

Perforated and Fractured Territories

Socio-territorial identity building as response to growing interest in metalogenic mining in Finnmark, Northern Norway

P5 | Report | Mark Slierings



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Coverphoto: Nussir copper mine, Kvalsund.
Created by author.

Gulatgo eallima jienaid
joga šávvamis
biekka bossumis

Dat lea visot maid áigon dadjat
dat lea visot

--

Can you hear the sound of life
in the roaring of the creek
in the blowing of the wind

That is all I want to say
that is all

Nils-Aslak Valkeapää, *Beaivi, Áhcážan [The Sun, my Father]. 1988 [1997].*

Abstract

The thesis explores the socio-territorial orientation of Finnmark, northern Norway, in relation to the growing international interest for the development of the mineral industry. This interest is met locally with directly opposing views, favouring on the one hand the cultural development related to land-based practices, and on the other hand exploiting Finnmarks high resource potential for the benefit of municipal growth and job development. Difficulties arise with the geographic distribution of ethnicities. Proposed developments of the mineral industry find more support in coastal areas and although most indigenous Sámi find their home inland, they depend to a large degree for their livelihood on this coastal areas.

The current fractured political landscape is highly related to and tied up with the complex history of internal center-periphery dynamics, colonization and stigmatization, which took (and in a way are still taking) place under the flagship of national assimilation policies of 'norwegianization', sustaining Finnmarks not-so-postcolonial present. In this perspective, three mining cases are of interest, due to the different social and political responses to the mining plans: Nussir in Kvalsund, Bidjovagge in Kautokeino and Sydvaranger in Sør-Varanger. Motivations behind decision-making on these cases illustrate clearly the conflicts of interests and demonstrate the difficulties for coexistence of directly opposing world views.

Through an understanding of the formation of societal strata, the argument of the thesis unfolds over an in-depth spatiotemporal and on-site analysis of the cases and their specific socio-territorial setting in Finnmark. I argue that we should look more critically at the tendentious role of the modus operandi of urbanists and geologists (more specifically of resource mappers), in their way of influencing decision-making and framing and shaping cultural life, especially in contested territories.

The thesis then moves towards a possible way forward through redesigning our conventional tools and methods for a more inclusive territorial-based endogenous growth model, such an inclusive growth model has the potential to bring together on the long term the opposing visions and ideas on the future of the mining industry and the preservation of indigenous culture. I end by arguing that knowledge building from a combined perspective has the potential to evolve the acceptance amongst cultures abiding by different worldviews. Effectively, the newly proposed geological era of the Anthropocene, proposes also the updating modern science with cultural diversity, asking for renewed responses away from the modern tradition.

Acknowledgments

I owe my gratitude to a number of people who helped, supported and kept me from getting lost in the complexity of this project:

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INTRODUCTION

Outline

This chapter introduces the larger scientific scale in which the project operates, through which also the motivation to address this specific topic unfolds. I introduce briefly the human side of the newly understood geophysical force, known as the Anthropocene, and the role of urbanists within this global framework. Furthermore, I set the basis for understanding the ideological background of the Anthropocene, and the ongoing project of what from a modern point of view is called 'development'. Much of this ongoing project is related to the question of land, and its decision-making is therefore dependent on ethics and values.

The Earth is undergoing a period of intense techno-scientific transformations. If no remedy is found, the ecological disequilibrium this has generated will ultimately threaten the continuation of life on the planet's surface. Alongside these upheavals, human modes of life, both individual and collective, are progressively deteriorating.

Guattari, F. (2000) 'The Three Ecologies' (I. Pindar & P. Sutton, Trans.). London: The Athlone Press. (Original work published 1989)

01.





01. Introduction

Urbanism in the Anthropocene

The Anthropocene

Since its introduction by atmospheric chemist Paul Crutzen, the notion of the Anthropocene[1] has been a dominant factor in recent academic discussions, crossing the discipline that's primarily involved with the ages, epochs, periods, eras and eons - the discipline of geology - to social, economic, political and environmental discussions. Reasoning behind the suggested change of epoch from the Holocene to the Anthropocene, lies in the understanding that mankind (Anthropos in Greek) is the most dominant force in altering the earth system. The earth system is the collective system of the earth, comprising of the atmosphere, hydrosphere (water), biosphere (life and its surrounds), cryosphere (ice) and lithosphere (the earth's crust). Particularly interesting for urbanists, is the suggestion to add the androsphere[2] or the anthroposphere[3] to this list. This sphere is concerned with human activity and works primarily over gradients of urban versus rural and developed versus non-developed.

For some earth scientists, the changes in temperature and the high amount of CO^2 in the atmosphere are not primarily caused by human beings, whereas through natural processes, the earth has seen this conditions in earlier times already. Mainly surrounding that reasoning, the real influence human beings have on the course of the planet is still under debate. However, the velocity and magnitude of the recent changes is believed - backed by a much wider range of earth scientists - to be coming from a geophysical force formed by our collective human actions. As oceanographer Syvitski states: "By any unbiased and quantitative measure, humans have affected the surface of the Earth at a magnitude that ice ages have had on our planet, but over a much shorter period of time"[4].

The Anthropocene is in this thesis understood to be the all-encompassing epoch of today, and its earth system the system of reference for modern actions. The epoch adds another dimensionality to earth system science, or as public ethics professor Clive Hamilton insightfully explains:

> "If the human imprint on the Earth System is so far-reaching that Homo sapiens now competes with the forces of nature in its impact on the way the planet as a whole functions, the human imprint is the effect of a force fundamentally unlike physical ones such as weathering, volcanism, asteroid strike, subduction, and solar fluxes. This new "force of nature" contains something radically different – the element of volition."[5]

Within this ontological understanding, the urbanist plays through its plans and designs a central role of translation between earth sciences and use of space. As it seems, the way in which humankind answers to the challenges it is fitted with today are of a fundamentally dichotomous nature. Or as Hamilton explains:

> "Humankind is now confronted with a momentous decision: to attempt to exert more control so as to subdue the Earth with greater technological power – the express purpose of some forms of geoengineering – or to draw back and practice meekness, with all of the social consequences that would follow."[6]

Planetary urbanization

Vis-a-vis the current global trends of metropolization and city expansion the interest of an increasing number of urbanism scholars and researchers is somewhat paradoxically focused on the areas beyond the administrative boundaries of the city. In large, the reason for this change in focus is the much needed recognition that cities are part of a system of processes of extraction,

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[1] Crutzen, P. J. (2002). Geology of mankind.

[2] University of Nebraska Omaha. (n.d.). What is earth system science (ESS)?

[3] AGCI. (n.d.). The Anthroposphere.

[4] Syvitski, J. (2012). Anthropocene: An epoch of our making.

[5] Hamilton, C. (2017). Defiant Earth: The Fate of Humans in the Anthropocene.

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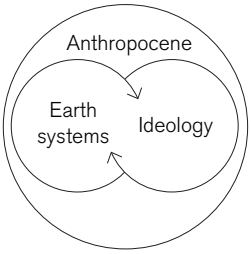
[9] Deleuze, G. (1988). Foucault.

[10] Deleuze, G., & Guattari, F. (1987). A Thousand Plateaus.

Figures

▶ 1.1 Anthropocene combines earth systems with ideology, and merges cultural studies with geology.
Made by author, definitions from IGBP and www.dictionary.com

production and consumption, fundamental in shaping modern urban life. This recognition opens up a completely new spectrum to assess different qualities of urban life and of those left outside or wronged by forms of development. Further enhanced by the ongoing process of market liberalization in order to facilitate capital mobility, the main quality of the city can now be conceptualized as the "operationality of urban processes on the planetary landscape"[7].



Earth systems

"The term "Earth system" refers to Earth´s interacting physical, chemical, and biological processes.
The system consists of the land, oceans, atmosphere and poles. It includes the planet's natural cycles — the carbon, water, nitrogen, phosphorus, sulphur and other cycles — and deep Earth processes.
Life too is an integral part of the Earth system. Life affects the carbon, nitrogen, water, oxygen and many other cycles and processes."

Ideology

1. the body of doctrine, myth, belief, etc., that guides an individual, social movement, institution, class, or large group.
2. such a body of doctrine, myth, etc., with reference to some political and social plan, as that of fascism, along with the devices for putting it into operation.
3. Philosophy.
   a. the study of the nature and origin of ideas.
   b. a system that derives ideas exclusively from sensation.
4. theorizing of a visionary or impractical nature.

Urbanism and geology as territorializing practices

Combining the notion of the Anthropocene (and particularly the ando- or anthroposphere) with the notion of planetary urbanization, we can start to question whether there's a significant distinction between what urbanists and geologists address. Professionals have recently hinted at the correlations between the two practices. Geologist Jan Zalasiewicz has termed cities as being the most remarkable feature from a geological perspective because one can "(…) consider them as effectively rocks and minerals, put together in particular patterns by natural organisms - that is by us"[8].

Further in this project I introduce a methodology that makes use of the way geological strata are formed by natural processes, as a metaphor to asses the formation of societal strata. This is understood to be paramount in the reconceptualization of the practice of urbanism in the Anthropocene, which is a question of intensities (as discussed earlier: gradients of urban versus rural and developed versus non-developed). Philosopher Gilles Deleuze has already investigated the formation of these strata and has described thoroughly how they enact through processes of 'territorialization' (distribution) and 'coding' (intensity/expressivity)[9,10].

Modernity/coloniality: the question of land

As earlier scholars have investigated, to speak about land means to speak about political power[11]. In which way this power becomes spatial is then guided by ideology. In accordance with scholars like Aníbal Quijano, Walter Mignolo and Enrique Dussel I view modernity as an epistemological frame, inseparably bound to the ongoing (Western) European colonial project, in which modernity and coloniality are two sides of the same coin[12,13,14]. The social impact of the appropriation of resources - fundamental for the benefit of 'development' - is not always harmonized with environmental and indigenous matters. Furthermore, as Mignolo and Tlostanova insightfully delineate:

> "'Development' is a companion concept to modernity. 'Underdevelopment', however, is not the equivalent, in economic terms, to coloniality in historical and philosophical terms. Underdevelopment is what development proposes to overcome. In contrast, modernity does not propose to overcome coloniality, but rather 'tradition', 'barbarism', 'fanatic religious belief', and the like."[15]

Often the verb 'to modernize' is unfairly used from the vantage point of modernity, which is mistakingly positioned as a global ideology. If the urban project within a planetary framework is aimed at extraction in order to sustain urban life, then its role in the project of development has already a tendency to pressure lands from a biased perspective. As I suggest in this thesis, the process of territorialization is initiated spatially through planning and design, and grows from there. It is furthermore biased by an unholistic framing of space, and in doing so its premise is to instrumentalize the modern project over indigenous livelihood.

In the case of the Sámi in Northern Norway extraction processes directly affect the sustainability of culture, the safety of the environment and the survival of indigenous knowledge. Their environment is an in many ways extreme landscape which the Sámi have learned to read, endure and master over many generations dating back several thousands of years. In their livelihood the Sámi culture has throughout generations been challenged through (i.a.) missionary programs, major policies of forced "norwegianization" (*Fornorsking av samer*), land fragmentation, infrastructural development and climate change, driven by ever-increasing globalizing trends. The biggest challenge - as described by Sámi reindeer herders - is not as some might suggest the extreme climatic changes that are projected for the area, rather it is the loss of pasture grounds to forms of development of the northern parts of Norway[16,17,18]. The question of land is therefore an ideological one, and the valuation of land forms a central part.

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Figures

▶ 1.2 Iceland
Made by Magdalena Jetelová, photo by Werner J. Hannappel



CONTEXT

Outline

This chapter outlines the relationship between Finnmark and the wider scale as the foundations in which the project operates. Here, I introduce global consumption trends and their effects on Arctic territories. Furthermore I outline political economic responses to these trends, and the threat to specific indigenous groups that are dependent on these territories. In addition I outline the fragile climatic state of the Arctic and the vulnerability towards ecological changes.

There are dangerous tensions and inequalities between the paper worlds of extraction and the oral histories of the land and life. The map is simply no longer the territory.

Pierre Bélanger (2018). "Extraction Empire". The MIT Press, Cambridge, Massachusetts p. 17

02.



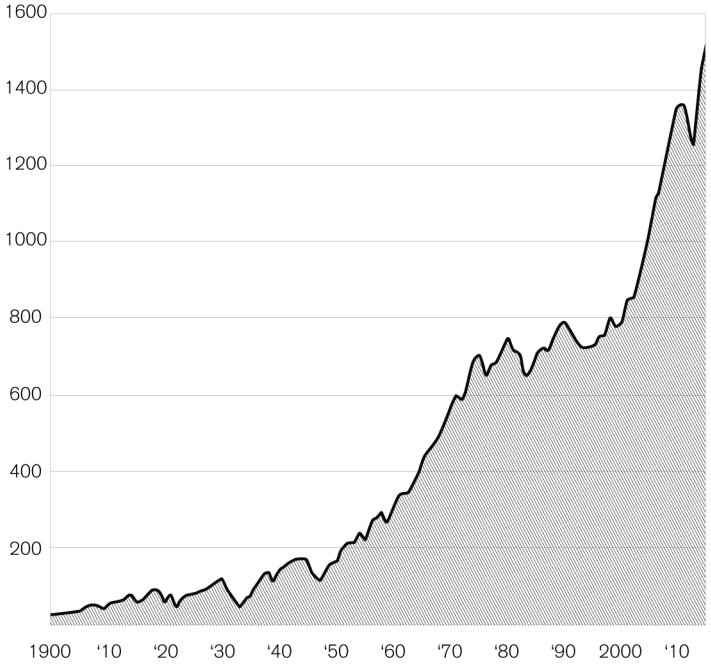


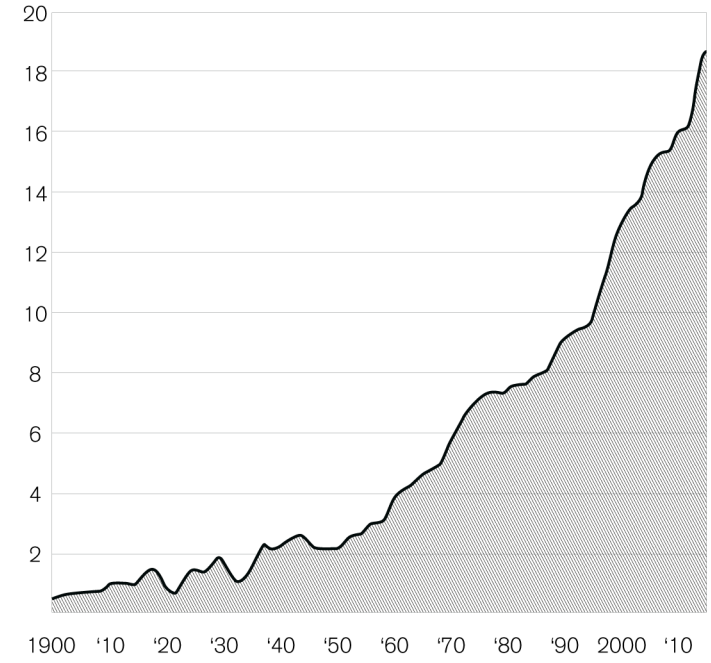
02. Context

Global

Extraction, production and consumption trends

Globally the need for materials has been rising sharply over the past century. Sudden surges in the diagrams portrayed below correspond with the industrialization of developing economies[1] and technological advancements. These increases in extraction, production and consumption trends are simultaneously linked to an increase in global GDP, yet the ethics behind the distribution of these increases remain an often challenged topic in contemporary research[2].





Citations

[1] Grant, A., Hawkins, J., & Shaw, L. (2005). Mining and commodities exports.

[2] eg. Sassen, S. (2014). Expulsions: Brutality and Complexity in the Global Economy.

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[5] Copper Development Association Inc. (n.d.). How Copper Drives Electric Vehicles.

[6] Smith, P. (2014). Soaring copper prices drive wind farm crime.

Figures

▲ 2.1 Annual global steel production (million tons)
Adapted from: Grant, Hawkins and Shaw (2005), Richter (2018)

◀ 2.2 Annual global copper production (million tons)
Adapted from: Grandell and Höök (2015)

▶ 2.3 Declining ore grades in copper mines globally
Adapted from: Crowson (2011)

▶ 2.4 Global copper demand by product category
Source: Schipper, B. W. et al. (2018)

▶▶ 2.5 Projected global metals demand from EV lithium-ion batteries
Source: Bloomberg

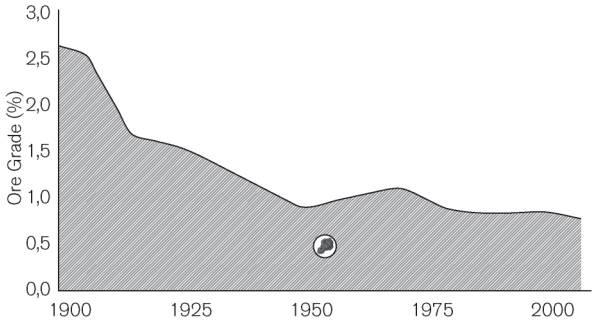
Declining grades

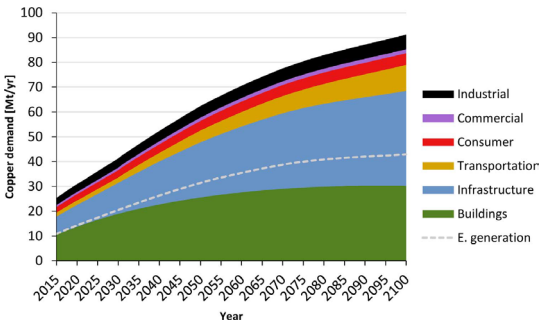
Around the world copper ore grades of mines in production are gradually declining, while at the same time the global mine production is rising rapidly. As Rötzer and Schmidt argue[3], this should not be seen as a sign of exhaustion, but rather as improvements in extractive technologies as well as the economic results on increased demands, making mining earlier economically feasible. However, the increased technologies make the extraction of copper resources of higher energy and water demand[4].

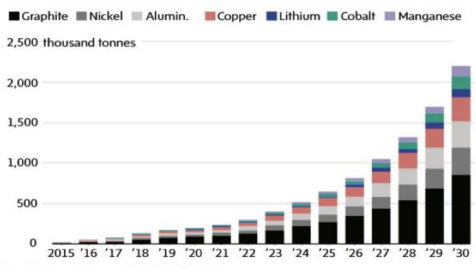
Expected material need

The significance of especially copper as fundamental material for the energy transition translates through its excellent capacity as conductor for both electricity and heat, and relatively low price. In large part accountable to a growing advocation of the energy transition - seen as a technological transition - the demand for copper is rising rapidly. Consequently, copper has gained interest from extractive industries globally. Because of expected technological advancement, and development of economies of nations around the globe, the demand for new materials is expected to soar in the upcoming years. Some so-called sustainable products require high amounts of copper: electric cars use up to ten times as much copper as conventional cars[5], windmills hold around 3.6 tons of copper per MW[6].

We're used to naming these sources of energy sustainable, yet usage of the word sustainable is somewhat misplaced in several ways. It disregards the fact that these materials are finite, and bound to the stock that the earth provides. It disregards the process of extraction and production, that profoundly alters the direct environment through needs of infrastructures and urban developments. And it disregards the cultural responses that stretches far beyond the vicinity of the mine.







Climate change and market liberalization

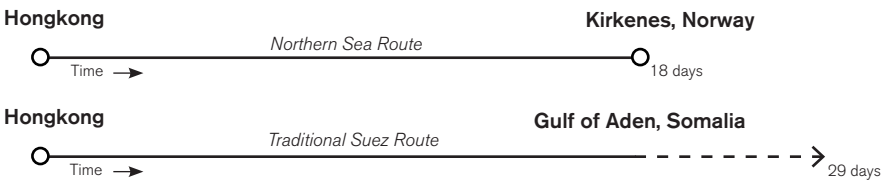
Despite increasingly widespread environmental concerns over the rapid shrinkage of sea ice, chances for economic growth are rising rapidly for a number of different reasons. The opening of the Northern Sea Route and the Northwest Passage is giving countries within the Arctic Circle the benefits of trading from a much more central economic position for trade overseas in the Northern Hemisphere. Anticipation of stark economic growth in these territories is framing national development programs as shipments of goods is already rising rapidly[7]. It should be noted that historically empires were able to build and dominate mainly because of their domination of the seas. Today still 90% of the logistical flows happen overseas[8].



The infrastructure of the Fennoscandian Shield is – as displayed on the map on the right page – more developed than in the surrounding Nordic countries giving it the economic advantage of accessibility and rapid dispersal of goods. The growth of ports in Northern Norway and the Murmansk Oblast region of Russia is therefore already happening and is very likely to grow further, given the growth of consumption rates within the coming years. These developments will open up new macroeconomic opportunities for regions that have been struggling with longstanding trends of population decline, but are at the same time a big threat to long existing indigenous practices.

Extractive industries have shaped and secured investments, employment, social and economic development in Northern countries and regions for centuries[9]. Yet, these industries have historically been subject to large fluctuations and instabilities. The global economic crisis in 1972, for example, led to a decline in mineral demand resulting in the closure of many mines in the Arctic. However, global economic growth and technological advancement after 2000 led to improved profitability and, consequently, shaped high interest for the relatively large resource basins of the Arctic countries[10]. As a result many mineral mines were active in the year 2011 (as shown on the right page). Especially the Fennoscandian shield and Alaska have widely dispersed mining activities. Accessibility is one of the guiding factors for the amount of mines being developed in a certain area, and it is precisely the infrastructural connections and the ease of getting resources from the Fennoscandian countries to Eastern and Western Europe that make the region stand out more in relation to the other Arctic countries.

Amplified by climate change, the development potential of the sub-arctic and arctic regions is increasing. The increased connectivity and mapping of potential resource basins, show possible answers to the increase in raw material use and looks increasingly attractive to investors.



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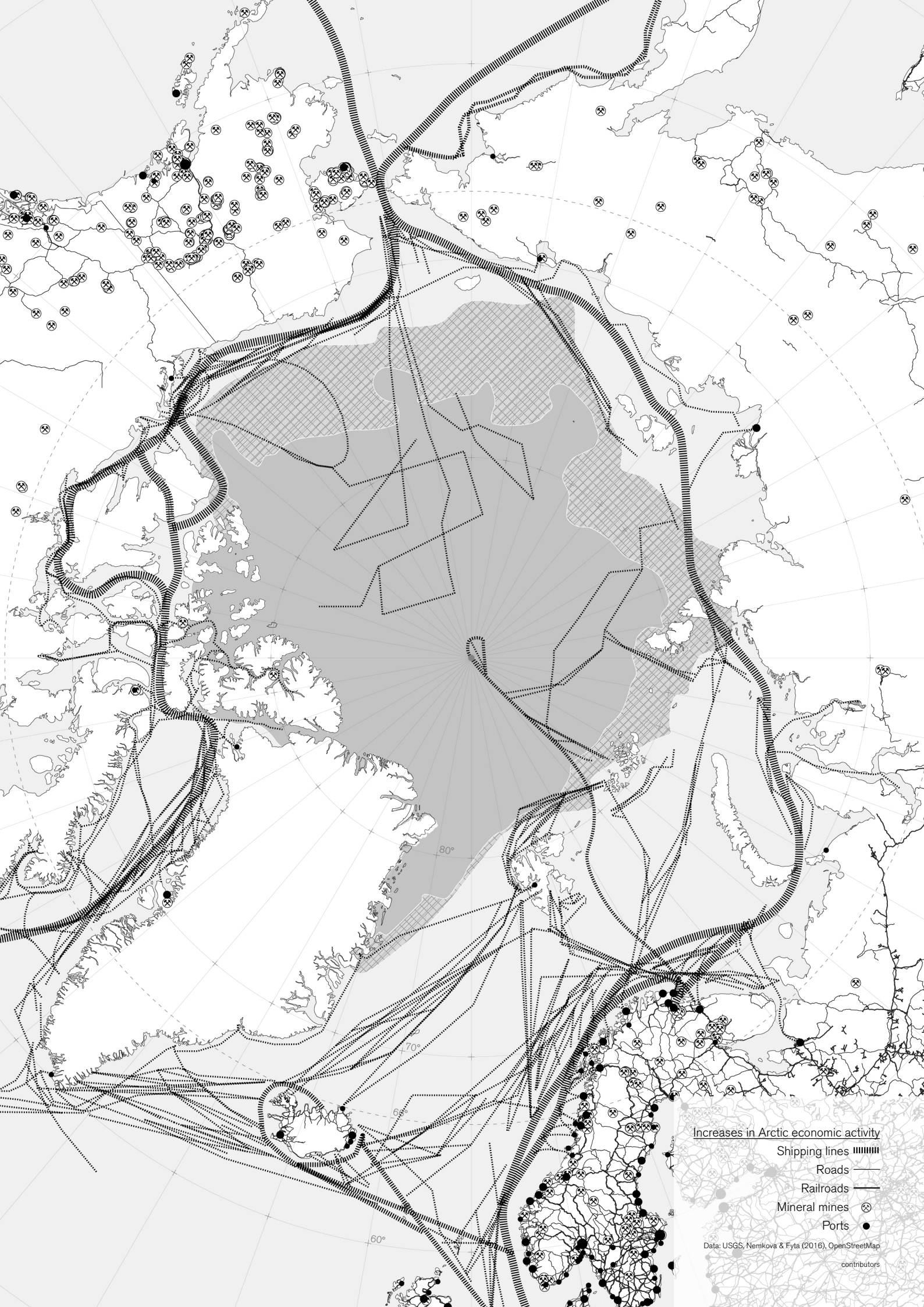
[10] Ibid.

Figures

▲ 2.6 Kirkenes is already actively promoting its town development to Chinese businesses.
Source: www.barentsspektakel.no

◀ 2.7 Cutdown of the Suez route through the opening of the Northern Sea Route
Source: www.arcticcorridor.fi/

▶ 2.8 Increases in Arctic economic activity
Adapted by author from: USGS, Nemkova & Fyta (2016), OpenStreetMap contributors


80°
70°
60°
Increases in Arctic economic activity
Shipping lines
Roads
Railroads
Mineral mines
Ports
Data: USGS, Nemkova & Fyta (2016), OpenStreetMap contributors

Arctic and North Sea interface

Economic, ecologic and cultural shifts

As argued, the significance of the energy transition seen as global footprint on the earth should not be underestimated. As most scientists warn us for climate responses from the current way of life, the material version of the energy transition is commonly and increasingly advocated politically as the solution. In this way, global dependency on the underground is strongly affecting life and livelihoods, on contested territories around the globe. This is analyzed in a combined effort in the Transitional Territories graduation studio.

The concluding statement of the group work North Sea, TT studio, Temporality and Extractivism, Book of Tides:

> Over the past millennia, the North Sea's seascape has been constantly altered. The historical shifts in its patterns, profile and ecosystems are an expression of the tide of natural and anthropogenic, extractivist processes that have stimulated these alterations. We can therefore understand that the base condition of any landscape or seascape is that of constant flux through time, because the external stresses themselves are constantly evolving. This crystallizes the notion of 'unstoppable tides of change'.
>
> In recent centuries, extractivist processes can be seen as being the most ecologically critical stress on the North Sea territory. It is an underlying process that outdates contemporary Keynesian economic models, having begun in the colonization era. Since the 1970s, extractivism has evolved under global neoliberal growth into neo-extractivism, a hegemony that coalesces with neocolonial practice. As such, neo-extractivism is not only contingent on neoliberalism but acts as the foundation of materialist capitalism – that is, accumulation by dispossession. When analyzed through a critical ecological lens, the degree of the human population's right to take what is 'needed' from the natural sphere for developmental purposes is being fundamentally called into question. As our understanding of ecosystems as complex systems - that are heavily interdependent – develops, so does the realization of the uncertainty of the sea's ecological future. While new abiotic conditions stimulate new complex biotic responses, we are now a society of risk and are entering a realm of the sublime unknown that may benefit from a more fluid and adaptive civilization. The only certainty is that seascapes will continue to change, move, fluctuate and be subject to the dynamic relationship between oceanic space and time.

Figures

◀ 2.9 Current energy network
By author, in Transitional Territories Studio (2018). New Geographies, North Sea: Landscapes of Coexistence.

▶ 2.10 (New) renewable energy sources.
Source: by author, in Transitional Territories Studio (2018). New Geographies, North Sea: Landscapes of Coexistence.



Energy Transition: Increasing industrialization

With the energy transition coming, a new time of cultivation of the North Sea will start. The change to renewables and the opportunities for wind energy on the sea will translate in the form of huge wind farms on land and on the sea accounting for our energy need. Gas pipelines are reused to connect the offshore windfarms with the onshore power facilities.

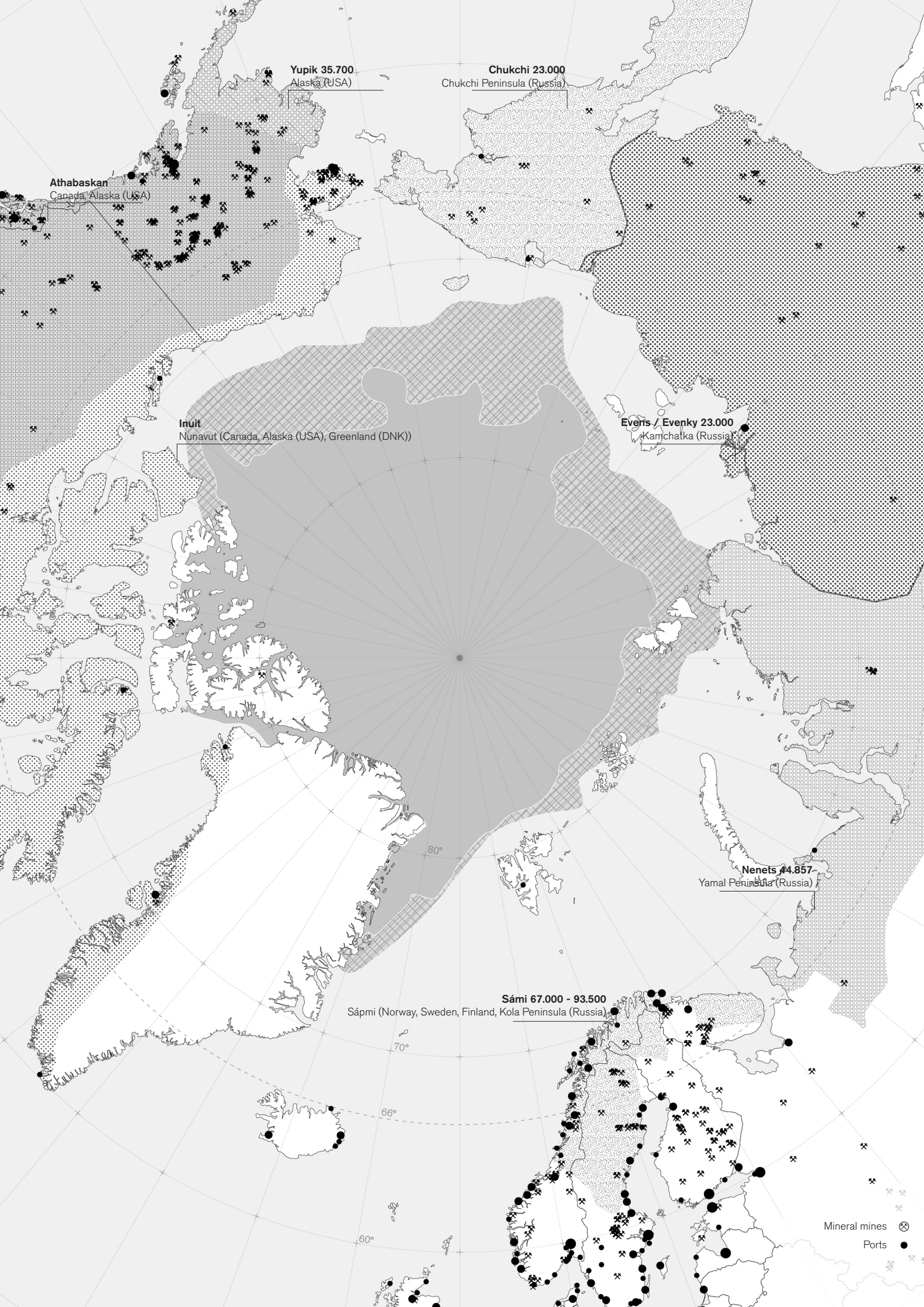
fossil fuels
- oil platforms
- gas fields
- gas and oil fields
- potential oil fields

infrastructure
- oil pipes
- gas pipes (new wind-energy transport)

renewables
- wind farms
- hydropower
- DC lines

powerlines
- 750kV
- 500kV
- 380-400kV
- 300-330kV
- 220-275kV
- 110-150kV




Yupik 35.700
Alaska (USA)
Chukchi 23.000
Chukchi Peninsula (Russia)
Athabaskan
Canada, Alaska (USA)
Inuit
Nunavut (Canada, Alaska (USA), Greenland (DNK))
Evens / Evenky 23.000
Kamchatka (Russia)
80°
Nenets 44.857
Yamal Peninsula (Russia)
Sámi 67.000 - 93.500
Sápmi (Norway, Sweden, Finland, Kola Peninsula (Russia))
70°
66°
60°
Mineral mines
Ports

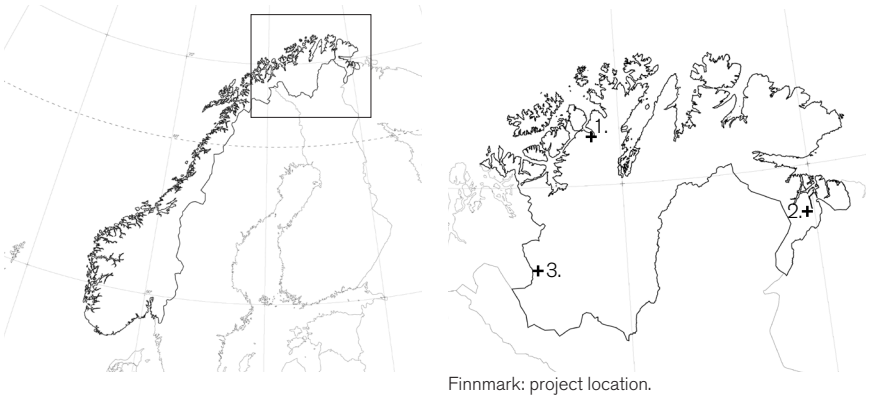
Indigeneity and territorialization

The Arctic is home to many indigenous populations. These people practice longstanding land-based livelihoods where large tracts of undisturbed land are crucial for their survival. For example, the practice of reindeer and caribou herding is a livelihood which is practiced all around the Arctic, and is situated on 10-15% of the total land area of the entire globe[11]. This extensiveness would suggest that losses of land would be quite easy to overcome, yet the reality is the contrary.

In these territories many natural resources are situated in and on the ground, ranging from large basins and deposits of hydrocarbon, gas and minerals - fundamental to maintaining our current industrialized modes of living - to large tracts of diverse tundra and taiga vegetations. Opening of new extraction sites, related infrastructural development, land degradation, pollution and further related urban developments are generally seen as huge threats to the continuity of indigenous land based practices[12,13].

The indigenous peoples in the circumpolar nations have been able to keep much of their livelihood mainly because of the remoteness of their living places, where those living in the harshest regions have been able to maintain most of their identity and customary resource use. Here the forms of colonization and cultural assimilation has left its marks, yet it was never fully completed[14].

This project takes on the case of the Sámi in Finnmark, northern Norway and their struggle against planned mineral extraction developments. Finnmark - being Europe's most northern county - lies at the intersection of the Arctic and North Sea interface, and its associated logistical developments. It is, combined with the governmental and local advocation for the development of extraction industries, expected to undergo major shifts. At the same time the in Finnmark located cities Karasjok and Kautokeino in particular can be seen as the cultural centers for the (Norwegian) Sámi, and especially for reindeer herders since the most amount of practitioners live in these areas[15,16]. Three (planned) extraction sites are of relevance to this thesis: Nussir in Kvalsund (1), Sydvaranger mine in Sør-Varanger (2) and Bidjovagge in Kautokeino (3).



Finnmark: project location.

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Figures

◀ 2.11 Arctic indigenous peoples
Adapted by author from: USGS, Nemkova & Fyta (2016), OpenStreetMap contributors

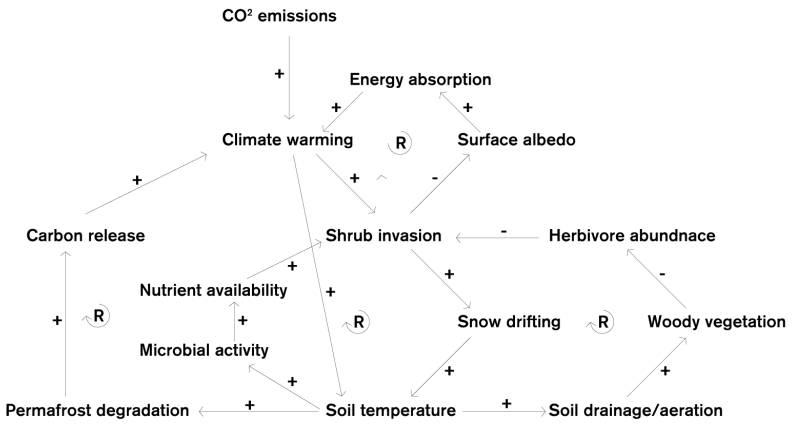
▶ 2.12 Norway with project location.
Adapted by author from: OpenStreetMap contributors

▶▶ 2.13 Finnmark: project location.
Adapted by author from: OpenStreetMap contributors

Arctic warming

Mainly due to the decrease in sea ice extent - primarily caused by a loss in albedo – the arctic is warming twice as fast as the lower latitudes[17]. Climate warming triggers several ecological responses including four major reinforcing feedback loops portrayed below. This process is shifting large parts of the tundra biome towards a boreal forest, incorporating better growth conditions for trees and shrubs, a process which is also called Arctic greening. This is an irreversible process caused by climate warming where only a sufficient herbivore abundance could slow down this process[18]. Te Beest, Sitters, Ménard, & Olofsson (2016) show that reindeer grazing increases summer albedo by reducing the shrub abundance. This in turn has a potential cooling effect on climate change in these areas[19].

Although greening itself is seemingly a positive shift from a lower latitudes point of view, it simultaneously causes more challenging conditions for reindeer herders to find desirable pasture grounds[20,21]. According to Karlsen et al. (2017) the vegetation types of winter pastures with a high grazing accessibility for reindeer declines by around 84%. On the other hand, pastures with medium accessibility will increase 17% at only a 1°C summer temperature rise[22]. Simultaneously, the strong increase in precipitation and increase in extreme weather events increases the probability of ice-crust formations, which vastly decrease foraging capabilities[23].



Citations

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Figures

◀ 2.14 Tundra to Boreal shift.
Adapted by author from: te Beest, Sitters, Ménard and Olofsson (2016) and Rocha, Sadauskis, Biggs, & Peterson (2017).

▶ 2.15 Summer temperature increase (°C)
For 2071-2100 as compared to 1971-2000, RCP 8.5 scenario. Source: EEA, adapted by author

▶▶ 2.16 Summer precipitation increase (%)
For 2071-2100 as compared to 1971-2000, RCP 8.5 scenario. Source: EEA, adapted by author

▶ 2.17 Winter temperature increase (°C)
For 2071-2100 as compared to 1971-2000, RCP 8.5 scenario. Source: EEA, adapted by author

▶▶ 2.18 Winter precipitation increase (%)
For 2071-2100 as compared to 1971-2000, RCP 8.5 scenario. Source: EEA, adapted by author

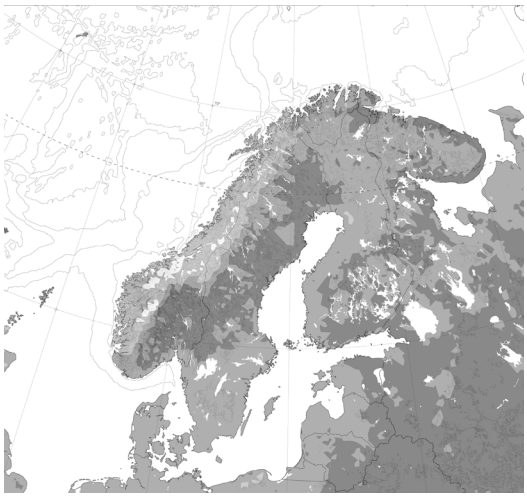




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35 - 45
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35 - 45
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Problem Field

Global

Vis-à-vis the surge in global material demand, extractive industries continue to grow on territories rich in mineral resources. The development of mining sites is putting increased pressure on environments, as it generates increasingly larger amounts of waste rock, greenhouse gas emissions, water demands and societal costs[24,25]. Local economies depend on the money generated through extractive industries, and quickly developing nations like China and India aim at importing minerals from the ground to fulfill their growth goals. The result is industrialization and increased trade possibilities through neoliberal policies.

Norway

As shall be explained later, Norway capitalizes strongly on crude resources. Almost 68% of its 106 billion dollar of exported goods in 2017 comes from extraction. This dependency is a legacy from many years of mining, oil and gas extraction, firmly rooted in Norwegian culture. Simultaneously, Norway has the largest indigenous population of Scandinavia. The Sámi strongly oppose the development of mining industries on Sápmi (lands inhabited by the Sámi for several thousand years), as these industrial developments pose threats to the continuation of the indigenous practices of fishing and reindeer herding.

Arctic & North Sea interface

For Western Europe, two maritime territories are especially of interest from a geopolitical perspective. The sea has always been the primary enabler of imperialism and colonialism, and still today according to Global Maritime 90% of global trade happens overseas. Because of the opening up of the Northern Sea Route economic interest is rapidly shifting northbound. Scandinavian countries are already anticipating on this shift, with plans for the Arctic Railway, a railway cutting through Sámi lands, connecting the northern Norwegian mining town Kirkenes through Finland with the Baltics and eastern Europe.

Finnmark

In Finnmark, Norway's and Europe's most northern county, all of these trends converge. The area is subject to high interest from extractive companies, with mines re-opening in municipalities Kvalsund (mainly for copper) and Sør-Varanger (mainly for iron), and with large interest in deposits in the municipality of Kautokeino (mainly for gold). Finnmark has in relation to the other Norwegian municipalities a fragile socioeconomic state, being subject to decades of population decline in areas with smaller towns, accompanied by a huge decline in the amount of workers in the fishing industries (through economies of scale and technological improvements in fishing boats leading to improved efficiency).

At the same time the county has the largest Sámi population (almost half of the county) of all of the Scandinavian counties, where the municipality of Kautokeino is often portrayed as the heart of Sápmi. Like all of the Arctic indigenous peoples, the culture of the Sámi is intimately tied to the land and revolves around the practice of reindeer herding. The development of the mining industry, disputes over land use and the regulation of reindeer herding in Northern Scandinavia bring to the foreground open wounds of longstanding policies of cultural assimilation in an ongoing struggle to defend indigenous livelihood on Sápmi[26,27,28]. With the new copper mine opening in the Repparfjord in Kvalsund the debate has brought to the foreground two seemingly contradictory decisions of the Norwegian government. Through a "(…) narrative reality [of overgrazing, that] is in large part decoupled from its supposed scientific basis"[29], the herders ownership of reindeer in Norway are capped related to supposed pasture degradation. Simultaneously the copper mine has been granted a license to dump 2 million tons of toxic waste material annually into the nearby designated National salmon fjord, destroying all life inside.

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METHODOLOGY

Outline

The chapter begins by an outline of the importance for the methodology to embrace both Western and indigenous science. Then I illustrate the relationship between the formation of geological strata to understand societal strata. Which in turn, is made into the methodology to assess and reorient the territory. Then I move towards the problem statement, research questions and aim. Next I link the research questions with the understanding of the strata, completed with methods and outcomes. Then the methods are described more in detail, and I finalize with a research framework, showing the overview of the chapters within the totality of the research.

Current forms of extraction can result in the uneven stratification of wealth. Friction and confrontation often occur in the self-regulation of an industry that benefits from the under-estimation of environmental and security risks. Greater levels of economic exchange and cultural interaction across multiple generations can eventually eliminate the damaging practices of high-grade mining and recalibrate the disparities of over-exploitation.

Bélanger, P. (2018) 'Undermining Empire. A Landscape Manifesto for this Generation' in In P. Bélanger (Ed.), Extraction Empire (p. 436). Cambridge, Massachussets: MIT Press.

03.





03. Methodology

Introduction

Western knowledge and traditional ecological knowledge

The way in which reindeer herding is practiced, is based on the accumulation of local situated knowledge[1]. Within the context of indigenous lands it is necessary to address the differences between traditional and western ecological knowledge. Although there's no universally set definition of traditional ecological knowledge, it's best framed as the generational accumulation of land-based knowledge[2]. These traditions are the products of "generations of intelligent reflection tested in the rigorous laboratory of survival"[3]. The benefits of traditional ecological knowledge in management systems has increasingly been highlighted in recent studies[4,5].

There's friction between advocates of Western knowledge and traditional ecological knowledge. Both are grounded in different worldviews and have different scopes, as Berkes (2008) notes: "Indigenous knowledge pursues holism by considering a large number of variables qualitatively, while Western science tends to concentrate on a small number of variables quantitatively"[6]. Where there seems to be no problem into making policies based on western knowledge, the integration of traditional forms of knowledge into decision-making in Norway continues to be troublesome[7,8].

The differing backgrounds and worldviews of indigenous and non-indigenous peoples come into reality in differences over the usage of land. Spatial policies, spatial planning and design on these territories become tools that can privilege and respond to one of the forms of knowledge over the other, and, in doing so, the resulting spatial reality can set the conditions for one culture to thrive over the other. In the case of the indigenous peoples, as explained, land-based practices rely on accumulated knowledge of land characteristics, and answers to flexible use of the landscape. Spatial planning and design fundamentally tries to fixate space, and is therefore already tendentious into privileging non-indigenous over indigenous. The central question for this methodology chapter is: if planning and design are out of the question due to the way in which they operate towards fixating space, then how can we remodel conventional tools for urbanism to incorporate a more holistic view?

Research approach: strata and articulations

> "Space is not a scientific object removed from ideology or politics; it has always been political and strategic. If space has an air of neutrality and indifference with regard to its contents and thus seems to be "purely" formal, the essence of rational abstraction, it is precisely because this space has already been occupied and planned, already the focus of past strategies, of which we cannot always find traces. Space has been fashioned and molded from historical and natural elements, but in a political way. Space is political and ideological. It is a product literally populated with ideologies."[9]

As was noted by influential spatial thinkers like Henri Lefebvre and Claude Raffestin, space is not a given, it should be seen as the result from past processes, constituted by natural ecosystems (that includes us)[10]. Within this process all kinds of ordering and sorting is made - for example natural selection - and results metaphorically and non-metaphorically in a stratification of space. This process is called territorialization, and we find its material grounding in the way geological strata are formed.

Arguably, relationships between geology and urbanism can be found in the formation of its methods to assess spatiotemporal processes of territorialization. This is understood to always happen in fluxes; in the same way as land formation never reaches a state of completion

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[1] Turi, E. I. (2016). State Steering and Traditional Ecological Knowledge in Reindeer-Herding Governance: Cases from western Finnmark, Norway and Yamal, Russia.

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Figures

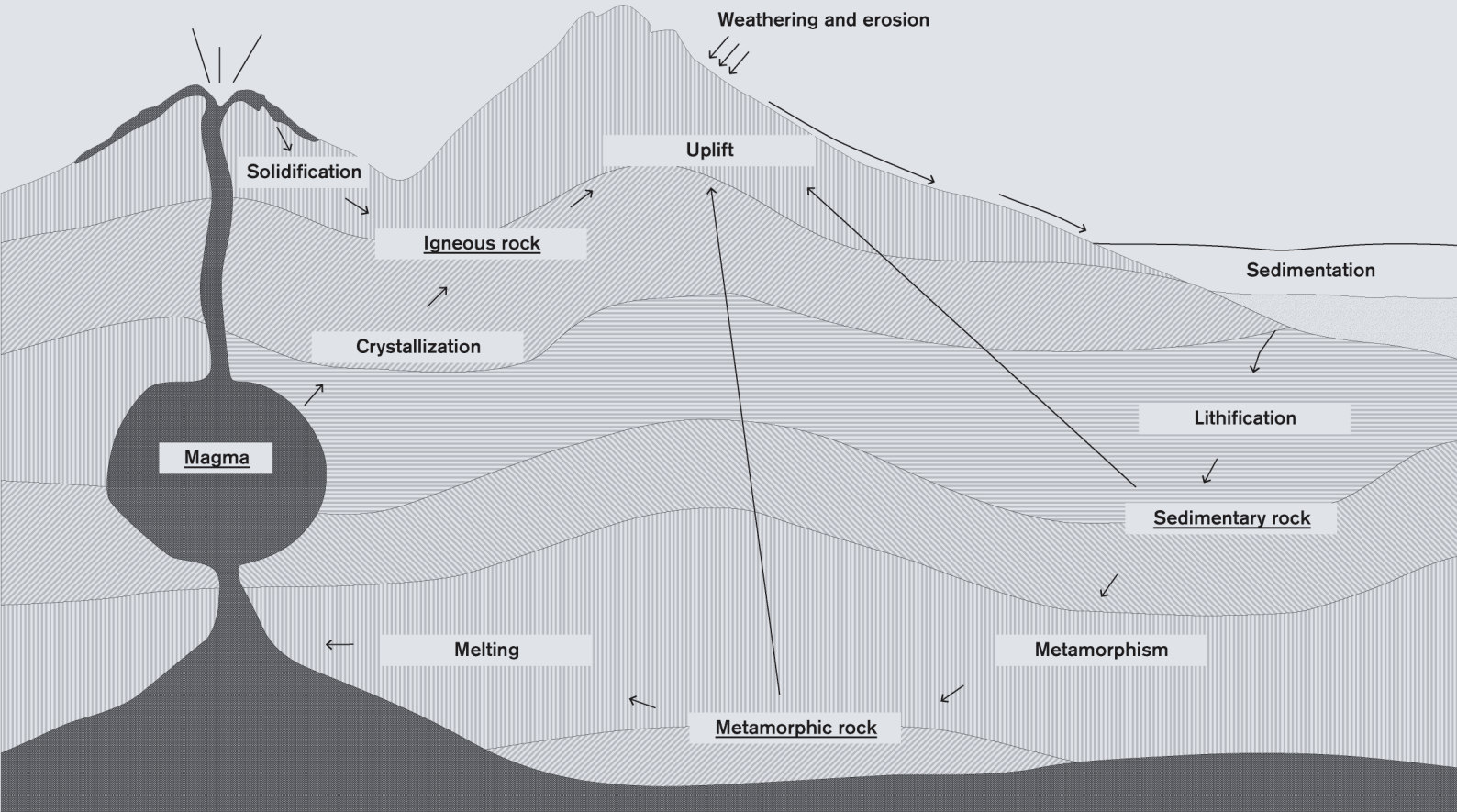
▶ 3.1 Visualization of the rock cycle.
Adapted by author from: Adviesloket Bodem & Natuur.

but is always in a state of flux, the spatial distribution of ideologies and political economic systems is also in a constant state of flux. Lithospheric strata are formed and shaped through several processes, mainly caused by plate tectonics. The formation of rocks is best explained through the rock cycle (see figure below). Three main types of rock can be distinguished, sedimentary, metamorphic and igneous rock. These are formed through the processes of lithification (cementation and compaction of sediments), metamorphism (changing of the internal composition of the layer due to heat and pressure), melting, solidification and crystallization.

This can be complemented by materialist philosophy. Gilles Deleuze argues that just as strata are formed in the lithosphere, through similar processes we can look at the formation of biological, social and psychological strata[11,12]. He distinguishes two articulations, that of sedimentation and of folding (corrected to cementation by Manuel deLanda[13], I prefer to use the term lithification because it also includes compaction).

The conceptualization works on a molecular scale, and is primarily occupied with explaining the formation of new hard earth crust. Through processes of sedimentation and lithification, societal strata can be seen as formed through similar forms of what he calls 'double articulation'. To look at geology, the first articulation is the process of erosion and sedimentation, depositing units of sediment according to a particular order given by water, ice, snow, wind, waves and gravity (weathering is discarded because it occurs on site, contrary to erosion, which involves movement). The second articulation is that of cementation, the gluing together of the sediment, and compaction, involving pressure. The first articulation equals formed materiality ("territorialization") and the second form deals with material expressivity ("coding")[14,15], for coding I would prefer to use the word 'territoriality', it comes down to the same thing. As deLanda now notes:

> We can now summarize the idea of a double synthesis this way: all the entities that populate the world come into being through specific temporal processes that affect both their materiality and their (nonlinguistic) expressivity. All identities are, in this sense, historical, as long as the word is used to refer not only to human history but to geological, biological, and even cosmic history. This constitutive historicity



> implies that these mind-independent entities are objectively changeable: they may undergo destabilizing processes affecting their materiality, their expressivity, or both. In other words, they may be subject to processes of deterritorialization and decoding [deterritoriality].[16]

At this point the rock cycle is explained to the point of the sedimentary rock layer. Based on deLandas arguements, I suggest that a third articulation is of equal importance in societal layers, one that explains the part of metamorphism, which can be called reterritoriality, and uplift, restarting the process, or reterritorialization.

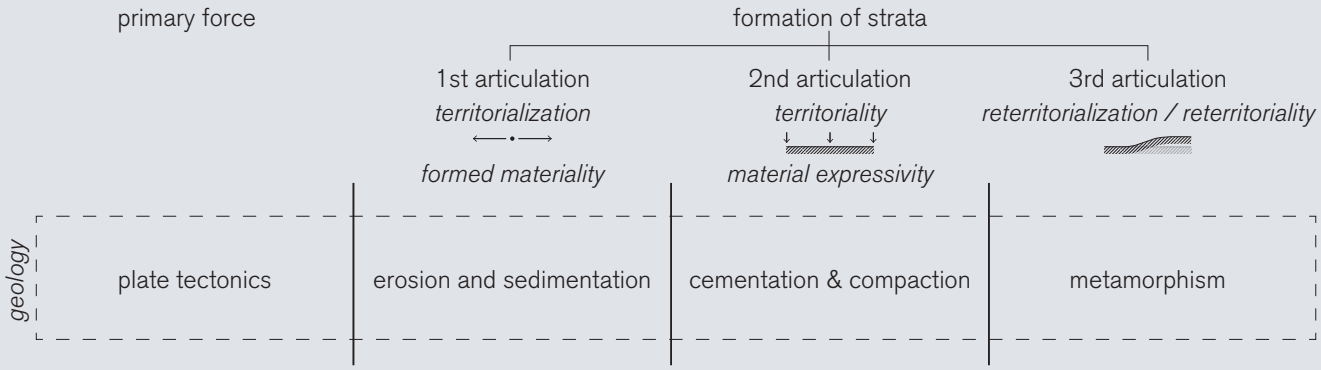
The conceptualization comes with a positive and a negative side in terms of usability. Geological strata are of course physical and have measurable characteristics, in that way the geologist is better able to predict in which ways strata form and have formed. Societal strata on the other hand are metaspatial strata, they don't appear physically, this makes it harder to assess and model its intensities and related formation trends. The positive side for societal strata is that it's easier to apply influence to the directions of its territorialization, which involve political and social projects.

Citations

[16] DeLanda, M. (2008). Deleuze, Materialism and Politics.

Figures

▼ 3.2 Strata and articulations framework. Made by author



Problem Statement

The surge in macroeconomic development is an enormous economic opportunity for residents of Finnmark as related to its fragile socioeconomic state. However, the projected development of mineral mines and the increased dependency on the resulting larger socio-technical systems are considered main threats for the indigenous practice of reindeer herding. Current governance is guided at the development of the mining industry and is by these means responding to the surge in macroeconomic developments. Local support is grounded in its fragile socioeconomic state, while these developments are impediment to Sámi indigeneity. The problems are mainly related to values, coming from different worldviews, informing different forms of knowledge. The modus operandi of resource mappers and urbanists, coming from the modern, non-holistic point of view, has a tendentious role into privileging one worldview over the other. As the landscape gets increasingly perforated in the search for minerals, it's socio-territorial identity is getting increasingly fractured.

Research Question

Primary:
From a **holistic approach**, how can analysis into the socio-territorial disputes of Finnmark, contribute to the **reconfiguration of values and ethics** within the modus operandi of geologists and urbanists?

Secondary:
How can a long term strategical project integrate **local cultural values** to respond to **socio-territorial disputes** related to the **expansion of the mineral industry** in Finnmark, Northern Norway?

Research Aim

For the main aim to understand and respond to the transitioning of local values under macroeconomic developments and enhanced trade possibilities, this research is divided over two parts, both of which address a different specific group.

Academics
This research seeks to explore relations between urbanism and geology within the context of the Anthropocene. This is seen to make geology cultural and urbanism a study of stratification. This research aims to understand its correlations and dualities and show the urgency of such coupling in the current climate crisis. Furthermore it attempts to demonstrate how socio-territorial identity is formed and changes over time, and how urbanists and resource mappers can respond, having social equality in mind.

Decisionmakers
The research aims to address how the socio-territorial identity formation have altered decision-making in Finnmark, and its role in guiding its future. It furthermore aims to establish a model for cooperation, that allows residents of Finnmark to regain more control over decision-making processes, and create a combined socio-territorial identity.

Research Questions	Sub-research Questions	Articulations
Primary: From a **holistic approach**, how can analysis into the socio-territorial disputes of Finnmark, contribute to the **reconfiguration of values and ethics** within the modus operandi of geologists and urbanists? *Secondary:* How can a long term strategical project integrate **local cultural values** to respond to **governance** related to the **expansion of the mineral industry** in Finnmark, Northern Norway? Relevance The Arctic is under huge interest for the development of new mining industries. Its nations are actively looking to develop extractive industries in these areas, and have been able to do so in the past relatively unnoticed. Climate change and the resulting opening up of the Arctic, enhances the possibilities actively. Whether it is through silencing indigenous peoples that only form a "barrier" in Russia[9] or the opening up of wildlife areas for oil and gas explorations in Alaska[10], or the building of a new gas pipeline through Wet'suwet'en territory in Canada, or through policies aimed at expanding the extractive industry in Norway, indigenous peoples along the Arctic are making way for the livelihoods of people in lower latitudes.	*Part 1: Problem analysis* a. How has Norwegian governance influenced the discussion surrounding the Sámi and mining developments?	1st & 2nd
	b. How can we define the socio-territorial orientation of Finnmark, related to the development of the mining industry?	1st & 2nd
	Part 2: Research design a. How can the field trip, journal and documentary broaden the scope of the thesis?	1st & 2nd
	b. How can the field trip, journal and documentary broaden general scientific knowledge of indigenous issues?	1st & 2nd
	c. What are hotspots for the development of the mining industry and reindeer husbandry?	1st
	d. What are expected to be the zones of conflict between herding and mining?	1st
	e. How have past processes influenced the development of herding and mining over the past century?	2nd
	f. What were historically the actors and stakeholders involved in the development of the Sydvaranger mine and what were their power relations?	2nd
	g. How did political-economic processes reshape socio-territorial identity over the past century in Finnmark?	1st & 2nd
	Part 3: Socio-territorial reorientation a. What mechanisms exist to guide endogenous development?	3rd
	b. What potential lies in these mechanisms to inform strategically socio-territorial identity forming?	3rd
	Part 4: Reflection a. What potential lies in conceiving urbanism and geology as combined practices?	
	b. What potential lies in the profession of urbanism to mediate territorial conflicts?	
	c. Can endogenous development measures be an effective tool for the decolonization of the Arctic?	

Citations

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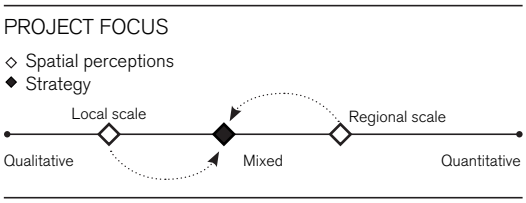
[18] Balkin, G., Necefer, L., & Gephart, L. (2019). Welcome to Gwichyaa Zhee.

Methods	Outcomes	
Part 1: Problem analysis a. Literature review, governance frameworks.	*Part 1: Problem analysis* Documentation of a deepened understanding of how the Norwegian state operates on the territory, and the rate of autonomy of the Sámi.	*Finnmark*
b. Literature review, mining cases review.	Documentation of a deepened understanding of the socio-territorial orientation of Finnmark as a whole.	
Part 2: Research design a. Cinematography, photography, interviews, documenting.	*Part 2: Research design* A **documentary and a journal** of the field trip, contributing to a knowledge database of the place.	
b. Cinematography, photography, interviews, documenting.	A **documentary and a journal** of the field trip, contributing to a knowledge database of the place.	
b. Regional scale mapping, literature review.	A **set of maps** representing the hotspots for the development of the mineral industry.	
c. Regional scale mapping.	A **set of maps** representing the main conflicting areas of Finnmark.	
d. Case study analysis: mapping, literature review.	A **set of maps** representing the spatial growth of the Sydvaranger mine and the nearby towns.	*Sør-Varanger case study*
e. Case study analysis: diagrammatic reasoning, literature review.	A **set of diagrams** representing power relations in the development of the mining industry.	
f. Case study analysis: conclusions.	A **conclusion text** deducting the interrelationships from the analysis done in the case study.	
Part 3: Strategy a. Literature review.	Part 3: Strategy A **theoretical framework** aimed at the implementation of endogenous development strategies.	
b. Mapping.	A **vision map** combining the theoretical framework with the analyzed dynamics in Finnmark.	

Methods description

Introduction

For the research a mixed methods approach has been utilized. For the more local scales a qualitative dominant approach has been utilized, and on the regional scale the approach has been quantitative dominant[19]. In order to attempt to bridge western and indigenous knowledge and world views, links between the purely quantitative entities and qualitative entities will be set. This will be done in order to test how certain trends are linked to each other, in order to find systemic and spatial pressure points.



Problem analysis

Part 1: Literature analysis

This part is meant to understand from a literature point of view the socio-territorial orientation of Finnmark. Subsequently it is meant to understand the level of autonomy of the Sámi on the territory, as a result of past processes and governance.

Field analysis

Part 2: Photographic journal

The journal is meant as a tool to build a database of knowledge of the territory. This is done to understand the territory from a more holistic approach. The idea is that through the writings and images the reader can place him/herself easier within the territory, than by reading a map. As many scholars now acknowledge, the map doesn't represent effectively anymore the territory[20,21,22], new media need to be utilized.

Part 2: Documentary

Also not generally utilized as academic research, yet the capacities of the tool as qualitative empirical research should not be underestimated, especially in research related to place identity or the genius loci. The overall advantages of utilizing a documentary as research expresses itself in its unique possibility to tell a story about real life: '[d]ocumentaries are always grounded in real life, and make a claim to tell us something worth knowing about'[23]. In other words, a tool to understand and translate a more holistic approach

Spatial analysis

Part 2: Hotspot mapping

The second part starts with a quantitative analysis of the hotspots, utilized over the regional scale. This part distinguishes four different themes, ecology, herding, work and minerals. With every theme the goal is to end with a map showing the most important spaces of that theme. This part is concluded with a map showing the hotspots for the four themes, and spatial conflicts of interest.

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Figures

▶ 3.3 Abandoned copper mine, Kåfjord. Made by author.

Temporal analysis

Part 2: Diachronic analysis

The diachronic analysis will be conducted in order to understand how political economic processes over time have changed one of the hotspots. The aim is to establish connections between identity, stakeholders and power relations and urban development, making these connections quantifiable by linking them to the amount of ore extracted. Direct products consist of a timeline, urban growth maps, mine growth maps and diagrams of power relations.



Socio-territorial reorientation

Part 3: Theoretical review endogenous development

The strategy starts with a theoretical review on endogenous development. These are then put into a framework and linked to the challenges that Finnmark is facing.

Part 3: Vision

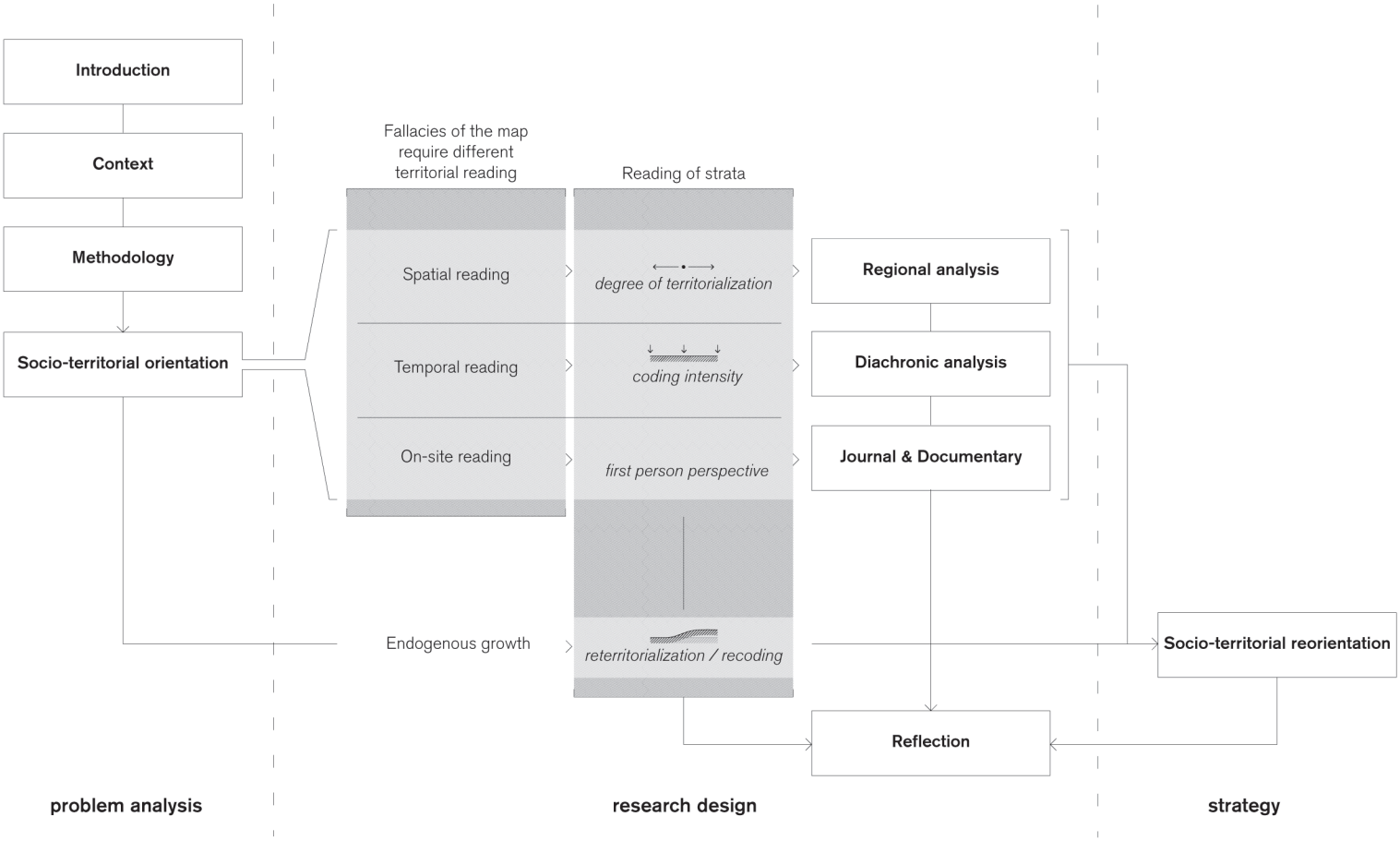
Through combining the analysis with the endogenous development theories specific goals are structured. The vision will be responding to the mechanisms of endogenous development over the county of Finnmark. It is meant as a tool open for negotiation, who's main goal is to point at the necessity for creating a combined project of knowledge building.

