Stockholm Environment Institute

THE UNIVERSITY OF SYDNEY

Sydney Environment Institute

Fighting to be herd

Impacts of the proposed Boliden copper mine in Laver, Älvsbyn, Sweden for the Semisjaur Njarg Sami reindeer herding community

SEI report
April 2019

Rebecca Lawrence[a, b]

Rasmus Kløcker Larsen[b]

In collaboration with the Semisjaur Njarg Sami community

[a] Sydney Environment Institute, University of Sydney
[b] Stockholm Environment Institute

Stockholm Environment Institute
Linnégatan 87D 115 23 Stockholm, Sweden
Tel: +46 8 30 80 44
www.sei.org

Author contacts:
Rebecca Lawrence, r.lawrence@sydney.edu.au
Rasmus Kløcker Larsen, rasmus.klocker.larsen@sei.org
Editing: Scriptoria
Translation from Swedish to English: Paul Williams and Rebecca Lawrence
Layout: Richard Clay
Cover photo: © Mats Berg

Stockholm Environment Institute is an international non-profit research and policy organization that tackles environment and development challenges.
We connect science and decision-making to develop solutions for a sustainable future for all.
Our approach is highly collaborative: stakeholder involvement is at the heart of our efforts to build capacity, strengthen institutions, and equip partners for the long term.
Our work spans climate, water, air, and land-use issues, and integrates evidence and perspectives on governance, the economy, gender and human health.
Across our eight centres in Europe, Asia, Africa and the Americas, we engage with policy processes, development action and business practice throughout the world.

Contents

Foreword[1]

Reindeer herding is a northern phenomenon, practised across the circumpolar Arctic. It represents a traditional, nomadic way of life for 24 different indigenous peoples across the Arctic, all with long histories in the north. It involves close to 100,000 people and around 2.5 million semi-domesticated reindeer in Sweden, Norway, Finland, Russia, Mongolia, China, Alaska (USA), Canada, Greenland (Denmark) and Scotland. Although reindeer husbandry is spread all across the Arctic with many different cultures, its organisation is remarkably similar everywhere it is found: it is a nomadic livelihood with family-based working communities, representing a typical indigenous way of life. Reindeer herding can be seen as a human-coupled ecosystem.[2] It can also be seen as a model of sustainable use and management of northern terrestrial ecosystems, based on experience accumulated over generations, conserved, developed and adapted to the climatic and political-economic systems of the north.[3]

Today, reindeer herding communities across the Arctic are facing multiple new challenges. Whereas climate change, globalisation and socio-economic change comprise considerable challenges, one of the most serious concerns for reindeer husbandry today is the loss and fragmentation of reindeer pastures, due to infrastructure development, resource extraction and increasing human activity. Looking at the current situation, Fennoscandia is the region with the highest cumulative loss of reindeer pastures in the circumpolar Arctic, and no integrated management plans are currently in place for the land-based parts of the Barents region.[4] The importance of these issues is also clearly articulated in the Aoluguya Declaration from 2013.[5]

Reindeer herding is managed within somewhat different regulatory regimes in each country. However, a re-occurring challenge in all these contexts is a general lack of understanding and recognition of pastoralism by state governing authorities;[6] a challenge that also concerns reindeer herding.[7] State management regimes for reindeer herding are often based on non-indigenous agricultural models and understandings of land use, thereby not reflecting the full depth of reindeer herding as an indigenous, traditional, nomadic way of life. By defining and modelling sustainable reindeer husbandry in terms of "modern" agriculture, for instance, states have the power to define what reindeer husbandry ought to be.[8] These definitions imposed by states rarely properly engage with indigenous peoples' own worldviews, traditional land uses and cultural practices.

In short, a fundamental core of indigenous reindeer herding is that *reindeer herding peoples follow the reindeer, not the other way around*. By contrast, agriculture is primarily based on human attempts to control the animals at any given time – or perhaps even seeking to control nature itself. As senior Sámi reindeer herder and Secretary General of the Association of World Reindeer Herders Johan Mathis Turi has stated: "...Reindeer herding peoples have always known that they have to work with nature, not against it."[9] Reindeer herders' worldviews means that you do not conquer the world, but try to get along with it and come to an understanding with it.[10]

Traditional indigenous knowledge, culture and language provide a central foundation for adaptation and building resilience to rapid Arctic change in reindeer herding communities.[11] But just as reindeer herding as a land use is not fully understood in mainstream society, nor is the traditional indigenous knowledge of reindeer herders properly utilised in management today.[12]

1 Translations of the foreword and executive summary into Northern Sami and Swedish are included in Appendices, as well as a translation of the executive summary into Pite Sami. There are some minor differences between the English versions and the translations as the former were updated for this English report and there were not resources to update the translations.
2 Tyler et al. (2007) and Berkes (2012).
3 Magga et al. (2011).
4 Vistnes et al. (2009).
5 Aoluguya Declaration (2013).
6 Scott (1998), Pedersen and Benjaminsen (2008) and Benjaminsen et al. (2009).
7 Benjaminsen et al. (2016).
8 Paine (1996).
9 Turi (2009).
10 Oskal (2000).
11 Magga et al. (2011) and Mathiesen et al. (2013).
12 Eira (2012) and Turi and Keskitalo (2014).

All this raises challenging questions: What capacities do authorities and resource developers have to properly understand, and engage with, the impacts of developments on reindeer herding systems? What understanding do they have of the complexity of reindeer herders' land use, under ever changing conditions? To what extent are current impact assessment regimes and practices really able to grasp these realities?

Reindeer herding peoples across the north now find themselves on the "frontlines" of climate change; the climate in the Arctic is warming much faster than the global average.[13] In this context, access to pastures and pasture resources will be even more important for reindeer herders.[14] Reindeer herders' local adaptation to climate change is also dependent on a geographical dimension, where diversity and the freedom of movement of the herd can be absolutely crucial under given circumstances and variability.[15] Indeed, the Intergovernmental Panel on Climate Change 5th Assessment Report has pointed out that the "*...protection of grazing land will be the most important adaptive strategy for reindeer herders under climate change*".[16] In combination with societal, economic and political changes, this constitutes substantial and unprecedented challenges to the future of reindeer husbandry.[17] Seen in this light, it would make sense to apply the precautionary principle for proposed land use developments in reindeer herding areas, given the current and future challenges already posed by climate change.

This is exactly why well-functioning regimes for impact assessments are crucial for a genuine sustainable development of the north. Impact assessments, when properly done, provide a tool to use the best available knowledge as a foundation for the best possible management decisions. However, one of the major challenges with planning processes for resource developments in reindeer herding areas is that they are often assessed in isolation, from both already existing and future encroachments. Yet, from the point of view of reindeer herding societies, it is the whole picture that needs to be considered. It is often the cumulative impacts of developments that have the most serious consequences.

On a similar note, one must also take into account that reindeer herding represents a system dependent on the whole. Professor Erik Reinert for instance uses the term Mandatory Passage Points, and offers the following simple analogy to illustrate: "...It might look as if there is plenty of room in the tundra, just like it might seem that there is plenty of room in a 2-storey Norwegian villa, so that it shouldn't matter if you lose a couple of square meters. But should those few square meters of the villa that you lose accidentally be where the stairwell between the 1st and 2nd floor is, you would have lost half of the living area."[18] In reality, reindeer herding pasture use may be built around many such "boundaries", which may limit the system as a whole. Issues relating to the complexities of reindeer herders' land use must of course be clearly understood in order to comprehend the real impacts of development on reindeer herding.

In our work with circumpolar reindeer herding communities facing land encroachments, it is clear that development processes are often not good enough. Affected reindeer herding communities are not approached and included in appropriate ways, often lacking capacity themselves to monitor and participate in the magnitude of ongoing development projects. A re-occurring key challenge is that reindeer herding communities are being brought into development processes at much too late a stage. By the time they are included – often only symbolically – projects are already "set in stone" and major investments have been made, so that reindeer herders are not able to exercise any meaningful influence over the project or process.

The point here is that when this occurs, we – the society at large – face a situation of opportunities lost. The late inclusion into processes means that it is too late to establish trust and real interaction between the parties, too late to have good processes of mutual adaptation and too late to include the traditional indigenous knowledge of reindeer herders in action. In other words, we lose out on the best knowledge for the best solutions. There are many examples where investors have lost money on developing natural resource projects that were not feasible, or not as profitable as projected, simply because of the lack of inclusion of all sides, all perspectives and all available knowledge. Although including affected communities

13 IPCC (2014).
14 McCarthy et al. (2005), Tyler et al. (2007) and Magga et al. (2011).
15 Tyler et al. (2007).
16 Nymand-Larsen et al. (2014).
17 Magga et al. (2011) and Nymand-Larsen et al. (2014).
18 Reinert (2016).

and their traditional indigenous knowledge into impact assessment processes is much easier to talk about than to actually do, it is still feasible. In fact, we argue that it is absolutely necessary if we want to equip ourselves with an adequate knowledge base upon which to make important environmental management decisions.

However, it must also be underscored that reindeer herders, as customary rights holders and traditional users of their homelands, have legitimate rights to refuse consent, withdraw consent and even refuse dialogue altogether. These rights are enshrined in international law,[19] although many governance structures and companies still fail to recognise them.

Today, different types of impact assessments are used in the circumpolar north. These include Environmental Impact Assessments, Social Impact Assessments, Biodiversity Assessments and in later years also Resilience Assessments.[20] Such assessments may also be combined, depending on the situation. However, it seems that regulatory frameworks often are not specific in terms of what type of assessment, content or process is demanded for legally required impact assessments.

There is a need to improve the standards used in impact assessments and agreements with reindeer herders so as to include their traditional indigenous knowledge, perspectives and experiences.[21] In the context of rapid Arctic change, we need to use the best available knowledge in environmental management, by utilising both science and traditional indigenous knowledge systems and combining these "two ways of knowing".[22] The utilisation of traditional indigenous knowledge also naturally implies the active involvement of communities, given the contextual nature of these knowledge systems.

This report is an important step towards developing new ways of doing impact assessments that are based on the active participation of the affected indigenous communities, the inclusion of their traditional indigenous knowledge and a respect for their rights as indigenous peoples. On behalf on the International Centre for Reindeer Husbandry, I am very pleased with the collaboration on this report with the Stockholm Environment Institute (SEI) and Stockholm University. We hope that this report will serve as an important example to be replicated, followed and further improved.

Guovdageaidnu/ Kautokeino, Norway. April, 2019
Anders Oskal
Executive Director
International Centre for Reindeer Husbandry (ICR)

19 See Åhren (2016).
20 Mathiesen et al. (2013).
21 Naykanchina (2012).
22 Magga et al. (2011), Berkes (2012) and Eira (2012).

Executive Summary

This report concerns the impacts of Boliden's proposed open-cut copper mine on the Swedish side of Sápmi[23] in Laver, Älvsbyn, in Northern Sweden, for the Semisjaur Njarg Sami reindeer herding community. The proposed mine is on the Semisjaur Njarg community's winter grazing pastures. Winter grazing pastures constitute a "bottleneck" for reindeer herding in general, and the Semisjaur Njarg Sami community is already under significant pressure from other land encroachments and industrial developments on their traditional lands. The Semisjaur Njarg Sami community want to continue to enjoy their right to pursue traditional reindeer herding in the area. They also want to sustainably manage their traditional land in the area for future generations. The Semisjaur Njarg Sami community believe that the proposed Boliden mine would make this impossible; they therefore oppose the proposed mining activities in the Laver area.

The primary intended audience[24] for this report includes decision-makers, such as national permitting authorities, courts and the Swedish Government; Boliden and Boliden's stakeholders, such as Boliden's investors;[25] as well as international bodies such as the UN and the OECD.[26] The aim is to provide all involved parties with an overall picture of how the Semisjaur Njarg Sami community see their future, and what a mine in Laver would mean for them. In doing so, the purpose is to provide a space for Sami knowledge on reindeer herding to take centre stage[27] and to ensure that herders' voices are heard.

This report primarily consists of two parts. The first part comprises a basic investigation of the current situation (i.e. a so-called "baseline" study). It provides a comprehensive description of the Semisjaur Njarg Sami community, as well as a detailed description of their land use. Following this, current and future encroachments on the community's lands are analysed. Next, a general description is given of reindeer herding's social and cultural importance, and specifically for Semisjaur Njarg Sami community. It also describes the general challenges reindeer herders face, given increasing industrial developments in traditional Sami areas.

This first part of the report concludes with a general review of the mining industry's impact on reindeer herding, as well as a detailed case study of the Gällivare Forest Sami community's experiences of the impacts of Boliden's Aitik mine. The Aitik mine provides a relevant comparator to the proposed mine in Laver, given both Aitik and the proposed mine in Laver are large-scale open-cut copper mines. According to the Gällivare Forest Sami community, the Aitik mine has contributed to several herders being forced to leave reindeer herding, due to shortages in available pasture lands and an unsustainable workload. Young people, in turn, will not risk investing in reindeer herding and intergenerational succession within the community is no longer secured. The experience of the Aitik mine also demonstrates how the disruption to a Sami community (e.g. due to traffic and infrastructure) may well become much larger than originally assumed. A mine and its infrastructure, such as associated road and power lines, can also "grow" and claim ever greater areas of land, as in the case of the Aitik mine.

The second part of the report consists of the actual impact assessment of Boliden's planned mine in Laver. First, maps are provided of the mine and its buffer zone, and then together with existing and planned intrusions in Semisjaur Njarg's northern winter pastures. These maps demonstrate that if the proposed mine becomes a reality, almost all of Semisjaur Njarg's northern winter pastures will be impacted by one kind of encroachment or another. Following this, the report provides a qualitative in-depth analysis of the how the situation can develop for the Semisjaur Njarg Sami community, if the mine in Laver does/does not become a reality, and what direct and indirect impacts each of these alternatives may entail. In order to structure this, a so-called scenario analysis is applied. Two main scenarios are examined: a null alternative scenario, where the mine does not go ahead and the situation develops according to current conditions;

23 Sápmi refers to the traditional territories of the Sami people, which are now divided across the northern parts of the nation states of Norway, Sweden and Finland and the Kola Peninsula.

24 In the Swedish version of this report the Semisjaur Njarg community were also listed as an audience for this report, so that they could themselves better understand the totality of the impacts of the proposed mine on their community.

25 Boliden's top investors include Swedbank Robur Funds, Norges Bank, SEB Funds and AMF Insurance & Funds. They are all Nordic-based institutional shareholders, represent four of the top five shareholders, and all have policies outlining their commitments to respecting human/indigenous rights.

