isobutyl carbinol (MIBC) (see Miljødirektoratet, 2016). The new facility will be updated with a new refinery, accommodation unit, crew rig, cantina, tank station, new power supply, thickening plant, temporary tailing dams, potentially river dams, and several new roads between buildings and mining shafts. The project includes sea-tailing between 1-2 million tonnes of mining waste annually into the Repparfjord, consisting mostly of non-metallic rocks and small amounts of copper and nickel. The tailings will be deposited on the fjord bottom through a pipeline from the processing plant. To ensure that the tailings deposit without particle spreading, and that the fresh water can be recycled, the product Magnafloc 10 will be used. The waste is expected to cover 8km<sup>2</sup>, or 10-15%, of the Repparfjord (Christensen *et al.*, 2011a). The copper

concentrate will be transported by up to 10 boats/yr from the dockings. The project is estimated to employ about 150 workers and is expected to cause ripple effects on the service sector (Muotka, 2011). Over the first 13 years the estimated project value in 2014 NOK is 1,4 billion NOK (168 million EUR).

An assessment plan including the suggested social and environmental impact assessments was completed and accepted in 2010 (Didriksen & Wilesrud, 2010). The assessment plan received 27 consultation statements. A zoning plan with the impact assessment was completed and accepted in 2011 (Didriksen & Wilesrud, 2011). There were in total 17 impact assessments presented in 15 reports, each stating the value and the impact of the area in concern. The values are in non-monetary terms, deriving from the area's importance for different factors such as use, biological functioning, and national importance. For example, the value of the Repparfjord river is estimated to be high as it is an important river for salmon spawning and recreational sport fisheries, and thus has received among 51 other rivers the status 'National Salmon River'. The expected consequences for the river is then weighted up against its high value. As the impact assessment estimates insignificant consequences from particle dispersal in the waterbed, and salmon smolt migrate in the upper water level, the impacts on the river and salmon are considered small, despite the river's high value. Most reports used the methods to derive value from Handbook 140 on IA from the Norwegian Public Roads Administration. This implies setting a discretionary value based on the aforementioned factors along a scale of low value to high value.

The results from the IA are presented in Chapter 5 section 5.4.1. Land tailings were considered to have the largest impact and to be too expensive, and thus did not become an option (Didriksen & Wilesrud, 2011). The zoning plan was thus approved with the sea tailings alternative. The decision was objected, and the Ministry of Local Government and Modernization (2014) accepted the zoning plan in 2014, with input from the Ministry of Agriculture, Ministry of Trade, Industry and Fisheries, and the Ministry of Climate and Environment. The Ministry of Agriculture originally opposed the project but changed its position with the new government after the national election in 2013. Due to conflict with Sámi use and values within fisheries and reindeer herding, the Sámi parliament ordered an independent social impact analysis from the consulting firm Vista Analysis. The report argues, based on the findings in the IA, that the social benefits would be lower than expected in the interim report on social benefits (see Muotka, 2011), and the costs higher than anticipated from sea tailings and environmental effects (Ibenholdt *et al.*, 2016). Including

several formal complaints and produced articles, the Institute of Marine Research also launched a research program in the Repparfjord, which so far has found the importance of spawning grounds for cod to be undervalued (Fosså, 2016).

In addition, the Norwegian Environmental Agency (NEA) required two extra assessments on stream conditions and modelling provided by consulting firms DNV-GL and SINTEF (Endresen & Rudberg, 2014; Eidnes *et al.*, 2014). NEA (Miljødirektoratet, 2016) then approved the project based on the Pollution Act with requirements for pollution control and monitoring, which received formal objections. The Ministry of Climate and Environment (2016) evaluated the objections and accepted NEA's decision in December 2015. In 2016 Nussir applied for an operating license to the Mineral Agency, still pending (Nussir, 2016). In September 2017 the Finnmark Estate voted over the Nussir project as the property owner, ending with a Sámi minority vote (3-4, due to the director's double vote in a draw), and thus taking the matter back to the Sámi parliament (Kristoffersen & Bøland, 2017). The Sámi parliament concluded on the 8<sup>th</sup> of March 2018 that the project violates the Finnmark Act. The Finnmark Estate must treat the Sámi parliament's decision, before the case is sent to the Ministry of Law and Public Security. The sea tailings will be treated for a second time in the national parliament in the spring of 2018. The process is still not resolved.



## 4. Methodology

### 4.1 The research

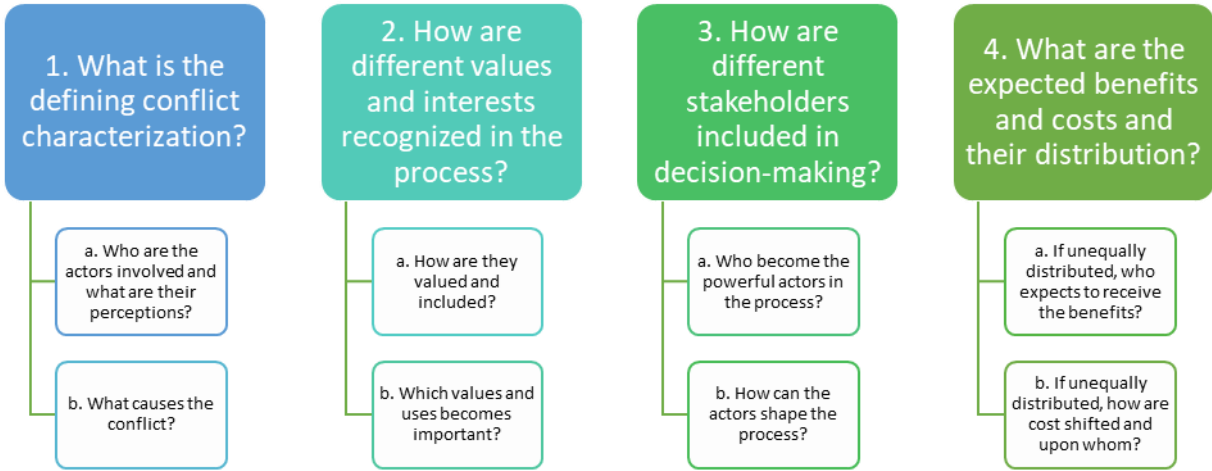
The thesis incorporates a mixed-methods design, combining qualitative and quantitative data sampling. Firstly, I collected in-depth information concerning actors' experiences, meanings, use of terms, and discourses. And secondly, I produced statistics concerning the experience of stakeholders. The two sampling methods allow both creating new theory (inductive reasoning) applicable to the case-study and regional resource exploitation, and testing environmental justice theory (deductive reasoning). According to McCarthy (2005) qualitative data is important to understand local contexts and scales and is key to political ecological research. Furthermore, few environmental justice aspects are quantifiable, such as perspectives and experiences (Callhan, DeSozho & Kenyon, 2012). Mixed-methods research also provide opportunities for triangulation, facilitation, and complementarity (Bryman, 2012). Where one data type does not explain or inform accurately, the other data type can assist. They also provided greater result validity, where the findings from one method can be compared to the other. The combination also makes the research more likely to have relevance in the general setting, and not to be reduced to certain groups or settings (Berg & Lune, 2012). The results can also be triangulated with previous research that has touched upon similar topics in the chosen areas, such as the research on legitimacy by Dale and Dannevig (2018) and on rationalities in land-use change by Johnsen (2016).

The research methods follow the environmental justice framework. One key distinction is excluding the psychological recognition aspect. While recognition has been seen both as a psychological issue and a social issue (Schlosberg, 2007), the latter is in focus in this research. Translating issues such as a person's ability to feel dignity into the qualitative and quantitative research was considered too difficult for this thesis. The research thus concerns more the institutional setting for how different socio-environmental interests, cultures and values are included in the process. The thesis also looks at the community level, and not individual level.

Furthermore, as discussed in the last part of the theory chapter, the environmental justice framework holds a normative element, which should be reflected upon by the researcher (Holifield, 2001; Walker 2009b). This is not exclusive to distributional justice, but also the explicit focus on the groups and individuals that become marginalized in decision-making and socio-political processes. The environmental justice framework used in this thesis is concerned with the winners and losers in the process, through recognition, participation, and

distribution. Thus, it challenges other frameworks and states its normative foundation: excluding certain stakeholders from decision-making, excluding certain values, interests, and cultures, limiting benefit distribution, and shifting costs onto third parties is considered unjust. The survey is available in Appendix 1 and the interview guide in Appendix 2. Errors in the results, as well as research limits are discussed in section 6.5. The research questions are repeated in Figure 4.1.

Figure 4.1 The research questions



4.2 Data sampling

Data sampling took place through three main stages: 1) collection of background information, 2) semi-structured interviews among key stakeholders, and 3) a field survey among local inhabitants, including reindeer herders. Interviews were conducted prior to the survey to make sure survey content was fit for the case-study. If any initial actors had remarks that were not covered in the survey this could be added before commencing the quantitative data sampling. Subsequently, the two methods were used at the same time throughout the field-work.

4.2.1 Background information

**Literature review**

The literature review consisted of reading and analyzing different sources of information, including scientific literature, media articles, impact assessments, company and government reports, and organization and consultancy reports/articles. Firstly, scientific literature relevant to environmental justice, ecological economics, and political ecology, with a focus on mining activities, was reviewed (Bebbington *et al.*, 2008a, 200b; Fisher-Kowalski, 2008; Martinez-

Alier, 1997, 2001, 2002, 2009; Moore, 2000, 2003; Schlosberg, 2004, 2007; Walker, 2009a, 2009b). This provided the foundation for the framework used in the thesis. Some of this literature was also reviewed during the data analysis stage when more specific concerns had to be incorporated as different themes were brought in by both interviewees and survey respondents. Secondly, media articles covering the Nussir case were reviewed to provide an overview of the case and the conflict that has received attention, and further to understand how different stakeholders positioned themselves. This includes also press releases from different organizations, such as the two environmental organizations that had been vocal in the conflict: Friends of the Earth and Nature and Youth. Thirdly, relevant policy documents were reviewed, including the assessment plan, 27 consultation statements, the impact assessments, the zoning plan, government policy documents and letters (such as Ministries' and NEA's decisions), company documents (such as applications and reports), external reports and other relevant information produced by policy-makers and researchers. These documents provided the foundation for understanding the process and the decisions taken, together with the scientific literature and media articles.

### **Stakeholder Analysis**

Identifying key stakeholders was necessary to ensure their participation as they either had an influence on the project or were impacted by the project. A stakeholder analysis was conducted through literature review to identify key actors who are either 1) affected by the mining project, 2) decision makers in the process, 3) main contributors to knowledge production, based on the information available in media, the IA, official reports, and scientific literature. However, the focus was on the local conflict, and policy-makers on higher levels such as county mayor or national government were not included in the qualitative data gathering, but their decisions and documents were assessed. Their involvement in the case has been limited to making formal decisions, and their role in the process has been less in focus by the actors.

Firstly, those who claimed to be affected by the mine according to revised sources had been vocal in media and shaped the conflict. Their concerns were also present in the IAs, and the IA was a source for identifying stakeholders. Secondly, decision-makers were identified stepwise, by evaluating the process from local decisions to national decisions. In Norway, such processes are to a high degree determined by law. For example, the Plan and Building Act of 2009 and the Mineral Act of 2009 include guidelines for involving affected parties and necessary IA content. However, there are other stakeholders who become important such as

organizations and others who deliver consultation statements, object to decisions, or contribute to the public debate. Thirdly, authors who had contributed to reports becoming sources of debate and conflicts were included after the field work was completed, as they were important for knowledge production in the process. Certain IA authors, for example on cultural heritage sites, were not prioritized as none of the other stakeholders saw this as an important concern in the conflict.

### **Field work**

Field work took place between mid-August through October 2017 in Kvalsund, Hammerfest, Alta, Karasjok, and Kautokeino municipalities in Finnmark County, Northern Norway. The research process started in February 2017 with initial collection of background information. The thesis' focus and framework were approved by June 2017. Preparations were done during the summer of 2017 by contacting some initial stakeholders as an entry point, including the mayor of Kvalsund, the former leader of reindeer herding district 22, and the Sámi parliament council member responsible for mining conflicts. These initial stakeholders were very helpful in suggesting further participants within the specific organizations/groups that had been important. By renting a house in the local community I was introduced to community members that helped me with local contacts. An inquiry on social media also led to a journalist writing a short article about the field work I was planning, facilitating my entry into the community.

#### 4.2.2 Semi-structured interviews

The qualitative part of the research consists of semi-structured in-depth interviews with key informants (N=17). The informants are based on the stakeholder analysis but limited to central actors in the conflict. I chose purposive sampling, where key informants are chosen based on their relevance for the study objective, followed by so called 'snowball sampling' technique, where informants are asked to provide contacts of new informants (Bryman, 2012). Based on the stakeholder analysis, selected participants for the qualitative part included two representatives from Kvalsund municipality, the CEO of Nussir ASA, one representative from the local Fishing and Hunting Organization and a fisherman himself (who is also on the municipal board but is not counted as a municipal representative in the sample), one fisherman/representative from the Sea-Sámi fishing organization Bivdi, one representative from Friends of the Earth Norway, one representative from the Nature and Youth organization, three representatives from the two reindeer herding districts, one representative from the Sámi parliament, and one former representative from the municipality. Semi-

structured phone interviews were also conducted with one former researcher from the Institute of Marine Research, three authors of different reports, and one representative from the Norwegian Environmental Agency. The five remaining IA authors considered important either declined (one person), could not be reached (two people), or did not respond (two people). Included in the sample was thus the three authors, one researcher, and one policy-maker who responded.

Face to face interviews were performed in different settings, including at the work place, in the home or in a public location, depending on the interviewee's preference. The interviews lasted between one and three hours, with the average around one hour and 30 minutes. The interviews were recorded and later transcribed in full. Oral consent was given prior to recording. All informants signed a letter of consent, including if their name could be displayed. All interviews with report authors or researchers were conducted by phone, with an average duration of 40-50 minutes. The interviewees received the letter of consent by email. Oral consent was given on phone, and notes were taken during the interview. Two interviews were also recorded with oral consent. The interviews allowed room for flexibility and adapting to the informant's focus concerns or expertise (Bryman, 2012). A few thematic concerns were discussed with all the actors following the interview guide (available in Appendix 2). All research questions were covered in the interviews. Common themes were how they viewed the process in terms of openness and their ability to participate, which values they held important and how these were incorporated in the process, which benefits and costs they expected, and who they expected to receive the benefits and costs.

#### 4.2.3 Field Survey

The quantitative part analyzes wider environmental values and uses, and find trends, patterns, and differences between various groups (Field, 2012), central to testing the theory of cost-shifting and injustice. While concerned with all four research questions, the field survey focused more on the values and uses, the pros and cons of the process, personal attitudes, and the character of socio-environmental benefits and costs, and their distribution. Quantitative research requires probability sampling, which provide everyone in the population the same probability of taking part in the sample (ibid. Fowler, 2009). Initially 82 informants were randomly drawn out of the total population living in Kvalsund municipality (N=822), obtained by listing all the registered people with a right to vote in the local election, starting with a random inhabitant and systematically choosing every 10<sup>th</sup> person. This complies with the guidelines provided by Fowler (2009) who suggest 1/10<sup>th</sup> of the population to provide a

representative sample, which in the case of Kvalsund should be around 82 respondents randomly sampled (excluding the population below 18 years of age). Due to the difficulties of receiving an audience with all the initial participants, the sample was expanded twice by the same sequence resulting in a total of 225 participants after removing those I could not locate or were unavailable. Out of the original 225 people in the sample the survey was completed with 92 respondents. The rest were not available, declined, or could not be located. In addition, one extra fisherman, as well as 17 members of the two reindeer herding districts were included in the sample by purposive and convenience sampling. The fisherman was included to expand upon the data as another fisherman had already taken part in the qualitative part. The reindeer herders were central to the conflict and should thus be incorporated. However, herders are spread across Finnmark and spend considerable time unavailable at work. Their inclusion was thus through participating in the weeks they spent marking calves and slaughtering in the fall, and participants were picked out through the connections made while participating, also based on their relevance. For example, district 22 is divided into two areas, where the western part of the district is more relevant. However, there were also respondents in the eastern part with experience from the process. In total the field surveys consisted of 110 handwritten surveys.

Prior to initiating the survey, a pilot-study was conducted with four people; one bureaucrat with knowledge and years of experience with cases such as Nussir, one recreational user who frequent the area, and two local community members. Through the pilot-study and discussions with the supervisors, the survey was amended to minimize framing biases and to clean for jargon and fit better with the language used by local people. For example, initial questions such as “Which ecosystem services are important to you in the discussed area” was changed to “What is important to you in the area”, due to difficult technical language. The surveys were conducted face to face, performed by home visits to the sample population. Though energy and time consuming, the method was believed to ensure a higher response level in the sample. Face to face surveys allow the respondent to explain and provide deep insights, as well as being relaxed and comfortable in their own home.

A few questions were open ended, but the answers were put into categories. In example, “which values have received adequate attention in the process?”. This question had 5 preset categories (social, natural, political, economic, and cultural values), as well as “other” and “I don’t know”. The respondent’s answer was written down next to the category the answer belonged in. This worked out well, as the population’s concerns were quite uniform. Writing

down the exact answer also allowed the answer to be revisited in case categories had to change. Some questions were open ended without possible categories to demarcate answers, and the answers were treated during the analysis stage.

One question was added after about 30 respondents had taken the survey. Thus, not all participants had the opportunity to answer the question: “Whom have had too much influence in the process?”. This is an important question and should have been included from the beginning. One question that should have been included into the survey was “How could the outcome become just?” if the respondents answered ‘No’ to the “Is the distribution of benefits and costs just?”. The respondents did however answer why they thought the distribution was or was not just, and possible measures to amend an unjust distribution if this was the response can be extrapolated from this answer. While people will have different perceptions of what is just, the follow up question “why/why not” allows such views to be incorporated.

One electronic survey (N=35) was also distributed online, with the same questions, but due to few responses with scattered applicability, the responses were used to check if new insights could be brought in and were not included in the dataset.

#### 4.3 Data Analysis

Both the qualitative and quantitative data are analyzed as narratives, where the participants’ description of the social dimensions define their position to the mining project. A narrative analysis includes both manifest and latent content (Berg & Lune, 2012). Manifest content mean that the actors’ views are described. The latent content means that their meaning is discerned and discussed in a wider context. This approach follows the basis of social science research and fits well with the environmental justice framework, where participants’ subjective positions are considered important. In political ecology research, narratives have been studied as stories describing the heroes, villains, and victims of ecological distribution conflicts (Adger *et al.*, 2001; Benjaminsen & Svarstad, 2017). Though, narratives can also be more simplistic, identifying the winners and the losers of land use change and the causal relationships (Benjaminsen & Svarstad, 2008).

The qualitative interviews were transcribed in full, except for the phone interviews, for which extensive notes were taken. The data was then analyzed in a descriptive and interpretive approach, called conventional content analysis (Berg & Lune, 2012). Through color coding, key concepts, meanings, and descriptions were sorted out in each interview. These were then sorted by topic in connection to the research questions (characterization, recognition, process,

distribution) for each respondent in one common document. This method makes it easier to compare the results and find similarities and differences between the actors.

The quantitative data were recorded into Excel and variables had to be coded to perform statistical procedures, as many were recorded as nominal or ordinal variables. For example, to open ended questions such as “Which values are important to you in the impacted area: The Repparfjord and the Nussir/Ulveryggen mountains” the respondents’ answers ranged between “fishing” to “birds nesting in the trees”. Each variable was given a number in the dataset, and through three stages narrowed down into broader categories to limit the number of variables to each answered. For example, “sport fishing”, “cod fishing”, and “salmon” could be put under the variable “fishing”. The dataset was then loaded into the statistical software R to conduct standard statistics, including descriptive and inferential statistics. Different methods including Regression analysis and Chi-Squared Test of Independence, were used to determine the relationship between variables. The dataset through each step was kept and errors did not take place.

The relationship between the respondent’s attitude to the project and questions regarding recognition, participation and distribution were mostly significant between  $p=0.1$  and  $0=0.001$ . For example, if the respondent was positive to the project, she/he was likely to view the process as open, all values to be included, and the distribution to be just. If the respondent was negative, then the answers were the opposite.

#### 4.4 Ethical considerations

Ethics is of the foremost concern for the researcher. This thesis strives to comply to the highest ethical standards. According to Bryman (2012) there are four pillars of ethics a researcher should oblige to. Firstly, through the research I should do no harm, to participants or myself. Secondly, every participant should provide prior informed consent before being included. Thirdly, privacy should be respected, especially through informed consent, anonymity, and confidentiality. And fourthly, the research should be honest throughout the whole process.