Figures

▶ 3.4 Research framework.
Made by author.

Research framework

The research is divided in three parts. The first part is concerned with the problematization, and the first understanding of the socio-territorial orientation of Finnmark as a whole. The second part is the main part, and is a deepened analysis into the socio-territorial layering. From the understanding that the map supplies a non-holistic view three different forms of reading the territory are proposed, spatial, temporal and on-site reading. All of these contribute to the creation of a knowledge database, from which the societal strata can be extrapolated. The third part is the socio-territorial reorientation, where endogenous growth theories help constructing a combined understanding of values and ethics.



SOCIO-TERRITORIAL ORIENTATION

Outline

This chapter outlines a brief history, and the way in which governance of Finnmark is reterritorializing the ground following specific (local) cultural values. First I describe briefly the history of reindeer husbandry and the mining industry, before documenting several conflicting interests around governance related to reindeer husbandry and the mining industry and draw lines between them. I conclude by arguing that the territory, despite measures taken by the Norwegian government to help the Sámi strengthen their culture, is aimed at the development of the mineral industry, and at modernization and rationalization of traditional reindeer herding methods. In so doing state measures to help the Sámi strengthen local culture are antagonistic to national interest in the development of the mineral industry.

Constructed territory mobilizes the three worlds of (1) things and material states, (2) states of conscience, emotion, and subjective knowledge, and (3) knowledge taken objectively; every construction or production is a point of convergence of these three worlds. It is a structure unique in its reality at a given moment - and only at a given moment - but multiple in its representations. It is precisely these multiple representations that can make it possible to deconstruct the history of a territory.

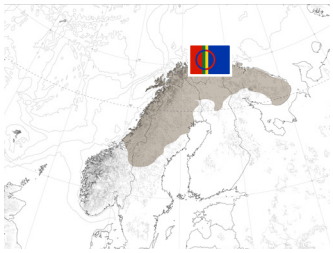
Raffestin, C. (2012) 'Space, territory, and territoriality', Environment and Planning D: Society and Space, 30(1), pp. 121–141. doi: 10.1068/d21311.

04.





04. Socio-territorial orientation





Sámi

Sámi culture origins

The Sámi - the only officially recognized indigenous people in Europe - live on the lands called Sápmi, an area transgressing the borders of Norway, Sweden, Finland and Russia. Despite the harsh living conditions, the area is known to be inhabited for a very long period as first written proof of the presence of people in these northern areas dates back to 98 A.D. when Tacitus described their "astonishingly wild" and "physically demanding hunter-gatherer background"[1]. Although these are the first written proofs, rock carvings have been found which date back to some 10,000 years ago, possibly being made by the ancestors of today's Sámi.

Nowadays, distinctions are made between the Sámi based on geographical characteristics which signify their livelihood, being coastal, mountain, river, reindeer and forest Sámi[2]. In this thesis especially the practice of reindeer herding will be highlighted because this livelihood lies currently under threat as a result of the development of the mineral industry. Furthermore reindeer herding is among the Sámi generally pointed out as one of the pillars of the indigenous culture: "without the reindeer, the Sámi wouldn't be"[3]. The herding and semi domestication of reindeer started around 1500 and had many hurdles to overcome ever since[4].

> *"According to the Reindeer Herding Act the Reindeer husbandry in Norway must be economically, ecologically and culturally viable and it will be based on Sámi culture, Sámi traditions and Sámi customary practices. The right to conduct reindeer husbandry in Norway is based on the Sámi's immemorial claim of lands and the area where these lands are is called the Sámi reindeer herding area."*
>
> - Center for Reindeer Husbandry: www.reindeerherding.org

Sámi culture assimilation

In Norway, the cultural assimilation of the Sámi can be divided in two different periods. Firstly the Christianization of the Sámi from approximately 1500 to 1800 (where the southern parts of Scandinavia had already been Christianized much earlier) and secondly the period of forced Norwegianization (approximately 1850-1980). After 1500 - as part of systematic large scale missionary programs - first the coastal Sámi were converted to Christianity, followed by missionary programs inland until ultimately the Sámi shaman had disappeared by the 1800s, resulting in the successful removal of the ancient Sámi religion.

In the 19th century, political-cultural assimilation of indigenous peoples in the Northern Hemisphere started taking shape. Guided by nationalist ideals many regions unified into the contemporary Western nations. In Scandinavia, Norway separated from Denmark in 1814 - when the Norwegian constitution was signed - proclaiming sovereignty over the nation (although Norway was ceded to the King of Sweden for another 91 years). Dominating agricultural and commercial cultures from the south started spreading northwards, where the nomadic cultures of the Sámi (and Kven) were pushed into smaller areas[5].

When the Norwegian constitution got signed in 1814 the Sámi language was initially accepted and put on the same level as the Norwegian language. However, the upper class in Northern Norway started to oppose this policy and from around 1850 policies of forced norwegianization (*fornorsking av samer*) were issued to systematically "drop their language and change the basic values of their culture and national identity"[6]. The Norwegian state invested in making the Norwegian language the only language spoken in schools, where speaking in Sámi was not allowed. This opened the door for more extreme forms of racism, stigmatization, forced

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Figures

▲ 4.1 Sápmi.
Image by author, adapted from Overland and Berg-Nordlie (2012).

▲ 4.2 Rockcarvings dating from 4200 - 500 B.C. Alta, Finnmark.
Photo by: Markus Sirkka

resettlement, physical violence, domination and the systematic destruction of the Sámi culture, resulting in the coastal Sámi now being almost completely norwegianized[7,8]. Another important event was the scorched earth policy exercised by German forces in the north in 1944, resulting in an exodus. This for many Sámi parents became an opportunity to escape the system of stigmatization. Hoping to give their children the chances they never had, when people started to return to the area the large majority - mainly in the coastal municipalities - suddenly identified as Norwegian[9,10]. The Alta controversy from 1979-1982 - where Sámi protested against the creation of a dam in the Alta Canyon - is marked as the end of the assimilation policies.

It was only in 1997 that the king of Norway officially reconciled and apologized on behalf of the Norwegian government, after which the right to develop culture, language and society have been formalized within the Norwegian Constitution. As part of the attempts for reconciliation and in consultation with the Sámi Parliament the Finnmark Act was accepted in 2005, moving 96% of the lands of the province of Finnmark from state-ownership to be Finnmarkseiendommen Finnmárkkuopdamat (FeFo), of which the board is 50/50 chosen by the Finnmark County Council and the Sámi Parliament. The important side note to this act is that it does not cover fishing rights in saltwater, mining or oil rights. This makes it especially challenging for the survival of reindeer herding where "our main challenge is preserving pastures", as Maret Sara, representative of the Reindeer Husbandry Centre, noted after the passing of the act: "The main threat in our area is the entry of mining companies, after the Finnmark Act came into force last summer"[11].

Struggles over identity, struggles over land

Norwegianization policies have introduced strong cultural uncertainty, still felt today. Nowadays, in the revitalization period, many Norwegian people in Sápmi are still learning much about their background actually being Sámi[12]. Arguably, the importance of this is seen in local support for Nussir's mining developments in Kvalsund, a coastal municipality which has been characterized as being heavily norwegianized[13]. The relevance of the policy nowadays translates into the loss in collective memory of its residents. These lands have for centuries been of importance, as features of the inland gained names and memory, to inevitably become of cultural importance. As Marion Palmer, a poet from Kvalsund, insightfully notes, the "namelessness" of the features of the inland - that came to shape as a result of the inner colonization practiced by the Norwegian government - is a crucial part of the transition and intimately bound to local support for the mining operations. She herself found out on a later age that she was from Sámi descent. As Reinert describes following a meeting with Marion Palmer:

> To the poet [Marion Palmer], the shock of this realization was profound. After a lifetime thinking herself one of the colonists, she had discovered that she was, in fact, the colonized—so fully colonized, in fact, that her identity had disappeared, that her people had ended their own identity so as to give her the hope of another. The stigma, the internalized shame of indigeneity was so deeply embedded that to this day, she said, many of her family members refused to talk about the subject. In her hands, the story refracted much wider realities. With her own erasure and uncountable others like it, across the ancestral territories of Sápmi, entire generations had lost not just their language and identity but also their past, their anchoring to the land in biographical, historical, and generational time. Knots had been undone, rich continuities erased and falsified. The dynamics of colonization had not just conquered or rewritten the past but erased it, made as if it had never happened—as if history itself had yet to happen, or yet to begin. Using shame to destroy even the memory of memory, colonization had disconnected people from land: uprooting the



former, leaving the latter as if devoid of value. Now, without name or memory, the land lay as if empty: if there was nothing to be lost here, there was also nothing worth defending.[14]

The two major forms of erasure profoundly altered identity along the coast of Finnmark. Two scars still unhealed today as inhabitants struggle to discover their identity. In Kvalsund, these scars are converging in the early discussions between locals and Sámi reindeer herders around the opening of the mine. According to the CEO of Nussir, Øystein Rushfeldt, the first meeting was unproductive because of racist undercurrents dominating the discussion[15]. This is not just a singular case, as clashes between coastal municipalities and inner municipalities are happening more frequent, and mainly along the discussions around industrial developments. Mainly in coastal municipalities of Finnmark, the Sámi claims for large tracts of land for their summer pastures is met with antagonism.

Reindeer husbandry

The practice of reindeer herding is characterized as extensive, yet of low impact on the land[16]. It is only practiced by around 10% of the Sámi, but its dependability on landscapes with challenging living conditions made it to be an important pillar for indigeneity, in terms of cultural retention, collective memory and ancestral land bonds[17]. To strengthen the cultural resilience of the Sámi, the practice is in Norway only allowed to be practiced by people of Sámi descent[18]. The spatial extensiveness translates in around 40% of the landscape of Norway being used as pasture grounds for reindeer herders[19]. The herders follow migrational patterns, moving the herds between several seasonal pasture grounds in order to find satisfactory grazing conditions. The herders move on most lands all along Sápmi, with the major exception of the heavily polluted

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Figures

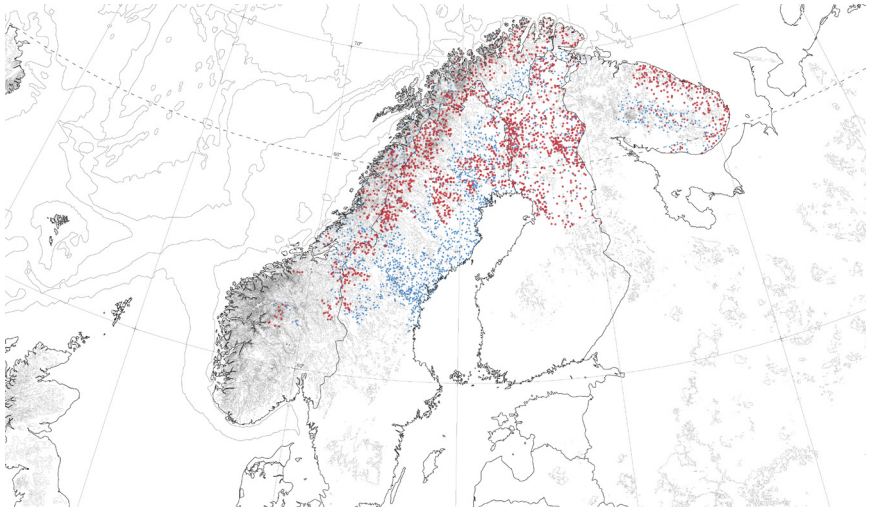
◀ 4.3 Segment of an ethnographic map, including Sámi names for places in the areas north of Kautokeino. J. A. Friis (1861). Taken from: https://www.dokpro.uio.no/friiskartene/1861/1861oversikt.html

▶ 4.4 Projected Nussir copper mine, Repparfjord, Kvalsund.
Image by author



and industrialized area in Russia around Murmansk, Nikel and Zapolyarny. Following mutual agreements, a set number of herding families are allowed to herd their reindeer in districts on areas called siidas, which in turn becomes part of a multi-yearly cycle in which the pastoralist adapts to several changing climatic and landscape conditions[20].

Out of all the areas where reindeer husbandry is practiced, Finnmark - and especially west-Finnmark - is the largest pastoral region. Stocks of reindeer and the amount of practitioners by far exceed other pastoral grounds around Sápmi. Around 73% of the semi domesticated reindeer find their home in Finnmark and the range of the pasture grounds cover almost the entire county[21].



Contested landscapes

Especially impacted by the extremer forms of climate change, flexibility and mobility becomes even more important for reindeer herders[22]. This results in a higher need for diverse pasture grounds[23], making lands which are valorized for their minerals in the ground increasingly contested.

Seeing the longstanding historical ties to these particular lands, many Sámi claim that the rights of their ancestral lands should be in their hands, and not orchestrated by the Norwegian state. This is a viewpoint which gains ground through contemporary analysis of forms of governance over the practice of reindeer herding[24,25]. On the other hand, as related to most other countries where indigenous peoples struggle against the hegemony of the state, the Sámi have gained recognition in the constitution, they have their own parliament and they have politicians in national parties in Norway. However, indigenous sovereignty is still very far away and the situation becomes increasingly complex.

Governance: reindeer herding

Governance of reindeer herding is commonly coined as being problematic. According to Johnsen, Mathiesen & Eira the profession has since the 1970s become increasingly subject to forms of rationalization, that are in conflict with the practice. In these forms of rationalization, the herders

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Figures

◀ 4.5 Summer (red) and Winter (blue) reindeer density map, 1 dot equals 100 reindeer. Adapted from: Nemkova and Fita (2016).

▶ 4.6 Reindeer herding pen. Image by author.



intention to seek balance between nature, reindeer and humans is compromised by a focus of the Norwegian state primarily on economic output and meat production[26].

According to Turi, a central challenge in reindeer herding governance remains in incorporating traditional ecological knowledge based governance systems into policy processes[27]. Failure in incorporating such knowledge is a source of tension for the herders, especially since state-controlled governance systems follow a questionable science of overstocking, aimed at improving resiliency for herders, yet it works counterproductive and forces herders into more economic problems[28,29]. Turi in turn advocates the need for holistic strategies to include traditional ecological knowledge into governance systems as a means to counter these forms of state-steering[30].

Reindeer herding is governed over three levels: national, county and local (see image on the right page). The Ministry of Agriculture and Food is the most powerful level, however it appoints most of its tasks to the Norwegian Reindeer Husbandry Board. The board of seven is chosen by the Ministry (4) and the Sámi Parliament (3). The board has both an advisory and a managerial role. Then comes one of the five appointed county governors of the counties where reindeer herding is practiced (Finnmark, Troms, Nordland, Nord-Trøndelag or Sør-Trøndelag). These are in charge of for example objecting to plans for changes in land-use or for approving land-use regulations provided by districts. Then, each reindeer herding district has its own board, with members appointed from the different siidas[31]. The primary task of the district board is to safeguard reindeer grazing resources. On the local level each siida is divided in shares related to the amount of reindeer that are owned per family[32]. Management of joint activities and facilities is done during the annual siida meetings, containing one responsible herder per family.

Of the Scandinavian nations, Norway has been pioneering most in securing indigenous rights and values. The Norwegians were the first to install the Sámi Parliament, having granted them with more authority than the other Sámi Parliaments in Scandinavia. Also, Norway has ratified the ILO-Convention 169 on indigenous and tribal peoples as first nation on the globe (Norway is still the only circumpolar nation to have ratified the convention). The convention commits the state to recognize and protect the rights of ownership of lands traditionally owned by indigenous peoples[33]. However, as I will explainn, Norwegian governance can be termed as dichotomic over recent years, added to that is the questionable extend up to which the ILO-169 convention has actually been part of policymaking.

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Figures

▶ 4.7 Reindeer governance scheme with regions and districts.
Adapted by author from: Landbruksirektoratet and NIBIO.

National

Ministry of Agriculture and Food

Norwegian Reindeer Husbandry Board
Reindriftstyret

Sámi Parliament
Sámediggi

Regional

County Governors
Fylkesmannen

6 District Boards
Distriktstyret

Sør-Trøndelag and Hedmark	*Nord-Trøndelag*	*Nordland*	*Troms*	*Vest-Finnmark*	*Øst-Finnmark*
13.965	13.972	13.790	11.773	77.370	69.229

Local

Kautokeino østre sone

4.694	*19 - Sállan*
2.490	*20 - Fálá*
2.246	*21 - Gearretnjárga*
5.182	*22 - Fiettar*
6.533	*23 - Seainnus/Návggastat*
1.221	*24A - Oarje-Sievju*
492	*24B - Nuorta-Sievju*

Kautokeino midtre sone

1.160	*25 - Stierdná*
2.998	*41 - Beaskádas*
4.807	*26 - Lákkonjárga*
4.226	*27 - Joahkonjárga*
774	*28 - Cuokcavuotna*
1.196	*29 - Seakkesnjárga ja Sildá*
2.095	*32 - Silvvetnjárga*
5.044	*33 - Spalca*
5.779	*40 - Orda*
487	*11T - Ráidná*
893	*33T - Ittunjárga*
2.129	*19/32T - Ivgoláhku*

Kautokeino vestre sone

4.104	*34 - Ábborašša*
6.236	*35 - Fávrrosorda*
6.897	*36 - Cohkolat*
1.120	*37 - Skárfvággi*
1.880	*39 - Árdni/Gávvir*
2.687	*42 - Beahcegealli*

Polmak/Varanger

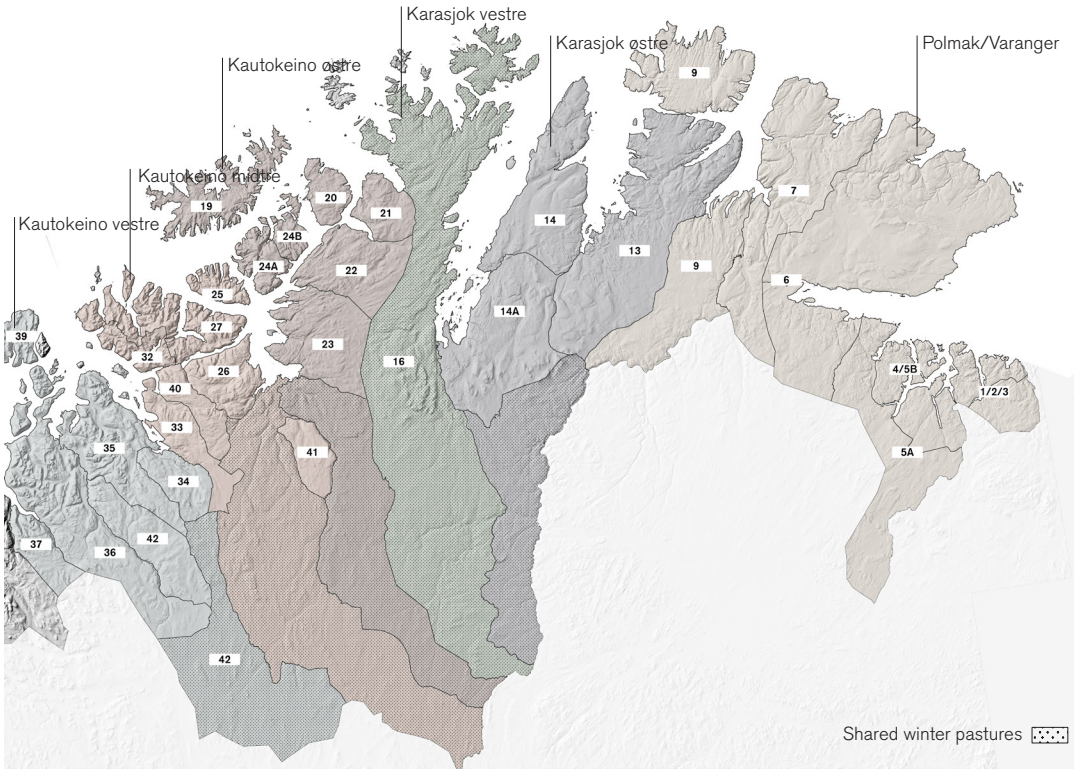
589	*1/2/3 - Østre Sør-Varanger*
2.404	*5A - Pasvik*
1.791	*4/5B - Vestre Sør-Varanger*
10.503	*6 - Várjjatnjárga*
3.741	*7 - Rákkonjárga*
5.044	*9 - Čorgaš*

Karasjok ostre sone

10.815	*13 - Lágesduottar*
3.366	*14 - Spierttanjárga*
6.713	*14A - Spierttagáisá*

Karasjok vestre sone

24.263	*16 - Kárašjoga oarjabealli*



Mining

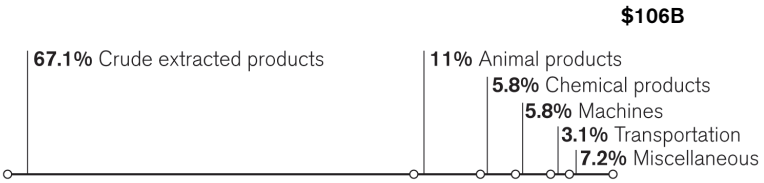
Is Finnmark a mining region?

Because minerals have profoundly altered our lives over the technology-dominant past two centuries, it is motivated to look at mineral mining - the very basis of technology - as profoundly and fundamentally a cultural activity. When seeing mineral mining through a cultural lens, as opposed to strictly an economic or environmental one, a different frame of research opens up. Avango et al. point to mining operations as being large scale socio-technological systems which "are dependent on a much wider range of technical, societal, environmental [and political] components to function"[34]. These systems comprise of several technological artefacts, production technologies and waste disposal, large scale energy networks, transportation networks, a wide variety of actors, institutional frameworks and settlements[35].

Norway has longstanding cultural traditions in mineral mining. Next to granting job opportunities, mining in the heydays in Scandinavia have granted a livelihood in the form of several urban projects, as happened in Kiruna and Kirkenes for example, where cities have been built by mining companies themselves. Still now the company LKAB (owned by the Swedish government) is responsible for moving the city of Kiruna, now that it is facing subsidence due to the mining activities[36]. Also Kirkenes, and the town of Bjørnevatn have benefitted profoundly from the Sydvaranger mine (for most of its time owned by the Norwegian government). These forms of development are often invoked as a strategy among mining advocates, yet they negate the fact that the mining industry has changed profoundly and that specific skilled technical labor is required, which is nowadays most likely found through trained migrant workers, most of whom do not settle in the mining town[37].

In the development of mines, Avango et al. argue, we can distinguish three different phases. The innovation phase (1) consisting of prospecting, the development of technologies and the planning of mining operations. The expansion phase (2) in which the system is build up. And the momentum phase (3), the phase in which the mining operations, investments and responsibilities towards workers and other stakeholders have grown so big that it is difficult to abandon the system[38]. In the end these systems themselves have across Northern Scandinavia “created a momentum working in favour [sic] of new mining projects”[39].

The mining culture of Scandinavia started many years ago in the south, before slowly migrating northwards, bringing the growth and prosperity of Norwegian cities like Mo i Rana, Narvik and Kirkenes on its way. Nowadays Norway capitalizes strongly on extracted products. Of its export figures in 2017 67.1% consist of crude extracted products, most of it being crude oil and gas. In Finnmark the mineral mining industry is likely to develop further through the (at this point mapped) copper, gold, nickel and iron deposits. Mineral mines in Finnmark that developed historically are Sydvaranger (iron), Bidjovagge (gold/copper), Repparfjord (copper), Kåfjord (copper), Raipas (copper). Nowadays mainly of interest are three different cases, Sydvaranger, Bidjovagge and Repparfjord.



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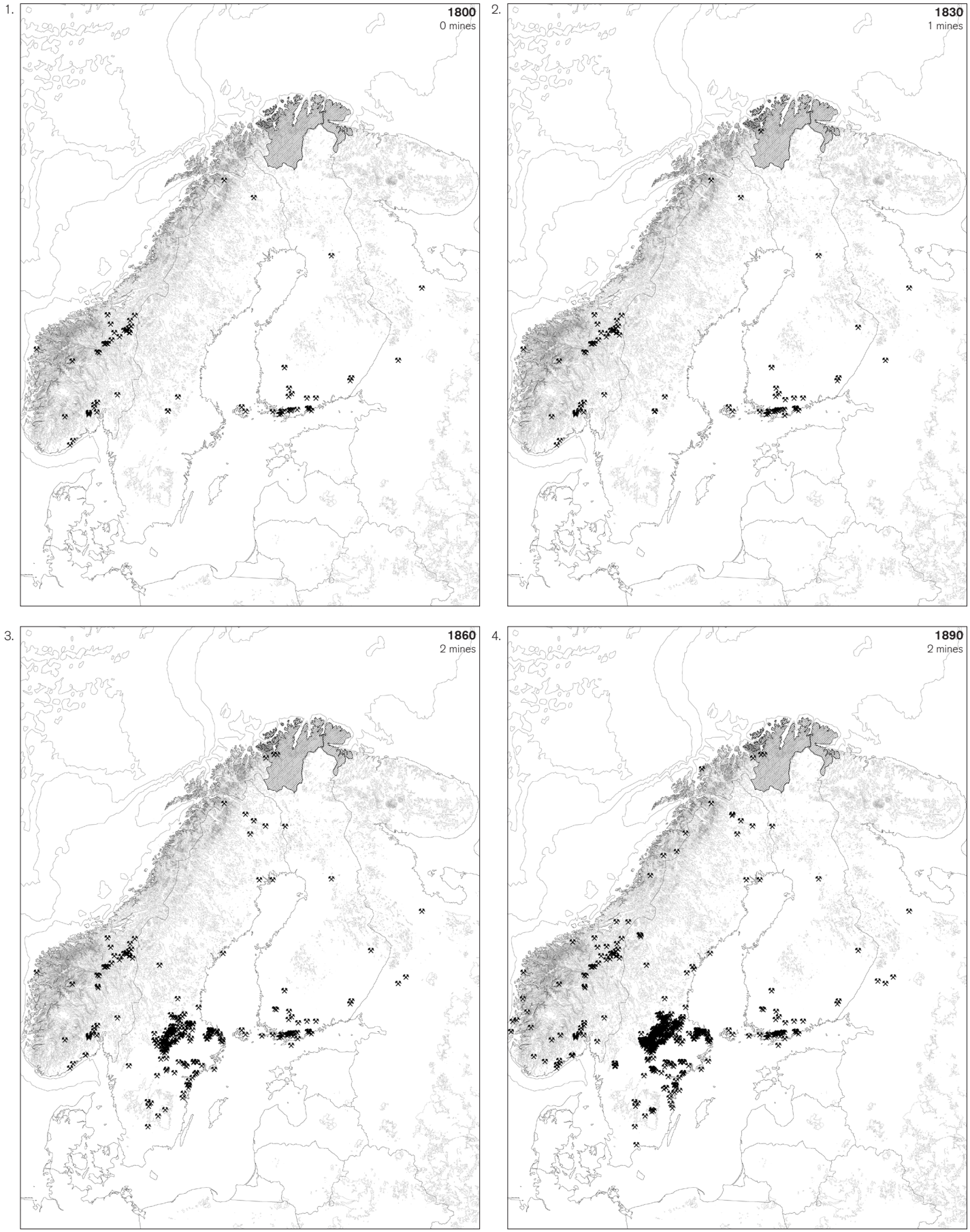
[39] Ibid.

Figures

◀ 4.8 Export figures of Norway in 2017. Adapted by author from: OEC.

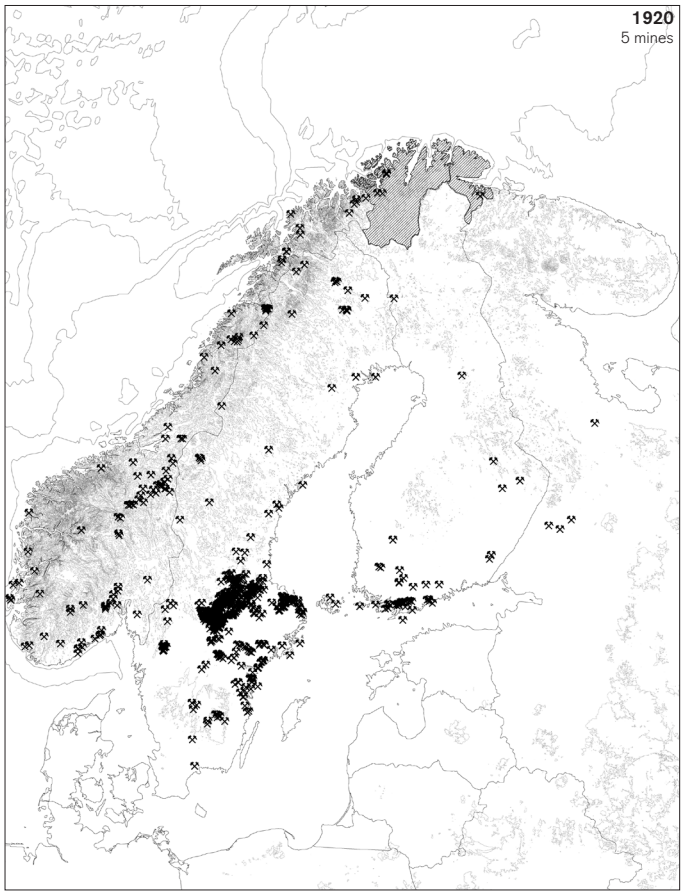
▶ 4.9 Statue of a miner in Bjørnevatn. Image by author.



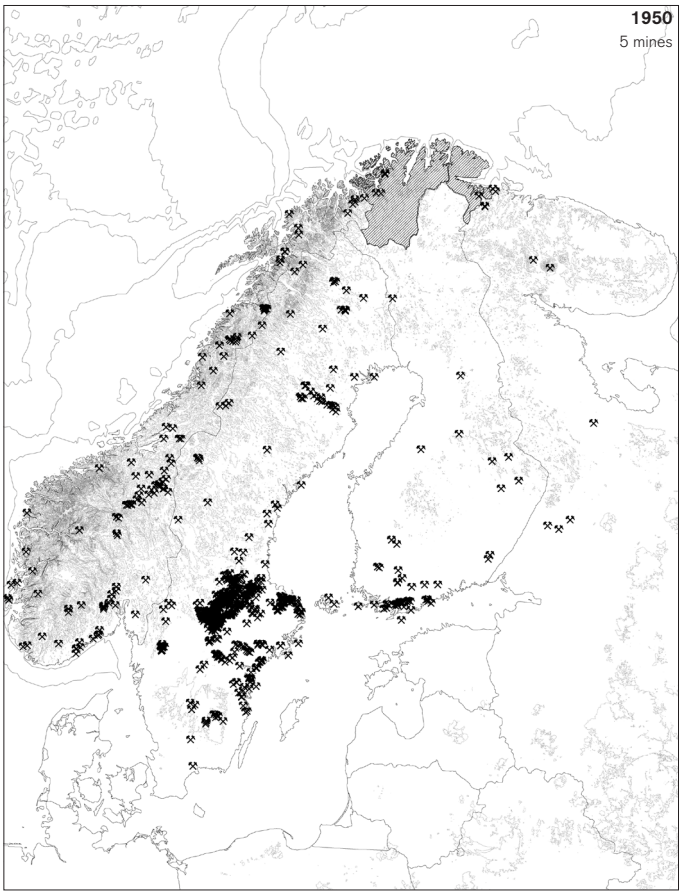


4.10 Growth of the metallogenic mining industry.
1: Mines which developed up until 1800,
2: Mines up until 1830,
3: Mines up until 1860,
4: Mines up until 1890,
5: Mines up until 1920,
6: Mines up until 1950,
7: Mines up until 1980,
8: Mines up until 2012.
Data from Geological Survey of Finland, adapted by author.

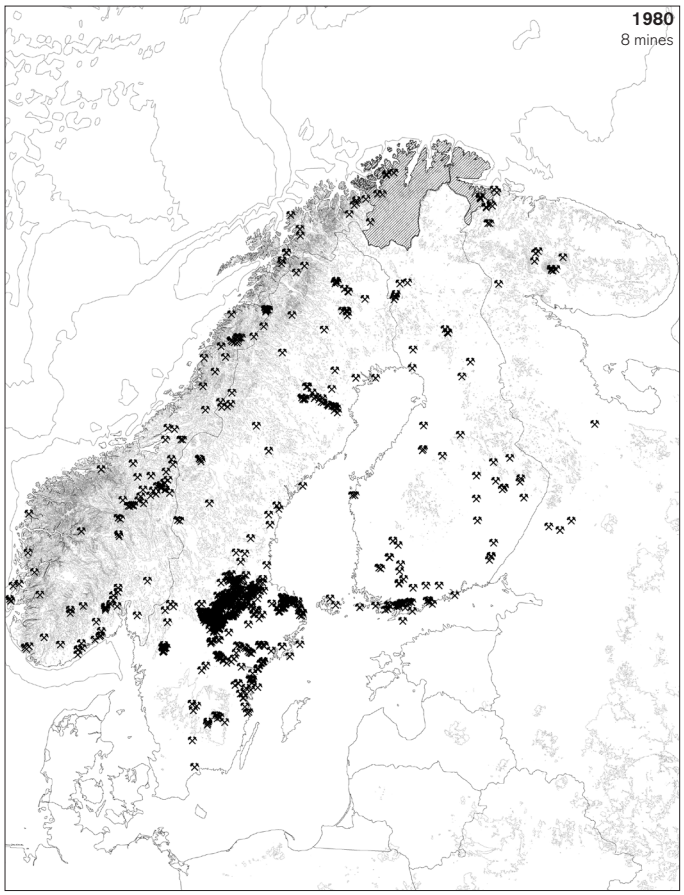
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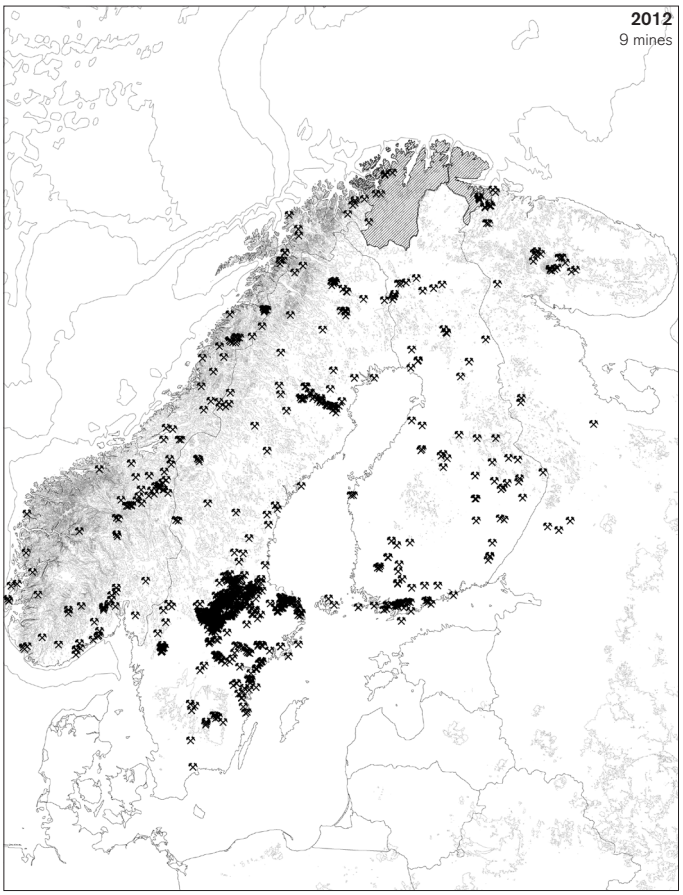
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7.



8.



Governance: mineral industry

As noted earlier, in 2005 the Finnmark Act came into force, transferring around 95% of the ownership of the land into the hands of the FeFo, a Sámi-Norwegian board collective elected every 4 years. However, the act disregards rights in saltwater, mining and oil. Ownership of any metal with a weight of over 5 grams per cubic meter – which includes all of the currently found metallogenic minerals - belong according to Norwegian law to the Norwegian state[40].

According to the Mineral Act (2009), in order to obtain an operating license a mining company has to provide an approved zoning plan, and a discharge permit. The zoning plan has to be accepted by the municipal council, any potential land-use conflicts should be addressed during the development of the plan[41]. Reindeer herders can take part in the planning discussion early on, emphasis is laid on transparency, predictability and participation as basic democratic and judicial principles[42]. The discharge permit gets checked by the Norwegian Environment Agency and includes environmental impact assessments[43].

In 2011, the government published their visions for the development of the High North under the framework of the Northern Area Investment program [Nordområdesatsingen][44]. It involved the financing of large geological mapping programs through which it seeks to develop the mineral industry to strengthen the job market in the region. According to Johnsen[45], the government followed up on the visions by publishing its strategy for the mineral industry in 2013. Here it acknowledges the challenges to the environment and Sámi culture, suggesting to find "solutions for coexistence based on good dialogue and a shared understanding of the challenges to be met" (NHD, 2013 as quoted in Johnsen[46]). Further explanation of the concept of coexistence is not provided[47].

Submarine tailings

International concerns regarding Norwegian governance in mining and environment are related to Norway allowing - as one of very few countries[48] - submarine tailings disposal. Norway is the only country which allows this practice in shallow coastal waters[49]. These practices are internationally viewed as environmentally destructive, as they imply the dumping of toxic mining waste, where



Citations & comments

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[43] Dannevig, H., & Dale, B. (2018). The Nussir Case and the Battle for Legitimacy: Scientific Assessments, Defining Power and Political Contestation.

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[46] Ibid.

[47] ibid.

[48] Apart from Norway, only Chile, Turkey, Papua New Guinea and Indonesia allow submarine tailings disposal to happen. Norway is the only country that allows it to happen at shallow coastal waters.

[49] Reinert, H. (2019a). The Midwife and the Poet: Bioaccumulation and Retroactive Shock.

[50] Nilsen, T. (2016). Norway votes against ban on dumping mining waste at sea.

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[56] Mathis Nilsen Eira (2019), representant of the Sámi Parliament.

[57] The equivalent of 17 lorry loads every hour according to Naturvernforbundet, https://naturvernforbundet.no/repparfjord/norway-to-allow-new-mine-waste-dumping-in-national-salmon-fjord-article38878-3800.

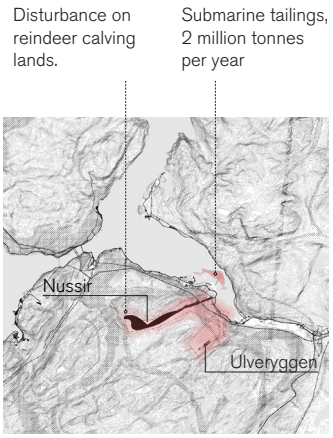
Figures

◀ 4.11 Repparfjord, Kvalsund municipality.
Image by author.

▲ 4.12 Mining and issues for indigenous practices.
Adapted by author from: Nussir, NIBIO.

▶ 4.13 Drone image of the Repparfjord.
Image by author.

chemicals are used in the process to separate the ore from the rock till the required consistency. Norway is one of the few countries who has been internationally active in lobbying against an international ban on sea tailings[50]. Recently, policies have changed and Norway will not allow future projects to use submarine tailings disposal[51]. However, mines that have received a license to operate before the change in policies are still allowed to continue in the same way. Soon eight mining sites in Norway will be dumping their waste into the sea, other active mines that utilized these methods as of 2015 are currently situated in Indonesia (2), Papua New Guinea (2), Turkey (1) and Chile (1)[52].

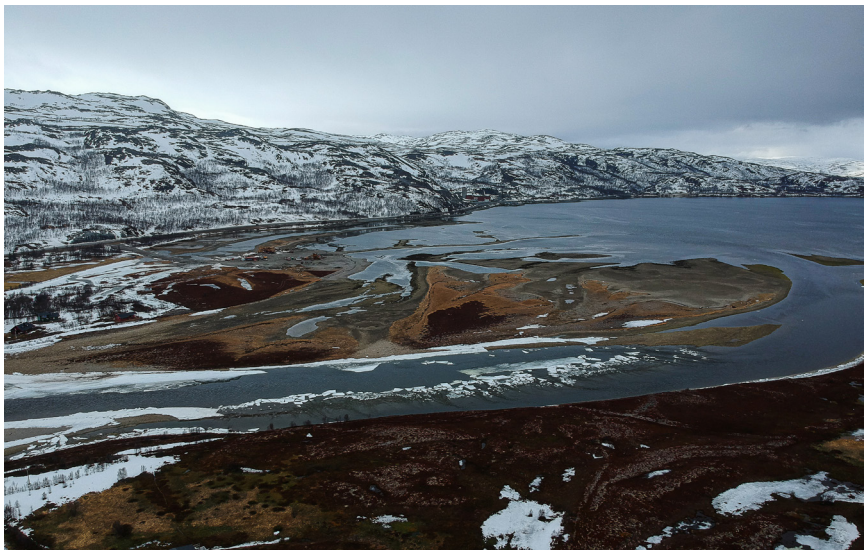


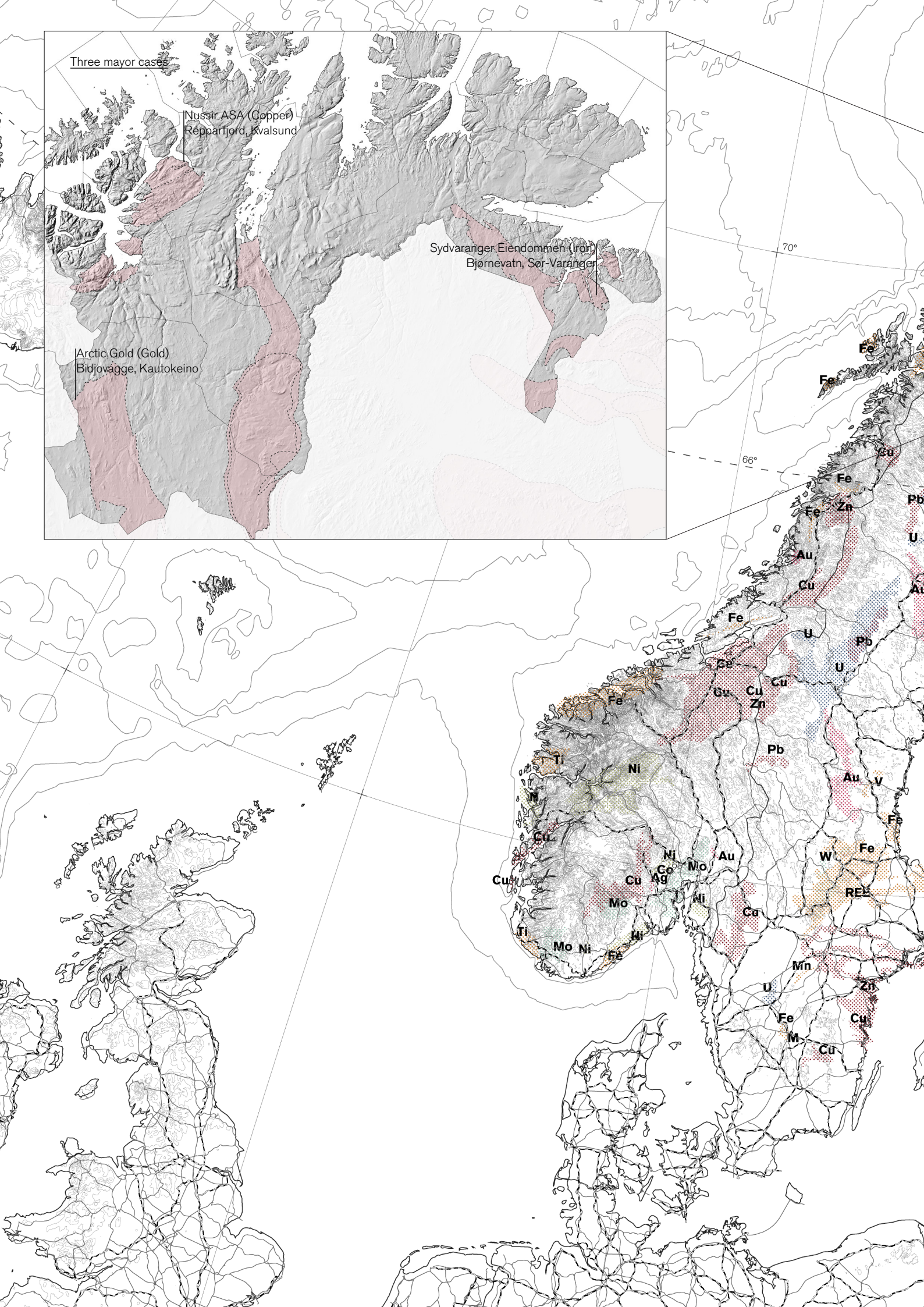
Mining and issues for indigenous practices.

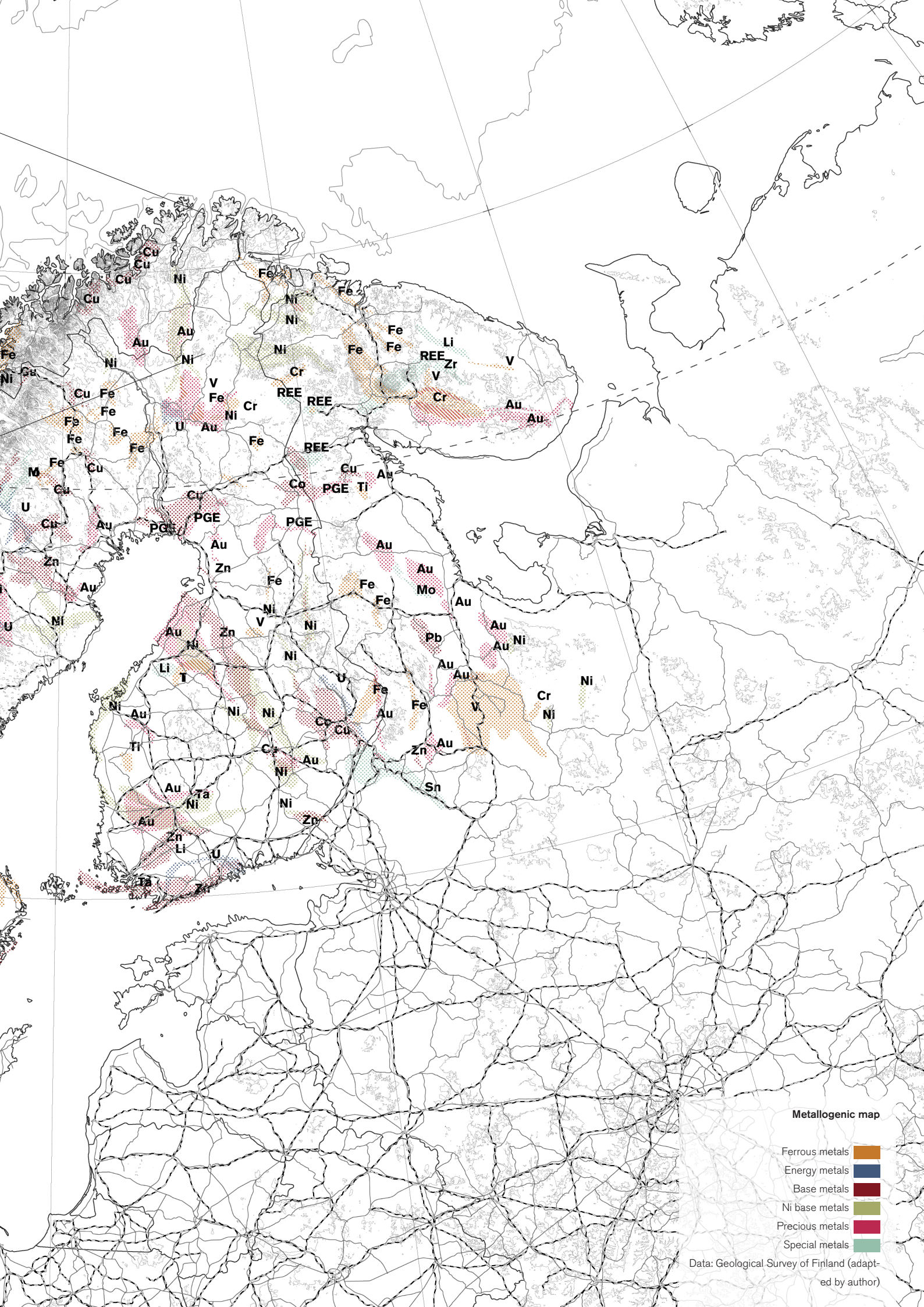
Mining developments: Repparfjord

The mine that has sparked the biggest debate around Norway is situated in Kvalsund. On the 14th of February 2019, mining company Nussir received a license to operate[53]. The company plans to reopen an existing copper mine on the banks of the Repparfjord, and extract ores for the coming 30 years. The deposits analyzed in the area in total account for an estimated size of approximately 73.7 million tons of copper ore. The grade is considered quite high for the area, Ulveryggen has an estimated grade of 0.8% and the Nussir deposit has an estimated grade of 1.15%. It is expected that future drilling in the central area will result into discovery of more ore[54]. Nussir claims that the mining operations "(…) can coexist with the traditional industries in Kvalsund and become a natural part of local communities with roots in both Norwegian and Sami culture"[55]. The Sámi Parliament on the other hand has appealed the issuing of the license, and calls the opening of the mine, green colonialism "(…) where lands are taken from us [Sámi] to develop industrial projects under vicarious environmental motives"[56]. Nussir is allowed to dump 2 million tonnes of copper extraction[57] waste each year into the Repparfjord. This fjord is an officially recognized National Salmon Fjord, given its importance in being a spawning spot.

The issue for reindeer herders revolves around the change in land-use of the site. The land that will be used for the development of the buildings and shafts that will be placed, that interfere with important calving grounds for the Fiettar herding district and migratory routes for the Fálá herding district. For a better coexistance the company has agreed to stop mining operations during the calving period. However, sparking the concerns from a herder from the Fiettar district,




Three mayor cases
Nussir ASA (Copper)
Repparfjord, Kvalsund
Sydvaranger Eiendommen (Iron)
Bjørnevatn, Sør-Varanger
Arctic Gold (Gold)
Bidjovagge, Kautokeino
70°
66°


Metallogenic map
Ferrous metals
Energy metals
Base metals
Ni base metals
Precious metals
Special metals
Data: Geological Survey of Finland (adapted by author)

dust and air pollution during the previous mining period - commonly referred to as the Foldall period, from 1972-1978 (which was of a much lower scale) – had caused pneumonia in their herd. Furthermore disturbances from mining would mainly comprise of the cumulative effects from the operations. The mine was just one of the encroachments on their lands. The mine will need power, power lines and hydropower plants. Apart from that new infrastructure has to be developed. All these activities will enhance new encroachments on the land[58].

Debates on the development of the mine spark mainly around the environmental consequences these practices. There is a lot of disagreement over the expected effects. Environmental impact assessment by a company hired by Nussir concludes there will be “some damage”[59], while other reports show more devastating results ranging up to “catastrophic loss of life in the fjord and the dissemination of toxic materials into the wider regional ecosystems (and food chains) of the Barents Sea”[60]. Especially because the previous operation period has led to extreme consequences for local fishers, the plans are met with skepticism[61].

Altogether the issuing of a license to operate from the government is at the very least controversial. Conversations between Nussir and the herding communities were carried out, but an agreement was never made as there was never a “shared understanding of the distribution of risks”[62]. This resulted in Nussir claiming that the mine can “coexist”, while the Sámi Parliament has appealed the decision to the King-in-Council, the highest form of appeal that can be made in Norway. The appeal has been rejected on November, 2019.

Mining developments: Bidjovagge

In the Bidjovággi mountain area the company Arctic Gold proposed to reopen a gold and copper mining site in 2010. The mine had two previous operative periods from 1970 till 1975 and from 1984 till 1992. The plans are situated on the border of two municipalities and counties, Kautokeino in Finnmark and Nordreisa in Troms. Authorities in Nordreisa accepted the plans unanimously, yet in Kautokeino the plan got rejected before the impacts were assessed[63].



Citations

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[63] Ibid.

[64] Johnsen, K. I. (2016). Land-use conflicts between reindeer husbandry and mineral extraction in Finnmark, Norway: Contested rationalities and the politics of belonging.

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[66] Jussa Seurujärvi in Wall, T. (2019). The battle to save Lapland: “First, they took the religion. Now they want to build a railroad.”

Figures

◀ 4.14 Drone image of Kautokeino. Image by author.

▶ 4.15 Drone image of the Sydvaranger mine. Image by author.

The critical difference between local support in Kvalsund – which as noted before became heavily norwegianized - and opposition in Kautokeino for both mining projects revolves around the fact that most reindeer herders are based in Kautokeino, even the ones that have their summer pastures along the coast in (for example) Kvalsund[64]. The different rhetoric utilized by decisionmakers points at the core of the struggle around the mineral industry in Finnmark. In Kautokeino, decisionmakers recognized pastoralism as a part of the municipal identity, whereas in Kvalsund the conflict was argued as being between an interest group and the interests of society[65].

Mining developments: Sør-Varanger

The biggest mining site of Finnmark is situated in Sør-Varanger, a few kilometers from the Russian border. The Sydvaranger open pit iron mine has for most of its time been operated by the state which has invested strongly in the mine and surrounding infrastructure. It has operated in two different periods from 1906 till 1997 and from 2009 till 2015. In 2020 the mine will restart production, as the mine received a license to operate in March 2019. Where Nussir received strong opposition, Sydvaranger was met with almost no opposition at all, despite the fact that there are plans for this mine, like the one in Kvalsund, for the disposal of mine waste in the sea. One of the reasons why the decision didn't evoke a national discussion is because the district board (Pasvik) came to an agreement with the operators (Sydvaranger Eiendom AS) regarding the operations. Mining has been going on for such a long time in this area that it became a practice engraved into the collective memory of the people in the region.

Mining developments here has brought prosperity to the nearby town of Kirkenes which is now planned to be the ending point of the Arctic Railway, a planned Finnish railway development connecting Kirkenes to Rovaniemi, in Arctic Finland. The plan is met with a lot of skepticism from the Sámi fearing that the cutting through pasture grounds will greatly affect their livelihood[66].



Rationalization & Alteration

> *"Norway has made great efforts towards fulfilling its obligations to the indigenous Sámi in relation to protecting their land rights and natural resources. However, one can legitimately argue that [Norway] still has a way to go before it fully accomplishes its legal obligations to the Sámi when it comes to recognising and protecting rights to lands, waters and natural re-sources."*
>
> Ravna, Ø. (2015). Sámi Rights to Natural Resources and Lands in Norway. In N. Loukachova (Ed.), Polar Law and Resources (pp. 63–77). Norden.

Under the flagship of Norwegian governance and politics, the mining industry has grown manifold. On its way it has profoundly altered and is continuing to alter cultural livelihood. Even today the modes of governance in the reindeer herding industry as well as in the mining industry are enacted through rationalization, and is overtly and covertly aimed at 'modernizing' the indigenous Sámi culture[67]. The grip the state has over the practice of reindeer herding, as well as the power to develop mineral mines, effectively frames the power Norwegian politics has over fundamentally altering culture. Two recent PhDs investigate this from the perspective of Sámi reindeer herding. Both these PhDs show that there are fundamental differences in world views and conflicts related to traditional ecological knowledge[68,69]. Rationalization is seen as counterproductive to traditional ecological knowledge, while the importance of the latter is increasingly being highlighted in studies on environmental governance[70].

According to Johnsen (2018) rationality on planning and development in Norway is based on 'transparency, predictability and participation' which according to the Norwegian model will lead to consensus and will minimize or avoid negative impacts. However, the land-use conflicts originate from differences in worldviews that the Norwegian state fails to address. The resource related conflicts are often misjudged in terms of scales - both temporal and spatial - of the cumulative effects, and are often focused on material issues only, neglecting the nonmaterial issues and moral claims behind the conflicts[71,72]. Focus of an analysis into the problematics around mineral extraction and indigenous livelihood should be more guided towards for example "the underlying ethical stands about proper resource use, historic ties to the place, precedence in customary law, encroachment history, unjust exercise of power by an authority, etc."[73]. Furthermore, the actors that are more powerful in decision-making can define with more ease what knowledge is relevant, interpret the truth and create rationality. This inequality in terms of focus, impact and power highly influences the consensus-seeking process[74]. The best example for this is the issuing of the license to operate to Nussir in Kvalsund, despite having no agreement with the Sámi.

Conclusions

Research questions:
a. How has Norwegian governance influenced the discussion surrounding the Sámi and mining developments?
b. How can we define the socio-territorial orientation of Finnmark, related to the development of the mining industry?

Autonomy
During the course of history, Sami culture had its challenges to overcome, these have left its lasting mark on the culture today, and strong struggles over identity. As was the case in the Nussir developments, this complex cultural history was overlooked in the decision-making.

Citations

[67] Overtly outspoken by Helga Pedersen in a documentary from 2013, where she (as parliamentary leader of the Labour Party) spoke about the necessity of the Sámi culture to become 'new' and 'modern'. Einarsson, H. (2013). NUSSIR - Drømmen om Finnmark.

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[70] Ibid.

[71] Turner, M. D. (2004). Political Ecology and the Moral Dimensions of "Resource Conflicts": The Case of Farmer–Herder Conflicts in the Sahel.

[72] Johnsen, K. I., Mathiesen, S. D., & Eira, I. M. G. (2018). Sámi reindeer governance in Norway as competing knowledge systems: a participatory study.

[73] Ibid.

[74] Ibid.

Through the installment of the Sámi Parliament, and the transfer of land rights to FeFo the state has taken measures to help recover the Sámi culture. However, strong opposition related to the opening of the mining industry, and inability to grant more autonomy to reindeer herders, indicate that the state struggles over recognizing its real impact on the Sámi, much of which can be explained through the history of the territory. Furthermore, the state's dichotomic nature of decision-making has to be highlighted. On the one hand it attempts to help recover the Sámi, and on the other it attempts to capitalize on the vast amount of resources in the ground. What the state fails to acknowledge with the Northern Area Investment program, facilitating the plans for the development of the mining industry, is its own role in the alteration of the ethnogeographic composition of Finnmark. Furthermore it fails to maintain its promises that it did through ratifying the ILO-169 convention on indigenous and tribal peoples, making full indigenous sovereignty on these lands still far-fetched. The state still has a responsibility in helping the Sámi strengthen their culture.

Modernization

Through many years of living with nature in the harsh environments of the Arctic, the Sámi have established a long-lasting cultural relationship with the landscape. Worldviews of the Sámi find their origin in these relationships. These worldviews are in many ways directly opposed to modern worldviews. However, the state is still aimed at maintaining modern development ideals in the rural environments. This can, among other things, be seen in the fact that Norway has a Ministry of Local Government and Modernization. Helping the Sámi strengthen their culture implies then that the state in its decision-making also needs to acknowledge traditional knowledge. The only way to do this is to understand how the Sámi could be granted more autonomy.

FIELDTRIP & DOCUMENTARY

Outline

This chapter explains the on-site analysis and documentation. It serves as the foundational base for the thesis. I argue that western knowledge has to a large extend failed to comprehend the first person perspective. In an attempt to gain a more holistic perspective, the field trip is documented in a journal and documentary. These are described in this chapter.

You see, gentlemen, reason is an excellent thing, there's no disputing that, but reason is nothing but reason and satisfies only the rational side of man's nature, while will is a manifestation of the whole life, that is, of the whole human life including reason and all the impulses. And although our life, in this manifestation of it, is often worthless, yet it is life and not simply extracting square roots.

Dostoevsky, F. (1864). Notes from Underground.

05.






WEST HERCULES
PANAMA
IMO 8768763
ANTHROPOCENE


PEOPLE


LANDSCAPE

Introduction

Thorough research on site is a crucial aspect for every project. Preliminary analyses has shown gaps between western and indigenous perspectives which have caused conflicting situations. In order to bridge these gaps, we (Boaz Peters and Mark Slierings) conducted a two week field trip to northern Norway and Scandinavia. The main purpose is to understand the perspectives of the local residents on the incoming industries. By means of a journal we ground our experiences through cinematography, photography, interviews and literature in order to get a more holistic socio-territorial perspective.

The first part will explain the objective of the field trip and what types of documentation were used. The second part will consist of a day to day journal. This documentation explains the foundations for the construction of our documentary.

As outcome we proudly present our documentary 'Northbound' which has been selected for the Architecture Film Festival Rotterdam 2019 and the Budapest Architecture Film Days 2020. Main narrative lines of the documentary were build under the notions of anthropocene, people and landscape. The field trip has aided in the further creation of the theses, and the documentary and journal are the instruments to translate in real life as possible. We suggest that a project in contested landscapes like this is incomplete without the first person perspective, and we build this argument throughout this chapter.

Figures

◀ 5.1 West-Hercules, Rypefjord, Hammerfest.
Made by Authors 2019

◀ 5.2 Winning act of Sámi Grand Prix, Kautokeino.
Made by Authors 2019

◀ 5.3 Håja island, Hammerfest.
Made by Authors 2019

Objective

"Both in the selectivity of their content and in the signs and styles of representation maps are a way of conceiving, articulating and structuring the human world which is biased towards, promoted by, and exerts influence upon particular sets of social relations"

J. Brian Harley, "Maps, Knowledge and Power" (1988)

If the map doesn't present itself as a truthful representation for the territory anymore, then new modes of representation should be considered to broaden the academic scope. During the field trip our goal has been to investigate and communicate the social, environmental, cultural and political dynamics in Finnmark.

We chose documentary making as a tool to translate these problems. Objective and subjective gaps between Western and indigenous perspectives are causing conflicts in Finnmark. One of the primary problems is that a Western perspective - often based on a more objective, third person knowledge - fails to understand and translate local knowledge and perception into its research. According to the Stanford Encyclopedia of Philosophy, this objectivism is effectively based on the assumption "that an objective description of what exists can be complete; that there are no aspects of reality which can only be understood by having experiences of a specific type"[1]. But as the philosophical Knowledge Argument reveals; "no objective description of what exist can be complete"[1].

The Knowledge Argument "rests on the idea that someone who has complete physical knowledge about another conscious being might yet lack knowledge about how it feels to have the experiences of that being"[1]. This is exactly where documentary making can be seen as an effective tool. Our goal is to combine and test our pre-gathered research and hypotheses with the first person experience through filming, photography and interviewing and translating this to reach a wider audience.

There are multiple methods to gain a holistic view in regard of first person perspective/ knowledge (interviewing, studies in humanities etc.). We chose to focus on film making as it provided us with a tool which is visually and emotionally strong. Furthermore, it is quite quickly mastered with little experience or study.

Western- and indigenous knowledge perspectives

Knowledge based indigenous science has been gathered over centuries by place-based natural-history observations: in lexicon, calendars, place names, maps and other practices of indigenous resource managers. We will use the field trip, journal and documentary as aides for opening up this knowledge to us, in order to elaborate on the findings of our theses. And as Sarah Pink explains; "first person perspective recordings might be engaged and made analytically meaningful in disciplines where naturalistic and observation visual recording is uncommon". She argues that these technologies can be used for wider possibilities in ethnographic research both beyond their existing uses and for interdisciplinary research where the images they produce might be analysed from more than one perspective[4].

We will use the journal and documentation through documentary making to combine our (Western) research with the *traditional ecological knowledge*. Traditional ecological knowledge is "knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings, including humans, with one another and with their environment"[3].

Citations

[1] Nida-Rümelin & O Conaill, (2019), Qualia: The Knowledge Argument.

[2] Wilder, O'Meara, Monti, & Nabhan, (2016), The importance of indigenous knowledge in curbing the loss of language and biodiversity.

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Figures

▶ 5.4 Diagram showing relations between western knowledge and traditional ecological knowledge and their respective perspectives.
© Authors 2019

▶ 5.5 Table comparing features of Western science and TEK.
based and adapted from Wilder, O'Meara, Monti, & Nabhan 2016

The diagram and table below explain the main differences between Western knowledge and traditional ecological knowledge (TEK). As the digram shows, traditional ecological knowledge enriches Western science, but can also benefit from it. This cooperation will eventually enable researchers working in these environments to help engage diverse constituencies in addressing the biological, cultural and economic consequences that global externalities have on these territories. This should therefore be of interest to those scholars working to bridge the environmental sciences with social sciences, art an religion[5].

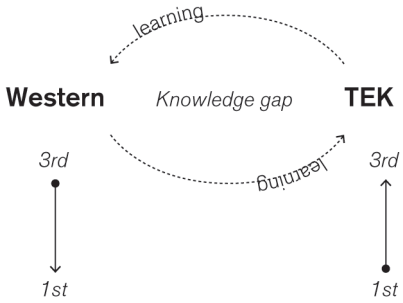
Ultimately we will try answer the following questions:

How can the field trip, journal and documentary broaden our knowledge for our theses?

How can the field trip, journal and documentary broaden general scientific knowledge of indigenous issues?

The journal can be found on the following pages. For each location we stopped, we will couple our personal experience with scientific literature and news articles. On the days of the interviews, a summary of the interview will be given. Concurrently, we will explain which stories, conclusions and images ended up in the documentary. By providing a journal, we hope to be transparent in our motivations and intentions.