26 Both the UN (particularly the Committee on the Elimination of Racial Discrimination) and the OECD (see OECD Guidelines on Multinational Corporations) are important international fora for indigenous peoples to raise complaints over extractive activities on their traditional lands.

27 See Oskal and Sara (2001), Sara (2009) and Turi et al. (2014) on traditional Sami knowledge.

and a scenario where the mine is operational. Both scenarios play out from the year 2025, given this is when the proposed mine is likely to be fully operational (if it becomes a reality).

In the future scenario without a mine (the null alternative), there would be opportunities for the continuation of viable reindeer herding in the area, although the Sami community would still face a number of challenges. The Sami community would, however, have good prospects to pass on reindeer herding, traditional knowledge, the Sami language – and thus the Sami culture – to future generations.

In the future scenario in which the mine goes ahead, this would mean that Sami reindeer herding – based on the free grazing of reindeer on natural pastures – is no longer possible in the Laver area. Instead herders would have two alternatives. In the first alternative, herders would be forced to provide artificial feeding (pellets) to their reindeer in Laver throughout the entire winter. This artificial feeding of reindeer would so fundamentally change the reindeer herding's yearly cycle, and reindeer herding per se, that, according to the Sami community, it would no longer be a question of "traditional Sami reindeer herding", whereby reindeer freely graze on natural pasture, and use different pastures throughout different seasons of the year. Instead, it would be equated with "reindeer farming" – where reindeer are kept in large pens, or are fed artificially like "cattle or sheep", which, according to the Sami community would fundamentally deviate from the Sami culture and the Sami view of reindeer herding. Furthermore, these technical mitigation measures would not be sustainable in the long term, because they would result in poorer animal welfare and an unsustainable workload for the herders. The herders would eventually be forced to give up reindeer herding. This would mean that the intergenerational succession within the winter group would cease, and the local traditional knowledge of reindeer herding in the area would be lost.

In the second alternative, the winter group in Laver abandons the pastures in the Laver area entirely. Instead, they are forced to use other winter pastures within the community's lands, as well as use the community's year-round-grazing lands to a greater extent. In this scenario, several herders in the community would have to reduce their herds to adapt to the total loss of the winter pastures. This, in turn, would lead to conflicts within the community, as well as overgrazing both on winter pastures and year-round-grazing lands. A substantial increase in artificial feeding would be required, with attendant problems, because of the significant restrictions on other pasture areas. Even in this scenario, a number of herders would be forced to give up reindeer herding, because of a lack of sufficient pastures and an unsustainable workload. As such, the intergenerational succession within the community as a whole would be at risk. Young Sami people today already have grave concerns concerning the future of reindeer herding, and such a development would contribute to more young people not wanting to invest their future in reindeer herding.

Both alternatives would have far-reaching consequences for everyone in the Sami community. There would, for instance, be fewer reindeer herders to undertake the collective herding work within the community. The Sami community feel they are already too few and the workload would become even greater for everyone in the community. There is a risk that this, according to the community, would lead to a "domino effect", whereby more and more herders would leave reindeer herding. These conclusions are supported by the Gällivare Forest Sami community's experiences of the Aitik mine.

In summary, although Boliden asserts that the impacts of the proposed mine in Laver can be mitigated by the supplementary feeding of reindeer, fencing and increased reindeer supervision, Boliden's own Environmental Impact Assessment concedes that reindeer herders will likely be pushed out of reindeer herding. Boliden's proposed mitigation and compensation scheme is to offer reindeer herders jobs in the mine. This report tells the story of why reindeer herding is so important to Sami people and why the impacts of the proposed mine simply cannot be mitigated or compensated for.

The conclusions of this report must also be understood from a broader perspective. Both the proposed mine in Laver, and the existing mine in Aitik, illustrate well how a mine can be experienced as the "last straw" by a Sami community already subject to other developments and land encroachments. A closer look at the experiences of Sami communities with various industrial projects reveals such a trend. Various Sami communities discuss how more and more herders have thoughts of leaving reindeer herding, precisely because of the mounting pressure on their grazing lands. Many reindeer herders in Sweden today express they are "at their limits"; that they "cannot withstand any more land encroachments"; and that "the last of

our lands are disappearing". Similarly, many young Sami people perceive that it is very difficult to establish themselves as reindeer herders, given current conditions. When reindeer herding is threatened by industrial activities, so too is the Sami culture, and it is precisely this link many reindeer herders and their families make. This report aims to present the Semisjaur Njarg community's perspective on this issue.

This report has not had the ambition to carry out a full human rights impact assessment of the proposed mine in Laver. By law, Sami communities enjoy property rights to their traditional territories, and individual reindeer herders have a right to practice their culture – through reindeer herding – without significant harm from industrial developments. It is clear, however, based on the evidence presented in this report, that a mine in Laver would entail significant breaches of (1) the Sami community's property rights, because of the mine's planned location in the middle of the community's winter pastures and (2) individual reindeer herders' right to culture, as several herders would be forced out of reindeer herding.

A full human rights impact assessment of the proposed mine in Laver would therefore be appropriate in conjunction with a further assessment of the mine's impact on Sami rights. This would determine if a mining permit is consistent on the one hand with the international conventions that Sweden is bound by, and on the other hand with the human rights commitments that Boliden, and its investors, have made in their own corporate policies.

Preface

Since this material was originally published in a Swedish report in mid-2016, much has happened for the Semisjaur Njarg Sami community. When we worked together with the community during 2015 and 2016, we spent a good deal of time listing and analysing the various existing and proposed development projects and competing land uses on their traditional territories. At that time, three years ago, there were a number of future developments in the pipeline – the proposed Nasa Mountain mine, the proposed Råliden wind park, an extension to the existing Markbygden wind-power park and, of course, the focus of this report, the proposed Boliden mine in Laver.

At that time, some of these projects seemed abstract, and the thought of them all eventuating was a worst-case scenario. Any of these projects in isolation would have serious negative impacts on the community's ability to pursue traditional reindeer husbandry, but today they are in a situation where several of these projects are much closer to becoming a reality. As of 2016 both the Råliden and Nasa projects were in the early stages of environmental impact assessment processes. Since then, the Råliden wind-power project has been approved by the Environmental Assessment Delegation at the Country Administration Board of Norbotten during May of 2017, which the Sami community has now appealed to the Land and Environment Court. The company proposing the Nasa mine, Elkem, has now applied to the Norwegian Government to expropriate the lands, which the affected Sami communities (including Semisjaur Njarg) are also appealing. In other words, both these projects are much closer to becoming a reality, if the Sami appeals fail. Moreover, the Markbygden wind-power farm, which as of 2016 had not been fully built, has now further expanded.

The fact that all three projects have continued in their progress towards approval/expansion is important, because it means that the likely future cumulative impacts the community now face are significant. Any additional projects, such as the proposed Boliden mine, will likely signify the end to traditional reindeer husbandry as currently practised in the Semisjaur Njarg Sami community.

Regardless of whether the proposed Boliden mine goes ahead or not, this report tells a timely and important story. It tells the story of how a country like Sweden, well-known throughout the world for its pioneering work in the field of human rights abroad, fails dismally at home in regard to the rights of Sami people. It also demonstrates how such stories can be told better, so that the lived experiences of indigenous peoples are heard.

Rebecca Lawrence
April, 2019

1 Introduction

1.1 Background

This report concerns the impacts of the proposed Boliden copper mine in Laver, located on the Swedish side of Sápmi, Älvsbyn, Norrbotten County in Northern Sweden. It focuses on the impacts the mine will have on the Semisjaur Njarg Sami reindeer herding community (hereafter the Semisjaur Njarg Sami community). It was written by researchers Rebecca Lawrence and Rasmus Kløcker Larsen, in collaboration with the Semisjaur Njarg Sami community. The report was first published in 2016 in Swedish. In 2018–2019 it was updated and translated into English, and published in 2019 for an international audience.

The proposed location of the mine is on the community's winter grazing pastures. These pastures constitute a "bottleneck" for reindeer herding, and the community is already under significant pressure from a number of other encroachments and challenges. The Semisjaur Njarg Sami community want to continue to enjoy their right to pursue traditional reindeer herding in the area and to sustainably manage their traditional land use for future generations. They believe that a mine would make this impossible, and therefore oppose the establishment of a mine in Laver. The community commissioned this report in order to explain their points of view.

1.2 Purpose, methodology and analysis

1.2.1 Purpose

The main purpose of this report is to present and highlight the Semisjaur Njarg Sami community's perspective on how they might be affected by the proposed Boliden mine in Laver, Älvsbyn. In doing so, the aim is to provide a space for Sami knowledge on reindeer herding to take centre stage[28] and to ensure that herders' voices are heard. It focuses primarily on the Laver area and the winter group that is currently using it, but also deals with how the mine could affect the entire community. The analysis concentrates on the impacts the mine would have for the community in terms of their traditional land use, their culture and their rights.[29]

The report also aims to address questions about the broader impacts of various land encroachments on Sami areas: what does it mean for reindeer herding in the long term if more and more herders are forced to abandon reindeer herding because of competing land uses?

This report is directed towards decision-makers at both national and international levels, as well as Boliden and Boliden's stakeholders (e.g. investors). The aim is to provide all involved parties with an overall picture of how the Semisjaur Njarg Sami community see their future and what a mine in Laver could mean for them.

The focus and scope of the report have been discussed with the community on an ongoing basis. For example, discussions with the board of the Semisjaur Njarg Sami community revealed an interest in finding out more about how the Gällivare Forest Sami community has been affected by the Aitik mine, as both Aitik and Laver are low-grade copper deposits requiring large-scale open-pit mining over extensive areas. The Gällivare Forest Sami community's experiences with the impacts of the Aitik mine are therefore summarised in Chapter 7 as are experiences of other Sami reindeer herding communities with existing mines.

1.3 Limitations

The report has four significant limitations. The first is related to the fact that it focuses specifically on the Semisjaur Njarg Sami community: it does not address the impacts a mine might have on other Sami reindeer herding communities in the area, such as those of Ståkke, Östra Kikkejaur or Luokta-Mávas. It therefore does not deal with how the members of those communities regard the potential establishment of a mine, which is an important issue that merits further investigation.

28 See Oskal and Sara (2001), Sara (2009) and Turi et al. (2014) on traditional Sami knowledge.

29 This report does not include an assessment of the bio-physical impacts of the mine on the environment, although this is something that should be undertaken by independent scientific experts in collaboration with the Semisjaur Njarg Sami community.

The second limitation is related to the lack of additional information on the project itself. At the time of writing, Boliden has submitted an application to the Mining Inspectorate of Sweden for a mining exploitation concession. The application contains only a limited description of the project and its environmental impact, and is missing many aspects that are important for reindeer herding.[30] For example, Boliden's application includes no information on how the ore is to be transported; according to Sami communities that have had experience with mining activities, ore transportation is one of the most disruptive ways in which a mine can affect reindeer herding. This affects the conclusions of the report because it has not been possible to make a detailed analysis of some of the most significant disruptions to reindeer herding or the consequences of those disruptions. The report's conclusions should therefore be interpreted as a best-case scenario. If there had been more information available on the more significant impacts – such as ore transportation and infrastructure – it would have been possible to analyse and predict yet more negative consequences for reindeer herding in the area.

The third limitation, and linked to this, is the lack of information available on the proposed Nasa mine and proposed Råliden wind-power project, when this report was originally written in Swedish in 2015–2016. Both these projects have progressed significantly in the permitting process since then and are likely to have significant impacts on the Semisjaur Njarg Sami communities if realised. Although the report describes these projects, it does not include them in the impact assessment per se: their impacts are not mapped in Chapter 5, nor are they included in the impact assessment and scenario analyses in Chapter 9. Again, this simply means that report's conclusions should be interpreted as a best-case scenario.

The fourth limitation is that the work for this study was only carried out in Swedish and none of the workshops or interviews were held in Sami. This means that the report does not contain any Sami terms or quotations, a limitation that has been pointed out by two academic reviewers. This linguistic choice is primarily due to the authors' lack of knowledge of Sami. There are many reasons why the study and this report should have been carried out in Sami, at least in part. First of all, from the point of view of research ethics, it would have been easier for certain members of the community to share their experiences and knowledge – thereby affecting the research process – if some of the discussions, workshops and interviews had been held in Sami. Secondly, it would have provided a better opportunity to expand on matters of traditional knowledge, as much of this is encoded in the language and many Sami terms cannot be translated directly into Swedish.[31] In their work with the Semisjaur Njarg Sami community and its members, the authors have done their best to highlight the importance of traditional knowledge for reindeer herding work and Sami culture. Some shortcomings in the descriptions are unavoidable, however, as they were originally written in Swedish rather than Sami.

1.4 Method and material

The choice of Laver as a case study was made by the researchers in consultation with the "Land Use Working Group" of the National Association of Swedish Sami. The Working Group proposed a number of different cases where it might be useful to collaborate with a Sami reindeer herding community and produce an impact assessment from the point of view of the community in question. The mine proposed by Boliden on Semisjaur Njarg land stood out as a case study because it was the only ongoing process in the reindeer herding area in which a company was developing an environmental impact assessment for an exploitation concession.[32] The Semisjaur Njarg Sami community and the researchers then agreed on a mode of working and drew up a cooperation agreement governing the work.[33]

30 See Section 2.4 for a more detailed description of this issue.

31 See Ryd (2007) for a discussion of the 300 different Sami words for snow.

32 The case was also of interest because it involved an established mining company. A lot of attention has been given recently to small foreign-owned exploration and mining companies, and it was therefore interesting from a research point of view to look at a larger, established mining company.

33 The research was designed as a participatory action research process together with the Semisjaur Njarg Sami community. This research tradition is characterised by the goal of jointly creating knowledge – together with stakeholders affected by a specific change process, for example Greenwood and Levin (2007). Another ambition of the research project was to take the traditional knowledge of the members of the Sami community into consideration as much as possible, in line with Akwé: Kon Guidelines (Secretariat of the Convention on Biological Diversity 2004), guidelines produced within the framework of Article 8(j) of the Convention on Biological Diversity relating to the traditional knowledge of indigenous peoples and local communities. The initial research efforts of Larsen and Lawrence in connection with this report were financed by two grants from the FORMAS research council, which supports research in areas such as the environment, agricultural sciences and community building. The research grants financed the Semisjaur Njarg Sami community's travel costs in order to attend various meetings as part of the investigation process. The community paid its own labour costs, however. The translation of report from Swedish to English was funded by a separate FORMAS communications grant.