To achieve this the research process is described in detail to assure accurate measuring and sources are quoted and cited accurately. Participants were asked for informed consent prior to participating, and the anonymity of those that wished to be anonymous is respected. Each interviewee signed a Letter of Consent, or provided oral consent, prior to participation. The



participants who were included through phone interviews were given the same letter in electronic form, as well as an introduction by phone. All the survey respondents were given a formal introduction before asking for their participation. The research process should not harm anyone, and neither should this final thesis be used to harm any participants or other relevant people. By standard of research conducted in Norway, the required primary data gathering was accepted by Norwegian Privacy Ombudsman for Research (NSD). The research is also in line with the research principles by the Sámi parliament and The Norwegian National Research Ethics Committees regarding research on Sámi.

One of the challenges in relation to ethics during the research was to ensure anonymity in the rather small community, especially concerning survey respondents' identity. In some cases, finding the correct address was difficult, and I had to rely on two local informants to get directions or information. However, this also facilitated the research in many ways, as the informants could tell me if the person had moved, was very ill, or other complications. In some occasions, survey respondents would tell their neighbors and friends about my visit, but out of free will. It was also a challenge concerning discussing certain topics in interviews, were asking the informant about a claim another informant had made to get both sides of the story, as such must be done without misrepresenting or distorting the other informant's claim or belief. Also, as informants were eager to suggest new participants, it was important to not reveal if they had been interviewed if they wished to remain anonymous.

Another challenge concerns using the environmental justice framework. While the topics this research covers were explicitly stated in the survey, the framework used to assess them were not. That is, the participants were told the focus concerned recognition and participation in the process, and the character and distribution of benefits and costs. To the interviewees the framework was stated in the title of the consent form and mentioned when beginning the interview. The field survey respondents however, did not get this extended information when asked to participate. This was done knowingly, as the environmental justice framework was believed to not be familiar to everyone and to keep answers honest.

## 5. Results

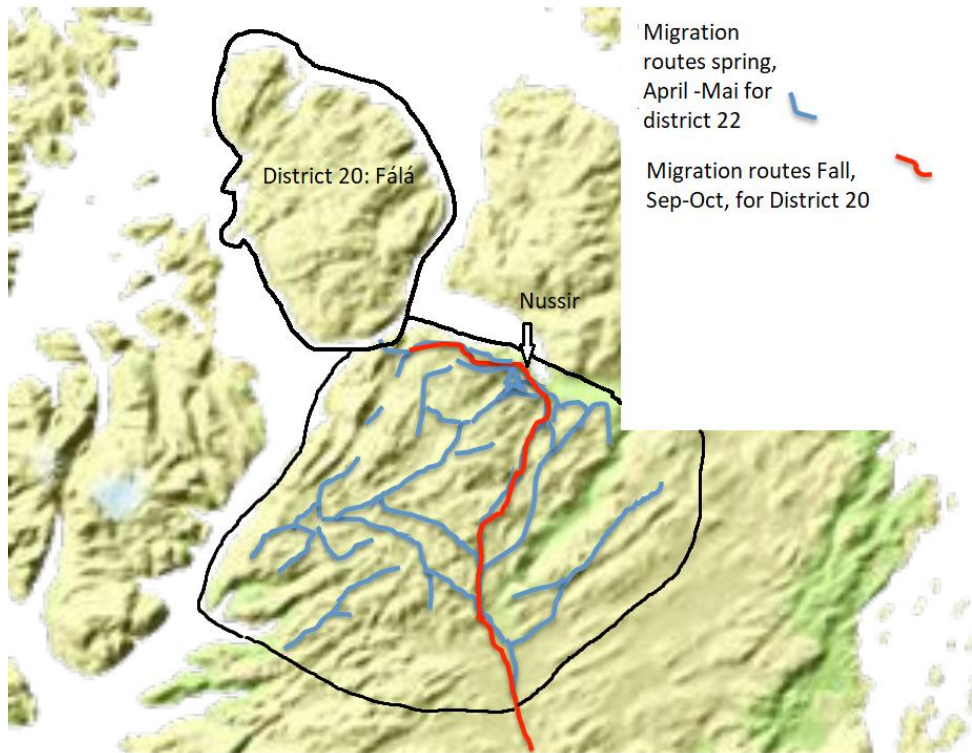
### 5.1 Characterization of the conflict

The conflicts that arose over the Nussir mining project in Repparfjorden has grown to a somewhat hostile front between the opponents and the proponents with an uncommitted group in the middle. The uncommitted group is more visible in the local population as other stakeholders such as the government or herders have placed themselves as either proponents or opponents. As seen in table 5.1, the stakeholders' views range from the project being a benefit to all to the project being a loss for local stakeholders. See Appendix 4 for placing different stakeholders in relation to their impact from the project and their ability to influence the project as evaluated by the stakeholder analysis. The conflict has mostly revolved around the impacts on marine ecosystems from sea tailings. A total of 71 people in the field survey expected marine pollution, though in varying forms, also evident in media (see Eliassen & Pettersen, 2011; Forland & Novikova, 2016; Horn *et al.*, 2016). This has been the central focus of actors such as Friends of the Earth, Nature and Youth, Bivdi, the Hunting and Fishing Organization, Coastal Fishing Organization, and the Marine Research Institute. These actors expect grave consequences for the fjord and argue that the environmental impact assessments have fundamental flaws (Klo & Eriksen, 2014). This has also led to most people in Finnmark opposing the project (Klo & Jakobsen, 2017), and Friends of the Earth establishing a local branch in West-Finnmark (Lande, 2014).

The Sámi parliament has been both concerned with the marine impacts, and the impact on reindeer herding. There are two reindeer herding districts in the area. District 22 Fiettar who have their spring/summer/fall grazing territory covering the area between the Repparfjord and Porsa, to Sennalandet, as well as district 20 Fálá who have their migration route between summer and winter grazing territory in the proposed mining area, see figure 5.1. For district 22 the conflict concerns losing grazing and calving areas to the proposed mine. The district is already under pressure from cabin development, hydro-power development, and power supply lines (Larsen, 2017a). While for district 20 the conflict surrounds blocking their migration route to and from Kvaløya. Together with the herders, the Sámi parliament has said they will take the matter to UN as they argue indigenous rights are not respected (Holmsen & Klo, 2017) and that the company need to come to an agreement with district 22 before commencing activity (Mortensen & Novikova, 2015). They are determined to stop the project (Mortensen & Pedersen, 2017; NTB, 2017). The environmental organizations have supported their claim and argue that the project is violating the Finnmark Act (Friends of the Earth,

2017; cf. Olli, 2017). Conflict has also concerned whether the project is economically viable, both if the reserves are as rich as they claim or if the copper price is high enough for the project to be profitable (Normannsen & Oksholen, 2012).

*Figure 5.1 Map of the Mining plans in relation to reindeer herding district 22 and 20's migration routes. Note that the district boundaries are not precise. Adapted from Nellemann and Vistnes (2011)*



The main mining project advocates are the municipality, current (2013-) government and the mining company Nussir. They argue that the benefits outweigh the few costs, and focus primarily on job creation, income, and the benefits from an expanding mineral industry. Furthermore, the municipality has advanced that approving the mining proposal was a local democratic decision involving the community (Hykkerud, 2017). As such many argue that the Sámi parliament's attempts at stopping the project is overriding local decisions (Lund, 2017b). According to CEO of Nussir, Øystein Rushfeldt, it is practically impossible to prevent mining now that the pollution license is in place, and acquiring capital is not a challenge (Klo & Vik, 2017; Kosowski, 2016). Kvalsund has experienced outmigration during the last decades and have no larger businesses. This has been the trend for many Sámi areas in the North (Wernersen, 2018), and developing the extractive industry has been key to population increase in Hammerfest (Jørstad, 2017). The proponents expect the same upswing for Kvalsund (Kvalsund municipality, 2017b), and argues this will benefit the Sea-Sámi

populations as well. This has not been warmly welcomed by the Sámi community as they argue the foundations for Sea-Sámi culture is sustainably harvesting renewable resources, such as fish, being jeopardized by Nussir’s sea-tailing plans (Larsson *et al.*, 2016; Muotka, 2017). Furthermore, the municipality has argued that reindeer herders dominate political decisions to the cost of the coastal community (Larsson & Holmestrand, 2015). They are not alone, a majority of the county inhabitants believe industrial development should be prioritized over reindeer herding (Hesla, 2015), to which the herders argue that they become the victims of modernization for society at large (Larsen, 2017b).

*Table 5.1 Overview of the three dominant narratives with their corresponding stakeholders, logic, and view*

	Proponents	Uncommitted	Opponents
Stakeholders	Nussir ASA Municipality Government	One IA author Norwegian Environmental Agency (NEA)	Reindeer herders Fishers Friends of the Earth Nature and Youth Hunting and Fishing organization Bivdi Coastal Fishing Organization Sámi parliament Norwegian Marine Institute Two IA authors
Percentage of the survey respondents	Between 24-41% of the sample.	About 18% of the sample.	Between 27.3-37.3% of the sample.
Survey respondents’ attitude to project	- Very positive 19p - Positive 26p	- In between 20p	- Very negative 30p - Negative 11p Without reindeer herders: - Very negative 20p - Negative 10p
Sociodemographic profile	Independent of gender. Younger population more positive (p=0.05).	Independent of gender.	Independent of gender. Older population more negative (p=0.05).
Dominant reason they belong to this narrative	The project has many benefits, and if any, few, and irrelevant costs.	There are both positive and negative sides to the project, in terms of costs and benefits. They don’t have a strong opinion.	There are few, if any, benefits, while there are many costs, which are born by specifically recreational users, reindeer herders (RH) and fishers. The concern for Sámi culture.

Most of the local community belong to the proponents, representing 41% of the sample. The opponent narrative contains 37.3% of the sample. If reindeer herders were excluded from the sample, the latter narrative would shrink. A total of 25 expected lost reindeer territory, where 19 were opponents. Thirteen out of those 25 were reindeer herders, meaning only 12 out of 93 local residents mentioned that as a cost in question 13. Thus, the field survey and quantitative findings look different if one excludes the reindeer herders from the sample.

The perceptions of the very positive and positive respondents were uniform, and therefore are treated as proponents. Likewise, the perceptions of the negative and very negative were also quite uniform and are therefore treated as opponents.

## 5.2 Recognition of ecological, social, cultural, and economic values and uses

The conflict has not only been concerning the outcome, but also the process. The conflicting views on the recognition of socio-environmental (ecological, social, cultural, and economic) values and uses are presented in table 5.2

The stakeholders emphasized social, ecological, cultural, and economic values. The proponents focused mostly on the social and economic values deriving from mining development, such as job creation and municipal income. The municipal representatives also believed both ecological and cultural values were recognized in the process. The opponents focus more on the ecological values such as the ecosystem functioning of the Repparfjord, social values such as traditional livelihoods, and cultural values such as Sámi and Sea-Sámi culture. One fisherman also mentioned the fisheries' economic value. To the opponents these values were not recognized in the process and decision-making. The uncommitted, representing only one IA author and the NEA representative (though approving the project the NEA does not hold a proponent position) highlighted the values that were included in their analysis, mainly being the ecological values. Though, NEA has also put emphasis on the project's economical values.

Table 5.2 Interview findings concerning recognition of socio-environmental values and uses, separated by narrative

Narrative: Topic:	Proponents	Uncommitted	Opponents
Why area is important	Resources for the community, from fish to copper. Recreational area.	National salmon fjord/river.	Key for traditional Sámi livelihoods: fisheries and RH. Everyone uses and depends on a functioning environment.
Which values are important for the stakeholders	Local democracy. Openness. Lifting Sámi culture through growth. Salmon has been a key concern. Fisheries are important. RH are “guests in the municipality”. Copper for the green shift.	Aspects of both.	Marine ecology, Sámi culture, fisheries, reindeer herding. Sustainable use of public resources.
Which values are included and recognized in the process	Every value and environmental use has been included and recognized.	All values are included, but some become dominant.	Money and profit outweigh all other values and interests. Jobs given a lot of weight.
Which values are excluded from and not recognized in the process	External stakeholders to the municipality lack respect of local decisions.	Traditional livelihoods.	Traditional culture and livelihoods. People’s and Indigenous rights. Ecology. Recreation.

All stakeholders agreed that the fjord system is important for marine organisms, and thus has a potential value for fisheries. The municipality has increased its support for the fisheries sector, and in collaboration with the fishers collectively prepare a new fish landing facility with special attention to Less Utilized Resources (LUR) such as snails (*Buccinum undatum*) and king crab (*Paralithodes camtschaticus*). However, the stakeholders disagree on the importance of the fisheries sector. The mining company Nussir claimed the fjord was dead due to overfishing and there were no fishers still active in the area. This view was partly supported by the Norwegian Environmental Agency who did not see a commercial value from fisheries in the area. In contrast, the Norwegian Institute of Marine Research institute, the guiding organization on marine research, claim the fjord plays a vital role for fisheries and ecological processes. The municipal representatives reported an increase in fishers during the

last years and that fisheries are becoming a keystone for the community again. The fishers themselves claim that the fjord is vital for the larger fisheries sector in Finnmark, and during a good year can support four to five boats. According to one fisherman, there are currently 12 fishers in the local fishermen collective (one female), utilizing a large area of the Norwegian coast, including the Repparfjord. There is in practice no quota for other fish or marine resources than cod (*Gadhus morhua*) for standard size boats (8-9.9m) in the Repparfjord. For cod the quota for a standard boat is a guaranteed 31 tonnes per year. Thus, in total for five boats the potential local production, given ecological supply, is 185 tonnes of cod, which has a market value in 2017 of approximately 3 145 000 NOK (333 864 euros). However, one boat utilizes a larger area than just the local fjord. The king snail's value, which the local fishers have started to harvest, is set at 35 euros/kg in the European market in January. One fisherman pointed out that if the local collective can deliver 10 tonnes of king snail in January to France and Belgium where demand is very high, that is worth 3 297 000 NOK (350 000 EUR). Furthermore, they point out the Repparfjord's value for ecological process and biological diversity as the fjord is the spawning ground for herring (*Clupea harengus*), cod (*Gadhus morhua*), haddock (*Melanogrammus aeglefinus*), and pollock/seith (*Pollachius virens*), and the Repparfjord river is an important salmon (*Salmo salar*) river (one of the 10 most important in terms of catch in Norway). Together with the Sámi parliament and the environmental organization the fishermen highlight the fisheries' importance for traditional Sea-Sámi livelihoods.

For all the opponents Sámi culture was a crucial value, represented by traditional livelihoods, believing both the marine and terrestrial area played a role in maintaining Sámi culture. The Municipality has advocated that the benefits from the mining project will benefit the Sea-Sámi culture through general growth, something the opponents completely disagreed with as they argued marine pollution destroys the foundation for Sea-Sámi livelihoods. Two actors also argued that Sámi are never a part of the "we" in such decisions, and that Sámi concerns are valued against social-economic benefits for the wider community. The Sámi parliament representative said "We see exactly that Sámi interests are placed in a large pot and evaluated up against other interests. And they call it something nice like social interests. As a result, Sámi interests are not a part of social interests, if not they would have provided crucial weighting". Those actors saw a difference between the interests of Sámi and the society at large in Finnmark, which is contested as a population majority probably have Sámi or Kven

inheritance despite not identifying as such. Though, the argument surrounds the opposition of traditional Sámi activities such as reindeer pastoralism and fishing versus new land use.

Likewise, opponents argued decision-makers under-acknowledge the terrestrial area's value for reindeer herders, and maybe more importantly the lack of care for reindeer herding in general. Reindeer herders argued that the wider society didn't find their profession important and thus other actors never included their use and values, as one herder said: "We are unfairly treated by everyone. By society. Reindeer pastoralism is seen as a hindrance that should yield all the time". Their interests are always put up against societal development and modernization, which people believed the herders were preventing (see Hesla, 2015; Larsson, 2017b). The herders argued that no one believes them and that they are made fun of, as one herder said: "... All that we have, all the knowledge, what we convey, about grazing, how reindeer herding works, how reindeer graze, how they naturally migrate..., it is viewed as nonsense, it isn't true, it isn't believed". Furthermore, herders claimed that people do not understand how reindeer herding works and how reindeer utilize different areas for grazing. This view was supported by the opponents and the author of the impact assessment on reindeer herding. The municipal actors claimed the herders were "guests" in the municipality, and while using the services provided they did not contribute with any benefits. Excluding their values and uses in decision-making is also seen by the herders as a larger political aim to gain votes and secure resources. This was supported by other opponents, one environmentalist said "If you remove the herders, you remove the Sámi. It is strategic and tactically wise for those who wants sovereignty in Finnmark to remove the Sámi. Then you get control over the resources".

The local Municipality, the mining company Nussir and the NEA argue that all environmental values and uses are included and respected in the process, and that it always will be conflict. For these actors the social-economic benefits are most important in the process. The Mayor of Kvalsund said "Any politician wishes increased development, things need to happen in your community, especially in relation to work". NEA says that their decision is based on a discretionary assessment and that all benefits and costs cannot be calculated specifically, thus non-numerical estimates are used for certain aspects such as environmental costs. Despite this, all actors need to accept the decision as all concerns have been included. The municipal representatives find local democracy to be disrespected by other actors claiming a unanimous decision made by a democratically elected council must be respected. Everyone cannot simply get their will. Furthermore, the proponents argued for copper's role in the green shift, phasing



out hydrocarbon-based energy with renewable energy, as electric components and the growth in electric cars demand an increase in copper. The Nature and Youth representative agreed with copper's importance for green development, though believed the economic demand was currently too low. The Friends of the Earth representative and one reindeer herder disagreed with the necessity to extract copper, claiming that the pressing issue was a decrease in consumption, and increased mineral recycling due to increasing pressure on natural resources and ecosystems, and not further mineral extraction.

Concerning how the values and uses were represented by the impact assessment, proponents claimed all values and uses had been adequately addressed. Though, both the municipality and Nussir claimed the interim report on reindeer herding should have had used Norwegian Public Roads Administration handbook 140 (the method used estimate values, see section 3.4) to display the importance and value of current uses and the level of impact. The report author disagreed as handbook 140 diffuses the impacts. Some opponents claimed that the handbook was not suitable for the case, or maybe not at all for Arctic or Northern settings.

Importantly, opponents argue that environmental and cultural values as well as indigenous and people's rights are marginalized in political processes. They argue that political will and economic interests have more power than laws or rights that exist to protect the environment or Sámi interests. Economic growth was also seen to trump indigenous or environmental interests. These actors argued that Article 27 in the UN Declaration of the Rights on Indigenous Peoples had been neglected, and that the requirements of the Finnmark County Law, the Planning and Building Act, the Mineral Law, the Nature Diversity Act, and potentially other laws had been violated. The representative from the Sea-Sámi fishing organization Bivdi especially pointed out the neglect to fulfill paragraph 29 in the Finnmark County Law, which requires marine use rights to be prioritized before new establishments. The Finnmark Commission which was set forth to identify land and marine rights in Finnmark has not approached the areas of Alta and Kvalsund. The Bivdi representative argued this was due to known conflicts with industries.

The respondents in the field survey tell the same stories as the interviewed stakeholders, as seen in Table 5.3. For a full quantitative results overview with references to frequencies and correlations, please see Appendix 3.