Western and indigenous perspectives



Goals	Seeking universals and testing theories through experiments, the analyses of data and models	Usually offering data and pattern analyses specific to or bounded by a culturally defined space and time
Participants	academically trained professionals & technicians	Largely done by “proto-professional” naturalists: foragers, hunters, fishers, farmers and shamans
Communication	Primarily through written works, graphs and formal oral presentations	Primarily transmitted orally in indigenous language and through songs, story, maps and art.
Framework	Done by individuals, small teams, or cybernetworks for universal benefit	Done in multigenerational communities primarily for the community

Journal setup

Day 1 - 3: Tromsø | page 70
Arctic University of Norway
Grøtsund Fort Harbor
Tomsø Arctic Reindeer
Nordnorsk Kunstmuseum

Day 3 -4: Hammerfest | page 76
Snøhvit: oil & gas industry
Museum of Reconstruction
Local perspectives

Day 4 - 5: Forsøl - Børselv | page 84
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Strømsnes: future industrial development
Repparfjod: re-opening copper mine

Day 5 - 6: Børselv - Vardø | page 90
Interview: Siv and Per - social geographer and reindeer herders
Fjord landscapes : fishing towns
Varangerfjorden

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Radar surveillance stations
Interview: Torbjørn
Steilneset Memorial: Sámi and Kven evictions
17th century

Day 7: Kirkenes - Russia | page 108
Nikel: nikel mines and smelters
Zapolyarny: mines and industry

Day 7 - 8: Inari - Leppäjärvi | page 114
Siida museum
Arctic Corridor
Sami Parliament

Day 8 - 10: Kautokeino | page 122
Sami University
Interview: Aslak Sokki - owner Sokki
Adventures and reindeer herder
Sámi Grandprix

Day 10 - 11: Leppäjärvi - Alta | page 128
Alta Rock Carvings Center
Alta Canyon: Alta protests against Alta dam

Day 12 - Alta - H'fest - Tromsø | page 134
Kåfjord: old copper mine and 2nd world war
Repparfjord
Rypefjord: Polar Base harbor

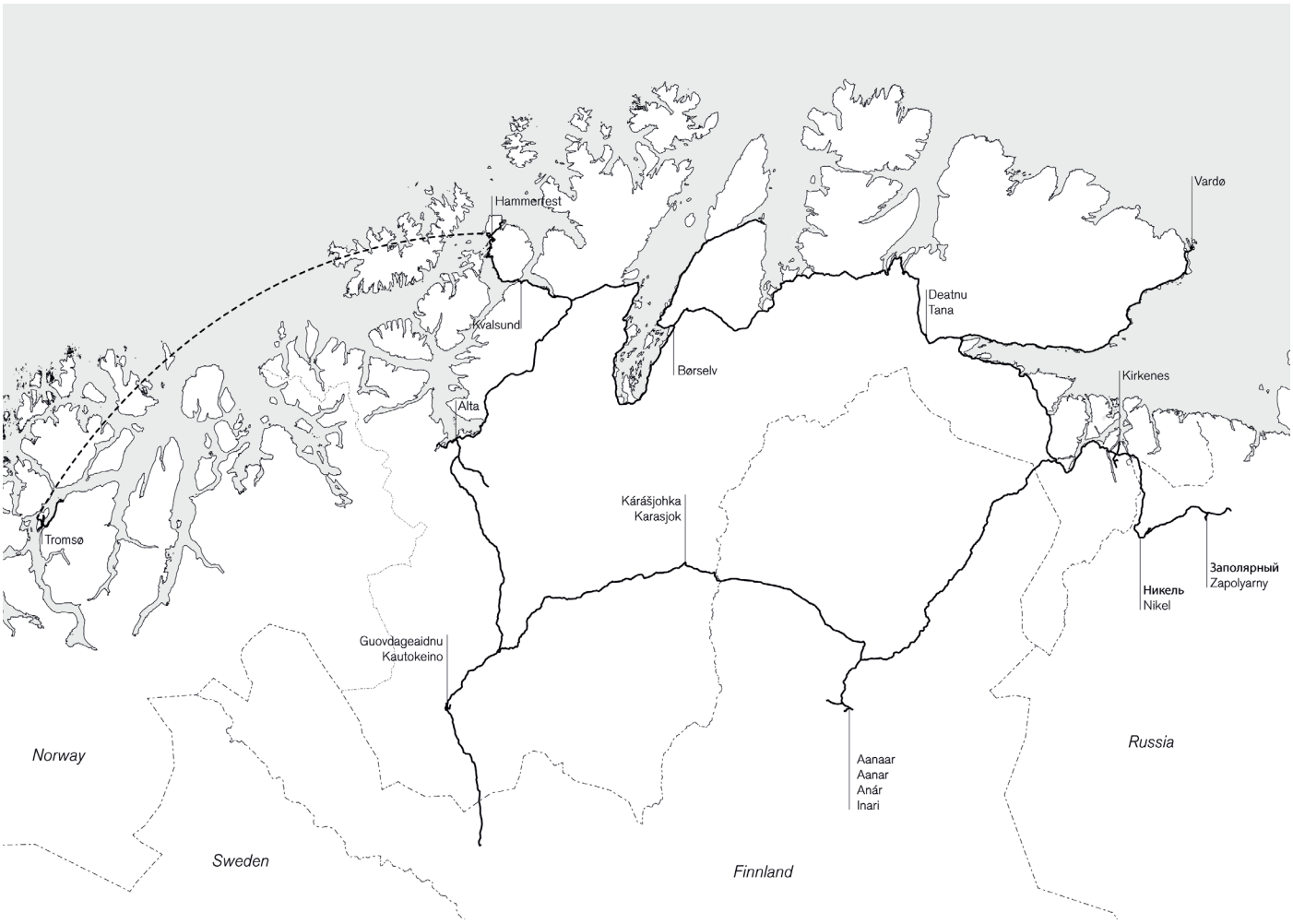
Day 12 - 14: Tromsø | page 138
Norgen Arktiske Universitetsmuseum
Polar Museum

Figures

▶ 5.6 Twighlight lasting hours seen from the car.
made by Authors 2019

▶ 5.7 Map of traversed route through Norway, Russia and Finland.
made by Authors 2019, based on height data from Kartverket 2019




Hammerfest
Vardø
Deatnu
Tana
Kvalsund
Børselv
Kirkenes
Alta
Kárášjohka
Karasjok
Tromsø
Заполярный
Zapolyarny
Никель
Nikel
Guovdageaidnu
Kautokeino
Aanaar
Aanar
Anár
Inari
Norway
Russia
Sweden
Finnland

Tromsø

Thursday April 11th, 2019
To reach the North of Norway one can travel to Alta or Tromsø. Most flights to Tromsø have a layover in Oslo. It is one of the few airports with wooden floors, and exhibits grand luxurious characteristics. This sight immediately confirms the richness of this Scandinavian country, and we joke that this is all built on oil. Landing around midnight, our first Arctic experiences are greatly influenced by an immensely long twilight, illuminating steep fjord mountains in the distance.

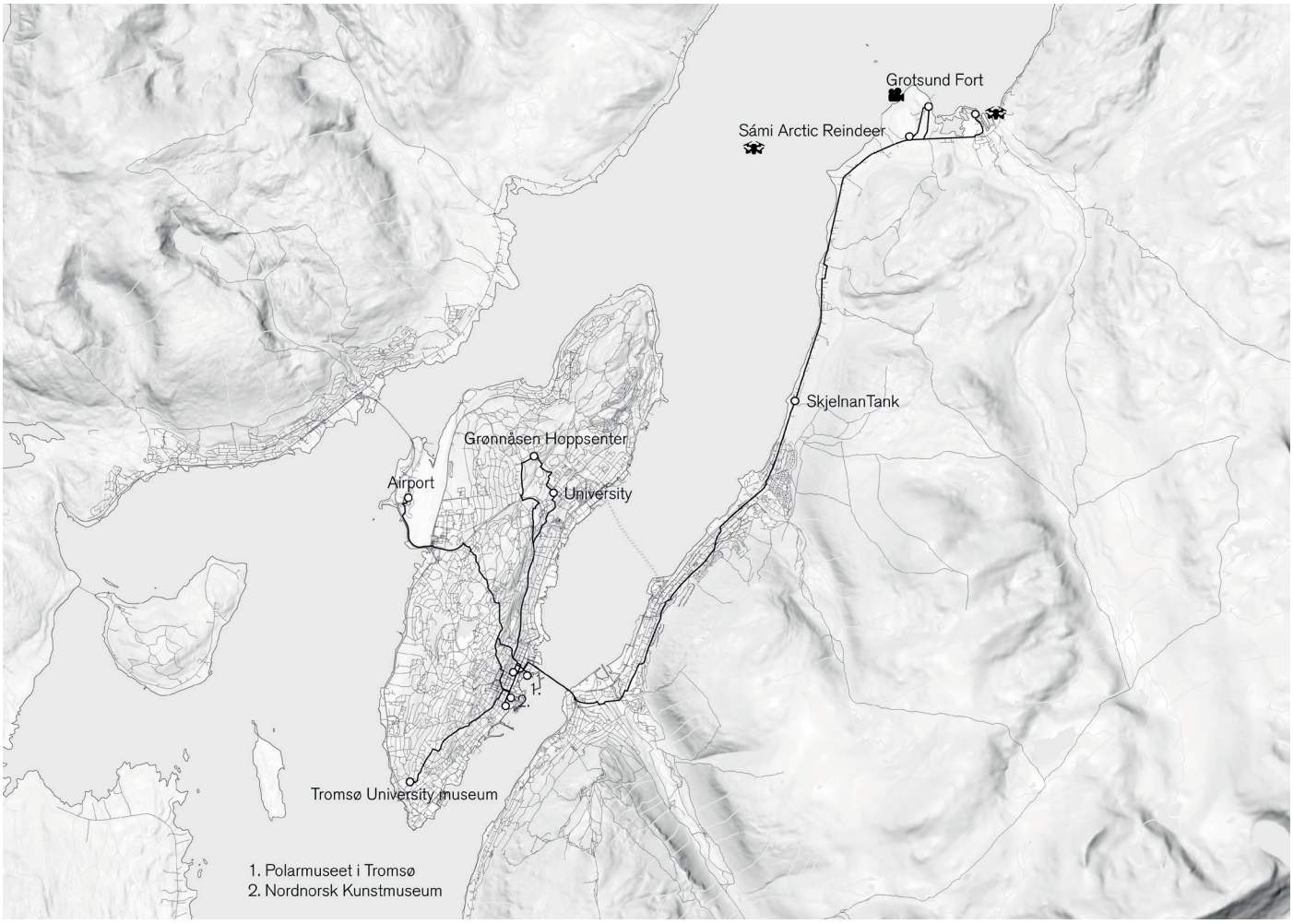
Friday April 12th, 2019 | 9:00
Tromsø can be considered the northernmost 'big' city of Norway and is mainly situated on an island between the fjords. While walking around town, the remoteness of this place is confirmed by a constant visual reminder of the mountains looking over the town (figure 5.10). We spend the first day walking around and trying to contact researchers from the University.

15:00
The campus of the Arctic University of Norway is desolated because of the Easter study break and our attempt to find Sámi researchers ends in vain. The academic librarian Vibeke Bårnes tells us that the Sámi are quite religious and therefore it is difficult to get in touch during the Easter time. This difficulty, and the fact that many Norwegians go on holidays in the South, resonated throughout the whole trip.

In the basement of the faculty of Human Sciences a poetic embroidery is displayed called *"Historja"* (figure 5.8), made by Swedish textile artist Britta Marakatt-Labba. The artwork reaches back centuries and across 24 metres of linen, mapping out the lives of the land's indigenous Sami people. The artwork shows in detail the natural connections of the Sámi with the landscape



Figures
▲ 5.8 Detail of *"Historja"*.
© Britta Marakatt-Labba, detail 2003-07.
▼ 5.9 Traversed route in and around Tromsø.
made by Authors 2019, based on height data from Kartverket 2019
▶ 5.10 Tromsø bridge seen from Grønåsen Hoppsenter (ski jump centre).
made by Authors 2019





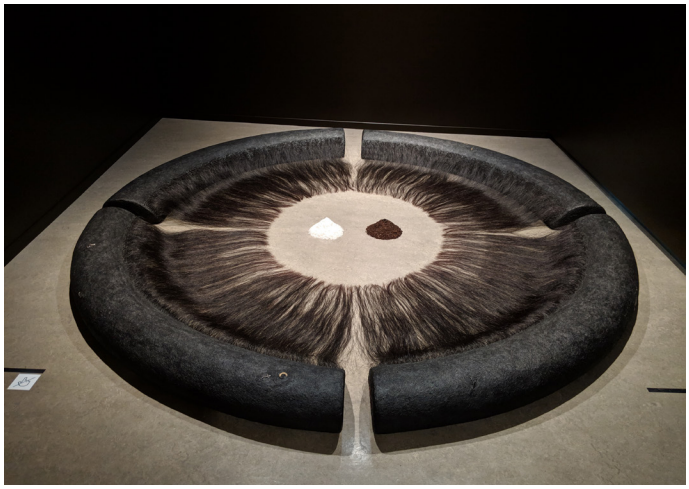












and its animals. Although Tromsø is a real Norwegian town, the Sámi presence is sensible throughout town. Every year around February there is a Sámi week which aims to fuse modern city life and traditional Sámi values[6].





Saturday April 13th,2019 | 12:00

Prior analyses by Boaz along the coast in Norway revealed that a new harbor was recently erected near Tromsø. The new industrial port was completed in 2014 and is focussing on the storage and transportation of goods and equipment for oil and gas fields and renewable energy development projects[7]. After further research a movie about the development shows that further expansion of the port into a full grown industrial area - primarily focused on the oil and gas development in Barents Sea. The heroic clip - with up-beat music - seems to be directed towards the youth[8], once again confirming the continuing interest in developing more hydrocarbons in the future.

We decide to have a bike ride to Grøtsund Fort, since busses hardly go into this 'dead' direction. After a 45 minute ride, along typical Norwegian houses and an oil terminal location, we stumble upon a Sámi reindeer attraction. Watching the reindeer behind fences - with in the distance tourist having a sleigh ride - the place feels uncomfortable. Of course these types of tourist attractions are important, even for the Sámi to make some extra money, but we can't stop thinking about the supposed dual nature of this phenomenon, whereas indigeneity seems to become more part of a museum or a tourist ride.

Currently a big Chinese ship is harbored at Grøtsund Fort and is unloading, what seems to be windmill parts. We decide to have a closer look and film the processes around the ship from ground and in the air. One can only imagine what kind of impact a large oil rig will have, especially for tourists learning about the Sámi culture this seems to have a big impact.

Sunday April 14th, 2019 | 11:00

> The North has enthralled and attracted artists for centuries. Yet the North is multidimensional, comprised of several places and landscapes. So what exactly is the North? In the 19th century Romantics linked the concept of the sublime to the northern regions. Nature was regarded as dramatic, fearsome, and often associated with divine and cosmic powers. Artists are still fascinated by the North's landscape and how it is affected by extreme light and darkness, namely the midnight sun and northern lights[9].

A visit to the Northern Norway Art Museum helped us with shaping our understanding of the North and its history. There were a few sections of the museum each with their own introductionary texts about people, places and stories. The museum questions the following; *what shapes the North? What is its history and what does it hold for the future?* The following text about *stories* struck us most as it shows that there is a rich history to be discovered.

> Diverse cultures in the North have coexisted together despite land borders for thousands of years. While for most part maintaining a peaceful coexistence, there are also dark moments of unrest in history. Rights to land and water have often been the source of conflict[4].

Reflecting on this we noticed that a huge part of contemporary art is from Sámi descend where reindeer herding is an often occurring theme. Art - mainly in the form of poetry and handicrafts - is an important part of Sámi culture, and many exhibitions in Nordic art galleries are composed by Sámi artists. When thinking about the Norwegian art in these areas there's less to find. Only earlier painters like Knud Baade and Peder Balke come to mind, who painted dramatic versions

Citations

[6] Sámi Week (2020)

[7] Port of Tromsø (n.d.)

[8] Tromsø Havn, [video] (2014)

[9] Nordnorsk Kunstmuseum, Tromsø (2019)

Figures

◀◀ 5.11 Tromsø Arctic Reindeer.
made by Authors 2019

◀ 5.12 Undocking of Chinese windmill parts at Grøtsund Fort, Tromsø.
made by Authors 2019

◀◀ 5.13 *Northern Lights, Bossekop, January 6, 1839 at 6:04 pm* - Leon Jean Baptiste Sabatier
Tromsø Kunstmuseum

◀ 5.14 *Northern Lights* - Peder Balke
Tromsø Kunstmuseum

◀◀ 5.15 *Asjas* - Rose-Marie Huuva, Sámi artist
Tromsø Kunstmuseum

◀ 5.16 *unknown* - Rose-Marie Huuva
Tromsø Kunstmuseum

▲ 5.17 Tonsvik delta in 2010.
© Google Earth 2019

▲ 5.18 Tonsvik delta in 2018, 1: Grøtsund Fort and 2: Tomsø Arctic Reindeer.
© Google Earth 2019


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of the landscape in the 19th century. Hypothesizing from this we start to question whether there's a relationship, perhaps if you're more outside the city using the landscape, you're more inspired to start making art projects.

Documentary

Although the documentary focusses on the province of Finnmark - from 2020 on the region Troms and Finnmark are merged - our experience in Tromsø have shaped our perspectives on the various peoples that reside here. By visiting museums before and after the trip we were able to confirm most of our expectations and hypothesis and were able to critically reflect on what they represent. Tromsø could be considered the capital of Arctic Norway, with both culturally embracing the Sámi - thanks to Sámi reindeer festivities and representation in various fields of research at the University - as well as aiming at expanding its industrial and economic position in the North.

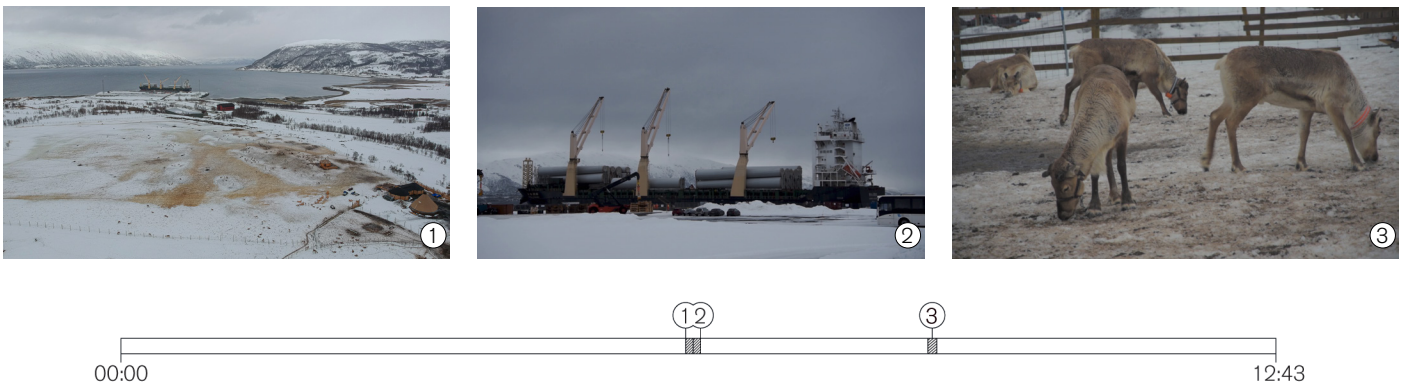
The example of the Grøtsund Fort harbor was our first experience with new big industrial development and immediatley a good example of the dual characteristics of the Arctic. While the Sámi culture is a strong culture, they are both threatened to become a historical attraction/ museum and at the same time industrial development is taking land which reindeer herders particularly need with the climate change.

This duality is one of the main topics of the documentary and therefore the shots from the Tromsø Arctic Reindeer tourist place next to the newly (still developing) industrial area has got a prone position in the documentary. With future development the Tromsø Arctic Reindeer propbably have to move to another location.

Figures

◀ 5.19 Undocking of Chinese windmill parts at Grøtsund Fort, Tromsø.
made by Authors 2019

▼ 5.20 Documentary stills.
made by Authors 2019



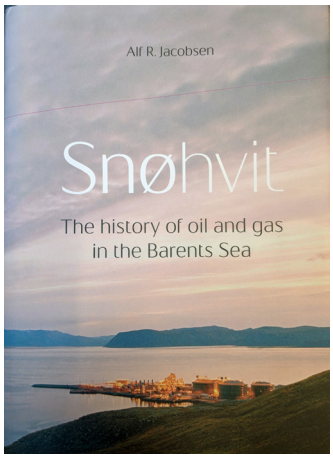
Hammerfest

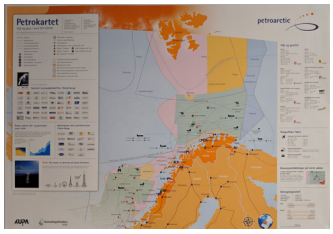
Sunday April 14th, 2019 | 15:00

The easiest way to reach Hammerfest is by plane, we board a small propeller plane and are condemned to a turbulent 45 minute flight to Hammerfest. The first meeting with Hammerfest is a rough one, with strong tail winds, the landing was a shaky experience. Being in close connection with open sea Hammerfest is prone to higher winds, making a turbulent landing not an uncommon experience. Descending through the clouds, the flaming chimney of the Melkøya gas plant is one of the first sights. The city embraces the sea, with its harbours situated on headlands and the residential areas on the slopes behind that. Arriving at the airport, a sign is welcoming us in *the northernmost town of the world.*

> In the arrival hall there is a depiction of a polar bear with a crown on its head, the Hammerfest city coat of arms. Strange, [...] because there are no polar bears in Norway. It is symbolic of what this place stands for: the gateway to the Barents Sea adjacent to the Northern Ice Sea, the most productive sea in the world, full of expensive fish such as salmon, cod and halibut. Hammerfest means "Fixed anchor" in Old Norwegian, a name from the time that fishermen on the turbulent Barents Sea faced an uncertain adventure[10].

Where in Tromsø it still feels everywhere that you're in a city or a small village, in Hammerfest the remoteness of Arctic Norway can be felt strongly. The strong winds and inclemency of the sea give rise to a chilling almost melancholic feeling. Being there, we're reminded of paintings by Knud Baade and Peder Balke, that in many works tried to show this side of the Norwegian landscape.





19:00

The importance of the sea is adequately portrayed in a book we encounter at a prominent place in the hotel lobby. The book is titled 'Snøhvit' (Snow White) named after the gas field and project that gave rise to the gas plant developments on Melkøya island. The local author Alf K. Jacobsen describes the developments of the gas plant with great pride.

> For Hammerfest and the surrounding area the arrival of the petroleum industry has been a revolution. Development has been phenomenal. From being the centre capital of a region marked by pessimism and stagnation, the town is now full of optimism and is positive - based on the income and the opportunity that the gas has brought.
>
> [11] Alf K. Jacobsen, "Snøhvit, The history of oil and gas in the Barents Sea"



Citations

[10] translated from Noteboom, B. (2018). *Arctica - Mijn biografie van de noordpool.*

[11] Jacobsen, A.K. (2009), *Snøhvit, The history of oil and gas in the Barents Sea.*

Figures

▲ 5.21 Snøhvit book on display in hotel lobby. made by Authors 2019

▲ 5.22 Petroleum maps, visible in many hotel lobbies and governmental buildings. made by Authors 2019

◀ 5.23 Håja island, prominently visible from all over Hammerfest. made by Authors 2019

▶ 5.24 Headland with Skansen Fortress (front), Melkøya gas-plant facility island (back). made by Authors 2019



20:00

In the evening there is time to see the city in a different light, we walk around town and get a good view of Melkøya from the Skansen Fortress (figure 5.23 on previous page). Under a seemingly excessive amount of lights, a boat is docked and being loaded (figure 5.29 next page).

Monday April 15th, 2019 | 11:00

On the second day we try to get a better feeling of what it would be like to live in Hammerfest. Probably because Easter is around the corner, the amount of people we encounter on the streets in Hammerfest is quite low, only when a Hurtigruten boat docks the activity around the harbour was higher. There are a few snack-bars, some restaurants and a big supermarket with some more activity, but at the same time it is clear that we are there at a time with low activity.

12:00

We learn that Hammerfest (and all of Finnmark due to a scorched-earth policy) has been rebuilt completely after the Second World War. The Museum of Reconstruction focusses on the dramatic events around WWII: the forced evacuation, the conflagration and the reconstruction. Societies in the fjord areas before the war were shaped by three northern cultures meeting; (sea and nomadic) Sámi, Kvens and Norwegians. The forced evacuation and destruction at the end of the war made 75.000 people homeless and many of them hid in caves or in turf huts. Although some Sámi houses were saved, the museum hints that the scorched-earth policy basically finished the authorities ideas of equalization - or "Norwegianization" - during the reconstruction period. This was because the reconstruction was influenced by standardized and modernized ideas, and therefore the uniqueness and traditions failed to show in the new settlements. This was particularly felt the hardest by the Sea Sámi[12]. Reinert explains this as following:

> After the war, when the government in the south undertook the grand project of reconstruction, aiming to modernize and reform the north, many of the returning villagers saw this as an opportunity: a chance to join the opulent southern modernity they had glimpsed in the evacuation, a world of wealth and abundance—of wide roads and grand structures, electricity, markets, libraries. And that world, of course, was Norwegian. Unsurprising, then, that in town after town along the coast, in the first census after the war, townships that registered a Sámi majority before the war suddenly "switched," en masse, to becoming predominantly Norwegian[13].

In the new modernized world older generations were sometimes ashamed of their culture and therefore "many children ha[d] to live without grandma and grandpa's soft words because grandma and grandpa d[idn't] want to nurture them with a strange language"[14].





Citations

[12] Based on texts from the Reconstruction Museum, Hammerfest.

[13] Reinert, H. (2019a). The Midwife and the Poet: Bioaccumulation and Retroactive Shock.

[14] Rauni Magga Lukkari, quote from Reconstruction museum, Hammerfest.

Figures

▲ 5.25 Hammerfest in 1945 after the scorched earth burning.
© Hammerfest Museum of Reconstruction

◀ 5.26 View on the coastal Hammerfest.
made by Authors 2019

▶ 5.27 Hammerfest seen from the view point on top of Salen, with Melkøya on the background.
made by Authors 2019

▶ 5.28 Main street of Hammerfest, empty.
made by Authors 2019









5.29 Melkøya at night.

Walking around town, the modernization trend is still clearly visible. Large parts of the city consist of a relatively modern, but generic appearance. After another period of decline in the 80s and 90s - due to the decline of the fish industry - the city welcomed the arrival of the oil industry with open arms in 2001. From that moment on, new buildings have emerged and façades refurbished, but some doubt the success of this; "Never have we had more money, and never has it been uglier around us"[15]. Compared to other places in Norway, Hammerfest seems to have lost its typical Norwegian character for good.

18:00

We plan on having an interview in Hammerfest, but aside from some tourists brought in by the cruise-ship, the town is empty. The only activity seems to be the fuelling of the gigantic Arctic Princess, docked at Melkøya island. When filming from an empty parking lot, next to the entrance of the tunnel - leading to the island - we feel slight uncomfortable, as being watched over. The kind of misplaced feeling is underlined by the perspectives most people here have on external parties opposing petroleum developments. As Loe & Kelman explain, based on interviews, most people assumed that "the petroleum adventure (or fairy tale, since the Norwegian word "eventyr" means both) would last decades and obviates any need to worry about the future, such questions of scale, either spatial or temporal, were effectively absent from the interviewees' consciousness"[16]. Local people who do worry, are often confronted or silenced by (un)written rules. As the following interviewees' show:

> "I am pissed off at academics and people sitting in cafés in Grünerløkka in Oslo [a trendy neighborhood in Norway's capital] arguing against petroleum. They have their things—so why should they begrudge us to have something as well".
>
> "People care more about status, [material] things and expensive cars. People talk about buying new snow scooters and where they are planning to travel. The petroleum industry has created an illusion that having much money is happiness. It was different before. Calmer".
>
> Interviewee 12, a young female cultural worker, explained that environmental concerns would typically be met with comments such as "If you care so much about the environment, then why are you living here and reaping all the benefits from oil and gas?"[17].



Citations

[15] From "Mitt hus er din utsikt", Anna Elisa Tryti, leader of the Public Committe on Building Tradition - 1996-2000, quote in the Museum of Reconstruction.

[16] Loe, J. S., & Kelman, I. (2016). Arctic petroleum's community impacts: Local perceptions from Hammerfest, Norway.

[17] Ibid.

Figures

◀ 5.30 Stormy weather along the coast of Hammerfest.
made by Authors 2019

▶ 5.31 Documentary stills.
made by Authors 2019

"For us, it has not been a question of environmental risk but of survival and having a place to work· · ·Our nature and culture in this region [where fisheries used to dominate] is to survive, and we know there is a risk in all activities. Furthermore, we have grown up here, and don't see the nature surrounding us as so unique"[2].

It is of course hard to disagree with the desire of the people to - finally - have a stable, wealthy future, but at the same time it feels wrong, knowing climate change and Sámi are both victim of these kind of industries.

"Hammerfest has become one of the richest small places in Finnmark because of Equinor, because of the gas developments."

Atle Staalesen, Barents Observer.

Documentary

Hammerfest is portrayed in the documentary as a town that is subject to inclemency, that embraces the sea both spatially and economically. It has known a long sordid history with its reconstruction and fluctuating economy after the second world war. The industrial developments, and particularly the ones aimed at developing off-shore oil and gas, can relate to Hammerfest as a successful example. The town has already claimed its share in the Arctic oil and gas developments. Therefore Hammerfest has a central role in the documentary.

Hammerfest is *the* foremost example where the Northern industrial transition has already triumphed. It can therefore be regarded as a

The message we wanted to portray is why coastal towns advocate in favour of industry, but also explain that this could leave the city vulnerable in the future.









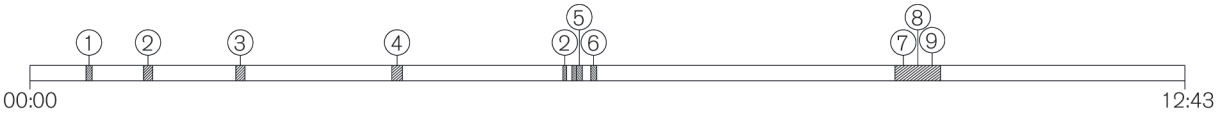












Forsøl - Repparfjord - Børselv

Monday April 15th, 2019 | 18:00

After receiving the rental car we drive to the small village of Forsøl on the east side of Kvaløya island. What particularly catches our eye are the fishing racks residing in the calm waters. The salmon held here is the kind of fish we can find in our supermarkets. Browsing Google maps, these kind of structures can be found all along the coast in Norway and it is therefore no surprise that Lars Lerup argued - in his keynote lecture - that this industry has been the driver behind the Norwegian economical succes[1]. The same modernization policies - visible in Hammerfest - have industrialized the fishing industry in the 50s, when freezers were introduced in every household in America. Combined with cheaper transportation - and the older generations selling their quotas to companies - it has slowly pushed out traditional fisheries[2]. Knowing that, we observed this phenomenon along the whole coast of Finnmark. Aside from the cheap production, these fish farms are also known to spread diseases in the fjords[2], thereby altering the local ecosystems. Villages - like Forsøl - seem to slowly decay as younger generations move to bigger cities in the region and the south. It is one of the reasons as to why people are turning towards industrial development to ensure a higher availability of jobs.

"The fisheries have undergone major changes over the last decades. There is big industrial ships doing lots of processing offshore for example, there is not so much fish going to the ports as before."

Atle Staalesen, Barents Observer.

Citations

1 from keynote lecture at the Transitional Territories sypmosium - Territory as a Project.

2 Ellefsen, K. O. (2018) Keynote - Karl Otto Ellefsen.

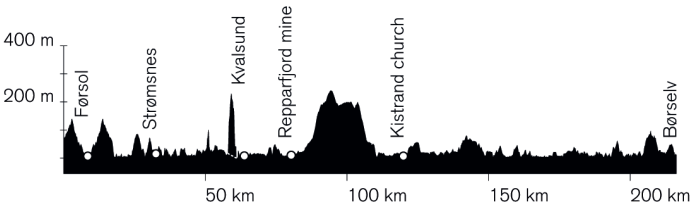
Figures

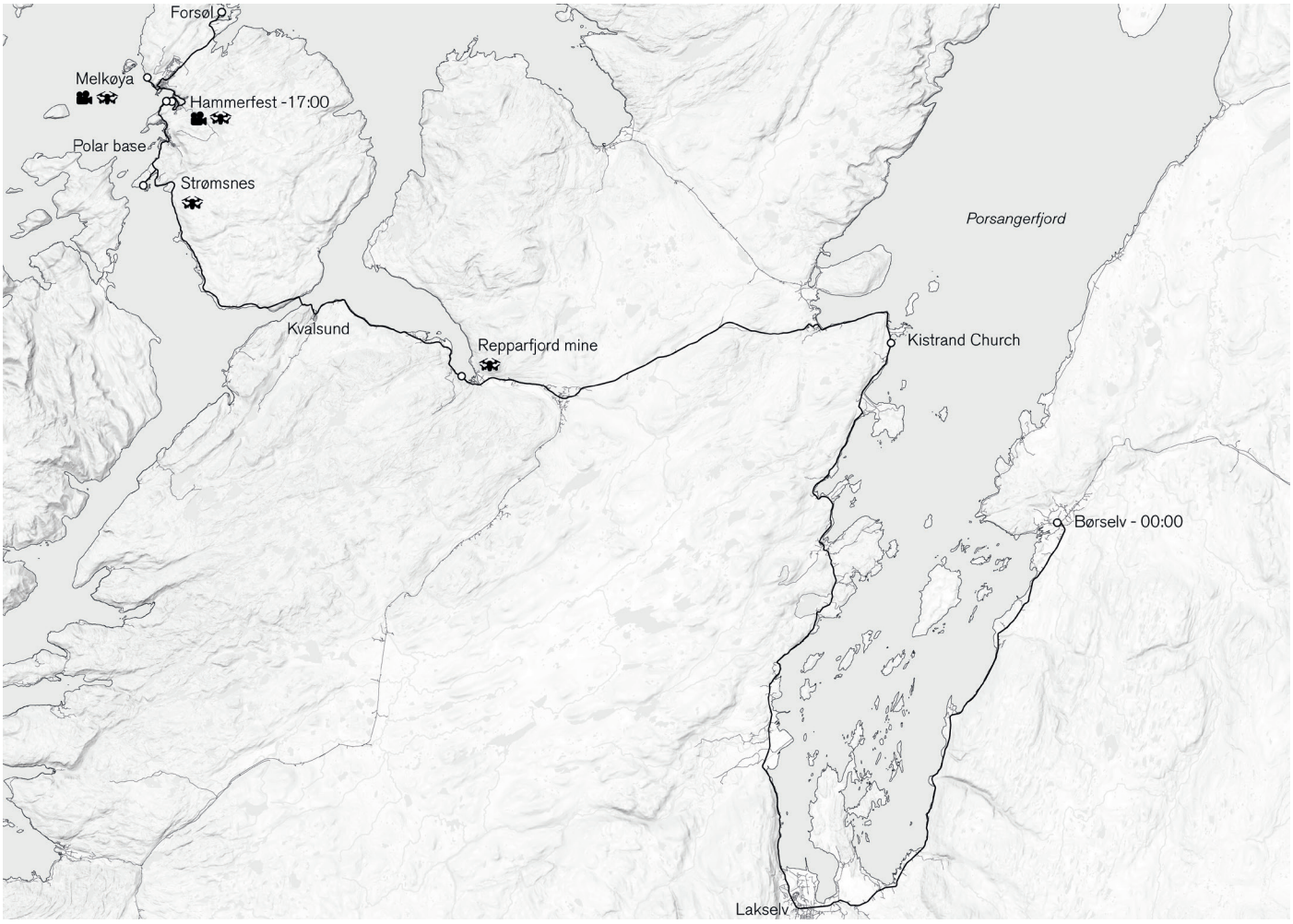
◀ 5.32 Section of traversed route. Made by Authors 2019, based on height data from Kartverket 2019

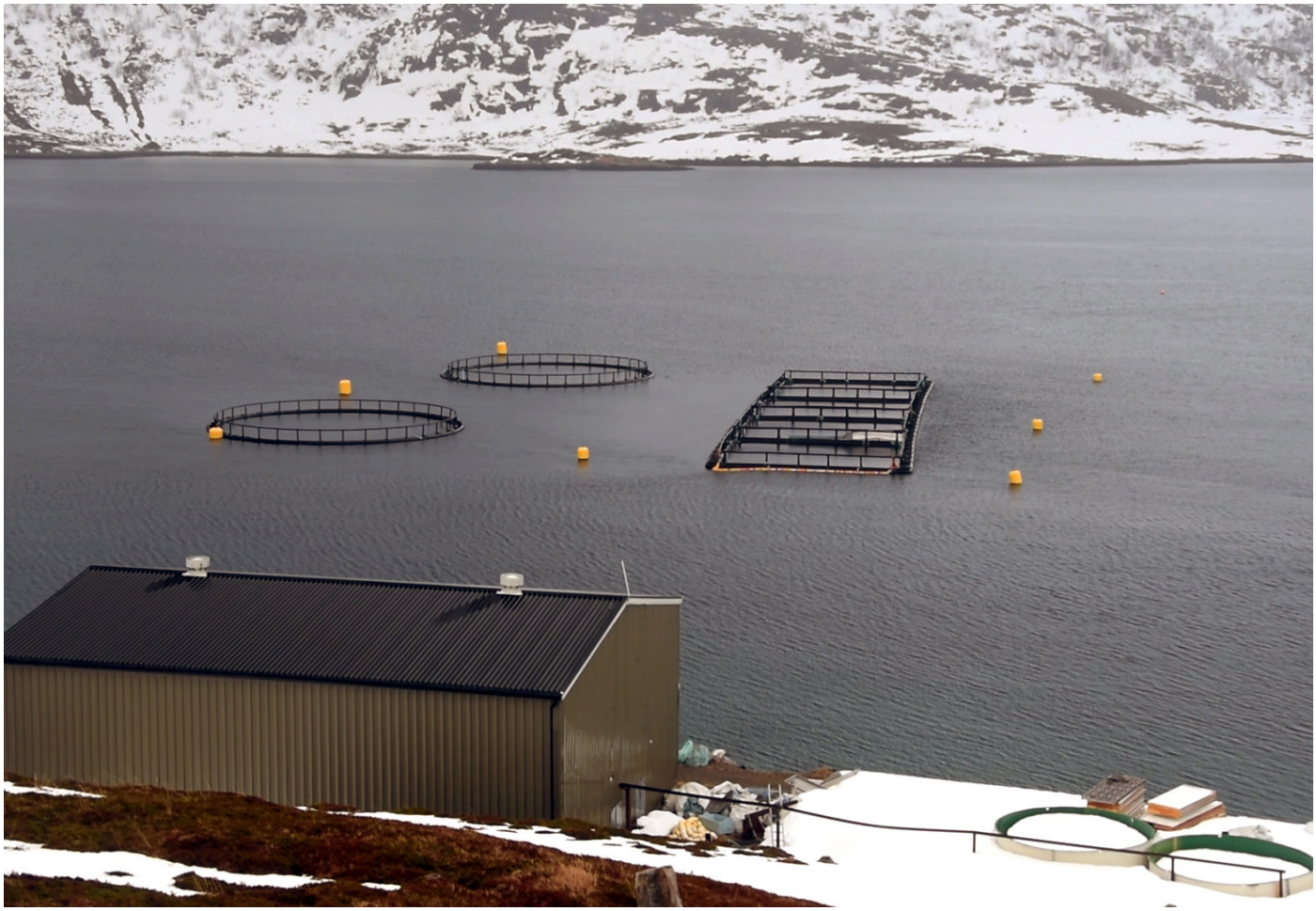
▼ 5.33 Traversed route from Forsøl to Børselv. Made by Authors 2019, based on height data from Kartverket 2019

▶ 5.34 Salmon fishing farms calmly residing behind the mountains near Forsøl. made by Authors 2019

▶ 5.35 Small harbor in Sandbukta bay, Forsøl. Made by Authors 2019













20:00

Driving out of Hammerfest we pass Rypefjord - which is nowadays considered a suburb of Hammerfest. The village is home to a major harbor, consisting of a fish factory and Polar Base AS - an oil and gas supply base. When preparing the trip we contacted the company for an interview, unfortunately without response. The harbor has been extended since the 80s when oil was first discovered in the Barents Sea. We are surprised and overwhelmed by the sight of a gigantic oil rig in the harbor and turn into the first road to get a better look with the drone (figure 5.37). As we hypothesized upfront, the Norwegians are - perhaps unconsciously - quite good at hiding the industry from most main roads. It strikes us that from one point of view we witness the beautiful docking of a ferry to Seiland, while looking the other way reveals the other face of Norway. As we later discover there are plans to turn the whole peninsula of Strømsnes into a new industrial area - a not so modest 1.000.000m^2 - which will significantly impact on the Sámi reindeer herders on the island. Again an accompanying movie - advertising the industry in a heroic way - is used to attract investors and people to Hammerfest[18].


The Barents Observer

Repparfjord is near Norway's northernmost point. Photo: Thomas Nilsen

Norway greenlights copper mine with tailings to be dumped in Arctic fjord

21:00

This is not the only controversial industrial development plans which we pass today. About an hour drive from Polar Base, we pass the bridge connecting Hammerfest to Kvalsund, municipality that is home to the Repparfjord. Here the biggest known copper deposit of Norway is situated a few hundred meters below the ground. Mining company Nussir has received a license to operate from the Norwegian government, despite strong opposition from the Sámi Parliament, the Fishing Union and Environmental groups. The issues revolve around two issues. First, the dumping of waste material in the nearby fjord - destroying live for several years in a National Salmon Fjord with possibly broader consequences. Second, the encroachment on important calving grounds and migration routes for the Fiettar and Fálá reindeer districts. The mine has been the center of a national debate revolving around the damaging practices of Norwegian mining, both on environment as on indigenous livelihood.

> Kvalsund is an old coastal Sámi community. Then-Mayor of Kvalsund estimated that while 90% of the population were Sámi descendants, only 15% speaks or understands Sámi language today. Fishing combined with agriculture and reindeer husbandry were traditional livelihoods within the municipality, but these livelihoods were weakened after the Second World War. Between 1950 and 2004, the population declined by 43% – a decline related to the decrease in employment in fisheries[19].

When we arrive, we're surprised to see a construction vehicle in operation. Although the mine received a license to start operating in February, the decision was appealed to the King-in-Council (highest form of appeal), limiting the operation possibilities of Nussir. We assume that operations now involve the preparation for mining developments to start. The only parts of the mine that are visible at this time are the processing plant in the red building, some barracks for workers and a part of an open pit which was used for the extraction of gravel. The Ulveryggen open pit which was in operation in the seventies is higher up and is only accessible on foot, but a thick layer of snow impedes our possibilities to reach it.

Citations

[18] Hammerfest -- The gateway to the Barents Sea. [youtube video].

[19] Johnsen, K. I. (2016). 'Land-use conflicts between reindeer husbandry and mineral extraction in Finnmark, Norway: Contested rationalities and the politics of belonging'.

Figures

◀ 5.36 Strømsnes ferry to Seiland national park at Akkarfjord.
Made by Authors 2019

◀ 5.37 Strømsnes peninsula with on the background the West-Hercules oil rig in Rypefjord.
Made by Authors 2019

▲ 5.38 News cover of November 30th, 2019 in the Barents Observer.





22:00

In the next two hours we drive towards Børselv. The inland areas are seemingly empty of any human intervention. The twilight - lasting for hours - deeply impacts both of us. When descending from the mountain range we see a small church. We decide to have a look. The Porsangerfjord - the 4th longest fjord of Norway and longest of Finnmark - stretches out before us. The silence and emptiness has a calming effect. Hours seem to go slower here, and we start imagining how it is to live of the land here. Words - and even photography and film - seem insufficient to cover the experience.

Documentary

Depicting and explaining the developments around the oil and mining industry is one of the central goals of the documentary. The main footage used of today is about the Repparfjord and Strømsnes peninsula. Though there is no time in the documentary to thoroughly explain both developments, we have tried to communicate these problems through powerful imagery and narration. It is a good exercise in how to translate these problems to a wider audience.

Figures

◀ 5.39 Repparfjord mine.
Made by Authors 2019

◀ 5.40 Kistrand Church in deep green-blue twilight.
Made by Authors 2019

▼ 5.41 Documentary stills.
Made by Authors 2019











Børselv - Vardø

- *Tuesday April 16th, 2019 | 10:00*
  While making ready to leave Børselv we're talking about the projects and our goal of shooting a documentary in Finnmark with the owner of the bungalow park. She tells us that she knows reindeer herders that are situated on Porsanger, and they might be willing to help us out by having a conversation before the camera. After making the call and setting the appointment, we drive north in the direction of Kjæs in Porsanger, where we meet with Siv Merethe Sara (SMS) and her husband Per Alf Sara (PAS[20]), and their dog Bárfi.

- *12:30*
  Summary interview Siv Merethe Sara and Per Alf Sara:
  They're out on the field at that time to make sure that the reindeer are kept together, while being disturbed as little as possible. Upon arrival SMS tells us that she has relatively recent obtained her degree in social geography, she is of Norwegian descent and has a full-time job in order for them to be able pay the bills. PAS is of Sámi descent and has lived the days in which the herding of reindeer was still done without the benefits of the snowmobile. He tells us that he has lived the days that they had to cross with the whole family much larger distances than the Sámi are now

Citations and comments

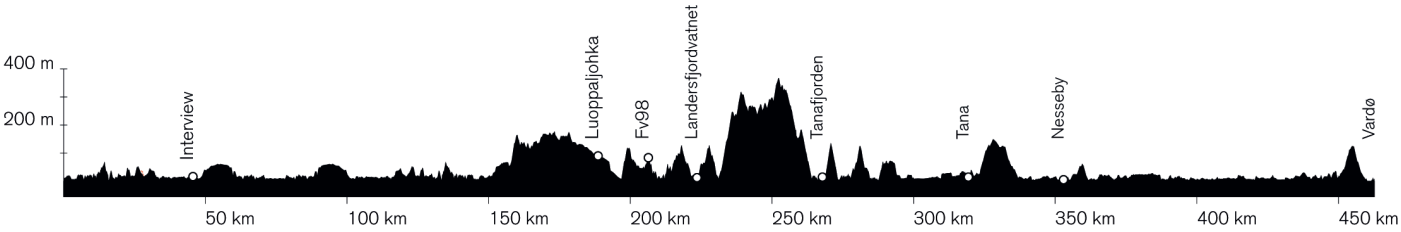
[20] Per Alf Sara spoke Norwegian during the interview, what he said was translated by Siv Merethe Sara.

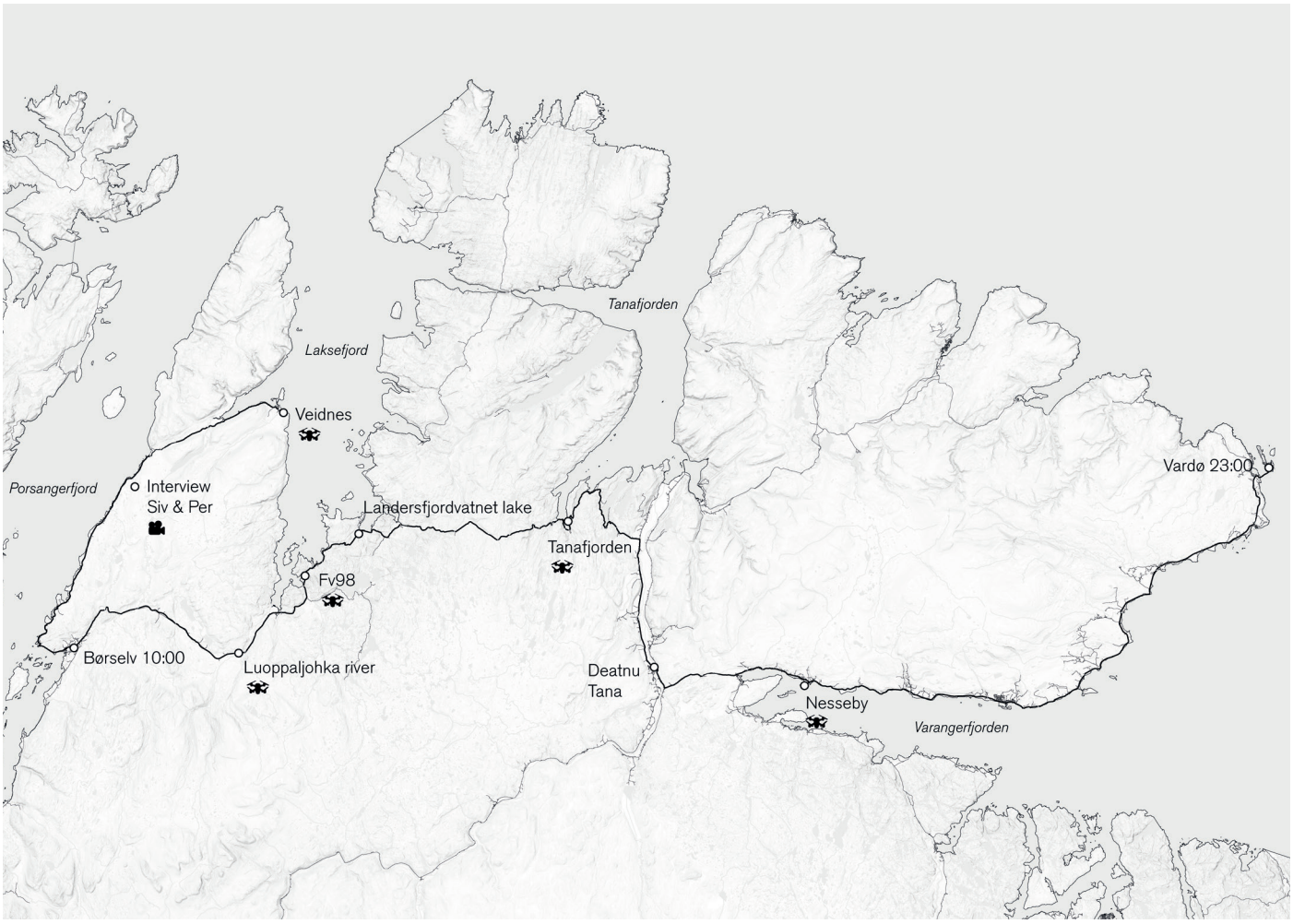
Figures

▼ 5.42 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019

▼ 5.43 Traversed route from Børselv to Vardø.
Made by Authors, 2019, based on height data from Kartverket 2019

▶ 5.44 Siv Merethe Sara, Per Alf Sara and their dog Bárfi.
Made by Authors, 2019







accustomed to. Their marriage was at the time controversial, as it was customary for Sámi and Norwegians not to mix.

The start of the conversation is about climate change which is felt strongly here.

SMS

"Nature is connected to us all, and it affects us all. What people do globally, we feel locally."

PAS

"There's been much changes in the climate, there's now often so little snow left, that makes it difficult for us to move."

SMS

"The landscape is changing, because of there's coming more trees... and people are not using the area for cutting wood, for fire and so on. So they're not using it anymore. And that's what happens, this knowledge doesn't go further."

What makes it more difficult is the variability in which climate change affects the landscape; PAS shows us a small branch of lichen (food for the reindeer), while SMS explains that the growth rates have surprisingly been going well in this specific area lately. The conversation then quickly moves to the annual variability.

PAS

"The Sámi way of saying is that this year is not the same as next year, they're not brothers. Because they're so unlike."

It seems then that already we can find the first break with Western science, which is preoccupied with trying to understand the changes happening in the Arctic as one closed system, and how to respond to them.

PAS

"I'm a lot out here on the field, and science is not updated. It's not connected. Science and field works from reindeer herders. They're having their own methods and ways to see how the world is."

SMS

"So they don't take the knowledge from people who work out in the fields. I was talking with the area planner in the local community, and the difficulty for reindeer herders, in relation to the local community is that they want to have everything in a plan. And a plan is for the hearing and everything, it takes a lot of time. But reindeer herding is about flexibility and mobility. That's the way it has survived, because it's flexible and mobile, and follows to changing conditions. But the plan is fitted. And you have to have a hearing and everything. It makes it difficult to meet in a point where you can discuss properly."

The spatial distribution of the energy transition on reindeer herding lands is often coined as problematic for the Sámi. Despite that the reindeer herding area of SMS and PAS is of low interest for mineral industries, the conversation moves to the energy transition, and the plans for developments in Finnmark.

SMS

"They want to build this wind parks and mining projects, like Nussir. And it's not good for our culture because we need areas. Reindeer need really big areas, they are eating different kinds of food, and they have to walk long ways to find it."

The question arises then, what is sustainability? Is its foundation maintained through extraction processes (as is required for the energy transition)? Or is its foundation primarily sedimented into

failing to understand how to make use of the landscape surrounding us?

SMS

"We're trying so hard to maintain this way of living because it's, we take from nature and give back to nature. That's sustainable. It's renewable resources. We use what is here. But it's difficult, we're connected too... to capitalism, in the same way. We live in a house we use the stores."

PAS

"Drive cars... Use electrics [problematic because of Nussir]..."

SMS

"It's difficult, it's hard to find a balance."

As PAS has left to keep the reindeer together, the discussion moves towards the current economic system. And it's apparent pervasiveness into traditional ways of living.

SMS

"It's difficult to live here. And I have to have another job, a full-time job to earn money. So, my money goes back to the reindeer herding, and for our house and so on, but it's quite expensive to do this. In this industry, it's not so much about money, but values are important. The way of living. For us it's important to see the reindeer, that they have good animal welfare, and that we're taking care of our animals. And we have seen that this is difficult when you have big herds to maintain that. But that's capitalism making you think that's necessary. That you need a lot of reindeer because of the money it makes. It could of course be good for us to have for example an expensive car, but it's not so... it doesn't matter. Because we have the love to each other, to the animals, the dog, the reindeer. And to our children, and that's most important for us. And that we can have reindeer meat to eat, to make clothes, shoes. And that we can eat salmon because we can fish salmon. And that's important for us, it's not so important for me to have a good house... that doesn't matter for me."

To conclude we ask SMS the following question: "Do you think Finnmark will thrive or subdue under this increasing industrial expansion?"

SMS

"*Sigh* ... Well, that depends on the government, and on the municipalities. And how they're taking ownership to the fact that we are here where we are. But I think, the governing bodies in the south are not giving so much money to the municipalities here. And it's pressing that municipalities, in a way, are setting their values aside, for money, so they can use money for this welfare, for stores, doctor, everything what you need to live in this cities. So it's depending on them, its depending on the voices. Whose voices, who are talking. And it's depending on how much we appreciate the values that we have here.
We have to talk together. Dialogue is important, we have to speak, what's the problem?"

14:00

Back in the car we reflect on the lessons learned during the talk with Siv Merethe Sara and Per Alf Sara, and try to connect it to our previous knowledge obtained. What stuck most is the way in which the landscape is perceived differently. Climate change wasn't perceived so much as a direct threat, but more as a challenging way to adapt to new uncertainties. The biggest threat perceived therefore wasn't the rapidly changing climate - as one might suggest - but more the loss of land through political economic processes. This resonates with the following said by Turi on a Standing Committee on Natural Resources at the House of Commons of Canada:

> If you talk to Sami reindeer herders, they will often say they are much more alarmed by loss of grazing land than they are of climate change. Why? A reason for this is that mobility, moving your herd to a different area, is a key adaptive strategy for adverse snow conditions. Access to pasture resources will therefore be even more important under climate change.[21]

The response to climate change from the Norwegian state is one of a very different character. Planned windmill parks on (eg. in Fosen) and mineral mines (eg. Nussir) needed for 'the green shift' are unstrategically positioned on Sámi lands, and directly impede indigenous professions practiced on these lands. Among other Sámi representatives the Sámi Parliament president Aili Keskitalo has termed these intrusions as *green colonization* on official meetings: "Colonialism has dressed up in nice green finery and we are told that we have to give up our territories and our livelihoods to save the world because of climate change"[22].

Another resonating aspect of the interview was the friction between the fixations imposed by planning and design instruments, and the flexible use of land paramount to the survival of the reindeer herd. As became clear, there's no need for fixed planning, nor design, as this would in municipal discussions, count as opportunities to mainly instrumentalize non-indigenous livelihoods. Rather, there's need for improved tools for communication, which enhance the reindeer herder's possibilities of being understood, and allow for a better and more just weighing off of values. As SMS explained, the future of Finnmark depends largely - if not fundamentally - on communication and values.

14:00

We drive as far as the road takes us to the end of the Porsanger peninsula, and arrive in a very small village by the name of Veidnes. The first impression of the area is not one of incredible uniqueness, we see a few houses, and a seemingly barren land around us. On the internet, we've read in advance that there's plans for a new oil terminal on this location - later on we understand that the oil terminal was planned on Veidnes on the island of Magerøya near Nordkapp. It is only after we send a drone up in the air that we start realizing that we're actually on a frozen delta, with a unique and massive variability of both colors and vegetation types. We realize that the different perspectives of the landscape - illuminated by the drone, leads to a more complete understanding of the landscape. We continue our way in the direction of Vardø knowing that



Citations

[21] Turi (2019). RNNR-127.

[22] A. Keskitalo as quoted in Schreiber (2018). The Arctic's Indigenous peoples bear a disproportionate burden of the world's response to climate change, leaders say.

Figures

◀ 5.45 Frozen lake in between Sáhkkavárri and Bærfjellet mountains.
Made by authors, 2019.

▶ 5.46 Veidnes frozen delta.
Made by authors, 2019.

this day we travel through the mountainous coastal areas, and touch upon the Porsangerfjord, Laksefjord, Tanafjord and Varangerfjord - the four longest fjords of Finnmark. The stops we make along the road show a huge diversity in landscape settings with occasionally small towns.

18:00

We stop on a small unpaved road to take a better look at the Tanafjorden and are confronted with a street filled with abandoned houses showing the visual effect of population decline in the area (see next page). The twilight made the fjord water into a surreal mirror-like ambience, which only seemed to exacerbate the abandonment of the houses.

> Finnmark consist of mostly small towns and a quite fragile system of people moving out, population decline and local municipalities which do not have much money.
>
> From personal interview with Atle Staalesen, Barents Observer.

20:30

As it is already late we pass through the Sámi towns of Tana and Varanger relatively quickly. We stop at Nesseby to see a church and a fish drying rack, situated on a headland. On this side of Finnmark the presence of numerous fish drying racks illustrate the importance of the fishing industry for this region. Reason for the survival of the industry may be connected to the close proximity of the towns in this area. The town of Vardø is situated at the end of the road on an island for which we have to go through a steep tunnel.

Documentary

From this day much footage made it to the final version of the documentary. On the right page a selection is shown. The main messages that are shown in the documentary are main lines of the interview with Siv Merethe Sara and Per Alf Sara and the unique fjord landscape of the north of Finnmark. The mountain range, high natural diversity, many (frozen) rivers and lakes and desolated houses, leave a lasting impression on anyone traveling through here.

The talk with Siv Merethe Sara and Per Alf Sara has deeply influenced the projects and the trajectory of the documentary. In approximately an hour and a half we've talked about the biggest issues now faced by them and other reindeer herders, and were very inspired by what Siv Merethe Sara sees as the way forward, better communication and a common understanding of values.

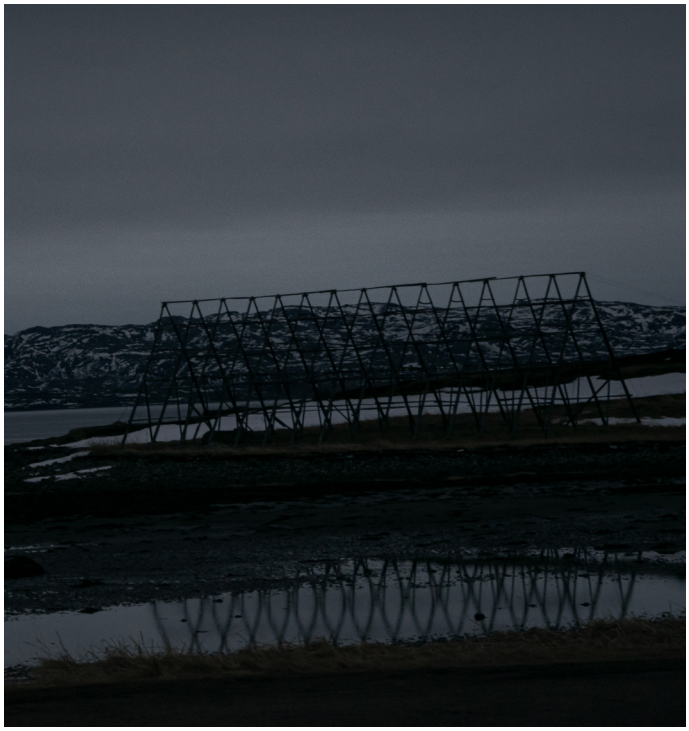
Figures

▶ 5.47 Twilight mirroreffect in Tanafjorden.
Made by authors, 2019.

▶▶ 5.48 Fish rack on headland in Nesseby.
Made by authors, 2019.

▶ 5.49 Documentary stills.
Made by authors.






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He says he's a lot on the field and he sees what happens.
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- should communicate to find common ground.
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5.50 Abandoned houses Tanafjorden.
Made by authors, 2019.

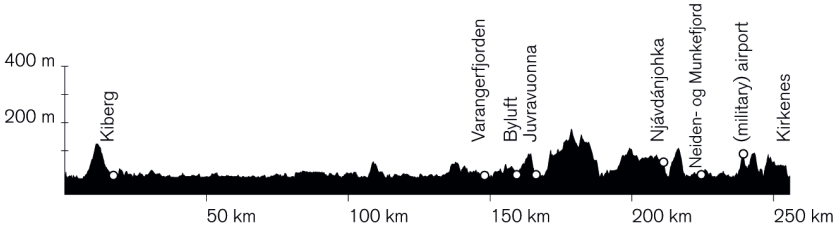
Vardø - Kirkenes

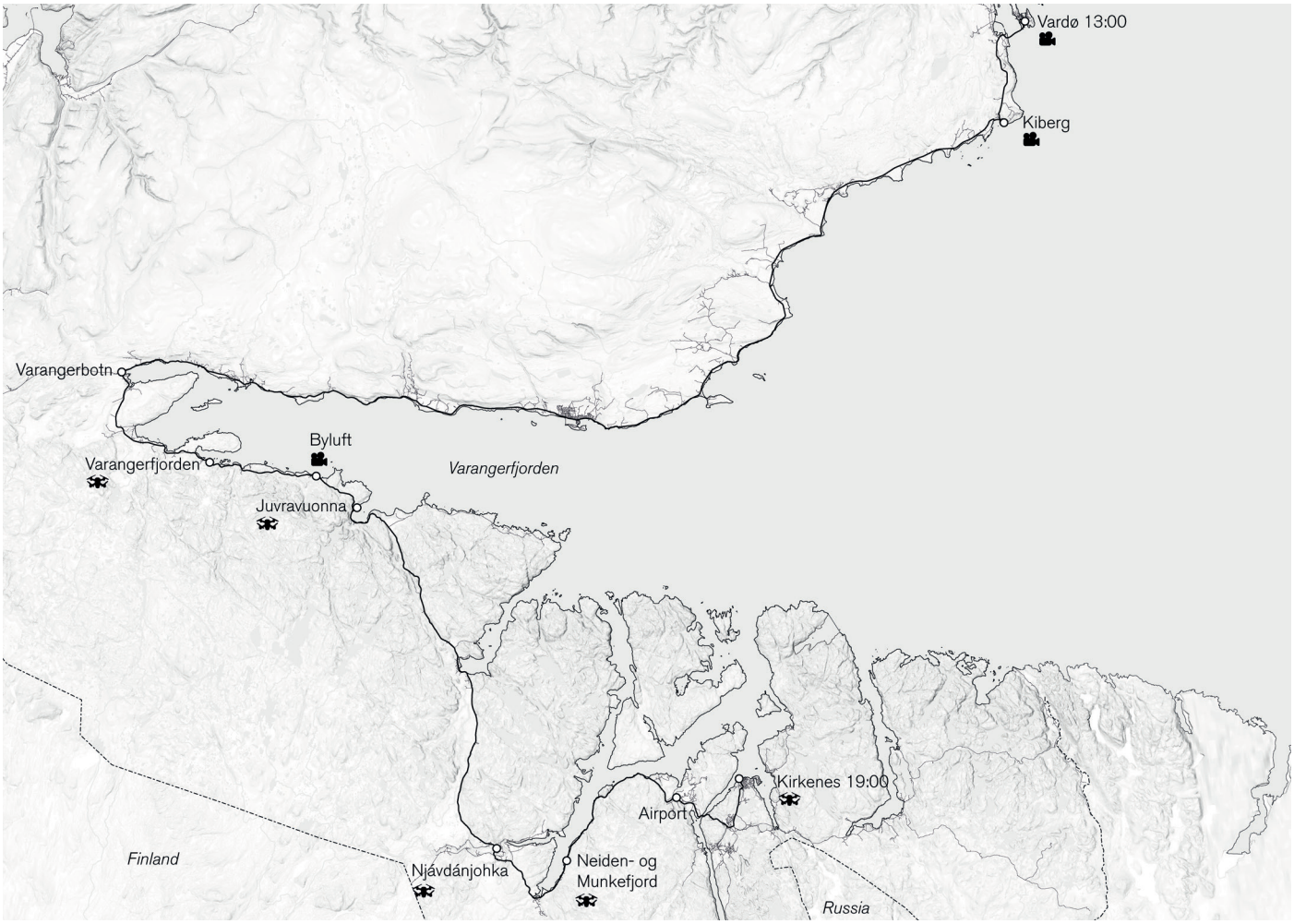
Wednesday April 17th | 10:00

Vardø is an old town and its situation has been of strategical importance in its history. The population heavily fluctuated with the up-rise and decline of the fish industry the past centuries. Because we arrived at night, we start to wander around the town in the morning. The first noticeable thing are the enormous radar stations at the highest point of the island. The Norwegian Intelligence Service states that the radar is used for space surveillance, surveillance of areas of national interest abroad and for research. It is believed that the new radar - funded by the US in 2017 - was built as part of the US anti-ballistic missile system[23]. It's controversy and its presence are felt all over the island.

11:00

We walk around town and are an outstanding appearance with our camera for this time a year. The owner of the hotel told us that we are actually here in between seasons, as most people come here in the winter or summer - for bird watching. In front of a coffee bar a man comes up to us and asks what we are here for. We explain that we are filming a documentary about Finnmark and the incoming industries and decide to ask him for a short interview.





Citations

[23] Nilsen, T. (2018). US and Norway upgrade eye on border to northern Russia.

Figures

◀ 5.51 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019

▼ 5.52 Traversed route from Vardø to Kirkenes.
Made by Authors 2019, based on height data from Kartverket 2019

▶ 5.53 Vardø seen from behind the church.
Made by Authors 2019

▶ 5.54 The military surveillance radars in Vardø.
© Thomas Nilsen, Barents Observer






NATURRESSURSENE
TILHØRER FOLKET

Summary interview Torbjørn:

Before the interview Torbjørn (**T**) tells us that he has been living most of his life in Vardø - aside from a few years in Sweden - and that he is currently receiving benefits from the government. His daily occupancy consists of hand work with clothes, wood for fire and taking away snow for people who can't do it themselves. In Norway securing benefits often comes with the obligation of doing social work at a communal company in return.

We start the interview by asking if he notices changes in the region because of incoming industries in Finnmark.

T

"I'm not sure, because it is only on the map, on the planning stadium. But already things have happened here because of the military region they are developing. And people are arriving here because of that. It has been here since 1998 and last year they started to build a new one."

We feel that there is a strong cultural connection with the landscape here with the sea and people that are living here. Which is particularly visible in famous paintings of the extreme climate and lightning and the amount of people that come here.

T

"Many people are arriving here with their cameras and the bird watching is getting more popular. From now [April] till autumn its the hight season, but there are always some travelers that are coming here to watch the northern lights, nature and the people."

It is often argued that incoming industries help giving more opportunities to the local people. We wonder what the local perspective is.

T

"I don't think so much for the people that are living here if they don't have education. But some people are taking education. You know, they are going to Tromsø and the bigger cities in Norway and some of them are coming back. Because, we already here have public offices."

Vardø has known a great population decline in recent history because of the collapse of the fish industry and a lot of young people have moved south. Before our interview **T** told us that there were (or are) plan about a new receiving oil terminal coming to Vardø.

T

"You know, people are happy and positive. Getting new industry, you know, people are positive to that."

Climate change is happening about 2 to 3 times faster in the Arctic, altering the landscape and sea life in the Barents Sea: "what is your opinion, do the changes impact the community?"

T

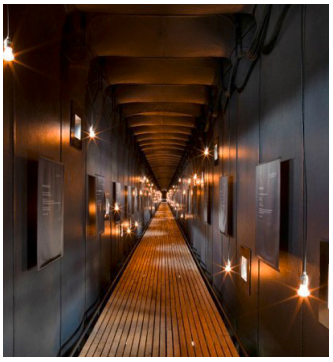
"Ah, last summer we had two weeks with a very warm plenty. 20 degrees every day one day 29. I don't have anything against it."

The interview illustrates that people are happy with any development in the town, either being industrial or more service related. The fact that tourism and military activity is positively influencing the return of more skilled workers, ensures more job opportunities for locals, being it that in other cities like Hammerfest, local residents often do not benefit as much as temporary or migrant workers.