It is standard practice for environmental impact assessments to be carried out by the developers themselves or their consultants. This study is the first of its kind in Sweden, in which the affected Sami community's perspective on a development proposal is investigated with the support of researchers (with independent funding) in cooperation with the community itself. This helps to put forward a Sami perspective that is rarely given a platform in environmental impact assessment (EIA) investigations in Sweden.[34]

The report summarises an extensive body of working material compiled through a series of activities, including:

1. an examination of the various draft analyses of the reindeer industry produced by Boliden;
2. a number of meetings with the Semisjaur Njarg Sami community's chairperson (and also the vice chairperson at one of the meetings);
3. three half-day meetings with the Laver winter group, including a site visit to Laver with the winter group;
4. a half-day meeting with the board of the Semisjaur Njarg Sami community;
5. a half-day meeting with the chairperson of the Semisjaur Njarg Sami community and a GIS coordinator from the Sami Parliament, as well as several meetings with developers of the RenGIS software at the Swedish University of Agricultural Sciences, to map the various encroachments on the community along with relevant disturbance zones;
6. a full-day meeting with the entire Semisjaur Njarg Sami community, including a number of smaller workshops with youth, women and individual winter groups;
7. individual conversations, both on-site and by phone, with various winter groups;
8. a half-day meeting with the Gällivare Forest Sami community to clarify the reindeer herders' experiences with the Boliden Aitik mine, as well as subsequent phone meetings and email correspondence;
9. a half-day meeting with the entire Semisjaur Njarg Sami community and Boliden together;
10. three meetings/interviews with representatives of Boliden to gain a better understanding of how they see the EIA process and the mine's impacts on the community in question;
11. an examination of a number of EIAs, reindeer herding analyses and court decisions in relevant cases;
12. reading through various EIA guidelines/documents that have been produced on the basis of Swedish practice;
13. reading through the relevant research on matters including the impact of industrial activities/other changes on reindeer herding, as well as consultations with the following experts in the fields of:

    a. effects of supplementary feeding on reindeer (Birgitta Åhman, Professor of Reindeer Husbandry, Swedish University of Agricultural Sciences);
    b. human disturbances in reindeer habitat (Anna Skarin, Swedish University of Agricultural Sciences);
    c. Sami rights, indigenous rights and international law (Christina Allard, Luleå University of Technology; Malin Brännström, Umeå University; Jenny Wik, National Association of Swedish Sami; Mattias Åhrén, Arctic University of Norway);
    d. social and cultural values of reindeer herding (Åsa Nordin);
    e. Sami land use and the mining industry (Ragnhild Nilsson, Stockholm University);
    f. reindeer herding, Sami culture and state policy (Ulf Mörkenstam, Stockholm University);
    g. natural resources and management (Kaisa Raitio, Swedish University of Agricultural Sciences);
    h. risks of heavy metal pollution in mining (Prof. Emeritus Gunnar Jacks, KTH Royal Institute of Technology);
    i. mapping of Sami land use (Per Sandström and Stefan Sandström, Swedish University of Agricultural Sciences; Niila Inga, Laevas Sami reindeer herding community; Carl Österlin, Stockholm University);
    j. reindeer herding, resilience and "adaptability" (Annette Löf, Umeå University);
    k. the Sami language – specifically Pite Sami – and its connection to reindeer herding (Dr Joshua Wilbur, University of Freiburg).

14. Towards the end of writing the original report in Swedish, the authors also had the opportunity to access Boliden's statement to the Mining Inspectorate of Sweden, which contained a number of comments on a previous draft of this report. Based on Boliden's comments, certain clarifications have been provided in this final report.

34 e.g. Howitt (2005) and Lawrence and Raitio (2015).

The interviews and workshops conducted with the members of the Semisjaur Njarg Sami community began with very open questions to the reindeer herders and their families within the community about their thoughts on a potential mine and what they thought the impacts of a mine might be. Follow-up questions were then asked, and a number of follow-up discussions were arranged and different scenarios were carved out. The members, board and chairperson of the Semisjaur Njarg Sami community then had the opportunity to verify whether the different scenarios matched the community's own statements and the relevant research. Following this, various adjustments were made on the basis of the community's comments. This means that, right from the start, members of the community have determined the relevant scenarios to be discussed and described and the relevant information to be considered. The researchers' role has been to support these discussions within the community and ensure that all members have had an opportunity to have their voice heard.

All direct quotations in the report are from Sami community members unless otherwise specified. The quotations were gathered from discussions, workshops and meetings and specific references to quotations are not given. In some cases, the chairperson is named as the source if this is deemed relevant, but the majority of quotations are anonymous insofar as no names are mentioned. At the same time, it is impossible in some cases to rule out the possibility of a quotation being traced back to a specific individual given that the community consists of a relatively small group of people. The quotations reproduced in the report have been selected to give as broad and fair a picture as possible of the different points of view and opinions among the community's members.

The entire community was given the opportunity to comment on an early draft of the report, the governing board has been given a chance to comment on the final draft and the chairperson has commented on various texts on an ongoing basis. Most of the section on the annual reindeer herding cycle (section 4.2) was written by the chairperson.

The report was reviewed by a total of six independent academic reviewers. Professor Ciaran O'Faircheallaigh (Griffith University) and Dr. Marcus Carson (Stockholm Environment Institute) provided peer reviews upon request by the authors. In addition, four external anonymous reviewers were commissioned by the International Centre for Reindeer Husbandry. The six reviewers were consistently positive about the report, and in particular its robust impact assessment methodology. Several of them stated that they considered the quality of the research to be high.

The reviewers' proposed changes dealt mainly with matters relating to the structure of the report, clarifications of some factual issues, and requests for (1) the use of more Sami terms in the report, (2) more in-depth information about traditional knowledge and (3) broader discussions of policy. The comments were taken into account as far as possible, but some of them – particularly the request for more Sami terms in the report – were difficult to incorporate given the circumstances (see section 1.3 above for more information).

In late 2018 the original Swedish report was translated into English by Paul Williams, with assistance by Rebecca Lawrence. Megan Jones co-ordinated the translation and suggested the title "Fighting to be Herd". For this English version, Carl Österlin, Stockholm University, produced additional maps of the Laver mine footprint overlaid upon major cities to give an international audience some perspective of the scale of the mine.

1.5 Analytical framework

1.5.1 Scenario analysis

Put simply, an impact assessment consists of two parts: (1) a baseline study of the current situation and (2) a prospective analysis of the how the situation could develop if the planned development does or does not take place, and what direct and indirect impacts these alternatives might entail. To structure the assessment, a so-called scenario analysis is applied in this report.

A scenario analysis is an established method of identifying and analysing a number of different possible scenarios and their impacts.[35] It does not aim to describe what the future *will* be, because nobody can predict the future. Instead, a scenario analysis is intended to develop a number of different accounts of what the future is *most likely* to be like *if* certain decisions are made or certain things happen. The scenario analysis basically asks the question: "what happens if?"[36] A common denominator for many methods used in scenario analysis is that they are written in the present tense.[37]

What happens, for example, *if* a mine is established in Laver? What happens *if* a mine is established while other winter grazing pastures within Semisjaur Njarg also disappear as a result of the Reindeer Grazing Convention? What happens *if* a mine is established while Semisjaur Njarg is also exposed to the impacts of the Markbygden Wind Farm (with 1,101 planned wind turbines), which is right on the boundary of their winter grazing pastures? What happens to Sami reindeer herding in the area – and to Sami culture – *if* more reindeer herders are forced to leave reindeer herding? Scenario analysis is therefore a suitable method of more closely investigating the indirect and cumulative impacts that can arise as a result of a development project *in the longer term*.

There are two main scenarios developed in the report: a scenario without a mine and a scenario with a mine. These scenarios – or accounts – are based on interviews and meetings with the Semisjaur Njarg Sami community, the experiences of the Gällivare Forest Sami reindeer herding community with the Aitik mine, and relevant research. They are presented in Chapter 9. Both scenarios are written in the present tense, as if the reader were in the middle of the situation being described. For the Semisjaur Njarg Sami community, they are not equivalent scenarios: a scenario without a mine is absolutely preferable.

1.5.2 Disturbance zones

According to the most recent scientific research, an analysis of the impact of development on reindeer should consider not only the direct disruption and use of land, but also the "disturbance zone" around the development. A disturbance zone causes disruption to reindeer and changes in their behaviour. Although some stray reindeer can occasionally be found in the area, the majority of the herd will avoid the disturbance zone.[38] Sami reindeer herding communities can compensate for these disruptions in different ways, such by supervising the reindeer more closely, more intensive work and supplementary feeding[39], but these measures all have negative effects on herding. These effects are discussed in detail in this report.

The disturbance zones applied in this report were determined in consultation with Anna Skarin (Swedish University of Agricultural Sciences, a leading researcher in the field), Thomas Kuhmonen (GIS officer in the Sami Parliament), other Sami reindeer herding communities that have had experiences with existing mining operations and the Semisjaur Njarg Sami Community.[40] Both ongoing and imminent disruptions to the community's land, along with the relevant disturbance zones, were mapped using the RenGIS[41] software and are set out in Chapter 5. The disturbance zone for the proposed mine in Laver is set out in Chapter 6.[42]

1.5.3 Human rights perspective

According to the latest international guidelines, such as those of the UN and the International Association for Impact Assessment, impact assessments must take into account the impacts that high-risk industrial

35 Scenario analyses have also been used previously to understand the impacts of development projects on reindeer husbandry (e.g. UNEP 2001; Vistnes et al. 2009).
36 e.g. Duinker and Greig (2007).
37 e.g. Frittaion et al. (2010).
38 See Skarin and Åhman (2014) and the associated reference list, which includes a comprehensive overview of the research into disturbance zones in Sweden as well as in Norway, Finland and North America.
39 Supplementary feeding refers to herders feeding reindeer pellets rather than the reindeer feeding from free pastures.
40 These disturbance zones must be seen as preliminary, and the research on the Semisjaur Njarg's local conditions still needs to be applied further in order to calculate the actual disturbance zones, on the basis of topography, migration routes and grazing quality, for example.
41 RenGIS is a computer program that aims to map land use by Sami reindeer herding communities and competing land uses. It was developed under the Reindeer Husbandry Plan coordinated by the Swedish Forest Agency, and is now overseen by the Swedish Sami Parliament (see also Sandström et al. 2003).
42 The scientific term "disturbance zone" is not directly compatible with the local and traditional knowledge of the reindeer herders, who use other terms to describe the impacts of the mine. This is not surprising given that Western science and the traditional knowledge of indigenous peoples are often based on entirely different world views. See Turi et al. (2014), for example.

projects could have on relevant human rights.[43] Nowadays, it is the norm in international institutions such as the OECD and the World Bank to include a human rights perspective in impact assessments relating to mining projects, but this practice is not generally applied in Sweden. Around the world, however, there is a more developed standard on human rights perspectives in impact assessments, although there is still a need for further development even there.[44] In line with international standards, a human rights perspective was therefore included in the report's analysis.[45] This is mainly set out in Chapter 2 below.

1.6 Structure of the report

The report is divided into ten chapters. Following this introduction, Chapter 2 provides an international perspective by analysing the Swedish permit process for mines against the backdrop of laws relating to indigenous peoples. This chapter also gives a summary of Boliden's Environmental Impact Assessment (EIA) process with the Semisjaur Njarg Sami community, as a way of highlighting Swedish EIA practice and its more general deficiencies with regard to Sami rights. Chapter 3 provides a summary of the proposed Boliden mining project in Laver.

Chapters 4, 5, 6 and 7 present the "baseline" material, i.e. a basic investigation into the current situation. Chapter 4 provides a comprehensive description of the Semisjaur Njarg Sami community, as well as a detailed description of their land use. Chapter 5 summarises the existing and imminent land encroachments facing the community. Chapter 6 gives a description of reindeer herding's social and cultural importance in general and for the Semisjaur Njarg Sami community in particular. It also describes the general challenges reindeer herders face. Finally, Chapter 7 discusses the current knowledge surrounding the impacts of the mining industry on Sami reindeer herding. A number of examples of experiences from different Sami reindeer herding communities are presented, and the Gällivare Forest Sami community's experiences with the Boliden Aitik mine are examined in depth.

Chapters 8 and 9 contain the actual impact assessment of the mine proposed by Boliden. Chapter 8 presents the mine and its disturbance zone. In Chapter 9, the scenario analysis is developed with a null scenario (or null alternative), in which the proposed mine in Laver is not established. This chapter also sets out the alternative scenario in which the mine is established, along with an analysis of its likely impacts. Both scenarios play out from about ten years in the future, i.e. around 2025, given that this is when the proposed mine is expected to be fully operational.

Chapter 10 summarises the report with a number of more overarching conclusions. The report does not propose any mitigation or management strategies, rather it analyses the mitigation proposals by the proponent, Boliden. It is the view of the community that the impacts of the mine cannot be mitigated or compensated for and that the only alternative is to oppose the mine.

43 See Vanclay (2003) and the guidelines developed in connection with the UN Guiding Principles on Business and Human Rights (Ruggie 2011), for example.
44 e.g. Vanclay and Esteves (2015).
45 Note that this report is not a complete human rights impact assessment, but could rather be described as a social and traditional land use impact assessment with a human rights perspective, i.e. a combined community-based and human rights-based approach; see Vanclay et al. (2015).

2 Indigenous rights and mining

This chapter begins with some brief comments on international law and norms and human rights as they pertain to indigenous peoples affected by extractive industries. This is followed by a short discussion of Sami rights in Sweden, and an overview of the Swedish permit process for mines and its shortcomings, with particular regard to Sami rights and international laws and norms. It then outlines the impact assessment process carried out by Boliden for the Laver mine, highlighting key issues pertaining to the Semisjaur Njarg Sami community and indigenous rights.

The purpose of this chapter is to offer a brief introduction for international readers to some of the key features, and deficiencies, of the Swedish permitting process for mines in light of international laws and norms on the rights of indigenous peoples. This chapter does not offer a comprehensive legal and scholarly review of the issues highlighted, and refers to relevant literature and sources where appropriate.

2.1 International laws and norms

There is an evolving body of international law and norms that establishes standards for states and corporations in regard to extractive industries on indigenous peoples' traditional territories. The rights to which many of these standards refer are the human rights of indigenous peoples, and more specifically their cultural and property rights.[46] Many states and corporations do not comply with these laws and norms, and Sweden is no exception. Swedish law and standard Swedish practice have generally failed to keep up with international laws on indigenous peoples in recent years,[47] and Sweden has repeatedly been criticised by a number of UN bodies[48] and by the Swedish Equality Ombudsman[49] for this failure. Although Sweden has signed up to various international conventions for the protection of indigenous peoples, as things stand, they have not yet been implemented into standard practice in Sweden; below we highlight some key examples.