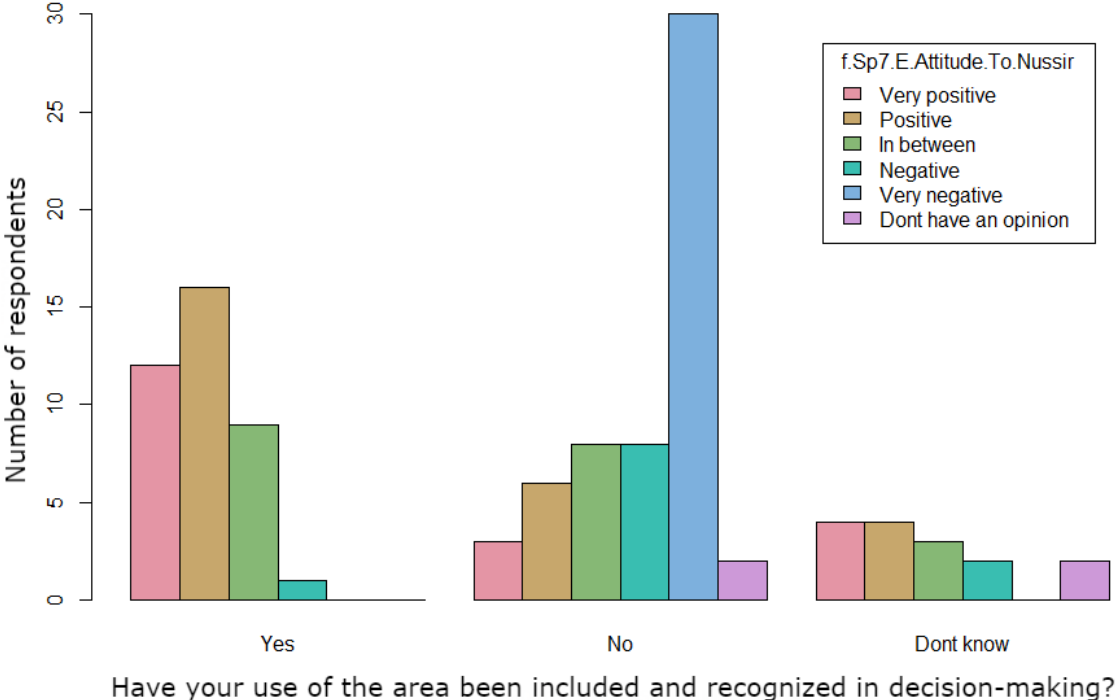
Table 5.3 Field survey findings on socio-environmental values and uses, divided by narrative

Narrative: Topic:	Proponents	Uncommitted	Opponents
Important uses and values in the area	<ul style="list-style-type: none"> <li>- The area is not important</li> <li>- Fishing</li> <li>- Recreation</li> <li>- Minerals and industry</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing</li> <li>- The area is not important</li> <li>- Recreation</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing</li> <li>- Reindeer herding</li> <li>- Recreation</li> <li>- Next generation</li> </ul>
Values that have been most important in the process for decision-makers	<ul style="list-style-type: none"> <li>- Social values: employment, immigration</li> <li>- Monetary values: income, profit</li> <li>- Political values: copper, political interest</li> <li>- Don't know</li> </ul>	<ul style="list-style-type: none"> <li>- Social values: employment, immigration</li> <li>- Monetary values: income, profit</li> <li>- Don't know</li> </ul>	<ul style="list-style-type: none"> <li>- Monetary values: income, profit</li> <li>- Political values: copper, political interest</li> <li>- Social values: employment, immigration</li> </ul>
Values that have not received adequate attention in the process	<ul style="list-style-type: none"> <li>- All values have received attention</li> <li>- Don't know</li> <li>- Social values: impact on fishers/herders</li> </ul>	<ul style="list-style-type: none"> <li>- Natural values: env impact</li> <li>- Social values: impact on fishers/herders</li> <li>- Cultural values: Seasámi culture</li> </ul>	<ul style="list-style-type: none"> <li>- Natural values: env impact</li> <li>- Cultural values: Sámi culture</li> <li>- Social values: impact on fishers/herders</li> </ul>
Considerations cared for	All  15 respondents explicitly stated a negative/hostile attitude to reindeer herders	All, except environment and fishing  Three respondents explicitly stated a negative/hostile attitude to reindeer herders	<ul style="list-style-type: none"> <li>- Mineral use</li> <li>- Income and development</li> <li>- Employment</li> <li>- Recreation</li> </ul>
Considerations disregarded	<ul style="list-style-type: none"> <li>- Fishing</li> <li>- Environment</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing</li> <li>- Environment</li> <li>- Reindeer herding</li> <li>- Recreation</li> </ul>	<ul style="list-style-type: none"> <li>- Environment</li> <li>- Fishing</li> <li>- Reindeer herding</li> <li>- Recreation</li> <li>- Employment</li> <li>- Income and development</li> <li>- Mineral use</li> </ul>

According to the surveyed informants the values that have been given most prominence in the process have been economic values such as copper for technological development, income and profit, followed by social values such as jobs and new inhabitants, and political values such as the political will to establish the mine (as many informants argued the mine was a political project, and not socio-economic development). The proponents perceived the social values, and the opponents the monetary values, had been most important to decision-makers.

None of the informants believed decision-makers saw ecological or cultural values as important in the process, but rather they disagreed if they had been recognized or were excluded. Most proponents believe all values and uses have been receiving adequate attention, with a few being concerned for fisheries and the impact on Sea-Sámi culture through sea tailings. However, most proponents stated that there were no important values or uses to them in the area. The opponents don't find their uses and values included due to the impacts on fisheries, reindeer herding, and recreational use of the area, and how this translated to negative effects on Sámi culture and general livelihoods as seen in Figure 5.2. Thus, they argued ecological, cultural values and the social values important to them were excluded in the process. Noticeable is also how some proponents displayed noteworthy hostile attitude to reindeer herders, as many see reindeer herders as a hinder for development through controlling vast terrestrial territories.

Figure 5.2 Respondents who perceived their use of the area had/had not been included in the decision-making process



### 5.3 Stakeholder participation and process openness

The conflicting views on the process are presented in table 5.4. Some issues of process openness and inclusion overlap with recognition, such as media's role in the process, but the results are presented in this section.

*Table 5.4 Interview findings concerning perception of procedural quality and participation in terms of openness and inclusion, divided by narratives*

Narrative: Topic:	Proponents	Uncommitted	Opponents
Degree the process has been open (in terms of stakeholder participation, information availability, possibilities to affect decisions).	Very open and inclusive (Nussir ASA, Municipality).  Rushfeldt is very good at inclusion. Everyone has been heard.  Sámi parliament process closed.	Weaknesses in openness (some researchers, herders).	Between open and closed process, depending on actor.  Fishers, Sámi Parliament and env. org think process has been somewhat open.  RH find process to be inaccessible.
What determined the openness of the process.	Public meetings with discussions. Resource group - decided content of IA. Open web page. Media attention has been good and neutral.  RH have too much power. D22 are to blame for lack of dialogue, while D20 has engaged in dialogue.  Sámi parliament doesn't publish minutes etc.	Shaping the debate is a result of power.  Open web page.	Rushfeldt uses divide and conquer to split opposition.  Lack of resources. Political power dominates the process.  Municipality and Nussir violates laws and rights.  Decision-makers glorify the project.  Mixed view on media.

According to the municipal representatives and Nussir the process has been very open and clear for all participants. The process has from the beginning included all stakeholders and provides them with possibilities to deliver statements prior to decisions. There has been held public meetings in Kvalsund, and all parts of the process, including minutes and protocols from meetings have been available at Nussir's web page. Furthermore, involving a resource group with local community members was important for participation. The resource group helped decide impact assessment content and were able to choose authors for the different interim reports. Though, a weakness in the process is that the Sámi parliament does not operate with the same openness, and they overstepped their boundaries by contacting investors and not respecting local decisions. As one municipal representative said, "I do feel that what is a local democracy's wish for development should be governing in relation to

those who do not have the same local rooting or affiliation to the municipality”. The CEO of Nussir also criticized the Institute of Marine Research for knowingly attempting to undermine the research conducted for the impact assessment for political reasons, through measures such as delaying spawning research. The former representative from the Institute of Marine Research refuted this as it was a matter of budget funding.

According to the opponents the process has been to a varying degree open. The environmental organizations argue that media has done a good job covering both sides of the project, but that Nussir and decision-makers glorify the project and deny the costs while overlooking affected stakeholders. The representative from Nature and Youth said:

*“They have had public meetings where only Nussir talked and spoke highly of the project and about what the project would bring to Kvalsund and Kvalsund’s role in the project, so one has only heard from one side of the story. And then there is a split and rule technique by a knowledgeable leader in a big firm with reports to refer to, it is very easy for an ordinary citizen to think that this is what we need. And then that opinion has been established already before one hears the other side of the story”.*

The Sámi parliament representative however argues that media has been pro-Nussir and opponents are not respected in the process, especially the herders and fishers: “...One hasn’t emphasized their view in the case. One has rather trampled on them. But I also miss the involvement of the Sea-Sámi that fish in the fjord. They bear rights to the same extent as the reindeer herders”. The fishers’ representatives argue that the process is open if people are willing to engage themselves. The Bivdi representative said, “I cannot claim it was closed, it is us who make the effort to engage in the process who get an open process”. Though the fishers highlight some challenges and weaknesses in the process in terms of access to decision-making. One fisherman argued that Nussir controlled the information flow and the decision was rigged from the beginning. The representative from Bivdi argued that the CEO of Nussir selectively used people to support his view: “If you read the Plan and Building Act’s introductory paragraphs it is clear that one, in a case like this, should consult with the impacted stakeholders.... But what he [Øystein Rushfeldt] managed to do was to seek out those he could profit from, in a way [those he could] buy”.

The reindeer herders have a more complex view on the process and claim it was not open. The district 22 leader said: “But even if we haven’t reached an agreement Nussir has continued, so they haven’t taken into consideration us at all”. The herders argue

misrecognition and exclusion of their views is the reason they cannot enter the process at fair terms, and has thus not participated in dialogue since 2015.

What mining opponents have in common is the argument that power asymmetry between the actors determine their possibility to affect the process. While Nussir is seen as a resourceful actor that shape the process and the outcome, reindeer herders and environmental organizations lack the resources to participate. They thus argue they are less influential. The fishers did mention this as a challenge. According to the herders the herding districts do not possess the money and time required to participate in bureaucratic processes. One municipal actor believed the strong push by the developer was necessary, after all the process has taken 12 years, which the proponents argued was a waste of time. Furthermore, opponents once again argue that the process neglects established laws and rights, and that the lack of resources makes it impossible to defend their rights vis-à-vis a powerful developer. Two actors pointed out that one only has the right to be heard in such processes, and thus are respected if one has delivered statements or participated in dialogue independent of whether the consultation lead to change or not. Combined the opponents also argued that political interest in socio-economic benefits outweighed other interests in the process, and that in the end the dominant political discourse decides any outcome, which in this case is the political interest in expanding mineral extraction. The reindeer herders pointed out how the Ministry of Agriculture changed their position to the project after the governmental election in 2013, arguing the arguments remained the same while the weighting had changed. Nussir argued this was due to a combination of their work to highlight the exaggerated impact on reindeers to the administration, and the political interest shifting.

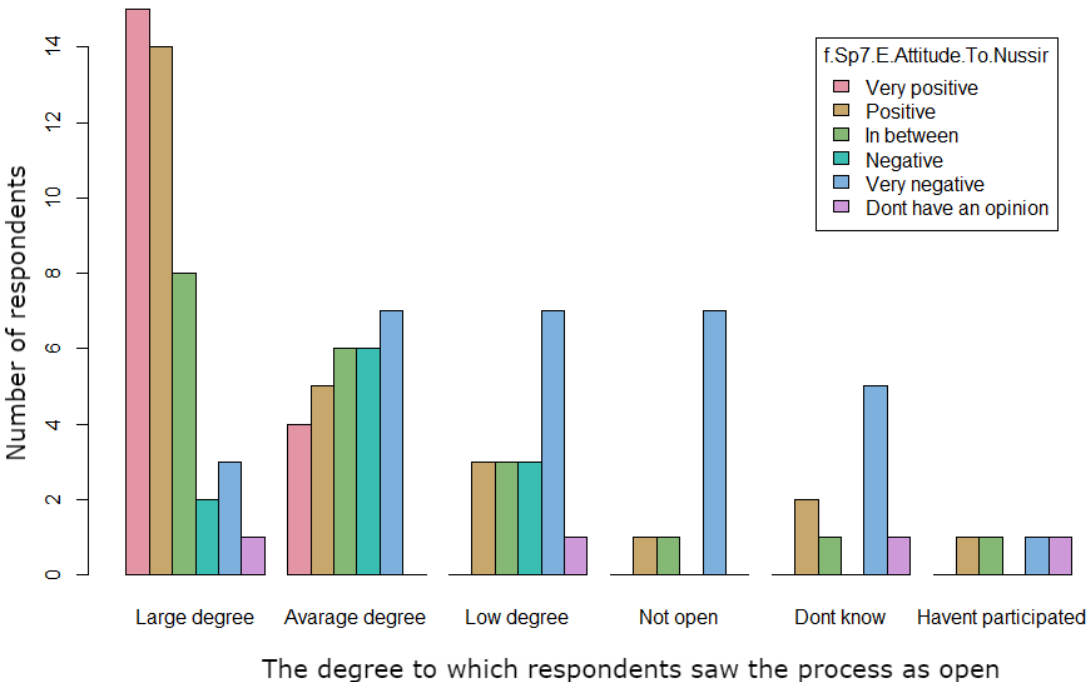
The opponents claimed Nussir and the Municipality used rhetoric and techniques to weaken their opponents, exploiting a divide and rule strategy. Nussir claimed they had a good dialogue and had come to an agreement with district 20, while lacking dialogue with district 22. Rushfeldt said that “Fálá is very relaxed, they do not scream loudly... When they migrate past the area the workers stop [the machinery during muting], several of them have Sámi and reindeer pastoralism in their blood, and they help out [with herding the reindeer]”. According to the reindeer herders Nussir did not have a good dialogue with either and had not come to any agreements except a mutual understanding of halting machinery during the move through the area for district 20 in Fall/Spring. Furthermore, the two districts are in different situations, one losing a migratory route, the other a key part calving and grazing area. The latter was more pressing due to lacking mitigation options. They argued Nussir using the districts’

different situations attempted to weaken district 22 as trouble makers by claiming a partnership with district 20. The Sámi parliament representative claimed the municipality used divide and rule to split up the Sámi population by claiming the project benefits the Sea-Sámi population while pastoralist Sámi were a hinder for development.

While most stakeholders have been active voices in the process and participated in dialogue, the reindeer herders departed the formal process in 2015 arguing that they cannot see any benefits from the project and that dialogue is no help for their situation. Nussir stated that as the two parties could not agree on mitigation measures, there had been no dialogue since 2015. The Municipal actors and Nussir claimed the herders were to blame for insufficient dialogue, as herders refused to participate and only they could suggest measures that Nussir could implement to mitigate impacts.

The survey respondents largely highlight the same trends as the interviewed stakeholders. The proponents believe the process has been open due to public meetings, the large information flow, and the frequent media attention (Figure 5.3). According to the proponents, everyone has been included. They, like Nussir and the Municipality, argue that the Sámi parliament and the reindeer herders have too much influence to affect the process and question local democratic decisions.

Figure 5.3 The degree to which respondents saw the process as open



The uncommitted believe the process has been to an average degree open, highlighting the strengths that the proponents and the weaknesses the opponents point out, as seen in table 5.5.

*Table 5.5 Field survey findings concerning process and participation, divided by narrative.*

Narrative: Topic:	Proponents	Uncommitted	Opponents
What has made the process open	<ul style="list-style-type: none"> <li>- Open meetings</li> <li>- Media</li> <li>- Available Information</li> </ul>	<ul style="list-style-type: none"> <li>- Open meetings</li> <li>- Media</li> <li>- Available Information</li> </ul>	Process has been to a low degree open or completely closed.
What has made the process closed		<ul style="list-style-type: none"> <li>- Only positive aspects presented</li> <li>- Lack of info</li> <li>- Political pressure</li> </ul>	<ul style="list-style-type: none"> <li>- Only positive aspects presented</li> <li>- Lack of info</li> <li>- Political pressure</li> </ul>
Ways the process could have been better	<ul style="list-style-type: none"> <li>- Could not have been more open</li> <li>- More info</li> </ul>	<ul style="list-style-type: none"> <li>- All actors should have been included/heard</li> <li>- More info</li> </ul>	<ul style="list-style-type: none"> <li>- Better dialog with affected stakeholders</li> <li>- All actors should have been included/heard</li> <li>- More info</li> <li>- Could have provided the correct info</li> </ul>
Who could have been more included in the process	<ul style="list-style-type: none"> <li>- Nobody</li> <li>- Not sure</li> </ul>	<ul style="list-style-type: none"> <li>- Nobody</li> <li>- Not sure</li> <li>- Environmental consultants</li> <li>- Reindeer herders</li> </ul>	<ul style="list-style-type: none"> <li>- Not sure</li> <li>- Environmental consultants</li> <li>- Reindeer herders</li> </ul>
Who has had too much influence	<ul style="list-style-type: none"> <li>- Reindeer herders</li> <li>- Not sure/didn't respond</li> <li>- Sámi parliament</li> </ul>	<ul style="list-style-type: none"> <li>- Rushfeldt and Nussir ASA</li> <li>- Not sure/didn't respond</li> </ul>	<ul style="list-style-type: none"> <li>- Rushfeldt and Nussir ASA</li> <li>- Not sure/didn't respond</li> <li>- Municipality and local politicians</li> </ul>

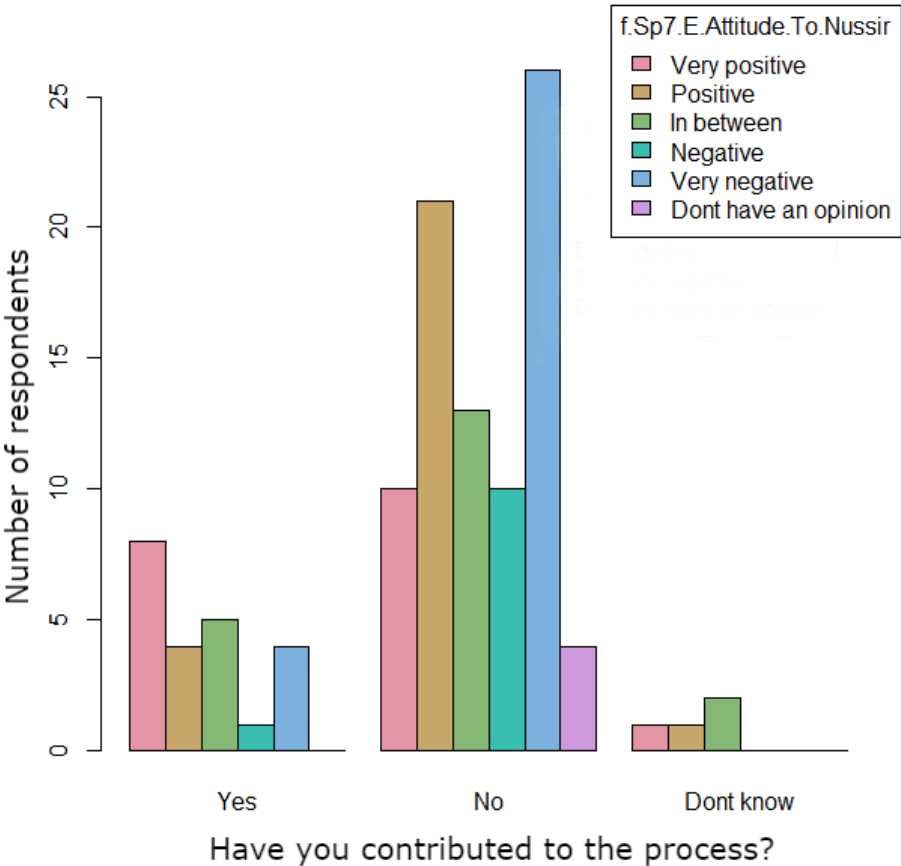
The opponents believe the process has been from an average degree open to completely closed on the grounds that i) there has been lacking information, ii) the information that is presented is skewed towards the positive, and iii) that the political will of the government and municipality is pushing the project through disregarding the opponents. According to the opponents, a more open process should have included all actors and their views to the same



degree and should have provided more or correct information concerning project impacts. Some reindeer herders themselves believe they could have been included more, while most opponents and uncommitted argued that Nussir and the local politicians had too much influence in the process.

Very few in the community reported to have participated in the process, independent of narrative as seen in Figure 5.4. Those who had was either due to their political party affiliation or personal relationship with the CEO of Nussir ASA. A few respondents also saw their presence at meetings or reading newspapers as participation. With a community of 800 members, excluding herders, and minors, this is surprising, and supports the claim that it is a political process and not a community led initiative.

Figure 5.4 Stated contribution to the process by local respondents



5.4 Distribution of socio-environmental costs and benefits

In the conflict over the Nussir mine the larger discussion surrounds the benefits and costs as seen in table 5.6

Table 5.6 The expected benefits and costs from the project and who they are borne by according to the narratives

Narrative: Topic:	Proponents	Uncommitted	Opponents
Benefits	The project causes a revitalization of the community through jobs, repercussions, and immigration. Copper is a mineral needed for the green shift. The project will benefit reindeer herders and Sea-Sámi culture.	It is difficult to calculate exact benefits, but they will be substantive.	The benefits are grossly exaggerated, they are short-term. There are no benefits for the reindeer herders. Fisheries are not likely to experience benefits. Project is not profitable. Rushfeldt sells Nussir and becomes rich.
Costs	The effects on reindeers and herders are grossly exaggerated. There will be minor effects on the fjord, but it will not affect salmon or cod (Municipality). Disagreement over existence of fisheries. A few social challenges concerning a shock of immigration. There are no costs (Nussir).	Difficult to determine the extent of costs, but those that will result are maybe considered acceptable.	Loss of reindeer grazing, and calving areas can lead to reduction of herd and herders. The effects on the marine ecosystem are severe. Fisheries and aquaculture will lose their employment. The combined effects on herding and fisheries is a large loss for Sámi culture and livelihoods.
Who received the benefits and why	Everyone benefits from increased municipal income.	Every project has benefits, but they will not be experienced by everyone.	Only Nussir and foreign workers will experience benefits.
Who carries the costs and why	Costs are minor, if any, and the major concern is the rapid restructuring of the community.	Fishers and herders will experience costs, but degree is uncertain.	Everyone experience costs, though costs are particularly shifted upon fisheries, herders and recreational users and the future generations.
Impact on Kvalsund as a society, and why	Revitalization of the community.	Revitalization of the community, though with side-effects.	Benefits accrue to external owners, and foreign workers will not contribute to the community.
Just distribution and why/why not	Benefits are much larger than costs, thus distribution is just.	A matter of normative perspective.	Unjust distribution due to cost-shifting.