Figures

◀ 5.55 'Natural resources belong to the people', painted on building in Vardø.
Made by Authors 2019





12:00

Walking throughout town we notice some vacant buildings, as well as a new municipal building with swimming pool. On the western side of the island are the main two attractions, exemplary the history of this town. The Vardøhus Fortress on the western side of the island, is one of the main attractions on the island. Serving as an military outpost - even up today - the grounds have been of great importance in defending and administrating the northern part of Finnmark.

In the west - along the jagged coastline of Vardø - rests the Steilneset Memorial. The 130 meter-long structure seems to be hovering above the ground as it is upheld by a steel cables and a wooden structure. Both structures have been built to commemorate the 90 - Sámi and Kven - people that were evicted and burnt at stake here in the 17th century. While the wind is howling outside, there is a certain calmness inside. There are 90 small windows through which you can barely look outside. Trials written on canvas show that the discrimination and colonization dates back centuries.

13:30

When driving towards Kirkenes we experience the Varangerfjorden in a different light. The road takes us along Kiberg, a small fishing town just 10 minutes from Vardø. On top of the hills are some left-over bunkers from the second world-war, unfortunately they are currently inaccessible.

15:00

We stop ate Varangerbotn, a small village at the very back of Farangerfjorden. The regions along the coast used to be inhabited by the coastal Sámi. But as explained earlier the sea Sámi were heavily assimilated during the “Norwegianization” period. The Varanger Sámi Museum communicates the history of these Sámi, but unfortunately we are out of luck, the museum closes at 15:00. The region around Tana are the only coastal areas where the sea Sámi still reside.

16:00

At the southern shore of the Varangerfjorden we observe many reindeer along the road. Due to the close proximity of the borders - with Finland and Russia - Siida’s have their winter pastures along the southern banks of the fjords instead of inland. In just a few weeks the reindeer will migrate to the northern Varangerhalvøya Peninsula west of Vardø. The variety of the landscape



Figures

▲ 5.56 Inside of Steilneset memorial - designed by Peter Zumthor, Vardø.
© Andrew Meredith

▲ 5.57 Installation by Louise Bourgeois.
Made by Authors 2019

◀ 5.58 Njávdánjohka frozen river.
Made by Authors 2019

◀ 5.59 Reindeer along the Neiden- og Munkefjord nature reserve.
Made by Authors 2019

▶ 5.60 Steilneset memorial, Vardø.
Made by Authors 2019

change from minute to minute; bare rock landscapes interspersed with snowy, ice fjords and rivers.

17:00
In Neiden, we pass another museum; the Ä ‘vv Skolt Sámi museum. The Skolt Sámi are the indigenous groups originally residing in the border regions between Norway, Russia and Finland. However, as we will later discover, most of them moved to Finland during the Soviet period. Mining industries now occupy these border regions. After sending up our drone we discover that we are residing next to a gigantic frozen river, the Njávdánjohka (image 3 of documentary stills). Before heading to Kirkenes we make one last stop at Neiden- og Munkefjord nature reserve. Big ice sheets - from the Njávdánjohka river - end up in the fjord and present a spectacular sight. A reindeer herd along the water are one of the best shots we made with the drone (see image 4 of documentary stills).

20:00
We arrive in Kirkenes; a modern city which owes it existence because of the close proximity of the border with Russia and the Sor-Varanger copper mine in Bjørnevatn. When we arrive the city seems a ghost town. Since a lot of Norwegians left and Russians travel back to Russia - because they celebrate Easter at another time. Recently Kirkenes is gaining a lot of attention from both Chinese and European investors as it resides at a strategical arrival point in the Artic for hydrocarbons, minerals and cargo. A proposed new rail connection to the Baltic sea is to expand the harbor. The Chinese presence is increasingly visible through signing and a Chinese gate (see figure on the right). But more on the Arctic Corridor in ‘Inari - Karasjok - Leppäjärvi’.

Documentary
Vadrø - Kirkenes was the second longest journey. Vardø was a good example of a town in crisis because of the fish industry decline in 2017. It showed us another side of life here along the coast, with big uncertainties in both fish and tourism industry. The interview of Torbørn is primarily used in the documentary to give a counter voice to the main narrative and illustrates that a lot of people in these declining coastal towns are eager to get new industry. The first half we traversed the same route as the evening before. In the southern area of the Varangerfjorden we mainly shot natural landscapes and reindeer - as these were the only winter pastures we crossed.



Figures
◀ 5.61 Harbor in Kirkenes.
Made by Authors 2019
▶ 5.62 Industry in Kirkenes.
Made by Authors 2019
▶ 5.63 Documentary stills.
Made by Authors 2019




Torbjørn
Vardø resident
- people are positive to that.
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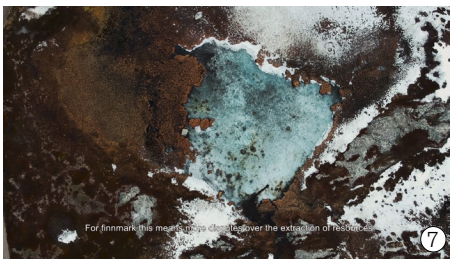

Kirkenes
Port and mining town
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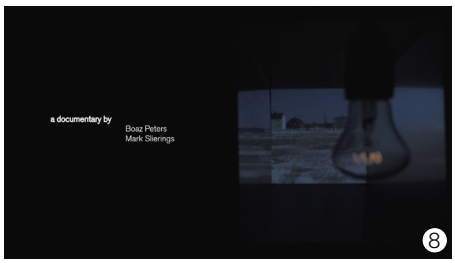

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- and a quite fragile system of people moving out, -
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a documentary by
Boaz Peters
Mark Slierings
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Kirkenes - Nikel - Zapolyarny

Thursday April 18th | 10:00

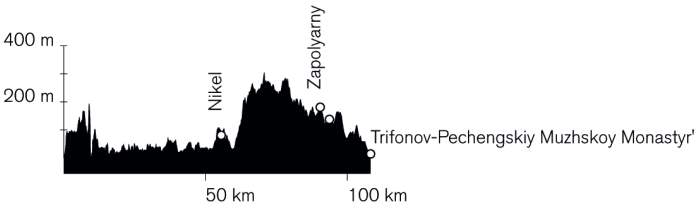
The military airport near Kirkenes reveals the presence of the Norwegian-Russian border when you arrive here (see map below). While the town is literally empty of people - because of Easter - the few people we encounter are Russian. We are picked up at 10:00 by our tour-guide Iliyana for a one-day trip to Russia, to the towns of Nikel and Zapolyarny. The Russian border is a 15 minute drive, and Iliyana explains to us that many people crossing the border are Russians who can shop visa-free in Kirkenes. After crossing the border it still is a 20km ride to leave the restricted area. Large green outposts - protruding from the forest around us - reveal the old military presence along the Iron Curtain during the Cold War.

11:00

The absence of trees are the first signs of nearing Nikel. The small industrial town literally exists because of what its named after - the nickel mines and smelters. We visit a small chapel at the edge of the barren landscape surrounding the factory. The priest is leading a prayer, and the serenity inside is in stark contrast to the wastelands outside. Illiyana tells us that many men do not age over 50, but that most people are content with the life here.



Nickel plant faces closure, locals fear their town is doomed



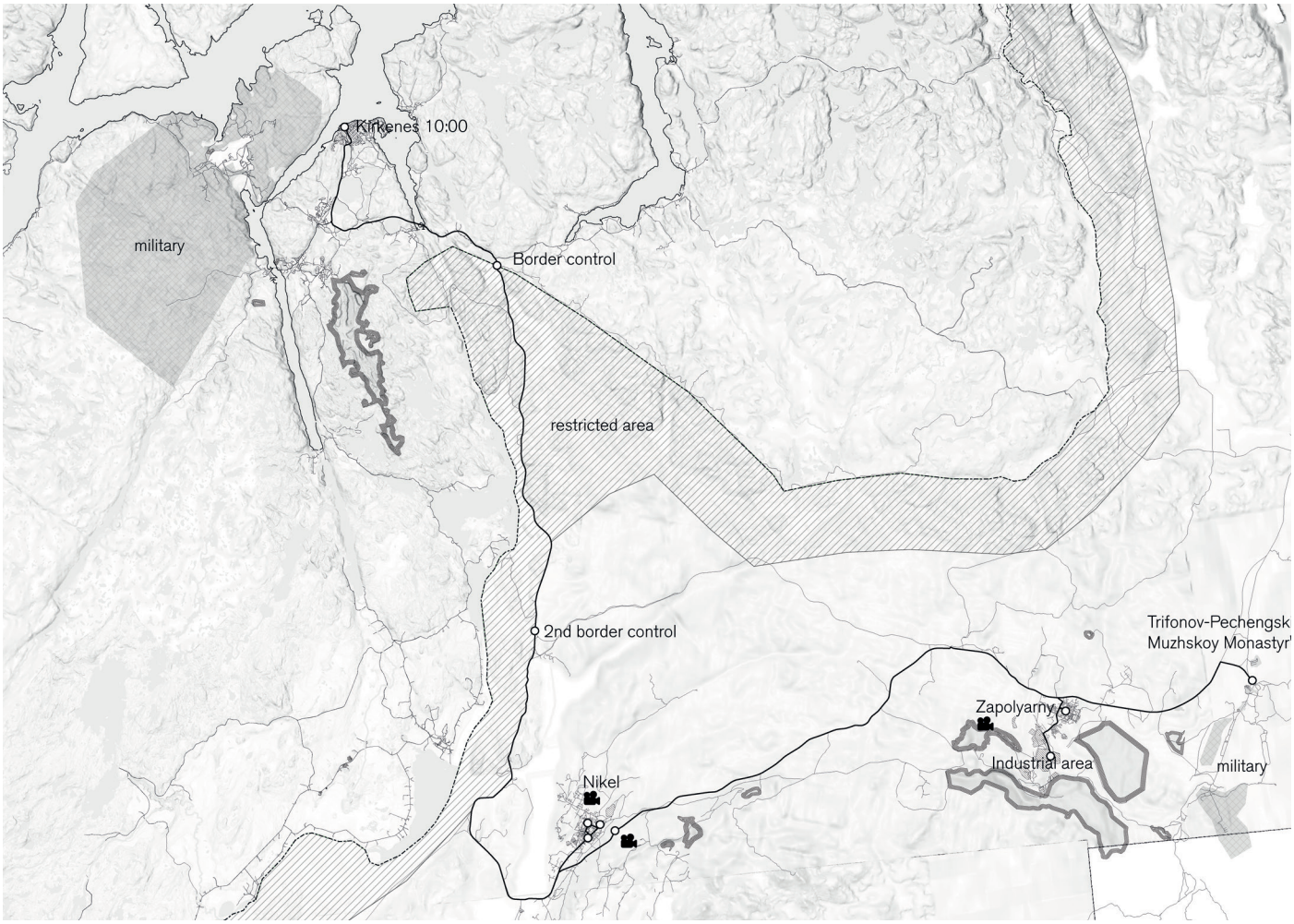
Figures

▲ 5.64 News cover of November 8th, 2019 in the Barents Observer.

◀ 5.65 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019

▼ 5.66 Traversed route from Forsøl to Børselv.
Made by Authors 2019, based on height data from Kartverket 2019

▶ 5.67 Nornickel's Nikel smelter in Nikel, Russia.
Made by Authors 2019









5.68 A ceremoney in the Orthodox Tserkov' Prepodobnogo Trifona Pechengskogo church, Nikel, Russia.
Made by authors, 2019.

12:00

We are heading towards a small building between the Soviet blocks, and to our surprise we enter a small museum. After the museum lady proudly explained the regional history - as well as the legendary cosmonaut, Yuri Gagarin - we enter a modern room where Nornickel has sponsored a exhibition about the local mining history. It reveals how hard Russia is trying to keep up with modernity, but fails to do so in many economic and social aspects.

Recent developments show how fragile life is here; Nornickel announced that it will close down all activities in Nikel, without any warning or backup plan. And Moscow is shutting down indigenous rights groups, thereby silencing their voices. "The Arctic and its resources mean a lot to Russian business and its budget. That's why companies look at indigenous minorities as a barrier to their activities"[24].


The Barents Observer

The Nenets people live on the tundra in Northwestern Russia. Photo: Thomas Nilsen

Sami parliaments, EU concerned by Russia shutting down indigenous rights group

13:00

We drive for another half hour and arrive in a slightly bigger city Zapolyarny. After lunch in the only restaurant and hotel, we go to the town hall where most communal activities take place; from a small market, to dancing and music lessons. Illiyana explains that the local cinema has been long gone and that for the real thing one has to go to Murmansk, only 300km away.

15:00

Although not directly visible, Zapolyarny is surrounded by multiple open-pit mines and an industrial area approximately the same size as the city. When driving towards - the now restricted - industrial zone, we see how local workers are waiting on a bus. We get the feeling that Iliyana is hesitant in showing us this side of the region. We leave Russia with mixed feelings - invoking either anger or helplessness - we wonder if our professional field could help resurrect the regions' barren landscapes after the industries will leave.

Documentary

Russia features a small part of the documentary. The interview with Atle revealed that the problems regarding indigenous groups and oil, gas and mineral extraction are far worse in Russia. We therefore decided to couple his lines by explaining that governmental decisions have a big impact on local conditions - in Norway similar factors are at play, although thanks to the democratic system the worst scenario is avoided.

Citations

[24] The Moscow Times. (2019, November 7). Russia Shuts Down Arctic Indigenous Rights Group.

Figures

▲ 5.69 News cover of November 12th, 2019 in the Barents Observer.

▼ 5.70 Documentary stills.
Made by Authors 2019

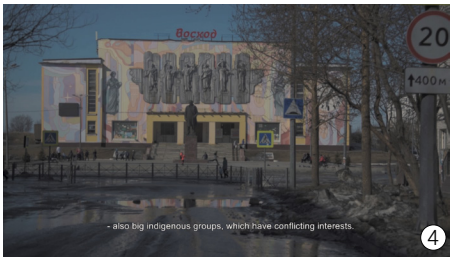
▶ 5.71 A Russian Orthodox priest at the Trifonov-Pechengskiy Muzhskoy Monastyr' near Zapolyarny.
Made by Authors 2019

▶ 5.72 Two Russian workers having lunch in the restricted industrial park in Zapolyarny.
Made by Authors 2019





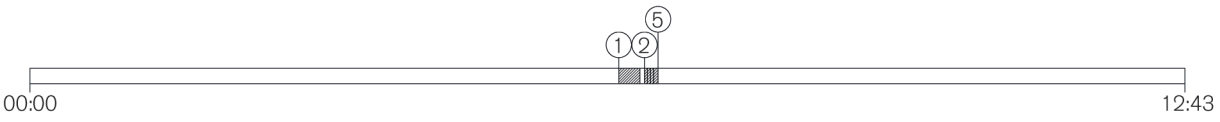






"If you look at Russia, you will find even more interesting conflict of interest between traditional groups, indigenous peoples and industrial interests. You will find huge oil and gas resources, both of the coast, but also on land, and you'll find also big indigenous groups which have conflicting interests."

Atle Staalesen, Barents Observer.





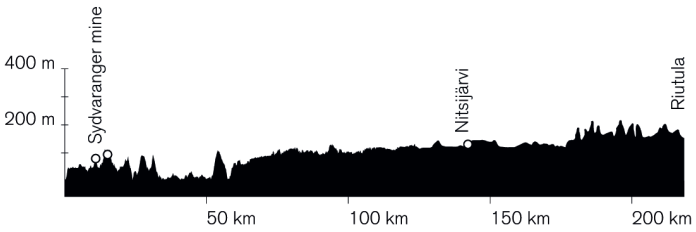


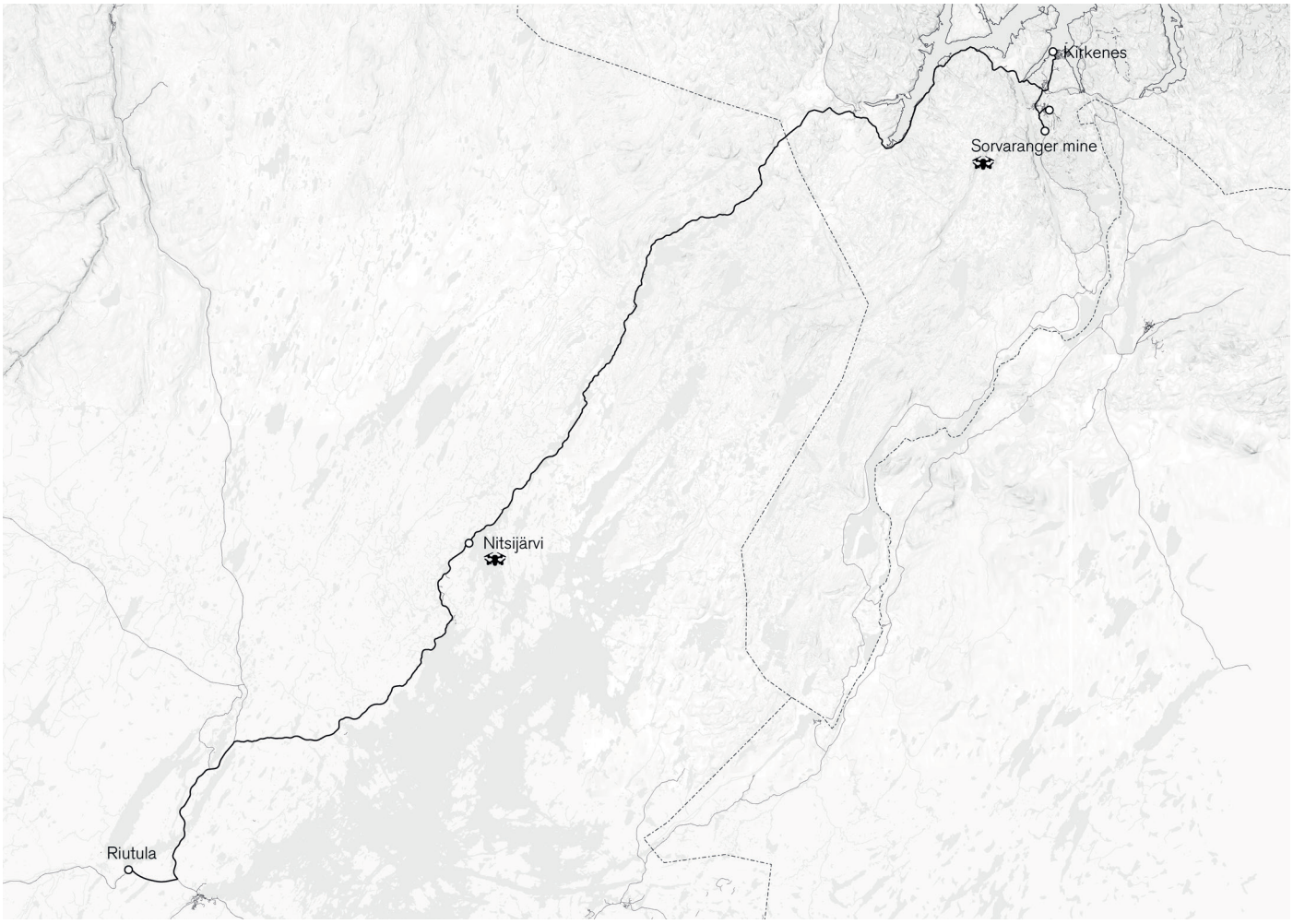
Kirkenes - Inari

Thursday 18th 2019 | 18:00

We leave Kirkenes, pass by a small town called Hesseng and drive into the town of Bjørnevatn some 15 minutes (?) later. A town which is particularly interesting because of the Sydvaranger iron mine, which is situated here. Early growth of both Kirkenes (because of its processing plant and port) and Bjørnevatn before the World Wars is due to the development of the mine since 1906. After the wars the company became predominantly state-owned till it's bankruptcy in 1996. During this time, large subsidies and infrastructure developments helped the growth of the towns of Bjørnevatn, Hesseng and Kirkenes. The mine opened between 2007 and 2015 once more, this time under the flagship of the Australian company Northern Iron Ltd.

The area is to a large extend defined by its complex history as border region, and what was at some point in time a multi-ethnic region. Prior to the mine, a significant portion of the population - comprising of the indigenous (Skolt) Sami and Kven people - traded their goods peacefully with the Pomors in Russia and the Finnish and Norwegian people. To an extend related to the development of the mine, today the residents identify as primarily Norwegian and Russian (as part of a cross border strategy following the fall of the Soviet Union).





Figures

◀ 5.73 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019

▼ 5.74 Traversed route from Krikenes to Inari.
Made by Authors 2019, based on height data from Kartverket 2019

▶ 5.75 Sydvaranger mine in Bjørnevatn.
Made by Authors 2019

▶ 5.76 Statue of a miner posing in the centre of Bjørnevatn.
Made by Authors 2019







The Barents Observer



The Sydvaranger processing plant in Kirkenes. Photo: Atle Staalesen

Iron miners set for a restart in Kirkenes

A statue of a miner posing bravely, next to a bus stop modelled like a mine entry, reveals the nature of the direct surroundings today, a mining area. Ambitious plans to reopen the mine, and surround Bjørnevatn with high mountains of waste rock, have been accepted. Included in the license to operate is a permission to dump chemicals - derived from the extraction of ore from the rocks much like the Nussir-case - into the Bokfjorden, just outside of the Kirkenes harbor. Unlike the Nussir-case public resent towards the plans are near zero. The tradition of an operating mine nearby seemed to weigh higher against the disadvantages.

We're surprised that we can just drive up to the mine without a fence or people stopping us, perhaps because it is Easter. After we send a drone up in the air, the sheer size of the mine becomes clear. The main ore body - also carrying the name of the nearby town - Bjørnevatn is by far the largest pit, comprising of three parts. More to the south - in the so-called south field - development only started after 1980, yet this area comprises of some 6-8 (..?) open pits that together have roughly the same length as the Bjørnevatn open pits. The total length of the mine is around 8 kilometres.

We see another possible stop just around half-way and decide to go there to get a better picture of the south field. From here remnants of the once great Bjørnevatn lake can be seen, now covered mostly under mountains of mining waste.

20:30

When twilight starts, we cross the border and drive into Finland. The landscape around us changes from steep barren mountains to flat hills with low pine trees. It is a welcome sight after the past hectic days. The region, officially called Lapland - or Lappi -, is derived from Lapp, the name Scandinavians ascribed to the Sámi people. Nowadays the Sámi consider Lapp to be a denigratory term, and they prefer the area to be called Sápmi[1].

Apart from a few houses the landscape seems empty of any human interventions. The only stop we make is at Nitsijärvi, a frozen lake which is part of large system of lake Inari. It stretches from Inari to the border with Norway (see map).

Documentary

Only footage of the Sydvaranger mine made it into the final edit of the documentary. The footage is dispersed throughout the documentary as the best example of an open-pit mine in Norway. Combined with information about the mine it is a good example of what kind of impact it has on the landscape. The miner-statue perfectly resembles how these industries are exemplified; as heroic adventures.

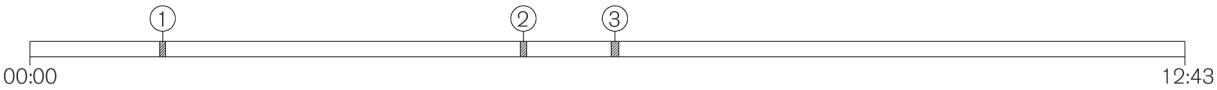
Figures

◀ 5.77 Frozen lake (Nitsijärvi), serving as highway for snowmobiles.
Made by Authors 2019









Inari - Karasjok - Leppäjärvi

- *Friday April 19th 2019 | 10:00*
  Inari is the largest - but scarcely populated - municipality in Finland, resides next to lake Inari and is considered to be the center of Sámi culture in Finland. When driving towards the Siida museum we see - even though its Easter - a tourist bus just leaving the parking lot. It shows that this part of Finland is popular for tourists who want to experience Lapland. The museum itself revolves around the Sámi history, but particularly about the seasonality of the environment and how they use the landscape for both herding and fishing as part of nomadic life. It is the first time we learn more in depth about the techniques, as articles (in English or Norwegian) are hard to come by.

- *12:00*
  When driving around in Inari, it doesn't feel like you're in a Sámi town where the Finnish Sámi Parliament is residing. After a big population decline the village is now growing as more tourists - particularly from east Asia - come in winter time. The local economy is benefiting and reindeer herding is not the main source of economy anymore. The municipality is also believed to have big deposits of minerals and ores. Where local authorities in Norway often choose to develop jobs and big revenues out of this, Inari has successfully withstand extractors[25].

Citations

[25] Alajärvi, M., & Rasmus, L. (2019). «Why don't they ask ordinary Sámi?»– Arctic railroad has an impact on many local people in northern Finland.

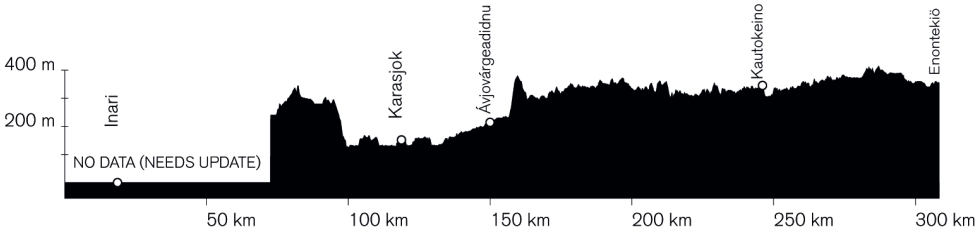
Figures

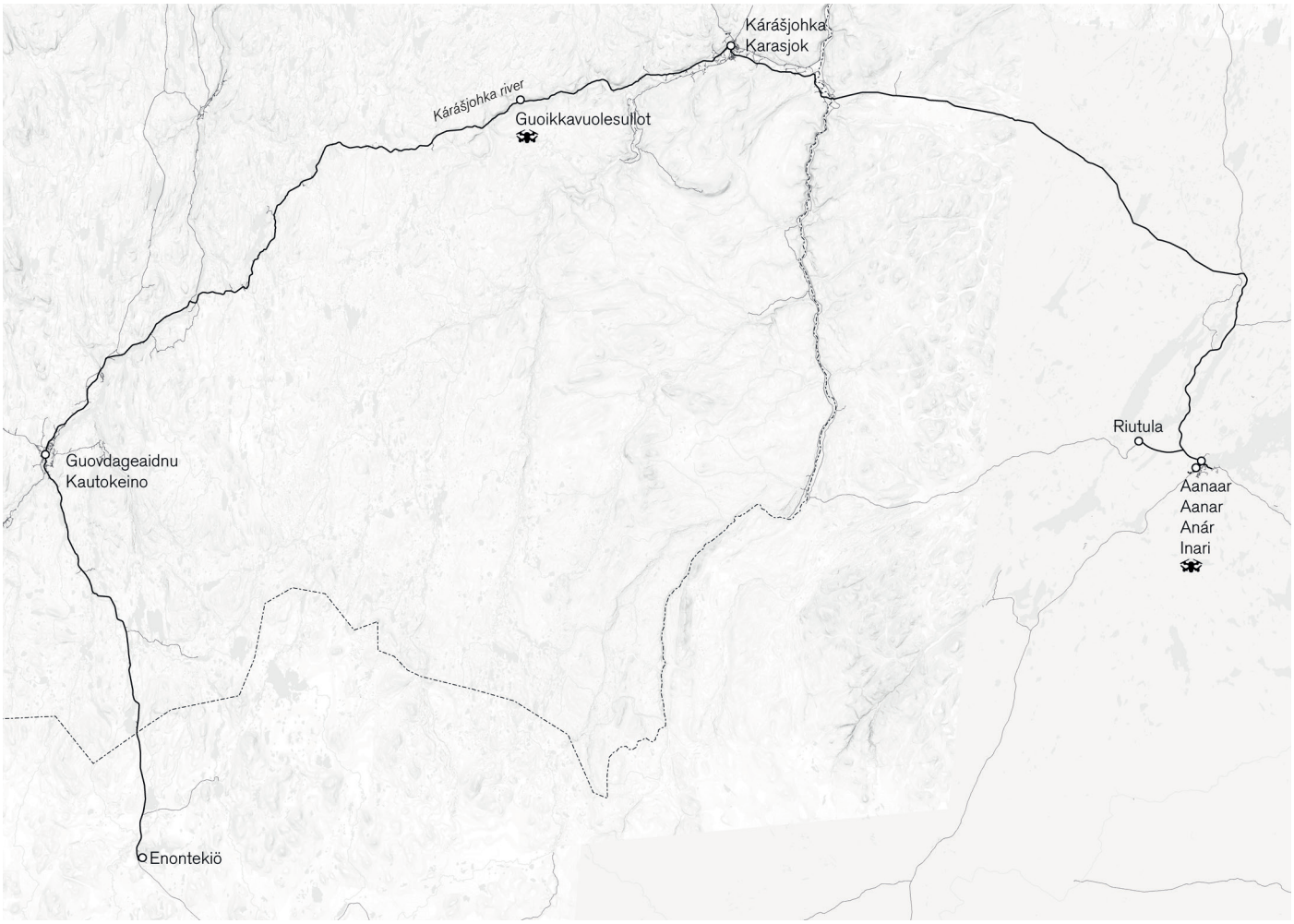
▲ 5.78 News cover of March 18th, 2018 in the Barents Observer.

◄ 5.79 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019

▼ 5.80 Traversed route from Inari to Leppäjärvi.
Made by Authors 2019, based on height data from Kartverket 2019

► 5.81 Juutua Suspension Bridge over the Juutuanjoki river.
Made by Authors 2019





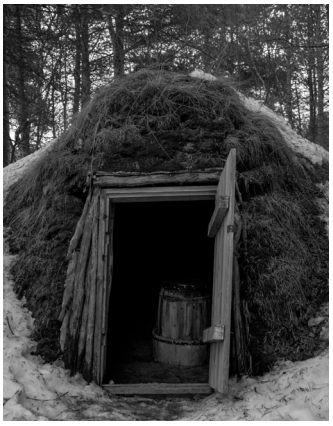






There is however one big concern regarding industrial development; the *Arctic Railway*. As part of the *Arctic Corridor*, the project aims to connect the Baltic Sea with the Barents Sea, and strengthen economic benefits from cargo transport from Asia, as well as oil, gas and mineral developments in the Arctic. The planned railway will cut right through the heart of Lapland, thereby splitting Siida's used by reindeer herders. The Sámi Parliament and herders have criticized the plans, as there have not been any consultation whatsoever about the chosen route[26].

In late 2019 the government of Finland has withdrawn from the project, as the project is social-economically not sustainable. As of now, Finest Bay Area Development Oy - a private company - is willing to invest into the project[27].



15:00

We decide to have a short hike to Juutuanjoki river (figure 5.78, previous page). Along the route, Finnish people are enjoying camp-fires in open huts. Places like Inari have attracted young people - and many families who want a second home - to buy a house here as it was cheap, nature in the backyard and recreation is close-by.

18:00

Back in Norway we pass Karasjok, the Sámi capital - home the Sámi Parliament - of Norway. Unfortunately everything is closed, and the local Sápmi park - owned by the Scandian hotel - looks thrillingly abandoned. We wonder if this is another 'standard' museum in the heart of Sápmi.

The drive alongside the Kárášjohka river is long. The area between the karasjoka river and the border with Finland could be considered the heart of Sápmi, where most valuable winter paster are located. An abandoned reindeer pen (figure 5.81) is one of the few signs left by ...

Documentary

Finland is not covered or mentioned in the documentary, but having been there has broadened our knowledge about the issues of the Sámi and Arctic communities in general. It seems that everywhere you go, industrial development is in a direct or indirect way influencing - and sometimes - splitting local communities. The lack of transparency towards, and consultation of local residents seem to be widespread.

Citations

[26] Alajärvi, M., & Rasmus, L. (2019).

[27] Arctic Corridor. (2019, 10/11/2019). Private company to build Arctic Railway?

Figures

◀ 5.82 Sámi Parliament of Norway in Karasjok.
Made by Authors 2019

◀ 5.83 A reindeer pen between Karasjok and Kautokeino.
Made by Authors 2019

▲ 5.84 News cover of March 18th, 2018 in the Barents Observer.

▲ 5.85 Example of old Sámi home in the Sapmi Park, owned by Scandic hotels.
Made by Authors 2019

▼ 5.86 Documentary stills.
Made by Authors 2019







Leppäjärvi - Kautokeino - Leppäjärvi

Saturday April 20th

Kautokeino - or Guovdageaidnu - is a small town in the heart of Sápmi. During our stay there were a lot of festivities surrounding the Sámi Easter Festival; a week long festival to celebrate Easter and the Sámi culture. As the librarian in Tromsø already told us, the Sámi are quite religious. It is therefore no surprise that the festival originated as a celebration of weddings, confirmations and christening, and slowly evolved into the festival as it is today. It includes concerts, theatre, exhibitions, market, duodji (Sámi handicraft), art, cinema and reindeer-racing.

13:00

When arriving in Kautokeino, the festival is well under way. We decide to go to the Diehtosiida (Sámi University), where an exhibition is displayed by a Japanese photographer Koji Tsuda. The Japanese followed and photographed the Sámi from 1974 to 1986. As we later found out, this was the period where the "Norwegianization" act came to an end as Sámi activists were protesting for their rights. These protests were for a large part started by the protests against a dam in the Alta river, but more on that under 'Leppäjärvi - Alta.'

We decide to go to the Sámi Festival center where we have our first Bidos (reindeer soup). Unfortunately we discover that the reindeer races have been cancelled. Luckily, we received a phone number of a local reindeer herder from Siv and Per, Aslak Sokki. Aslak will pick us up at the local Thon hotel to give us a small tour at his tourist company.

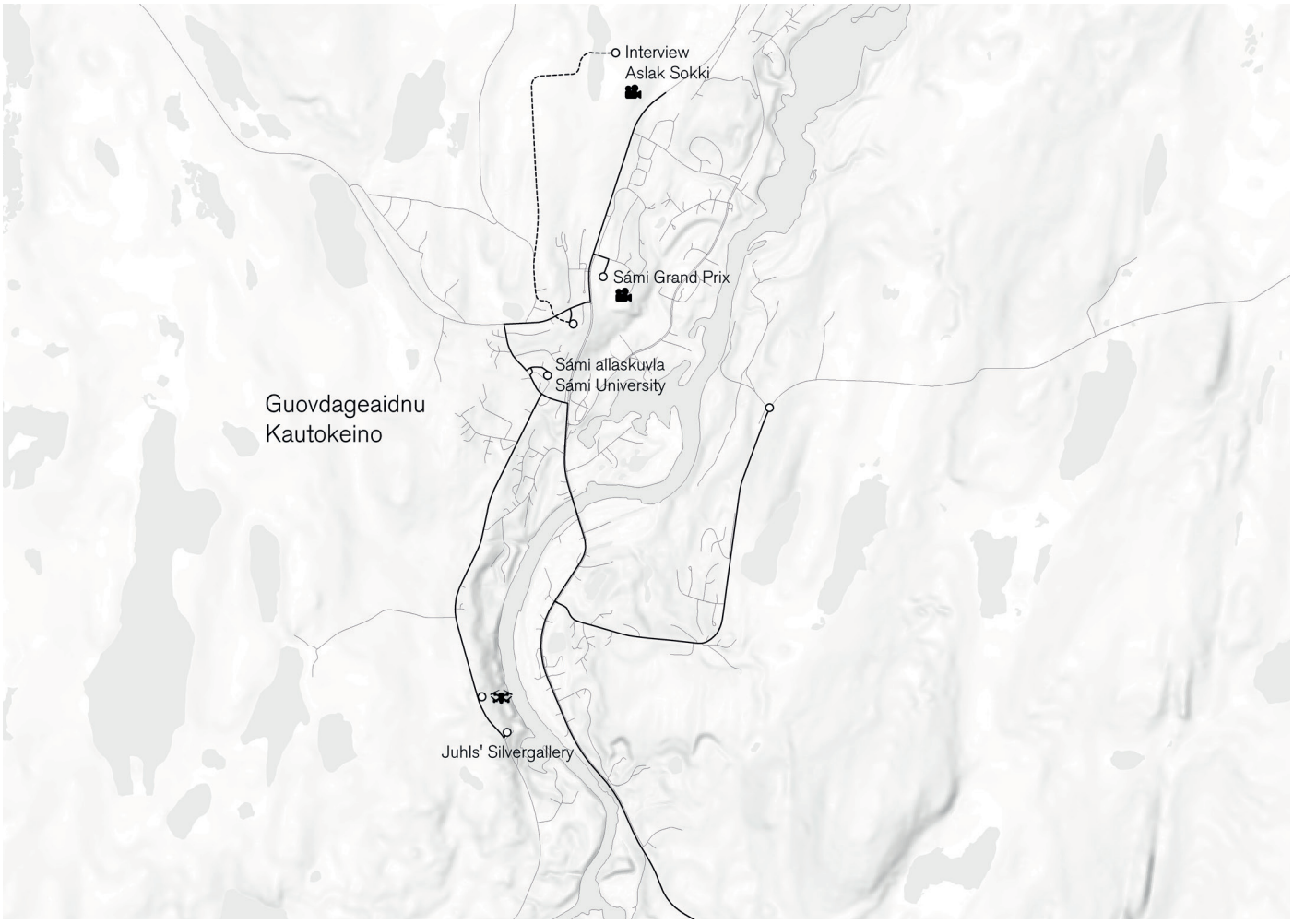
15:00

We are picked up by scooter mobile. Among us are an Iranian man and Norwegian women from Svalbard who are looking into arranging guided tours around Finnmark. This is perfect, as the

Figures

▼ 5.87 Traversed route from Inari to Leppäjärvi.
Made by Authors 2019, based on height data from Kartverket 2019

▶ 5.88 Kautokeino, seen from the South.
Made by Authors 2019





atmosphere is therfore a little less touristy. We head into the traditional Lavvu (figure 5.94) where Aslak Sokki and his niece explain us shortly some things about the Sámi culture. After another bowl of Bidos, his niece chants a personal Yoik for us. The traditional Yoik is believed to be one of the oldest forms of music in Europe and as Somby explains, Yoiks are an important part of their culture;

> There are Yoiks for persons, animals and land. In Saami tradition it was very important for a person to have a yoik, just as important as being given a name. Yoiking a landscape or an animal probably had a similar ritual significance. Even for the trained ear, it is difficult to hear the difference between an animal's yoik and a person's yoik. The reason is simply that people, animals and land are not as distinct in the Saami mind as in the western European mind. Ethics that apply to fellow humans also apply to a great extent to animals and land, or fellow animals and fellow land, so to speak. Thus, just as one cannot own a fellow man, one cannot own a «fellow» animal or «fellow» land.[28]

It illustrates again how drastically their world-view differs from western perspectives and how close they are with their environment.

Aslak explains that his first and foremost reindeer - the one in figure 5.91 - is the leader of the pack and that the herd is very trustworthy towards him. Without him the herd would panic. Most of the reindeer he uses here are white, because they are very calm and lazy. As we already noticed, most reindeer that wander around roads are also white - male - reindeer. Brown reindeer - especially females - are herded on the pastures. We also discover why the reindeer racing has been cancelled; the antlers have started to grow again, causing much pain for the reindeer.

Summary interview Aslak Sokki:

After the tour and ride on a sled, we have time to ask some personal questions. We quickly set up the camera. The start of the conversation is about the cultural connection of herders with the landscape. Around Finnmark there seems to be a strong connection with the landscape.

AS

"You see in Kautokeino you have time to listen to the nature, that's the most important for us. Because nature doesn't care about us, we have to take care of nature. And we have to listen to what nature is telling us, we have to look for those signs. I tried to live in the big cities, but that wasn't my life because it was too many buildings, too many sounds. "

"In large parts of Finnmark herders still migrate throughout the year, do you often go towards the sea or towards other place in Finnmark?"

AS

"We are like nomads. In the wintertime my reindeer herd will be 100 kilometres east up to Finnish border. But in the summertime then we move our reindeer herd to the coast in Troms, so then we are at the sea. We have many homes, but most of time we are in Kautokeino."

From our research we learned that within Siida's - reindeer pastoralistic districts - different families share the same areas throughout the year. Up to 2007 there have been conflicts with the government about the use of Siida's by the Sámi, and - because information is hard to get by - we wonder if herds still use these.

AS

"Of course, we have to follow the traces of our grandparents and great grandparents. But the reindeer are showing us the way, they know where they should go in wintertime and also in the wintertime, you just keep following. We just herd them at the same time."

Citations

[28] Somby, A. (1995). Joik and the theory of knowledge.

Figures

▶ 5.89 Aslak Sokki with his favourite reindeer. Made by Authors 2019

"Is it becoming harder to herd or to find the right pasture for the reindeer?"

AS

"We know where we should be, but sometimes it's very hard to herd the reindeer against predators. So we have to watch over for the reindeer all the time so they don't kill all the reindeer. And the industries try very much to come to our areas, but we don't want them. But I know that it will probably happen a few years from now. Because the government is saying we are putting new industry there new, new industry there, we don't care about the Sámi's, we don't care about the reindeer herding, we want more minerals. That's not good us, for us sami people. And for our kids either because they're going to take over the reindeer herding after us. But the industry will destroy so much areas, that we can't herd our reindeer there. We try to take care of the next generation, what will happen then, and it's very sad for us."

"We found out that there's some different perspectives on the incoming of the industries, well mainly in places along the coast."

AS

"We're like splitted people. Someone will have that industries and fifty percent don't want to have that industry. And I don't want it, those industries. Even at the coast either, because I know, these people they work to fish, and that's very important for us also. My cousin is actually fighting against it, because they have reindeers in the Repparfjord - the Nussir case - and they know the people that live and fish there. They don't want to lose their work because of some minerals."

"Has climate change affected your reindeer herding or do you think it will impact?"

AS

"We have seen many changes. We didn't have so much snow this year. And we had a really different winter as it used to be. Suddenly it can get really warm for 2 days, then it gets very cold. But normally in all January, February, maybe half March it used to be very cold inland. If you're thinking about 10 years ago. But now its so much changing with the weather. And I also see it in the reindeer, they're also changing with the weather. But we have to get used to it, we can't do nothing with that."









Aslak hints at a very important point here. Most herders are not that concerned about the changing climate, because reindeer can be very flexible. But this flexibility asks for bigger and flexible pastures which they can use. And these particular areas are threatened by new industries.

After the interview Aslak thanks us. He says that we are one of the very few people who actually did our research well and ask the right questions. Most people documenting - through filming - are mainly interested in their culture and do not have the right research background. We're glad that we could be of any help.

19:00

In the evening we are heading to the Báktehárji Idrettshall where the Sámi Grandprix will be hosted. The event is being broadcasted live on national television and consists of two parts; a Yoik and a song contest. When arriving at our seats, we discover that there are two Dutch people behind us, who turn out to be making a documentary as well. We exchange our experience and they are surprised that we are doing this from a research background. The Grand Prix is a warm experience, where the cultural differences between the different regional backgrounds are wonderfully visible.

Documentary

The past few days have been intense, although most towns we visit are quiet because of Easter, the presence of the Sámi and their natural connection is strongly felt land inwards. From our visit in Kautokeino, the meeting with Aslak quite remarkably showed that a lot of herders are forced to seek revenues from other activities, as herding is under pressure of capitalism. Although not visible in the documentary, the children playing in the background amplified his worries for future generations in the north - as most of these industries only provide jobs for a short time. We were quite enthusiastic about the reindeer racing, as we hoped to interview more people in an informal setting. But the Sámi Grandprix - becoming more popular every year - also seemed to provide a good insight into their culture. The earlier example of industrial development in Gørtsund Fort - in the Troms area - is combined as a contrasting sequence throughout the documentary.

Figures

◀ 5.90 Winner of the Yoik context at the Sámi Grandprix, Kautokeino.
Made by Authors 2019

◀◀ 5.91 Picture taken Sokki Adventure with in the background a Lavvu.
Made by Authors 2019

◀ 5.92 Painted pillars in the Sámi University, Kautokeino.
Made by Authors 2019

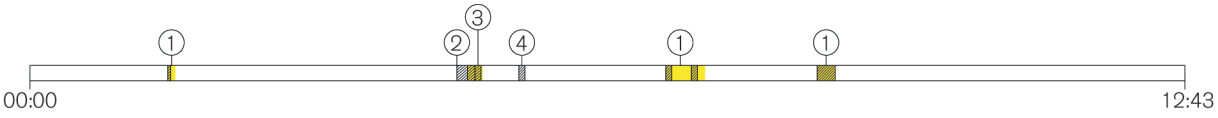
▼ 5.93 Documentary stills.
Made by Authors 2019











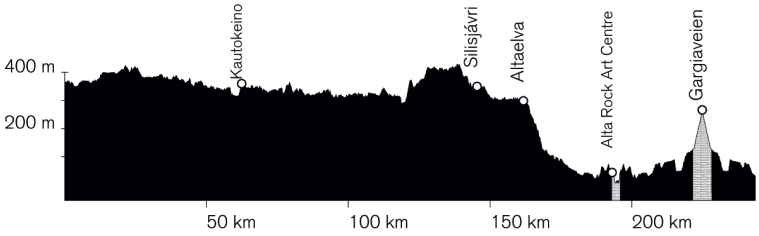
Leppäjärvi - Alta

Sunday April 21st

The journey today will take us from the Finnmark plateau of Finnmark to the coastal city Alta. Since we are travelling in an almost straight line, the section below gives a good impression of terrain we are traversing. Towards the coast the terrain is getting more mountainous before descending, hence the in-lands are protected from the harsh winds and thick covers of snow in the winter. This is the very reason that reindeer - and thus Sámis - originally reside inland.

13:00

We ride over the mountain range and pass lake Silisjávri, where the presence of snow-mobile routes are again visible on the ice surface. In the winter this means of conveyance is preferred because roads are often inaccessible. In fact, these climatic and landscape features have - for a large part - ensured the Sámi to escape the reach of colonizing forces along the coast in the past centuries.



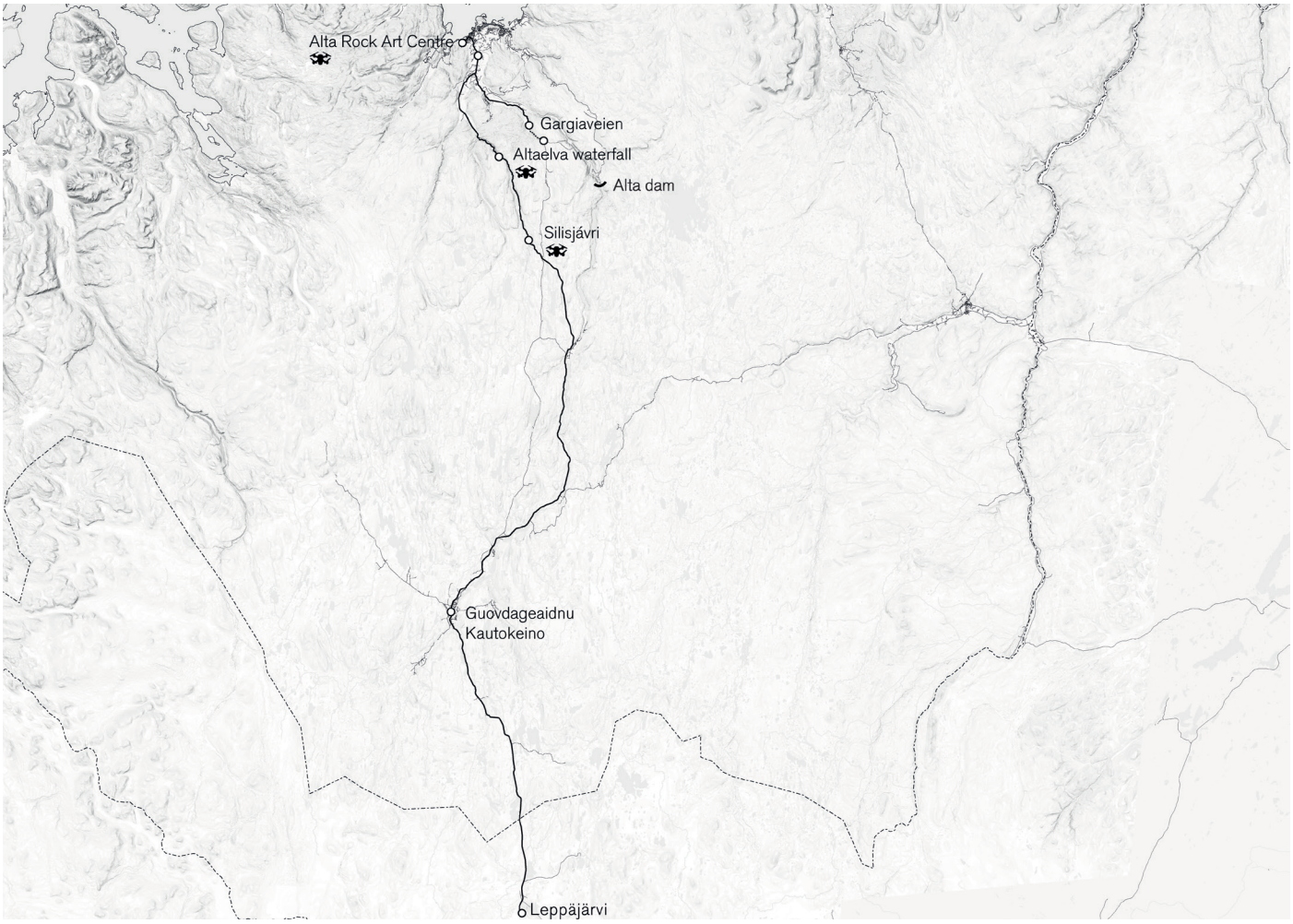
Figures

◀ 5.94 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019

▼ 5.95 Traversed route from Inari to Leppäjärvi.
Made by Authors 2019, based on height data from Kartverket 2019

▶ 5.96 Lake Silisjávri, near Masi.
Made by Authors 2019

▶ 5.97 Rock carvings at Alta Rock Art Centre.
Made by Authors 2019







14:00

We slowly ascend along the Eiby river between the mountains and come across a frozen waterfall (see documentary stills). After a quick stop, we descend with great altitude towards Eibydalen. We are surprised by the sudden change from a snowy-winter landscape to a green valley, full of large pine trees. The small river we have followed flows over into the Alta river, and enters the sea in Alta. The city is presents itself as the place to experience the northern lights in Norway.



17:00

After settling along the Alta river, we head towards Hjemmeluft where the Rock Carvings Center is located. (see figure 5.99) The World-Heritage site seems closed, but we decide to walk along the coast-path anyway.



> The Rock Art of Alta, with its thousands of paintings and engravings, is an exceptional testimony of the aspects of life, the environment and the activities of hunter-gatherer societies in the Arctic in prehistoric times. The wide range of motifs and scenes of high artistic quality reflect a long tradition of hunter-gatherer societies and their interaction with landscape, as well as the evolution of their symbols and rituals from approximately 5000 B.C. to about the year 0[29].



It is believed that these rock carvings were made by ancestors of the Sámi, but this is not proven fully proven. Although the genetic origin of the Sámi is still unknown, it appears that they are a blend of European Hunter Gatherers and the Ancient North Eurasians[30], making their culture very relatable with these prehistoric hunter-gather societies. Nevertheless the carvings have a deep impression on us, especially the fact that many of these habits - for a great part - managed to survive thousands years in Sámi and other indigenous cultures.

21:00 - Alta protests

In the evening we decide to walk towards the Alta Canyon, a 1,5 hour walk from Gargia over the top of te Grønnåsen ridge. But as the dark kicks in, thick snow cover limits our movement - as we we sink to our hips in the snow. 40 years ago, these grounds were the center of heavy protests against a dam in the Alta river. The Alta controversy "became a symbol of the Sami fight against cultural discrimination and for collective respect, for political autonomy and for material rights"[31].



Citations

[29] Unesco World Heritage. (2004). Rock Art of Alta.

[30] Wikipedia contributors. (2020). Sámi history.

[31] Minde, H. (2005). Assimilation of the Sami-implementation and consequences

[32] Briggs, C. M. (2006). Science, local knowledge and exclusionary practices: Lessons from the Alta Dam case.

[33] Alta Museum. (2019). The archives of the protest movement against the damming of the Alta-Kautokeino water system.

Figures

▲ 5.98 Sequence of different landscapes within 7 minutes drive from each other.
Made by Authors 2019

◀ 5.99 'Let the river live', protesters at the Alta against the Alta dam.
© Alta Museum

▶ 5.100 Documentary stills
Made by Authors 2019

The dam's impacts on reindeer herding, salmon and river quality constituted environmental burdens that were borne by Alta residents, without crucial state consideration of the resources' environmental and identity values. The project was, in many ways, an extension of Norwegian modernist and development ideologies that had long defined hydropower projects both in Norway and abroad, as well as relegating Saami populations to politically marginal status[32].

The protests ended up being a question of the rights of Sámi people and indigenous populations, both national an global[33], ultimately ending the "Norwegianization" policies in 1981. In the end, the project was constructed at a reduced scale, saving the Alta Canyon for flooding.

Documentary

From this day, particularly natural shots from the landscape and the Art Rock made it into the documentary. Unfortunately, we were unable to reach the Alta Canyon, but the stories have been of great importance in understanding the history of environmental protests in Norway. It amplifies the stark contrast between the preservation of the rock carvings and the allowed destruction of the livelihood of the Sámi. The recent case of the Repparfjord is a good example of this - sadly still existing - paradox. These stories have been the building blocks of the documentary, although they did not directly narrated.









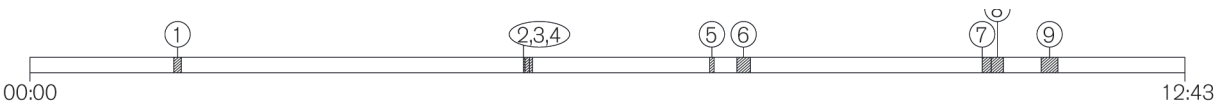
















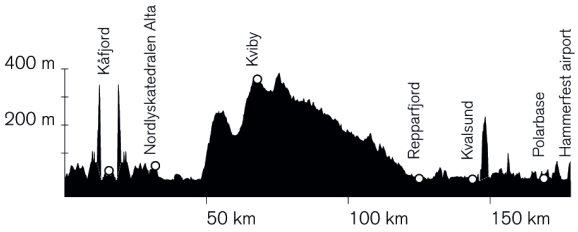
5.101 View from the Alta Rock Carving museum.
Made by authors, 2019.

Alta - Hammerfest

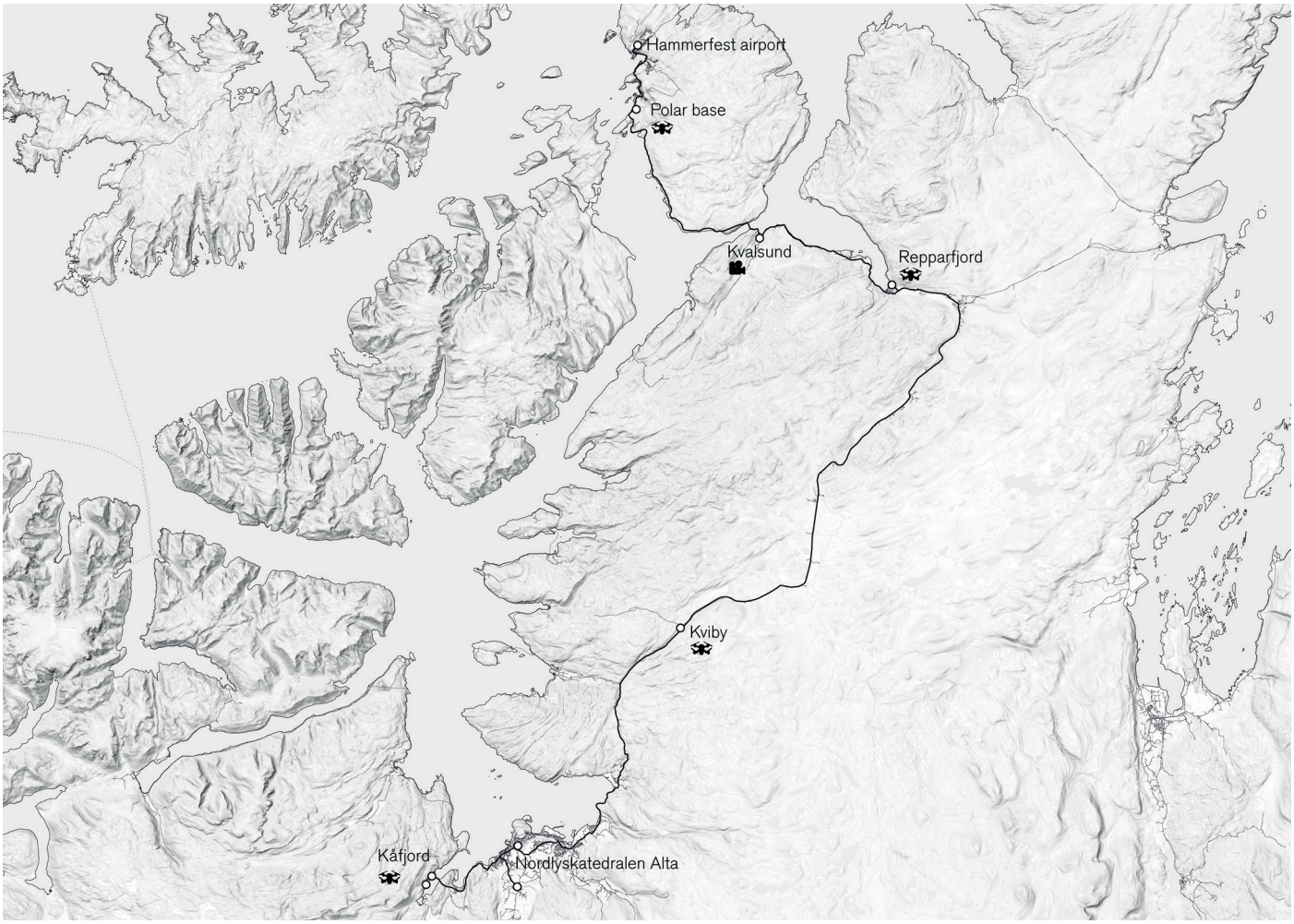
Monday April 22st | 11:00
We start our last day in Finnmark in Kåfjord. The famous fjord is known for the fierce battle - and sinking of the German battleship Tirpitz - in the 2nd world war and the Alten Copper Mines. The mine - founded by two Englishman - was operating from1826 till its exhaustion in1909.

12:30
After a short visit to the centre - and Northerns Lights Cathedral - of Alta, we head for Hammerfest again. The first stop is on a mountain range just outside of Alta, where great packs of snow still cover the landscape. We slowly descend towards the Repparfjord.

13:30
The second time in the Repparfjord we film the salmon spawning delta, with in the distance the - as of 2020, soon to be opened - copper mine. In Kvalsund we make a short stop to get some last impressions of the small town. In 2020 the municipality of Kvalsund and Hammerfest have merged. We have a gut feeling that with this cooperation the municipalities can work better together to attract industrial development. Kvalsund is hoping to house these new workers.



Figures
◀ 5.102 Section of traversed route.
Made by Authors 2019, based on height data from Kartverket 2019
▼ 5.103 Traversed route from Inari to Leppäjärvi.
Made by Authors 2019, based on height data from Kartverket 2019
▶ 5.104 Kåfjord Copper Works ruins.
Made by Authors 2019
▶ 5.105 Thick snow cover at Kviby.
Made by Authors 2019

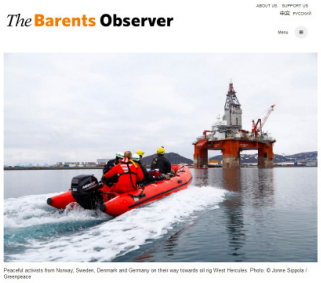












15:00

On the way to Hammerfest, we discover that the West-Hercules is still docked at Polar Base in Hammerfest. Returning from the trip, the grand gesture of this structure is invoking overwhelming emotions. As we later discover, the rig will explore new licences for Equinor in the northern parts of the Barents Sea. Later that week, activists from Greenpeace enter the rig, demanding a stop on drilling in the Arctic - of course without result. But as locals have expressed in interviews, they don't like the southerners coming in and demanding a stop on these important economic activities for Hammerfest.

Documentary

> *"Norway is a very petroholic country. The government in Norway has a strong interest in developing mineral resources and oil and gas. And also the biggest political opposition groups has the same, but there is at the same time a growing discourse, both locally and on the national level on how to handle these issues. Like climate change issues, indigenous peoples, and so on."*
>
> Atle Staalesen, Barents Observer.

From the opening shot to complementary footage under the narration of the documentary. We wanted to highlight - how insignificant it may seem in the vast landscapes - that industrial development invokes controversial problems both for local indigenous groups, as well as what they leave behind when the industrial activities stop.

Figures

◀ 5.106 Local working on his boat, Rypefjord.
Made by Authors 2019

◀ 5.107 West-Hercules oil rig, docked at Polar Base.
Made by Authors 2019

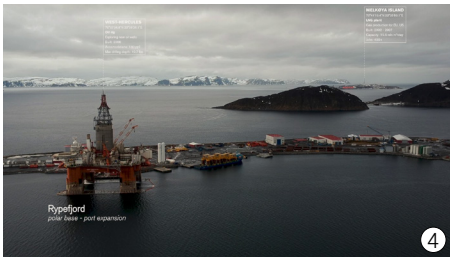
▲ 5.108 News cover of April 29th, 2019 in the Barents Observer.

▼ 5.109 Documentary stills.
Made by Authors 2019



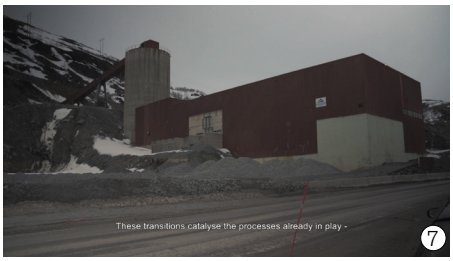



















P



Tromsø

Tuesday April 23th, 2019 | 13:00

The last day of our trip. We visit the Norgen Arktiske Universitetsmuseum and the Polar museum, both part of Tromsø University. We were biased into thinking that the musea would propagate the non-indigenous side of history, skirting the question of traditional ownership of the land. However, we were pleasantly surprised by the exhibition of the University museum. From geological facts to cultural stories, it explained the North from different sides. Insofar, even a extensive exhibition about the Norweginazation history of the Sámi.

One topic we want to highlight is the ongoing debate about overgrazing in Finnmark. In the museum this is explained as a consequence of too many reindeer on grazing lands and an increase in off-road driving. However, as Benjaminsen et al. suggest, "the narrative of overgrazing functions as a type of myth - an enduring 'social fact', whose narrative reality is in large part decoupled from its supposed scientific basis"[34]. The museum highlights that traditional husbandry might have prevented overgrazing, but this is made difficult through industrial development and husbandry policies aimed at herd reduction.

The last stop of our field trip is the polar museum, which is about historical polar explorations. As Bernice Noteboom explains in her book "Arctica",

> These stories [...] sensational by the amount of courage and patience that the polar hunters had, but also shocking by their enormous ignorance and arrogance. [...] They were undoubtedly more driven by their adventurous spirit than they were after wealth. [an huge discrepancy to the current situation] but most simply craved to gain fame or to plant the flag of their home country [first][35].

The heroism in these narratives of exploration are outdated and over-exaggerated. Though these exploration have increasingly been put in a different light, the heroism lives on in the world of oil and gas expeditions, as various videos and the book Snøhvit show; the same strategy has been used to hoist people in the North to believe in the goodwill of these industries. As we have discovered, this is very disputable.

Citations

[34] Benjaminsen, et al. (2015). Misreading the Arctic landscape: A political ecology of reindeer, carrying capacities, and overstocking in Finnmark, Norway.

[35] translated from Noteboom, B. (2018). *Arctica - Mijn biografie van de noordpool.*

Figures

▼ 5.110 The Polar museum in Tromsø.
© Alta Museum

▶ 5.111 The fjord landscapes, seen from the air.
Made by Authors 2019


AFFR
.NL
ARCHITECTURE FILM FESTIVAL
ROTTERDAM
NORTHBOUND
ARCHITECTURE FILM FESTIVAL ROTTERDAM
FRIDAY OCTOBER 11TH - 19:00
LANTARENVENSTER
a documentary by
BOAZ PETERS
MARK SLIERINGS
under the framework of
TRANSITIONAL TERRITORIES
graduation studio
AFFR
OFFICIAL SELECTION
2019
ARCHITECTURE FILM FESTIVAL
ROTTERDAM
"We only have one nature.
This is not something we can buy."
Aslak Sokki


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"We only have one nature.
This is not something we can buy."
Aslak Sokki

Documentary NORTHBOUND

"This documentary is about the most northern state of Europe, Finnmark. If this state would be a city it would rank 6th on the list of biggest cities in Norway in terms of inhabitants, yet the people are stretched out over an area slightly bigger than Denmark. The ground houses a lot of mineral riches, and it is the primary landing place for new oil and gas explorations in the Barents Sea. Sea ice recession in the Arctic furthermore greatly increases trade possibilities with China, cutting down the traditional Suez route by several days. A new projected railway line through Finland connects the in Finnmark situated harbor town Kirkenes to the Baltic States and further down to Central Europe. But what will this rapid industrial transition and economic expansion mean for local culture? How will the indigenous Sámi, the only remaining officially recognized indigenous peoples of Europe and their inseparable connection with herding reindeer, cope under this transition? Will Finnmark thrive under the coming industries or subdue under its destruction? Already the issuing of permits (like one in the Repparfjord in the municipality of Kvalsund) is causing the inhabitants to be divided over whether to choose for preservation of a natural condition, or exploit the landscape for economic growth and job development.

With this in mind we left to make a documentary along the several small villages, and the majestic stretched out landscape of Finnmark. Along the road trip we documented people's perspectives on the industries and life in Northern Norway, many fascinating fjords, large numbers of reindeer and already existing industries. We were struck by the amount of processes which are going on, but which don't meet the eye at first glance. Locals in general seem to be extremely divided, invoking either anger or hope, when talking about industries. What helps for the industries is that the greatly stretched out landscape morphology, allows them to operate in a more covert way. Globalization is pervasive, and it is profoundly affecting local cultural livelihoods."

Figures

▲ 5.112 Poster made for the AFFR selection. Made by Authors 2019

◀ 5.113 Poster made for the AFFR selection. Made by Authors 2019

https://vimeo.com/339203320
Password: Northbound2019

BK-Expo (18-06 – 30-06)

The Northbound documentary was first showcased on the Transitional Territories exhibition in BK Expo. For the Transitional Territories studio this was the chance to exhibit the work done during the year. The exhibition was meant as the collective end of the work for the studio and featured the graduation projects from around the North Sea, were students were asked to show the poetry behind the project, supported through imagination and narrative. Projects were divided over several tables (Territory, Landscape, Urban, Island) according to the theme of the graduation project. All projects reflected upon the political, economic and ecologic shifts of the North Sea and surroundings.

Figures

▼ 5.114 Documentary display at the Transitional Territories Studio exhibition in June 2019.
Made by Authors 2019

▶ 5.115 'Northbound' being displayed on the big screen.
Made Jesse Peters 2019

▶▶ 5.116 Live Q&A at the AFFR.
Made by Thomas Antony Dillon 2019



Architecture Film Festival Rotterdam (LantarenVenster, 11-10)

The theme of the Architecture Film Festival in Rotterdam - Lost in Transition – fitted perfectly with Northbound. Especially regarding the quick transition of the Arctic is causing strong tensions in Finnmark. The documentary was portrayed together with 690 Vopnafjörður (Karna Sigurðardóttir, 2017) and It's not Silence (Joonas Salo, 2018) in a block of documentaries portraying life through Arctic shifts. 690 Vopnafjörður captures a remote Icelandic village struggling with population decline while It's not Silence portrays life in the near abandoned Soviet village of Pyramiden on Svalbard.