For example, the UN Committee on the Elimination of Racial Discrimination (CERD) has, in recent years, interpreted the International Convention on the Elimination of All Forms of Racial Discrimination (ICERD) to mean that states must ensure that the affected indigenous society has consented to any proposed industrial developments before the developments go ahead on that society's traditional lands, thus ensuring that their property rights are respected.[50] Sweden ratified the ICERD and has therefore undertaken to comply with it. Yet, for example, Sweden is currently the subject of an ongoing investigation by CERD regarding an alleged breach of the Vapsten Sami community's property rights, because the Government approved a mining concession on their customary lands without their consent.[51]

The right to culture is enshrined in particular in the International Covenant on Civil and Political Rights (ICCPR, Article 27).[52] As with the CERD's interpretation of the ICERD, the UN Human Rights Committee's interpretation of the ICCPR has evolved in recent years and now prohibits competing activities that cause significant difficulties for an indigenous society in the practice of its traditional land uses.[53] This is because an indigenous people's traditional land use is necessary for the survival of its culture. Sweden has also ratified the ICCPR and has therefore undertaken to comply with it, yet, as this report highlights, this is not reflected in Swedish domestic permitting practices for mines.

46 See Åhrén (2014) for a detailed account of indigenous rights and international law.
47 Larsen et al. (2017).
48 For example, see Anaya (2011) and statements by the UN Committee on the Elimination of Racial Discrimination, e.g. CERD/C/SWE/CO/19-21 para. 17: "The Committee also expresses its concern that the State party allows major industrial and other activities affecting Sami, including under the Swedish Mining Act, to proceed in the Sami territories without Sami communities offering their free, prior and informed consent (arts. 5 (d)(v))."
49 Swedish Equality Ombudsman (2014).
50 According to Thornberry (2011): "...the principle of informed consent is now 'standard'". See UN-REDD Programme (2013) for a summary of the relevant cases in international law confirming that the free, prior and informed consent of indigenous peoples is required before a state can permit any industrial development that may have a negative impact on the property rights and culture of the indigenous people.
51 See CERD/C/92/D/54/201.
52 According to Article 27, minorities "shall not be denied the right, in community with the other members of their group, to enjoy their own culture".
53 For an example of a specific case, see Ángela Poma Poma vs. Peru, Comm. No. 1457/2006, para. 7. See also Åhrén (2014) for a review of several different cases.

Similarly, the right to self-determination has evolved in recent years in the context of international law on indigenous peoples. The Declaration on the Rights of Indigenous Peoples adopted by the UN General Assembly in 2007 maintains, among many other things, that all "[i]ndigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development" (Article 3). Traditional reindeer herding is crucial for the social and cultural development of the Sami people, because reindeer herding is a cornerstone of Sami culture. The revised Instrument of Government (in Swedish: *regeringsformen*), one of the four fundamental laws of Sweden, adopted by the Swedish Parliament in 2010, for the first time gave recognition to the special position of the Sami people in Sweden as an indigenous people.[54] Paragraph 2 of the Instrument of Government states that the "ability of the Sami people and that of ethnic, linguistic and religious minorities to maintain and develop their own culture and society shall be promoted". Formulations such as this promote normative ideals of what *should* take place, but again – as this report shows – the reality on the ground is another matter.

The key point is that substantial portions of international laws and norms are not legally binding on states that ratify them, in the sense that domestic courts will not require states to comply with their provisions. There are, in fact, few international instruments that can be legally enforced in the domestic arena. An exception is the International Labour Organisation "Conventions Concerning Indigenous and Tribal Peoples" (ILO 169), which is binding on signatories. Sweden is not, however, a signatory to this Convention, although neighbouring Norway is.

Having said that, Nordic countries, including Sweden *are* more sensitive to criticisms by UN bodies in regard to their approach to indigenous rights than many other states, and indeed Sweden prides itself as symbolising the "gold standard" of human rights abroad.[55] To be critiqued at home, for not respecting the human rights of Sami people, therefore sits uncomfortably with Swedish governments. Moreover, Nordic companies and institutional investors are becoming increasingly vigilant in ensuring their activities and investments are in line with international laws and norms, even if state practices in countries where they operate or invest are not. Although the discrepancy between international laws and norms on one hand, and domestic practices on the other, are often presumed to be most acute in the developing world[56], as this report demonstrates, Sweden is in fact no exception.

2.2 Sami rights in Sweden

Reindeer herding rights in Sweden consist of a bundle of rights, including reindeer grazing rights and hunting and fishing rights. In order to enjoy these rights, one must be a member of a Sami reindeer herding community.

Reindeer herding rights are a usufruct right based on immemorial prescription: members of Sami reindeer herding communities have the right to use the land, based on long-term customary use. This is a form of property right, recognised through Swedish jurisprudence, in particular via the Supreme Court in the Taxed Mountains Case (1981) and the Nordmaling Case (2011).[57] At present, these rights are codified in the Swedish Reindeer Herding Act (1971:437), but they apply regardless of the legislation in force. In other words, as confirmed by the Swedish Supreme Court, the legal grounds of the rights are the long-term customary use, not the Reindeer Herding Act per se.[58]

Reindeer herding rights do not constitute an exclusive property right: as a right based on customary use it overlaps with multiple tenures and other land uses. The possibility for Sami people to fully enjoy and exercise their rights is in fact significantly compromised by competing land uses. Reindeer herding rights cover approximately 50% of Northern Sweden, but these same lands may be owned, leased or used by competing land uses such forestry, mining and tourism (all of which create significant disturbances to reindeer herding) or as National Parks (where disturbances are fewer, but where herders' activities and hunting and fishing rights may be limited). There is thus a complex system of overlapping rights in Sweden where parallel rights holders are expected, in theory, to coexist.

54 Lawrence and Mörkenstam (2012).
55 See Brysk (2009).
56 See Lawrence and Moritz (2019) which highlights beliefs within the Swedish mining industry that indigenous and human rights issues are only relevant in developing or settler-colonial nations.
57 See Skattefjällsmålet, NJA 1981 p. 1 and Nordmalingsmålet, NJA 2011. See also Lawrence and Åhrén (2016) and Bengtsson (2011).
58 See Bengtsson (2004).

However, while coexistence is often the stated goal of development proponents and regulatory authorities, in reality, this is rarely an equal form of coexistence.[59] Sami land uses are systematically marginalised in land use and planning decisions, and Sami reindeer herding communities struggle to manage the cumulative impacts of multiple completing land uses.[60] In response, they are forced to continually adapt their reindeer husbandry. Migration routes are severed by ore transportation, and so reindeer herders must instead transport reindeer by truck between seasonal pastures; a wind-power farm is built, and so herders lose several weeks of pasture and must instead feed the reindeer artificial pellets to a greater extent. A hydropower development is extended, making migration across rivers and lakes more difficult, and so the migration route is changed, which places more pressure on pastures elsewhere and reindeer spreading onto neighbouring Sami community pastures, creating internal conflicts. In short, there is a continual buffering that takes place within Sami communities, as herders try to adapt, compensate and manage their land use in the face of increased competition for their traditional land. Added to this are the complex and unpredictable impacts of climate change.

Moreover, although Swedish jurisprudence (as noted above) recognises Sami property rights, this has not filtered down into sectoral legislation. The Mining Act, for example, does not reflect the developments in Swedish domestic jurisprudence, something discussed in greater detail further below.[61]

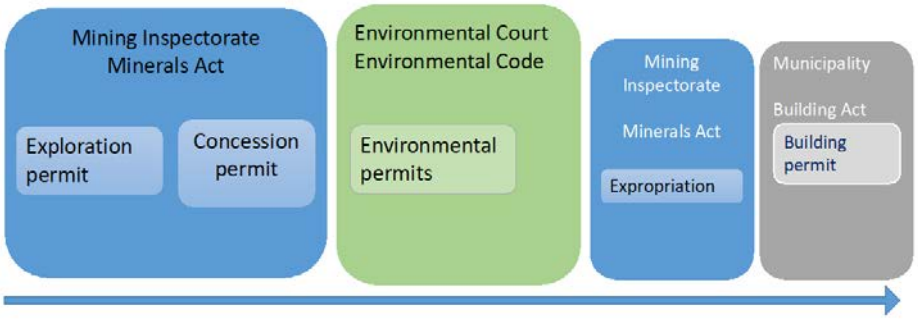
2.3 The Swedish mining permit system

A fragmented permit process

Permit procedures for mines in Sweden are highly fragmented, with mining companies requiring a number of different permits in order to open a mine. Mining companies are first required to apply for a mining concession permit (in Swedish: *bearbetningskoncession*), which is issued by the Mining Inspectorate of Sweden. The Mining Inspectorate's decision is made in close consultation with the local County Administrative Board. Both, in turn, consult with potentially affected groups in a complex and often very time consuming process of submissions (in Swedish: *yttrande*), responses to submissions and resubmissions. If the County Administration and Mining Inspectorate disagree, the latter can elevate the decision to the Government. The mining company and affected Sami community both have the right to appeal the decision by the Mining Inspectorate to the central Government of Sweden.

If successful in their application for a mining concession permit, the mining company are then required to apply for one or more environmental permits (in Swedish: *miljötillstånd*), which are issued by the Swedish Land and Environment Court. If successful in their environmental permit, they are then required to go back to the Mining Inspectorate for an official land allocation agreement or expropriation (in Swedish: *markanvisning*)[62], and thereafter apply for a number of different development permits for associated infrastructure (e.g. power lines) and roads, issued in accordance with various sectoral legislations (see Figure 1).

Figure 1. Swedish permit process for mines, indicating the different stages, respective regulatory authorities and applicable legislation.



In the course of applying for mining concession and environmental permits, mining companies must produce an EIA, which should include an overall

59 See Brännström on the unequal treatment of reindeer herding rights in relation to the forestry industry, and Lawrence and Åhrén (2016) and Lawrence and Larsen (2017) in regard to reindeer herding rights and the mining industry.
60 Larsen et al. (2017).
61 See Lawrence and Åhrén (2016).
62 If a land allocation agreement with the land-owner concerning compensation cannot be reached, an expropriation will take place under the Expropriation Act. This process is not satisfactory for Sami reindeer herding communities because, although a de facto expropriation of their lands take place, by way of their land being rendered unusable for them, monetary compensation does not adequately compensate for lost grazing lands (see Lawrence and Åhrén, 2016).

assessment of the impacts on human health and the environment.[63] Until a few years ago the EIA was usually a desk-top study, dealing only with certain aspects of the impact of a mine on reindeer herding. Nowadays many mining companies carry out relatively extensive "reindeer herding analyses", which may involve a considerable level of contact and cooperation with the affected Sami community. Reindeer herding analyses have become more common, because Sami communities have begun to demand a more solid basis for EIAs. Yet they remain problematic for many reasons, not least because they are still proponent driven and funded.

Moreover, under the practice that has emerged, this process is fragmented into two EIAs. The first EIA, produced as part of a mining concession application, has traditionally been much more limited in scope than the second EIA, produced later on as part of the environmental permit process. This is because, when applying for a mining concession, permitting authorities have not required that mining companies assess the impacts of the entire project including its facilities, and transportation of ore etc. – i.e. the entire range of industrial activities. Rather, mining companies have only been required to assess impacts that occur inside the concession area (i.e. the immediate mining footprint).

The problem with carrying out the assessments in this order is that it is at the mining concession stage i.e. the first EIA, that the authorities (and government, if appealed) must (according to the Environmental Code) make a decision as to which land use should prevail in the case of a land use conflict: mining or reindeer herding? Yet, at this early stage, the full project design has not been established, presented for consultations nor assessed for its impacts. In making a land use decision, the Mining Inspectorate of Sweden first needs to establish whether it is possible for competing land uses to coexist and, if it is deemed that they cannot, which of the competing interests should be prioritised.[64] According to the Minerals Act, the Swedish Land and Environment Court cannot re-examine the land use decision made by the Mining Inspectorate,[65] despite the fact that the impact of the entire project on Sami land use is not presented until the environmental permitting process is carried out later on, in the second EIA.

Importantly, a landmark court decision in 2016 changed the way the legal requirements are to be interpreted, and EIAs for mining concessions, and permitting authorities' assessments of them, should now consider *all the impacts*, both inside and outside the immediate mine footprint.[66] This is significant since the way the law has been thus far interpreted has meant that the impacts of a mine on reindeer herding and Sami land use were assessed before the project had been fully examined. Without being able to consider a project's overall impact on Sami lands, the permitting authorities and courts were also unable to carry out a full assessment of its potential impact on Sami property rights or the Sami people's right to their own culture. This was a significant failing in the regulatory process and meant that issues pertaining to Sami rights fell between the cracks.

In a recent application of this new requirement, permitting authorities refused an application for a mining concession in Kyrkberget because the total impacts of the mine and associated infrastructure would be too great for the affected reindeer herding community.[67] This signals a fundamentally new approach to assessing mining applications in Sweden, which pays more regard to the total impacts of mining projects on Sami communities.

63 There are now a number of documents that have examined this development and provide guidance in a Swedish context, e.g. Alexandersson (2005), Southern Lapland Research Department (2009a), Lindblom, (2010), Svonni, (2010) and Geological Survey of Sweden (2013). See Lawrence and Larsen (2017) for a critique of proponent driven impact assessments in Sweden.

64 In cases of permit applications where there is a conflict between reindeer herding and mining, the Swedish Environmental Code (SFS1998:896 Ch. 3, Section 10) requires the Court to carry out a balancing of national interests, i.e. to balance the long-term sustainability and public interest associated with the different forms of land use (see also Geological Survey of Sweden 2013).

65 See the Swedish Mining Act (1991:45) 4:2. For a specific example, see also Umeå District Court – Partial Judgement 2003 Mlr 112-01 / Svartliden.

66 See the Norra Kärr judgement from the Supreme Administrative Court of Sweden from February 2016 (case 2047-14), which relates specifically to the requirements of EU law. In this judgement, the Court repealed the government's approval of a mining concession in Norra Kärr in the municipality of Jönköping on the grounds that the basis for the decision (i.e. the application submitted by the company) did not include land use impacts for operating facilities (waste rock storage, tailings reservoir, clarification pond etc.), and the EIA therefore did not cover those facilities. The Court stated that the proposed land use for operating facilities will affect the surrounding areas, including the adjacent Natura 2000 areas, and that a joint assessment should have been carried out as part of the concession application, rather than later on as part of the application to the Land and Environment Court.