The proponents argue the major benefits derive from establishing a new enterprise, which will bring new jobs and require services from other businesses thereby contributing to the local

economy and social community development. According to the proponents, the estimated 150 employees required in the mining process can amount to 500 new jobs in the region when new businesses establish. The IA however estimate a total of about 350 new jobs. Job creation provides income to the municipality, immigration, and more activity in the community. Nussir argue the mine will revitalize the community which currently has no businesses to rely on. Furthermore, the local competence will be key to the extractive industry expansion in the resource rich and largely untapped county. The claim is that all stakeholders will benefit from the increase in activity, as one former municipal representative said “Nobody lose from mining. It is rather a win-win situation”. The municipality has supported a growth in fisheries and a stronger economy will only enhance these possibilities, while the possible negative marine consequences are as one municipal representative said minor and “a situation which is acceptable”. Strengthened services is also a welfare for all, therefore also for the Sea-Sámi community. They also believe the herders will experience benefits through these services and better infrastructure, and possibilities for explicit projects to aid herders with e.g. tourism will increase. Nussir has also proposed to support the two herding districts with a new mobile slaughterhouse and a deal to buy large meat quantities above market price. The NEA highlight the income to stock holders, state, county, Kvalsund municipality and potentially neighbouring municipalities from the estimated annual operating profit at 450 million NOK (54 million EUR).

The opponents believe the benefits for the community is short term, and the investors will reap the profit. They argue that there is currently no local employment to position the jobs and thus only foreign workers who work shifts will be available and they will not settle in Kvalsund. Though, a strengthened municipal economy could benefit fisheries as well, these actors argue that this is little help when the fisheries are burdened with substantial costs. The herders themselves don't see how they could receive any benefits for the same reasons, and they question the value of Nussir's suggested aid.

The uncommitted narrative is a bit more diffuse, arguing that there is uncertainty to both the nature and extent of benefits and costs. Key to the decision-makers, both the municipality and the government, is whether the costs that will result are acceptable. To the NEA, the socio-economic benefits are estimated to be considerable while the costs believed to be minor and acceptable (and see costs more as risks). The municipal actors argue that every development will have environmental consequences, but don't believe the costs from mining will be significant. They claim, based on the IA, that the impact on the marine ecosystem will be

minor and mainly concerning degrading the benthic community within the tailing area, translating to a small reduction in fishing grounds. Neither do they see how reindeer herders can at all be affected as they argue reindeer are not shy of activity or development, there is already activity there, and the mining operations will be underground where the reindeer don't graze. If any larger challenges, both Nussir and the Municipality point out the sudden shock of a new large establishment, but that efforts to mitigate these effects are in preparation.

According to the reindeer herders the situation is more complex. Firstly, they argue that the increase in activity from access roads and transport will scare off reindeer, especially more vulnerable females, and calves. According to the herders, the muting activity has already impacted the calving and grazing conditions by scaring reindeer further inland, which one herder could confirm through GPS track records of around 70 females. Secondly, the mining activity impacts must be seen in a larger perspective. The herders argue the threshold for development in district 22 is already reached, and with cabin area expansions, new power supply lines, hydro-electric development, and mining the accumulated effect is severe. Thirdly, both districts will experience the negative repercussions from increased population in the area as they argue more people will use the areas for recreation and build cabins. Increased activity in the area will affect reindeer and thus conflict with locals will increase, which happened with oil and gas developments for district 20. The result herders argue is herd reductions to an economically unsustainable level, and thus the end for herders with smaller herds. This is also a lost opportunity for future generations of herders. Their viewpoints are supported by the Sámi parliament, the environmental organization, fishers, and some researchers.

The fishermen expect the benthic fauna destruction to impact the grazing conditions for several fish species, lost spawning area for fish species, particles spreading in the water, and leakage of poisons and heavy metals. This translates to costs for everyone as many fish in the fjord and the river, or eat seafood originating from the area. Nevertheless, this especially means costs for the fisheries through lost fishing opportunities, decreased catch quality, and worsened reputation for Norwegian fisheries. The future generations also bear these costs.

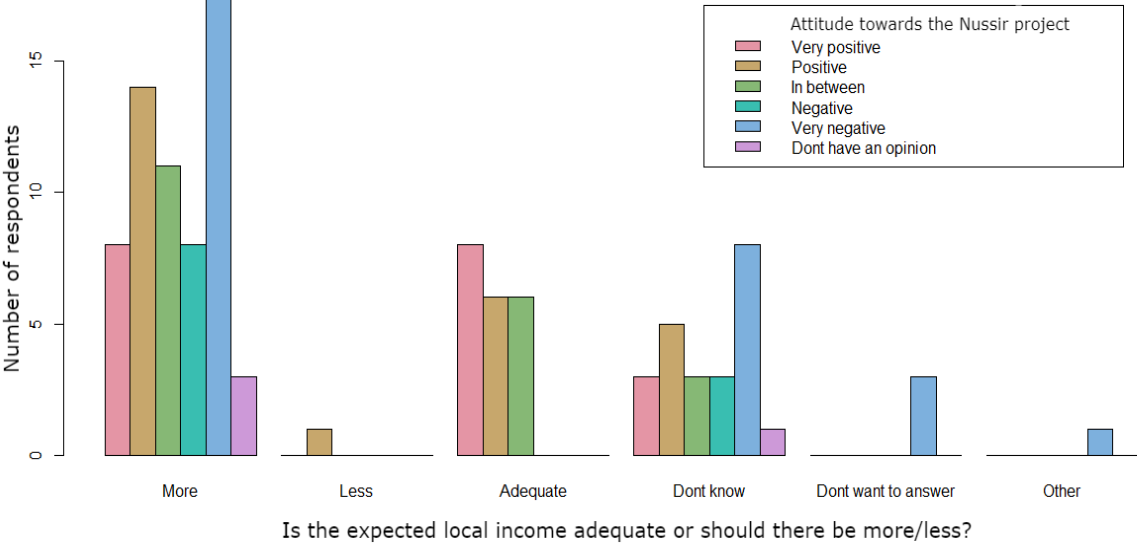
Again, the field survey respondents tell the same story as the interviewed stakeholders, however they can expand on the findings with some different data as seen in table 5.7. See Appendix 3 for a complete quantitative data overview.

*Table 5.7 Field survey findings concerning benefits and costs, including their distribution, divided by narrative*

Narrative: Topic:	Proponents	Uncommitted	Opponents
Expected benefits	<ul style="list-style-type: none"> <li>- Employment</li> <li>- More people and action in the area</li> <li>- General income</li> <li>- Development</li> <li>- Positive repercussions</li> </ul>	<ul style="list-style-type: none"> <li>- Employment</li> <li>- More people and action in the area</li> <li>- General income</li> <li>- Development</li> <li>- Positive repercussions</li> </ul>	<ul style="list-style-type: none"> <li>- Employment</li> <li>- No benefits</li> <li>- Few benefits: <ul style="list-style-type: none"> <li>o General income</li> <li>o More people</li> <li>o Positive repercussions</li> </ul> </li> </ul>
Expected costs	<ul style="list-style-type: none"> <li>- Marine pollution</li> <li>- No costs</li> </ul>	<ul style="list-style-type: none"> <li>- Marine pollution</li> </ul>	<ul style="list-style-type: none"> <li>- Marine pollution</li> <li>- Loss of reindeer territory</li> <li>- Environmental degradation</li> <li>- Noise and dust</li> <li>- Increased traffic in the area</li> </ul>
Who gets the benefits	<ul style="list-style-type: none"> <li>- Laborers</li> <li>- Tertiary sector</li> <li>- Municipality</li> </ul>	<ul style="list-style-type: none"> <li>- Laborers</li> <li>- Tertiary sector</li> </ul>	<ul style="list-style-type: none"> <li>- Laborers</li> <li>- Nussir</li> <li>- Tertiary sector</li> </ul>
Who gets the costs	<ul style="list-style-type: none"> <li>- Fishers</li> <li>- Nobody</li> <li>- Reindeer herders</li> <li>- Don't know</li> </ul>	<ul style="list-style-type: none"> <li>- Fishers</li> <li>- Reindeer herders</li> </ul>	<ul style="list-style-type: none"> <li>- Fishers</li> <li>- Reindeer herders</li> <li>- General users of the area</li> <li>- General population</li> </ul>
Impact on Kvalsund as a society, and why	<ul style="list-style-type: none"> <li>- Positive</li> </ul> Because of: <ul style="list-style-type: none"> <li>- Employment</li> <li>- Income</li> </ul>	<ul style="list-style-type: none"> <li>- Positive</li> <li>- Both positive and negative</li> </ul> Because of: <ul style="list-style-type: none"> <li>- Employment</li> <li>- Income</li> <li>- Divides the community</li> </ul>	<ul style="list-style-type: none"> <li>- Both positive and negative</li> <li>- Negative</li> </ul> Because of: <ul style="list-style-type: none"> <li>- Marine pollution</li> <li>- Employment</li> <li>- Lack of labour force</li> <li>- Impacted livelihoods</li> </ul>

Firstly, while proponents in the interviews argued for no costs for reindeer herders, a few field survey respondents in the same narrative expected costs for reindeer herders. Secondly, it seems the respondents in this camp expected more costs for fisheries than the government, municipality, and Nussir. Independent of narrative, the majority also believed the local community should receive a larger income proportion from mining activity as seen in Figure 5.5.

Figure 5.5 How survey respondents viewed the expected amount of local income from mining



The Municipality and Nussir are discussing a benefit agreement to aid new settlers and businesses, though most respondents believed this, as well as taxes and positive repercussions, does not suffice. The opponents presented mixed arguments about benefits, some expecting none, while some acknowledging the benefits from new jobs and businesses.

Maybe not surprising, many proponents personally expected to receive just benefits as they do not use the area and thus do not bear the costs people expect. While opponents were mostly respondents who used the area through fishing, recreation, and herding and thus personally expected to bear the costs as seen in Figure 5.6 and Table 5.8.

Figure 5.6 Survey respondents' personal expectation of cost-benefit experiences

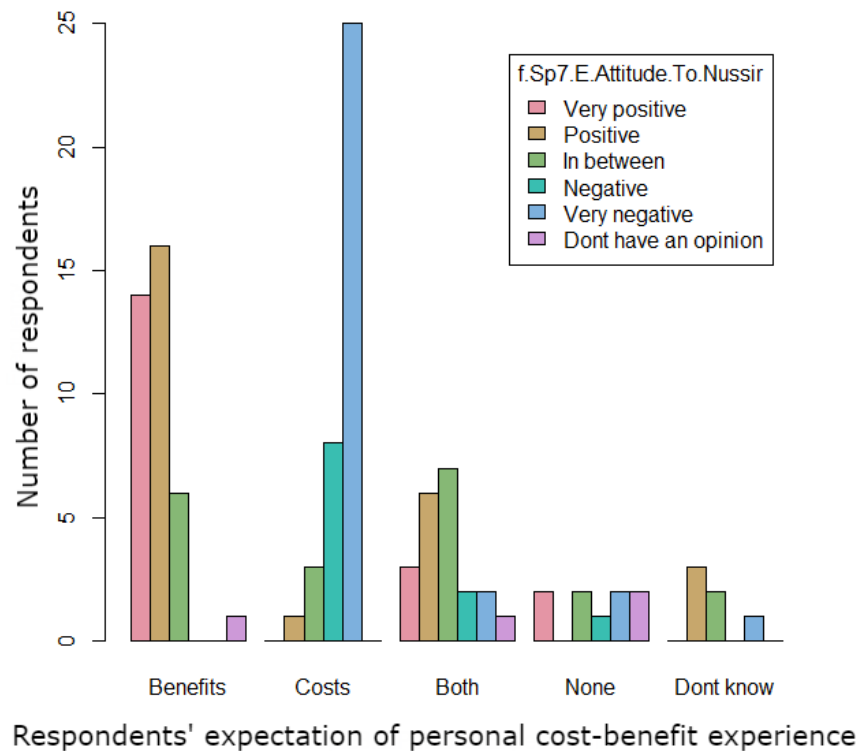


Table 5.8 Respondents expected impact on personal use

Narrative: Topic:	Proponents	Uncommitted	Opponents
Impact on personal use of area	<ul style="list-style-type: none"> <li>- Don't use the area</li> <li>- Won't change personal use</li> </ul>	<ul style="list-style-type: none"> <li>- Won't change personal use</li> <li>- Lost fishing possibilities</li> <li>- General restrictions</li> <li>- Don't use the area</li> </ul>	<ul style="list-style-type: none"> <li>- Lost reindeer territory</li> <li>- Lost fishing possibilities</li> <li>- Won't change personal use</li> <li>- Will move</li> <li>- Don't use the area</li> </ul>

Most respondents expected an unjust distribution as costs were shifted upon users of the area, being all opponents and some proponents and the uncommitted respondents, as seen in Figure 5.7. The reasons for why they claimed the distribution to be unjust is seen in table 5.9. Those who believed the distribution was just was mainly because they expected everyone to experience benefits or they did not know why.

Figure 5.7 Respondents' view on a just distribution in their own definition

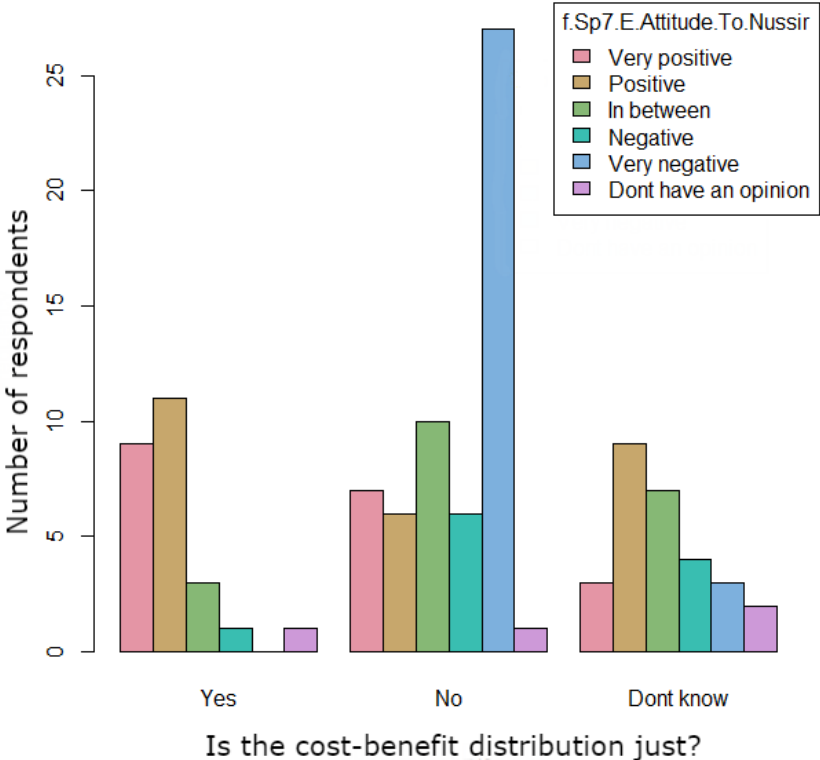


Table 5.9 Respondents reason for not expecting a just distribution

Narrative: Topic:	Proponents	Uncommitted	Opponents
Why not a just distribution	It never is	<ul style="list-style-type: none"> <li>- It never is</li> <li>- Costs are shifted upon herders or fisheries</li> <li>- Too many costs</li> <li>- Nussir gets the benefits</li> </ul>	<ul style="list-style-type: none"> <li>- Costs are shifted on fisheries and herders</li> <li>- Only costs</li> <li>- More costs than benefits</li> <li>- Nussir gets the benefits</li> <li>- Everyone gets costs</li> <li>- It never is</li> </ul>

5.4.1 The Impact Assessment and independent reports/research

The expected socio-environmental benefits and costs can be discussed up against the impact assessment presented in table 5.10. The IA has caused heated debate in the process. While there are many interim reports in the assessment, four have been subject to wider scrutiny, as well as the Vista Analysis report and the Norwegian Marine Institute’s research.



Table 5.10 Overview of the socio-ecological benefits and costs from the impact assessment reports

Theme (author):	Brief conclusion on socio-ecological conditions, values, and impact:
- Marine Baseline study (Christensen <i>et al.</i> , 2011b)	The fjord has good visibility. There are strong currents following the low and high tide in an inwards/outwards direction of the fjord.  The fjord ecology is relatively good and typical to Northern Norway. High ecological diversity with many species that require good conditions.
- Marine Fish baseline study (Falk & Christensen, 2011a)	There are about 10-20 active fishers on the fjord for species such as cod ( <i>Gadus morhua</i> ), though importance of the fisheries has decreased since the fish reception and processing facility in Kvalsund shut down in 2006.
- Consequences of land and sea tailings on marine species and fisheries (Falk & Christensen, 2011b)	Average value of marine species is medium. Sea tailings will have a large negative impact on the benthic community, including fish and spawning grounds, in total a medium impact on marine species.
- Consequences on Seasámi use of the fjord (Eythorsson, 2011).	The fishery value of the area for Sea-Sámi use is of medium importance, and the impact on Seasámi use is considered medium from sea tailing and small from land tailings.
- Consequences from sea tailings on anadrome salmon species (Urke <i>et al.</i> , 2011).	The area is of high value for anadrome salmon species. The impact on salmon ( <i>Salmo salar</i> ) is considered small, and medium for trout ( <i>Salmo trutta</i> ) and arctic char ( <i>Salvelinus alpinus</i> ) due to lost feeding possibilities.
- Consequences for the marine environment from land or sea tailings (Christensen <i>et al.</i> , 2011a)	The marine environment has a medium value. Land tailings will have a small impact on marine environments. Sea tailings will have a medium impact, mostly by exterminating benthic species on the sea bottom with a gradient from the tailing area core to the periphery. 99% of the particles will sediment on sea bottom, and free flowing particles were smaller than natural particles. The tailings are potentially toxic due to high copper and nickel levels with high to medium risk of contamination. Thus, the project has a medium negative impact on the benthic community.
- Assessment land tailings (Iversen & Aanes, 2011).	Land tailings will provide a contamination risk during and after deposition.
- Physical and chemical characteristics of the tailings (Kleiv, 2011).	Copper content of tailings will be 0.05%, and particles will be edgy to round.

- Exploitation of tailings for alternative use (Paulsen, 2011; Bonden, 2011)	Tailings can be used as bricks, tiles, and as fillers. Applicable areas are also flood protection in the Netherlands.
- Social consequences (Muotka, 2011).	The value of new commercial activity is very high, and the consequences on the local community will be highly positive.
- Consequences from traffic, noise, and dust (Robøle <i>et al.</i> , 2011).	A mine will not impact traffic, increase noise or dust in a substantial degree, except exceeding noise levels for nearby cabins and for recreation areas.
- Consequences on landscape, recreation, and biological diversity on land and freshwater (Simensen & Frilund, 2011).	The landscape has an average value and will be heavily affected by land tailings and less by sea tailings. Biological diversity will be more affected by land tailings. Vulnerable species such as Lynx ( <i>Lynx lynx</i> ), Otter ( <i>Lutra lutra</i> ) and some bird species will be affected by mining activities.  The Repparfjord river is of high value and is expected to be affected to a medium degree by sea tailings and no affect by land tailings.  The area has a medium to high importance for recreation, which will be somewhat affected by sea tailings and highly impacted by land tailings.
- Consequences on reindeer herding (Nelleman & Vistnes, 2011).	The project will have a very large impact on D22 through lost grazing and calving areas, and significant impacts on D20 through blocking their migratory route. All areas are of high value, and the project can be in violation of ILO 169.
- Consequences for cultural heritage (Myrvoll, 2009; Johnsen, 2010).	There are 21 cultural heritage locations within the proximity of the regulated area, 3 which are in direct conflict.

Generally, the proponents have a large degree of trust in the IA, while the only report that was attacked was the impact assessment on reindeer herding as seen in table 5.11. These actors argued that the report grossly exaggerated the impact on and presence of reindeer in the area. Nussir pointed out that the authors claimed that the project could impact 10 000 reindeer, while Nussir reported that they had only seen a dozen reindeer in the area and that district 22's calving area was further south than what the herders and the authors claimed.