12th Budapest Architecture Film Days (KÉK & Toldi Cinema, March 8th 2020)

The documentary 'Northbound' has been selected to show at the Budapest Architecture Film Days in Toldi Cinema. In a block together with the documentary 'Melting Souls' (François-Xavier Destors, 2017) it is set to show on March 8th. Metling Souls is about the "vortex town" of Norilsk - situated in central Russia - and captures the dismal poetry of one of the most isolated and toxic cities on Earth.







Conclusions

The documentary, we argue, is a counter narrative to existing structures of story telling in the north. As Reinert (2016) explains:

> The nation is embarked on an epic (re)conquest of the north, a magical adventure of wealth and riches to rival that of the oil finds. At trade shows and conferences, in editorials, interviews, and televised debates, politicians, magnates, developers, and entrepreneurs conjure the north as a vast frontier, a repository of unrealized wealth—a landscape replete with rare earth and precious minerals, awaiting only the transformative labour of human enterprise to yield its hidden riches[35].

Norway profiles itself as a green-social state, but in the making of the documentary we uncovered a new face of this Scandinavian country. The north is a vast frontier, with complex, interdisciplinary problems. Various disciplines are taking different perspectives on the issues in Finnmark, leaving the sociopolitical landscape fractured. The vast landscapes of Finnmark, seem quite empty at first glance. However, during our field trip we discovered that the meta-level of social, environmental, economic and cultural uncertainties are strongly interlinked, illuminating the sociocultural fragility of Finnmark.

The most striking insights were obtained from the interview with Siv Merethe Sara and Per Alf Sara. Siv Merethe explained to us that the future of Finnmark depends largely – if not fundamentally – on new improved ways of communication and a re-evaluation of the most important values. The making of the documentary and the journal is one of our answers to their issues. It has pushed us to refine and shape the complex issues to a wider audience, thereby also training ourselves into the communication to officials and residents of these places.

As we argued with the Knowledge Argument, new first person knowledge is needed - especially - in regard to Traditional Ecological Knowledge, to get a holistic view of the territory. This asks for a broad analysis, incorporating especially perspectives currently neglected or not well understood in and through Western science. If indigenous issues cannot merely be understood through general scientific knowledge, mapping is not a sufficient tool to translate and consider these problems. One method to understand this is through film making. According to Aufderheide (2007), film making can tell us something worth knowing about, while it is also grounded in life[36]. These inequalities cannot simply be mapped, it requires conversation and it requires the urbanist to be there in order to understand the place.

However, we are conscious that documentary making as a medium does have it limitations, in a sense that it is for a large part (our) reflection about the realities in Finnmark. Therefore we turned to the making of the journal to subjectively - but foremost - objectively validate our story, and be as transparent in our motivations and intentions into further research. For both of us the fieldtrip, documentary and journal has been the base of our project. Insofar, that Boaz is mainly focussing on communicative issues on industrial impact on reindeer herding on Kvaløya, and Mark's focus on value creation in Finnmark. Ultimately the journal can be seen as a mental mind-map, a database from which we pick pieces, to elaborate on in our project.

The documentation of the field trip - through the documentary making and the journal - aided us with a tool to start investigating these issues literally in the field, while at the same time starting a discussion on western perspectives. It is only when we start to incorporate traditional forms of knowledge into decision-making, that we can make fair policies and design. We might be able to produce change and shift in relation to where we are positioned as researchers/viewers in the world. Going to Finnmark has inspired us greatly for our own theses, and we have been able to inspire others too, as is already apparent in new graduate projects.

Citations

[35] Reinert, H. (2016). About a stone: Some notes on geologic conviviality.

[36] Aufderheide, P. (2007). Documentary Film: A Very Short Introduction.

Figures

◀ 5.117 View from Steilneset Memorial on Vardø.
Made by Authors 2019

REGIONAL ANALYSIS

Outline

This chapter explains the spatial analysis or the distribution of the territorialization, coming from different backgrounds. I introduce how the land has been formed, and explain more generally its natural and social geography, before moving to a quantitative analysis framed by the themes, ecology, herding, work and minerals, in order to find possible hotspots or zones of conflict. I end with an analysis of Nussir, the zone where the conflict became biggest.

In at least two senses, all cities can be described as colonial: at the local level, the powers that form them organize their hinterland and live off the surplus the non-urban realm provides. At the global level, existing cities organize the surplus both of their own society as well as that of others overseas; the local relationship of town-to-country becomes the metropolis-colony connection on a world scale.

King, A. D. (1990). Urbanism, Colonialism, and the World-Economy: Cultural and Spatial Foundations of the World Urban System. Routledge & Kegan Paul.

06.





06. Regional analysis

Regional context

Sámi municipalities

Of the municipalities of Finnmark there are five municipalities that recognize Northern Sámi in addition to Norwegian as their official language. These are Kautokeino (Guovdageiadnu), Karasjok (Kárášjohka), Porsanger (Porsáŋgu), Nesseby (Unjárga) and Tana (Deatnu). These municipalities are situated in the inner zones, the zones that got affected the least by the norwegianization policies.

Citations

[1] Ramberg, I. B., Bryhni, I., Nøttvedt, A., & Rangnes, K. (2008). The Making of a Land: Geology of Norway.

[2] Ibid.

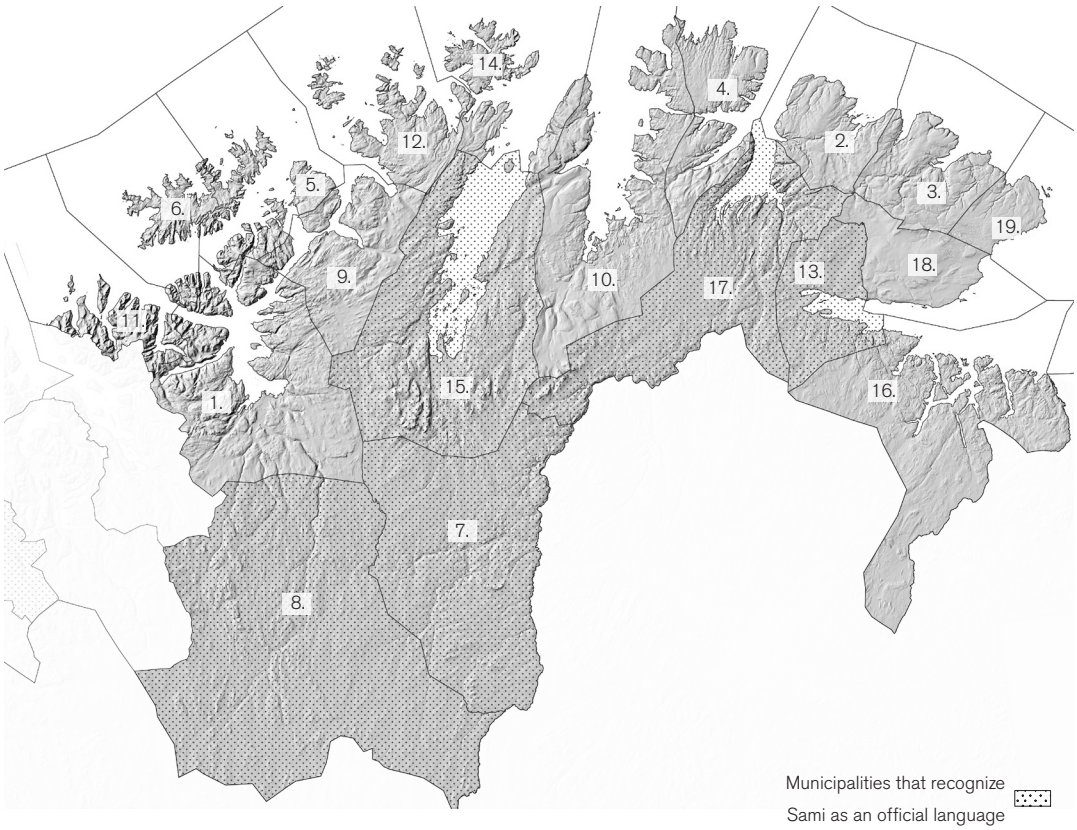
[3] Ibid.

[4] Torgersen, E., Sandstad, J., Viola, G., & Melezhik, V. (2014). Paleoproterozoic sediment-hosted Cu-deposits in western Finnmark, northern Norway.

Figures

▼ 6.1 Municipalities of Finnmark.
Adapted by author from: Kartverket.

▶ 6.2 Sections of Finnmark.
Adapted by author from: Google Earth.

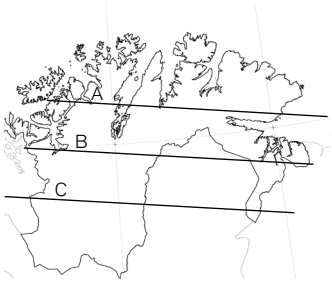


Municipalities

1.Alta
2.Berlevåg
3.Båtsfjord
4.Gamvik
5.Hammerfest
6.Hasvik
7.Kárášjohka - Karasjok
8.Guovdageaidnu - Kautokeino
9.Kvalsund
10. Lebesby
11. Loppa
12.Måsøy
13. Unjárga - Nesseby
14. Nordkapp
15. Porsáŋgu - Porsanger
16.Sør-Varanger
17. Deatnu - Tana
18. Vadsø
19. Vardø

Land formation

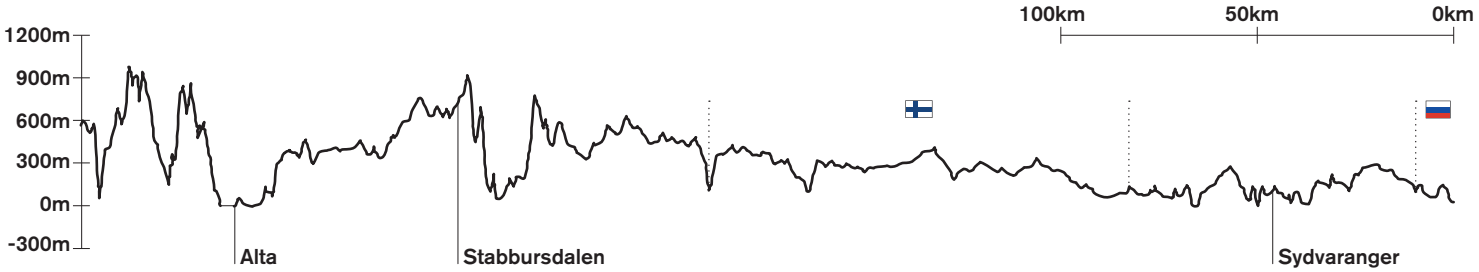
The oldest earth formations in the area of Finnmark are on the southern side, where Supracrustal rocks were formed during the Late Archaean 3100-2500 Ma (million years ago)[1]. These rock formations are situated on Sør-Varanger and span the entire length of the Kola Peninsula, although it is believed that they used to span on the other side to Troms and Lofoten[2]. This is the host for iron formations near the border with Russia. In the early Proterozoic large rifts have separated the Archaean formations. The Finnmarksvidda - a plateau on the southern side of Finnmark – consists of two Paleoproterozoic greenstone belts, that have formed in these rift zones[3]. Especially the western greenstone belt is rich in gold and copper formations. The other coastal municipalities are situated mostly on nappes from the Caledonian orogeny (having formed the fjords and the Gaissane mountain range during that period 425-400 Ma). Two windows in these formations expose the Alta-Kvænangen (and Altenes) and Repparfjord Paleoproterozoic greenbelts (supracrustal rocks, 2060 - 1960 Ma) host several occurrences of copper deposits[4].



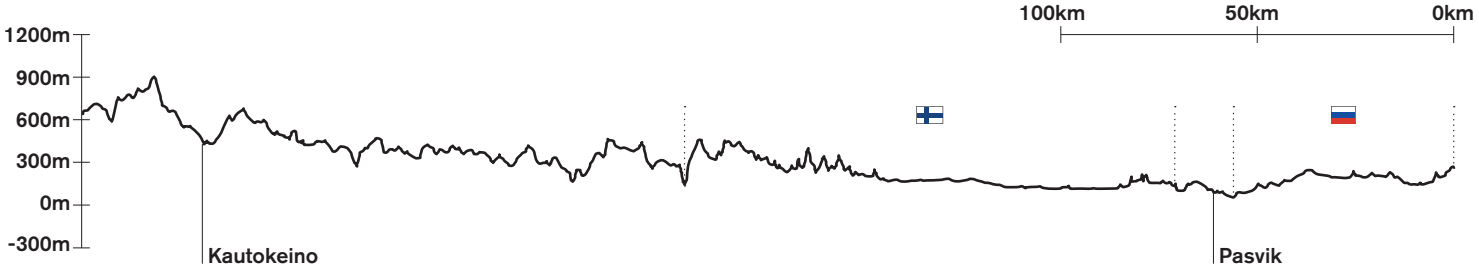
Section A



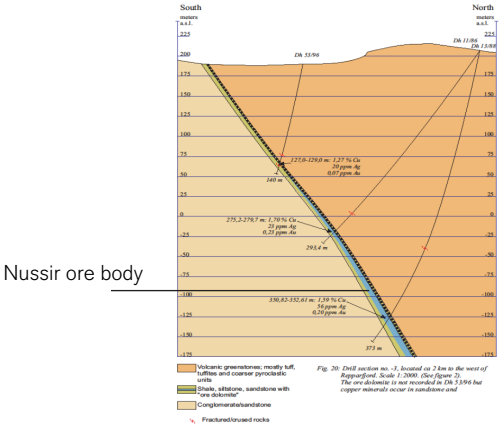
Section B

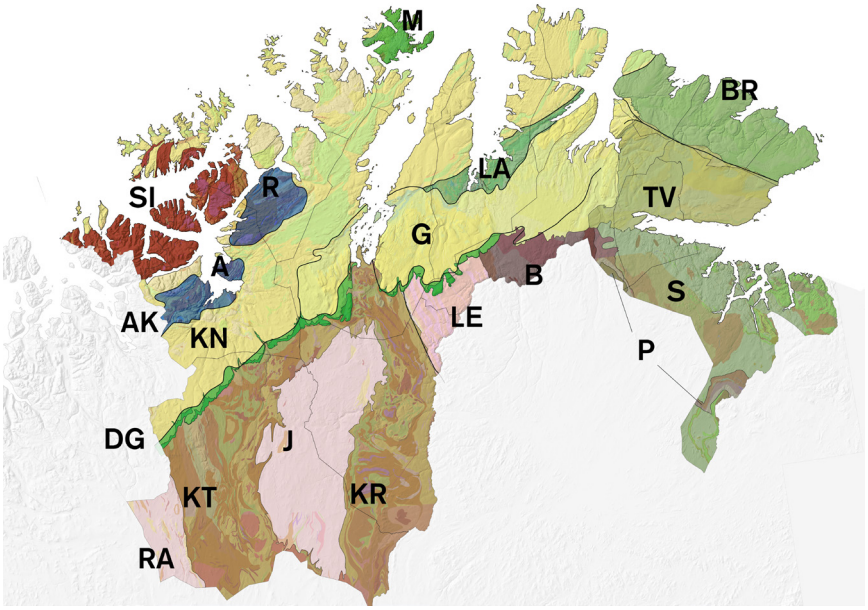


Section C



Of most interest lately is the Repparfjord window, where researchers for the mining company Nussir have indicated that there are at least 72 million tons of copper ore – already Norway's largest known copper reserves – although recent drillings have indicated a higher amount of copper[5]. Within the Repparfjord window, the Nussir and Ulveryggen ore bodies will be mined by the company. The largest of the two, the Nussir ore body, has a length of 7 km and a thickness of approximately 1-7 meter.





Adapted by author, data from NGU

Regions

Altenes area. **A**	Gaissa Nappe Complex. **G**	Laksefjord Nappe Complex. **LA**	Repparfjord Window. **R**
Alta-Kvænangen Window. **AK**	Jer'gul Gneiss Complex. **J**	Leavvajohka Granulite Complex. **LE**	Rai'sædno Gneiss Complex. **RA**
Baisvarri Gneiss Complex. **B**	Kalak Nappe Complex. **KN**	Magerøy Nappe Complex. **M**	Sørvaranger Region. **S**
Barents Sea-Rybachi Regions. **BR**	Karasjok Greenstone Belt. **KR**	Polmak - Pasvik - Pechenga Greenstone Belt. **P**	Seiland Igneous Province. **SI**
Dividal Group. **DG**	Kautokeino Greenstone Belt. **KT**		

Citations

[5] Valmot, O. R. (2019). Mens Nussir har ventet på klagebehandling har de funnet mye mer og særdeles verdifull malm.

Figures

▲ 6.3 Typical vertical section for the Nussir zone. Source: Sweco (2011).

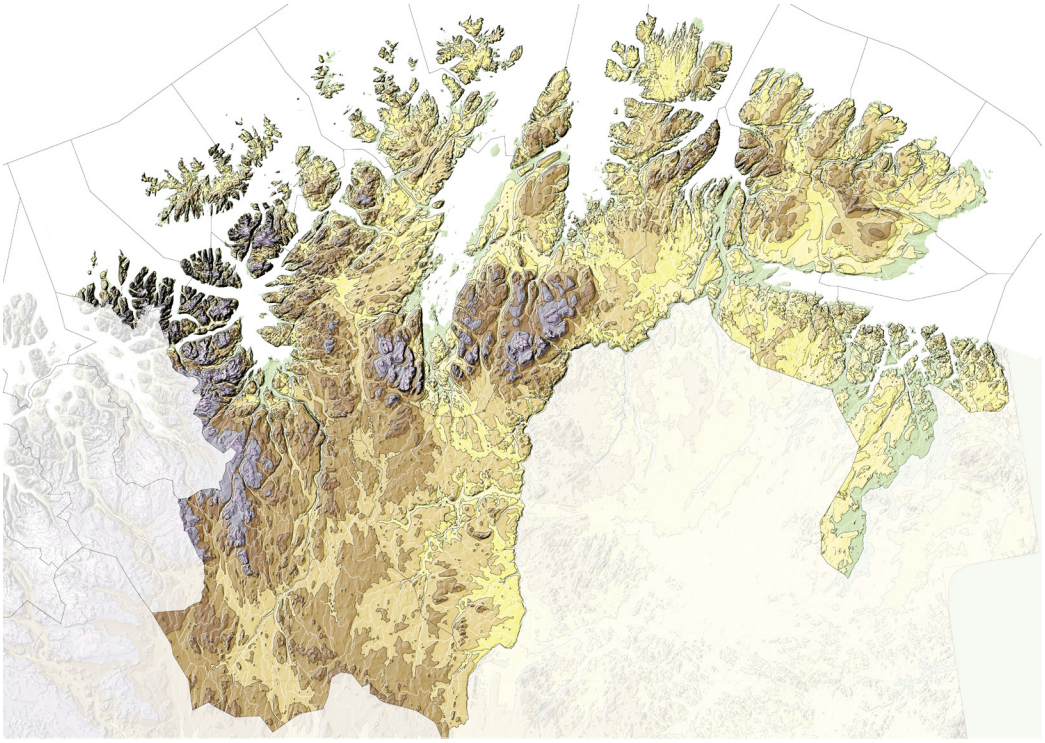
◀ 6.4 Bedrock geology: regions Adapted by author from: NGU.

▶ 6.5 Topography. Adapted by author from: Kartverket.

Topography

The landscape of Finnmark can be characterized according to four different regions. Coastal fjord and valley areas - where most of the settlements are situated (1), mountainous areas (2), the relatively flat Finnmark plateau (3) and the boreal Pasvik area (4). In the winter the coastal areas are warmer than the inland areas, yet stormy weather is more frequent. This is why reindeer are preferrably moved to the south for optimal survival during this season.





Source: Kartverket

Natural diversity

Despite tough growing conditions, Finnmark is characterized by high natural diversity, partly because throughout history the place has remained remote, impeding the arrival of many human beings. Given the fact that that the climatic and soil conditions make by far most of the land relatively unsuitable for agriculture[6], the area has stayed relatively 'remote'. The northern parts of the area are characterized as Arctic tundra biome, while from the south the boreal forest - termed as the taiga biome - is gaining ground through climate change[7].

Dispersed settlements

The process of settling in Finnmark was a very decentralized process. Along the coast small fishing villages originated very long ago. In many places this led to towns that are built up through a practical organization of space, surrounding the fishing industry and directed towards the sea. The importance of fishing was central and the towns were made to fit that need[8]. Furthermore, fishing has had profound influence in the centralization processes over the past century. People were relocated to other places because of the need for efficiency in the fishing industry. Even further centralization was caused by industrialization and modernization, people started moving towards places were the factories were situated[9]. In the latter part of the past century, improvements in ships and machines for the industry has caused – as one of the main factors - a decline in population rates in some municipalities, while Alta, Hammerfest and Kirkenes continue to grow. Nowadays most of the towns are situated along the coast, only Kautokeino, Karasjok Tana and some very small settlements of merely a few houses are not.

Citations

[6] NIBIO. (2017). Arealbarometer for Finnmark: Oppdaterte kart over areal egnet for matproduksjon.

[7] Karlsen, S. R., Tømmervik, H., Johansen, B., & Riseth, J. Å. (2017). Future forest distribution on Finnmarksvidda, North Norway.

[8] Ellefsen, K. O. (2018). Keynote - Karl Otto Ellefsen.

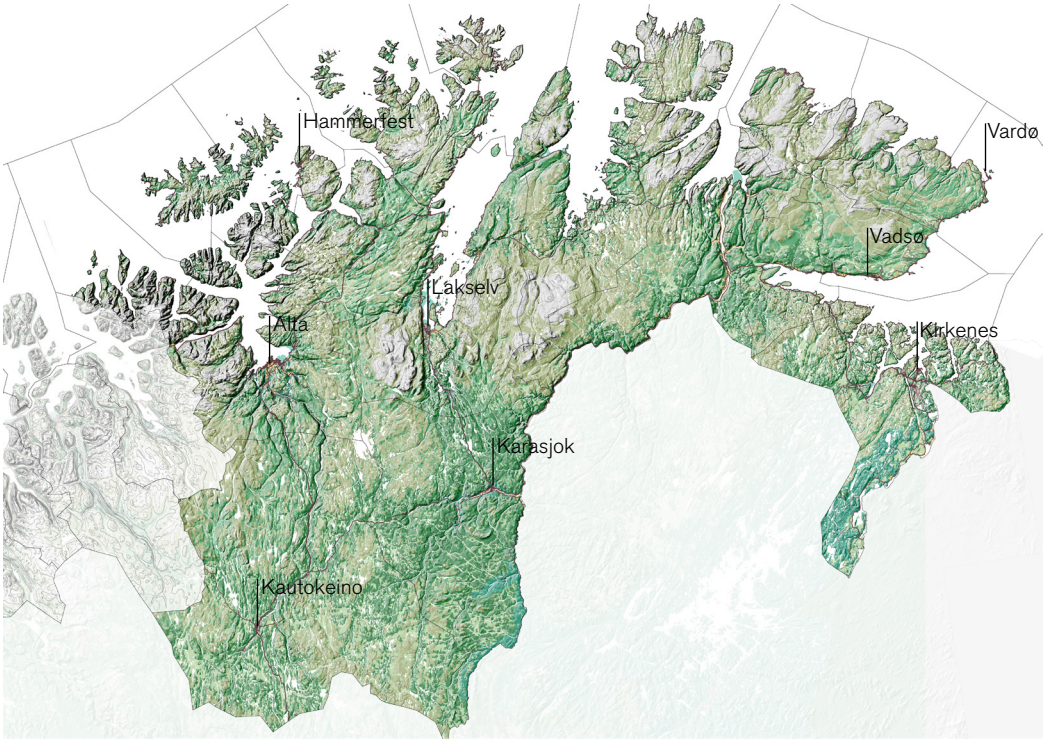
[9] Ibid.

[10] Tjallingii, S. (2015). Planning with Water & Traffic Networks. Carrying structures of the urban landscape.

Figures

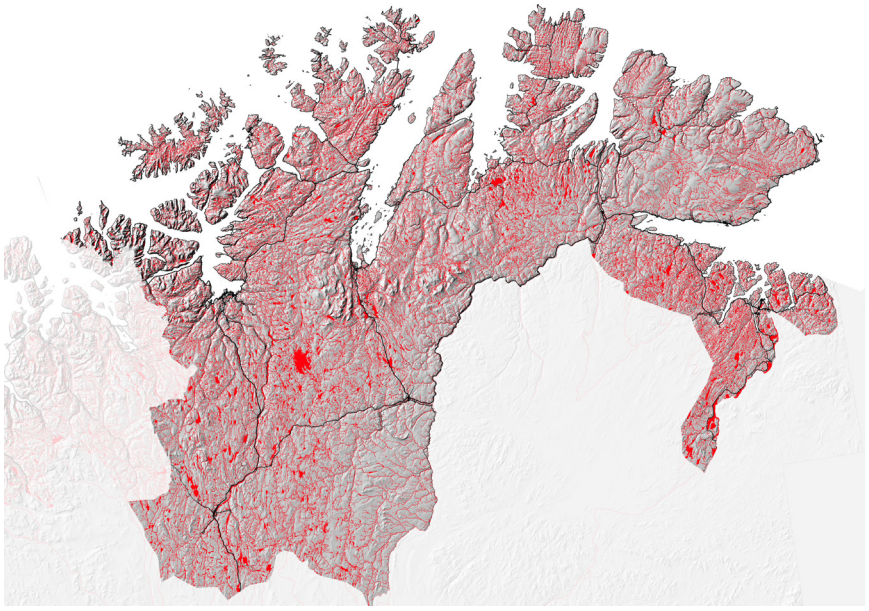
◀ 6.6 Land Cover
Data: CORINE, adapted by author.

▶ 6.7 Water and roads
Data: NVE, Kartverket, adapted by author.



Water and roads

The networks of water and traffic, can be conceptualized as the two carrying structures of an urban landscape[10]. Where the water network constitutes of nature's capacity to renew itself, the traffic network is understood as the primary enabler of political economic goals and job development. Not surprisingly given its flat landscape, Finnmark is for a large part covered in an abundance of rivers and lakes. Seasonality is also an important factor here, were the rivers are for a few months every year frozen solid.



Fracturing political landscape

Norway has had relatively stable politics over the past century. With the social democratic Labor Party (Arbeiderparti) the economic gains from the natural riches were ensured to be shared socially amongst Norwegians. Norway's Oil Fund is the biggest sovereign wealth fund around the world and many extractive companies are partly owned by the Norwegian government. The Labor Party was always the biggest party in elections in northern Norway, until the county and municipal elections of the 9th of September 2019. The Labor Party lost especially in the inner municipalities support, while the agrarianist party Center Party (Senterparti) has gained much support in these areas. Interestingly, the Labor Party had positioned itself in favor of the Nussir developments in Kvalsund, while the Center Party has been opposing the developments.



The Barents Observer

Photo: Thomas Nilsen

Political earthquake shakes up Northern Norway

The Labour Party loses its former firm grip on power in the Arctic region.

Read in Russian | Читать по-русски

By Atle Staalesen

September 10, 2019

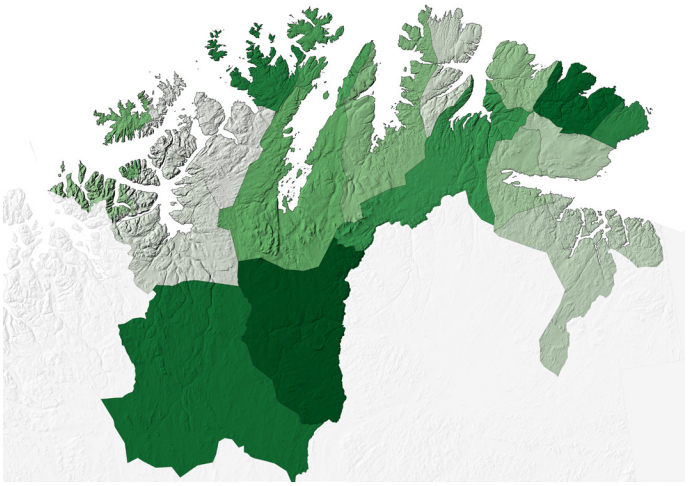
Figures

▲ 6.8 Staalesen (2019). Political earthquake shakes up Northern Norway.
The Barents Observer.

◀◀6.9 Senterparti support for County Council election of 2019.
Adapted by author, from Valgdirektoratet.

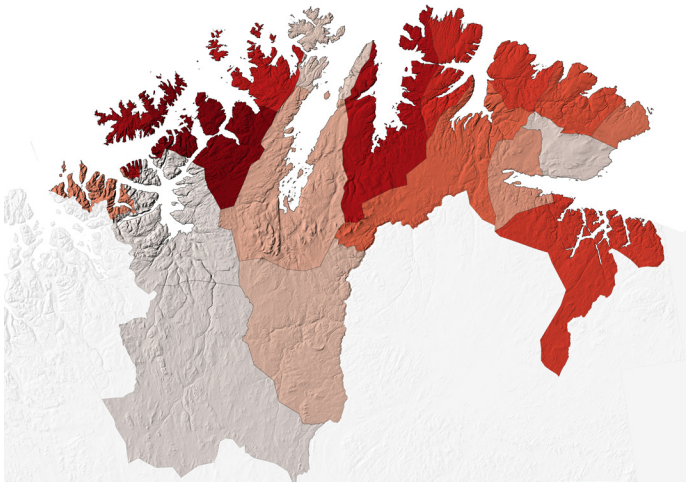
◀ 6.10 Arbeiderparti support for County Council election of 2019.
Adapted by author, from Valgdirektoratet.

▶ 6.11 Regional analysis chapter outline, maps combine with themes.
Made by author.



Higher support

Lower support



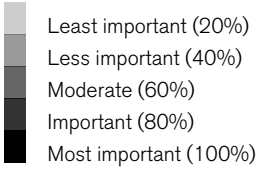
Higher support

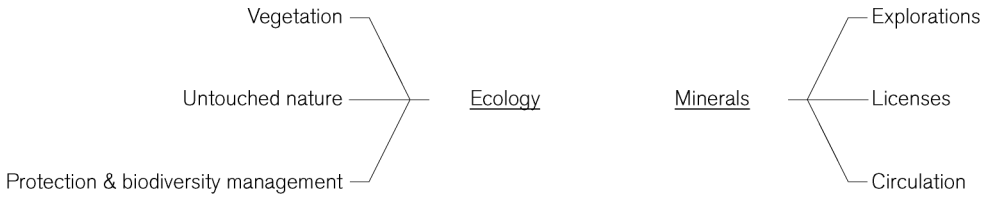
Lower support

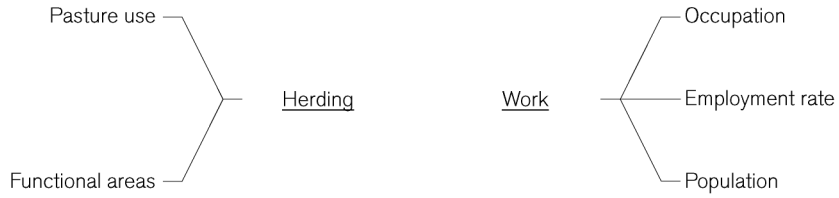
Hotspots analysis

Introduction

Since Finnmark is of an area slightly bigger than some countries (eg. the Netherlands or Denmark), the spatial scale of the analysis - in combination with the time constraints of this research - limits the extends of deepened research. The problematics addressed in the research require more in-depth human scale thinking, the regional analysis is therefore only meant to find out the hotspots for development of the mineral industry and for reindeer herding. Relevant theories are combined with a quantitative regional mapping exercise, conducted in order to get a relevant indication of the hotspots and resulting zones of conflict. The themes ecology and work are added to complement the research, because reindeer herding depends on pasture areas in their natural environment, and the mineral industries depend on the advocation of locals, which is above all tied to socioeconomic status. The results are overlaid and lead to maps showing possible conflicts of interest. For this analysis, layers have been flattened and weighed against each other through gradients of black. Importance is given to layers and motivated through literature over the following scales.







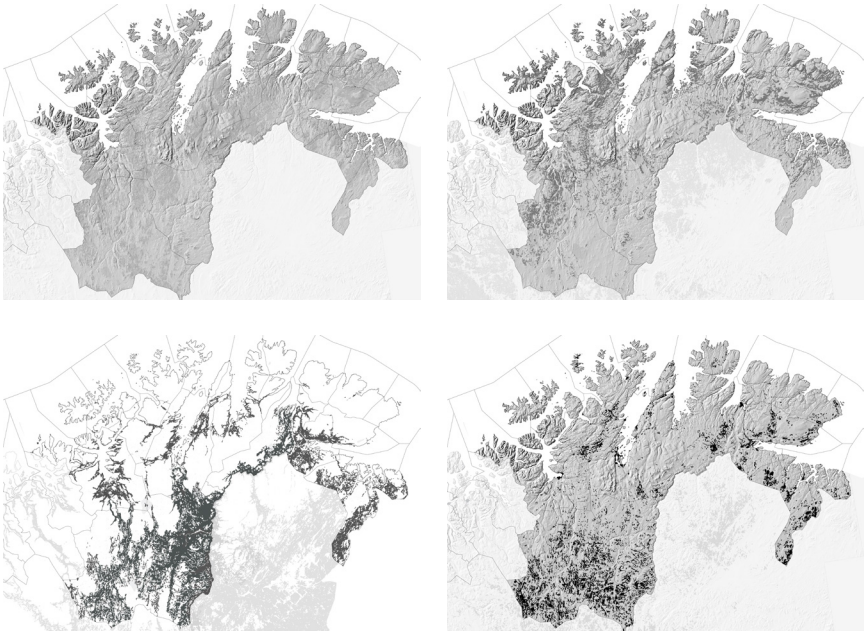
Ecology

Vegetation

The regional analysis starts with a classification of ecology. The vegetation is taken from the Corine Land Cover classifications taken over satellite imagery taken from Copernicus Land Monitoring Services[11]. From this analysis only the vegetated layers are taken. Finnmark consists of many parts that are sparsely vegetated, classified under the code 3.3.3. Mainly the central and northern parts consist of these areas where also there are more bare rocks (3.3.2) and beaches and sand dunes (3.3.1), which aren't considered in this analysis. For this analysis the sparsely vegetated areas have been given little importance. According to Corines nomenclature these areas are: "Areas with sparse vegetation, covering 10-50% of surface. Includes steppes, tundra, lichen heath, badlands, karstic areas and scattered high-altitude vegetation"[12].

The moors and heathland (3.2.2) have been assigned a gradient of 40% following their description in the nomenclature: “Vegetation with low and closed cover, dominated by bushes, shrubs, dwarf shrubs (heather, briars, broom, gorse, laburnum etc.) and herbaceous plants, forming a climax stage of development”[13]. These cover mainly the areas in the tundra biome that have slightly better growing conditions than the sparsely vegetated areas, resulting for example in more shrubs. These areas are due to climate change growing into the sparsely vegetated areas[14].

Forest cover is classified as important vegetation (80%) and includes broad-leaved (3.1.1), coniferous (3.1.2) and mixed forest (3.1.3). The forest areas have either a crown cover of > 30 % or a 500 subjects/ha density - of the broad-leaved, coniferous or mixed forest types - according to the Corine Land Cover classifications [15].



Citations

[11] EEA. (2019). Corine Land Cover (CLC) 2018, Version 20.

[12] Ibid.

[13] Ibid.

[14] Olofsson, J., Oksanen, L., Callaghan, T., Hulme, P. E., Oksanen, T., & Suominen, O. (2009). Herbivores inhibit climate-driven shrub expansion on the tundra.

[15] EEA. (2019). Corine Land Cover (CLC) 2018, Version 20.

[16] Borge, A. F., Westermann, S., Solheim, I., & Etzelmüller, B. (2017). Strong degradation of palsas and peat plateaus in northern Norway during the last 60 years.

[17] Miljødirektoratet. (2019). Inngrepsfri natur.

Figures

◀◀6.12 Sparsely vegetated.
Adapted by author from: CORINE.

◀ 6.13 Moors and heathland.
Adapted by author from: CORINE.

◀◀6.14 Forest cover.
Adapted by author from: CORINE.

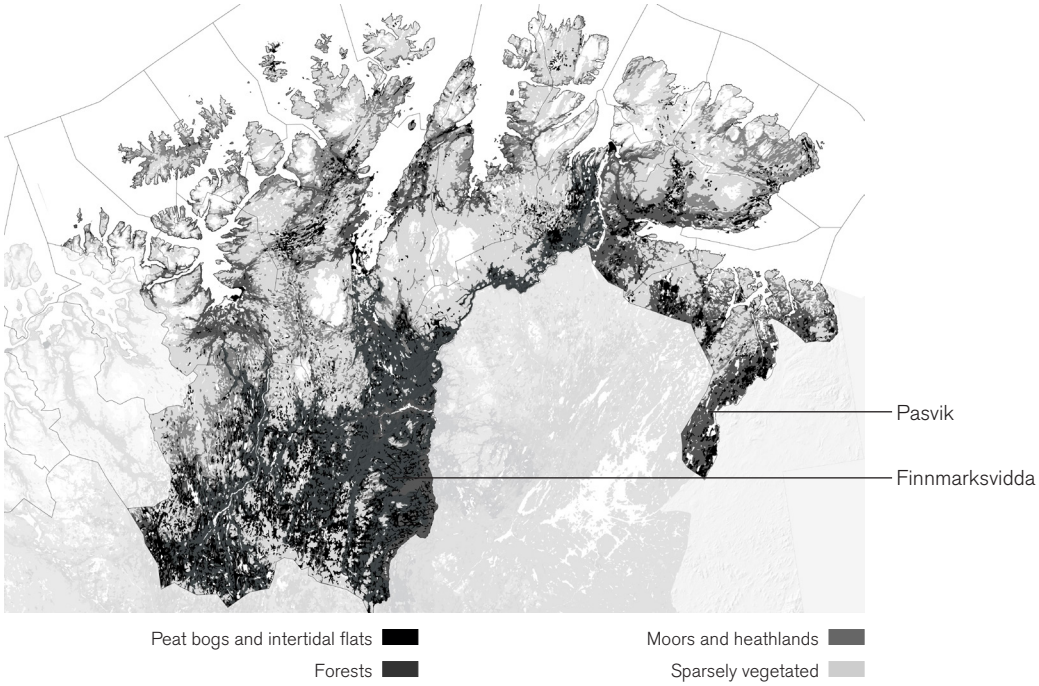
◀ 6.15 Peat bogs and intertidal flats.
Adapted by author from: CORINE.

▶ 6.16 Vegetation map.
Adapted by author from: CORINE.

The peat bogs (4.1.2) and intertidal flats (4.2.3) have been given most importance (100%) for their diversity of natural habitat, and the resulting interaction between a multitude of species. Mainly the Finnmarksvidda consists of many peat bogs, which are found to be strongly degrading[16].

Vegetation map

The combination of these maps shows the core vegetation zones where the higher parts - both in altitude and latitude - are less vegetated, while the Finnmarksvidda plateau is considered more important. Also the Pasvik area in the southern strip of Sør-Varanger is classified as important. The lower areas that are guided by the rivers leading into the fjords are also classified as more important.

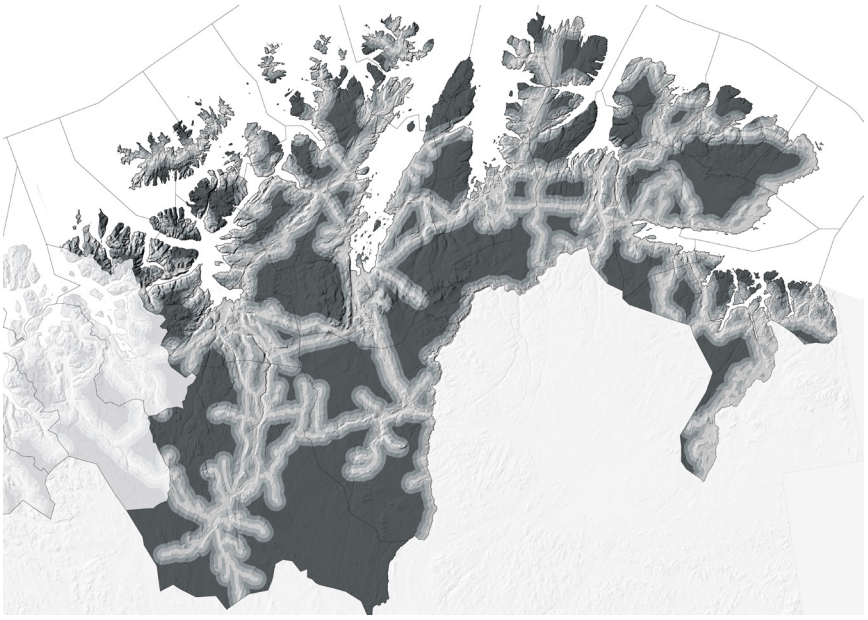


Untouched nature map

One of the aspects characterizing Finnmark is its high contribution to the amount of 'untouched nature' in the country. According to the Norwegian Environment Agency (Miljødirektoratet) these zones are important for a multitude of reasons:

> "Large interconnected natural areas are important as habitats and species corridors. They have an impact on nature's ability to adapt to climate change. Most of the heavier interventions in nature are irreversible, so the value for natural diversity is difficult to recreate.
> Large contiguous nature areas are important as hiking areas, for landscape qualities, landscape variation and for nature experience.
> Large areas without heavy technical intervention are an important part of the Norwegian natural heritage and are regarded as a scarcity resource both in the national and international context.
> The areas also contain important qualities for future generations."[17]

Furthermore the amount of wilderness-dominated areas in Norway has declined over the past century from almost half of the land to 11.5%[18]. Given its importance for the resiliency of ecosystems, the untouched nature areas have been classified as follows: a gradient of 60% for areas that are over 5 kilometers away from human interventions, 40% for areas that are 3-5 kilometers away and 20% for areas that are 1-3 kilometers away.



Protected areas and biodiversity management

In order to get a better grip on where the most crucial species and habitats are situated in this analysis also the protected areas and biodiversity management areas according to Norwegian law are classified.

The protected area layers are divided into already protected areas (100%) and suggested protected areas (60%). It is understood that suggested protected areas constitute importance as sites for the regional natural system. The protected areas consist of: plant life conservation, wildlife conservation and landscape protection areas or a combination of multiple of these and nature reserves, natural monuments and national parks[19]. Suggested protected areas only consist of national parks and nature reserves[20].

The biodiversity management layers are based on the important habitat areas classified by the Norwegian Environment Agency. The dataset distinguishes locally important, important and very important habitat areas[21]. These have been mapped in the gradients related to moderate (60%), important (80%), most important (100%) according to the scales used for this mapping exercise.

Citations

[18] Miljødirektoratet. (2019). Inngrepsfri natur.

[19] Miljødirektoratet. (2017b). Naturvernområder.

[20] Miljødirektoratet. (2017a). Foreslåtte naturvernområder.

[21] Miljødirektoratet. (2014). Viktige naturtyper.

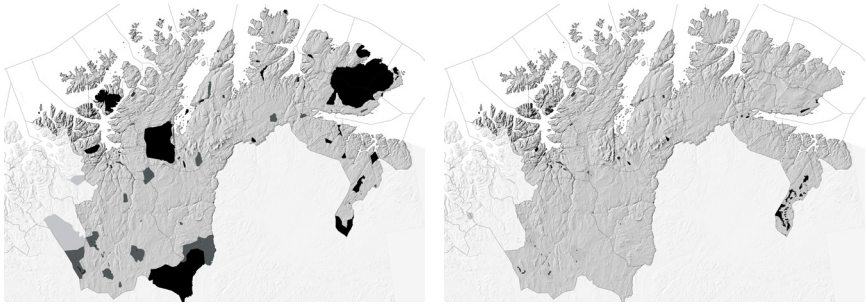
Figures

◀ 6.17 Untouched Nature map.
Adapted by author from: NIBIO.

▶ 6.18 Protected areas map.
Adapted by author from: NIBIO.

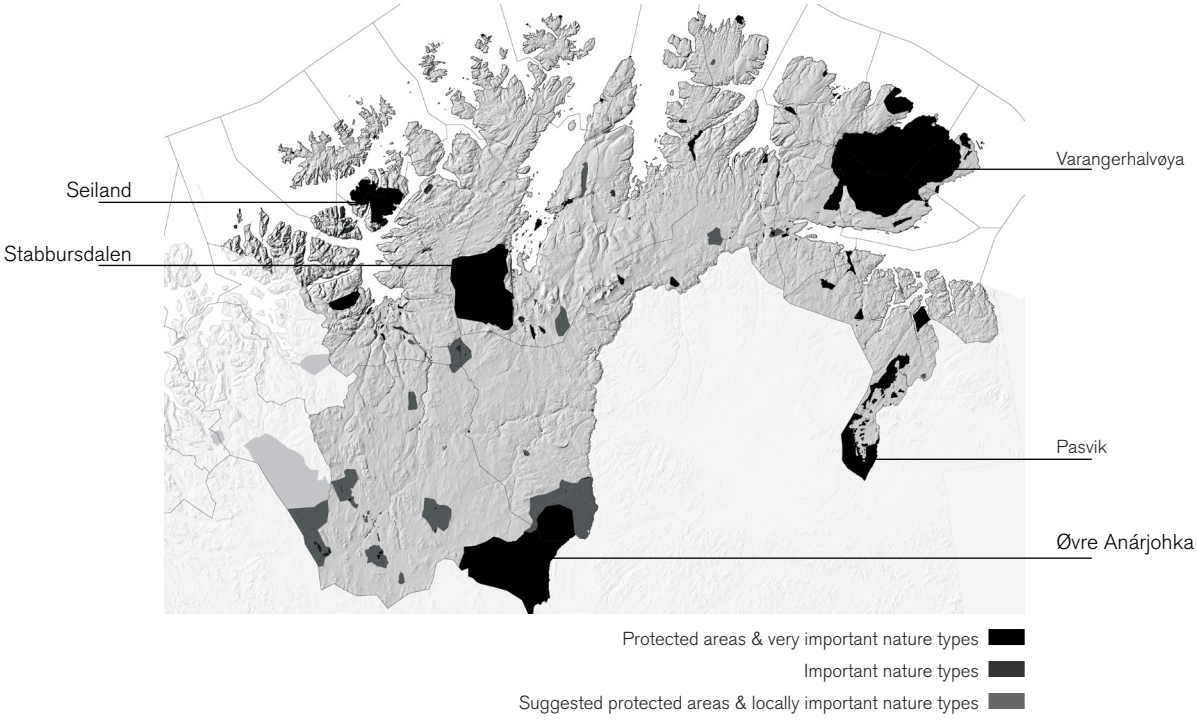
▶▶ 6.19 Biodiversity management map.
Adapted by author from: NIBIO.

▶ 6.20 Protected areas and biodiversity management maps.
Adapted by author from: NIBIO.



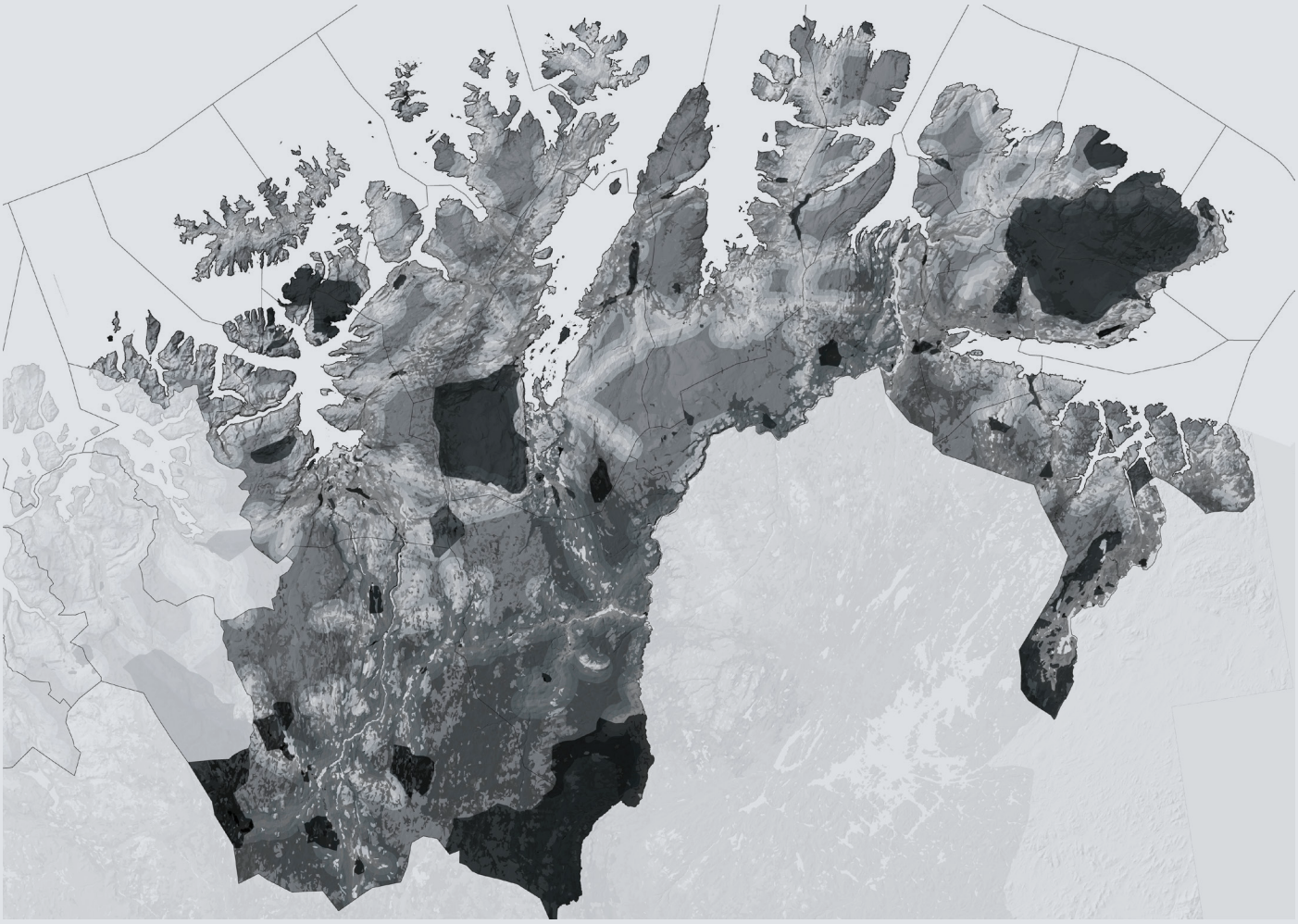
Protected areas and biodiversity management

The combination leads to the map portrayed below. Large national parks situated in Finnmark are Varangerhalvøya, Stabbursdalen and Seiland - that constitute of tundra vegetation types - and Øvre Anárjohka and Pasvik – that are typical for their taiga vegetation.



Ecology conclusion map

The combination of the three maps lead to the conclusion map portrayed here. For better readability, in all the combination maps, the three combined layers are shown at a transparency of 60%. Finnmark can be termed as very rich in biodiversity and is a key habitat for many species.



Herding

Seasonality

Reindeer herding has been modernized throughout the years, especially through means of mechanization. However, it still depends on a system of long traditions in which the 8 different seasons (the Sámi use 4 more) are weighed off against each other to achieve best fitness of the herd. The climatic variations make that each season is marked by different challenges. In the diagram below these variations are shown. During the summer the sun doesn't set and during the winter it doesn't rise above twilight. The temperature on average is around 15°C and in winter the average goes below -15 °C, however peaks reaching below -30°C are not uncommon inland. For around 5 months a year the ground is covered with a layer of snow up to around 50 cm. The reindeer need to strengthen up before and after these snow periods[22]. The scope of this research only allows me to touch upon the very basics of reindeer herding. Semi domestication of reindeer means that the reindeer is regarded free, mobile and independent and that it cannot be fully controlled by human beings. The herder assists through observing and assessing the biology of the reindeer, grazing mass, topography, weather, climate and all the relationships in between these factors[23]. The herder most of the times move the herd to the areas described below in the diagram. Because of the versatility it is not possible to map all aspects of the use of land accurately. The map layers show an indication of the different uses during each of the different times of the year as mapped by the Agriculture Agency (Landbruksdirektoratet).

Citations

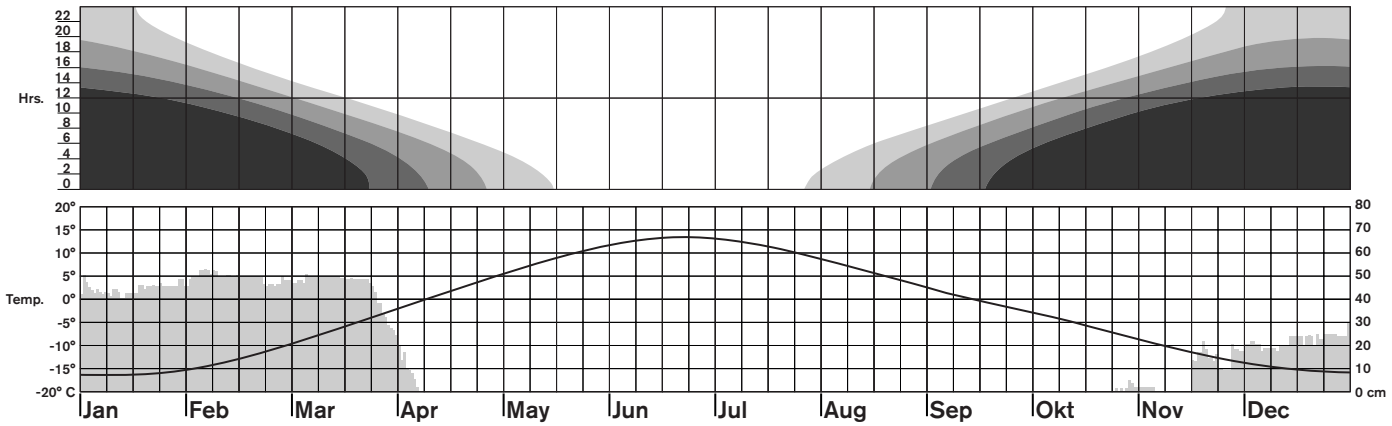
[22] Sara, M. N. (1999). Praktisk reinbeitebruk - tradisjonelle kunnskaper.

[23] Ibid.

Figures

◀ 6.21 Ecology conclusion map.
Adapted by author from: NIBIO and CORINE.

▼ 6.22 Sungraph, snow depth, temperature and Sámi seasons including reindeer behavior.
Adapted by author from: yr.no, timeanddate.com and Sara (1999).



Winter	Spring-winter	Spring	Spring-summer	Summer	Fall-summer	Fall	Fall-winter
- Marshy areas - Lower relatively dense wooded areas	- More open areas - Tree-free higher areas	- Tree-free higher areas - Migration - Calving areas	- Lower areas	- Higher areas	- Lower areas - River valleys	- Lower areas - Fixed mating areas	- Lower areas - Wooded areas - Marshy areas - Migration

Winter

The winter pastures are situated in the southern areas of the country. The more intensively grazed areas (80%) correspond with forest areas, as underneath the trees the reindeer can to an extend still continue foraging. The herder during this time tries to disturb the herd as little as possible for them to not use too much energy needed for the survival[24]. Towards the end of the winter (during the Sámi spring-winter) the herder moves the reindeer towards higher lying more open areas (20%) where the herd depends on the availability of lichen mostly through bare spots in the snow[25,26].

Spring

The spring marks the migration towards the summer pastures and an important phase in the biology of the reindeer. The time towards the melting of snow is critical for the reindeers survival, where it depends on spots made in the snow through high wind (which is why the higher areas are sought for)[27]. The herds move to the calving lands (80%) were the oxen are separated from the rest of the herd and go to lower lying areas (20%). The newborn calves and mothers join the oxen later during spring[28].

Summer

In summer, the reindeer seek protection from fly's higher up. During this time newly grown grass will be available for the herd to strengthen on[29]. The higher areas are marked more important (60%) than the lower less intensively used areas (20%)[30].

Fall

After the insect plagues it is important that the reindeer builds up us much strength as possible to get well through the winter. During this time there's a high abundance of material to feed upon. The reindeer move through mainly lower lying areas[31]. In the early autumn, the reindeer spread in search for fungi (20%). Later in autumn is the mating season which happens on the mating lands (80%)[32].

Fall-winter

Fall-winter starts with the migration to the winter pastures and is characterized by an early period which involves intense grazing on areas that become inaccessible during the winter (80%) and then moves on to areas of more scattered use (20%)[33].

Citations

[24] Sara, M. N. (1999). Praktisk reinbeitebruk - tradisjonelle kunnskaper.

[25] Ibid.

[26] Landbruksdirektoratet. (2019f). Reindrift - Vinterbeite.

[27] Sara, M. N. (1999). Praktisk reinbeitebruk - tradisjonelle kunnskaper.

[28] Landbruksdirektoratet. (2019e). Reindrift - Vårbeite.

[29] Sara, M. N. (1999). Praktisk reinbeitebruk - tradisjonelle kunnskaper.

[30] Landbruksdirektoratet. (2019d). Reindrift - Sommerbeite.

[31] Sara, M. N. (1999). Praktisk reinbeitebruk - tradisjonelle kunnskaper.

[32] Landbruksdirektoratet. (2019b). Reindrift - Høstbeite.

[33] Landbruksdirektoratet. (2019c). Reindrift - Høstvinterbeite.

Figures

◀◀ 6.23 Winter pastures.
Adapted by author from: Landbruksdirektoratet.

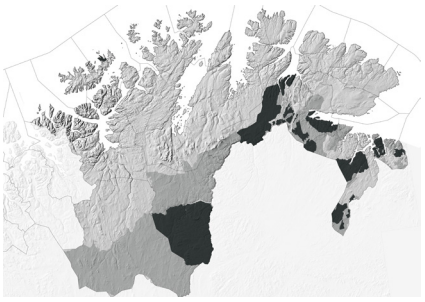
◀ 6.24 Spring pastures.
Adapted by author from: Landbruksdirektoratet.

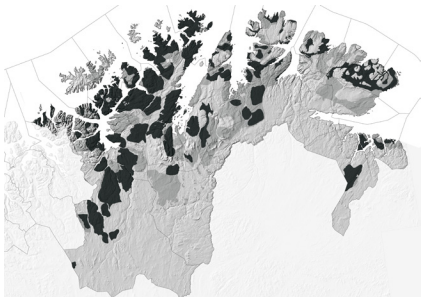
▶ 6.25 Summer pastures.
Adapted by author from: Landbruksdirektoratet.

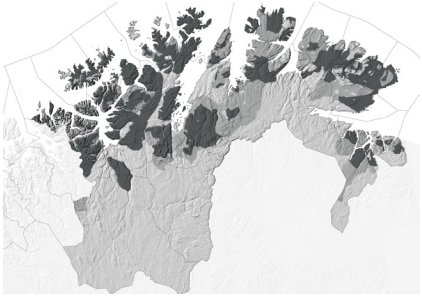
▶▶ 6.26 Fall pastures.
Adapted by author from: Landbruksdirektoratet.

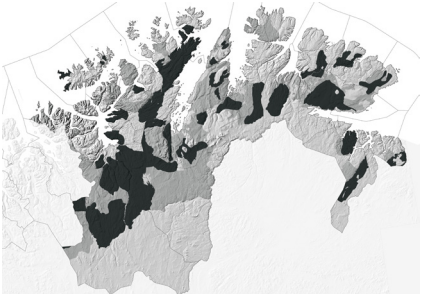
▶ 6.27 Fall-Winter pastures.
Adapted by author from: Landbruksdirektoratet.

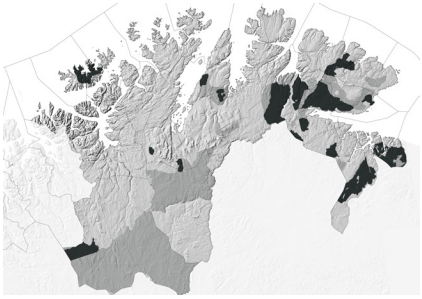
▶ 6.28 Pastures combination map.
Adapted by author from: Landbruksdirektoratet.





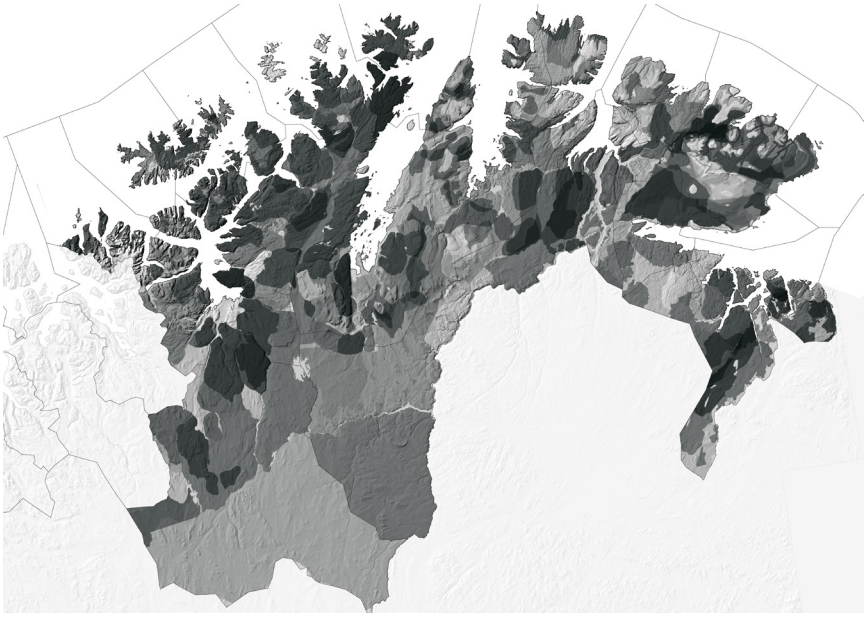


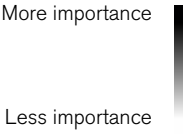




Pastures

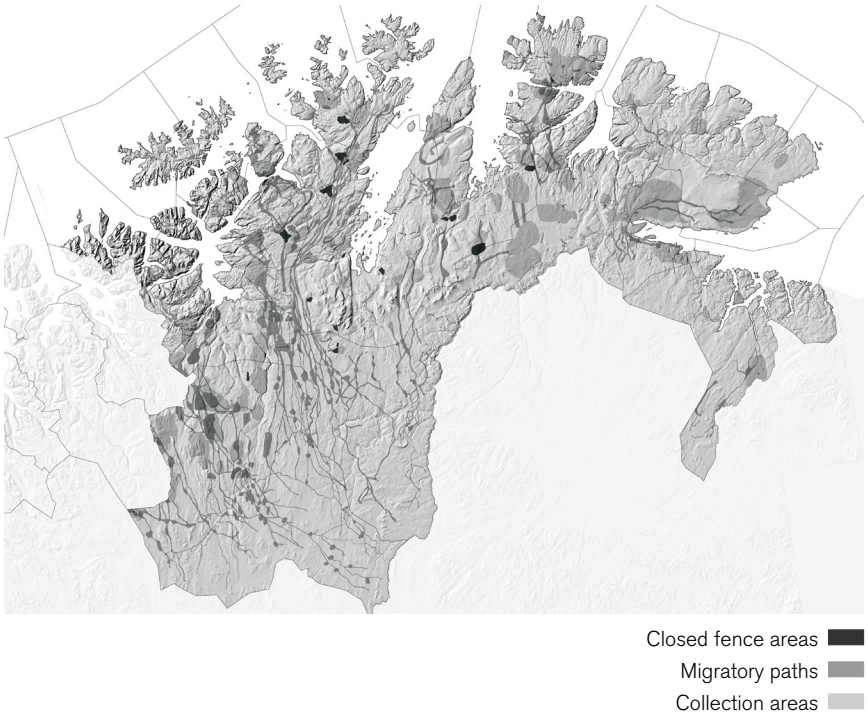
The combination of the five maps shows the most critical places. Because of the strengthening of the herd after the winter, and the criticality of having undisturbed calving grounds, mainly the pastures along the coast are darker.





Functional areas

The collection areas (20%) are areas with natural boundaries to lineup the reindeer temporarily, before moving to the fenced areas (80%) for relocation, calf marking, separation or slaughter (Landbruksdirektoratet, 2016). The migratory paths (40%) are the natural 'roads' the reindeer take to move between the summer and winter pastures (Landbruksdirektoratet, 2019a).



Citations

[34] Landbruksdirektoratet. (2019a). Reindrift - Flyttlei.

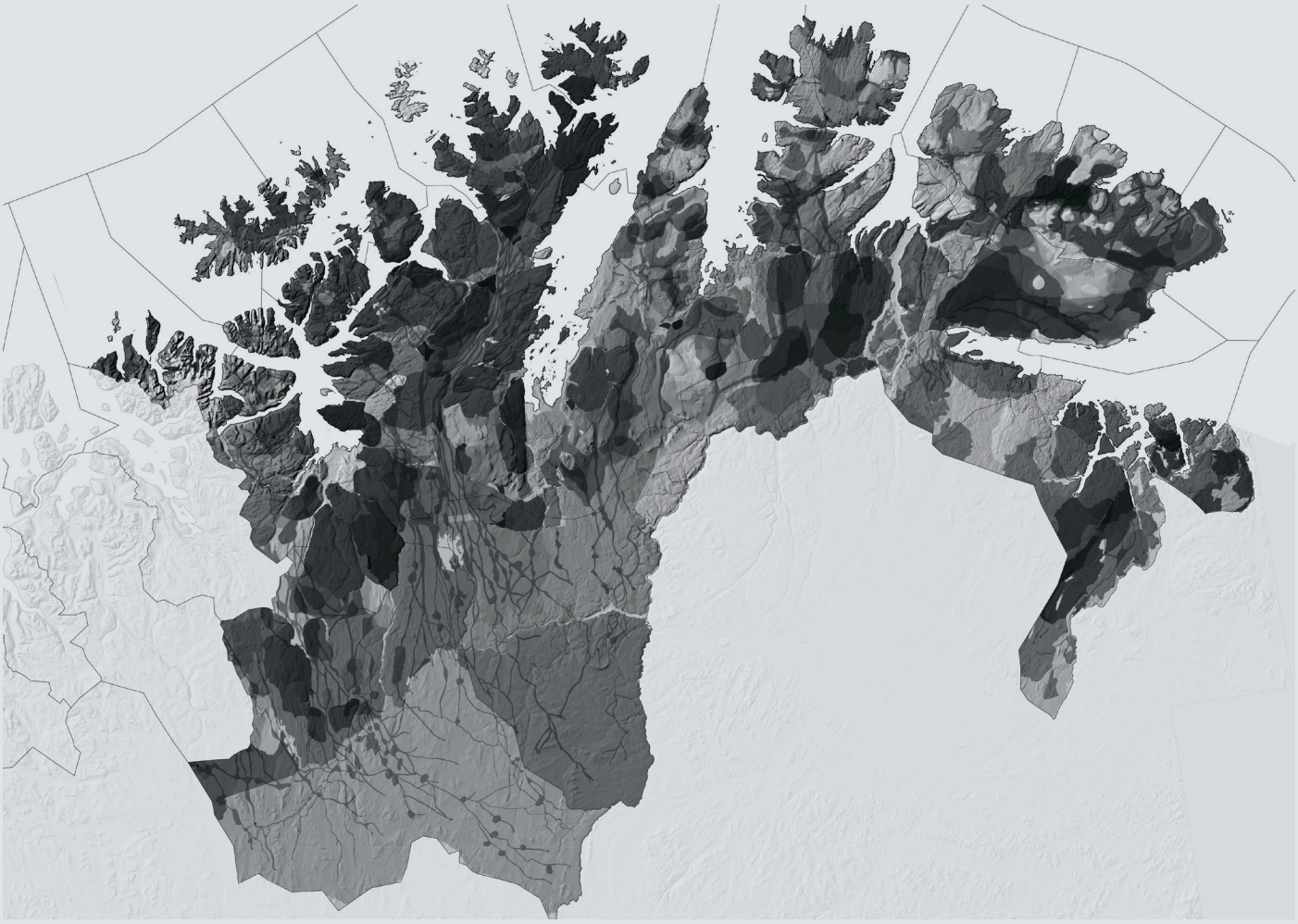
Figures

◀ 6.29 Functional areas
Adapted by author from: Landbruksdirektoratet.