67 The mining concession application (Kyrkberget K no. 1) was rejected by both the Country Administration of Västerbotten and the Mining Inspectorate of Sweden on 11 January 2019.

2.3.2 Mining and reindeer herding presumed to coexist

Decisions and judgements by the Mining Inspectorate of Sweden, the courts and the Government have been based on certain assumptions regarding the impacts of mining on reindeer herding.[68] One common assumption is that the establishment of a mine has no significant impact on Sami reindeer herding and that mining and reindeer herding can therefore coexist.[69] It is usually assumed that any impact can be negated by technical means such as supplementary feeding, ecoducts and fencing, and that this will make coexistence possible.

However, this viewpoint can be disputed on the following two grounds in particular. Firstly, there is the question of whether sustainable coexistence can be achieved on the basis of forcing reindeer herding to adopt unwanted technical adaptations.[70] Many of these mitigations entail a shift away from reindeer grazing on free pastures and with minimal intervention from herders, to a form of reindeer herding more akin to "reindeer farming" and a dependency on expensive technical interventions and a significantly higher workload for herders. Secondly, there are a number of Sami rights that risk being breached by such adaptations. For example, the Sami have a recognised right to self-determination, meaning that they are entitled to exercise control over their own economic, social and cultural development. They therefore have the right to decide for themselves how reindeer herding should evolve. Furthermore, forcing such adaptations on them may constitute a breach of their right to their culture and property, as outlined further below.

2.3.3 Inadequate consultations with Sami communities

The Swedish Mining Act does not require mining companies to consult with affected Sami communities when conducting an EIA as part of an application for a mining concession, even though one of the purposes of the document is to assess the impacts of the mine on Sami land use.[71] Although the Swedish Mining Act requires the relevant County Administrative Board to give the affected Sami communities the opportunity to express their views on the company's EIA, this requirement is not equivalent to the duty to consult under international law.[72] In short, Swedish law does not require adequate consultations with affected Sami communities in those parts of the permit process that are most important for Sami land use, i.e. when issuing mining concessions. There are also several examples from other sectors – such as tourism and wind power – where Sami communities are routinely not consulted in accordance even with the limited requirements of national law,[73] have been excluded from consultation processes by various informal means[74] and have been marginalised through more general structural discrimination.[75]

2.3.4 Impacts of permit processes on Sami property and cultural rights

The Swedish Mining Act does not require the state to seek the consent of the affected Sami communities before a mine is granted a permit. This is one of the reasons why Sweden has repeatedly been criticised by the CERD for not respecting Sami property rights in permit procedures, including those for mines, and for allowing "major industrial and other activities affecting Sami, including under the Swedish Mining Act, to proceed in the Sami territories without Sami communities offering their free, prior and informed consent (arts. 5 (d)(v))."[76]

68 e.g. Torp (2014).

69 The coexistence assumption has even also meant that decision-makers have, in some cases, actually failed to apply Chapters 3 and 4 of the Swedish Environmental Code (so-called housekeeping provisions) where it is actually needed. A clear example of this can be seen in the Vapsten vs Nickelmountain case (HFD-443-11) regarding the company's application for a mining concession. In this case, the judgement of the Supreme Administrative Court was that the government's earlier assessment was flawed, in that it had assumed that coexistence was possible without carrying out an analysis to determine if this was actually the case, in line with the requirements of Chapters 3 and 4.

70 Löf notes that reindeer herding has long been described as adaptable by the herders themselves, by the majority society and by researchers. For a way of life and a livelihood that is highly dependent on a constantly shifting environment and fast-changing weather conditions, flexibility and adaptability are necessary in order to survive. The concept of the supposed adaptability of reindeer herding should not simply be accepted without criticism, however; it can also be seen as a double-edged sword that is increasingly being used against reindeer herding. As early as the 1960s, the idea was put forward that, because reindeer herding had been able to adapt to the large-scale expansion of hydropower without any major problems, the industrialisation of reindeer herding lands should not be a major problem either; reindeer herders would surely be able to adapt to those changes too (Löf 2014).

71 Most mining companies now conduct some form of consultation with affected Sami communities ahead of an application for a mining exploitation concession, although there is no legal requirement for them to do so. There are a number of problems that can arise in this type of informal consultation process, some of which are discussed in section 2.3.

72 For example, see Ward (2011) for a discussion of consultations under international law. See also Allard (2006) for a critical examination of consultations in a Swedish context.

73 e.g. Torp (2007).

74 e.g. Lawrence (2014).

75 See Swedish Equality Ombudsman (2014).

76 See CERD/C/SWE/CO/19-21 para. 17.

Property rights are not absolute, and states have the formal right to expropriate land – thereby breaching property rights – for the purposes of mineral extraction and other projects that are in the interest of the nation or society. States usually operate under the assumption that mining projects are in the legitimate interest of society; however, the UN Special Rapporteur on the Rights of Indigenous Peoples has stated that this is not necessarily the case concerning commercial activities, particularly where the interests involved relate to private profit.[77] In such cases, the rapporteur maintains that expropriation for the sake of the national interest or greater societal benefit is not legitimate.

Moreover, even if a proposed project is in the legitimate interest of society, the compensation for a breach of property rights must be proportionate to the breach itself. According to the Swedish Mining Act, compensation for breaches of reindeer herding rights is granted in line with similar principles to those applied to breaches of land ownership rights, such as those when farmers or private property owners lose their productive land or assets due to mining. In many cases, courts and authorities have attempted to "compensate" Sami communities based on the number of square kilometres of lost pastures. This essentially means that the Swedish authorities and courts carry out a form of "market-based" assessment of the lost land, on which the financial compensation is based.

However, breaches of Sami property rights have not only an economic impact, but also and above all a cultural impact. Reindeer herding lands and the practice of reindeer herding itself are intimately associated with Sami culture,[78] just as other indigenous peoples depend on their traditional lands for their cultural survival. This distinction is crucial given that financial compensation is used to "justify" the breach of rights. However, taking into consideration the fact that financial compensation cannot make up for the potential erosion of an indigenous people's traditional land use and culture and that there is no other land that can replace the property that has been lost, it becomes more difficult to justify the breach of rights in accordance with the principle of non-discrimination.[79]

Although it may well be difficult for affected Sami communities to prosecute breaches of their property and cultural rights in a domestic court of law, it is becoming increasingly common for these kinds of complaints to be taken to the international arena. In doing so, pressure builds on countries, such as Sweden, to align themselves with international law and norms. It also leaves those companies and investors involved in activities that are the subject of complaints vulnerable to share-holder actions and questions regarding their own ethical conduct.[80]

2.4 Boliden's EIA process in Laver

This section gives a brief account of how an EIA process between a mining company and a Sami community is conducted in practice. This case relates specifically to the EIA process carried out by Boliden in cooperation with the Semisjaur Njarg Sami community, but it gives a clear illustration of the problems that often arise in such processes.

In autumn 2013, Boliden began working on an EIA for the proposed mine in Laver. As part of their EIA, the company drew up a separate reindeer herding analysis to establish the impacts of the mine on the Semisjaur Njarg Sami community.[81] The community decided to take part in the EIA process and the associated reindeer herding analysis, making it clear in the cooperation agreement between the community and Boliden that the community opposed the mine. The process of cooperation between the Semisjaur Njarg Sami community and Boliden consisted of ten or so meetings in which Boliden attempted to map the community's land use and the mine's impact on the community.

77 See Anaya (2013), para. 35.
78 Prop. 1998/99:143 p. 64.
79 The non-discrimination principle not only requires that similar cases be handled similarly, but also that different cases be handled differently. In brief, breaches of the land rights of an indigenous people have far-reaching impacts on the culture of that people, whereas the same is not true in the case of non-indigenous peoples. It is therefore discriminatory to attempt to assess or compensate for breaches of the land rights of indigenous peoples in the same way as for non-indigenous peoples (see Åhrén 2014).
80 See Lawrence (2007, 2008).
81 Other industrial developers usually commission independent consultants to carry out their reindeer herding analyses, but Boliden carry out this work internally and conduct their own investigations.

As described below, Boliden and the Semisjaur Njarg Sami community have had very different perceptions of the EIA process and its content.[82] For example, Boliden and the Semisjaur Njarg Sami community have very different "world views", or perceptions, that have shaped their respective views of the EIA process conducted by the company in cooperation with the community for the Laver mine.[83] The differences between the results of Boliden's EIA process and the results of this study also reflect significant differences in the working methods used by Boliden compared to those of this report. In the company's EIA, the issues to be discussed were defined by Boliden and not the community. The work contained in this study, by contrast, has largely been directed by the community itself. This study has therefore also given the members of the Sami community a more in-depth knowledge and insight into what a mine might mean for them.

2.4.1 Disagreement about what to include in the EIA process

The EIA process between the Semisjaur Njarg Sami community and Boliden has been characterised by differences in their perceptions of what should or should not be included in the reindeer herding analysis. Boliden maintain that they have made significant efforts to conduct their investigation into reindeer herding issues in the best way possible and to promote good, open dialogue. They also believe that they have done so successfully given the conflicting interests inherent in the project, although they acknowledge that there is room for improvement.[84]

However, in the course of Boliden's EIA process, the Semisjaur Njarg Sami community have told Boliden on a number of occasions that they consider the basis of the investigation to be inadequate and have requested a much more detailed description of the mine's potential impacts on reindeer herding and the community than Boliden was prepared to provide in its EIA. In late September 2014, Boliden submitted its EIA and application for a mining concession to the Mining Inspectorate of Sweden, even though the community were still in disagreement with Boliden regarding the contents of the EIA, and in particular the reindeer-herding analysis. The following discussion focuses on Boliden's EIA process itself, that is, prior to its submission to permitting authorities. The trajectory of the permit process since then is discussed further in Chapter 3.

2.4.2 Disagreement about what the parties agree on

As well as disagreeing about what should be included in the reindeer herding analysis, the Semisjaur Njarg Sami community and Boliden also disagree about whether (or not) they actually agree on the content of the analysis itself. In general, Boliden and the community appear to agree on the description of the community's current land use, although it is missing some important details on competing land uses. By contrast, they have entirely different views on matters surrounding the impacts of the mine, i.e. how to interpret the impact of the loss of pasture on the winter group and the community as a whole. For example, Boliden has produced a map that attempts to show what the community's land use will look like in the presence of a mine. This map indicates that the reindeer will continue to be able to use the area in Laver around the mine. Boliden maintain that the mapping material was produced by the community together with Boliden and that they therefore agree on it. The community, on the other hand, believe that Boliden have ignored the impacts of a disturbance zone around the mine, and that Boliden's map therefore does not consider the *functional loss of pasture* or how this will affect the winter group and the community in the long term.

The general view of the community is that Boliden has manipulated the process – and therefore limited it – by reducing the scope of the area and the indirect impacts of the loss of pasture. In summary, Boliden take the view that they are in agreement with the community to a much greater extent than the community themselves do. This raises the question as to whether two parties can actually be in agreement if only one of the parties believes they are.

Related to this is the issue of whether or not the views of the community are reflected in Boliden's reindeer herding analysis where those views differ from those of Boliden. In an early draft of Boliden's reindeer herding analysis, for example, there was no mention of the community being opposed to the mine. The fact

82 Boliden have been given the opportunity to comment on Section 2.3 and have replied by email (18 June 2015) to say that they do not agree with the description of the process given here. Boliden also maintain that there are inaccuracies in the description, but do not specify what they are.

83 For a more detailed introduction to the term "world view" (*världsbild* in Swedish), see also Ison (2008), for example.

84 Email correspondence from Boliden, 18 June 2015.

that the community were opposed to the mine was written into a confidential agreement between Boliden and the Semisjaur Njarg Sami community, but not into the draft of the reindeer herding analysis. A later draft mentioned that the community were opposed to the mine, but omitted the fact that they had not approved the content of the reindeer herding analysis and were in fact opposed to its submission to the permitting authorities in its current form. In the final draft, Boliden also stated that the community believed that the impacts needed to be more clearly illustrated.[85]

2.4.3 Disagreement about the transparency of the process

Boliden and the Semisjaur Njarg Sami community also have different views on whether or not the EIA process has been conducted transparently, i.e. the extent to which relevant information has been made available to the community. For example, at the time of the EIA process, permitting authorities did not require that a mining concession application provide full description of the proposed design of the mine (e.g. ore transportation and related infrastructure).

However, the community take the view that the greatest obstacle has been Boliden's perceived failure to share the material that was available. According to the community, this has created problems with regard to the location of different facilities, such as tailings dams. The community state that, during one meeting, Boliden presented four different locations and asked the community which of them would be the best from a reindeer herding viewpoint. They state they did not receive any written material either before or after the meeting. At a later meeting, the community explained that the company informed them that they had selected the location identified by the community as being the worst of the four options from a reindeer herding viewpoint. The community state they did not receive any written account of how the company reached the decision to select this location, other than that the company's representative told them that the other options were too close to Natura 2000 areas (protected areas under EU law) and would therefore require special assessments/permits.

In another example, Boliden commissioned the Museum of Norrbotten to conduct an archaeological study of the area – including many Sami archaeological sites – without consulting with the community on the scope or design of the study.[86] In summary, the Semisjaur Njarg Sami community's chairperson maintains that Boliden's working methods have caused frustration for the community: "If I know what I need to ask Boliden for then I get it, but first I need to know what to ask for."

85 Other Sami communities have had similar experiences with other EIA processes. See the experiences of the Malå Sami community with the EIA process for the Storliden mine, for example: "The Malå Sami community believe that one of the problems is that the community is not perceived as credible but is seen as just one party in the case, resulting in submitted information being 'filtered and corrected' before it is presented in the EIA" (Alexandersson 2005).

86 A telephone conversation with Lars Backman, archaeologist at the County Museum of Norrbotten in charge of the archaeological investigation commissioned by Boliden, revealed the following: Boliden commissioned a mapping of the archaeological remains in a limited area only. This means that the archaeologists documented GPS locations for a number of archaeological sites. They did not investigate the sites in any greater detail, for example by dating them, and so could not interpret their significance in terms of Sami cultural history. This means that the investigations that were carried out have little to say about historical Sami land use, despite the fact that a number of Sami sites were found. According to Backman, Boliden said that they would carry out a study of the cultural history of the area themselves. It is unknown whether Boliden have done so. If they have, it was done without the involvement of the Semisjaur Njarg Sami community.