*Table 5.11 View on impact assessment by stakeholder groups*

Narrative: Topic:	Proponents	Uncommitted	Opponents
View on Impact Assessment	Solid assessment, includes all values.  Assessment on RH was useless.	Mixed.	Included only what was necessary, lacks technicalities.  Assessment on RH was good.  Handbook 140 not suitable for concerned topics.

According to the reindeer herders the impact assessment on reindeer herding was as good as it could get, arguing that other actors had little knowledge of reindeer behavior or herding practice. They argued that people based their personal experiences on more “social” bucks, while the issue was females and calves as they were more vulnerable and easily affected by infrastructure and activity. The report author claimed the reports’ academic foundation was very good and supported the herders’ arguments.

All opponents also claimed the general impact assessment had many weaknesses, especially concerning the ecological impacts on marine life and how this translated to effects on fisheries. This claim has been supported by researchers in the Institute of Marine Research. For example, one fisherman argued that the report on salmon disregarded TEK of local spawning habits and smolt behavior. The report author however argued that the reports’ scientific data was extremely solid and did not know any other report with the same data magnitude.

The Vista Analysis report was brought forward by the opponents as a respectable source of the project’s true benefits and costs. One researcher also argued that the socio-economic impact assessment was very weak. The project proponents however argued the Vista Analysis report was complete nonsense, lacking integrity, and was a paid commission by the Sámi parliament. The opponents disagreed, arguing the report was based on data from Nussir’s own impact assessment which itself was a paid commission by the company.

## 6. Discussion

### 6.1 A characteristic ecological distribution conflict

The conflict over the Nussir mining project can be labelled a characteristic ecological distribution conflict, especially one concerned with mining. The parties disagree on the importance of mining for development, which can be seen in similar mining conflicts in Latin America (Bebbington *et al.*, 2008a; McNeish, 2016). The stakeholders struggle for recognition of traditional livelihoods and cultural values, especially a minority culture. What can be called environmental and traditional values are put up against industrial and economic values. Such struggles take place in most mining conflicts in the world's commodity frontiers (Bebbington *et al.*, 2008b; Dale *et al.*, 2018; Martinez-Alier, 2001, 2002), but also in general ecological distribution conflicts (Agyeman *et al.*, 2010; Martinez-Alier, 2009; Martinez-Alier *et al.*, 2010) and over resources in the Arctic in general (Eide, 2009; Jensen, 2015).

The clash between indigenous rights and livelihoods and new development is also found in many frontier conflicts (Martinez-Alier, 2002; Westra, 2012). The environmental impacts expected in the Nussir case resembles those from mining cases all over the world. For example, the expected marine pollution resembles the environmental impacts from mining in Latin America where primary sector bears the costs of polluted rivers and water tables (Bebbington & Williams, 2008; Perrault, 2013). There are only five countries currently using sea-tailings as a method to dispose excess mining waste, thus this dimension is different from many other mining cases (Eriksen, 2014). Norway has six operating mines utilizing sea tailings, five of them are in Northern Norway (Ramirez-Llodra *et al.*, 2015). All these tailings take place at less than 200m sea depth, making Norway the only country in the world disposing mine tailings in shallow fjord basins. This element has received critique from environmental organizations such as Friends of the Earth and Nature and Youth.

Commonly in political ecology the reader can interpret the presented narrative of community resistance as a simple and uniform resistance, where either the state or a private corporation enter a community to enforce extraction against their will. However, as Robbins (2012) point out, political ecology should analyse how different groups are affected by, and therefore support or oppose, extractive industries or other forms of development. The Nussir case demonstrates that a simple narrative where the whole community oppose extraction is not satisfactory, as a simple majority of the local community are mining proponents. Though, political ecology concerns then especially the difference between those that are for and those

that are against mining and why. In the Nussir case, it is those stakeholders that perceive themselves to be negatively impacted from copper mining that are opposing the project. Those that expected to benefit become the advocates.

## 6.2 Recognizing conflicting interests and values: a matter of power to value?

### 6.2.1 Incommensurability of values

There are overlapping areas of concern between actors, mostly the impact on fisheries. Most stakeholders (except Nussir and partly NEA) found fishing, both in the fjord and the river, to be important for the local community and national/regional fisheries. The opponents did however put more emphasis on the fisheries' importance for traditional Sámi livelihoods. To these actors, such concerns were not recognized in the process and not given emphasis in decisions. Thus, their culture is not recognized. In contrast, the decision-makers, from local to national, argue that all values and interests are adequately included and given decent weight. In the decision by the four ministries to approve the project the argument is that the benefits are larger than the costs. In the ultimate approval of the sea tailings the NEA decide according to the Pollution Act based on a simple Cost-Benefit Analysis (CBA) where the benefits are aggregated in monetary terms as well as non-monetary terms, while other interests and values are compared in non-monetary terms. The NEA makes a discretionary assessment based on the knowledge available, concerning if the benefits outweigh the costs. If they do, the project should go forward. Included in this assessment is not if the benefits and costs accrue to different actors. CBA is a value-articulating institution – the process defines; which values are important, who should participate, and what sort of data should be used (Vatn, 2015). Through such decisions and processes important values and uses are implicit.

In the conflict with herders the municipal actors argued that reindeer herders had to “give and take”, reducing different interests to the same standard, the commensurability element (Espeland & Stevens, 1998). In their logic, municipal interests in terms of benefits could be measured against herders' interest in grazing areas. In herders' logic, their interests were always sacrificed for societal development they did not benefit from. Thus, their lack of participation results from their belief in the incommensurability of their interests: one could not sacrifice their native land. The other opponents argued the same for environmental concerns. The first recognitional issue is thus that the values of fishing, herding, recreation, traditional livelihoods, and indigenous rights are put up against expected benefits from job creation, commercial activity in the community, and the monetary income. Environmental impacts on the marine environment are somewhat uncertain and thus also seen as risks. These

values and interests are according to the actors who are expected to lose from the project incommensurable and refuse trade-offs. According to Martinez-Alier (2001) “there is a clash in standards of valuation when the languages of environmental justice, or indigenous territorial rights, or environmental security, are deployed against monetary valuation...” (p. 23). One fisherman was the only opponent who talked about traditional livelihoods’ economic value. All stakeholders talked about the resources and ecosystem services’ use-value, while some also talked about the environment’s intrinsic value.

Furthermore, many survey respondents argued in dialogue that herders were just seeking compensation, which have been the case in many conflicts, and has been a [default] logic in many ecological distribution conflicts (Martinez-Alier, 2001, 2009). For Espeland and Stevens (1998) this is the contradictory aspect of actors claiming incommensurability. However, the herders themselves argued that this was not about compensation, one could not replace calving land and lost livelihoods with money, not for present herders or for future herders’ ability to continue their cultural rights.

#### 6.2.2 Disputes over impacts as a struggle for recognition

The case similarly illustrates scientific uncertainty in environmental assessments, and how different knowledges and values lead to disputed impact claims (Martinez-Alier *et al.*, 2010). The current mining project approvals are hinged on the expected benefits and costs which are largely predetermined by the IAs. There were large disagreements concerning the assessments on the impacts on the fjord, fisheries, salmon, the community, and reindeers. Many actors claimed that their inputs to the assessments had not been included, and it was not based on TK. These findings are consistent with those of Dannevig and Dale (2018) who looked at the environmental impacts of the Nussir project: the “environmental impact assessment (EIA) process did not contribute to local legitimacy, as there was little local involvement in its production, while the content of the EIA is virtually inaccessible to local residents due to its sheer size and technical jargon.” (p. 151).

While incorporating TK has become mandatory through the Nature Diversity Act in land management, it is not defined how it should be included in decision-making (Eythorsson & Thuestad, 2015). In the impact assessments, such on Sea-Sámi resource use (Eythorsson, 2011; see also Eythorsson & Thuestad, 2015, p. 142) and reindeer herding practices (Nellemann & Vistnes, 2011), the authors included TK in their reports. Though, Nygaard (2015) argues that social TK dimensions are excluded in the Nussir process. The reindeer herding assessment author argued social dimensions are excluded in the report due to their

focus on the natural science aspects. The report on social consequences (Bedriftsanalyse, 2011) excludes Sámi concerns and TK. However, according to opponents, the knowledge portrayed in those reports is not recognized in the decision itself and undermined in the process. A key conflict concerning fishing is to which extent the fjord is vital for local fisheries, where the municipality sees its relevance, the NEA claims its marginal importance. The fishers on the other hand argue for its significant importance. Concerning reindeer herding, the conflict is even more polarized, where all proponents argued that the mining project didn't impact reindeer or herders. While opponents, especially herders themselves, argued for absent understanding of herding and recognition of these areas for the herders. Thus, disagreements over impacts is a result of struggles for recognition.

The disagreements over the potential impact on reindeer herding were not present in Dannevig and Dale's (2018) study, in contrast they write "the negative impact on reindeer herding pastures is acknowledged by all parties in the process" (p. 165) and that "the decision-making process has taken into account the negative impacts on the reindeer herding industry, but has favoured the expected positive effects of the mine instead of protecting the herding industry" (p. 167). While their focus concerned the sea tailings conflict it is still interesting that they obtained these results. The municipal actors, Nussir, and residents were not trusting the NORUT report on reindeer herding (Nelleman & Vistnes, 2011), delegitimizing its content and methods, and argued that there was no impact on reindeer herding. In Nussir's (2016) application for an operating license the company writes that the "NORUT report is based on a wrong scientific basement, failing understanding for how extraction is planned and as a result the conclusions drawn were wrong which became a part of the zoning plan" (p. 28 of PDF, own translation). Based on this claim the company provided the Ministry of Food and Agriculture, who originally sought to accept the objection provided by the Sámi parliament and district 22, with a letter explaining how reindeer herding would not be affected. In the interview CEO Rushfeldt argued that it was this letter, in combination with the governmental change after the 2013 altering the Ministry's position, which approved the project between 2013 and 2014. Thus, the Ministry seemed to change their position for two reasons, the change in government meant a larger push for mineral expansion, and the Ministry recognizes the information from the mining company to be more precise than the report from the Northern Research Institute with a scientific basis. According to the district 22 leader at the time it was the decision weighting by the ministry that changed, and not the scientific basis. This is a shift in recognition of interests, as it was the developer's

arguments and the new government's interests that won fourth with the changed Ministry position.

### 6.2.3 The marginalized losers

As the marine consequences have been the major concerns independent of narrative and from the local to the national scale, the recognition of reindeer herding values and interests lose out. As seen in the results, some pro-respondents were also concerned with the marine impacts from sea-tailings, very few were however concerned with impact on reindeer herding. There were also several respondents who displayed direct hostile attitudes towards herders. According to the herders, up until other mining opponents included their concerns they were solitary in recognizing their values and interests. They even saw the Sámi parliament to neglect their conflict. As seen, a larger majority in Finnmark believe development such as infrastructure and mining should be prioritized over reindeer herding. The government seem to share this view, as they argue minerals of national importance should be prioritized in conflicts (Ministry of Trade and Industry, 2013). Furthermore, there is a structural misrecognition of reindeer herding in society which serves a purpose. Sámi reindeer pastoralism in Finnmark is seen as unsustainable and unproductive, thus the argument has been that the herds must be reduced to an ecologically sustainable size, despite contrary evidence (Benjaminsen *et al.*, 2016). As the interest in other land uses increases, land use competition increases as herders utilize all available areas for grazing. To pave the way for developments such as mining, infrastructure, hydroelectric dams, cabins, windmills, and other projects that have received a growing interest in Northern Norway, the herders must be removed or reduced to a number where conflict is less persistent. The conflict with herders over the mine in the Repparfjord is seen as something that must be 'succeeded through dialogue'. The conflicting interests, both over terrestrial and marine land, is never seen as a fundamental problem, but a conflict where the impacted stakeholders must be convinced they are wrong, evident in the language used by Nussir and decision-makers (see e.g. Forland & Novikova, 2016; Ministry of Trade and Industry, 2013).

Though, there seems to be a similar situation taking place with fisheries. While many respondents claimed the fjord was dead, they did not perceive small scale fisheries as a threat to their interests. However, the government through the Finnmark Commission has neglected to map out the rights to marine areas where there are potential conflicts over resources. Paragraph 29 of the Finnmark County Law of 2009 requires the right to marine resources to be determined if conflicts over use is raised by users over time in relation to newcomers,



which has not taken place in the Repparfjord area. Neither has small-scale fisheries managed to exercise their rights to fishing grounds in competition with large scale vessels or aquaculture (Davis & Jentoft, 2001; Søreng, 2007). Furthermore, while many have been concerned with sea tailings and marine consequences, few relates this to a struggle for recognition of culture and rights. It is framed by most as an environmental issue, and not a cultural issue. Nevertheless, the environmental organizations have included the cultural and indigenous dimension over the years. Thus, the recognition of Sea-Sámi culture as the Sea-Sámi fishers perceive it themselves, is also structurally not recognized to serve a purpose. Thus, while many find environmental values to be neglected, the nonrecognition of culture and tradition makes the traditional professions with a Sámi identity become further marginalized.

### 6.3 Decision-making, participation, and their limitations

#### 6.3.1 Majority decisions and power inequality

The thesis' findings are not corresponding with the survey from NRK in Finnmark, where 45,4% of the county population were against mining in Kvalsund, and 38.7% were pro, and 16% were not sure (Klo & Jacobsen, 2017). Likely, the local attitude is more positive as this is where the major benefits are expected. Both surveys find that the younger generation was more positive, potentially due to the expected benefits such as access to employment. Two different sampling techniques were also used, the NRK survey was performed by InFact Norge AS by automatic phone interviews with weighting by gender, age, residence, and municipal election 2015. The respondents in this thesis was randomly selected from the municipal population in Kvalsund. The difference between the county simple majority against mining, and the municipal simple majority in favour of mining, raises the question whether the decision to mine should be taken at the municipal, county, or national scale. Currently, there is no data available on the national scale concerning the national population's perception of the Nussir mine.

A simple majority in the local community was positive to the project<sup>5</sup>. Thus, in line with democratic principles, despite several stakeholders claiming to be significant losers. Most local project proponents didn't expect themselves do be affected, didn't find the area important, and expected to receive benefits and not costs. Who has the right to approve a

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<sup>5</sup> In the sample there is a simple majority in favor of the project in the local community if reindeer herders are excluded, i.e. less than half of the community are proponents, but the proponent narrative is larger than the other two. Usually majority refers to 'more than the half', but in this context is used as simple majority.

project, the simple majority, or the expected losers? This is an issue that has no easy answer. One of the earlier political theorists to attempt to solve this issue was Rousseau (de Dijn, 2015). In his work on 'The Social contract' Rousseau (1968, [1767]) saw direct democratic participation to be a key element in the principle of power division and should result in the common good and freedom. But he also highlighted the sovereignty issue, what he called the 'Tyranny of the Majority'. If the majority imposed a decision (Rousseau discussed this in relation to laws) that served the majority's interests and excluded a minority, that would only be just if the decision was truly benefitting everyone. Thus, if a minority, such as recreational and full-time fishers, oppose mining and have their will neglected that is within the democratic system just if the decision still benefits them. This, he argued, was assured through participating in decision-making (see de Dijn, 2015 for a discussion of Rousseau's theory). In the environmental justice discourse, this would be all stakeholders' participation and recognition resulting in a just outcome – an outcome benefitting the public without imposing costs on a minority (Schlosberg, 2007). However, this entails that the stakeholders have the power and capacity to participate and influence the process. Furthermore, that decision-makers recognize the impacted stakeholders in the first place.

The possibilities and requirements for participation in this case demonstrates that environmental justice struggles go deeper than the ability to participate. Many actors agreed that Nussir had spent considerable attention to involve the local community through public meetings, a steady information flow, and creating the resource group. Nussir's success in gaining local proponents for their project is largely attributed to their efforts at gaining trust, and as such builds on the Social License to Operate (SLO) idea (Nygaard, 2015). In line with Dannevig and Dale (2018) who find Nussir's efforts to create local project engagement in the early process phase being key to their success in earning legitimacy from the local community. Though, important for impacted stakeholders was that their participation did not lead to any situation where they were better-off. Based on the results, one can argue that it is because the extraction plans, furthermore enhanced by sea tailings, conflicts with existing values, uses and ultimately thus traditional livelihoods. This case does not seem to be solved by more participation as the actors fight over different and possibly incompatible world views, one where extraction can go along with traditional livelihoods, and the other where it cannot. Johnsen (2016) highlights the different rationalities as a limit to reach agreements, which is why the herders have been reluctant to participate. Also, if participation succeeds is dependent on the actors' involvement in the IA and that it results in a common trust, if the

stakeholders dispute the socio-environmental impacts, they will oppose the project as well. However, it is equally about if the stakeholders have the power to impose their narrative and win peoples' interests. While in the municipality, the proponent narrative has gained the largest momentum, on a county basis a majority oppose the project, siding with the uncommitted or opponent narrative.<sup>6</sup>

One could also question the degree of participation required by law in this context, to which indigenous rights are included, but not exclusive, to be considered as 'ends' in themselves and not 'means to an end'. While a certain degree of participation, such as consultations, the right to request content in the planning program and the zoning program, and the right to counter decisions, are required by Norwegian law for involved stakeholders, it doesn't mean that decision-makers have to agree or respect the other opinion (see Mineral Act, 2009; Nygaard, 2015; Plan and Building Act, 2009; Regulations for Impact Assessments, 2009; Skogvang, 2013). These laws include 'consultation' and not 'consent', thus participation is reduced to a requirement and not an outcome for justice. As Schlosberg (2001) argues, procedural justice means respecting different values and interests in itself *and* such that it leads to equitable outcomes, which opponents in the Nussir process claim fall short. Neither does the extent of participation in this case, or in similar cases in Norwegian governance, satisfy Arnstein (1969) and Pretty's (1995) requirement for participation. Impacted stakeholders in the Nussir project are only consulted and included through degrees of tokenism. While the resource group established by Nussir received decision-making power over IA content and authors, the group excluded the opposition (as the few critical left the group early on). This raises the question whether impacted stakeholders should be given a larger say in decision-making, as argued by Arnstein (1969) and Pretty (1995). Furthermore, the laws all remain somewhat open regarding environmental and social impacts, especially the costs, and allows the decision-maker to assert discretionary evaluation where their main interests will triumph (Winge, 2013). This is evident in NEA's assessment after the Pollution Act of 1981 and the Biological Diversity Act of 2009 which both allow pollution and environmental degradation if the decision-makers find the benefits to outweigh costs or interpret the law in their advantage.

Nygaard (2015) argues that Sámi stakeholders have "ample opportunity to influence the different stages of the planning process", but that it is restricted by resources (p.22). In the end

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<sup>6</sup> It is difficult to determine which of the two narratives the regional population opposing the project belong to, as they were not included in the field-survey. However, it is likely a mixture. While some of the regional population was uncommitted, many of the opponents might see the benefits of the project while still arguing they are not outweighed by the costs.

it matters how the Sámi (and other socio-environmental) interests are incorporated into the decision taken by the Norwegian state. She further points out when comparing the Nussir case with the Artic Gold case in Kautokeino municipality, that the Nussir project opponents were not able to receive the same interests in protecting Sámi herding livelihoods in Kvalsund as Kautokeino due to the non-existence of anyone from the reindeer herding community in the Kvalsund municipal board. Thus, she concludes in line with Johnsen (2016), the extent to which Sámi reindeer herders have consent opportunities to mining in the Norwegian institutional setting is dependent on their representatives having a majority in the municipal board where the project is located. As reindeer herders are a minority in Finnmark, it is thus bleak for their ability to participate and be recognized in such projects. This point should also be extended to minority interests in general, and not just concerning herding interests.

However, the lack of actors representing opponents can only be said for the reindeer herding community, as fishers have representatives in the municipal board, and themselves argue there are possibilities to impact decisions. The issue concerning fisheries and other environmental uses such as recreation has mostly been a disagreement on expected impacts from the project. However, the fishers and environmental organizations argue the proponents control the information flow. Hence, the conflict over the environmental impacts on the terrestrial and marine environment is determined by who has the power to convince the local community that their position is more correct, as the stakeholders struggle over narratives.

In the conflict between herders/the Sámi parliament, and the municipality there is a dimension that is not present in the conflict between fishers and the municipality: the way the actors think about scale. For the municipal actors the area is within municipal borders, an area where herders (who are mostly formally located in Kautokeino/Karasjok) are guests. The decision regarding mining activity was thus seen to be one of only a local matter, and outsiders' involvement, like herders and the Sámi parliament, was not warmly welcomed. The conflict is also one over property rights, where the minerals are owned by the state, the land by the Finnmark Estate and the marine resources by all the users. Though, this is also heavily contested by the actors, as the herders would argue they have ancient use rights to the terrestrial land as dominant users over time. Similarly, the fishers argue they own marine resources together with the local community and herders because of use over time.