▶ 6.30 Herding conclusion map
Adapted by author from: Landbruksdirektoratet.

Herding conclusion map

Through this analysis I have sought to distinguish - based on literature and available data - the most important zones for reindeer herding. The analysis points at the zones shown on this map. However, it should be noted that reindeer herding is dependent on flexibility and pasture areas. This map will be used for this thesis, but cannot give any set guidelines for any kind of development to happen. Conversation with herders about developments on the lands needed for their herding operations is and should be leading.

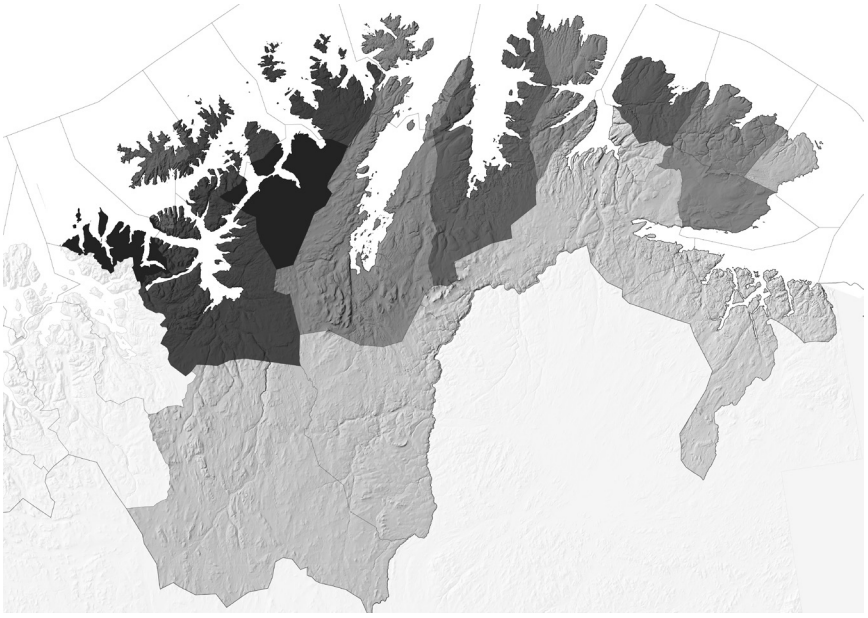


Work

Occupation

The fishing industry is one of the identity carriers and oldest professions of the region. Today it remains an important industry, yet employment in the fishing industry has declined strongly over the latter half of the past century. According to Turi, the employment decline in the 1990s made other occupations like the oil, gas and tourism become increasingly important in the county[35]. Employment in the extraction industries is characterized by strong shifts. In Sør-Varanger for example - where the Sydvaranger mine was operational between 2009 and 2015 – 158 new employees entered between 2009 and 2013, while between 2014 and 2018 the amount of employees in the extraction business declined by 298 following the closure of the mine. The growth rate in Hammerfest is related to the Melkøya gas plant which has been operational since 2007.

1. Hammerfest	**-75.3%**	**8.** Kvalsund	**-90.0%**	**14.** Gamvik	**-25.2%**
2. Vardø	**-5.8%**	**9.** Måsøy	**-70.4%**	**15.** Berlevåg	**-42.7%**
3. Vadsø	**-23.9%**	**10.** Nordkapp	**-30.4%**	**16.** Deatnu - Tana	**17.9%**
4. Guovdageaidnu - Kautokeino	**0.0%**	**11.** Porsáŋgu - Porsanger	**-39.1%**	**17.** Unjaargga - Nesseby	**0.0%**
5. Alta	**-72.3%**	**12.** Kárášjohka - Karasjok	**0.0%**	**18.** Båtsfjord	**-28.0%**
6. Loppa	**-85.2%**	**13.** Lebesby	**-52.3%**	**19.** Sør - Varanger	**-15.9%**
7. Hasvik	**-59.7%**				



-100% - -80%
-80% - -60%
-60% - -40%
-40% - -20%

Citations

[35] Turi, E. I. (2016). State Steering and Traditional Ecological Knowledge in Reindeer-Herding Governance: Cases from western Finnmark, Norway and Yamal, Russia.

Figures

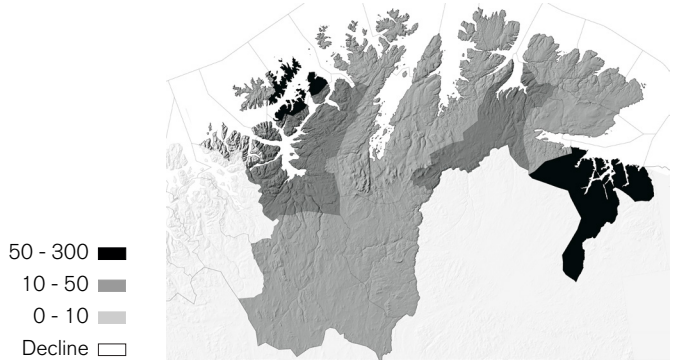
◀ 6.31 Decline in amount of Fishermen 1992-2018
Adapted by author from: Fiskeridirektoratet.

▶ 6.32 Increase in employees in mining and quarrying (2009-2013)
Adapted by author from: SSB.

▶ 6.33 Decline in employees in mining and quarrying (2014-2018)
Adapted by author from: SSB.

Increase in employees in mining and quarrying (2009-2013)

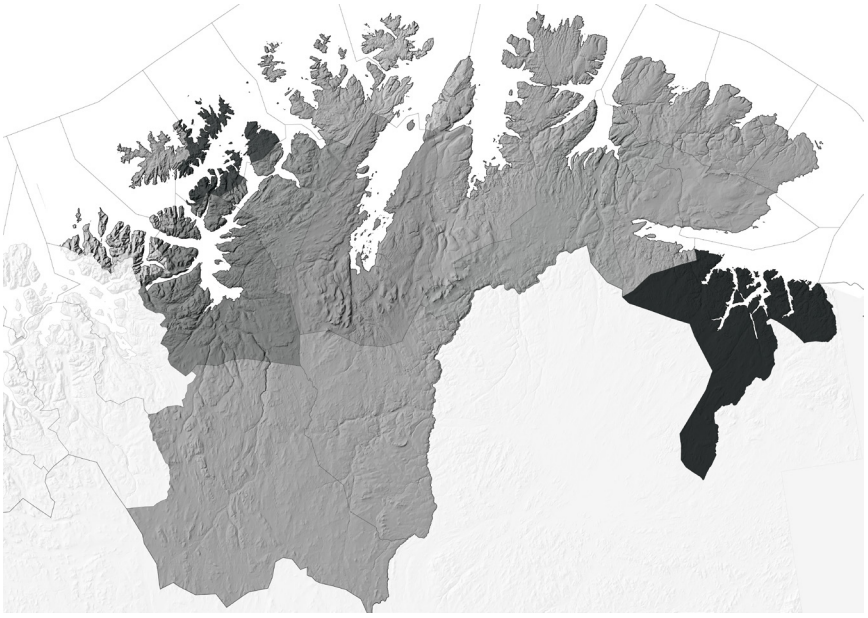
1. Hammerfest	**199**	**8.** Kvalsund	**12**	**14.** Gamvik	**-3**
2. Vardø	**3**	**9.** Måsøy	**0**	**15.** Berlevåg	**2**
3. Vadsø	**6**	**10.** Nordkapp	**0**	**16.** Deatnu - Tana	**6**
4. Guovdageaidnu - Kautokeino	**7**	**11.** Porsáŋgu - Porsanger	**10**	**17.** Unjaargga - Nesseby	**0**
5. Alta	**26**	**12.** Kárášjohka - Karasjok	**0**	**18.** Båtsfjord	**0**
6. Loppa	**-1**	**13.** Lebesby	**0**	**19.** Sør - Varanger	**158**
7. Hasvik	**3**				



Decline in employees in mining and quarrying (2014-2018)

1. Hammerfest	**-24**	**8.** Kvalsund	**-1**	**14.** Gamvik	**-3**
2. Vardø	**-3**	**9.** Måsøy	**-1**	**15.** Berlevåg	**0**
3. Vadsø	**-2**	**10.** Nordkapp	**1**	**16.** Deatnu - Tana	**7**
4. Guovdageaidnu - Kautokeino	**0**	**11.** Porsáŋgu - Porsanger	**-11**	**17.** Unjaargga - Nesseby	**-3**
5. Alta	**-33**	**12.** Kárášjohka - Karasjok	**0**	**18.** Båtsfjord	**-1**
6. Loppa	**0**	**13.** Lebesby	**-3**	**19.** Sør - Varanger	**-298**
7. Hasvik	**-3**				



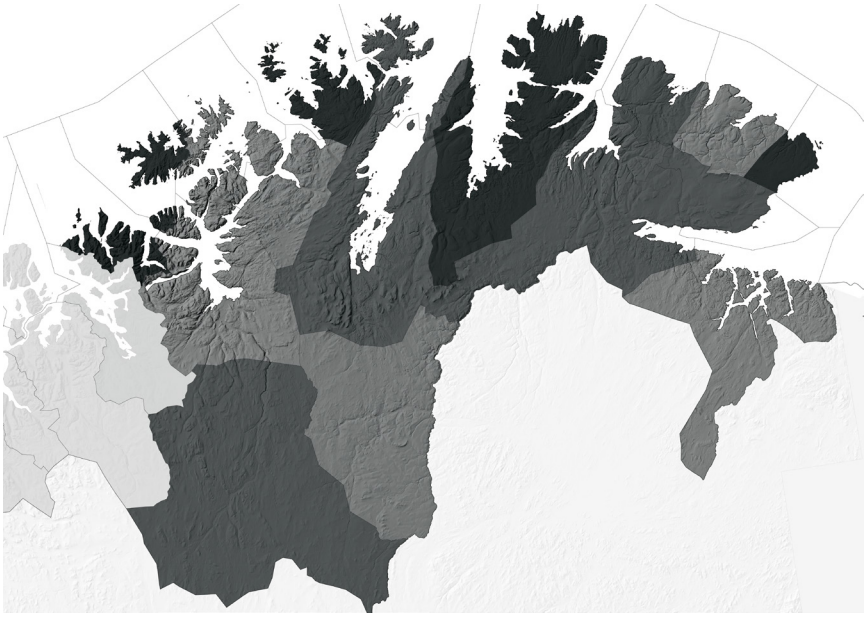


Higher flux

Lower flux

Employment

The employment rate of the people in Finnmark is below average in comparison with other Norwegian counties[36], yet around average as compared to Europe. Municipalities that are struggling more with employment are mainly situated along the coast.



<60%

60% - 65%

65% - 70%

Citations

[36] Nordregio. (2018). Employment rate 2016.

[37] Wallin, G. (2014). "Every Polish worker's dream is a steady job in Norway."

Figures

▲ 6.34 Combinationmap: flux in employees in mining and quarrying (2009-2018)
Adapted by author from: SSB.

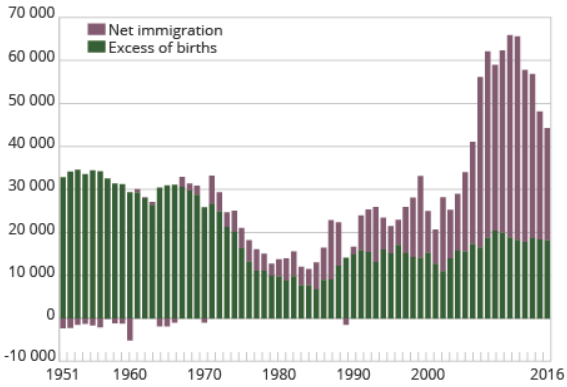
◀ 6.35 Employment rate.
Adapted by author from: Regjeringen.no.

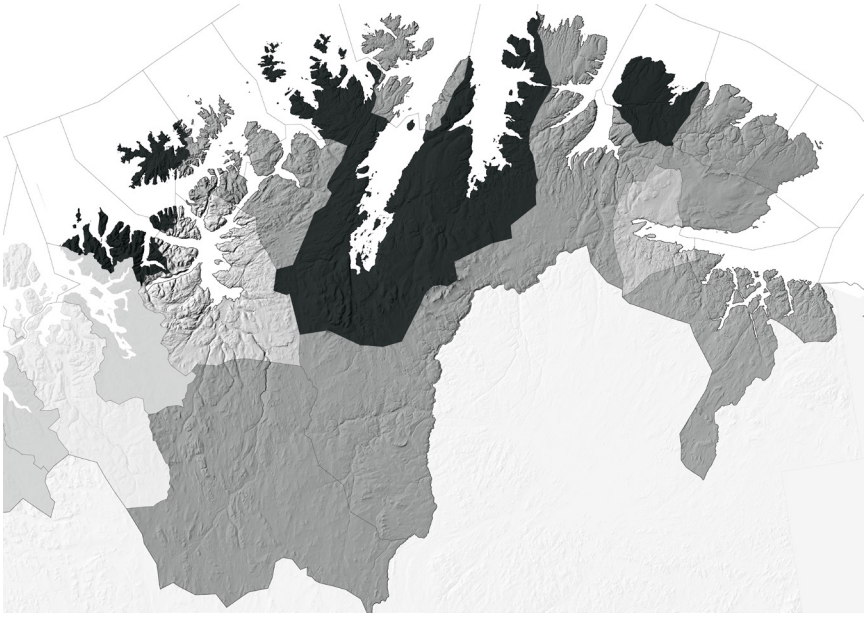
▶ 6.36 Changes in population.
Source: SSB.

▶ 6.37 Role of International migration on population change (2011-2016)
Adapted by author from: Nordregio

Population

A large portion of the growth in population of Norway of recent years is due to immigration. Norway is one of the most attractive countries to go to for labor migrants[37]. In Finnmark only Nesseby and Alta are growing in population despite of immigration. The majority of the municipalities in Finnmark is growing because of immigration, whereas there are also a few municipalities that are declining in population.

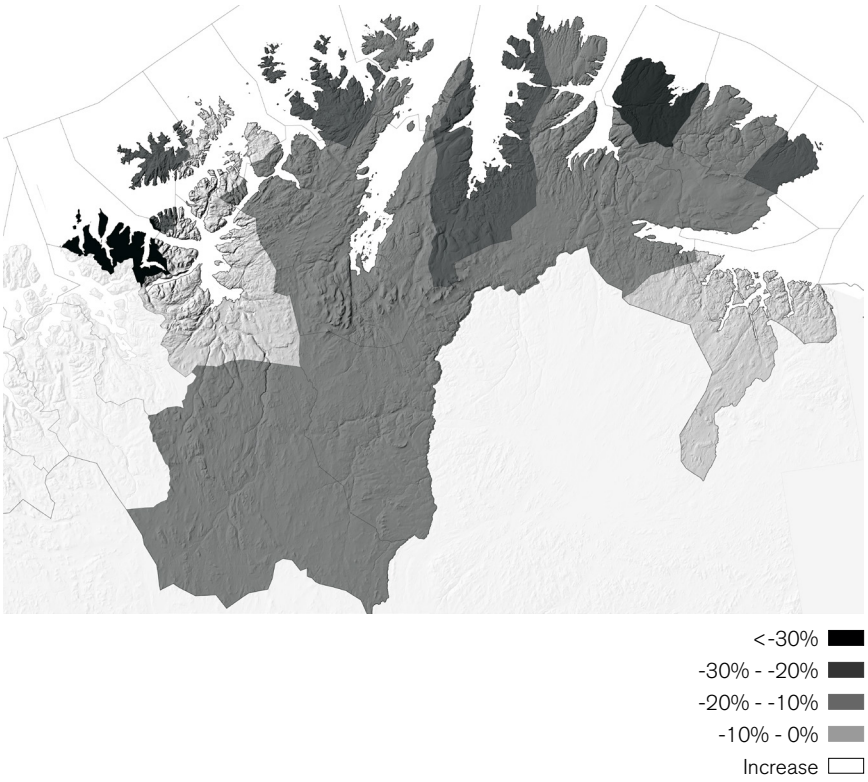




Population decline regardless of migration
Population growth due to immigration
Population growth regardless of immigration

Population decline is a familiar problem amongst many Arctic municipalities, those in Finnmark included. Especially Loppa has seen an enormous decline in its population over the past 18 years where more than 1/3 of the people have left the area.

1. Hammerfest	**-75.3%**	**8.** Kvalsund	**-90.0%**	**14.** Gamvik	**-25.2%**
2. Vardø	**-5.8%**	**9.** Måsøy	**-70.4%**	**15.** Berlevåg	**-42.7%**
3. Vadsø	**-23.9%**	**10.** Nordkapp	**-30.4%**	**16.** Deatnu - Tana	**17.9%**
4. Guovdageaidnu - Kautokeino	**0.0%**	**11.** Porsáŋgu - Porsanger	**-39.1%**	**17.** Unjaargga - Nesseby	**0.0%**
5. Alta	**-72.3%**	**12.** Kárášjohka - Karasjok	**0.0%**	**18.** Båtsfjord	**-28.0%**
6. Loppa	**-85.2%**	**13.** Lebesby	**-52.3%**	**19.** Sør - Varanger	**-15.9%**
7. Hasvik	**-59.7%**				



Figures

◀ 6.38 Population decline (2001 - 2019)
Adapted by author from: SSB.

▶ 6.39 Work conclusion map.
Adapted by author from: SSB, Regjeringen.no, Nordregio and Fiskeridirektoratet.

Work conclusions

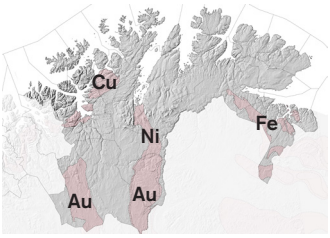
According to this analysis - and resonating with earlier analysis - the coastal municipalities can be termed as the most fragile in terms of work stability. Characterized by a higher job stability amongst the coastal municipalities are mainly the municipalities with bigger cities (Alta and Sør-Varanger), or the municipalities (with the exception of Berlevåg and Vardø) situated on the Varangerpeninsula where the fishing industry was affected less. In the Sámi municipalities there's seemingly more stability.



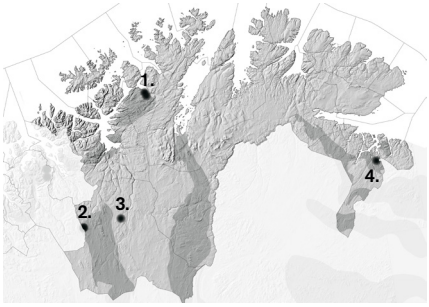
Minerals

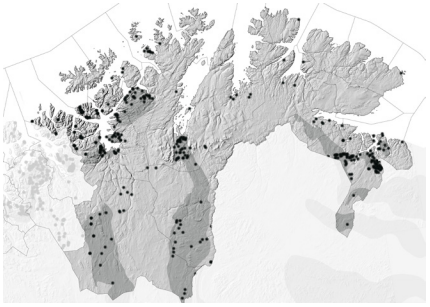
Exploration

In the maps below indicated mineral occurences are shown. NGU makes the distinction in minerals that are clustered together in quantities that are economically attractive (deposits) and heaps of possibly economically viable minerals (occurences). Clusters of these occurences show better potential for the mapping of higher amounts. NGU distinguishes four different deposits, three of which are the deposits for which already plans for extraction have been made. Namely the Nussir and Ulveryggen copper deposits, Bjørnevatn iron deposits and Bidjovagge gold and copper deposits. The fourth - Biggejav'ri houses Scandium and Rare Earth Elements.

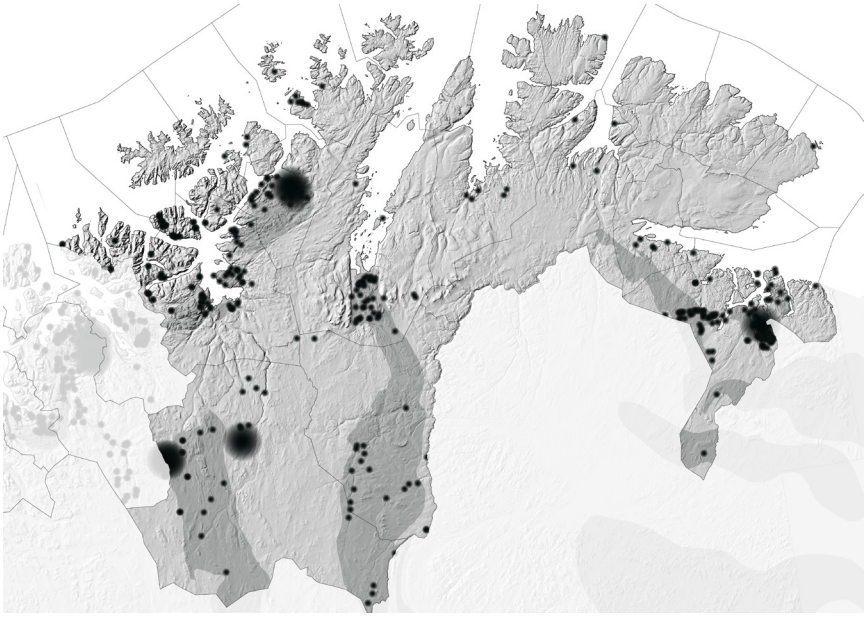


Au - Gold
Cu - Copper
Fe - Iron
Ni - Nickel





1. Nussir & Ulveryggen (Cu)
2. Bjørnevatn (Fe)
3. Biggejav'ri (Sc, REE)
4. Bidjovagge (Au)



Figures

▲ 6.40 Bedrock regions with occurences.
Adapted by author from: GTK.

◀◀ 6.41 Deposits.
Adapted by author from: NGU.

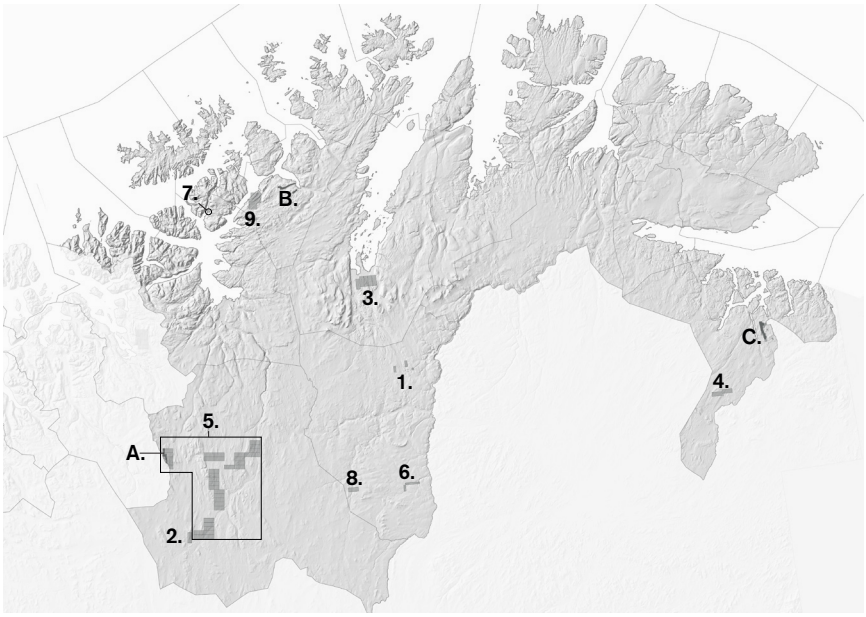
◀ 6.42 Occurences.
Adapted by author from: NGU.

◀ 6.43 Explorations.
Adapted by author from: NGU.

▶ 6.44 Licenses.
Adapted by author from: NGU.

Licenses

There are two different licenses for mining and exploration companies. A license to extract and a license to explore. In the Nussir-case, in 2008 the company received 50 exploration licenses, relatively recently something similar happened for the GoSiLi AS company, who received licenses to explore for 43 areas. The exploration licenses are granted after extensive sampling in the area, in total GoSiLi has collected 2,378 samples. Although Bernt Stilluf Karlsen, representative of the company, doesn't want to elaborate on the findings, the large amount of licenses indicates the possibilities of large findings in this area.



License to extract

License to explore

Exploration licenses:

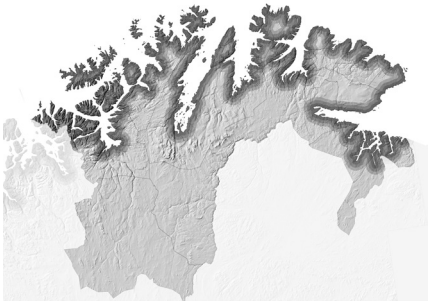
1. Antaeus Pro AS
2. Arctic Fuchsit AS
3. Element-46 Ltd
4. Geode Consult AS
5. GoSiLi AS
6. Hansen Viktor
7. Jan Fjelltvedt
8. Lars Gunvald Ottesen
9. Norwegian Resource Ventures AS

Extraction licenses:

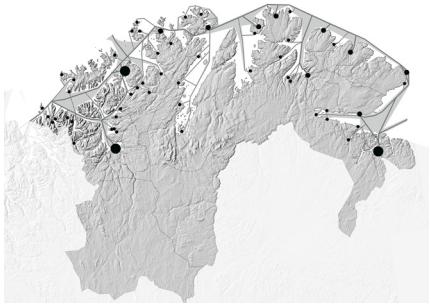
A. Arctic Minerals AB
B. Nussir ASA
C. Sydvaranger Eiendom AS

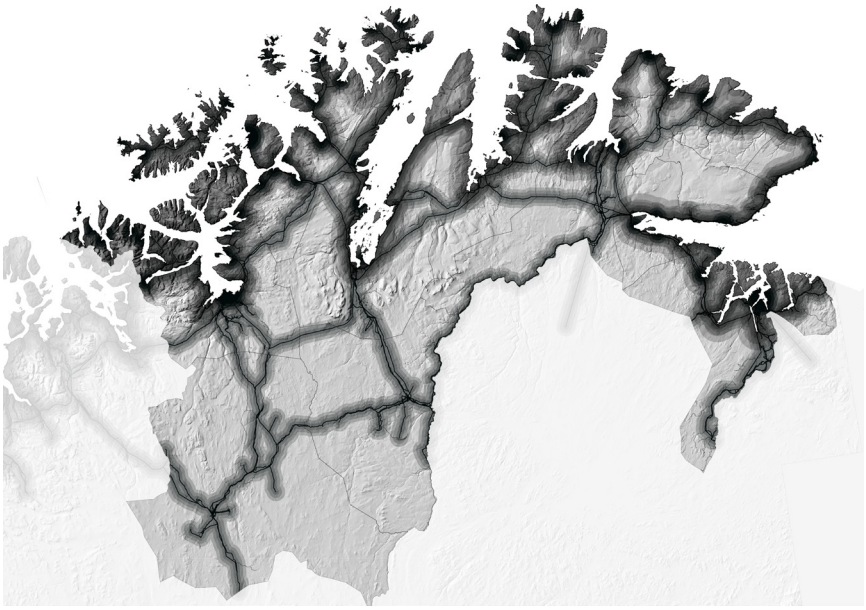
Circulation

Another economic factor for the development of mineral mines is the ability of transportation. Boats can carry much larger weights than trucks and are therefore much cheaper and more effective. The proximity to the coast is therefore a huge cost saver for the mining companies. Secondly, developed infrastructure is a big plus, both in terms of roads able to carry high loads and power supply. Also the proximity to developed ports, and therefore transshipment to the rest of the world counts. All factors combined have the potential to greatly reduce operating costs.









Figures

◀◀6.45 Proximity to the coast
Adapted by author from: Kystverket.

◀ 6.46 Infrastructures.
Adapted by author from: NVE, Kartverket.

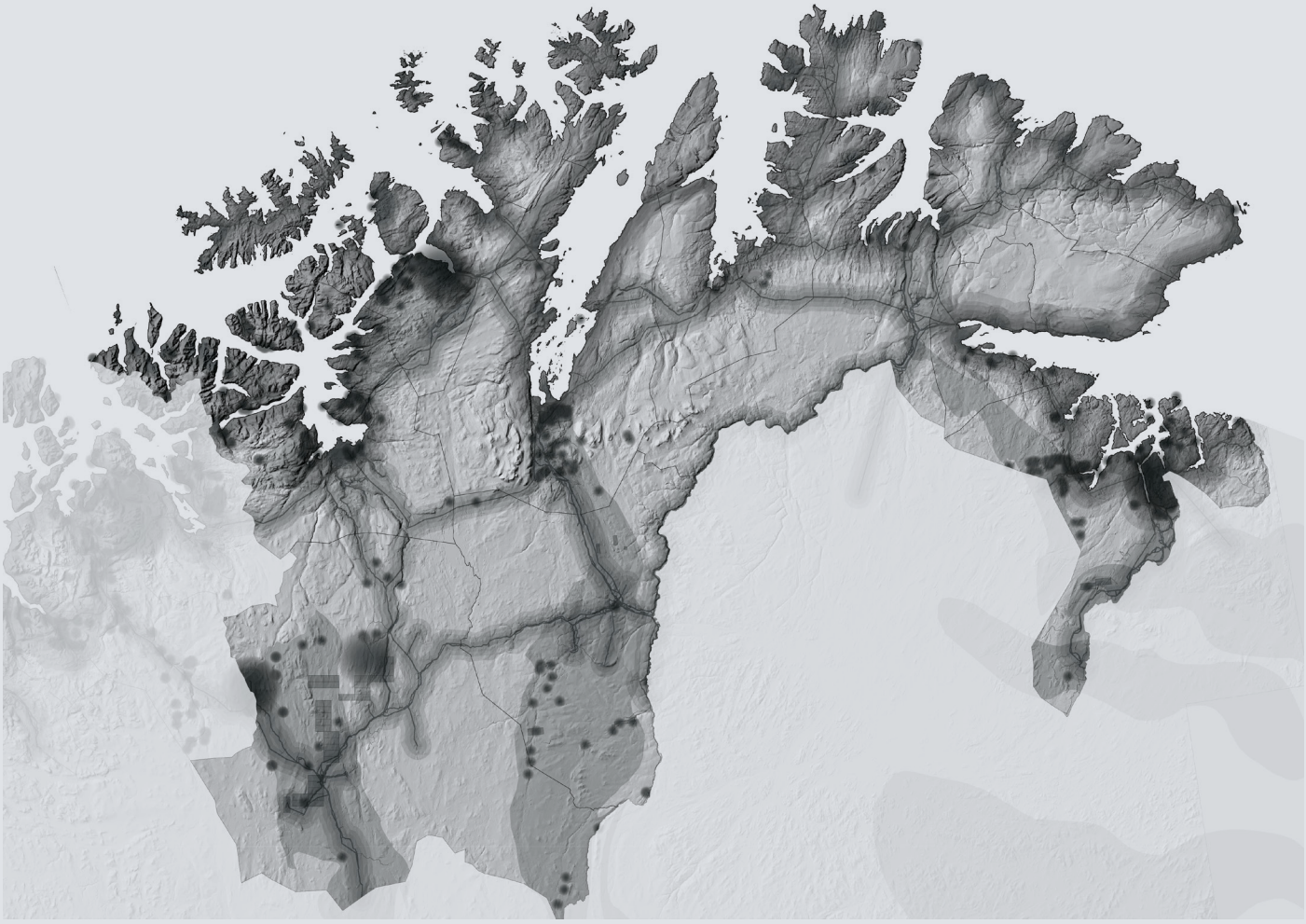
◀ 6.47 Shipping.
Adapted by author from: Kystverket, OpenStreetMap contributors.

◀ 6.48 Circulation (combination map).
Adapted by author from: Kystverket, NVE, OpenStreetMap contributors.

▶ 6.49 Minerals conclusion map.
Adapted by author from: GTK, NGU, Kystverket, NVE, OpenStreetMap contributors

Mining conclusions

For the mining of minerals mostly the coastal zones are deemed important through means of this analysis. There are two main zones, one in Sør-Varanger, in the proximity of the iron mine, and one in the Repparfjord, in the proximity of the planned Nussir copper mine. Of course most important from this analysis is to see where possibly new mines could emerge. The greenstone belt in Kautokeino seems to be a zone where more plans for extraction can be expected in the near future. The mining plans for Bidjovagge have earlier on been rejected by the municipality, due to preference given to the municipalities traditional inheritance. However, the question is how long the municipality can halt incoming mining projects, as exploration licenses will most probably result in higher amounts of minerals in the Kautokeino municipality, strengthening the mining companies' proposals.

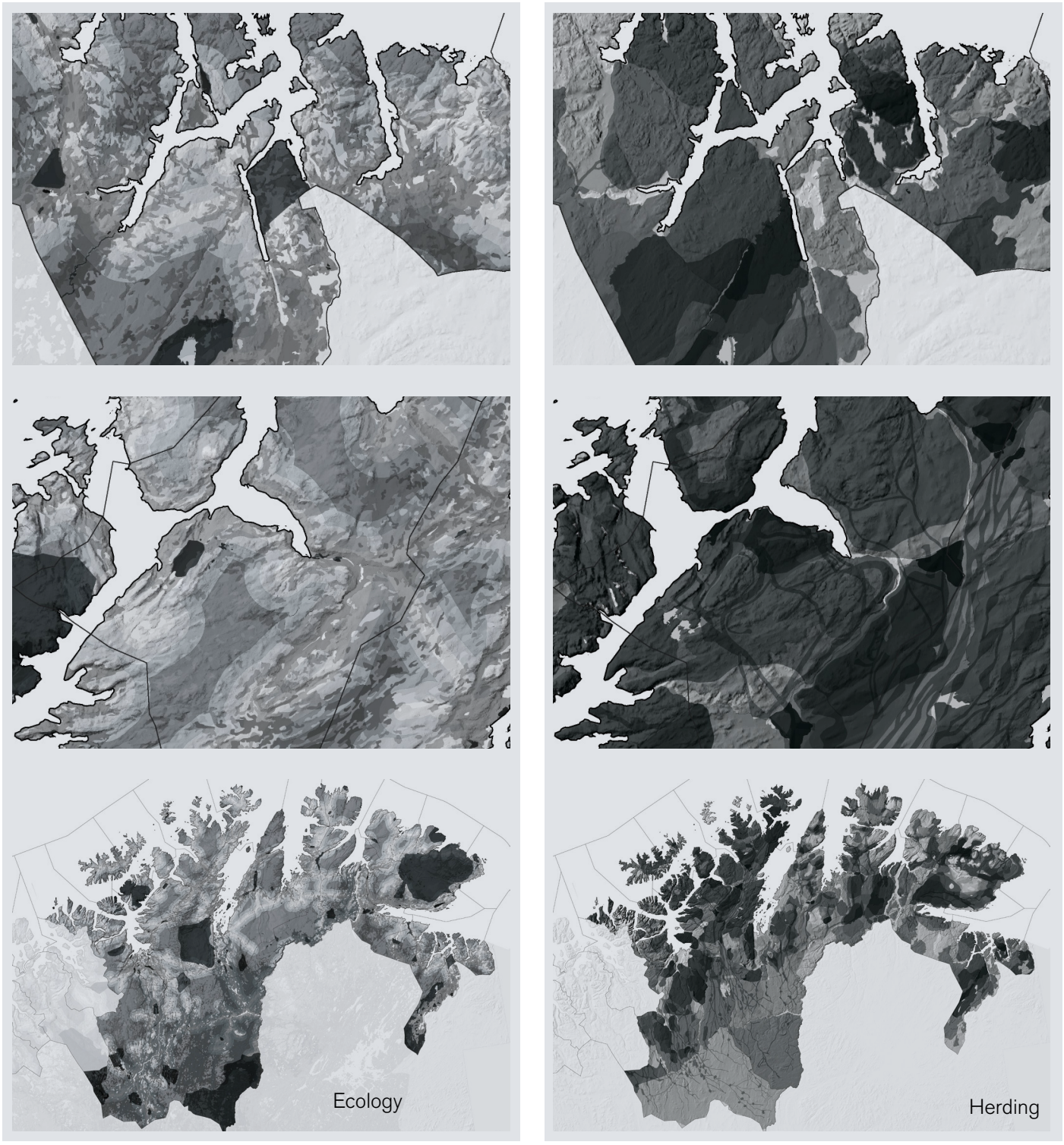


Better possibilities

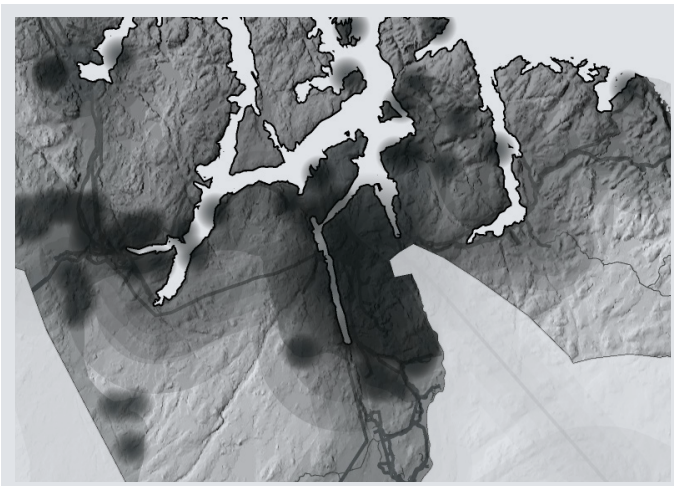
Less posibilities

Conclusions

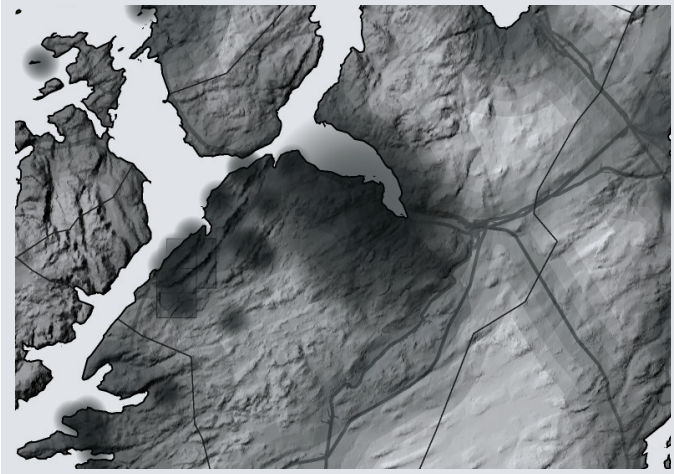
Main conflicting areas are situated around the mapped mineral deposits. Potential conflict arises if the occurences around Lakselv and Kautokeino proof to be of higher quality. At this stage, it is impossible to proof whether these areas have high deposits or potential higher economic value, other than through geological mapping excersices involving sampling and drilling. The two main areas that can be seen as conflicting zones, the Repparfjord and Sør-Varanger, are shown

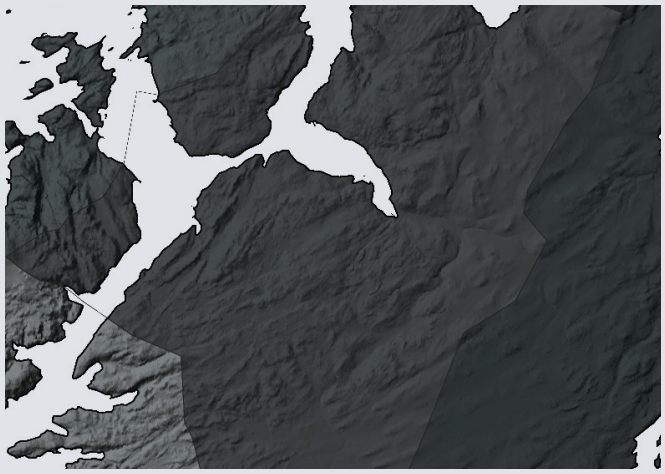


below. The intensities of the conflicts depend on a lot of factors. First of all of the way in which it impacts life or traditional livelihood, which for the Repparfjord was deemed much higher than for Sør-Varanger.









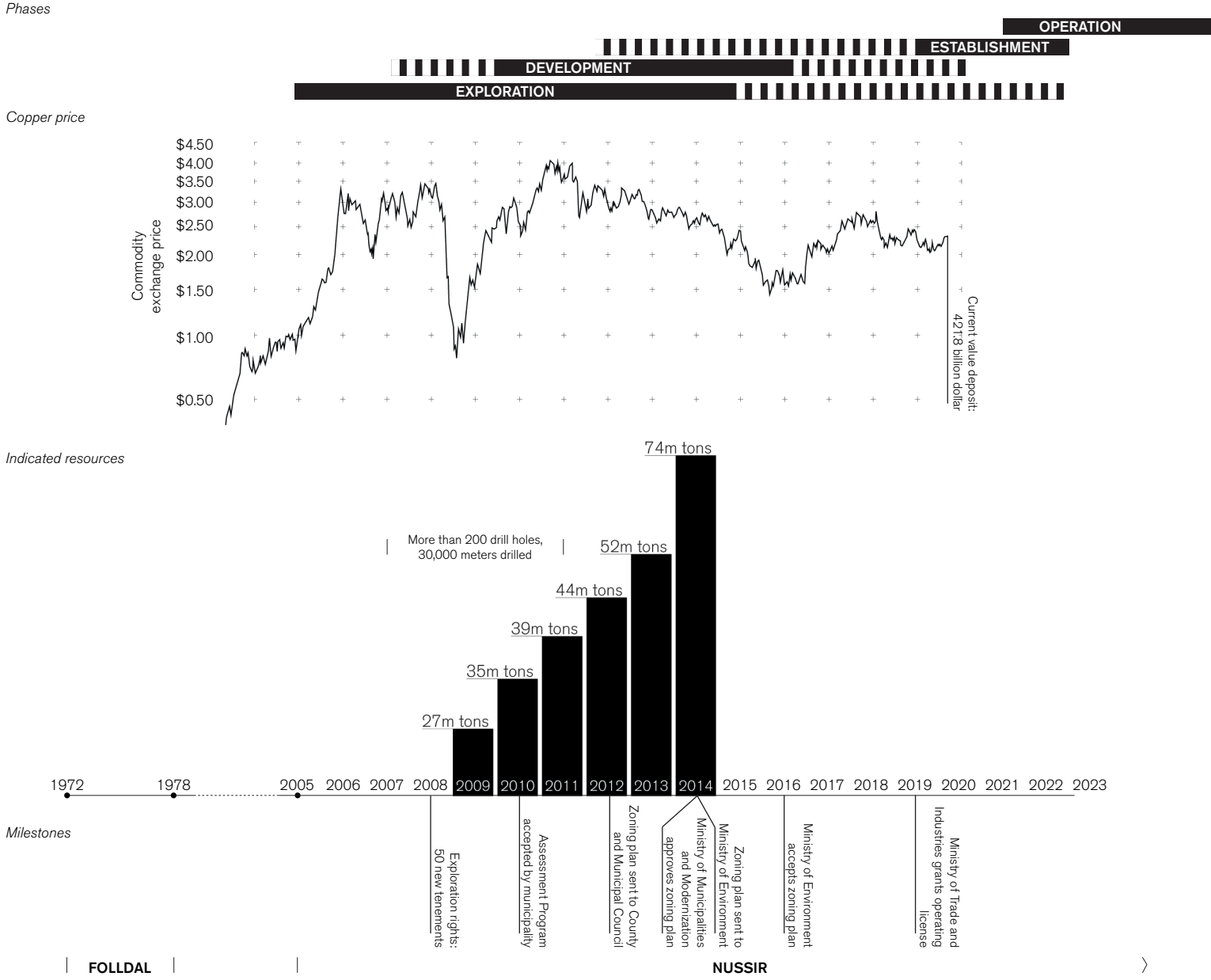




Repparfjord case

This project looks for ways to move towards a combined understanding of ethics and values within the practices of urbanism and geology. As the previous analysis has shown, this entails - among other aspects – a better understanding of the political role of mapping minerals within the lithosphere on sociopolitical processes. As discussed earlier, the case of the Repparfjord has sparked an outrage amongst Sámi indigenous and environmental groups and has caused interest for investigation amongst researchers – mainly from the field of social geography. The role of the mining company Nussir in reaching its goal of an operating license is often cause for debate. From this we can synthesize at what point the role of the geologist mapping resources enters a political and social sphere.

According to the website, Nussir was established in 2005 in response to a growing demand for copper. Most prominent media representative is the companies CEO Øystein Rushfeldt, who himself holds a master's degree in Mining and Mineral Engineering from NTH (now NTNU) in Trondheim. The company presents itself as taking its social responsibility seriously, and is actively engaged in discussions around the opening of the mine. Mining developments on these grounds are politically justified in the Northern area development programs.



Repparfjord case discussion



“Last time we had mining here [1972-1978], the municipality had 1900 inhabitants. Today, there are few young people, but many elderly. Nussir is welcomed here. It will create wealth and growth.”

Terje Wikstrøm, mayor Kvalsund municipality. Photo: Bjørn Egil Jakobsen, iFinnmark.

“The mining will have too much consequences for Sami culture and way of life, both for fisheries and reindeer herding. We can’t allow this to happen.”

Beaska Niilas, Norske Samers Riskforbund (NSR). Photo: NSR.





“The green shift depends on increased exploring of many new metals that could be utilized in new technologies, like solar panels, wind mills, electric cars and batteries.”

Torbjørn Røe Isaksen, Minister of Trade and Industry. Photo: Marte Garmann, Regjeringen.

“Dumping of mining waste will kill every living thing on the ocean floor in the immediate area and disturb spawning grounds over a much greater distance. Scientists have repeatedly warned against dumping.”

Silje Ask Lundberg, Naturvernforbundet. Photo: Naturvernforbundet.





“It is important to say that all mining has negative consequences for disturbing the environment, use of land and other effects and it doesn’t matter if the tailings are placed on land or in sea, it’s always with consequences.”

Øystein Rushfeldt, CEO Nussir ASA. Photo: Altaposten.

“In addition to the environmental destruction, the destruction of Repparfjord is also an attack on the Sami culture in the area. Traditional practices are becoming difficult or impossible to conduct.”

Aili Keskitalo, President of the Sami Parliament. Photo: Åse M.P. Pulk, Sámi Parliament.





Rushfeldt started relatively early on in 2009 with regularly having meetings with interested locals. Both proponents and opponents describe his role in these meetings as fruitfull and constructive[38]. He was primarily concerned with "mutual understanding, dialogue and participation" and "a genuine concern for the well-being of the population and future opportunities in Kvalsund"[39]. Nevertheless, this role has also been explained as a corporate strategy, aiming for as much profit as possible[40].

In the pre-mining phase a mining company generally has two main goals: (1) to indicate where and how much of the ore bodies are located and (2) finding the best way to extract as much as possible. One side of this is done by the conventional tools of resource mappers, but it's not distinct from the other side. The way to extract can be further divided into local approval for the mining operations and the utilized mining methods. The amount of minerals, and the ease to reach them, can easily be used in the tactic to gain further local approval. From 2009 till 2014 the amount of minerals that were known to be in the ground almost tripled, from 27 million tons to 74 million tons, this strengthens the whole case and helps the local approval rate for extraction, if more wealth in the ground also means more growth for the municipality.

In Norway, there are many moments during the process for locals - and the Sámi - to appeal to the decisions. What is highlighted by Dannevig and Dale, is Rushfeldt's strategy to immediately following the deliverance of the Assessment Program. After delivering, Nussir "engaged in a frenzy of outreach activities" including taking opponents of the mine to mines in southern areas, to show the impact of land depository as opposed to sea deposition[41]. Due to this, local acceptance of the mine grew manifold[42]. The acceptance of the Assessment Program initiates the process of creating a Zoning Plan and retreiving an Environmental Impact Assessment, which in Norway has to be found and payed for by the mining company. The results of this impact assessment have been categorized as sloppy and unsatisfactory. As Reinert notes, other impact assessments have estimated results to be catastrophic and largely unknown[43]. Mainly because of this reason, environmental organizations, fishing unions and Sámi organizations continued to oppose the mine.

What was perhaps expexted was a response from the Finnmarks eiendommen Finnmárkuopdamat (FeFo). In 2005, following the Finnmark Act, a board consisting of three members from the Sámi Parliament and three members of the County Council (FeFo) became a powerfull player as owner of 96% of the land of Finnmark. Although the board was set up to follow up on Norway's ratification of ILO-169 on indigenous and tribal peoples, its effects are much less satisfactory[44]. As an example, on the Nussir case the board voted 50/50, the three representatives of the County Council voted in favor of the mine, and the Sámi voted against[45]. Since then FeFo managed to remain silent in the discussions surrounding the mine[46].

After the zoning plan controversially got accepted in 2016, the only remaining approvals were by the reindeer districts Fálá and Fiettar. The district Fálá had reached an agreement with Rushfeldt. The mine was to pause operations in the calving season, as Ante Sara, district chief of Fálá has aggreed on[47]. The herders from this district migrate the reindeer over the site towards the island of Kvaløya. Still, Sara supports Fiettar in their decision not to aggree. Fiettar has their calving grounds in these areas, and for their survival the calves need to be disturbed as little as possible. Even with the pausing of operations, the herders from Fiettar fear that the mine and surrounding developments of workers habitation and electricity lines would significantly impact the ability to

Citations

[38] Dannevig, H., & Dale, B. (2018). The Nussir Case and the Battle for Legitimacy: Scientific Assessments, Defining Power and Political Contestation.

[39] Ibid.

[40] Einarsson, H. (2013). NUSSIR - Drømmen om Finnmark.

[41] Dannevig, H., & Dale, B. (2018). The Nussir Case and the Battle for Legitimacy: Scientific Assessments, Defining Power and Political Contestation.

[42] Einarsson, H. (2013). NUSSIR - Drømmen om Finnmark.

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[44] Ravna, Ø. (2011). The Process of Identifying Land Rights in parts of Northern Norway: Does the Finnmark Act Prescribe an Adequate Procedure within the National Law?

[45] Aslaksen, E. A. (2017). Prøvesteinen dypt nede i fjellet.

[46] SAGAT. (2019). – FeFo har ingen mening om Nussir.

[47] Larsen, H. (2017). Vi er presset fra alle kanter.

[48] Ibid.

herd on the land. Reindeer owner Mikkel Nils Sara, stated in 2017 that he felt "under pressure from all sides"[48]. In 2019, Nussir received a license to operate anyway, having failed to reach an aggreement with Fiettar.

In the case of the Repparfjord – and in many cases alike – the mapping of resources acts as a kind of gold rush. The mapping of resources itself strengthens the case economically, and its local acceptance. The sheer size of investments made in the mine, local agreement of the mine and heavy media debates together causes pressure on those affected by the developments. Decision-making in the end hinges on the weighing off of advantages versus disadvantages. The delineation of mineral resources, is the building up of a case that disregards life and livelihood. The mining case can only grow, as long as more minerals are found, more investments made and more local acceptance is gained, in the end an in many ways biased weighing off of values concludes the decision-making process.

Conclusions

Research questions:
c. What are hotspots for the development of the mining industry and reindeer husbandry?
d. What are expected to be the zones of conflict between herding and mining?

Conflicts
In this chapter I delineated the (meta-) spatial distribution of (potential) mining projects versus reindeer herding. The goal was to understand the spatial distribution of the mining industry and related possibilities of conflict with reindeer herders. Apart from mapping a few zones, as of this point it is impossible to map potential conflicts without deepened geological knowledge. Companies can decide to keep sampled potentialities of the underground away from the public (as happens now with GoSiLi in Kautokeino). Through this way they can build up their case for mining developments from the underground.

Meta-territoriality
Mining companies already territorialize long before the physical process of mining. This process involves the mapping of resources, gaining investments and gaining local acceptance. The analysis of the Repparfjord-case shows that mining companies in a very early stage already make a claim on land. Their claim grows in size as the company fulfills its goals. This in term puts pressure on those making use of the landscape.

DIACHRONIC ANALYSIS

Outline

This chapter is a zoom-in on the area surrounding the Sydvaranger mine. I analyze the spatiotemporal distribution of the mine and the nearby towns of Kirkenes, Bjørnevatn and Hesseng. This I combine with a stakeholder analysis displayed through their power relations. The area of Sør-Varanger has been undergoing a complete change, from a multiethnic area living primarily off the land, towards a predominantly Norwegian ethnicity taking industrial developments in the area almost for granted.

"The policy of norwegianization was introduced in the field of culture with school as the battlefield and teachers as frontline soldiers. The subject which was focused on was therefore language."

Minde, H. (2005). Assimilation of the Sami - Implementation and Consequences. Journal of Indigenous Peoples Rights. (Original emphasis).

If it has taken 100 years to norwegianize the Coast Samis, then it will perhaps take another 100 years to make us Samis again?

Beate Hårstad Jensen, Dagbladet 28 July 2001

07.





07. Diachronic analysis

Stratification of ethnicities

The connection of territory with language is, especially in this geographic context, a complex one. This chapter attempts to explain the linkages in between for the state of Finnmark, to attempt to distinguish a degree of territorialization in a specific area, in this case the Sydvaranger mine and its surroundings. As stated before, in Norway, several cities (mainly along the coast) have in the 19th and 20th century been subject to policies of forced "norwegianization". The aim of these policies was to create a homogeneous nation with the same culture and language[3,4]. Although Norway has come a long way in giving more autonomy to the Sámi - through the Sámi Parliament and the Finnmark Act for example - the disputes over land are far from gone. In Finnmark today, still the past processes of cultural eradication live on to impede the creation of a collective socioterritorial identity.

To start analyzing the spatiality of these policies we should start in the 19th century. The maps portrayed to the right of the Sør-Varanger area show ethnogeographic studies of this time conducted by Jens Andreas Friis. The maps show very precisely the resident locations of Norwegian, Kven and Sámi people according to their descent, and the languages they do or do not speak. Strategic areas are rivers and coastal areas. These were also the main residual places of the Sámi, as traditionally from there they have taken part in fishing, trade and transportation[5]. The maps were financed by the Norwegian state and Friis was asked to be as precise as possible when describing his journeys to northern Norway[6]. These maps later proved to be useful in the goals of the Norwegian state to eradicate the Sámi language, which was most successful along the coast.

The distinction made in ethnicity forms the fundamental base for this chapter. Through the implementation of policies and changing cultural dynamics in Sør-Varanger, the ethnic strata has been altered and changed throughout the 20th century. These alterations have affected decision-making and helped making the areas around Kirkenes and the Sydvaranger Iron Mine to what it is today: a region where industrial developments are generally advocated locally as they have brought economic growth and wealth to the area. Furthermore, as will be explained later, a mine can be seen as a strategic political tool in modernization and cultural assimilation policies.

Citations

[1] Deleuze, G. (1988). Foucault.

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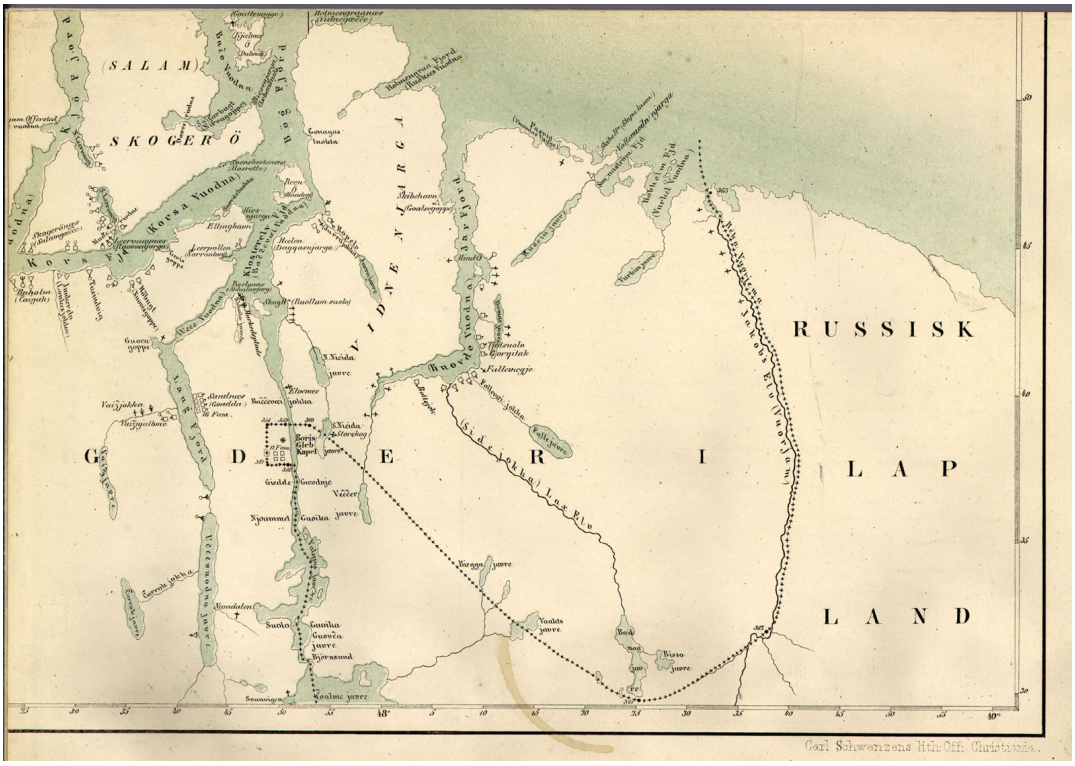
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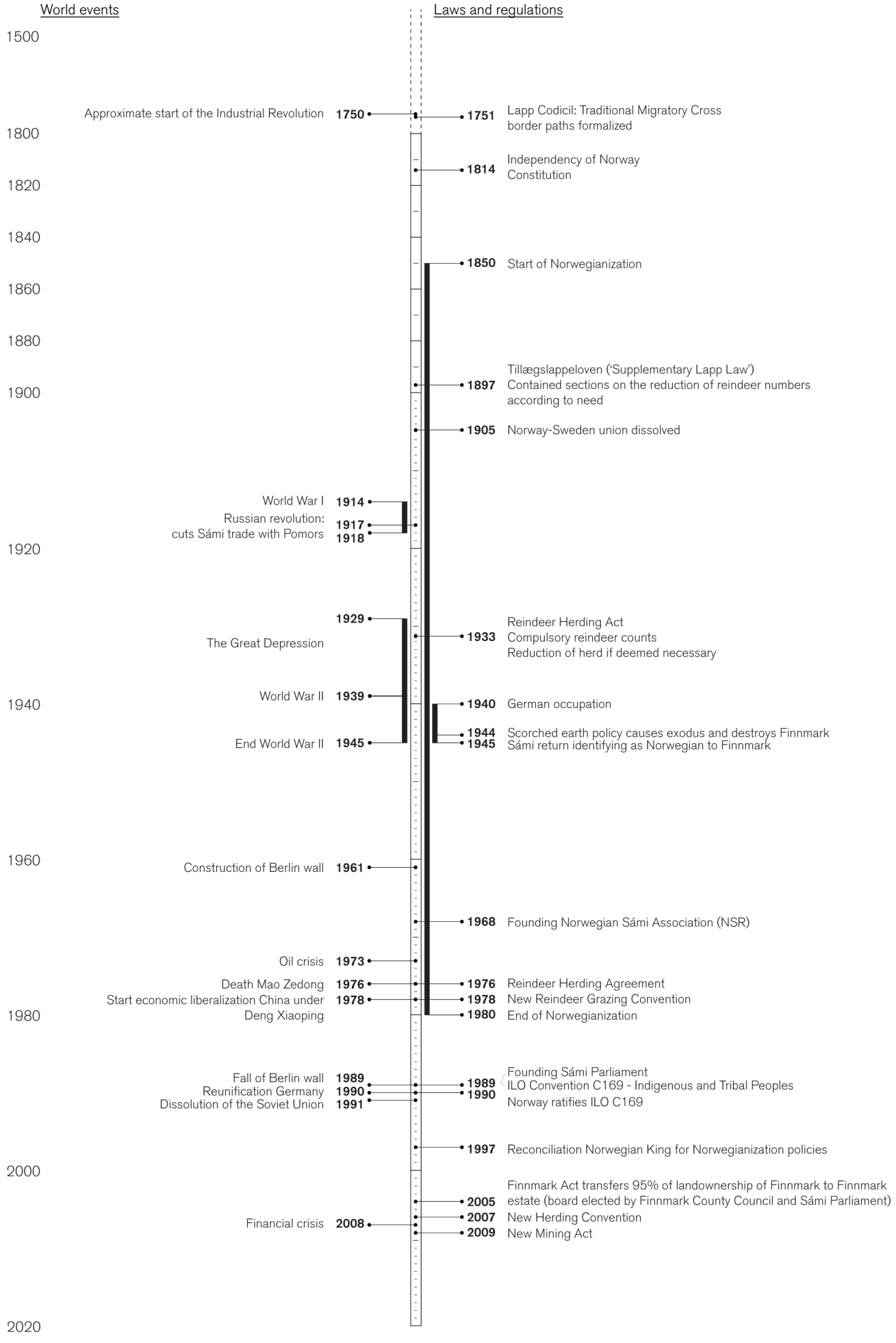
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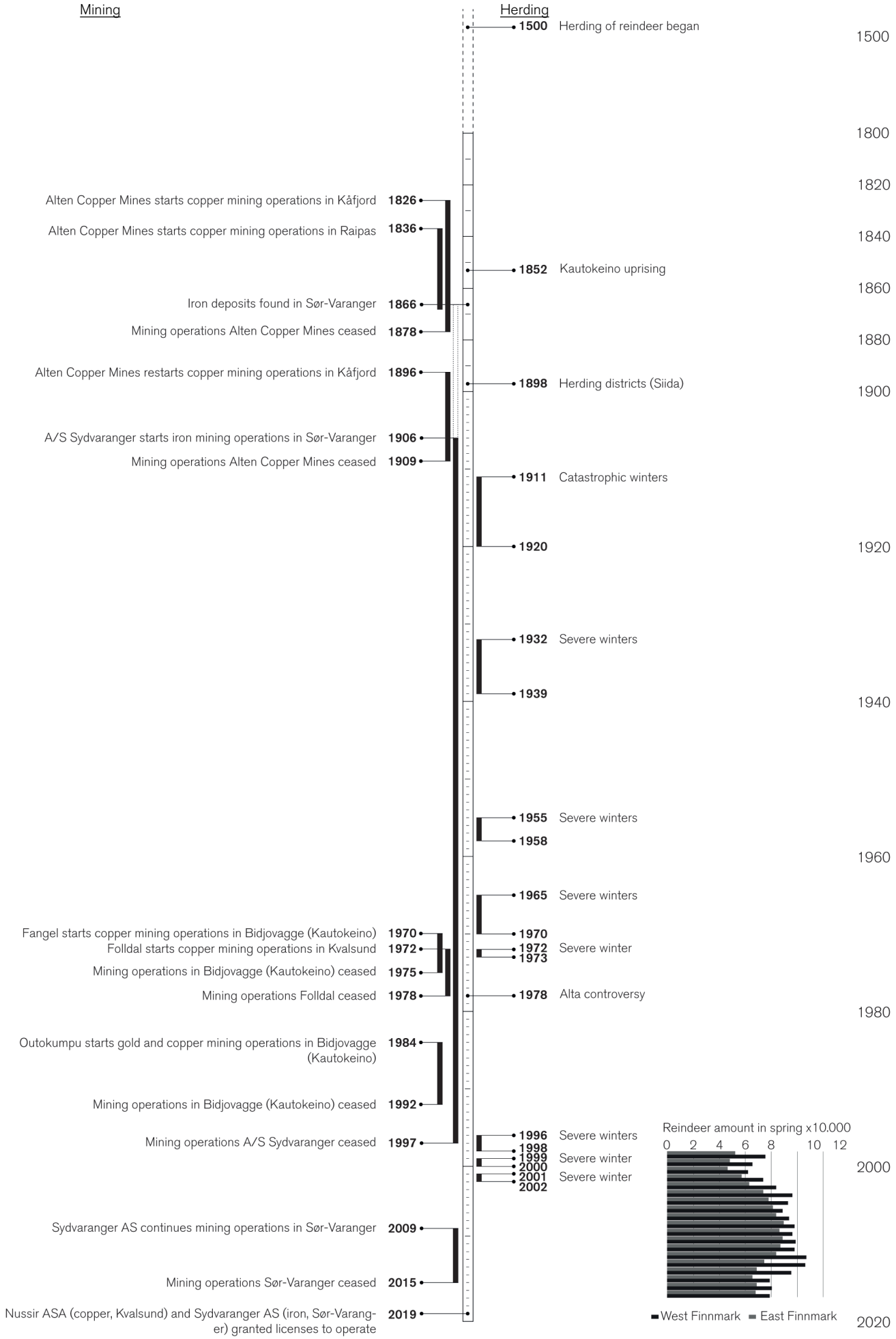
▶ 7.1 Ethnogeographic mappings of J. A. Friis of the Sør-Varanger area. The maps show very precisely the origin of the people in the area and which languages they speak. The coast areas were the most accessible areas and are therefore mapped. Above map is from 1861 and below from 1888.
Source: https://www.dokpro.uio.no/friiskartene/1861/1861oversikt.html


(SALAM)
SKOGER Ö
RUSSISK
L A P
L A N D
Carl Schwenzens lith. Off. Christiania.