3 The proposed project

Laver is located 40 km west of the village of Älvsbyn in Northern Sweden (Figure 2). It is a remote area of forests, small undulating hills, lakes and mires. The forests primarily consist of pine trees, with some birch and spruce. The understory consists of moss, lichen and herbs, which provide rich pasture for the grazing reindeer. The lakes and watercourses of the area fall within the Piteå River system, which is a protected Natura 2000 area and one of the few river systems in Sweden that is relatively free from hydropower developments. The Laver area is used primarily by the reindeer herders of the Semisjaur Njarg Sami community for reindeer herding pasture during the winter. The only car access to the area is a dirt road, which can be inaccessible during the winter time. Reindeer herders travel throughout the area on snowmobiles.

The proposed project is located on land owned by Boliden and Sveaskog, the latter being the Swedish state-owned forestry company (see Appendix F - Land ownership map of Laver concession area).

A condensed timeline of the history of permits, mining and proposed mining in the Laver area is included below:

- A small-scale copper mine was operated in Laver by Boliden during 1938–1946 with a small open pit, but mining primarily took place underground.
- Exploration activities took place during 1970–2007, undertaken by several different mining companies (including Boliden).
- In 2007 Boliden applied for the exploration permits, which are currently valid for the site.
- During 2008–2012 geological surveying and core drilling were undertaken.
- In September 2014, Boliden submitted an application for a mining concession under the Swedish Mining Act to the Swedish Mining Inspectorate.
- The proposed operations in Laver:
  - would consist of a large-scale open-cut copper mine, a tailings dam and associated infrastructure. The final open-cut pit would cover a final area of 2.2 km^2 and have a void of 360 m^3. The entire site would have a footprint of 50 km^2 and be completely fenced (Figures 2 and 3);
  - would require draining a small lake within the site – the Lill-Laver lake – and redirecting several watercourses, all of which are a part of the Piteå River system; and
  - would extract 36 million tonnes of ore per year. The ore would be crushed, ground and concentrated on site. The metal copper concentrate would be transported to Boliden's smelter at Skellefteå harbour, 180 km to the south-south-east, where the metals would be further processed.[87]
- Boliden's application for a mining concession contained information pertaining to the extraction of ore and on-site environmental management, but did not contain any information on associated infrastructure, such as roads, the transportation of ore, the environmental impacts beyond the site, or any detailed assessment of the risks of the rehabilitation of the site.[88]
- In March 2015, and again in October 2015, the County Administration Board of Norrbotten recommended that the Minerals Inspectorate refuse the application, primarily on the basis of environmental impacts, but also for its impacts on reindeer herding.
- The Minerals Inspectorate considered the application, together with written submissions from various stakeholders, including the Semisjaur Njarg Sami community, who submitted a draft version of this report (in Swedish) as a part of their written submission.

87 See section 2.3 for a critical discussion of the Swedish permit process for mines.

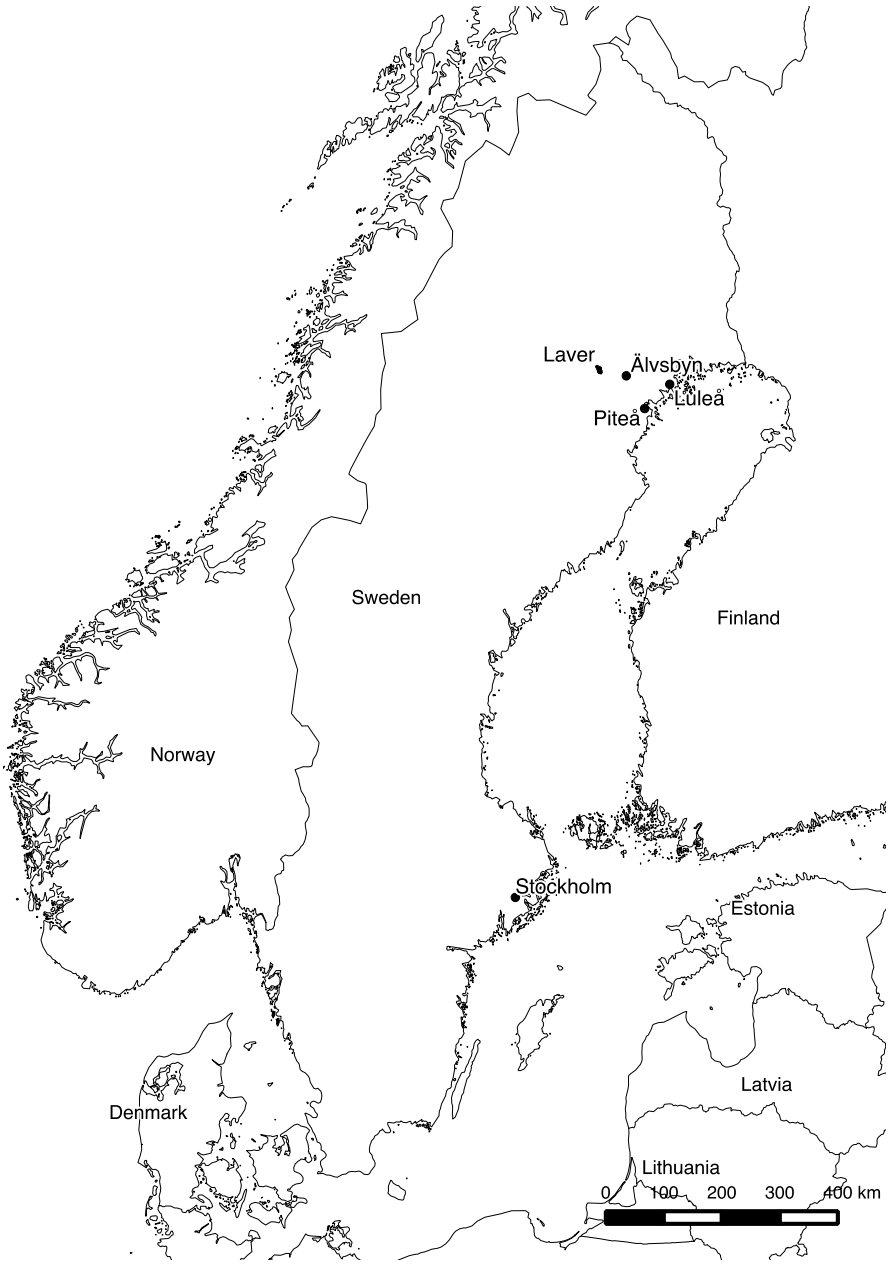
88 The EIA application briefly dealt with the question of rehabilitation (in three pages) and proposed, among other things, turning the open-pit into a pit-lake. However, the EIA did not provide any detailed assessment of the environmental impacts of pit-lakes and the research that documents the risk of them becoming toxic (e.g. Blanchette and Lund 2016).

- In December 2016, the Minerals Inspectorate refused the application. The grounds for refusal were the following: the Minerals Inspectorate had requested that a Natura 2000 permit for extracting the deposit be obtained before the concession application was submitted. Boliden refused to submit a Natura 2000 application, claiming it could be dealt with later in the process. The Inspectorate disagreed and so refused the application.[89]

- In early 2017, Boliden appealed the decision to the Swedish Government. The Semisjaur Njarg Sami community again submitted a draft version of this report (in Swedish) as a part of their written submission to the Government.

- At the time of writing this report, Boliden's appeal is one of several appeals over mining concessions currently awaiting a determination by the Swedish Government.

Figure 2. Map of Sweden showing Laver locality



89 See footnote 67 for further discussion of recent case law developments in Sweden regarding Natura 2000 areas.

Figure 3. Proposed Laver mine site and footprint (source, Lindeström and Eriksson, 2015)

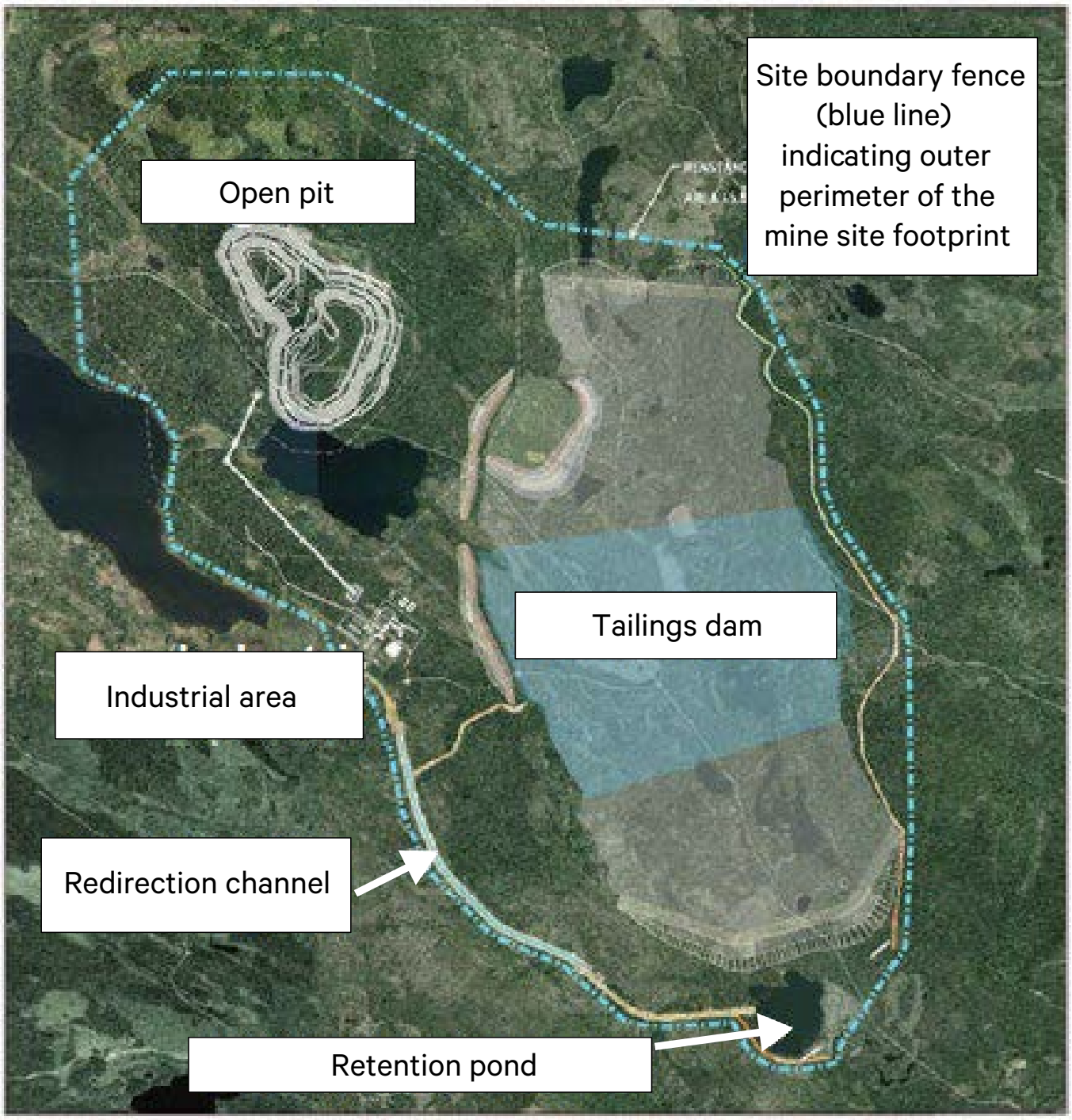
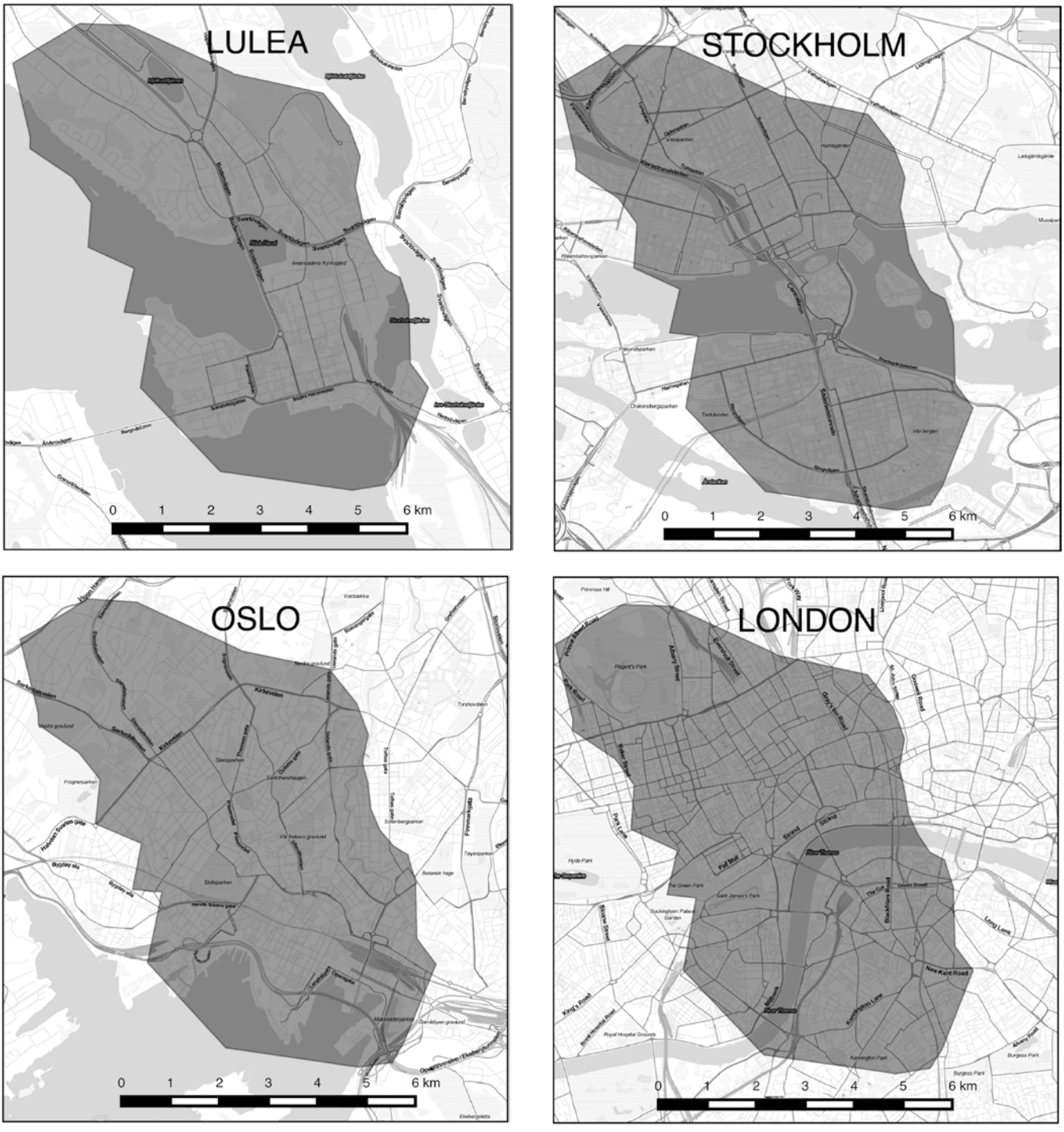


Figure 4. Laver mine site footprint in relation to major cities: Luleå, Stockholm, Oslo and London[90]



90 Luleå was chosen because it is the closest regional city in Sweden to the Laver site; the headquarters of Boliden's major shareholders are located in Oslo and Stockholm; and London provides a global reference point for an international reader.