The coalition between fishers, reindeer herders, the Sámi parliament, and the environmental organizations has strengthened their position, which is common in socio-environmental conflicts (Muradian *et al.*, 2012). Several actors argued that opponents' resistance was the

reason the majority in Finnmark had turned against the mining plans, but it was not a friendly relationship in the beginning. The Sámi parliament and Nussir made a deal the herders refused to accept in 2010. The environmental organizations did neither pay much attention to the herders' conflict in the beginning as their focus was on sea tailings and environmental consequences. Traditionally, the herders have neither been allied with environmental organizations due to their support for the "tragedy of the commons" narrative regarding herding and degradation in Finnmark (see Benjaminsen *et al.*, 2016). One fisherman also said the environmental organizations lacked interest in indigenous rights in the beginning. However, over the course of the process these actors have increased their attention to each other's concerns, forging an alliance that has strengthened their position. This would most likely not have taken place if the process hadn't taken several years, in fact 11 years since Nussir started muting (test-drilling). The long process has also been an argument by the proponents as a factor that increased possibilities for participation (see also Lund, 2017b).

### 6.3.2 Procedural justice and indigenous rights

There has been an extended struggle for Sámi fishing rights, to which the Sámi fishing community has not come to an agreement with the government in their struggle for more autonomy (Davis & Jentoft, 2001). Despite the Smith commission of 2006's conclusion (a commission set forth to identify Sámi rights to marine resources) leading to exclusionary rights to fishing grounds in Finnmark for local communities (such as paragraph 29 in the Finnmark Act), this has not translated to a *de facto* right to prevent other uses that potentially degrades fishing opportunities. The fishers' willingness in the Nussir case to eventually take the matter to court will determine the outcome for Sámi rights to marine resources *vis-à-vis* non-fishing interests. Such environmental justice aspects as indigenous rights are, will have to be further discussed in the Norwegian setting for both indigenous and non-indigenous actors who claim rights to marine resources in Norway.

According to the former UN Special Rapporteur on the rights of Indigenous People, indigenous self-determination in relation to extractive projects on their land must be a result of their own choosing (Anaya, 2015). This is especially characterized by ILO 169's FPIC (Hanna & Vanclay, 2013). In the participation language, this complies with self-mobilization (Pretty, 1995; Vatn, 2015). Though within the Norwegian institutional setting, a developer suggests a project, to be approved by the municipality, if conflict arise to be evaluated by the county and corresponding state ministries, and if potentially in violation with a law evaluated by the corresponding agency. Thus, the level of stakeholder participation is determined by

their representation or degree of interest for their concern in the municipal board and the government. They do not have the right of consent, but consultation. The Mineral Act requires Sámi interests only to be heard, and reduces their self-determination (Skogvang, 2013).

Furthermore, Skogvang (2010, 2013) argues the government has intentionally avoided establishing too exclusive rights because of the interest in resources in the North. Ravna (2011, 2012, 2015) concludes that the Norwegian government in general are ‘recognizing’ Sámi rights, but the Finnmark Act or the Finnmark Commission does not meet the ILO 169 requirements and finds both to be inadequate. He argues, the rights are there on paper, but not fulfilled in practice (2012). His view is supported by the former UN Special Rapporteur on Indigenous Rights (Anaya, 2011). Furthermore, in relation to mining and Sámi rights Ravna (2015) concludes:

*Since the Sámi do not have full participation and co-determination rights when extractive industries, mining operations and other interventions are implemented in their traditional lands, there is reason to question whether the legal protection regime in respect of Sámi rights to natural resources and lands in Norway is, after all, as adequate as we would like to assume. (p. 75).*

In the Nussir case his arguments are reflected in how the Sámi actors view the process in terms of not recognizing their rights or values, and neither respects their disaccord with the project. Nussir ASA is also ranked 17 out of 18 groups, with a score of 1.26-1.50 out of 4, in consideration to respecting indigenous people and rights by Overland (2016).

The Sámi members in the Finnmark Estate board voted against Nussir in the fall of 2017 does however show that Sámi participation and right to self-determination is more complex. Though, how this will play out will be determined after the Finnmark Estate will for a second round treat the case after the Sámi parliament concluded it was in violation with the Finnmark Act on March 7<sup>th</sup>, 2018. The decision will be represented to the Ministry of Justice and Public Security for a final decision. Though the current political will for the project is so strong, evident by the previous four ministries’ approval, that to which extent Sámi rights will be respected now is questionable.

### 6.3.3 A political decision

Why haven’t the expected cost-shifting and the rising conflict led to a situation where these costs are attempted to be mitigated (if possible) or the authorities to stop the mining project up to this point? Even when it possibly is in violation with national and international laws?

According to Fauchald (2014) the current legal regime that governs mining activities in Norway have many challenges concerning power in decision-making. Municipalities may accept mining plans despite lacking knowledge of the long-term effects and the impact on stakeholders, and the responsibility to take into considerations environmental effects is somewhat unclear. He concludes that:

*It seems that the current decision-making framework favors political freedom of decisionmakers and promotes bargaining between public authorities and stakeholders with significant interests in the projects. Despite the important environmental consequences of mineral mining, the framework does not significantly strengthen the position of stakeholders with diffuse interests or weak bargaining power. (Fauchald, 2014, p. 65).*

According to the reindeer herders, the municipality does not have a concern for reindeer herding. Neither do the herders feel that they can get their opinions heard by the local politicians as they battle over several development projects. According to Nygaard (2016) the municipality holds the power over whether to include the concerns raised by the herders or not, and argue that the Nussir case shows that when the community and the politicians do not show a concern for reindeer herding, herders will lose out. The results of this thesis support her claim.

Furthermore, Fauchald (2014) argues “there is no specific procedure to check whether the EIA and the zoning plan are of sufficient quality beyond the hearing processes and the possibility of raising objections” for stakeholders (p. 59). When the zoning plan was approved the decision was objected by the Sámi parliament, reindeer herders and the Directorate of Fisheries. Four ministries treated the objections, and decided to approve the zoning plan, despite the impact assessment on reindeer herding, and even that these impacts would be a violation of the law. Despite the conflicts that have emerged and the debates over the consequences from the project the decision-makers, from the municipality to the national government, have been reluctant to engage in further discussion about the negative impacts. The Mayor of Kvalsund argued that if the consequences for reindeer herders were so significant, this should be the national government’s responsibility to determine and if so decide if the project was in violation with the law. The Ministry of Local Government and Modernization approved the project but added that Nussir and the reindeer herders had to come to an agreement concerning mitigation options prior to commencing activity. While for the herders this meant that Nussir could not start mining before the herders had approved the

decision, the government has confirmed that this is not the case. The government thus put the responsibility of respecting reindeer herders to the company, who argue that they will not be affected.

Throughout the process, the clear political will to establish this project has made the government on different levels reluctant to face conflict. Whenever concerns over negative effects have been discussed in the government, the answer is that the benefits outweigh the costs, disregarding who gets what. The government has also been highly interested in expanding the mining sector in the North, devoting millions to the industry, emphasizing the benefits this industry will bring. In the mineral strategy of 2013 (Ministry of Trade and Industry, 2013) the government explicitly state that mineral industry can coexist with other interests, such as reindeer herding, fisheries, and environmental recreation. Though, they highlight that when conflicting use land uses takes place the need for minerals in society should be safeguarded. The NEA concludes in their project approval: “In evaluating if approval shall be given, we have put special emphasis on the industrial policy guidelines for mining of minerals in Norway” (Miljødirektoratet, 2016, p. 46, own translation). The political will to mine has been asserted as an important value in their decision. Thus, the strong political will lead Dannevig and Dale (2018) to conclude that

*An EIA process with more local participation and incorporating local knowledge would not have avoided the conflict over the monetary and non-monetary valuation of the Repparfjord area, but it could have resulted in a knowledge base that was less controversial, more legitimate and therefore provided a more solid basis for future operations. However, this would have required local politicians to admit that the decision to open the mine was primarily a matter of politics, and not a technical matter which can be resolved to the satisfaction of all solely through the production of scientific knowledge. (p. 151).*

Nygaard (2014) also concludes in the same regard, arguing that interests such as fisheries and reindeer herding “can be neglected when important national interests are at stake” (p. 23). Discussing the Nussir case as a sacrifice zone, Reinert (Forthcoming) presents how the socio-ecological costs are considered trade-offs for the benefits, where other livelihoods such as fishing and reindeer herding are sacrificed for larger social gains. He points out that the project is built on sacrifices, of ecosystems and people, for others gain, which is found legitimate and morally correct by the government. What seems to be key in this conflict, is the degree those holding political power are interested in the values and livelihoods at stake.



While in the Nussir case, the decision-makers have been determined to establish the mine, and other regards are thus not worth the same level of interest. This does not provide the other stakeholders a real opportunity at shaping the process.

#### 6.4 The character and distribution of socio-ecological benefits and costs

##### 6.4.1 Disagreements over local and regional benefits

While Nussir, the decision-makers and their supporters in the local community see the project as a community revitalization through job creation, commercial activity, income, and immigration, the opponents argue that these benefits are exaggerated. While the opponents attempt to deny the benefits, this might be a political struggle to undermine the project due to the expected distribution, and not the extent of benefits in themselves. While the extent of the benefits from this project is uncertain, there should be no doubt that it will create new local jobs and provide income for the local municipality. As such it contributes to economic development.

However, the environmental justice concern is who this development benefits and whom it does not. Many actors and respondents expected significant benefits in the community, but that also while the project takes place in Kvalsund many expected the benefits to be reaped by external actors, located in Hammerfest, Alta, and Oslo. Briggs (2007) argue there is a centre-periphery divide in Norway that is recognized by the North-South divide (majority of population and the political power is in the South). For political ecology and environmental justice scholars, the scale is important in ecological distribution conflicts. Walker (2009), supporting Harvey (1996), argues that scalar issues are central to understanding unequal development and environmental conflicts. Especially opponents argued that there is a benefit flow from resource development from rural to urban areas. This can be understood in terms of Marx's (1867) idea of metabolic rift, which is central to the commodity frontier theory (Moore, 2000, 2003).

Furthermore, opponents argued that there are no benefits for the Sámi community, especially as they argue traditional Sámi livelihoods are sacrificed for others benefit. Herders did not see the proposed aid as beneficial, and the fishers did not expect the benefits from a strengthened economy to outweigh the costs of marine pollution. The herders in district 22 also seemed to perceive the suggested benefits to be a continuation of a paternalistic relationship were herders are economically dependent on external actors. Neither did the opponents in the local community who were concerned with the environmental effects see the opportunities from a

strengthened municipal income to outweigh costs. In contrary, the proponents see the project also as a source of survival for the Sea-Sámi community. The landowner fee given under the Finnmark Act to the Finnmark Estate, an income percentage from economic activity on Finnmark Estate property, is not mentioned as a benefit by the actors, most likely because the Sámi parliament does not recognize this as a benefit to indigenous people (see Nygaard, 2015). Thus, the conflict over benefits is indeed a conflict over the perception of what are benefits, and how they are to be viewed against the costs.

#### 6.4.2 The green shift and justice discourses

While previous studies have researched the importance of creating legitimacy for mining activities in the Arctic (Dannevig & Dale, 2018; Koivurova *et al.*, 2015b), few have touched upon the role of discourses for creating local, regional, or national legitimacy for the mining industry. Following previous studies on discourses in political ecology, for example on environmental change (Adger *et al.*, 2001) and on salmon-farming (Christiansen, 2013), the role of discourses to provide legitimacy is found particularly interesting in the Nussir case.

Key to the proponents was that copper itself was a large benefit, both at national level and global level. Municipal actors argued that copper was important for the green shift, highlighting the large dependency on copper for electric cars production and other more climate-friendly initiatives. This has become the mining industry's focus as well (Norges Geologiske Undersøkelse, 2016). The government has also put the green shift as key to Norway's sustainable development (Sandberg, 2017) and sees mining as a large contributor (Ministry of Trade and Industry, 2013). The argument that we should contribute to the copper production, and we will do it more sustainably than "developing" nations are also used by proponents, as well as media (see Lund, 2017b). In Nussir's (2016) application for an operating license the company claim the mine can become one of the "greenest" in the world. The CEO also argued that the company likely to process the ore in Sweden was the most sustainable in the world. The mayor of Kvalsund argued Nussir could be an exceptional green mine as they had discussed electrification of the mine, and that extraction in Norway is done more environmentally friendly than elsewhere. The argument used by the proponents in terms of increasing Norway/Europe's mineral self-supply is also an environmental justice aspect, as the current regional consumption depends on the imports of minerals such as copper from Latin America and China. An increase in regional self-supply is line with the idea of reducing industrialized nations' 'ecological rucksack', meaning the materials and energy that are

imported to and consumed in industrialized nations from other countries (Martinez-Alier, 2002).

A few opponents opposed the green shift discourse, arguing for recycling and less consumption being the key for sustainability. Most copper demand in Europe is for electronic goods (Martinez-Alier, 2002), and the rising demand for minerals such as copper derives from an increased material consumption globally, and urbanization in India and China requiring copper for infrastructure (Kabwe & Yiming, 2015; Muradian *et al.*, 2012). Thus, many researchers argue that the pathway to sustainability lies in reduced consumption, and not increased extraction (and economic growth) (Xue *et al.*, 2016). Such aspects are important for wider discussions of the green shift in Norway. Goes and Skorstad (in Dale *et al.*, 2018) argue that the mining sector in Norway has not managed to exceed its bad image with environmental “green washing” because of lacking transparency and environmental reporting. The CEO of Nussir has actively tried to impose a greener image through transparency and including stakeholders in the IA. The NEA also requires environmental monitoring of the marine ecosystem. What is maybe even more pressing, is the discussion of justice in the green shift as “just sustainability” (Agyeman *et al.*, 2002; Agyeman & Evans, 2004), as increased resource extraction for more climate friendly products such as copper for electronics will entail socio-environmental costs that are borne now and in the future through changing ecological conditions. Thus, two competing environmental justice views can be seen in the discourses used: reducing industrialized nations’ “ecological rucksack” and climate impact, versus mining activities’ cost-shifting on traditional and environmental uses of the area.

#### 6.4.3 Cost-shifting expectations

All actors, except Nussir, expect some costs from the project. Nussir expected a few challenges concerning workers immigrating rapidly into a small community. Though, the question for the authorities have been if the benefits outweigh the costs, or if the environmental risks are worth the social gains. While a complete discussion of the nature of the costs, their extents, and their implications are impossible to include here, let the expected costs by the IA and different actors be the basis for the following discussion of why many actors expect costs to be shifted to traditional livelihoods, recreational and general environmental use.

The values are incommensurable, and power determines which become important. Why does the interest in job creation and monetary income trumps other interests in the Nussir case? Even when interests that hold specific rights according to International and Norwegian law

are not respected? To try to understand this process, we must go back and look at the underlying reason the copper mine is proposed in the first place. According to the literature we can start with the demand for copper resulting from social metabolism (Martinez-Alier, 2009; Martinez-Alier *et al.*, 2010). An expanding economy requires increased consumption, thus the need to increase resource provision. Resource extraction of minerals such as copper produces socio-environmental costs like water pollution (Martinez-Alier, 2001; Perrault, 2013). These costs are implicit in the economic system and will be borne by a third party (Kapp, 1978). Thus, excluding the costs extent discussion in the Nussir case, some costs will appear and will be shifted upon the environment and those that use it. This is because increasing material extraction will lead to land-use change, and as the outputs of economic activity does not disappear but will change the environmental conditions through waste disposal.

Since there is a finite copper supply within the currently mined reserves which either run out or become degraded to the extent they are no longer economically viable to extract, this pushes the commodity frontiers into new areas (Moore, 2000, 2003). Very few areas are not under use by pre-existing social groups, and even in cases where the area is not under direct use questions concerning justice arise to the long-term and spread of effects, e.g. energy or climate justice (Jenkins *et al.*, 2016). In Finnmark most of the land area is used by the reindeer herders and the marine resources are used by fisheries, from small-scale Norwegian and Sea-Sámi fishers, to large multinational vessels and aquaculture companies. Both terrestrial and marine areas are also used for recreation. Thus, it is likely that these actors will have to experience parts of the costs associated with new industries such as mineral extraction due to conflicting resource use and access to both land and marine areas. In essence, this is what Harvey (2004) calls ‘accumulation by dispossession’, meaning further capital accumulation (economic growth) by capital owners results in the need to invest that capital in underdeveloped areas where resources are available. Thus, the constant need for geographical capitalist expansion means that existing uses of the environment and the land vital for current settlements will have to be conquered to increase production. Perrault (2013) brings this aspect further to show that the accumulation of toxins and other forms of contamination can dispossess previous users through enclosure. By polluting the water to the extent that it cannot be used for other socio-economic activities, the previous users are dispossessed of their livelihoods. In different forms, through slightly different means depending on ecological, geographical, technological, demographic, and socio-cultural factors, mineral extraction

throughout the world's commodity frontiers from the Andes to Northern Canada show the same pattern of environmental justice conflicts arising from the uneven cost-benefit distribution, rights to land, protection of livelihoods, lack of recognition, and marginalization in political processes (Agyeman *et al.*, 2010; Bebbington, 2012; Bebbington & Bury, 2013; Bebbington *et al.*, 2008a, 2008b; Gordon, 2010; Martinez-Alier, 1997, 2001, 2002, 2009; Martinez-Alier & O'Connor, 1996, 1999; Martinez-Alier *et al.*, 2010, 2016; Muradian *et al.*, 2010). Thus, the socio-ecological conflicts arising from mineral extraction cannot be ignored.

It has been the marine consequences that have received the largest attention, and it is important to propose an understanding how this dimension is added to the project as the actors have disagreed over the most socio-environmentally sustainable way to deal with the mining waste. The private costs of holding rights and maintaining the status entails pursuing extraction now rather in the future (Kapp, 1978). However, low mineral prices can restrict revenue and push extraction to lowest possible costs. Thus, issues such as dealing with mining waste, central to the mining conflict in Kvalsund, become pushed to the cheapest possible solution because the costs of more sustainable alternatives are too expensive. The opponents argued this point. Especially as it is costly to wait around for potentially more sustainable solutions. Costs are pushed onto third parties because the operating company needs to maximize revenue. In the Nussir case, if a different alternative of dealing with the waste from the mine had been chosen that was found legitimate by the stakeholders and the public, the conflict would have been decreased to a conflict over land use with reindeer herders primarily. An alternative option would still have to be an option excluding land tailings, despite some actors having reflected that land tailings are better. However, land tailings would most likely not have been an option as it is too expensive, the mining proponents claimed it was worse and acknowledged that the costs for reindeer herders would have been severe. Some respondents saw the mine itself to impose restrictions on terrestrial recreation, but this has not been a substantial part of the conflict.

### 6.5 Limitations and challenges in the research

There are some limitations in the results too keep in mind. Firstly, some impacted stakeholders were excluded. Except from the representative from the hunting and fishing association, there is a lack of actors who use the area through other means, such as cabin owners, tourism, the aquaculture industry, and sport fishers. As there are 1300 cabins in the area, their view is important. One fisherman also argued that the heaviest users were the Hammerfest population, which neither were included in the survey. As 3000 people use the

Repparfjord river for fishing, their view would have been important. An attempt at remedying this was done by making the electronic survey, but with 35 respondents and mostly not representing the lacking actors, those responses were used as a source of additional conflict understanding, and not for statistics.

In the statistics itself there are also a few weaknesses. Firstly, there is a skew towards older respondents. This might be because that there is a relatively older population in Kvalsund (SSB, 2017), but also that retirees especially had the time and willingness to take the survey. There is also a larger representation by males in the sample, which is believed to be of two reasons. Firstly, including reindeer herders made the sample skewed in gender, due to most active herders being males. Secondly, for an unknown reason, males were more willing to discuss the case and respond to the survey in the community. One reason for this might be that they had a stronger opinion, but this suggestion is only based on an undocumented feeling that more women responded that they didn't have an opinion when declining the offer to participate in the survey. Many of those who did not want to participate in the survey said it was because they did not have a strong opinion or didn't know the facts. The uncommitted narrative might thus become underrepresented.

Unfortunately, the results exclude the respondents' employment. In the questionnaire the employment categories of Norwegian Statistics Bureau (SSB) (2017) were used as options. However, this became a cluster due to category misunderstandings, and while the exact profession for many respondents were written down, some were just ticked off. In the aftermath, it was difficult to remedy this, for example only 2 people in the sample belonged to the "Secondary industry" option, while according to SSB (2017) it is 95 of about 450 people. Since the employment variable did not have a significant relationship with attitude towards the project (except for fishers and reindeer herders), it was thus dropped.

Still, the mixed-method approach provides opportunities for triangulation, facilitation, and complementarity (Bryman, 2012). The two data forms which tell the same story provide validity through a better result explanation. The tests of dependence also show that there is a significant relationship between the variables and the three narratives.