VADSÖ
Tegnforklaring.
FINSK
LAPLAND
RUSSISK LAPLAND

Timeline


World events
Laws and regulations
1500
1800
1820
1840
1860
1880
1900
1920
1940
1960
1980
2000
2020
Approximate start of the Industrial Revolution 1750
1751 Lapp Codicil: Traditional Migratory Cross border paths formalized
1814 Independency of Norway Constitution
1850 Start of Norwegianization
1897 Tillægslappeloven ('Supplementary Lapp Law') Contained sections on the reduction of reindeer numbers according to need
1905 Norway-Sweden union dissolved
World War I 1914
Russian revolution: cuts Sámi trade with Pomors 1917
1918
1929
The Great Depression
1933 Reindeer Herding Act Compulsory reindeer counts Reduction of herd if deemed necessary
World War II 1939
1940 German occupation
1944 Scorched earth policy causes exodus and destroys Finnmark
End World War II 1945
1945 Sámi return identifying as Norwegian to Finnmark
Construction of Berlin wall 1961
1968 Founding Norwegian Sámi Association (NSR)
Oil crisis 1973
Death Mao Zedong 1976
1976 Reindeer Herding Agreement
Start economic liberalization China under Deng Xiaoping 1978
1978 New Reindeer Grazing Convention
1980 End of Norwegianization
Fall of Berlin wall 1989
Reunification Germany 1990
Dissolution of the Soviet Union 1991
1989 Founding Sámi Parliament
ILO Convention C169 - Indigenous and Tribal Peoples
1990 Norway ratifies ILO C169
1997 Reconciliation Norwegian King for Norwegianization policies
2005 Finnmark Act transfers 95% of landownership of Finnmark to Finnmark estate (board elected by Finnmark County Council and Sámi Parliament)
Financial crisis 2008
2007 New Herding Convention
2009 New Mining Act


Mining
Herding
1500 Herding of reindeer began
Alten Copper Mines starts copper mining operations in Kåfjord 1826
Alten Copper Mines starts copper mining operations in Raipas 1836
1852 Kautokeino uprising
Iron deposits found in Sør-Varanger 1866
Mining operations Alten Copper Mines ceased 1878
Alten Copper Mines restarts copper mining operations in Kåfjord 1896
1898 Herding districts (Siida)
A/S Sydvaranger starts iron mining operations in Sør-Varanger 1906
Mining operations Alten Copper Mines ceased 1909
1911 Catastrophic winters
1920
1932 Severe winters
1939
1955 Severe winters
1958
1965 Severe winters
1970
Fangel starts copper mining operations in Bidjovagge (Kautokeino) 1970
Folldal starts copper mining operations in Kvalsund 1972
1972 Severe winter
1973
Mining operations in Bidjovagge (Kautokeino) ceased 1975
Mining operations Folldal ceased 1978
1978 Alta controversy
Outokumpu starts gold and copper mining operations in Bidjovagge (Kautokeino) 1984
Mining operations in Bidjovagge (Kautokeino) ceased 1992
Mining operations A/S Sydvaranger ceased 1997
1996 Severe winters
1998
1999 Severe winter
2000
2001 Severe winter
2002
Sydvaranger AS continues mining operations in Sør-Varanger 2009
Mining operations Sør-Varanger ceased 2015
Nussir ASA (copper, Kvalsund) and Sydvaranger AS (iron, Sør-Varanger) granted licenses to operate 2019
1500
1800
1820
1840
1860
1880
1900
1920
1940
1960
1980
2000
2020
Reindeer amount in spring x10.000
0 2 4 6 8 10 12
West Finnmark
East Finnmark

Sydvaranger mine

The Sydvaranger mine is the biggest mine of Finnmark having operated over most of the previous century. The mine has for most of its time been run by a state company called A/S Sydvaranger, only in its latest period of operation (2009-2015) it was run by a private company. Operation is expected to recommence in 2020 under the flagship of Tschudi AS, a private company who owns large parts of the port in the nearby town Kirkenes.

The process of extraction of iron ore produces several byproducts. In order to get to the material the overlying ground called overburden needs to be removed to get to the body where the raw ore is located. Here raw ore can be mined from other nearby rock, which is called gangue, these together get deposited on land around the mine (gråberg). The raw ore is then loaded on a train and moved to Kirkenes for further processing. In order to get to the wanted iron pellets, several crushers, grinders and separators need to be passed. For these processes chemicals are used which produce an abundancy of toxic waste. This waste was up until 1976 along with gangue material dumped into the nearby Langfjorden - which altered the fjord topography significantly – and after 1978 through a newly built pipeline. In 1976 the topography of the fjord was altered so significantly that the material was decided to be dumped deeper and into a new location, Bøkfjorden, around 450 meter to the north of Kirkenes, which then became the main pipeline[7].

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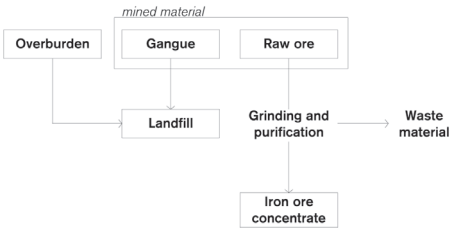
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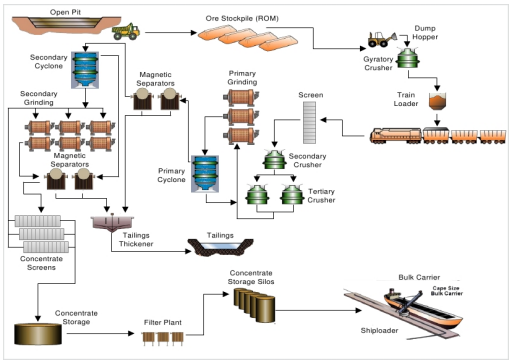
◀◀ 7.2 Mining process. Made by author.

◀ 7.3 The production process, Northern Iron (2013). Taken from: http://gruve.info/a3.htm

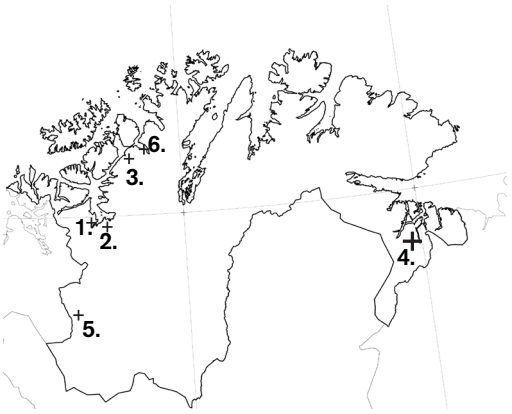
◀ 7.4 Metallogenic mines in Finnmark. Adapted by author from: OpenStreetMap Contributors

▶ 7.5 Sydvaranger Iron Mine. Image by author.





The production process, Northern Iron (2013). Taken from: http://gruve.info/a3.htm



1.Kåfjord (1826-1878, 1896-1609)
2.Raipas (1836-1869)
3.Bachkes (1900-1906, 1929-1931)
4.Sydvaranger (1906-1997, 2009-2015, 2020-...)
5.Bidjovagge (1970-1975, 1984-1992)
6.Folldal/Nussir (1972-1978, 2019-...)



Sydvaranger Iron Mine, image by author

Pre 1900

Pre-1900

In 1866 Tellef Dahll found iron mineralizations in the Bjørnevatn area. At the time Kirkenes consisted of a church (the name Kirkenes means church headland) and a few houses. The area was used by reindeer herders who depended on the lands for the wellbeing of their herds. At first the mineralizations weren't considered of good quality because there weren't methods to enrich the ore[8].

Kirkenes was at the time for Norwegians from the south barely accessible, the only opportunity to arrive here was by coastal steamer. The inaccessibility at the time has affected the ethnic composition of the area, where several slightly different languages and dialects had emerged, nowadays known as Nord, Enari and Skolt Sámi. Along the coast settlements comprised mainly of fisherman and their families of southern and central Norwegian descent. Also people from Finnish and Kven descend resided in Finnmark[9]. The Skolt Sámi at this time lived on an area from roughly the place where now Murmansk is situated to lake Inari in Finland and Sør-Varanger, nowadays - accountable to geopolitical reasons - a small portion of Skolt Sámis lives in northern Finland.







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Figures

◀◀7.6 Bjørnevatn deposits, 1902.
Image by Ellisif Wessel, Finnmark fylkesbibliotek. Taken from: http://gruve.info/a3.htm.

◀ 7.7 Kirkenes 1897.
Image by Ellisif Wessel / Finnmark fylkesbibliotek. Taken from: http://gruve.info/a3.htm.

◀ 7.8 Group portrait of Skolt family in the open air.
Image by Ellisif Wessel / Preus Museum.

▶ 7.9 Map of the Bjørnevatn - Kirkenes zone in 1900.
Adapted by author from: Kystverket, Kartverket, NVE, OpenStreetMap Contributors.


Bøkfjorden
Kirkenes
Langfjorden
Sandnes
Bjørnevatn
2 km

1900-1940

Given the rise of nationalist movements and conflicts based on language minorities across Europe since the late 19th century, the Norwegian governments launched a policy to "Norwegianise" its heterogeneous borderland with Russia and Finland. The Sydvaranger mine was seized as an instrument of this policy when the Norwegian state required that anyone employed there must have Norwegian language skills.

Wråkberg, U. (2019). Collective memory of the Kirkenes iron mine in sub-Arctic Norway: Its role in forming the future. Polar Record.

Prior to production

It took Norwegian mining entrepreneur Christian August Anker years to receive a license to operate from the state. He applied initially for 70 square kilometers free of charge, but in the end he received an area of 56 square kiometers with the necessity to pay a fee. The area was used mainly by pastoralists, but also by some farmers. Then mayor of Kirkenes Andreas Wessel made a strong commitment for the mining establishment not to deprive farmers and reindeer owners their right to land in the concession area. In the end the area was not exclusively for mining, as it was stated that the area could still be used for grazing and harvesting, as long as it didn't prevent mining operations[10].

Production mine

In 1906 the Sydvaranger A/S company was founded and production in the mine started one year later. First shipments of the iron ore took place in 1910. During the First World War the economic foundation of the mine was destroyed, keeping production levels low. When the war was over production started rising again, only to drop down again because of a decreasing iron ore price in the 20s. Refinancing in 1927 allowed the company to develop the mine again till World War II. The mine has from 1900-1940 produced a total of 25 million tons of raw ore and 11 million tons of refined ore[11]. Just before the war the plant reached its highest number of employees in 1938[12]. During the first period, the mine reliead heavily on foreign investments, and was owned by Swedish and German investors[13]. From the start the company dependen heavily on the export market and transfers of technology and expertise, giving it, according to Wråkberg, as much a sub-Arctic as a European character[14].

Assimilation

In this time the norwegianization policies reached its height. The time is characterized by a shielding off in a relatively short period from both Russia and Finland. The Russian Revolution of 1917 made it impossible for the Sámi to trade with the Pomors, having significant economic impacts. When in the interwar period also Finland shielded off, the Norwegian state gradually became more inner offensive towards the Sámi and Kven, out of fear of Sámi mobilization[15]. Norwegian language and culture were viewed as superior. The forms of racism and stigmatization are illustrated by the state's chief inspector of norwegianization measures Christen Brygfjeld. At that time (1923) were he placed the Sámi that were still holding on to their cultural roots on the same foot as the mentally retarded[16]. The enforcement of the Elementary School Act 1936 further tightened the use of language in schools[17].

1940-1950

Second World War

During the occupation of Norway, the production of the mine was in the hands of the Germans, and the people in Kirkenes were forced to give shelter and supply for German forces, due to it's strategic location as a border-town. Moreover, the local economy became dependent on doing business with the occupiers, which was in the years after the war criticized from the south for failing to resist, despite the low opportunities for conducting business and the harsh environment making survival difficult[18].

Citations

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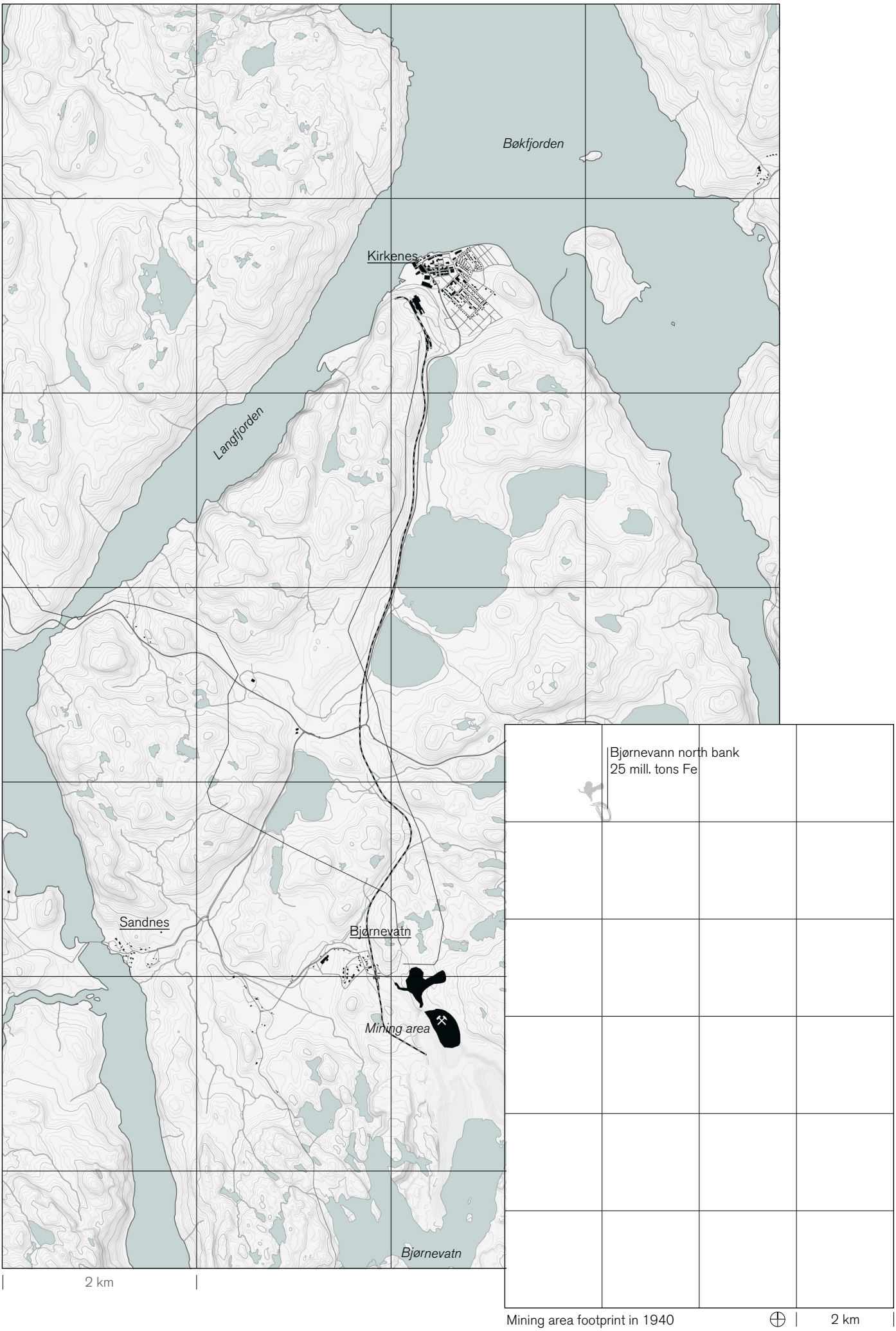
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[18] Wråkberg, U. (2019). Collective memory of the Kirkenes iron mine in sub-Arctic Norway: Its role in forming the future.

Figures

▶ 7.10 Map of the Bjørnevatn - Kirkenes zone in 1940.
Adapted by author from: Kystverket, Kartverket, NVE, OpenStreetMap Contributors.

▶ 7.11 Footprint Sydvaranger mine in 1940.
Adapted by author from: NGU.


Bøkfjorden
Kirkenes
Langfjorden
Sandnes
Bjørnevatn
Mining area
Bjørnevatn
Bjørnevann north bank
25 mill. tons Fe
2 km
Mining area footprint in 1940
2 km

Aftermath of the War

As mentioned earlier, when the occupying Germans fled for the Soviet army at the end of the Second World War (1944), the soldiers were instructed to fulfill a scorched-earth policy, destroying most of Finnmark. The next censuses showed drastic declines in the amount of people identifying as Sámi especially along the coast, while largely the same families returned to the area[19]. As stated, before the war the mine was mainly in hands of Swedish and German banks. This posed a particularly difficult challenge in the years just after the war. The mine had to be rebuilt, and as part of the reconstruction the Sydvaranger mine became predominantly owned by the Norwegian state.

Power relations

During this chapter, on three moments (1950, 1980 and 2020) the stakeholders of that time, and their specific power relations have been analyzed. Power is defined as a specific potential to influence decision-making[20]. A scale of 5 levels has been distinguished level I is defined as those players that have the power to veto the mining project. Level II is the primary consultants of these players. Level III are those players that don't necessarily have a direct involvement in the project, but form a strong media presence in safegaurding their interests. Level IV are those that can influence the project locally, and without necessarily an organization that looks after their interests. Level V are either deemed less significant players or players that play a supplying role, which reinforces other stakeholders in their argument, for the sake of readability these aren't portrayed on the diagram. The stakeholders are positioned on a graph according to their (supposed) position on a scale of representing mining interest against Sámi interest and on a local economic versus political interests. Next, the relations between the stakeholders have been analyzed, this is done according to a methodology developed by Czischke, distinguishing three forms of collaboration:

> Strong' collaboration relationship: related to day-to-day operational aspects of the project, of high frequency and mutually interdependent.
> 'Ad-hoc' collaboration relationship: limited to specific exchanges on usually technical matters, e.g. financing, service provision (e.g. special care needs,etc.).
> 'Indirect' relationship: latent or implicit, e.g. of legal or regulatory nature.[21]

Just after 1950, this time under the flagship of the Norwegian state the mine reinitiated production. The lack of Sámi organizations looking after their interests illustrates the harsh reality of the time. Mining interests were deemed much higher then interests of the Sámi. Reindeer herding was administered by the Lapp bailiff (*Lappevogd*) who operated under the Ministry of Agriculture. The time was characterized, like in many other European countries, by increased control of the state over land and natural resources.

Relative to most other countries, Norway has a history in strong trade unions that, over the course of history, been important players in safegaurding the interest of the laborer. In this specific time at the Sydvaranger mine the trade unions - that have developed mainly in the years prior to the war - were allowed, but at rest [22].

Citations

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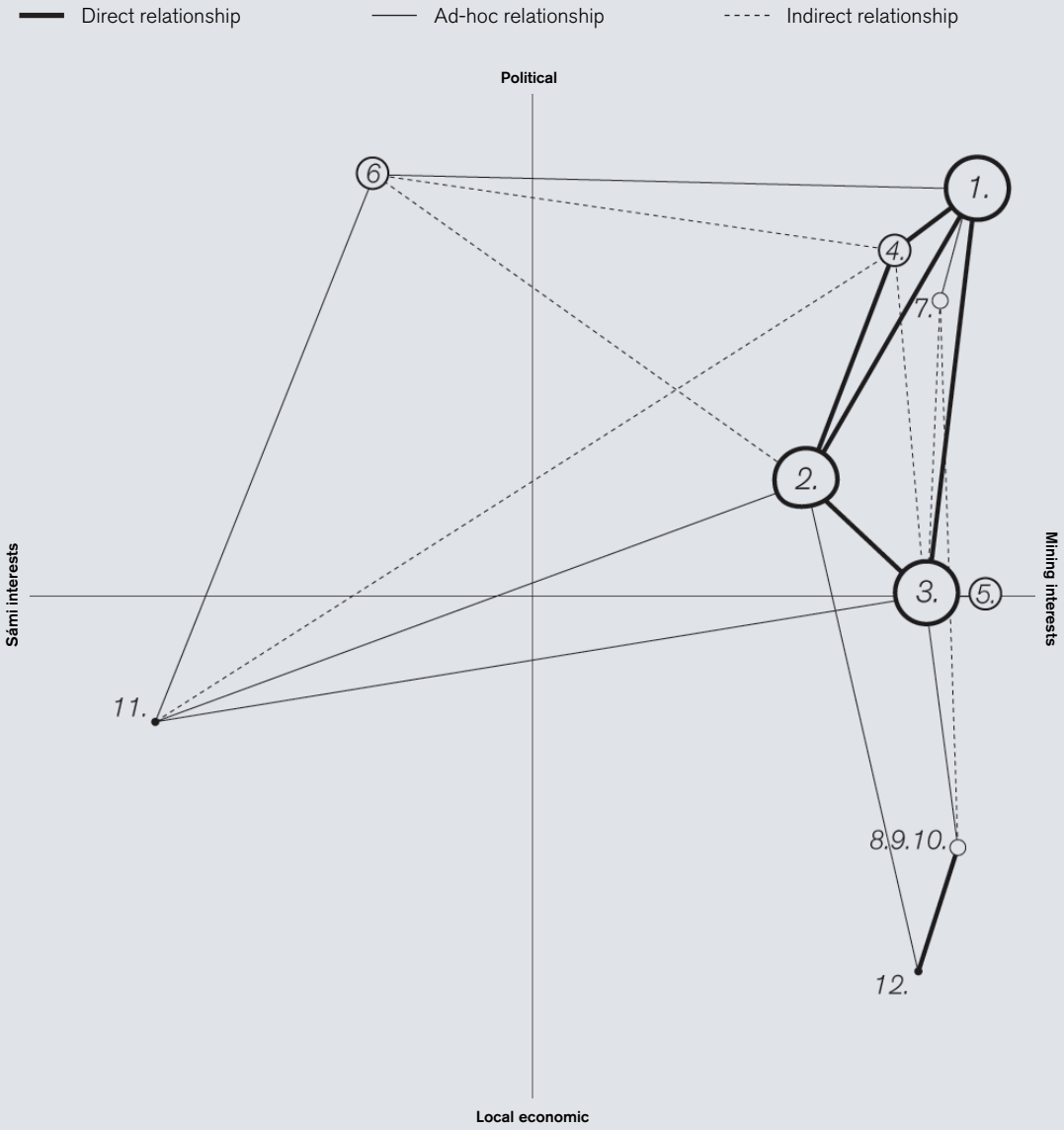
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[22] Wråkberg, U. (2019). Collective memory of the Kirkenes iron mine in sub-Arctic Norway: Its role in forming the future.

Figures

▶ 7.12 Stakeholder analysis surronding mine development in 1950.
Image by author.



Level I: power to veto
1. Ministries (Storting)
2. Sør-Varanger Municipality (Komunne)
3. A/S Sydvaranger

Level II: primary consultants
4. County council (Fylke)
5. Foreign investors
6. Lapp Bailiff (Lappevogd)

Level III: strong media actors
7. Federation of Norwegian Industries (Norges Industriforbund)
8. Workers Confederate of Trade Unions (Arbeidernes Faglige Landsorganisasjon)
9. Norwegian Employers' Confederation (Norsk Arbeidsgiverforening)
10. Workers' Association Nordens Klippe (Arbeiderforeningen Nordens Klippe)

- Level IV: local influencers
  11. Pastoralists
  12. Locals

Level V: less significant/partial role
Prospecting companies
National Association for Nature Conservation in Norway (Landsforbundet for naturfredning i Norge)
Norwegian Public Roads administration (Statens Vegvesen)
Norwegian Water Resource and Energy Directorate (NVE)
Varanger Kraft (Municipal owned)

1950-1980

Mine production

The scorched earth policy also had its effect on the Sydvaranger mine, the facilities needed to be rebuilt completely. It was only in 1952 that the mine started production again and five years later larger quantities of ore became accessible after the draining of the Bjørnevatn lake. In 1969 a pellet mill was created on the site allowing for the mine to increase production. In 1972 production started in southern ore fields first in Grundtjern (1972) and later in Søstervann (1974), Tverrdalen (1976) and Fisketind (1979) . Despite strong growth of the mining site, the period wasn't without its challenges. In the '60s, '70s and '80s, the government invested firmly in long-term infrastructure to overcome the challenges posted by lower iron prices. The extraction and export of crude petroleum made the country wealthy in a short period of time starting in the '60s.

Norway is a country with relatively stable politics and has for most of its time in the past century been ruled by the social democratic Labour Party (Arbeiderpartiet). Meaning that with the extraction of oil and gas, according to government policies, everyone in the country should take part in its wealth and benefit in one way or another. It became very easy in the '70s to own a house and a car in northern Norway[23]. In 1975 the mine reached its postwar employee peak[24].

Assimilation

In 1963 the Wexelsen decree (the decree that instructed schools to enforce the usage of Norwegian on schools) increasingly got debated in the parliament. However, it was still largely enforced in the time after. The planned building of a dam in the Alta canyon starting 1979 sparked protests amongst the Sámi which were met with support from many Norwegians. The period around the Alta controversies marks the end of the norwegianization policies[25].



Citations

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Figures

◀ 7.13 Explosiveholes being drilled.
Image by Svein Lund.

▶ 7.14 Map of the Bjørnevatn - Kirkenes zone in 1980.
Adapted by author from: Kystverket, Kartverket, NVE, OpenStreetMap Contributors.

▶ 7.15 Footprint Sydvaranger mine in 1980.
Adapted by author from: NGU.


Kirkenes - Bjørnevatn region
Bøkfjorden
Kirkenes
Langfjorden
Hesseng
Sandnes
Bjørnevatn
2 km
Mining area footprint in 1980
Bjørnevann north bank
31 mill. tons Fe
Bjørnevann south bank
~45 mill. tons Fe
Søstervann (1974-80)
Grundtjern (1972-77)
Tverrdalen (1976-79, 1981-87)
Bjørnevann south field
45 mill. tons Fe
Fisketind (1979-85)
South field
2 km

Power relations

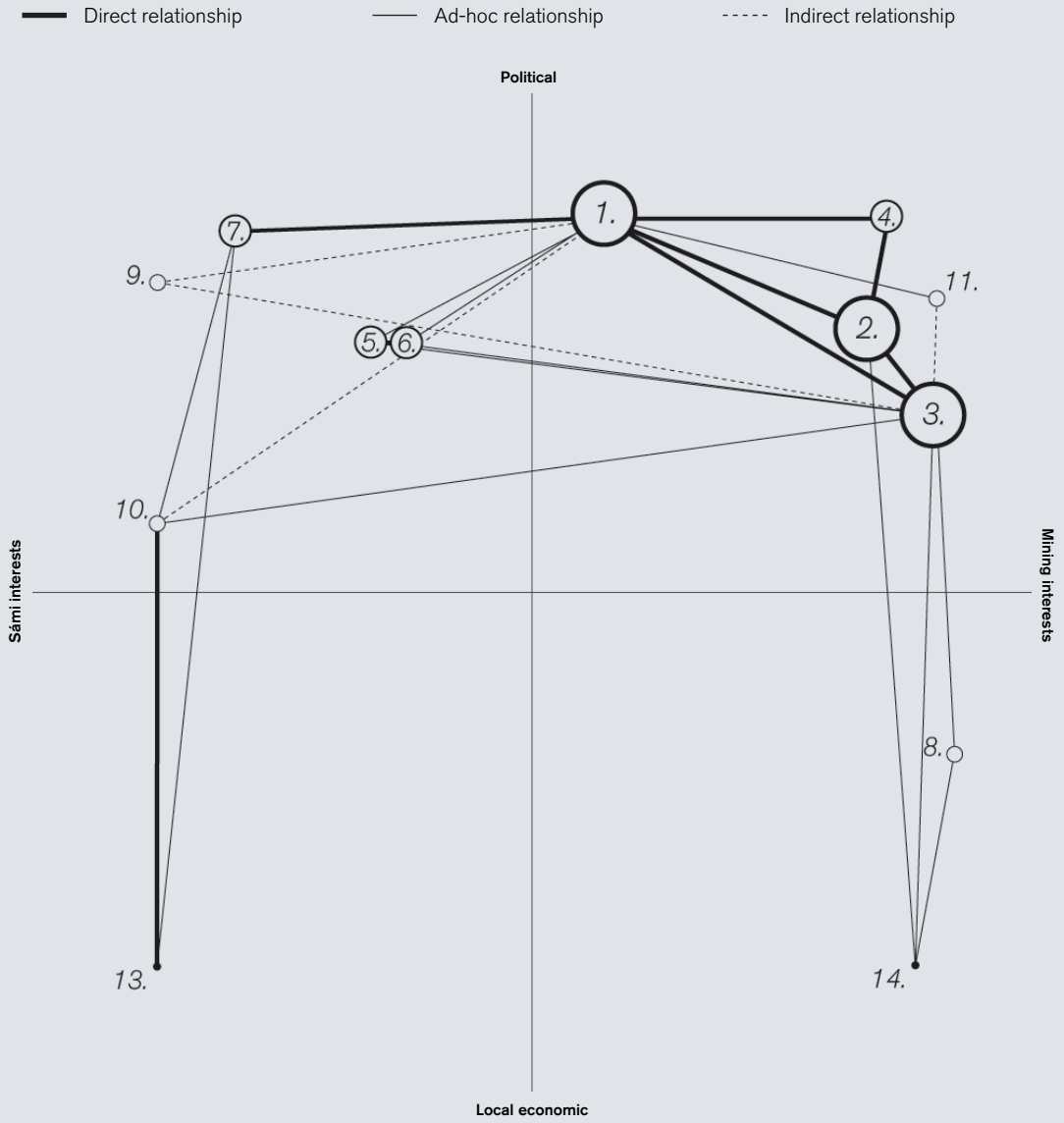
As stated earlier, the mine depended heavily on state involvement to survive. At the time first organisations looking after Sámi interests originated, with the Norwegian Sámi Association (*Norske Samers Riksforbund*) as its most dominant voice. The Lapp Bailiff has been replaced by the Norwegian Reindeer Husbandry Management (*Statens Reindriftsforvaltning*), which was a section in the Ministry of Agriculture. As part of Norway's continued strive to modernize and control the countryside, the practice of reindeer herding became heavily controlled following the Reindeer Herding Agreement of 1976. According to economist and prominent researcher on the case Erik S. Reinert, a drastic fall in income of the reindeer herders can be accounted to this specific agreement, and a "failure of the Norwegian Department of Agriculture to understand key factors distinguishing sub-Arctic herding from sedentary agriculture"[x]. At the end of the '70s Sámi rights became increasingly debated, and as related to the powerrelations diagram of 1950, the Sámi interests are being looked after more. Nevertheless, political decision-making was still framed in favor of mining interests.

Citations

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Figures

▶ 7.16 Stakeholder analysis surronding mine development in 1980.
Image by author.



Level I: power to veto
1. Ministries (Storting)
2. Sør-Varanger Municipality (Komunne)
3. A/S Sydvaranger (Mining company)

Level II: primary consultants
4. County council (Fylke)
5. Norwegian Directorate for Nature Management (Direktoratet for naturforvaltning)
6. Norwegian Pollution Control Authority (Statens forurensningstilsyn)
7. Norwegian Reindeer Husbandry Management (Statens reindriftsforvaltning)

Level III: strong media actors
8. Norwegian Confederate of Trade Unions (LO)
9. Nature Protection Association (Naturvernforbundet)
10. Norwegian Sami Association (NSR)
11. Federation of Norwegian Industries (Norges Industriforbund)
12. Norwegian Employers' Confederation (Norsk Arbeidsgiverforening)

- Level IV: local influencers
  13. Pastoralists
  14. Locals

Level V: insignificant
Prospecting companies
Norwegian Public Roads administration (Statens Vegvesen)
Norwegian Water Resource and Energy Directorate (NVE)
Varanger Kraft (Municipal owned)
Nature and Youth (Natur og Ungdom)
Confederation of Norwegian Enterprise (NHO Arktis)

1980-2020

Mine production

Within this period the mine has seen two opening periods, from 1980-1996 (through state ownership) and from 2009-2015 (through Australian company Northern Iron Ltd). Even when a mine is out of production it acts much like a sleeping volcano, as economic processes surrounding the mine go on. Ownership of, and investments in the mine have shifted often during these periods with the sole aim of reopening the mine.

Despite the opening of the Bjørnevann east bank, being dependent on state funding, and failing to up its profitability, resulted in an ultimatum from the state in 1985. The mining directory was given 10 years to make the mine profitable. When it failed to do so, government fundings stopped in 1996, which resulted in the closure of the mine. Then a period of ownership transferrals started, shipping company Tschudi for a time owned the mine before Northern Iron Ltd took over and started operations in 2009, with Tschudi as dominant owner (51.5%)[27].

In 2015 the mine closed following a drop in the global iron ore prices. Tschudi took control of the mine and started making plans for reopening. The new plans have been accepted in spring 2019.

Sea tailings

Already from the start of the mining operations environmental impacts of sea tailings became debated as fishermen in 1910 worried that the stream would carry the waste into the Varangerfjord. As Svein Lund describes the long history of sea tailings in the area as follows:

> The discharge was first situated in the mouth of the Langfjord, later it was moved somewhat inland to the fjord. A stone wall was built to which the emission was to be kept inside, but soon it became full and the emission spread further. At the two emission points, the fjord was almost completely filled up. In the 1970s, the discharge was to move out into the Bøkfjord, and emissions to the Langfjord should only be a reserve for incidental use. Nevertheless, emissions to the Langfjord exceeded on a large scale. Waste from pellet mills was also discharged here. SFT [Norwegian Pollution Control Authority] also gave the company a license to discharge dioxin-containing waste on top of the old waste.[28]

The fjord that was initially 60 meters deep and 400 meters wide got reduced to 1 meter deep and 30-40 meters wide. In 2007 there have been attempts to make the SFT dredge up the Langfjord, but without result[29]. After the Langfjord, now the Bøkfjord continues to be the outlet for mining waste. As opposed to the Nussir-case, reopenings of the mine, and specifically the continued pollution of fjords, is barely contested. Koivurova and colleagues, following conducted



Citations

[27] Koivurova, T., Buanes, A., Riabova, L., Didyk, V., Ejdemo, T., Poelzer, G., … Lesser, P. (2015). 'Social license to operate': a relevant term in Northern European mining?

[28] Lund, S. (2015). Gull, Gråstein og Grums: Omstridde Gruver [Gold, Waste Rock and Sludge: Contested Mines in Norway].

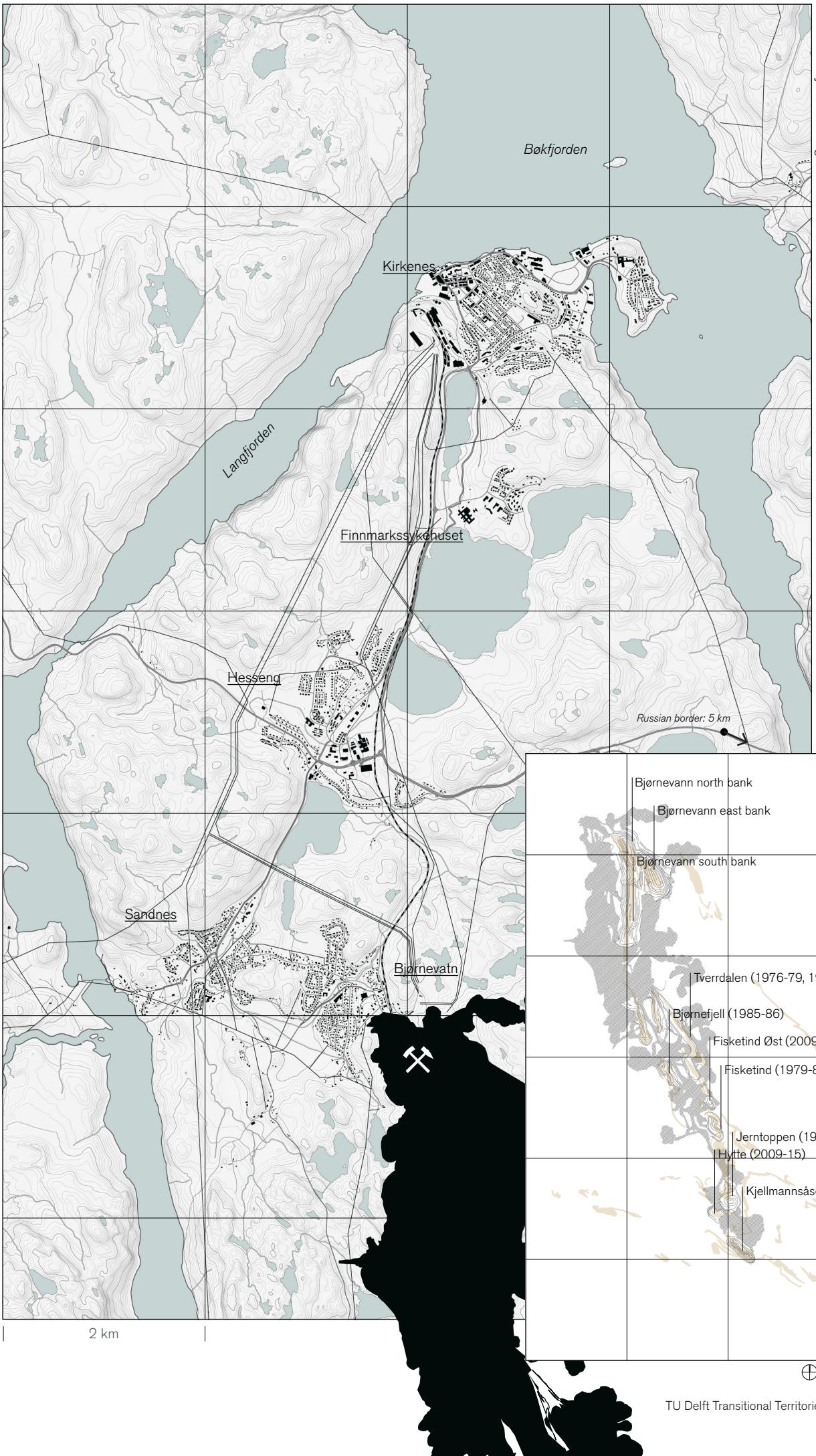
[29] Ibid.

Figures

◀ 7.17 Langfjord dumping area.
Photo by Thomas Nilsen, https://thebarentsobserver.com/en/ecology/2016/10/norway-votes-against-ban-dumping-mining-waste-sea.

▶ 7.18 Map of the Bjørnevatn - Kirkenes zone in 2020.
Adapted by author from: Kystverket, Kartverket, NVE, OpenStreetMap Contributors.

▶ 7.19 Footprint Sydvaranger mine in 2020.
Adapted by author from: NGU.


Kirkenes - Bjørnevatn region
Bøkfjorden
Kirkenes
Langfjorden
Finnmarkssykehuset
Hesseng
Russian border: 5 km
Sandnes
Bjørnevatn
2 km
Mining area footprint in 2020
Bjørnevann north bank
Bjørnevann east bank
Bjørnevann south bank
Tverrdalen (1976-79, 1981-87)
Bjørnefjell (1985-86)
Fisketind Øst (2009-15)
Fisketind (1979-85)
Jerntoppen (1987-92)
Hytte (2009-15)
Kjellmannsåsen (2009-15)
2 km

interviews in the Kirkenes area to assess the social license to operate for the Sydvaranger mine, state the following:

> One interesting point in the interview material is the weight both the local political system and state agencies give to employment when 'balancing' various concerns, or in the words of one local mining critic: '(environmental) monitoring is a waste of money. No matter what the result is, if there is an established company providing employment, nobody will say "no", just carry on'.[30]

The long tradition of providing for employment in this specific area outweighed environmental assessments, and the possibilities for the public to intervene. This form of collective memory is further backed by the Norwegian Confederate of Trade Unions, who also highlight the inclusive nature of what could generically be seen as a business run by man:

> The mineral industry has a long and proud tradition in Finnmark. (...) This industry has for generations offered year-round good employment, income for service and support personnel, increased community growth, spin-offs that many have benefited from, and not least, is a business wherein women and girls have contributed significantly. The best drivers of the big mining trucks at Sydvaranger were women.[31]

Power relations 2020

Some changes in stakeholders happened in between 1980 and 2020, in 1989 the Sami Parliament opened, becoming the primary consultant to safeguard Sámi interests - albeit without any decision-making power. Many changes happened to the governing of reindeer towards the way it is governed nowadays (see page 34 and 35 for more info). As stated earlier, the Finnmarks eiendommen Finnmárkuopdamat (FeFo) became a powerfull yet neutral player. Furthermore, the Norwegian Directorate for Nature Management, and the Norwegian Pollution Control Authority merged in 2013 to form the Environment Agency (Miljødirektoratet).

Although the analysis definitely points at improvement regarding Sámi interests, still most of the powerfull stakeholders are situated on the mining interests side. In areas where the tradition of mining and creating jobs is not so high as in the areas around Kirkenes, one can expect more heavy debates on the use and claims of land and mineral resources. As Siv Merethe Sara explained on the Porsangerfjord during the field trip, the future of Finnmark seems to depend on voices and values.

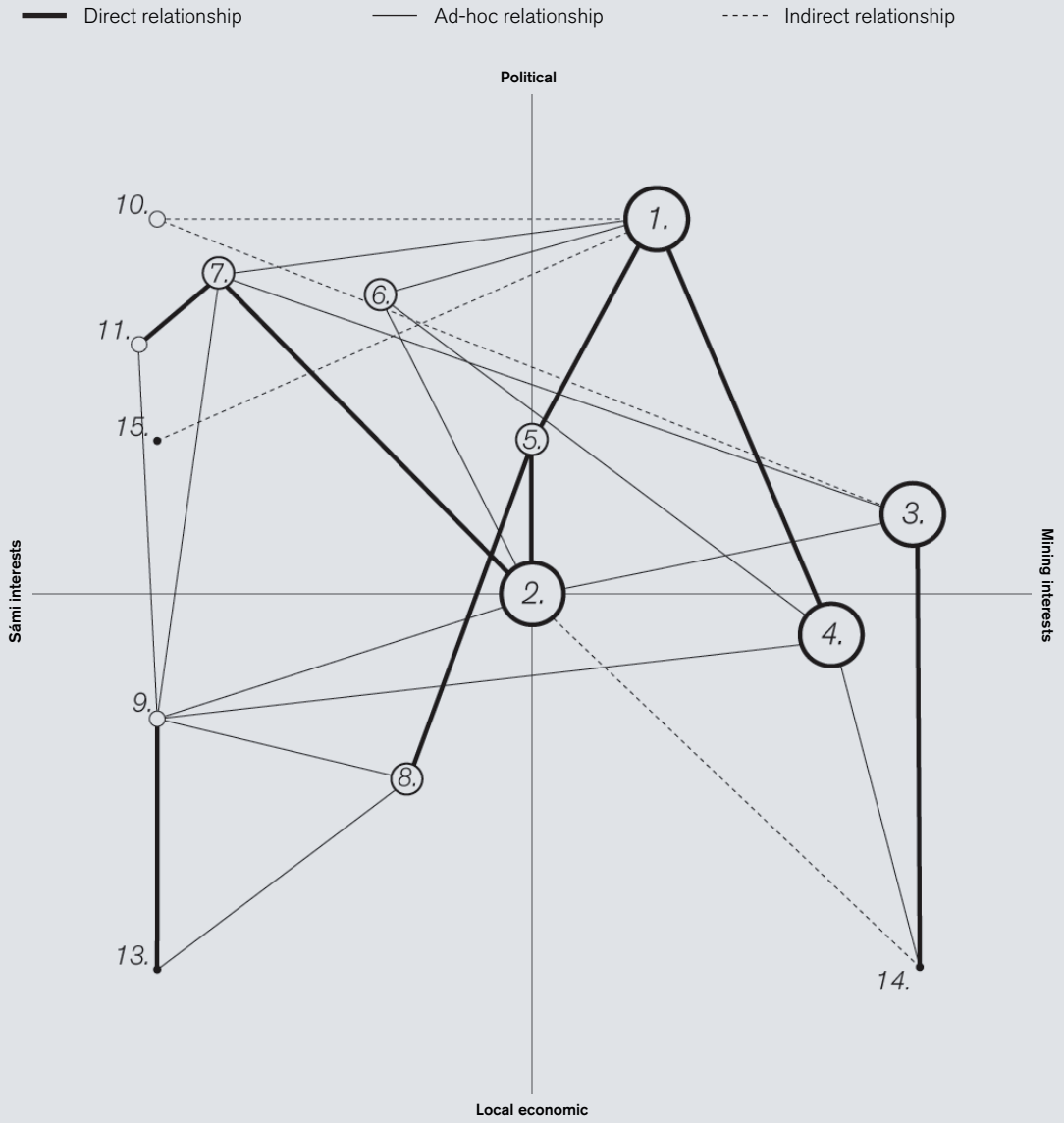
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[30] Koivurova, T., Buanes, A., Riabova, L., Didyk, V., Ejdemo, T., Poelzer, G., … Lesser, P. (2015). 'Social license to operate': a relevant term in Northern European mining?

[31] Wråkberg, U. (2019). Collective memory of the Kirkenes iron mine in sub-Arctic Norway: Its role in forming the future.

Figures

▶ 7.20 Stakeholder analysis surronding mine development in 1980.
Image by author.



Level I: power to veto
1. Ministries (Storting)
2. Finnmarks eiendommen Finnmárkuopdamat (FeFo)
3. Tschudi Group (Mining company & Port)
4. Sør-Varanger Municipality (Komunne)

Level II: primary consultants
5. County council (Fylke)
6. Environment agency (Miljødirektoratet)
7. Sámi Parliament (Sameting)
8. County governor Øst-Finnmark (Fylkesman)

Level III: strong media actors
9. Pasvik 5A/5C district Board
10. Nature Protection Association (Naturvernforbundet)
11. Norwegian Sami Association (NSR)
12. Norwegian Confederate of Trade Unions (LO)

- Level IV: local influencers
  13. Pastoralists
  14. Locals
  15. Nature and Youth (Natur og Ungdom)

Level V: insignificant
Prospecting companies
Norwegian Public Roads administration (Statens Vegvesen)
Norwegian Water Resource and Energy Directorate (NVE)
Confederation of Norwegian Enterprise (NHO Arktis)
Varanger Kraft

Planned developments

New plans for industrial developments in the area surrounding the mine nowadays are manifold. Firstly, Tschudi's plans for the development of the Sydvaranger mine have been accepted by the municipality. The issue that has been most debated by the municipal board is, unlike the debates of the previous opening of the mine, this time not related to the tailings into the Bøkfjord, but rather the doubling (!) of the on-land waste piles, creating five new high mountains that reach from 100-140 meters above the current surface level[32,33].

In addition, in anticipation of the opening of the Northern Sea Route, five port areas have been planned, of which KILA (Kirkenes Industrial Logistics Area) - strategically situated on top of the waste pile in the Langfjord - seems most likely to be developed soon. The other four are planned for the adjacent Tømmerneset Peninsula, out of which one oil terminal is planned on top of approximately 7,000 years old rock carvings. However, the CEO Jocob B. Stolt-Nielsen is confident that the carvings "(...) will not be a problem for a terminal at Gamneset"[34].

Another much debated industrial development is that of the Arctic Railway, which should after completion connect Kirkenes with the Finnish town of Rovaniemi, completing a corridor through the Baltic states to Eastern Europe. Strong opposition to these plans is expressed by the Sámi Parliaments of both Norway and Finland for threatening their lifelihood. As of today it is still unsure if the Railway will be developed.

Citations

[32] Wråkberg, U. (2019). Collective memory of the Kirkenes iron mine in sub-Arctic Norway: Its role in forming the future.

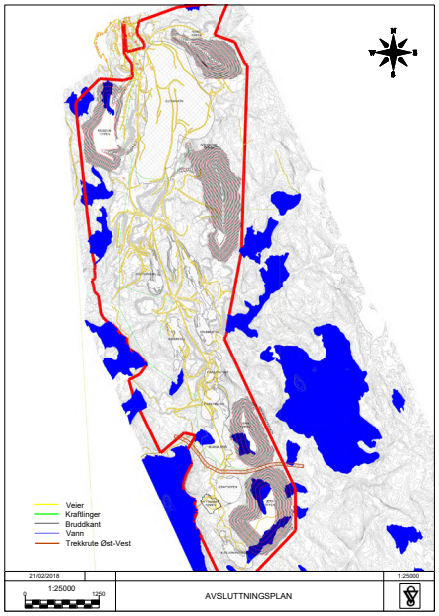
[33] Sydvaranger. (2018). 5.5.4 Gråbergstrategi og deponiplan.

[34] Nilsen, T. (n.d.). Rock art sensation discovered at site for Arctic oil terminal.

Figures

◀◀ 7.21 End of life situation Sydvaranger mine (2040), 5 new mountains reaching 100-140 meters above the current surface.
Image by Sydvaranger. (2018). 5.5.4 Gråbergstrategi og deponiplan. Retrieved from https://www.dirmin.no/hoering/sydvaranger-gruveomrade-i-sor-varanger-kommune-driftskonsesjon

◀ 7.22 Visualization of KILA (Kirkenes Industrial Logistics Area, placed on top of mining waste.
Image by Tschudi (n.d.).





Conclusions

Research questions:
e. How have past processes influenced the development of herding and mining over the past century?
f. What were historically the actors and stakeholders involved in the development of the Sydvaranger mine and what were their power relations?
g. How did political-economic processes reshape socio-territorial identity over the past century in Finnmark?

Drivers of loss of culture
Since newer technologies enabled the extraction of the iron mineralizations first discovered by Tellef Dahl, the Sydvaranger mine has been operating under Swedish-German ownership before the war and under the Norwegian state in the years after. It's history wasn't without hurdles. Throughout its time it has struggled with keeping the mine opened, and keeping the proud workers employed. Prior to the mine the isolated area can be identified as multiethnic, housing Finnish, Norwegian, Sámi (Nord, Enari and Skolt) and Kven people. Over the course of one century, the area shifted from a multicultural population living mainly of the fruits of the land towards a more monocultural predominantly Norwegian area, mainly challenged by job availability. This need for job availability makes the people here advocate the reopening of the mining developments sooner.

The flip side of the extraction of iron in this area has always been (and is still disguised under the recurring themes of today) industrial progress, development and modernization. In fact, the mine was initially used as a state tool for the modernization of Norway, helping to modernize not just the final destinations of the processed ore, but also the direct surroundings of the mine. It is motivated to understand the developments of the mine as the physical connection between 'modernization' and 'norwegianization' in this area. The amount of new industrial developments, that are primarily enabled through the constant development of the mine and the nearby towns, now threatens the livelihood of the Sámi from a much larger scale through the planned railway connection.

What we can furthermore conclude is that the practices of resource mapping and urban planning have a tendentious role in answering to their respective scientific backgrounds. And in order to strengthen cultural diversity, has to try to reverse processes of territoriality, in order to grant more autonomy to its inhabitants

Role of the state
Although state measures have had its effect on improving decision-making for the Sámi, there's still much room left for improvement. All of the measures done by the state help the Sámi grow stronger in voice (through the installment of the Sámi Parliament and the FeFo-board) but don't grant full decision-making or the right to veto damaging projects. Therefore it is questionable up to what extend the ILO-169 ratification of Norway is really lived up to. The fact that reopening of the mine was accepted without much opposition - both from Sámi as well as environmental protection groups - indicates the intensity of the sociopolitical layer, directed towards furthering mining operations.

SOCIO-TERRITORIAL REORIENTATION

Outline

In this chapter I outline the importance of holisticity in urbanism and geology practices. Furthermore I describe the endogenous development model and how it could potentially help to create a collective framework of knowledge building in Finnmark.

"T1

It is time to take back value. For many, value has long been dismissed as a concept so thoroughly compromised, so soaked in normative strictures and stained by complicity with capitalist power, as to be unredeemable. This has only abandoned value to purveyors of normativity and apologists of economic oppression.

Value is too valuable to be left in those hands."

Massumi, B. (2018). 99 Theses on the Revaluation of Value, A Postcapitalist Manifesto. University of Minnesota Press. (Emphasis in original).

08.





08. Socio-territorial reorientation

Introduction

With fundamental cultural differences at the core of decision-making in Finnmark, disputes are happening and growing in form and numbers. At the core of the problem lies the different worldviews, and different valuations of land. The mapping of resources, and the subsequent growth of mining enterprises, pressurizes the Sámi into gradually giving up their land. The ongoing project to modernize needs to be questioned. Western knowledge, deeply embedded within modernity, can learn from traditional ecological knowledge, values, and ethics. And subsequent governance structures should in term be able to respond.
In order to develop the base, I propose in this chapter a framework towards the revaluation of values and ethics. This is meant to be an ongoing project that finds its worth precisely in its continued adjustments in response to the accumulation of place bound knowledge.

Holistic responses to macroeconomic developments
Where extractive industries seek to develop the local economy, the mere fact that resources are finite, disregards that this type of development can be sustained over the long-term. This socio-territorial reorientation starts with the depiction that economic and job growth in Finnmark is often wrongly conceptualized as spatial development. The reality for Finnmark counterintuitively tends to show a negative correlation through increasing disputes over land. Instead opportunities need to be found in the coexisting, covaluation and coevolving of culture. The diversification of the local economy should be preferred in order to supply an alternative to macroeconomic developments.

Arctic Norway has many qualities of its own, emerging from long cultural ties to the landscape and the sea. In response to the destructive modes of macroeconomic developments, we have to find ways to increase the competitiveness of the local economy, based on long term sustainable use of natural and cultural resources. Through the concept of endogenous development such shifts of the system are theorized.





Citations

[1] Garofoli, G. (1993). Economic development, organization of production and territory.

[2] Boisier, S. (2005). Is there room for local development in a globalized world?

[3] Ibid.

[4] Vázquez-Barquero, A. and Rodríguez-Cohard, J. C. (2016) 'Endogenous development and institutions: Challenges for local development initiatives'.

Figures

◀◀8.1 Natural resources belong to the people mural (Vardø).
Image by author.

◀ 8.2 Anti-mining pillars in the Sámi University, Kautokeino.
Image by author.

Strata and articulations

Holisticity in urban planning

Urban planning has a tendentious role in its delivering of projects, where it often happens within a modern framework. Our projects fail to reach a fully holistic perspective, and expand on territories beyond the project site. To be more holistic we should always place our project in a global framework, and understand who we're designing for, what are the histories of the land we're designing on, and what are the areas where the materials come from. The strata and articulations help in framing that more holistic perspective. Ultimately, urbanism should move away from its fixed site understanding and start understanding how to create mechanisms for combined knowledge building. Knowledge building can be seen as a way of reterritoriality as, when used strategically, it could undo mappings that disregard many factors of life.

Holisticity in resource mapping

The resource mapper is through its mapping of the underground, valuating the ground surface at that point in time. In doing so some aspects of life are made less significant in an attempt to delineate the underground as 'mineral rich'. Therefore understanding how resource mapping could be not a thing in itself performed by private companies, but a part of a collective framework of knowledge creation, could make resource mapping more socially just.

Endogenous development

Towards inclusive growth

According to Garofoli endogenous development effectively means "the capacity to transform the social-economic system; the ability to react to external challenges; the promotion of social learning and the ability to introduce specific forms of social regulation at local level which favour the aforementioned points"[1]. Therefore it refers to the long term local capacity to produce an answer to surges in macroeconomic opportunities.

Boisier categorizes governance of the system as to function over four levels: the political (1), economic (2), scientific and technological (3) and cultural (4) in which decentralization must be favoured. The political level should aim at increasing the local capacity to take decisions on development, the local capacity to design and execute developmental policies and the local capacity to negotiate in this process. The economic level should be aiming at local reinvestment of part of the surplus value in the production chain to measures to diversify the local economy, making long term sustainability its central referent[2]. Mining companies in Finnmark now are able to work without such refundings to the local community. The scientific and technological level is the internal capacity of the system and should be aimed at generating knowledge able to create qualitative changes to the system and to produce the support of local initiatives. The cultural level aims at producing a kind of collective matrix. The cognitive framework plays out as a key ingredient for the effectiveness of endogenous development[3].

Vázquez-Barquero and Rodríguez-Cohard point out that specific actions to be taken can be categorized in three dimensions of endogenous development, an economic, institutional and political dimension[4]. The economic involves a system of goods production for local entrepreneurs,

this should be strongly tied with institutions, with a set ambition of technological change and innovation. In this way it aims at combining (traditional) knowledge with creativity in order to enhance value creation and increase local competitiveness.

Institutions play a leading role in the integration of economic and social actors into the system[5]. Finnmark has already made important steps in the development of institutions. In terms of academic institutions the university of Tromsø already has several campuses on dispersed locations around northern Norway: Alta, Kirkenes and Hammerfest have campuses. In Kautokeino there is the Diehtosiida campus comprising of the Sámi university of applied sciences (Sámi allaskuvla), the Sámi archives and the language department of the Sámi Parliament. The system of institutions should comprise of a network of relationships, active collaboration and collective knowledge building. Special focus should be on incorporating social and cultural values[6].

The whole system is instrumentalized through political participation in the system. Instead of the prolonged strengthening of extractive industries, the county governors and the FeFo board should be appointed to stimulate coordination, and favor local initiatives with multiple objectives[7]. To gain a more fair decision-making process, counter-mapping can prove to be an effective tool into understanding the real value of life on surface. A collective knowledge database of the landscape could proof to grant even more resiliency against extractive industries[8].

Recommendations

Inclusive growth measures
Endogenous development aims at local development over growth through exploitation of resources. It is, in effect, creating a system that helps create a combined socio-territorial identity in which governance should be aimed at increasing the local capacity on the long term to respond to external challenges. Mechanisms to guide endogenous developments are manifold. According to Vázquez-Barquero & Rodríguez-Cohard (2016) they depend on the development of (1) innovation and human resources, (2) networks and chain values, (3) institutions, social

Citations

[5] Vázquez-Barquero, A. and Rodríguez-Cohard, J. C. (2016) 'Endogenous development and institutions: Challenges for local development initiatives'.

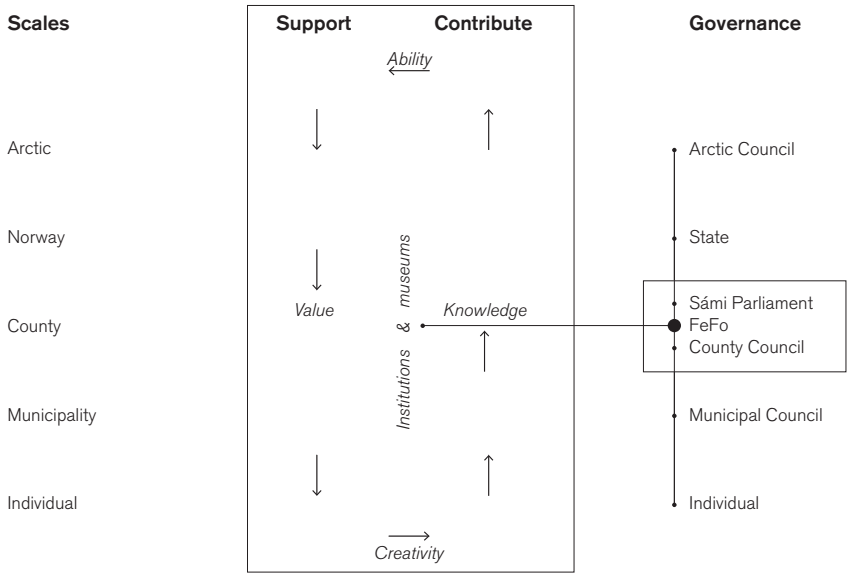
[6] Ibid.

[7] Ibid.

[8] Lassila, M. M. (2018). Mapping mineral resources in a living land: Sami mining resistance in Ohcejohka, northern Finland.

Figures

▼ 8.3 Enhancing the economy through an endogenous development perspective. Aimed at collaboration across scales. FeFo, as combination of the Sámi Parliament and the County Council should get a central role in the organization of economic opportunities, according to a collaborative knowledge and value creation system.
Made by author.



capital and governance, (4) polycentric development and infrastructures, (5) environment and natural resources, (6) creativity and entrepreneurship[7]. Spatial planning aimed at endogenous development should try to incorporate all in a regional polycentric model.

Institutions as catalysts

Institutions have a key role to play in these developments. In Finnmark already there are dispersed universities and other institutions over several settlements, this is a chance to build further upon. The knowledge institutions should always try to gain direct connections with cultural institutions like the large amount of museums. One challenging aspect is the distance between the centers. Herders travel all around Finnmark with their flocks, in every herding district there should be the possibility to reflect, explain and document the land. Endogenous development depends on good networks and clustering of opportunities to be competitive. Further research should be done on how to respond to this challenge for Finnmark. The role of FeFo within this framework should be as a guiding and mediating one.

The knowledge project

Knowledge building from a combined perspective has much potential towards better forms of coexistence. However, this is a very slow process, and the rapid transitions in the Arctic ask for quicker solutions. For that governing bodies need to acknowledge and take responsibility for the impact of the policies that are made. Urbanists and resource mappers draw often within a fixed project boundary, and are therewith part of larger projects that fulfill political goals, but - as this thesis has sought to explain - these are not always justifiable. We should become more critical towards the roles that our projects play within the larger societal framework, especially in the context of growing resource demands.

Countermapping

It is better to gain knowledge over singular mining projects, and see how they grow (territorialize) before operations, in order to understand how to respond to them. As was the case for Nussir, early negotiations and frequent talks with the residents of Kvalsund generated goodwill for the mining project. The building of this project, in terms of mappings, shareholders, local and municipal support grew so strong that apparently the only option was that the mine would eventually come. While still in negotiation with Nussir in 2017, reindeer herder Mikkel Nils Sara explained that he felt pressure from all sides. The counterproject, is the strong cultural resistance towards the development of the plan, already in an early stage. In the Finnish part of Ohcejohka, interest from a mining company into a specific area turned quickly into a resistance group. This group started counter-mapping the area through excursions on the landscape and, by mapping the living land, the mining company eventually quit its interest[7].

CONCLUSIONS

Since the early seventeenth century, science has been dominated by positivism (also called logical positivism or rationalism). It is an approach that assumes the existence of a reality driven by immutable laws based on the search for universal truths. The role of science is to discover these truths, with the ultimate aim of predicting and controlling nature. Science consists of value-neutral descriptions of objective events in nature, with the assumption that scientists themselves are detached from the world and operate in a value-free environment. Positivism uses reductionism, which involves breaking a system into discrete components, analyzing the components, and making predictions on the basis of the analysis of the parts. Knowledge about the world is then synthesized into generalizations and principles independent of context, space, and time.

Berkes, F. (2008). Sacred Ecology (Second). New York: Routledge.

09.





09. Conclusions

Recap problem statement

The surge in macroeconomic development is an enormous economic opportunity for residents of Finnmark as related to its fragile socioeconomic state. However, the projected development of mineral mines and the increased dependency on the resulting larger socio-technical systems are considered main threats for the indigenous practice of reindeer herding. Current governance is guided at the development of the mining industry and is by these means responding to the surge in macroeconomic developments. Local support is grounded in its fragile socioeconomic state, while these developments are impediment to Sámi indigeneity. The problems are mainly related to values, coming from different worldviews, informing different forms of knowledge. The modus operandi of resource mappers and urbanists, coming from the modern, non-holistic point of view, has a tendentious role into privileging one worldview over the other. As the landscape gets increasingly perforated in the search for minerals, it's socio-territorial identity is getting increasingly fractured.

Part 1: Problem analysis

Research questions:
a. How has Norwegian governance influenced the discussion surrounding the Sámi and mining developments?
b. How can we define the socio-territorial orientation of Finnmark, related to the development of the mining industry?

Autonomy
During the course of history, Sami culture had its challenges to overcome, these have left its lasting mark on the culture today, and strong struggles over identity. As was the case in the Nussir developments, this complex cultural history was overlooked in the decision-making. Through the installment of the Sámi Parliament, and the transfer of land rights to FeFo the state has taken measures to help recover the Sámi culture. However, strong opposition related to the opening of the mining industry, and inability to grant more autonomy to reindeer herders, indicate that the state struggles over recognizing its real impact on the Sámi, much of which can be explained through the history of the territory. Furthermore, the state's dichotomic nature of decision-making has to be highlighted. On the one hand it attempts to help recover the Sámi, and on the other it attempts to capitalize on the vast amount of resources in the ground. What the state fails to acknowledge with the Northern Area Investment program, facilitating the plans for the development of the mining industry, is its own role in the alteration of the ethnogeographic composition of Finnmark. Furthermore it fails to maintain its promises that it did through ratifying the ILO-169 convention on indigenous and tribal peoples, making full indigenous sovereignty on these lands still far-fetched. The state still has a responsibility in helping the Sámi strengthen their culture.

Modernization
Through many years of living with nature in the harsh environments of the Arctic, the Sámi have established a long-lasting cultural relationship with the landscape. Worldviews of the Sámi find their origin in these relationships. These worldviews are in many ways directly opposed to modern worldviews. However, the state is still aimed at maintaining modern development ideals in the rural environments. This can, among other things, be seen in the fact that Norway has a Ministry

Citations
[1] Reinert, H. (2016). About a Stone: Some Notes on Geologic Conviviality.
[2] Aufderheide, P. (2007). Documentary Film: A Very Short Introduction.

of Local Government and Modernization. Helping the Sámi strengthen their culture implies then that the state in its decision-making also needs to acknowledge traditional knowledge. The only way to do this is to understand how the Sámi could be granted more autonomy.

Part 2: Research design

On-site reading

Research questions:

a. How can the field trip, journal and documentary broaden the scope of the thesis?
b. How can the field trip, journal and documentary broaden general scientific knowledge of indigenous issues?

The documentary is a counter narrative to existing structures of story telling in the north. As Reinert (2016) explains:

> The nation is embarked on an epic (re)conquest of the north, a magical adventure of wealth and riches to rival that of the oil finds. At trade shows and conferences, in editorials, interviews, and televised debates, politicians, magnates, developers, and entrepreneurs conjure the north as a vast frontier, a repository of unrealized wealth—a landscape replete with rare earth and precious minerals, awaiting only the transformative labour of human enterprise to yield its hidden riches[1].

Norway profiles itself as a green-social state, but in the making of the documentary we uncovered a new face of this Scandinavian country. The north is a vast frontier, with complex, interdisciplinary problems. Various disciplines are taking different perspectives on the issues in Finnmark, leaving the sociopolitical landscape fractured. The vast landscapes of Finnmark, seem quite empty at first glance. However, during the field trip we discovered that the meta-level of social, environmental, economic and cultural uncertainties are strongly interlinked, illuminating the sociocultural fragility of Finnmark.

The most striking insights were obtained from the interview with Siv Merethe Sara and Per Alf Sara. Siv Merethe explained to us that the future of Finnmark depends largely – if not fundamentally – on new improved ways of communication and a re-evaluation of the most important values. The making of the documentary and the journal is one of our answers to their issues. It has pushed us to refine and shape the complex issues to a wider audience, thereby also training ourselves into the communication to officials and residents of these places.

As we argued with the Knowledge Argument, new first person knowledge is needed - especially - in regard to Traditional Ecological Knowledge, to get a holistic view of the territory. This asks for a broad analysis, incorporating especially perspectives currently neglected or not well understood in and through Western science. If indigenous issues cannot merely be understood through general scientific knowledge, mapping is not a sufficient tool to translate and consider these problems. One method to understand this is through film making. According to Aufderheide (2007), film making can tell us something worth knowing about, while it is also grounded in life[2]. These inequalities cannot simply be mapped, it requires conversation and it requires the urbanist to be there in order to understand the place.

However, we are conscious that documentary making as a medium does have it limitations, in a sense that it is for a large part (our) reflection about the realities in Finnmark. Therefore we turned to the making of the journal to subjectively - but foremost - objectively validate our story, and be as transparent in our motivations and intentions into further research. For both of us the fieldtrip, documentary and journal has been the base of our project. Insofar, that Boaz is mainly focussing on communicative issues on industrial impact on reindeer herding on Kvaløya, and Mark's focus on value creation in Finnmark. Ultimately the journal can be seen as a mental mind-map, a database from which we pick pieces, to elaborate on in our project.

The documentation of the field trip - through the documentary making and the journal - aided us with a tool to start investigating these issues literally in the field, while at the same time starting a discussion on western perspectives. It is only when we start to incorporate traditional forms of knowledge into decision-making, that we can make fair policies and design. We might be able to produce change and shift in relation to where we are positioned as researchers/viewers in the world. Going to Finnmark has inspired us greatly for our own theses, and we have been able to inspire others too, as is already apparent in new graduate projects.

Spatial reading

Research questions:

c. What are hotspots for the development of the mining industry and reindeer husbandry?
d. What are expected to be the zones of conflict between herding and mining?

Conflicts

In this chapter I delineated the (meta-) spatial distribution of (potential) mining projects versus reindeer herding. The goal was to understand the spatial distribution of the mining industry and related possibilities of conflict with reindeer herders. Apart from mapping a few zones, as of this point it is impossible to map potential conflicts without deepened geological knowledge. Companies can decide to keep sampled potentialities of the underground away from the public (as happens now with GoSiLi in Kautokeino). Through this way they can build up their case for mining developments from the underground.