4 Land use by the Semisjaur Njarg Sami community

4.1 Background

Reindeer herding is practised throughout Sápmi, i.e. in northern Norway, Sweden and Finland and on the Kola Peninsula of Russia. It is a nomadic form of pastoralism governed by the reindeer's seasonal migrations between summer, autumn, winter and spring pastures, and therefore requires large, continuous and flexible grazing land. Reindeer herding in Sweden is organised into Sami reindeer herding communities who pursue reindeer herding, hunting and fishing based on property rights established through their customary use (in Swedish: *urminnes hävd* [91]) (see Chapter 2.2). Hunting and fishing are an important customary land use and source of income, alongside the gathering of berries and other food for household use.

The Semisjaur Njarg Sami community was formed as an administrative entity under the 1946 Community Order (in Swedish: *Byaordning*). This took place when the then Lapp Bailiff (in Swedish: *lappfogde*), the official representative of the Swedish state in dealings with the Sami people at the time,[92] merged a number of former so-called Lapp villages (in Swedish: *lappbyar*) into a single community called the Semisjaur Njarg Lapp village. In 1971, the Semisjaur Njarg Lapp village was converted into a Sami community (in Swedish: *sameby*) in line with the new Swedish Reindeer Herding Act. Traces of two of the old Lapp villages can still be seen today:[93] the Semisjaur Njarg Sami community is clearly divided into two groups, Tjidtjakk and Tjallas, which essentially function as two entirely separate Sami communities.[94] They do not share winter pastures or year-round grazing land, but they do attend each other's reindeer separation and reindeer marking activities and help each other with various collective efforts, for example when attending reindeer separation activities in neighbouring Sami communities.

The Semisjaur Njarg Sami community is a mountain Sami community with so-called year-round pastures (Swedish: *året-runt-marker*) on both sides of the Silvervägen Road from Arjeplog and as far west as the Norwegian border. The community's year-round pastures are situated within the municipality of Arjeplog (Figure 5). They are permitted to graze their reindeer all year round on the year-round pastures.

Their winter pastures are divided between two entirely separate coastal areas: the northern winter pasture is located in the municipalities of Älvsbyn and Piteå (Figure 6), and the southern winter pasture is below the Byske River valley in the municipality of Skellefteå (Figure 7). Between these two winter pastures is land belonging to the Östra Kikkejaure and Västra Kikkejaure Sami communities. The Semisjaur Njarg Sami community therefore have no connected winter pastures. They are only permitted to graze their reindeer on the winter pastures between 1 October and 30 April.[95]

In addition, they have no grazing lands connecting their year-round and winter pastures. When migrating their reindeer between the year-round and winter pastures, they pass through land belonging to the Östra Kikkejaure, Västra Kikkejaure and Ståkke Sami communities (Figure 8). They are permitted to use these grazing lands belonging to the forest Sami communities for migration and as "resting pasture" (Swedish: *rastbete*) between the winter and year-round pastures, but in practice these resting pastures are difficult for the Semisjaur Njarg Sami community to utilise as the pasture has often already been consumed or trampled by neighbouring reindeer communities' use.[96]

91 This was confirmed in the Lapp Taxed Mountains Case (Skattefjällsmålet) 1981.
92 The Lapp Bailiffs were nominated by the County Boards to represent Sami people (Lapp being an older – now derogatory – word for Sami) while the Bailiffs themselves were Swedes. This formed part of a broader paternalistic system for governing Sami people and their lands. See Lantto (2012) for a historical description of the Swedish lappfogde system.
93 More than two original Lappish communities were merged to form the Semisjaur Njarg Lappish community, but only two of them have left clear organisational traces. More research and documentation of the history of the Sami community is needed.
94 There have, however, been movements between the different groups. For example, the winter group now located in the Storsund area in the Tjidtjakk group previously used pastures in the Tjallas area south of the Byske River valley. When the Storsund area became accessible in 1996 as a result of changes in the Reindeer Grazing Convention, however, they moved there because they considered the land to be better for grazing.
95 See the Swedish Reindeer Husbandry Act (Rennäringslagen 1971:437)
96 Resting pasture is where the reindeer rest, feed and rejuvenate during migrations.

Figure 5 – All of the Semisjaur Njarg Sami community's pastures

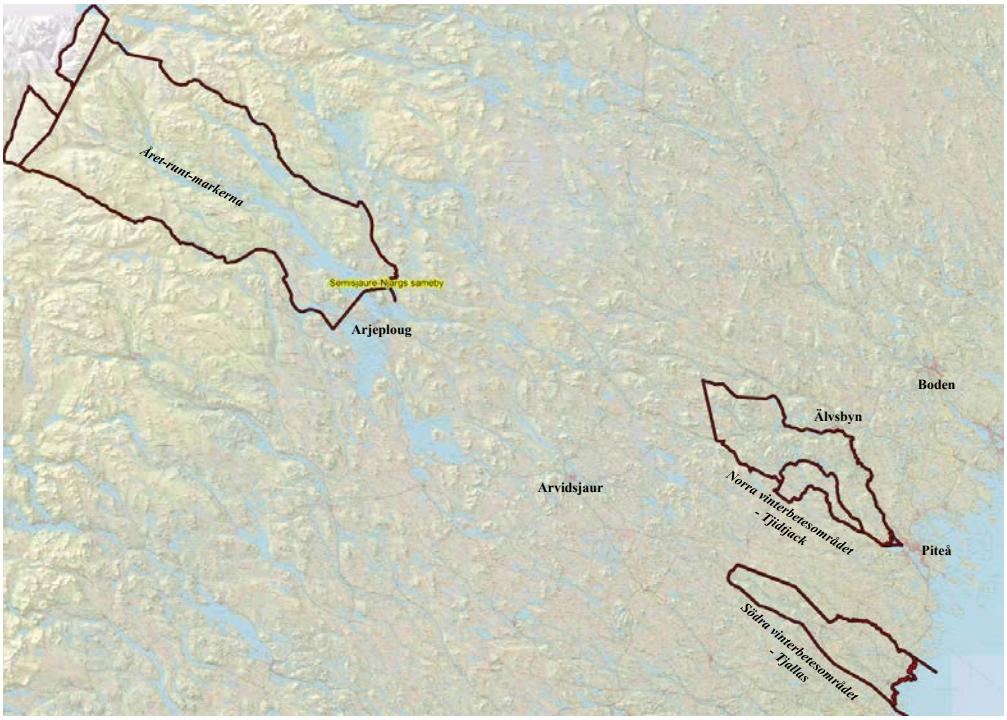
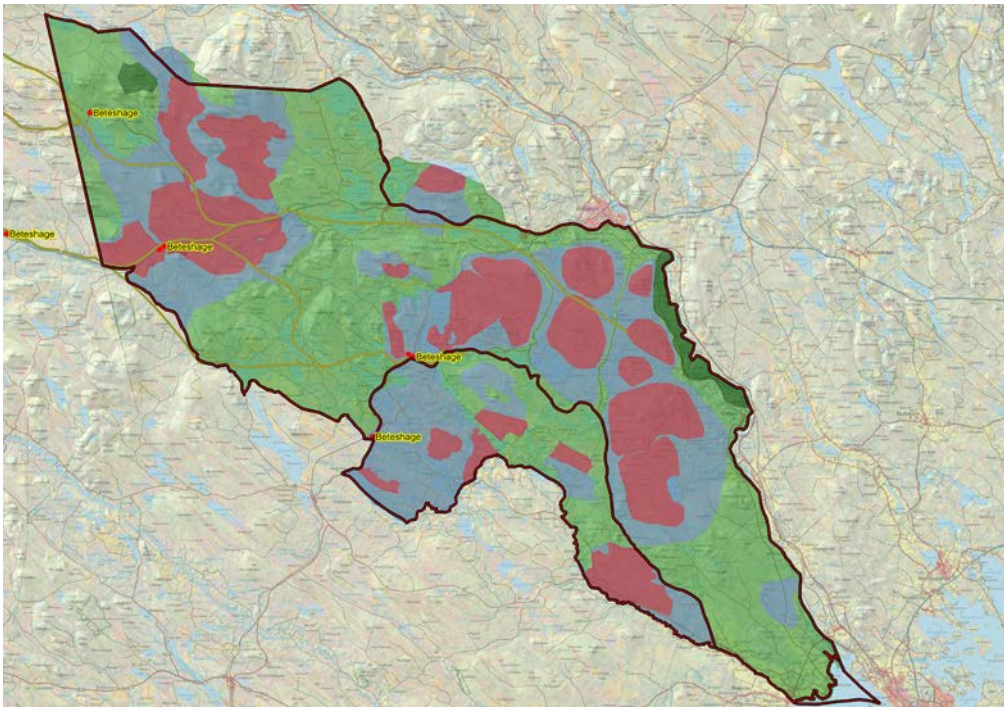
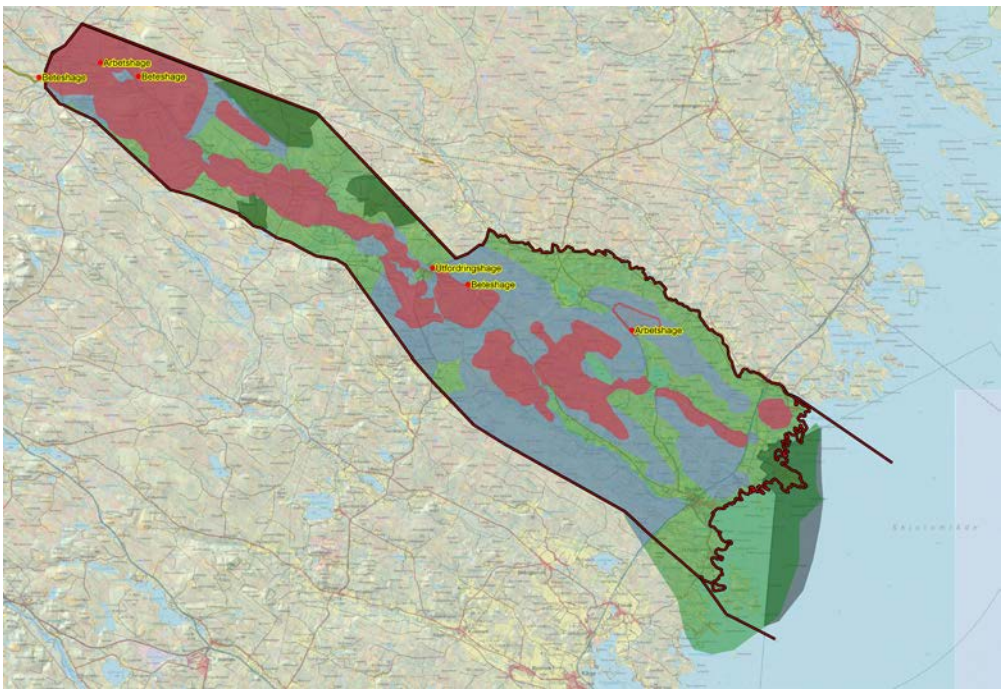


Figure 6 – Northern pasture used by Tjidtjakk



(Red = key areas; blue = core areas; green = winter pasture.)

Figure 7 – Southern pasture used by Tjallas



The maximum number of reindeer the Sami community is permitted to have is governed by an external party – the County Administrative Board – and not by the Sami community itself. The maximum permitted number of reindeer is 9,000 excluding calves; however, at present the Semisjaur Njarg Sami community has an estimated 7,000 reindeer. Due to extensive industrial development on their land, the community have assessed that it would not be possible to maintain 9,000 reindeer over the longer term as they believe the available pastures are insufficient to support more reindeer.

Internally regulating the number of reindeer at a margin below the permitted maximum ensures that there is reserve grazing land available and that regrowth can take place from year to year.[97] It also gives young reindeer herders a better opportunity to become established, as additional pastures are required during the transitional periods while new reindeer herders are establishing themselves but when established herders are still in place. The herd structure is around 60% females, 28.5% calves and 11.5% males[98] and has remained largely the same since at least the 1990s. The herd structure of the Semisjaur Njarg Sami community reflects the average distribution of females, calves and males in the total reindeer herd throughout the whole reindeer herding area in Sweden.[99]

The boundaries of the Semisjaur Njarg Sami community's land have been drawn in several stages (for the current boundaries, see Figure 8). The boundaries of their year-round pastures were drawn in 1946 by the Community Order (Swedish: Byaordning). Those of the winter pastures, by contrast, were drawn in two phases. First, the southern boundary of the winter pastures with the Östra Kikkejaure Sami community's land were drawn in 1981. The remaining boundaries of the winter pastures were drawn in 1996 when the boundaries of all the Sami communities in Norrbotten County were fixed by the County Administrative Board.[100]

The boundary-drawing processes in 1946 and 1996 were comprehensive processes involving several Sami communities, but that of 1981 was carried out by a special government decision applying only to

97 Hypothetically, and according to the chairperson of the community, it should be possible for the Semisjaur Njarg Sami community to compensate for this by changing the herd structure and retaining the same production levels – but with a smaller number of reindeer – by increasing the number of females and decreasing the number of calves and males, for example. However, this would entail two main problems: (1) meat production would be more vulnerable, because bad years could eliminate a large proportion of the calves and (2) it would require a complete reorganisation of the annual reindeer herding cycle, which the Semisjaur Njarg Sami community does not currently wish to implement; among the reasons for this is that the culling of males, which is important for cultural reasons as well as to provide an opportunity to mark the calves that are not marked in the summer, would no longer be required.