There are many aspects, theories, analytical viewpoints, and concepts that could have been expanded upon in this thesis. These are excluded due to lacking space. For example, while gender is very important in environmental justice work (Schlosberg, 2007) and in political ecology (Gonda, 2016; Mollet & Faria, 2014; Nightingale, 2004), it has been of restricted

importance in this thesis. The results didn't show any interesting differences in gender, or any aspects that showed that gender was important, but that doesn't mean it isn't. Deeper analysis and thinking about how gender plays out could have provided different results and is suggested as a further study on environmental justice in the Arctic on extractive industries.

The limited inclusion of several theoretical viewpoints to analyse the data, such as the applicability of environmental governance is due to lacking time and space. An interesting point to analyse is the marine environmental monitoring requirement and the governments goals for marine quality. Other points, for example ecological justice, meaning doing justice to the natural world (in terms of recognition, participation, distribution, and capabilities) should be seen in relevance to environmental justice (Schlosberg, 2007). The actors in the case-study, especially the environmental organisations, included arguments that pointed towards ecological justice theory and could thus be interesting to follow up on. Furthermore, the thesis did not include capabilities to a large extent, which has the potential to enhance the framework (Walker, 2009b). Neither did the thesis discuss the impact on future generations to a large extent. The expected impacts, especially the costs, from the Nussir project will be borne by future generations as well, which several stakeholders pointed out. The enclosure of land will restrict future reindeer pastoralism in the area, and reduced fishing possibilities will be present until the Repparfjord has recovered from the sea-tailings (unless the ecosystem is pushed over to another state which it likely cannot recover from). Overall, the thesis did neither include the ecology that is required to discuss impacts due to the stronger focus on social elements in the framework. Interesting would also be a larger discourse analysis as the actors consistently use language as a powerful tool to affect both public opinions and decision-making.

A challenge might be concerning limitations within the environmental justice framework. The approach builds strongly on the stakeholders' subjective positions understood through a narrative analysis. A larger part of the conflict is concerning complex disputes over impacts. Their positions cannot be analysed against the IAs since there is a distrust in parts of the IA from both sides. Though, this issue relies also upon the epistemological and ontological positions of the researcher and the reader. The reader should be reminded of the environmental justice framework's normative position. All frameworks hold normative positions (Benjaminsen & Svarstad, 2017; Robbins, 2012). Other frameworks might find the acquired legitimacy of a majority to be enough to conclude that it is just, because it will benefit a majority. This is also in line with the SLO perspective. Certain instrumental

frameworks share this view, in example CBAs, which asserts a consequentialist perspective (see Vatn, 2015). The environmental justice framework refutes such simple analysis of the size of benefits and costs and is concerned with their distribution. Furthermore, EJ is concerned with recognition of minorities values and their participation in the process explicitly, but not exclusively.

Another dimension that became visible through the research was how non-indigenous actors perceived the rights of the Sámi to be unfair and thus denying the rest of the population in Finnmark the opportunity to develop (see also Hellesvik, 2017; cf. Lile, 2013). Though, such aspects can be discussed not only in terms of the need for positive discrimination (Lile, 2013), but also the story of Finnmark as a colony. Or regarding political theories of imposing decisions that benefit everyone and not a majority of the population.

A weakness was also that actors on higher levels of the decision-making process, except from the NEA, were not interviewed. While the focus was initially on the local conflict, their decisions became important to understand the conflict. Due to a perceived constraint in the space to discuss results, these actors were not interviewed but included through analysis of policy documents. To build on this research actors from the five ministries involved, the elected government, the county government, and more directorates should be included. As well as more interviews with consultancy agencies, the mineral industry, and researchers.



## 7. Conclusion

As society's social metabolism grows, so does the need for more materials and energy to enter economic production. As materials and energy are found in a limited supply within the current extractive areas, the degradation of these supplies leads to pushing the extraction frontiers into new areas (Moore, 2000). The Arctic is such a commodity frontier, Northern Norway included. When mining for essential materials take place in new communities it brings possibilities for development but also ecological distribution conflicts (Bebbington *et al.*, 2008a). These ecological distribution conflicts are conflicts over values, livelihoods, and cost-benefit distributions (Martinez-Alier, 2002). Conflicts can be studied through the environmental justice framework with a focus on recognition, procedural justice, and distributional justice (Schlosberg, 2004). Procedural justice is both an element of justice itself, and necessary for a just outcome (Schlosberg, 2007). A just outcome entails a fair cost-benefit distribution, where socio-environmental costs are not shifted upon impacted stakeholders (Kapp, 1978).

The conflict that has resulted from the suggested Nussir mining project is a characteristic ecological distribution conflict. On one side the proponents argue for the benefits that flow from mining development in terms of job creation, immigration, and monetary income. The copper supply found in Repparfjorden is Norway's largest copper reserve and holds great promises of extraction. On the other side the opponents argue the project conflicts with environmental values and uses, traditional livelihoods such as reindeer herding and fisheries and indigenous culture and rights. The mine will take place on reindeer herding territory, a frequently used recreation area, and will include disposing mining waste as sea-tailings in the Repparfjord.

The process has to a certain extent recognized different socio-environmental uses and values. While the impacted stakeholders have had a chance to affect the inclusion of interests and values in the process and in decision-making, the interests and values of mining and development has won forth. This seems to be for three reasons. Firstly, the competing values are incommensurable. The traditional and environmental values are measured by the same metric in comparison to the interest in mining and the benefits. The latter holds stronger economic and political interests. Therefore, when higher level decisions are taken such as the Norwegian Environmental Agency's discretionary decision over the Pollution Act of 2009, the economic and political interests outweigh all other interests. Secondly, the degree different socio-environmental values and uses were incorporated did not result in a common

expectation of the impacts due to conflicting views over knowledge. Actors concerned with the environmental impacts argued the knowledge was incorrect, partly due to excluding TK in reports and decisions. Thirdly, affected stakeholders' interests have not been incorporated to a degree satisfactory to these stakeholders. Both fishers and herders argue they are not heard, and the structural misrecognition of reindeer herding and small-scale fisheries serves the political will to establish other land uses in Finnmark. The fishers' interests were only taken into consideration by the municipality, who did not expect any significant negative impact on fisheries. While no decision-maker recognized reindeer herders' interests. The conflict thus concerns recognition of culture, values, uses, and interests, but also expected impacts.

The process did include options for participation for all impacted stakeholders, but the success of participation depends on the recognition of the stakeholders' interests and their ability to impact the process. The shortcomings can result from the power asymmetries in the process, as well as limiting participation to consultation. Firstly, the mining company Nussir has had a large influence on the process and the community interests. The Ministry of Agriculture's position seemed to have been persuaded by Nussir and the new government in 2013. Reindeer herders have not been able to affect the process as their interests are not important to the local community, they do not have any representatives in the municipal board, and they lack the resources to affect decision-making. Secondly, the fisheries sector and the impacted environmental users has had a larger opportunity to influence the process, however their conflict has been more concerned with the opposing narratives on the impacts the sea-tailings will have. Though, they also lack recognition of their culture and values. Fishers and environmental users also face challenges concerning resources to affect both opinions and decisions. Thirdly, according to legal scholars the impacted Sámi stakeholders' narrative are in violation with the national laws of the Mineral act of 2009, the Finnmark act of 2006, and the Plan and Building Act of 2009. The process is neither in compliance with international laws which Norway is a signatory, such as ILO 169 requiring indigenous self-determination through Free, Prior and Informed Consent. Fourthly, the political will to establish this project has entailed that the competing interests loose-out and conflict is not resolved. The nonrecognition of the Sámi culture of reindeer herders and fishers, and the belief that conflicts is solved through dialogue, serves the political interests to expand the mining industry in Northern Norway. When conflict is not resolved, it is neglected, as seen by the government pushing responsibility of impact mitigation in relation to reindeer herding on the mining company, who does not recognize herders' claims or interests.

Ultimately, the actors struggle for disputes over the expected socio-environmental benefits and costs, and their distribution. Firstly, the disagreements over the Impact Assessment concerns both the impact on reindeer herding, ecosystem impacts, and on fisheries through marine pollution. While the proponents argue neither will be significantly affected, the opponents argue the socio-environmental costs are shifted upon traditional (Sámi) livelihoods. Secondly, this translates to a conflict over whether the herders and the fisher will benefit, and the Sámi culture thus strengthened, or if they will be further marginalized through cost-shifting. The cost-shifting is seen as implicit in the extraction of materials from the environment and the waste it generates, and as a feature of the profit-seeking private business (Kapp, 1978).

Though, the thesis also raises the question of justice and scale, which remains unanswered. Who should decide the process and outcome, or simply who decides if we should mine? At the municipal scale the simple majority is in favour, on a county scale the simple majority is against. At the national scale the democratically elected government is eager to expand the mineral industry. Thus, the questions at which scales such decisions should be taken and who becomes the subjects of justice are questions that should be further discussed, both within academia and in public debate in Norway.

While there has been up to now an increasing interest in research of mining in the Arctic, there are a few points to consider in terms of environmental justice. The research on Social License to Operate (SLO) (Koivurova *et al.*, 2015b) does not fulfil the requirements of a mining project in the environmental justice discourse, as a project can receive legitimacy and community support while still creating conflict with a marginalized and less powerful group in society. The focus on sustainability in mining across the Arctic (Dale *et al.*, 2018; Kokko *et al.*, 2015) does neither have an adequate justice dimension.

This does not mean that aspects of justice are completely excluded. In their book Dale *et al.* (2018) criticize the ecological modernisation view to lack sustainability for all by analysing several mining cases in the Arctic, while also mentioning justice. Other scholars such as Skogvang (2013) in discussing the legal dimension of mining in indigenous areas have been straightforward: “I am sorry to say that in Norway, the principle of sustainable development, does not fully apply for the Sami communities.” (p. 343). Though aspects of justice cannot be reduced to indigenous rights in the Arctic, despite most Arctic land areas belonging to indigenous groups, from Canada to Russia. How current and future conflicting land uses create environmental justice conflicts are not exclusive to indigenous populations.

Furthermore, outside Arctic Norway other mining projects are creating conflict with traditional livelihoods and environmental concerns, such as in the Førdefjord in Western Norway.

Importantly, the government seeks to expand resource extraction in Northern Norway and sees mining as key to economic growth and development. This will likely increase conflict with existing land uses. As the Nussir case demonstrates, mineral expansion is not likely to secure justice to affected stakeholders when extraction demands nonrecognition and exclusion of impacted stakeholders, while shifting costs over to these actors. Thus, further research on extractive industries development in the Arctic can be accompanied by an environmental justice framework where recognition, participation, and distribution are separate and interlinking issues. The framework can also be strengthened by the political ecology framework and the focus on power (Svarstad & Benjaminsen, in prep). As such, the expanding interest in political ecology on issues in the Global North and on mining, is well accompanied by a focus on environmental justice.

In conclusion, the conflict over the Nussir copper mining project has been a conflict over environmental justice. According to the environment justice framework, up to this point in the process, the marginalization of the opponents through the dominance of political power has led to an unjust procedure where impacted stakeholders' values and participation has not been recognized or led to a change in the mining plans. Their exclusion is due to the structural processes that emphasize industrial values over traditional values and the political will to mine. The expected outcome, somewhat uncertain, is potentially unjust as benefits can be experienced by the local community, the mining company, and the government, and potentially regional actors. Though, coppers' role in the green shift and for justice is not resolved. Meanwhile, the costs can be shifted upon the users of the ecosystem services that are generated by the terrestrial and marine environment. This is especially a concern for reindeer herders and fisheries, but also for general users of the environment for recreation and food supply and future generations. By prioritizing mineral development in Northern Norway, the decision-makers predetermines that the environment, traditional livelihoods, cultures, values, and uses are sacrificed (see Reinert, Forthcoming). Furthermore, they are legitimate trade-offs in the view of the government. The larger societal benefits from mineral development is worth more than any socio-ecological costs. Thus, the Northern Norwegian mineral frontier expansion hinges on nonrecognition, disregarding impacted stakeholders, cost-shifting and dispossession if it follows the Nussir showcase.

## 8. References

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# Spørreskjema om gruvedrift

For masteroppgaven om Nussir/Ulveryggen og lokalsamfunn

Jeg er en masterstudent fra NMBU som i perioden 2017/2018 skriver masteroppgave om Nussir/Ulveryggen gruveprosjektet i Kvalsund, Finnmark. Jeg samler inn data, både intervjuer og spørreundersøkelser, for å evaluere gruveprosjektet og folks mening. Jeg er interessert i å se hvordan ulike aktører oppfatter prosessen og verdiene rundt prosjektet, og hva folk forventer av fordeler og ulemper. Dette spørreskjemaet er en del av denne oppgava, og søker å kartlegge befolkningens og de tilknyttet Kvalsund sin vurdering. Deltakelse er anonymt, og kan ikke spores.

Mvh

Anders Vieth Rør

[Anders.vieth.ror@nmbu.no](mailto:Anders.vieth.ror@nmbu.no)

95448344

## Del I: Generell informasjon

1. Kjønn:
  - a. Mann
  - b. Kvinne
  - c. Annet
  
2. Alder, i antall fylte år:
  
3. Hvilken kommune er du bosatt i?
  - a. Kvalsund
  - b. Hammerfest
  - c. Alta
  - d. Porsanger
  - e. Hasvik
  - f. Måsøy
  - g. Kautokeino
  - h. Karasjok
  - i. Annen kommune i Finnmark

- j. Annen kommune i Norge
  - k. Ikke bosatt i Norge
4. Hvor lenge har du bodd i området, i antall år:
5. Hvis bosatt i en annen kommune, hvilken tilknytning har du til Kvalsund?
- a. Arbeid
  - b. Sekundær bolig
  - c. Familie
  - d. Friluftsliv/Jakt/fiske
  - e. På besøk/turisme
  - f. Annet
6. Hvilket yrke har du? Etter SSBs inndeling
- a. Jordbruk, skogbruk eller fiske: hvorav
    - i. Reindriftsame
    - ii. Yrkesfisker
    - iii. Deltid reindriftsame
    - iv. Deltid fisker
  - b. Varehandel, hotell, restaurant, samferdsel, finanstjenester, forretningsmessig tjenester, eiendom
  - c. Off. administrasjon, forsvar, sosialforsikring
  - d. Personlig tjenesteyting
  - e. Sekundærnæring
  - f. Undervisning
  - g. Helse – og sosialtjenester
  - h. Student
  - i. Annet, som pensjonist, uføretrygdet osv.
  - j. Vet ikke

## Del II: Personlig Forventning

7. Innen slutten av 2018 er det forventet at Nussir ASA er i gang med utvinning av mineralet kobber i Kvalsund, med påfølgende sjødeponi i Repparfjorden. Hvordan forholder du deg til Nussir prosjektet?
- a. Veldig Positiv
  - b. Positiv
  - c. Midt på tre
  - d. Negativ
  - e. Veldig negativ
  - f. Har ikke noe mening
  - g. Vet ikke

8. Hvorfor har du det forholdet til gruvedrift (som bevart over, altså f. eks: hvorfor positiv)?
9. Hvorfor er naturområdet Repparfjorden, Nussir og Ulveryggen viktig for deg?
10. På hvilke måter bidrar naturen i dette området til din livskvalitet/velferd?
11. Hvilke verdier er viktig for deg i planområdet Repparfjorden, Nussir og Ulveryggen?
12. Hva forventer du prosjektet vil bidra med av fordeler?
13. Hva forventer du prosjekter vil bidra med av ulemper?

### Del III: Verdier og prosess

14. Hvilke verdier føler du har veid mest i beslutningsprosessen?
  - a. Pengeverdier
  - b. Kulturelle verdier
  - c. Sosiale verdier
  - d. Naturverdier
  - e. Politiske verdier
  - f. Andre verdier:
    - i. Vennligst spesifiser:
  - g. Vet ikke
  - h. Ingen mening
15. Hvilke verdier føler du **ikke** har blitt viet nok oppmerksomhet i prosessen?
  - a. Pengeverdier
  - b. Kulturelle verdier
  - c. Sosiale verdier
  - d. Naturverdier
  - e. Politiske verdier
  - f. Andre verdier:
    - i. Vennligst spesifiser:
  - g. Vet ikke
  - h. Ingen mening
16. Føler du at ditt bruk av naturen og dine verdier har blitt inkludert i prosessen for godkjenning av gruvedrift på Nussir/Ulveryggen?
  - a. Ja
  - b. Nei
  - c. Vet ikke
17. Hvorfor føler du at ditt bruk og dine verdier er blitt/ikke blitt inkludert?

18. Hvilke av følgende hensyn synes du er mest ivaretatt i prosessen (Sett kryss ved de hensyn du føler er ivaretatt):

- a. Arbeidsplasser
- b. Økonomisk vekst og utvikling
- c. Miljø
- d. Fiske (både sjø og elv)
- e. Reindrift
- f. Friluftsliv
- g. Mineralbehov
- h. Andre, vennligst spesifiser:

19. Hvilke av følgende hensyn er **ikke** ivaretatt i prosessen (Sett kryss ved de hensyn du føler **ikke** er ivaretatt):

- a. Arbeidsplasser
- b. Økonomisk vekst og utvikling
- c. Miljø
- d. Fiske (både sjø og elv)
- e. Reindrift
- f. Friluftsliv
- g. Mineralbehov
- h. Andre, vennligst spesifiser:

20. Til hvilken grad føler du at prosessen har vært åpen for deg og andre?

- a. I stor grad
- b. I middels grad
- c. I liten grad
- d. Ikke åpen prosess
- e. Vet ikke
- f. Har ikke deltatt i prosessen

21. Hvorfor føler du prosessen har vært åpen/middels åpen/ikke åpen?

22. Hvordan kunne prosessen vært mer åpen?

23. Hvem mener du har kunne bidratt til prosessen som ikke har blitt inkludert?

24. Hvem mener du har bidratt til prosessen i større grad enn de burde?

25. Føler du at du har fått medvirke i beslutningsprosessen til prosjektet?

- a. Ja
- b. Nei
- c. Vet ikke
- d. Vil ikke svare

26. Hvis ja, hvordan har du fått medvirke i beslutningsprosessen?

27. Hvis nei, hvorfor har du ikke fått medvirke i beslutningsprosessen?

## Del IV: Fordeler og kostnader

28. Forventer du selv å oppleve fordelene eller ulemperne av prosjektet?

- a. Fordeler
- b. Ulemper
- c. Begge deler
- d. Ingen av de
- e. Vet ikke

29. I sin helhet, hvordan forventer du at prosjektet vil påvirke deg?

- a. Positivt
- b. Negativt
- c. Begge deler
- d. Ingen av de
- e. Vet ikke

30. Hvordan vil prosjektet endre ditt bruk av området?

31. Hvordan tror du prosjektet vil påvirke Kvalsund som samfunn?

- a. Positivt
- b. Negativt
- c. Begge deler
- d. Ingen av de
- e. Vet ikke

32. Hvorfor tror du prosjektet påvirke samfunnet i den grad som besvart ovenfor:

33. Hvis noen, hvilke samfunnsgrupper/yrker forventer du får oppleve flest fordeler av prosjektet?

34. Hvorfor vil de samfunnsgruppene/yrkene oppleve flest fordeler?

35. Hvis noen, hvilke samfunnsgrupper/yrker forventer du opplever flest ulemper av prosjektet?

36. Hvorfor vil de samfunnsgruppene/yrkene oppleve flest ulemper?

37. Hva årslønna di, i kategorier:

- a. 0-50 000
- b. 50 00 – 150 000
- c. 150 000 – 250 000
- d. 250 000 – 350 000
- e. 350 000 – 450 000
- f. 450 000 – 550 000

- g. 550 000 – 650 000
- h. 650 000 – 750 000
- i. 750 000 og høyere

38. Kommunen vil kreve inn eiendomsskatt, samt vil kommunen kreve inn inntektsskatt på de arbeiderne bosatt i kommunen (det er forventet 150 arbeidsplasser, men hvor mange som vil være bosatt i Kvalsund er vanskelig å anslå). Prosjektet vil også ha større ringvirkninger med tanke på kontrakter til andre næringer. I tillegg utarbeides det en ringvirkningsavtale mellom kommunen og Nussir hvor målet er årlig avsetning til lokale prosjekter og fond, hvor pengene blir styrt av en folkegruppe. Er dette tilfredsstillende, eller burde det mer eller mindre kommunal og lokal

inntjening?