Meta-territoriality

Mining companies already territorialize long before the physical process of mining. This process involves the mapping of resources, gaining investments and gaining local acceptance. The analysis of the Repparfjord-case shows that mining companies in a very early stage already make a claim on land. Their claim grows in size as the company fulfills its goals. This in term puts pressure on those making use of the landscape.

Temporal reading

Research questions:

e. How have past processes influenced the development of herding and mining over the past century?
f. What were historically the actors and stakeholders involved in the development of the Sydvaranger mine and what were their power relations?
g. How did political-economic processes reshape socio-territorial identity over the past century in Finnmark?

Drivers of loss of culture
Since newer technologies enabled the extraction of the iron mineralizations first discovered by Tellef Dahl, the Sydvaranger mine has been operating under Swedish-German ownership before the war and under the Norwegian state in the years after. It's history wasn't without hurdles. Throughout its time it has struggled with keeping the mine opened, and keeping the proud workers employed. Prior to the mine the isolated area can be identified as multiethnic, housing Finnish, Norwegian, Sámi (Nord, Enari and Skolt) and Kven people. Over the course of one century, the area shifted from a multicultural population living mainly of the fruits of the land towards a more monocultural predominantly Norwegian area, mainly challenged by job availability. This need for job availability makes the people here advocate the reopening of the mining developments sooner.

The flip side of the extraction of iron in this area has always been (and is still disguised under the recurring themes of today) industrial progress, development and modernization. In fact, the mine was initially used as a state tool for the modernization of Norway, helping to modernize not just the final destinations of the processed ore, but also the direct surroundings of the mine. It is motivated to understand the developments of the mine as the physical connection between 'modernization' and 'norwegianization' in this area. The amount of new industrial developments, that are primarily enabled through the constant development of the mine and the nearby towns, now threatens the livelihood of the Sámi from a much larger scale through the planned railway connection.

What we can furthermore conclude is that the practices of resource mapping and urban planning have a tendentious role in answering to their respective scientific backgrounds. And in order to strengthen cultural diversity, has to try to reverse processes of territoriality, in order to grant more autonomy to its inhabitants

Role of the state
Although state measures have had its effect on improving decision-making for the Sámi, there's still much room left for improvement. All of the measures done by the state help the Sámi grow stronger in voice (through the installment of the Sámi Parliament and the FeFo-board) but don't grant full decision-making or the right to veto damaging projects. Therefore it is questionable up to what extend the ILO-169 ratification of Norway is really lived up to. The fact that reopening of the mine was accepted without much opposition - both from Sámi as well as environmental protection groups - indicates the intensity of the sociopolitical layer, directed towards furthering mining operations.

Part 3: Socio-territorial Reorientation

Research questions:
a. What mechanisms exist to guide endogenous development?
b. What potential lies in these mechanisms to inform strategically socio-territorial identity forming?

Inclusive growth measures

Endogenous development aims at local development over growth through exploitation of resources. It is, in effect, creating a system that helps create a combined socio-territorial identity in which governance should be aimed at increasing the local capacity on the long term to respond to external challenges. Mechanisms to guide endogenous developments are manifold. According to Vázquez-Barquero & Rodríguez-Cohard (2016) they depend on the development of (1) innovation and human resources, (2) networks and chain values, (3) institutions, social capital and governance, (4) polycentric development and infrastructures, (5) environment and natural resources, (6) creativity and entrepreneurship[7]. Spatial planning aimed at endogenous development should try to incorporate all in a regional polycentric model.

Institutions as catalysts

Institutions have a key role to play in these developments[8,9,10]. In Finnmark already there are dispersed universities and other institutions over several settlements, this is a chance to build further upon. The knowledge institutions should always try to gain direct connections with cultural institutions like the large amount of museums. One challenging aspect is the distance between the centers. Herders travel all around Finnmark with their flocks, in every herding district there should be the possibility to reflect, explain and document the land. Endogenous development depends on good networks and clustering of opportunities to be competitive. Further research should be done on how to respond to this challenge for Finnmark. The role of FeFo within this framework should be as a guiding and mediating one.

The knowledge project

Knowledge building from a combined perspective has much potential towards better forms of coexistence. However, this is a very slow process, and the rapid transitions in the Arctic ask for quicker solutions. For that governing bodies need to acknowledge and take responsibility for the impact of the policies that are made. Urbanists and resource mappers draw often within a fixed project boundary, and are therewith part of larger projects that fulfill political goals, but - as this thesis has sought to explain - these are not always justifiable. We should become more critical towards the roles that our projects play within the larger societal framework, especially in the context of growing resource demands.

Countermapping

It is better to gain knowledge over singular mining projects, and see how they grow (territorialize) before operations, in order to understand how to respond to them. As was the case for Nussir, early negotiations and frequent talks with the residents of Kvalsund generated goodwill for the mining project. The building of this project, in terms of mappings, shareholders, local and municipal support grew so strong that apparently the only option was that the mine would eventually come. While still in negotiation with Nussir in 2017, reindeer herder Mikkel Nils Sara explained that he felt pressure from all sides. The counterproject, is the strong cultural resistance towards the development of the plan, already in an early stage. In the Finnish part of Ohcejohka, interest from a mining company into a specific area turned quickly into a resistance group. This group started counter-mapping the area through excursions on the landscape and, by mapping the living land, the mining company eventually quit its interest[7].

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Research questions

Primary:
From a **holistic approach**, how can analysis into the socio-territorial disputes of Finnmark, contribute to a **reconfiguration of values and ethics** within the modus operandi of geologists and urbanists?

Secondary:
How can a long term strategical project integrate **local cultural values** to respond to **governance** related to the **expansion of the mineral industry** in Finnmark, Northern Norway?

Socio-territorial orientation
Through this thesis I have sought to understand how past processes related to identity, have helped shaping and framing culture, to understand their role in decision-making for the years to come. The analysis explains the general socio-territorial orientation and the complex processes that have lead to this spatial distribution of ethnicities. The understanding of strata have informed the understanding of the way in which mining companies make a claim on land.

The human geophysical force invigorated through the idea of the Anthropocene invites stronger collaboration between the sciences of urbanism and geology. Knowledge obtained through commonly used tools and methods of the practices, historically have shown to be powerful communication devices in decision-making processes. To be holistic, it can not rely solely on its constitutive tools and methods, and its set project boundaries, whereas these have the tendency to move towards a certain fixation in place, favoring the ideology of modernity over indigenous ideologies that depend on flexible usage of space and nature. Furthermore, these tools have shown to be developed from the vantage point of modernity and it's flip-side coloniality. In this thesis I have sought to produce a framework for collaboration.

The question of land is what the knowledge building project revolves around. The question is larger than one thesis alone, and should be made on-site. Aimed at a holistic worldview, urbanists and geologists alike should steer towards understanding collectively values for indigenous and non-indigenous peoples. The tools of the urbanist and geologist, in the reframing of land and culture, should be further assessed and constantly reevaluated, in order to minimize impact.

Based on the earlier named endogenous development theories, I argue that knowledge building from a combined perspective is not only a way forward for the practices of urbanism and geology, it is also a way to build bridges between indigenous and non-indigenous peoples and can serve the purpose of evolving a combined socio-territorial identity.

REFLECTION

"An understanding of an independent human history became the foundation of all modern social sciences, so the convergence – or better, the collision – of human and Earth histories in the Anthropocene kindles the suspicion that all social sciences and their philosophical foundations have been built on an understanding of the historical process that is no longer defensible."

Hamilton, C. (2017) Defiant Earth: The Fate of Humans in the Anthropocene. Wiley.

10.





10. Reflection

Research and design

Design as material practice

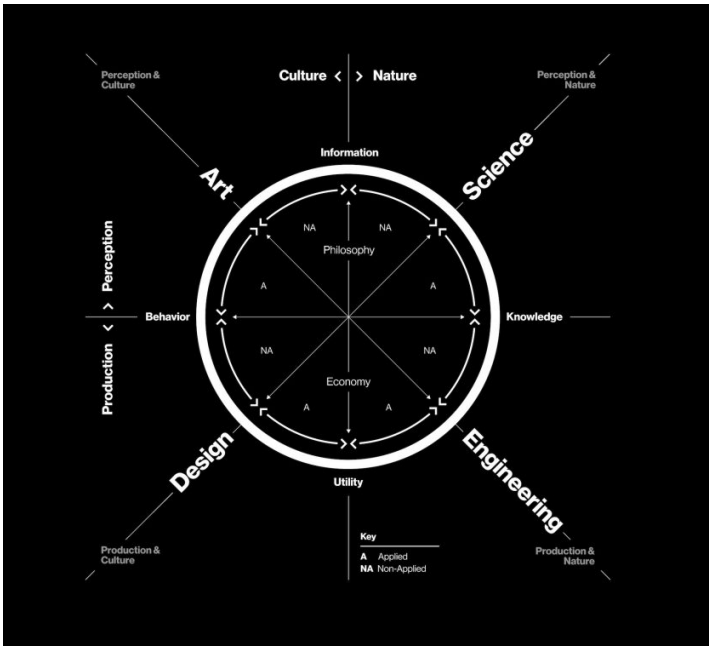
Materials are fundamental for most forms of design. According to some scholars we are now leaving the age of architecture and entering the age of design[1]. Based on the lessons learned in conducting this research - as well as reflecting on the wider intellectual network and events supplied by TU Delft from which I've taken advantage of gratefully – this focus on design enabled through the extraction of materials will be intimately tied with power over land. Here there are some vital lessons to be learned. Research and design converge in possibilities, and it is political-economic processes that enable these possibilities to materialize. This is also where the two relate with territory, and where they show the effect to predetermine cultural transitions, guided by ideology. Conventional urban design has a non-holistic approach to urban environments. Through this scope it is tendentious in its methods, and often contrary to indigenous worldviews and knowledge.

Design as visual media

Film and photography are forms of design. It forms a powerful tool to make known particular local dynamics to wider audiences. The way in which research relates to it is that it grounds its objectives. The shortcomings of research through cartography should also be mentioned in this section, as mapping shows a biased form of social reality. Or as Bélanger (2018) argues, "there are dangerous tensions and inequalities between the paper worlds of extraction and the oral histories of the land and life. The map is simply no longer the territory"[2]. The development of new modes of research on the territory should actively be encouraged on regional urbanism projects. The documentary forms a counter narrative to the conventional forms of mapping precisely aimed at showing life in its full context.

Neri Oxman's Krebs Cycle of Creativity

Reflecting further on the relationship between research and design I would like to refer to Neri Oxman's Krebs Cycle of Creativity (2016). This effectively positions research and design together in a cycle of creativity, to involve art as well. Science and engineering respond mostly to research as the building of objective knowledge, yet this is not necessarily grounded in culture. Design and art are its counterparts responding to behavior, yet this is not necessarily grounded in objective truth. Spatial research to me should have the obligation to respond to art, science, engineering and design, as all of these factors converge.



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◀ 10.1 Neri Oxman (2016). Krebs Cycle of Creativity. Journal of Design. Retrieved on 02-12-2019, from: https://jods.mitpress.mit.edu/pub/AgeOfEntanglement

Research studio topic: Transitional Territories

North Sea: Landscapes of Coexistence

The Transitional Territories graduation studio examines the modes in which the North Sea as central interface shapes political, economic, ecologic and cultural transitions on nearby territories, reflecting also on the connection between land and sea. Through the group analysis conducted at the start, interest towards the Arctic started to form, as rapid sea ice recession is reframing political-economic interest in this region. As the surrounding nations of the North Sea are well developed nations, large the demand for minerals in the region is high and still growing. Within the Arctic and North Sea interface lies the project location, Finnmark.

The graduation studio encourages territorial research over several political, economic, ecologic and cultural dynamics, which proved useful in the development of the thesis. Projects developed here move away from the more conventional urban projects focused on the city itself, to assess the other side of urbanism: the effects of urban processes on the planetary landscape. The practice of urbanism is constantly reconfiguring, yet the recognition of the necessity to be involved in these processes constitute enormous chances to give strength to the region.
This thesis has evaluated the direct and cumulative effects of the mineral industry on indigenous Sámi livelihood. Territorialization and territoriality were central themes in the development of the thesis.

Scientific relevance

Methodological

It has been argued before that the map is not any more representational of the territory. It is biased towards only showing specific parts, leaving out much of the local dynamics. Therefore I have sought to respond to this by doing thorough on-site analysis through means of a journal and a documentary. Furthermore, as was also discussed on-site, science is not updated, traditional ecological knowledge, the kind of knowledge that accumulates from generation to generation in order to survive on these harsh landscapes, is what the indigenous Sámi live by. The regional analysis was done to get an understanding of the way in which Finnmark has been territorialized according to different themes. The quantitative mapping excersice only produced some general results, and could therefore have been more enhanced to deliver more knowledgeable results, the scale of it all makes it a difficult excercise. The diachronic analysis on one of the hotspots was done to analyze how over time political economic processes have altered the landscape and its livelihood. Results show the effects of past governance and power relations on creating a zone where people are advocating strongly in favor of mining developments. Through the conducted research I have shown that there is a strong (metaphorical) sociopolitical layer, in the established mining zone of Sydvaranger, which is aimed towards accepting more industrial developments.

Societal

In the Arctic, remoteness and dependability of a low amount of people on large tracts of land is not often understood, and areas open up for mineral extraction to serve for the supposed public good. It is motivated to call this colonization, where specific cultures are strong-armed into the extraction of natural resources. We should be extremely aware that this is happening in different intensities all over the Arctic, and better economic possibilities is only driving it further. The opening of the Arctic National Wildlife Refuge in Alaska to oil and gas explorations[3], the silencing

of indigenous peoples in Russia that obstruct national development goals[4] or the Northern Norwegian policies aimed at developing mineral industries are merely some of the troublesome recent developments.

Ethical issues and considerations

When doing a project on Sámi indigenous livelihood related to the mineral extraction industry important ethical considerations, doubts and challenges emerge. To start with, the effectiveness of mining in Norway. One of the mines discussed in the report is the Repparfjord copper mine. In some perspectives this mine is highly efficient. For example, the mine has an average copper grade of around 1.1%, meaning that (on average) every cubic meter of extracted rock will supply 1.1% copper. An average copper mine in Chile (world's leading supplier of copper) has a grade of just below 0.6%[5], meaning that almost two times the amount of rock needs to be extracted to gain the same amount of copper. Plus the mine in the Repparfjord will be fully electric, and Norway is known for its many dams supplying clean energy. However, the fact that Norway is one of the only countries in the world allowing toxic sea tailings, and that it has policies aimed at coexistence and strengthening of Sámi culture, yet it fails to live up to these as one of the most wealthy countries on the world, show the necessity of this project. Furthermore, mining developments have a lasting effect on not only the landscape, but also on the people living around it, more than we might think.

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APPENDIX

12.





The Advocacy of Destruction

Disentangling reasoning behind the issuing of a license to operate for copper mining company Nussir ASA in the Repparfjord, Kvalsund, Northern Norway

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Abstract–

This paper investigates the motives behind the issuing of a permit to extract copper in the Repparfjord in Northern Norway. The permit grants mining company Nussir ASA the ability to dump 2 million tonnes of waste annually into the fjord, while encroaching inland on calving grounds for reindeer, interfering with two important cultural practices for the indigenous Sámi. Two lines of reasoning in the advocation behind issuing the permit can be distinguished, one about a growing material demand for the energy transition (of which copper is a fundamental material) and the other about local economic growth. In this paper I lay out these lines of reasoning, and its opposition, and add a layer of contemporary literature emerging in the fields of social, cultural and economic geography. I advocate that the issuing of the permit (and larger scale investments in geological mapping aimed at developing the mineral industry) frame further deterritorialization leading to mediatization and loss of culture, as a response to a continued faith invested in technologies to overcome the climate crisis. I then start by framing epistemologically our dependency on mineral resources, in order to inform further spatial research. I advocate that not the *material* itself is what the dependency lingers on, but rather the *service* it grants, supplying a preliminary frame of reference to rethink use of space. Furthermore, I advocate the importance of the human body as a biologic, cultural and ideological entity, as an underresearched phenomena in spatial research and design.

Keywords: *Sámi indigeneity, Kvalsund, Repparfjord, green colonialism, copper extraction, deterritorialization.*

1. Introduction

Kvalsund, a municipality in Northern Norway of around 1,000 residents stretched over an area slightly bigger than the greater London county, has become the center of a national discussion about mine tailings and environmental impacts, as opposed to the development of local Northern Norwegian communities and responding to a rising global copper demand. Reason for the discussion is the recent operating license, granted by the government to mining company Nussir ASA, to reopen and further develop an existing copper mine in Repparfjord on the 14th of February, 2019. Two lines of reasoning can be distinguished in the discussion to advocate in favor for the issuing of the permit, one about a growing material demand and one about local economic development.

The concerns on the other hand arise around two areas of destruction. The first and foremost reason of discussion being the tailings of the mine, the permit allows Nussir to dump (or 'place' as Nussirs CEO Øystein Rushfeldt prefers it to be called) 2 million tons of toxic waste into the fjord. The fjord is one of the national salmon fjords, which is still overcoming the pollution from dumping during the earlier period of opening in the 70's (commonly referred to as the Folldal period) most probably due to a strong undercurrent interfering which makes the layer of sediment thin (Andersson, Finne, Jensen, & Eggen, 2018; Einarsson, 2013). Second reason is the growth of the mines inland, mainly the interfering with calving lands and migratory paths for the indigenous Sámi practice of reindeer herding, a practice which depends on flexibility and the availability of pasture grounds, in order to cope with the challenging environmental conditions (Reinert & Benjaminsen, 2015).

The fact that the salmon in the fjord have historic and present-day importance to the remaining Sea Sámi in the area, together with the discussion around encroachment on pasture grounds, lead the overall discussion about the issuing of the permit, towards one framed and heated by cultural motives (eg. Einarsson, 2013). The Sámi Parliament, the legal body representing the Sámi's interests in Norway, has

appealed the issuing of the permit to the King-in-Council as a next effort to stop the mining operation. Runar Myrnes Balto (parliamentary head of the Norske Samers Riksforbund (NSR) in the Sami Parliament) goes as far as calling the issuing of the permit a "serious violation of Sámi rights" (Norske Samers Riksforbund (NSR), 2019) and the word colonialism is not strange to the discussion either, as I will later discuss.

Often taken for granted, the extraction of copper is deemed necessary, especially as its demand increases under new technologies related to the energy transition. This is politically further advocated by the Norwegian Minister of Trade, Industries and Fisheries, Torbjørn Røe Isaksen, who defends his decision for granting the permit mainly because of the growing material need for the energy transition (Nilsen, 2019). This opens up the common perception that we can't live without polluting and destroying natural environments, and the livelihoods that live of them. Effectively exposing our dependency on energy itself, even under the risks we're commonly confronted with related to the climate crisis. However, this also opens up the necessity to look epistemologically at this commonly assumed dependency, as it is precisely within this epistemology where we might be able to find ways to design alternatives, in order to find ways to mitigate the dependency on these resources ultimately.

This paper consists of two parts. First, I reflect on the discussion which has evolved around the issuing of the permit and the future development of the mine, linking it with theory in order to explain the political economic motives. Second, I turn to copper itself and reflect on its wanted services in order to see whether this sacrifice of land is so deeply rooted in contemporary materialist culture, that it actually meets society's needs. In doing so I try to reconstruct how in contemporary Western culture the extraction of copper in the Repparfjord is advocated on a local and national political economic level and what kind of cultural transitions this sets in motion. Finally, I emphasize the importance of the indigenous counter-culture, in overcoming a continued faith invested in technology and ongoing forms of dispossession through mineral extractivism.

2. Subjected to financial capitalism and ripple effects

Around the world the development of mines facilitates the continued flow of commodities from extraction and production to consumption and waste. The expansion of these mines are often justified under rubrics of modernity and its close relative material demand, while simultaneously coalescing with opportunities of job development and economic growth within the contemporary capitalist system. The continued delineation of mineral resources through (in the case of Norway) state funded geological mapping programs.

Chances for the development of the mineral mining industry in the Arctic are rising rapidly for several reasons: the opening of new northern trade routes, because of sea ice recession (Melia, Haines, & Hawkins, 2016), an expected growth of consumption rates within the coming years (OECD, 2018), the increased accessibility of former so-called 'wilderness' areas through infrastructural and port development (Norwegian Ministries, 2017) and governing bodies that are actively promoting the economic development of the North, in the form of policies and investments. This economic development will open up new opportunities for economic growth of local communities and is furthermore actively welcomed by municipalities because of promises of local development in return (Reinert, 2018). Kvalsund has, like many other Northern Norwegian municipalities a declining and aging population (Nordregio, 2018), leading up to concerns about future job development (as Svend Ingvar Hoel Larsen advocates, head of the Association of Heavy Equipment Contractors [Maskinentreprenørenes Forbund] (Jakobsen, 2019)).

Furthermore, reasoning behind the issuing of the permit in relation to local economic development relates to a sociopolitical construct related to the redistribution of economic wealth revolving around ripple effects [ringvirkninger]. The idea is that through the development of the mine, the area will receive positive 'ripple effects' that will help to economically develop the municipality. The ripple effect phenomena does only represent economic effects however (Reinert, 2016), environmental and cultural ripple effects in this case, grants ground for the opposition to stand on in the discussion.

We might read the development of the mine through Sassen's theory about 'expulsions' (2014). Here she effectively links forms of urban development with growing systemic trends of financialization, that lead to accelerating destruction of land and expanding displaced populations. Finance here has the goal to extract and start a process of circulation of resources in order to foster capitalists modes of development (Sassen, 2014). This can in turn be seen as an uneven center-periphery dynamic of domination of the city

over the territory, firmly posited within socioeconomic and sociopolitical systems, resulting in dispossession of lands and (forced) cityward migrations (addressed for example in Bélanger (2017)).

Aili Keskitalo, President of the Sámi Parliament of Norway, has called the developments around the extraction of minerals 'green colonialism' (Arctic Circle Secretariat, 2018), where the Sámi have to give up territory in order for the energy transition to help the world to its ongoing techno-scientific material demand. A problem which is now evolving in the discussion about more territories of mineral extraction mainly about materials extracted in the Global South and has recently reached the discussion around the United States' green new deal (eg. Rehman, 2019; Gebrial, 2019). What is advocated is that the current capitalist system, puts profit over people and planet (Gebrial, 2019). The advocations of the destruction of lands and the extraction of copper rely in that sense, on continued increasing consumption patterns. The need for the transition towards a sustainable world is widely acknowledged, what is less acknowledged, while of equal if not higher importance, is a need for reduction of consumer patterns and a step away from continued advocation of economic growth. One which is equally framed by a cultural transition.

3. Deterritorialization

The appropriation of mineral resources produce and shape territory according to the ideologies of the parties that carry them out (see, for instance, Raffestin, 2012). Leaving behind giant wastelands far outside of the direct milieu of the new users of the materials. The fact that this has always happened in areas distanced from the city is perhaps the primary reason why these deterritorialized entities are only recently gaining more attention.

When the mineral grade in the ground is high enough and the access to right technology and infrastructure to extract and distribute with positive revenue, accompanied with the wanted political and socioeconomic systems, there will always be opportunities for an ambitious entrepreneur to break apart the natural environment and start digging for mineral resources. In this self-regulation of industries, enabled through political systems, lies great environmental and security risks (Bélanger, 2018).

Because of increased extraction technologies, deposits with lower grades around the world are mined more easily. In this way, technology responds and boosts at the same time the ever-increasing copper demand (Figure 1)(Crowson, 2011). The copper demand around the globe is only expected to continue to grow in the future, at least till 2100 (Schipper et al., 2018).

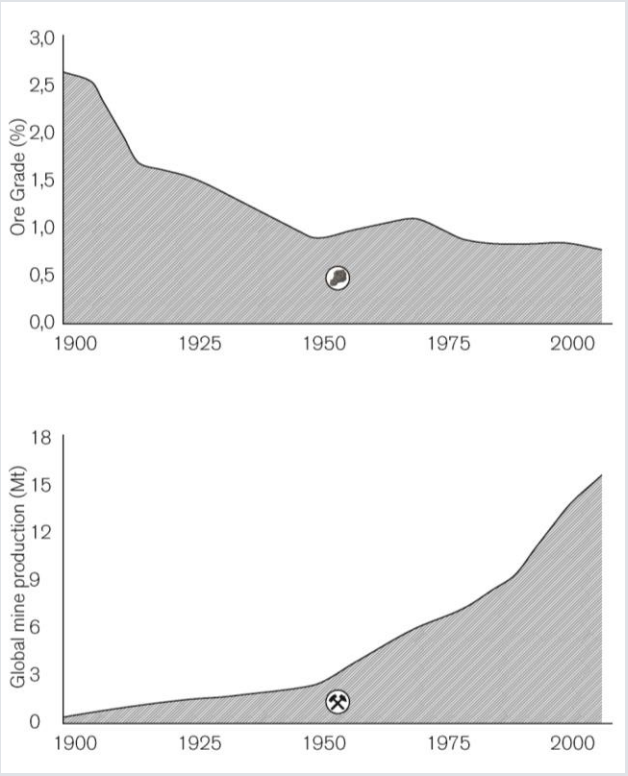


Figure 1 Trends in global mined copper ore grade and mine production. (Adapted by author from Crowson, 2011)

Growth of the mines, as advocated by governments of several countries around the globe, can in that sense be seen as an ever growing faith in techno-scientific materialism to overcome the current climate crisis. By the opening and ever-growing copper mines around the world, this faith is at the same time responsible for at large destruction of lands, dispossession and displacement (Sassen, 2014).

4. Copper and indigenous rights and laws

The Norwegian Mineral Act (19 June 2009, n° 101) states that by law, all metals with a specific weight of 5 grams/m^3 belong to the state. This includes copper, nickel, iron and gold, minerals which are abundant in Northern Norway, and which are increasingly sought after. The Norwegian state advocates the growth of the mineral industry and is funding large scale geological mapping exercises under the framework of the Northern Area Developments [*Nordområdesatsingen*] (Regjeringen, 2015). Therefore the issuing of the permit for the Repparfjord mine is often seen as the first in a row of more mines yet to come.

Uniqueness of this particular context manifests through Norwegian indigenous rights and laws. Norway is in general seen as a country with a relatively high standard of the acknowledgement of indigenous Sámi as distinctive peoples. This enacts, for example, through the Finnmark Act, a law adopted in 2005 which transferred ownership rights of the northernmost county Finnmark from the state towards the Finnmark Estate, a board which is evenly chosen by the Sámi parliament and the Finnmark County Council. However, in Ravna's view, the Mineral Act makes that Norway fails to follow up the ILO Convention No. 169 Article 15 (International Labour Organization (ILO), 1989, § 15), which grants indigenous peoples the right to participate in the use, management and conservation of these mineral resources (Ravna, 2012). Nevertheless, Norway still seeks to develop the mineral industry and is nationally protected by the Minerals Act.

As mentioned earlier, the extraction of mineral resources often coalesces with a sense of necessity to develop in the contemporary world. Former deputy leader of the Norwegian Labour Party [Arbeiderpartiet] Helga Pedersen said the following in a documentary about the Repparfjord mine: "If we're just going to do the old, and don't have the ability to turn the *new* and *modern* into something Sámi, then the Sámi-culture will crumble" (Einarsson, 2013, emphasis added by author). She goes on by explaining that if the majority of people want the economic development of the mineral mines, as opposed to a smaller Sámi community, then the opportunity should be given to the majority. Linking back to the enablement of self-regulation of industries through the political system where the Sámi, as minority culture after years of systematically ruling out language and culture under policies of forced "Norwegianization" from the early 19th till the 1980s, then puts the advocation of the development of the mine in a different light. Indeed, the municipality of Kvalsund has during this time been heavily Norwegianized (Paine, 1957; Reinert, 2018).

We might read the argumentations from Pedersen in relation to the extensive work of historian Fernand Braudel on culture and capitalism:

> Cultures (…) are ways of ordering space just as economies are. While they may coincide with the latter (particularly since a world-economy taken as a whole, tends to share the same culture, as opposed to neighbouring [*sic*] world-economies) they may also be distinguished from them: the cultural map and the economic map cannot simply be superimposed without anomaly, and this is after all only logical, if only because culture dates from even further back in time than the world-economy, impressive though the lifespan of the latter may be. Culture is the oldest character in human history: economies succeed each other, political institutions *crumble*, societies replace each other but civilization continues along its way. (Braudel, 1992 [1979], emphasis added by author)

In that sense, the case of Kvalsund then becomes part of a negative spiral frame within a global setting of increasing amounts of land destruction, with imminent cultural responses at its end. Amplified by ore percentage degradation, and techniques that make the extraction of materials still economically viable, the growing footprint of contemporary global capitalism seems merely a constantly evolving form, where nature is (in paradox to the current climate crisis) increasingly subjected to the logic of extraction and circulation of commodities, now used precisely as a strategy to address the climate crisis. The point that is missed in the debate around the issuing of the permit, and the energy transition that it seeks to address, centers around the continued believe in techno-scientific expertise. The same expertise that produced the climate crises in the first place (Adams, 2019). Primarily because of its quantifiable logic (for example, a windmill and its materials are of a certain price and produce a certain amount of energy), this techno-scientific expertise gives reason to the extraction of copper, and takes away the (to a large extend) unquantifiable logic of preservation, which is in turn informed by cultural and natural values. Therefore, I now turn to a more epistemological approach to understand our dependency on materials, in order to address how potential futures through alternative spatial imaginaries can help overthrow the copper dependency.

5. Material dependency

Reflecting the work of Deleuze and Guattari (1980/1987), in contrary to what many reports on the development of material dependency put forward, to rethink our material dependency doesn't involve a rethinking of the need of assemblages it puts forward (eg. mobile phones, powerlines or laptops (all of which contain copper)), but rather what is its capacity to fulfill these same or relative needs (eg. connectivity or electricity) (Deleuze & Guattari, 1980/1987). In other words, the dependency is not on the *material* itself, but on the *service* resulting from it, which allows for the energy transition. Alternatives might result in the

occupation of more space on the surface, yet this also might be an opportunity with more respect to the environment. Architectural historian and theorist Ross Exo Adams seems to advocate precisely for this epistemological change in design thinking, and advocates that it is already happening in several resiliency urban projects: "[a] vast array of technologies emerge across scales as the new face of an urbanism of pure disclosure—an urbanism that aims to bring to light all that has remained outside the scope of modernist urbanism" (Adams, 2016). It is here that the human body, its biological, cultural and ideological needs, can finally be implemented strategically into the spatial project, to overcome spatial practice that adheres to its material needs, in effect, to steer it towards new resilient and responsive space making (Adams, 2016). Ollman (1993) describes the importance of dialectics to restructure the way in which we think about reality, by reframing the word *thing*, as being in essence historical and externally related to other things with a notion of *process,* containing it's history and possible futures that form a *relation* which ties with other relations (Ollman, 1993). The human body is *par excellence* the body best capable of forming these relations.

Subsequently, a body relates to a certain culture within a group of a certain ideology. Since the effects of all forms of development are always mediated through culture (Williams, 1993) creates importance to note the increasing emergence of (indigenous) counter-cultures as a way of pressuring the *dispositif*, in order to change materialist policies. Or as activist Naomi Klein advocates "(…) the solution to global warming is not to fix the world, it is to fix ourselves" (Klein, 2014), which implies opportunities in the coupling of dialectics as described by Ollman (1993) and the frame of reference of the human body as described by Adams (2016). This change, is further underlined by Swyngedouw (2000) who argues that the field of research on "historical-geographical materialism turns all geography into a socio-environmental geography" (Swyngedouw, 2000). Rethinking of our material dependency in that sense is conditioned through spatial projects aimed at linking culture with the unquantifiable nature of its direct surroundings, moving beyond the modernist scope of purely quantifiable space.

6. Adverting destruction

In its granting of the permit, the Norwegian Ministry of Fisheries, Trade and Industries goes further down a negative spiral of resource extraction and the consequent destruction of lands on indigenous territories. Alternatives to an energy transition framed by the expansion of material industries need to be imagined. More importantly, spatial projects in which the human body aimed at framing specific dialectics with its environment. Even if faith is still largely invested in technologies to save the day, we can no longer neglect its growing counterpart that leads to deterritorialization in the form of destruction, dispossession and displacement.

7. Conclusions

This article related the advocation of the reopening of a copper mine in Repparfjord, Kvalsund, Northern Norway, with theories on growing trends of deterritorialization and material dependency. Through this reflection I advocate the importance of rethinking, the dependency on material itself, and advocate the capacity of the human body to engage in dialectics, conditioned by spatial projects.

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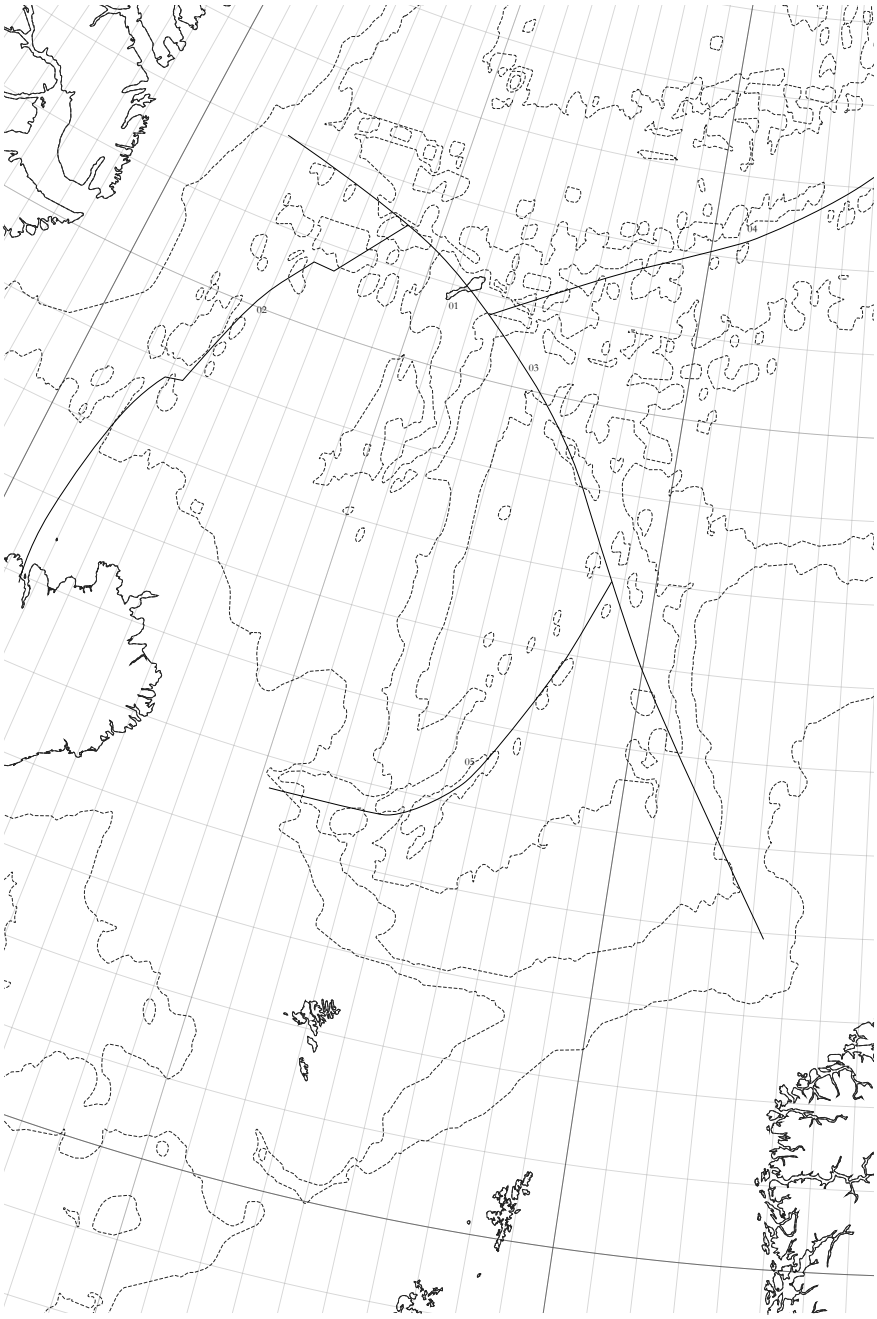
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Book of Tides

The island Jan Mayen (NO) is situated on top of a large fracture zone. Having only surfaced for no more than half a million year, this is a relatively young island. The area is around 380 km^2 and it houses one active volcano, the Beerenberg (alt: 2277m).

Jan Mayen Fracture Zone
Geographic scale. Oceanic Island.

01 Jan Mayen
02 Kolbeinsey Ridge
03 Jan Mayen Fracture Zone
04 Mohns Ridge
05 Aegir Ridge (inactive)


01
02
03
04
05
0
100km
70.9833 N, 8.5333 E

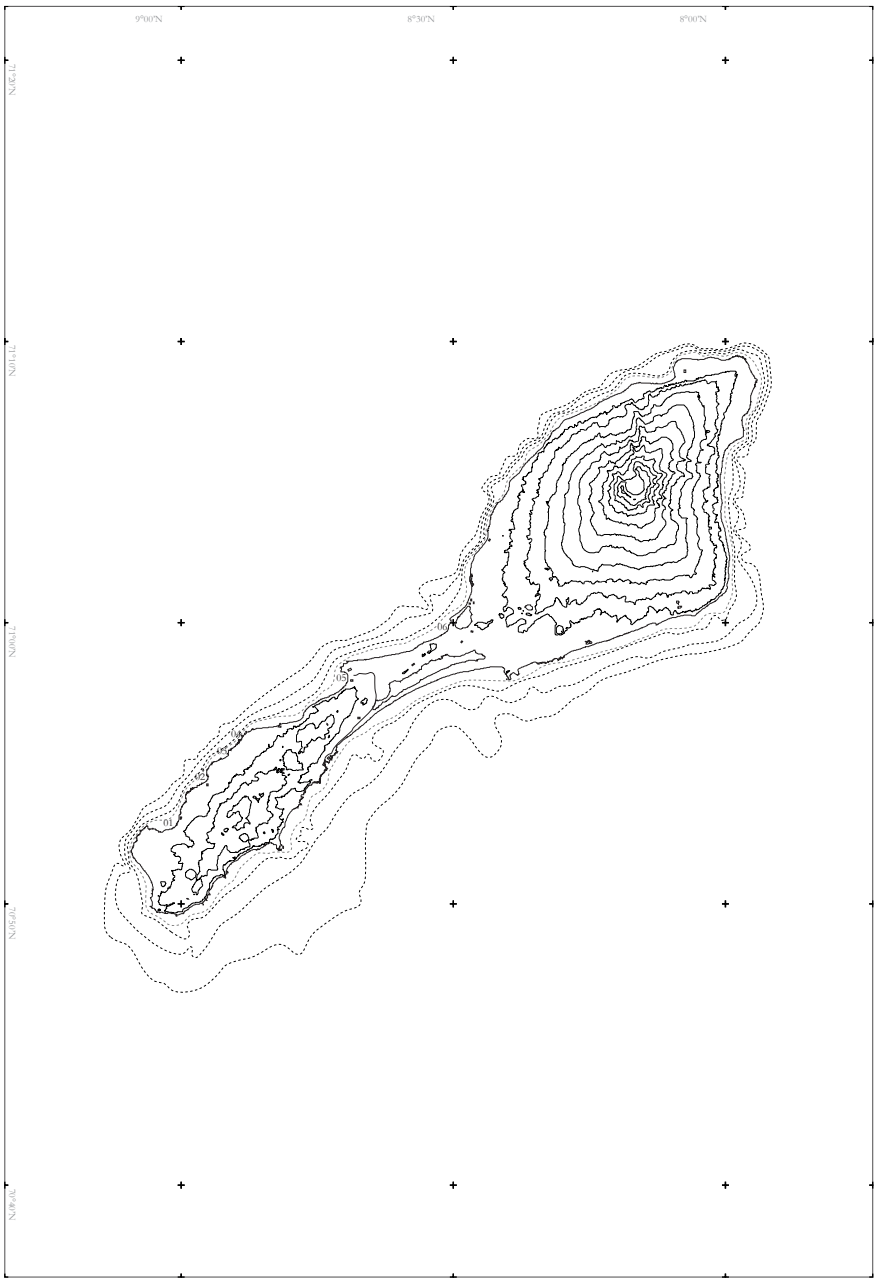
Although there are suspicions that Irish Monks in the 7th century and later on the Vikings have set foot on this island, this has never been proofed. The first confirmed sighting was in 1614 by John Clarke, after which Dutch whalers started building whaling stations on the island giving it the name the island still bears today.

An attempt at wintering on Jan Mayen during this time wasn't succesfull, and all men died of scurvy. Much later, in 1930, the Dutch marine placed a memorial stone on the island.

After the whales got scarce and there wasn't enough profit to be made from it, the island started to get isolated from human activity again till a group of Austrians decided to reside here during the first international polar year in 1882.

First cultivation period | Whaling stations
Island Scale

01 Titelbukta
02 Guineabukta (assumed)
03 Sjuhollendarbukta (assumed)
04 Hoepstockbukta (assumed)
05 Kvalrossbukta
06 Maria Muschbukta
(source: www.jan-mayen.com)



0 5km

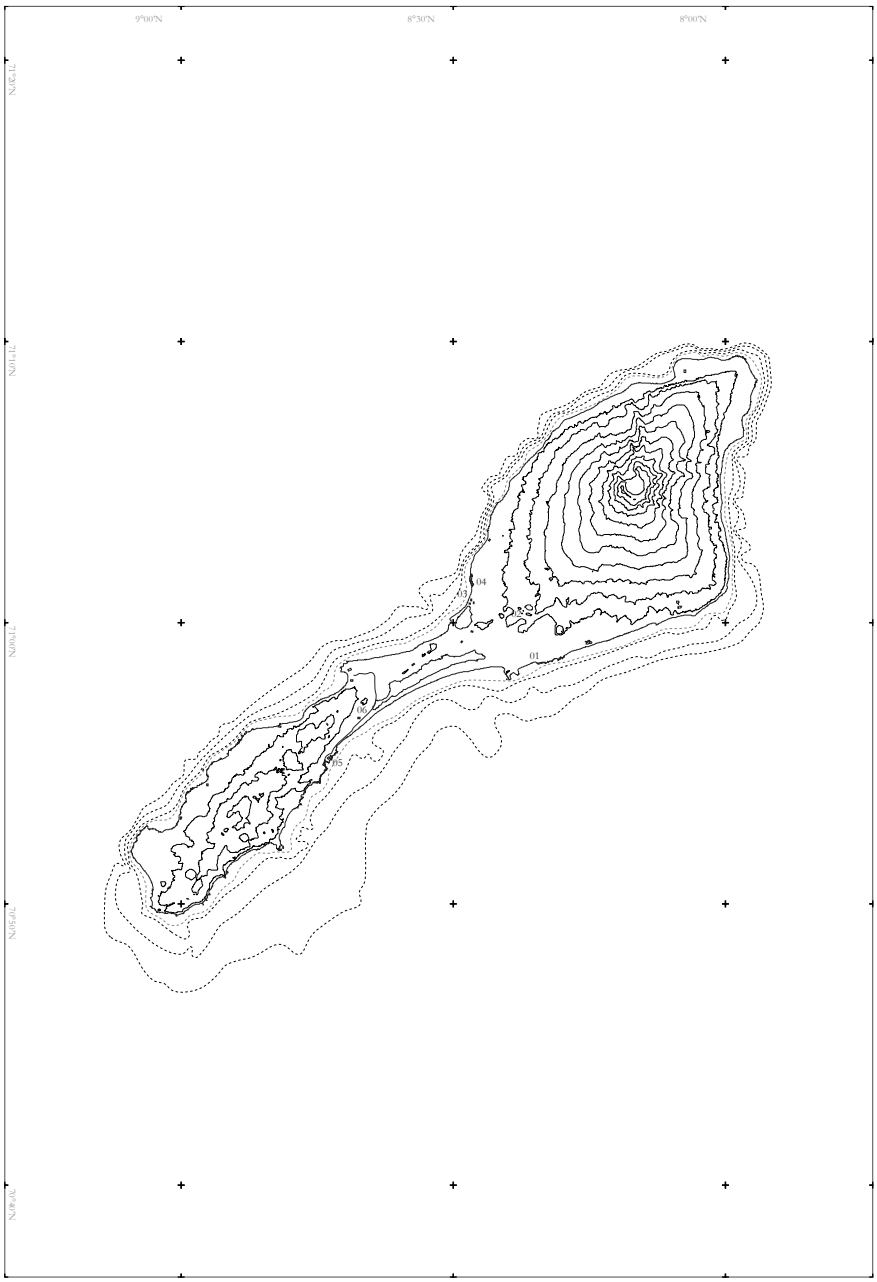
70.9833 N, 8.5333 E

Briefly at the beginning of the 20th century the island became a spot for Norwegian trappers, quickly driving the polar fox to locally die out. New technologies made the island important again for mainly the Norwegians.

From 1921 onwards the island has become a place mainly for weather stations. Also during WW2 the Americans build a station on the island to track down enemy radio traffic.

Second cultivation period | Weather stations
Island Scale

01 Eldste Metten (weather station: 1922-1940)
02 Jøssingdalen (weather station and garrison: 1941-1946)
03 Atlantic City (US Coastguard station: 1943-46, weather station: 1946-49)
04 Gamle Metten (weather station: 1946-62)
05 Olonkinbyen (today's Norwegian station, active since 1958)
06 Helenesanden (weather department of the station since 1962)
(source: www.jan-mayen.com)



0 5km

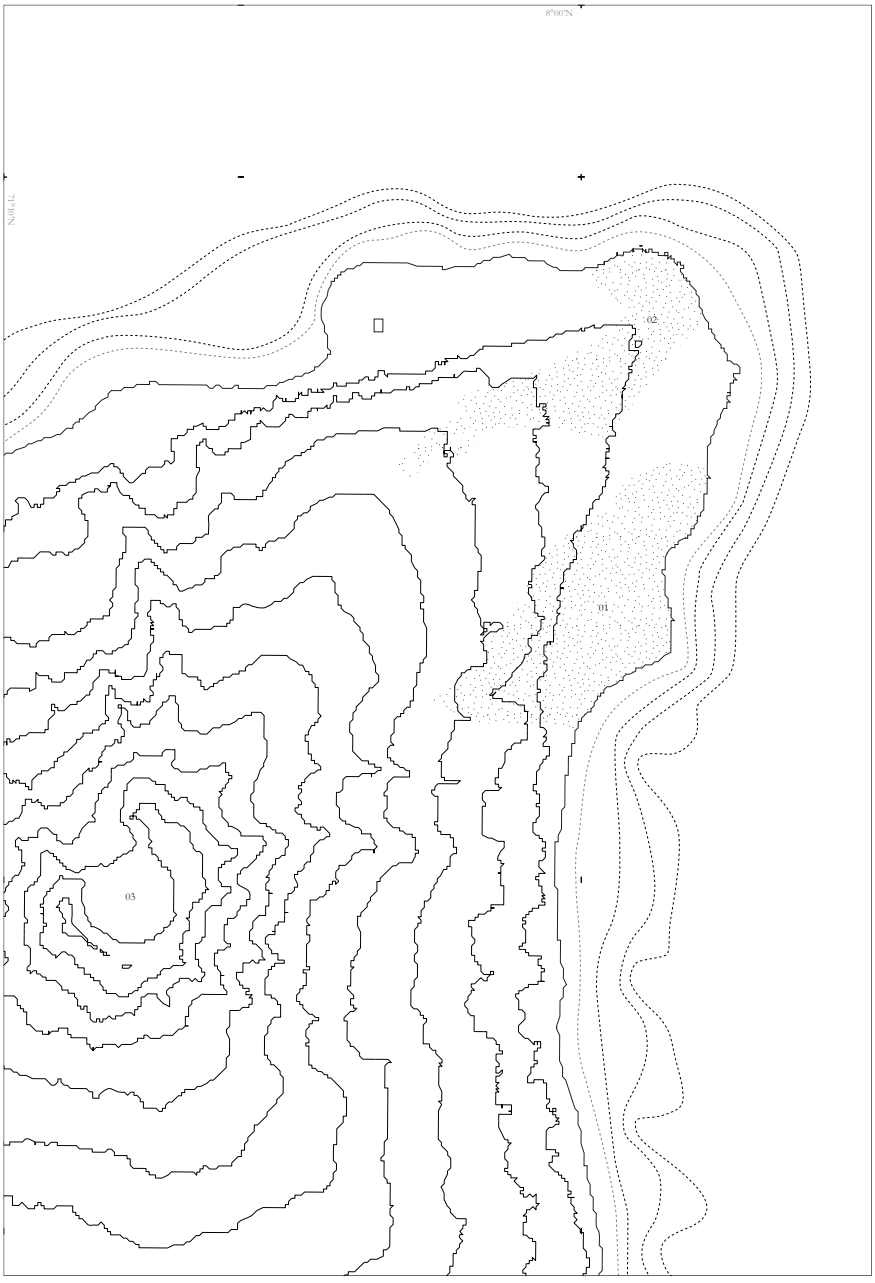
70.9833 N, 8.5333 E

Two major eruptions in the last century have caused the land to grow on the northeast side of Jan Mayen. The largest known eruption of the volcano was in 1970 when about 500.000.000 m^3 of lava was produced in less than 5 weeks. Causing the land to grow for an area of 4 km^2.

15 years later the volcano errupted again allowing the land to grow more on the north side.

Beerenberg
Architecture Scale

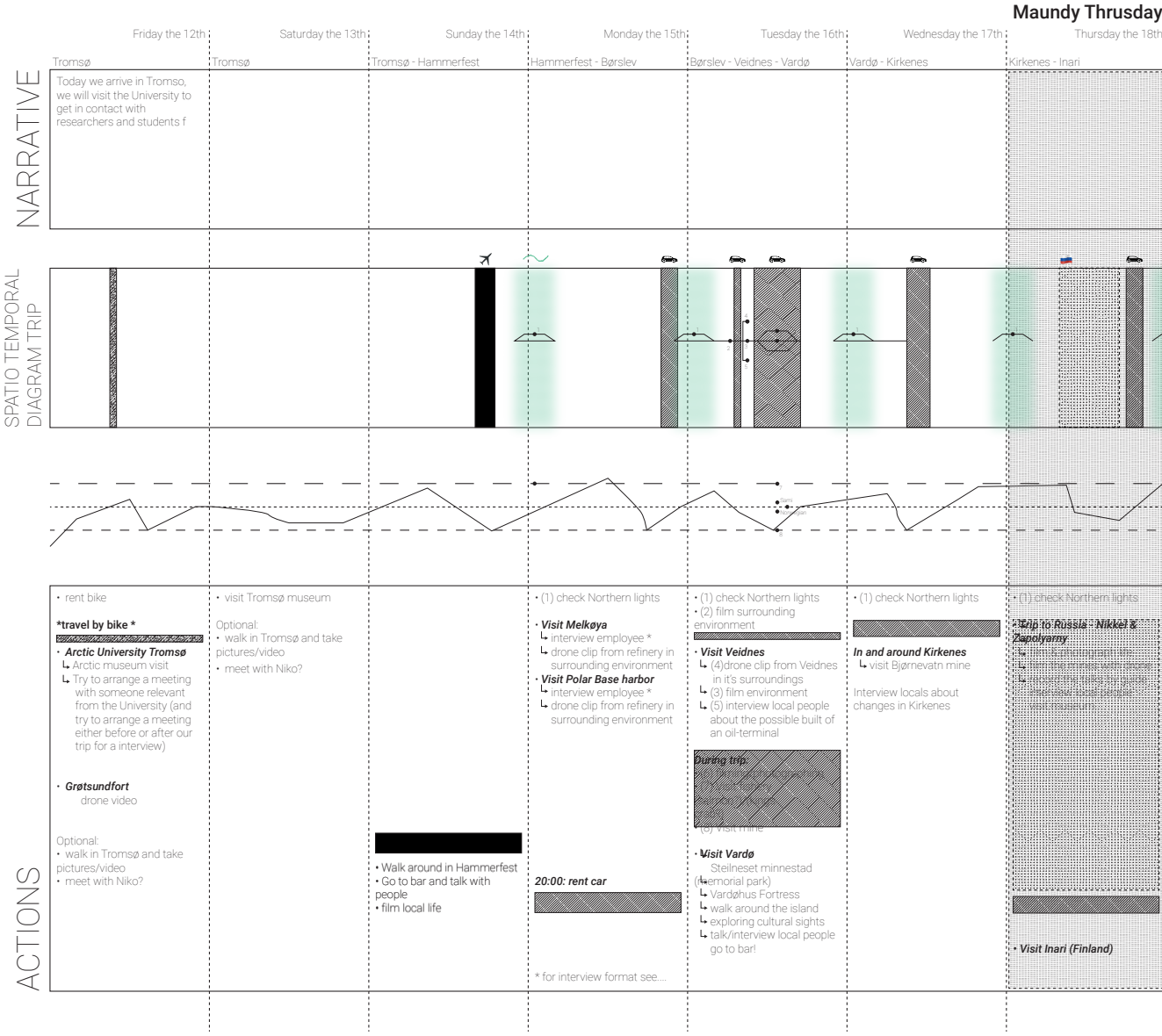
01 1970 Eruption
02 1985 Eruption
03 Crater
(source: www.npolar.no)

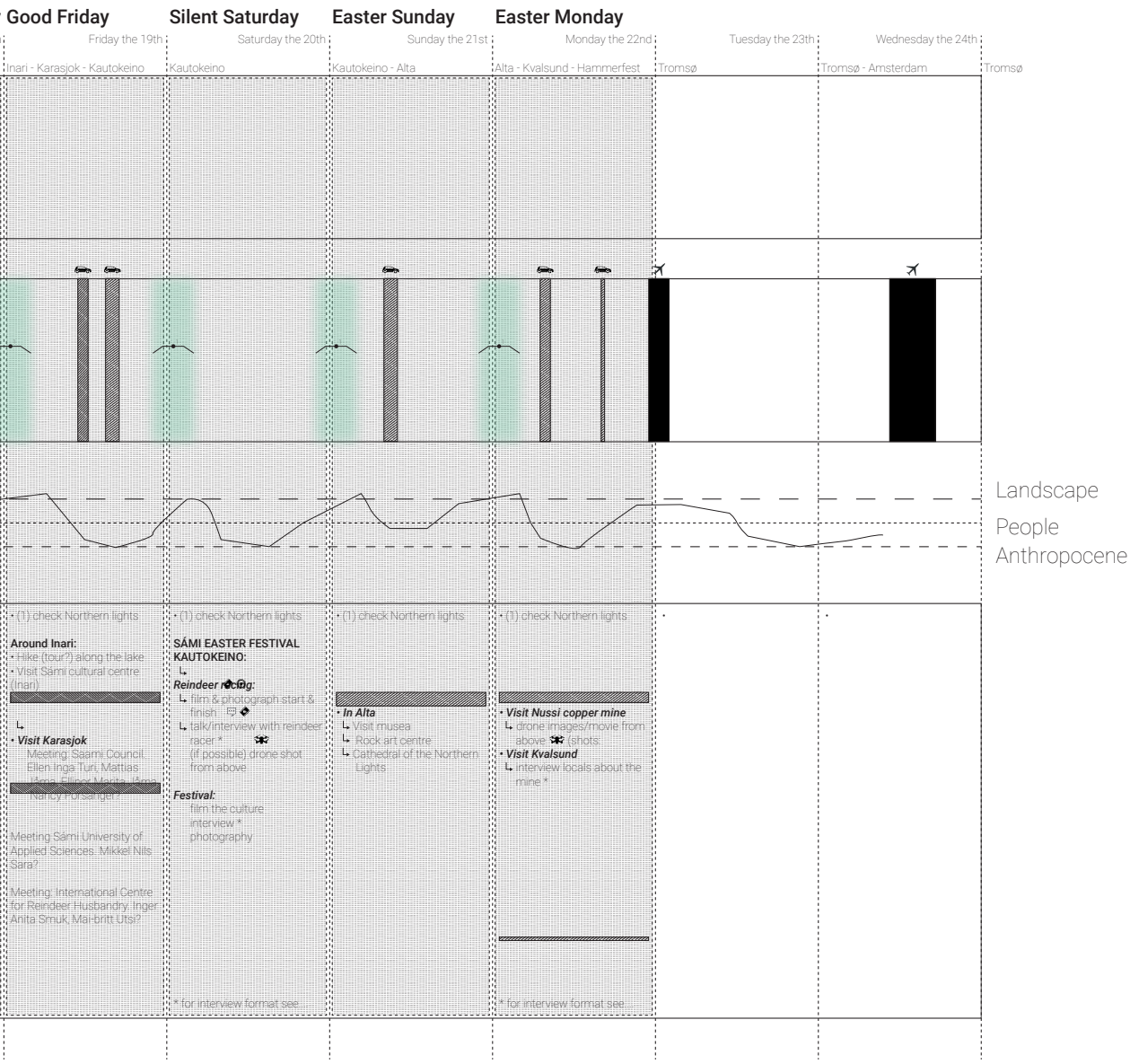


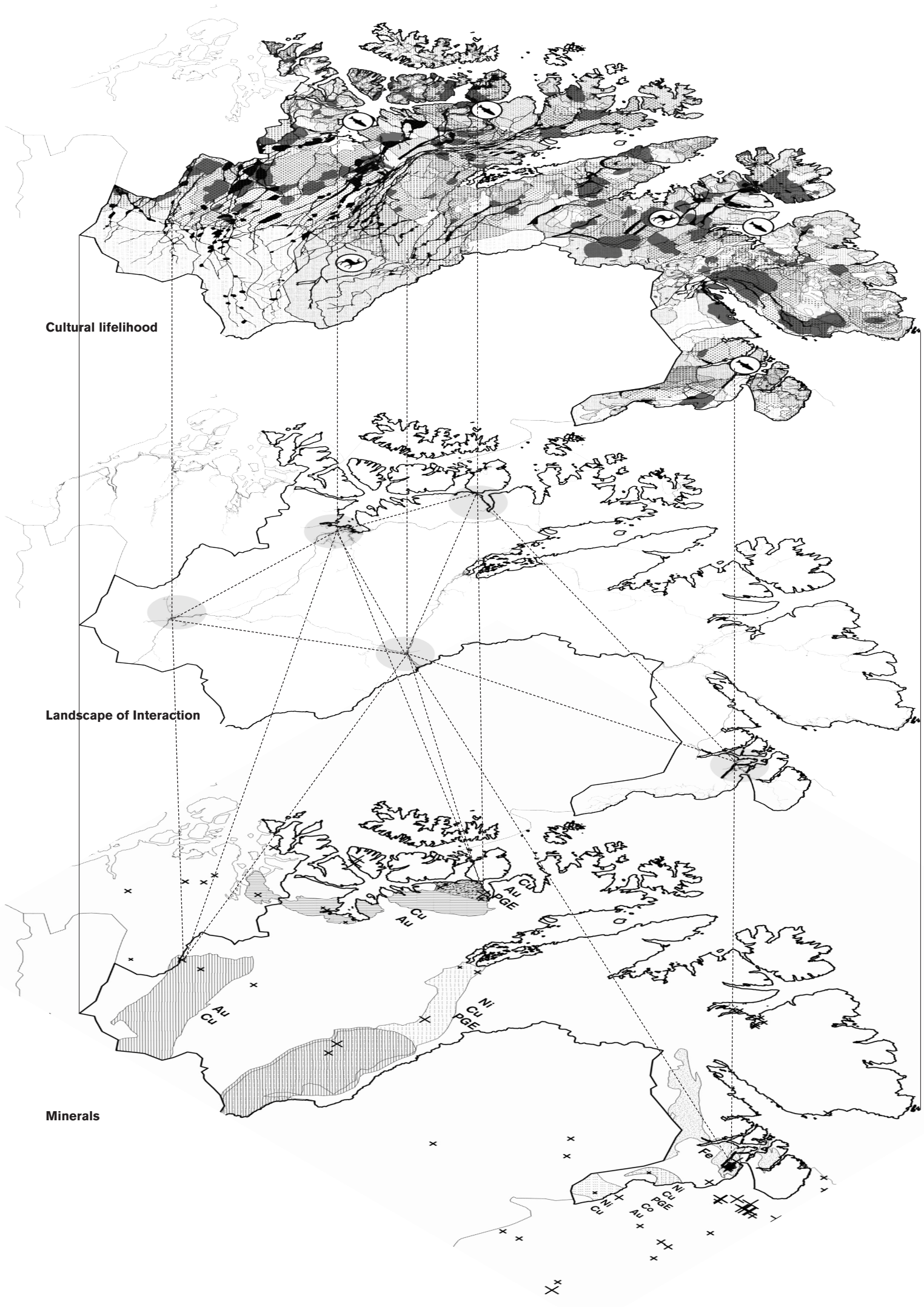
0 1km

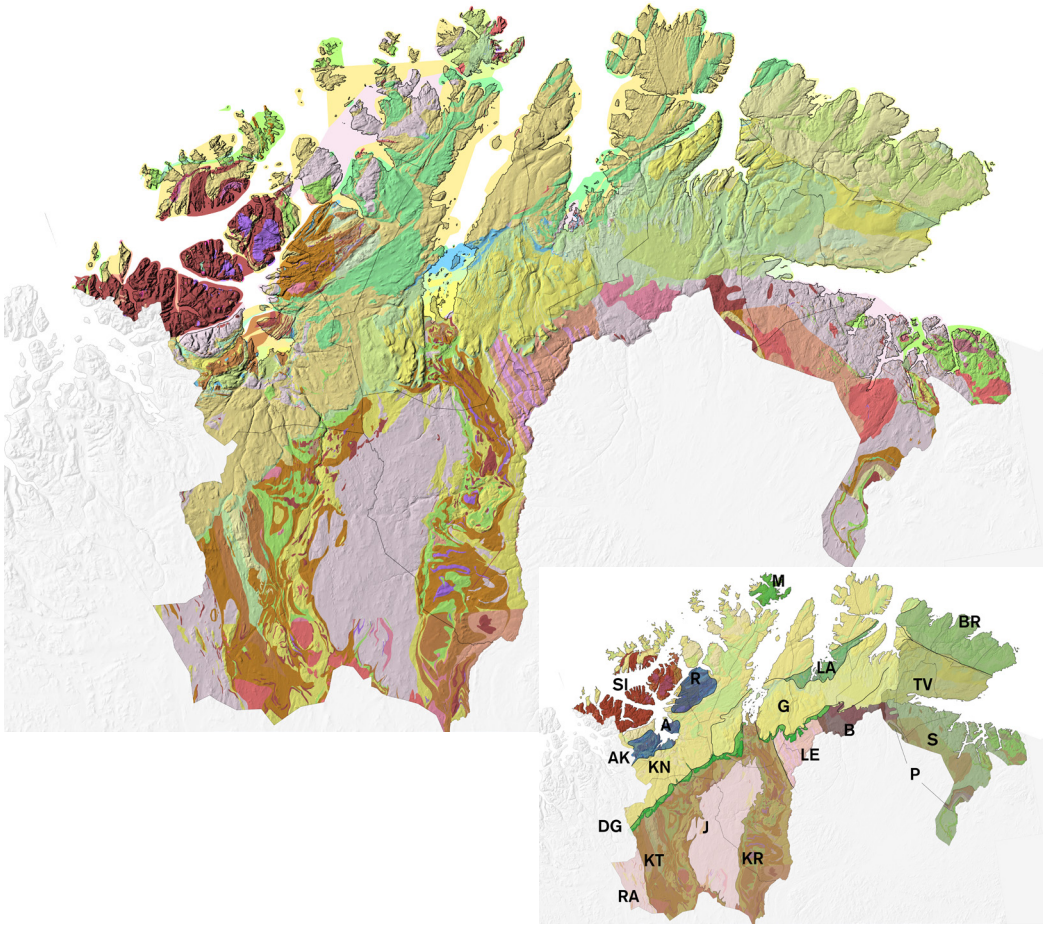
70.9833 N, 8.5333 E

Documentary plan




Good Friday
Silent Saturday
Easter Sunday
Easter Monday
Friday the 19th
Saturday the 20th
Sunday the 21st
Monday the 22nd
Tuesday the 23th
Wednesday the 24th
Inari - Karasjok - Kautokeino
Kautokeino
Kautokeino - Alta
Alta - Kvalsund - Hammerfest
Tromsø
Tromsø - Amsterdam
Tromsø
Landscape
People
Anthropocene
* (1) check Northern lights
Around Inari:
• Hike (tour?) along the lake
• Visit Sámi cultural centre (Inari)
• Visit Karasjok
Meeting: Saami Council. Ellen Inga Turi, Mattias
Meeting Sámi University of Applied Sciences. Mikkel Nils Sara?
Meeting: International Centre for Reindeer Husbandry. Inger Anita Smuk, Mai-britt Utsi?
* for interview format see
* (1) check Northern lights
SÁMI EASTER FESTIVAL KAUTOKEINO:
Reindeer racing:
film & photograph start & finish
talk/interview with reindeer racer *
(if possible) drone shot from above
Festival:
film the culture
interview *
photography
* for interview format see
* (1) check Northern lights
• In Alta
Visit musea
Rock art centre
Cathedral of the Northern Lights
* (1) check Northern lights
• Visit Nussi copper mine
drone images/movie from above (shots:
• Visit Kvalsund
interview locals about the mine *
* for interview format see


Cultural lifelihood
Landscape of Interaction
Minerals
Cu
Au
PGE
Ni
Cu
PGE
Au
Cu
Fe
Ni
Cu
Ni
Cu
PGE
Co
Au



Bedrock geology

Bedrock types

- Sandstone.
- Conglomerate, sedimentary breccia.
- Tectonic breccia.
- Sedimentary rocks (unspecified).
- Clay schist, sandstone, limestone.
- Sandstone, clay schist.
- Granite, granodiorite.
- Diorite, monzodiorite.
- Syenite, quartz syenite.
- Monzonite, quartz monzonite.
- Ryolite, ryodacite, dacite.
- Basalt.
- Volcanic rocks (unspecified).
- Gabbro, amphibolite.
- Quartz diorite, tonalite, trondhjemite.
- Olivine stone, pyroxenite.
- Anorthosite.
- Charnockitis to anorthosite, locally converted.
- Amphibolite and mica schist.
- Greenstone, amphibolite.
- Metasandstone, mica schist.
- Quartzite.
- Mica, mica schist, metasandstone, amphibolite.
- Phyllite, mica schist.
- Lime mica schist, lime silicate gneiss.
- Calcite marble.
- Dolomite marble.
- Dioritic to granitic gneiss, migmatite.
- Amphibolite, hornblende gneiss, mica, locally migmatitic.

Regions

- Altenes area. **A**
- Alta-Kvænangen Window. **AK**
- Baisvarri Gneiss Complex. **B**
- Barents Sea-Rybachi Regions. **BR**
- Dividal Group. **DG**
- Gaissa Nappe Complex. **G**
- Jer'gul Gneiss Complex. **J**
- Kalak Nappe Complex. **KN**
- Karasjok Greenstone Belt. **KR**
- Kautokeino Greenstone Belt. **KT**
- Laksefjord Nappe Complex. **LA**
- Leavvajohka Granulite Complex. **LE**
- Magerøy Nappe Complex. **M**
- Polmak - Pasvik - Pechenga Greenstone Belt. **P**
- Repparfjord Window. **R**
- Rai'sædno Gneiss Complex. **RA**
- Sørvaranger Region. **S**
- Seiland Igneous Province. **SI**

Source: NGU