- a. Mer
- b. Mindre
- c. Tilfredsstillende
- d. Vet ikke
- e. Vil ikke svare

39. Vil fordelingen av fordeler og ulemper være rettferdig?

- a. Ja
- b. Nei
- c. Vet ikke
- d. Vil ikke svare

40. Hvis fordelingen er rettferdig, hvorfor? Hvis ikke, hvorfor er ikke fordelingen rettferdig?

## Del V: Etnisk og nasjonal tilhørighet

41. Hvilken etnisitet tilhører du?

- a. Norsk, Svensk, Dansk
- b. Samisk
- c. Kven
- d. Finsk
- e. Russisk
- f. Annet:
- g. Vet ikke

42. Hvilken nasjonalitet har du?

- a. Norsk
- b. Svensk
- c. Finsk
- d. Dansk
- e. Russisk
- f. Annet:
- g. Vet ikke



## Appendix 2 Interview guide



# Intervjuguide til Masteroppgave med Tittel: «Environmental Justice in Resource Extraction»

### **Formål med intervju:**

Intervjuer vil bli forbeholdt primære og sekundære interessenter med tilknytning til gruveprosjektet i Kvalsund i form av yrke, bosted, interesseorganisasjoner, fagorganisasjoner osv.

### **Oppsett:**

Intervjuene vil være semi-strukturerte og vil ta opp en rekke temaer (listet nedenfor) med mulighet for utfyllelse og videreføring av temaet gitt personens fokus og tilknytning til prosjektet.

### **Temaer:**

Personopplysninger som alder, kjønn, etnisitet, yrke, posisjon, interesser, medlemskap i lag/foreninger.

Tilknytning til Kvalsund og forhold til Nussir prosjektet.

Miljøverdier og bruk av økosystemtjenester i Kvalsund/Repparfjorden.

Forventende personlige fordeler og kostnader ved Nussir prosjektet.

Personlig innflytelse på prosjektet.

Personlig påvirkning av prosjektet.

Verdsetting av miljø og Nussir prosjektet.

Kultur, verdier og interesser i prosessen og beslutninger.

Kvalitativ og kvantitativ bruk av ulike naturgoder.

Rettferdighet og kostnadsskiftning.

Makt, økonomi, og politikk.

Syn på politisk styring.

Diskurser.

## Appendix 3 Extended quantitative findings

*Table Appendix3.1 Extended quantitative findings on socio-environmental values and uses, divided by narrative.*

Narrative: Topic:	Proponents	Uncommitted	Opponents
Why area is important	<ul style="list-style-type: none"> <li>- The area is not important 22p, (p=0.001)</li> <li>- Minerals 3p</li> <li>- Recreation 8p, (p=0.1)</li> </ul>	<ul style="list-style-type: none"> <li>- The area is not important 6p, (p=0.001)</li> <li>- Fishing 10p, (p=0.001)</li> <li>- Recreation 4p, (p=0.1)</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing 23p, (p=0.001)</li> <li>- Next generation 3p</li> <li>- Reindeer herding 21p, (p=0.001)</li> <li>- Recreation 12p, (p=0.1)</li> </ul>
Contribution to welfare	<ul style="list-style-type: none"> <li>- Doesn't contribute 22p, (p=0.001)</li> <li>- Aesthetically 3p</li> <li>- Recreation 12p</li> </ul>	<ul style="list-style-type: none"> <li>- In every aspect 3p, (p=0.05)</li> <li>- Doesn't contribute 6p, (p=0.001)</li> <li>- Aesthetically 3p</li> <li>- Fishing 3p (p=0.1)</li> <li>- Recreation 7p</li> </ul>	<ul style="list-style-type: none"> <li>- In every aspect 13p, (p=0.05)</li> <li>- Aesthetically 3p</li> <li>- Fishing 11p (p=0.1)</li> <li>- Positively through use 4p, (p=0.01)</li> <li>- Recreation 6p</li> <li>- Reindeer herding aspects 14p, (p=0.001)</li> </ul>
Important values	<ul style="list-style-type: none"> <li>- No important values 16p, (p=0.001)</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing 10p (p=0.01)</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing 18p (p=0.01)</li> </ul>

	<ul style="list-style-type: none"> <li>- Fishing 6p (p=0.01)</li> <li>- Recreation 5p, (p=0.1)</li> <li>- Available nature 6p</li> <li>- Industry/minerals 6p, (p=0.05)</li> </ul>	<ul style="list-style-type: none"> <li>- Recreation 6p, (p=0.1)</li> <li>- No important values 3p, (p=0.001)</li> <li>- Available nature 6p</li> <li>- Industry/minerals 2p, (p=0.05)</li> </ul>	<ul style="list-style-type: none"> <li>- Recreation 11p, (p=0.1)</li> <li>- Spawning area for fish 3p</li> <li>- Food production 4p</li> <li>- Available nature 14p</li> <li>- Reindeer herding 10p, (p=0.01)</li> <li>- Grazing/calving areas 7p, (p=0.05)</li> </ul>
Values that have been most important in the process	<ul style="list-style-type: none"> <li>- Political values, e.g. copper, political interest 8p</li> <li>- Social values, e.g. employment, immigration 25p (p=0.1)</li> <li>- Monetary values, e.g. income, profit 22p, (p=0.1)</li> <li>- Don't know 7p, (p=0.05)</li> </ul>	<ul style="list-style-type: none"> <li>- Social values, e.g. employment, immigration 9p (p=0.1)</li> <li>- Don't know 6p, (p=0.05)</li> <li>- Monetary values, e.g. income, profit 9p, (p=0.1)</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Political values, e.g. copper, political interest 11p</li> <li>- Social values, e.g. employment, immigration 11p (p=0.1)</li> <li>- Monetary values, e.g. income, profit 30p, (p=0.1)</li> <li>-</li> </ul>
Values that have not received adequate attention in the process	<p>The value of local democracy.</p> <ul style="list-style-type: none"> <li>- None 17p, (p=0.001)</li> <li>- Don't know 12p</li> <li>- Social values, e.g. impact on fishers/herders 7p, (p=0.001)</li> <li>- Cultural values, e.g. Sea-Sámi culture 4p, (p=0.001)</li> </ul>	<ul style="list-style-type: none"> <li>- Natural values, e.g. env impact 13p, (p=0.001)</li> <li>- Social values, e.g. impact on fishers/herders 5p, (p=0.001)</li> <li>- Cultural values, e.g. Sea-Sámi culture 4p, (p=0.001)</li> </ul>	<p>Nature and our dependency on ES. Sami culture.</p> <ul style="list-style-type: none"> <li>- Natural values, e.g. env impact 36p, (p=0.001)</li> <li>- Cultural values, e.g. Sea-Sámi culture 26p, (p=0.001)</li> <li>- Social values, e.g. impact on fishers/herders 23p, (p=0.001)</li> <li>-</li> </ul>
Feel their uses/values are included,	<p>Yes: 28p No: 9p Because:</p>	<p>Yes: 9p No: 8p Because:</p>	<p>Yes: 1 No: 38 Because:</p>

and why/why not (general p=0.001)	<ul style="list-style-type: none"> <li>- Don't affect my use 8p, (p=0.1)</li> <li>- Don't use the area 19p (p=0.001)</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Don't affect my use 4p, (p=0.1)</li> <li>- Don't use the area 5p (p=0.001)</li> <li>- Fishing is not respected 3p, (p=.0.01)</li> </ul>	<ul style="list-style-type: none"> <li>- Fishing is not respected 11p, (p=.0.01)</li> <li>- Reindeer herding is not respected 15p, (p=0.001)</li> <li>- Opponents are not heard 4p, (p=0.1)</li> <li>- Other reasons: 7p (p=0.05)</li> </ul>
Considerations cared for	<ul style="list-style-type: none"> <li>- Employment 40p, (p=0.001)</li> <li>- Income and development 39p, (p=0.001)</li> <li>- Environment 36p, (p=0.001)</li> <li>- Fishing 32p (p=0.001)</li> <li>- Reindeer herding 32p, (p=0.001)</li> <li>- Recreation 38p (P=0.001)</li> <li>- Mineral use 39p, (p=0.05)</li> </ul> <p>Explicitly stated a negative/hostile attitude to reindeer herders 15p, (p=0.01)</p>	<ul style="list-style-type: none"> <li>- Employment 10p, (p=0.001)</li> <li>- Income and development 14p, (p=0.001)</li> <li>- Environment 6p, (p=0.001)</li> <li>- Fishing 4p (p=0.001)</li> <li>- Reindeer herding 9p, (p=0.001)</li> <li>- Recreation 12p (P=0.001)</li> <li>- Mineral use 11p, (p=0.05)</li> </ul> <p>Explicitly stated a negative/hostile attitude to reindeer herders 3p, (p=0.01)</p>	<ul style="list-style-type: none"> <li>- Employment 14p, (p=0.001)</li> <li>- Income and development 15p, (p=0.001)</li> <li>- Recreation 7p (P=0.001)</li> <li>- Mineral use 21p, (p=0.05)</li> <li>- Rushfeldt's salary 3p</li> </ul>
Considerations disregarded	<ul style="list-style-type: none"> <li>- Environment 6p, (p=0.001)</li> <li>- Fishing 11p, (p=0.001)</li> </ul>	<ul style="list-style-type: none"> <li>- Environment 15p, (p=0.001)</li> <li>- Fishing 16p, (p=0.001)</li> <li>- Reindeer herding 9p, (p=0.001)</li> <li>- Recreation 6p, (p=0.001)</li> </ul>	<ul style="list-style-type: none"> <li>- Employment 18p, (p=0.001)</li> <li>- Income and development 16p, (p=0.001)</li> <li>- Environment 41p, (p=0.001)</li> <li>- Fishing 41p, (p=0.001)</li> <li>- Reindeer herding 37p, (p=0.001)</li> <li>- Recreation 29p, (p=0.001)</li> <li>- Mineral use 5p, (p=0.1)</li> </ul>

Table Appendix3.2 Extended quantitative findings concerning process and participation, divided by narrative.

Narrative: Topic:	Proponents	Uncommitted	Opponents
Degree the process has been open	High degree: 39.1% of sample 29 of 45 positive) (p=0.001) Due to: <ul style="list-style-type: none"> <li>- Open meetings (p=0.01)</li> <li>- Media (p=0.001)</li> <li>- Available Information (p=0.001)</li> </ul>	Average degree: 25.5% of sample (p=0.001) Due to: <ul style="list-style-type: none"> <li>- Open meetings (P=0.01)</li> <li>- Media (p=0.001)</li> <li>- Available Information (p=0.001)</li> <li>- Only positive aspects presented (p=.01)</li> <li>- Lack of info (p=0.001)</li> <li>- Political pressure (p=0.05)</li> </ul>	Low degree: 15.5% Closed: 8.2% (p=0.001) 17 of 41 negative Due to: <ul style="list-style-type: none"> <li>- Only positive aspects presented (p=.01)</li> <li>- Lack of info (p=0.001)</li> <li>- Political pressure (p=0.05)</li> </ul>
Ways the process could have been better	<ul style="list-style-type: none"> <li>- Could not have been more open (p=0.001)</li> <li>- More info</li> </ul>	<ul style="list-style-type: none"> <li>- All actors should have been included/heard (p=0.001)</li> <li>- More info</li> </ul>	<ul style="list-style-type: none"> <li>- Better dialog with affected actors (p=0.01)</li> <li>- All actors should have been included/heard (p=0.001)</li> <li>- More info</li> <li>- Could have provided the correct info</li> </ul>
Who could have been more included in the process	<ul style="list-style-type: none"> <li>- Nobody 24p, (p=0.001)</li> <li>- Not sure 13p</li> </ul>	<ul style="list-style-type: none"> <li>- Nobody 6p, ((p=0.001)</li> <li>- (Environmental consultants 2p)</li> <li>- (Reindeer herders 2p,(p=0.01))</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental consultants</li> <li>- Reindeer herders 8p, (p=0.01)</li> <li>- Not sure 18p</li> </ul>

		- Not sure 5p	
Who has had too much influence (general p=0.01)	<ul style="list-style-type: none"> <li>- Sámi parliament 6p</li> <li>- Reindeer herders 16p</li> <li>- Not sure/didn't respond 17p</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- - Rushfeldt and Nussir ASA 5p</li> <li>- Not sure/didn't respond 9p</li> </ul>	<ul style="list-style-type: none"> <li>- Rushfeldt and Nussir ASA 19p</li> <li>- Not sure/didn't respond 13p</li> <li>- Municipality and local politicians 9p</li> </ul>
Have you contributed to the process, and how	<p>31 no, 12 yes through:</p> <ul style="list-style-type: none"> <li>- Political participation 6p</li> <li>- Personal relation to Rushfeldt 3p</li> <li>- Other 2p</li> </ul>	13 no, 5 yes through dispersed ways	36 no, 5 yes through dispersed ways

*Table Appendix 3.3 Extended quantitative findings concerning benefits and costs, including their distribution, divided by narrative*

Narrative:	Proponents	Uncommitted	Opponents
Topic:			
Expected benefits	<ul style="list-style-type: none"> <li>- Employment 29p, (p=0.05)</li> <li>- More people and action in the area 22p, (p=0.01)</li> <li>- General income</li> <li>- Development</li> </ul> <p>Positive repercussions</p>	<ul style="list-style-type: none"> <li>- Employment 14p, (p=0.05)</li> <li>- More people and action in the area 10p, (p=0.01)</li> <li>- General income</li> <li>- Development</li> </ul> <p>Positive repercussions</p>	<ul style="list-style-type: none"> <li>- Employment 14p, (p=0.05)</li> <li>- Few benefits: <ul style="list-style-type: none"> <li>o General income</li> <li>o More people</li> <li>o Positive repercussions</li> </ul> </li> </ul> <p>No benefits 16p, (p=0.001)</p>
Expected costs	<ul style="list-style-type: none"> <li>- Marine pollution 22p, (p=0.01)</li> <li>- No costs 14p, (p=0.001)</li> </ul>	<ul style="list-style-type: none"> <li>- Marine pollution 19p, (p=0.01)</li> <li>- Increased traffic in the area</li> </ul>	<ul style="list-style-type: none"> <li>- Loss of reindeer territory 19p of (p=0.001)</li> <li>- Marine pollution 33p, (p=0.01)</li> <li>- Environmental degradation 11p, (p=0.1)</li> <li>- Noise and dust 5p (p=0.1)</li> </ul>

			- Increased traffic in the area
Who gets the benefits and why	<ul style="list-style-type: none"> <li>- Laborers 29p</li> <li>- Tertiary sector 12p</li> <li>- Municipality 4p</li> </ul> <p>Through</p> <ul style="list-style-type: none"> <li>- Employment</li> <li>- Positive repercussion</li> <li>- Municipal Income</li> </ul>	<ul style="list-style-type: none"> <li>- Laborers 15p</li> <li>- Tertiary sector 6p</li> </ul> <p>Through</p> <ul style="list-style-type: none"> <li>- Employment</li> <li>- Positive repercussion</li> </ul>	<ul style="list-style-type: none"> <li>- Laborers 24p</li> <li>- Tertiary sector 7p</li> <li>- Nussir 10p</li> </ul> <p>Through</p> <ul style="list-style-type: none"> <li>- Employment</li> <li>- Positive repercussion</li> <li>- Profit</li> </ul>
Who gets the costs and why	<ul style="list-style-type: none"> <li>- Fishers 15p, (p=0.001)</li> <li>- Nobody 14p, (p=0.01)</li> <li>- Reindeer herders 8p, (p=0.001)</li> <li>- Don't know 7p, (p=0.05)</li> </ul> <p>Through:</p> <ul style="list-style-type: none"> <li>- Marine pollution</li> <li>- No costs</li> <li>- Loss of reindeer territory</li> <li>- Not sure</li> </ul>	<ul style="list-style-type: none"> <li>- Fishers 12p, (p=0.001)</li> <li>- Reindeer herders 7p, (p=0.001)</li> </ul> <p>Through:</p> <ul style="list-style-type: none"> <li>- Marine pollution</li> <li>- Loss of reindeer territory</li> </ul>	<ul style="list-style-type: none"> <li>- Fishers 48p, (p=0.001)</li> <li>- General population 6p, (p=0.05)</li> <li>- General users of the area 10p, (p=0.05)</li> <li>- Reindeer herders 29p, (p=0.001)</li> </ul> <p>Through:</p> <ul style="list-style-type: none"> <li>- Marine pollution</li> <li>- Loss of reindeer territory</li> </ul>
Personal outcome (general p=0.001)	<ul style="list-style-type: none"> <li>- Benefits 30p</li> <li>- Both costs and benefits 9p</li> <li>- None 2p</li> </ul>	<ul style="list-style-type: none"> <li>- Benefits 6p,</li> <li>- Costs 3p</li> <li>- Both costs and benefits 7p</li> <li>- None 2p</li> </ul>	<ul style="list-style-type: none"> <li>- Costs 33p</li> <li>- Both costs and benefits 4p</li> <li>- None 3p</li> </ul>
Impact on personal use of area (general p=0.001)	<ul style="list-style-type: none"> <li>- Won't change personal use 12p</li> <li>- Don't use the area 31p</li> </ul>	<ul style="list-style-type: none"> <li>- Lost fishing possibilities 3p</li> <li>- General restrictions 3p</li> <li>- Wont change personal use 9p</li> <li>- Don't use the area 3p</li> </ul>	<ul style="list-style-type: none"> <li>- Lost reindeer territory 17p (all herders)</li> <li>- Lost fishing possibilities 11p</li> <li>- Wont change personal use 4p</li> <li>- Don't use the area 2p</li> <li>- Will move 3p</li> </ul>
Impact on Kvalsund as a	<ul style="list-style-type: none"> <li>- Positive 39p</li> </ul> <p>Because of:</p>	<ul style="list-style-type: none"> <li>- Positive 10p</li> </ul>	<ul style="list-style-type: none"> <li>- Negative 15p</li> </ul>

society, and why (general p=0.001)	<ul style="list-style-type: none"> <li>- Employment 31p, (p=0.001)</li> <li>- Income 14p, (p=0.01)</li> </ul>	<ul style="list-style-type: none"> <li>- Both positive and negative 9p</li> </ul> <p>Because of:</p> <ul style="list-style-type: none"> <li>- Employment 9p, (p=0.001)</li> <li>- Income 7p, (p=0.01)</li> <li>- Divides the community 5p</li> </ul>	<ul style="list-style-type: none"> <li>- Both positive and negative 18p</li> </ul> <p>Because of:</p> <ul style="list-style-type: none"> <li>- Employment 11p, (p=0.001)</li> <li>- Marine pollution 19p (p=0.001)</li> <li>- Lack of labour force 8p, (p=0.01)</li> <li>- Destroys livelihoods 5p</li> </ul>
Attitude to municipal income (not significant)	<ul style="list-style-type: none"> <li>- More income 22p</li> <li>- Adequate 14p</li> </ul>	<ul style="list-style-type: none"> <li>- More 11p</li> <li>- Adequate 6p</li> </ul>	<ul style="list-style-type: none"> <li>- More 26p</li> </ul>
Just distribution and why/why not (general p=0.001)	<ul style="list-style-type: none"> <li>- Just distribution 20p,</li> <li>- Unjust distribution 13p</li> </ul> <p>Because of:</p> <ul style="list-style-type: none"> <li>- Various reasons</li> <li>- It never is 6p</li> </ul>	<ul style="list-style-type: none"> <li>- Just distribution 3p</li> <li>- Unjust distribution 10p</li> </ul> <p>Because of:</p> <ul style="list-style-type: none"> <li>- It never is 2p</li> <li>- Costs are shifted to reindeer or fisheries 3p</li> <li>- Too many costs (combined variables) 4p</li> <li>- Nussir gets the benefits 2p</li> </ul>	<ul style="list-style-type: none"> <li>- Unjust distribution 33p</li> </ul> <p>Because of:</p> <ul style="list-style-type: none"> <li>- Costs are shifted 7p (p=0.1)</li> <li>- Costs are shifted to fisheries 11p (p=0.01)</li> <li>- Costs are shifted to herders 10p, (p=0.05)</li> <li>- Only costs 6p (p=0.05)</li> <li>- More costs than benefits 6p</li> <li>- Nussir gets the benefits 7p, (p=0.1)</li> <li>- Everyone gets costs 5p</li> <li>- It never is 2p</li> </ul>



# Appendix 4 Stakeholder Analysis

Table Appendix4.1 Stakeholder Analysis

		Degree of Influence:	
Degree of Impact		High	Low
	High	Reindeer herders Municipal board and administration Nussir ASA Local population Fishing and Hunting Association (Org) Bivdi (org) Local Fisherman Organization (org).	Small scale fishers Cabin owners External sport fishers External outdoor enthusiasts
	Low	Friends of the Earth Norway (org) Youth and Nature (Org) National government Sámi Parliament IA authors Independent authors Researchers Mineral Industry	National population



**Norges miljø- og biovitenskapelige universitet**  
Noregs miljø- og biovitenskapelige universitet  
Norwegian University of Life Sciences

Postboks 5003  
NO-1432 Ås  
Norway