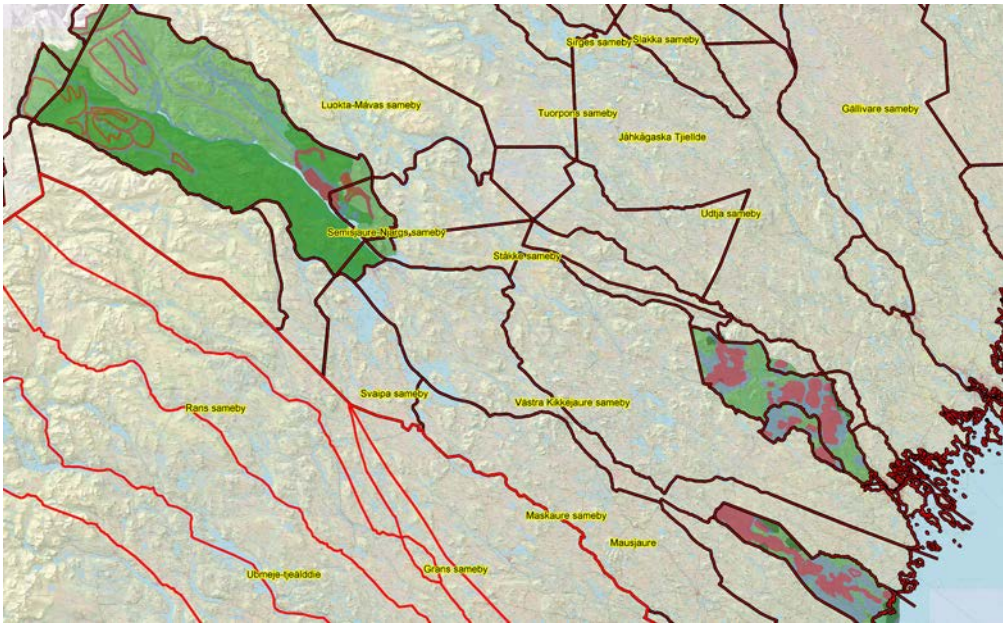
98 According to the last calculation done by the Semisjaur Njarg Sami community in winter 2014/15.

99 See https://www.sametinget.se/statistik/renhjorden.

100 The Sami communities in the municipality of Jokkmokk are an exception, and have communal winter pastures that are shared by the multiple Sami communities.

the southern boundary of the community's winter pastures with the Östra Kikkejaure Sami community. The reason behind this specific boundary-drawing process between the Östra Kikkejaure and Semisjaur Njarg Sami communities was that the Semisjaur Njarg Sami community had experienced problems with competition over pastures from forest Sami communities.[101] According to the Semisjaur Njarg Sami community, reindeer belonging to the forest Sami communities were consuming all the pasture before they were able to reach the forest areas themselves with their own reindeer. A number of winter groups therefore kept more to the year-round pastures in the mountains. However, the increase in snowmobile traffic and the presence of predators in these areas means that this is no longer an option, according to the Semisjaur Njarg Sami community. It also became unnecessary after the boundaries were fixed, given that this gave the Semisjaur Njarg Sami community the sole right to use its winter pastures without competition from other communities. There are still problems with the winter pastures to this day, however; these are discussed in more detail in the next chapter.

Figure 8 – The Semisjaur Njarg Sami community and neighbouring Sami communities



(Note: boundaries of the Sami communities are taken from RenGIS and any boundaries that have not been fixed are omitted. To make the map clearer, the Semisjaur Njarg Sami community's land is shaded according to summer and winter seasonal land. Red = key areas; blue = core areas; green = grazing area.)

4.2 The annual reindeer herding cycle

Below is a detailed description of the current land use carried out by the Semisjaur Njarg Sami community through the different seasons of the annual reindeer herding cycle. The description of the cycle begins in winter with particular attention to the area in and around Laver, since it is the main focus of the report and where Boliden's copper mine is proposed.

4.2.1 Winter: December–February

Winter is the most critical period of the year, because the reindeer need good grazing in order to survive. The winter pastures have become a bottleneck for reindeer herding because of various industrial developments and climate change, making winter even more difficult for reindeer herders. The impacts of climate change include long-term changes (e.g. open watercourses and weaker ice making migration routes along watercourses less safe and leading to accidents and drowning of both herders and reindeer); medium-term changes (e.g. arrival of some insects earlier in summer and the potential presence of new harmful insects that entail an increased risk of disease and insect infestation); as well as the cumulative

101 This report is written from the point of view of the Semisjaur Njarg Sami community and therefore does not cover the experiences of the Östra Kikkejaure Sami community or any other Sami community with regard to the drawing of the various boundaries; nor does it cover the reasons behind them or any impacts they may have had.

impacts of climate change together with competing land uses, such as infrastructure and resource developments, which block off pastures and are increasingly common.[102]

Above all, the winter pastures have been hit hard by extensive deforestation since the 1950s.[103] This deforestation has claimed ancient forests rich in hanging lichen, which is a crucial additional grazing resource for reindeer when ground lichen is locked under ice (due to melted and refrozen ground snow), or otherwise unavailable, during bad winters. In winter the reindeer eat a varied diet (including bilberry sprigs and wavy hair-grass), but lichen is their main source of food. Reindeer can survive on lichen thanks to the sugar it contains, but cannot survive on other plants during winter.[104]

Reindeer require a calm grazing environment in winter: it is important for the reindeer not to become stressed from too much activity because they need to conserve valuable energy. In addition, both herders and reindeer need to recuperate after the intensive process of gathering the reindeer in autumn. The herders also have plenty of other work to do in the winter, including predator inventories[105] and consultation meetings with all manner of public and private actors, such as development proponents, forestry operators, County Administrative Boards and so forth. In a good winter, the workload is usually limited and the herd is only gathered together again when returning to the year-round pastures. The quality and accessibility of lichen-rich land is vital to winter grazing. Because the female reindeer are in calf during the winter, they are particularly sensitive to disturbances. As a rule, the reindeers' condition is at its worst at the end of the winter period, immediately before calving.

The Semisjaur Njarg Sami community's winter pastures are now relatively limited. Today, as is the case in other Sami communities, they constitute a bottleneck for reindeer herding because of various competing land uses; there are no alternative winter pastures in reserve. During winter, the Semisjaur Njarg Sami community divides itself into two overarching work groups: the Tjidtjakk group, who keep to the northern winter grazing area in the municipalities of Älvsbyn and Pite; and the Tjallas group, who keep to the southern winter grazing area in the municipality of Skellefteå. These two groups are then further divided into five different winter groups with specific winter pastures, essentially based on customary land use (Figures 9 and 10). This practice of dividing into smaller winter groups, or *siida* (in Sami), is common throughout Sweden. Smaller herds facilitate a more efficient use of pastures, as well as allowing better overview and control of the reindeer by the herders.

There are three winter groups in Tjidtjakk: the first has its winter pasture in the far west of Laver; the second uses the area to the east of the main railway line in Storsund, a so-called convention area (in Swedish: *konventionsområde*); and the third uses the area further east, towards the coast around Sikfors. Below the Byske River valley there are two additional winter groups that form part of the Tjallas group: one primarily to the west of Fällfors and the other primarily to the east of Fällfors in the Byske River valley (Figure 9).

4.2.1.1 Winter: land use in Laver

The following section provides a detailed description of the land use in the Laver area specifically. According to the Semisjaur Njarg Sami community, the area in and around Laver is by far the best winter pasture, not only within Tjidtjakk but among all the community's winter pastures. The area is very rich in lichen and dominated by pine forest, and generally has a very high grazing quality. The County Administrative Board has also identified large portions of the Laver area that are of national interest for reindeer herding.[106] The reason the winter group in Laver keeps specifically to the land in Laver is that the land to the east of Nattberget and down to the main railway line is considered to be significantly worse.

102 Reinert et al. (2009) and Löf et al. (2012).

103 Kivinen et al. (2010).

104 Grey reindeer lichen, or *Cladonia rangiferina*, is a form on fungi that grows in Arctic environments. It is extremely slow growing and takes decades to replenish if destroyed by forestry, overgrazing, trampling or other disturbances.

105 Predator inventories previously counted how many predators and offspring were present in a reindeer herding area and estimate a pro rata or "average" loss of reindeer expected per year. That is, they did not quantify actual losses to predators, which Sami communities would prefer. Moreover, while predator inventories are undertaken by Sami reindeer herding communities, they are often double-checked by Swedish authorities once they are submitted for approval, which created a sense of distrust between communities and Swedish authorities. The new model for predator inventories has not been analysed as a part of this report.

106 The areas of national interest in the Semisjaur Njarg Sami community were mapped by the county administrative board in 1997 without the community's involvement. The community's governing board refused to point out "important areas" as they believed that all areas should be regarded as important. Although the description of areas of national interest is seen as identifying many important areas, the Semisjaur Njarg Sami community believe that it does not accurately portray the true situation, because all the remaining grazing areas are important.

Figure 9. The different winter groups (siida) forming the Semisjaur Njarg Sami community

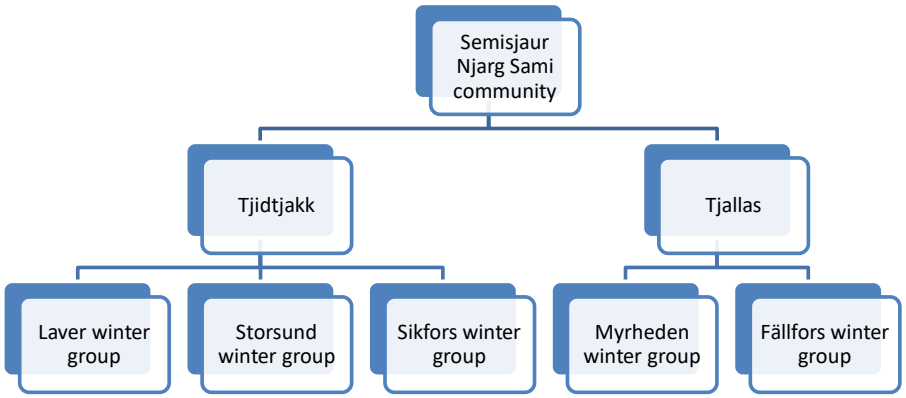
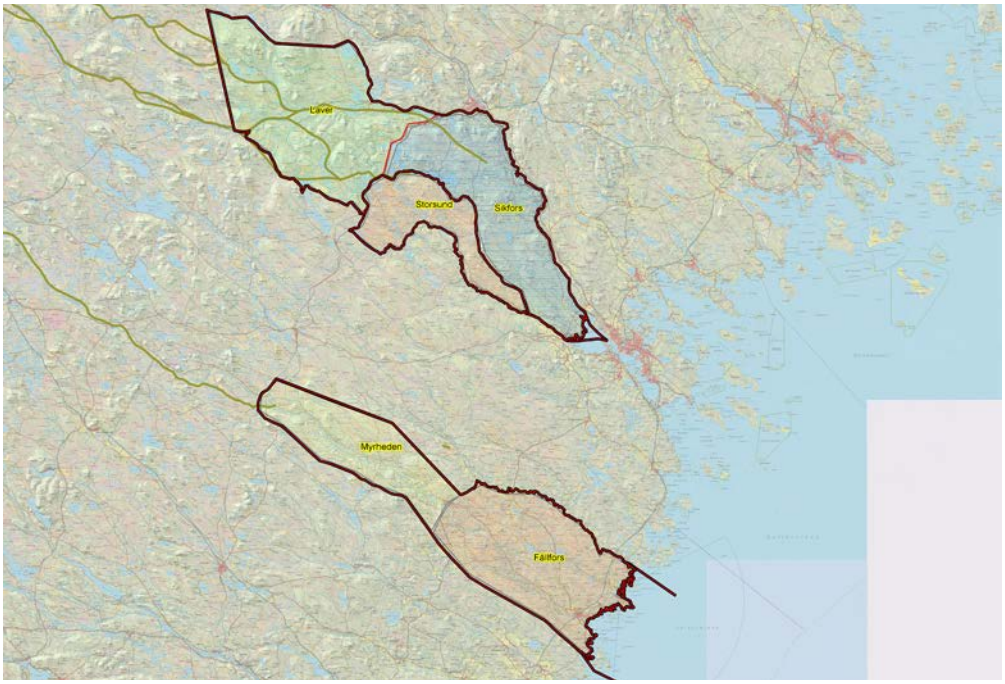


Figure 10. Internal divisions of the pastures within the Semisjaur Njarg Sami community



(Note: these areas are labelled for overview purposes only; the boundaries are negotiated internally within the community and are not fixed.)

This is because the land is more fragmented than in Laver and, according to the Semisjaur Njarg Sami community, is subjected to overgrazing by reindeer belonging to the Östra Kikkejaure Sami community.[107]

There are historic cultural traces of long-term use of the area by the Sami, such as old Sami settlements reminding the reindeer herders in Laver today that their families "have been here for hundreds of years". The winter group in Laver therefore consider that they "have a heritage to maintain" for future generations. There is no historic cultural record from the area, but a study has demonstrated a historical Sami presence in Segelvass and Städdjejaur, near Laver, where there have previously been so-called Lapp-taxed lands (Swedish: *lappskatteland*).[108]

107 This is the Semisjaur Njarg Sami community's view. The Östra Kikkejaure Sami community may take a different view.

108 Researchers at the Subarctic Center have pointed out that not all the areas in Laver are recorded in the Swedish National Heritage Board's register of sites of archaeological and historical interest (http://www.fmis.raa.se/cocoon/fornsok/search.html). In addition, there have been no studies of the cultural history of the Semisjaur Njarg Sami community like those carried out in the Njaarke (http://www.ripjakt.se/blanketter/Njaarke.pdf) and Malå (http://www.sapmi.se/mala_2.pdf) Sami communities.

Today, the area can provide a herd of approximately 2,000 reindeer with winter grazing for up to four months.[109] The winter group in Laver currently consists of three active reindeer herders[110] with a total of approximately 1,800 reindeer in Laver in winter. The winter group keeps the number of reindeer at just under 2,000 in order to maintain a margin for young people to build up their own reindeer herds and reduce the risk of overgrazing in bad winters. Compared to the year-round pastures, where there are many predators and snowmobilers, Laver is a relatively undisturbed area for reindeer herding with very little human activity other than the reindeer herders themselves and the occasional hunter. Laver has become all the more important for this winter group because it has no remaining alternative winter pastures: the group also used to use the winter pastures in the Luleå archipelago but, since the boundaries were redrawn by the County Administrative Board of Norrbotten in 1996, the Jokkmokk Sami communities now enjoy the sole right to use those areas for grazing.[111]

In a good winter, the reindeer make use of the Laver area for free grazing with minimal guidance from the reindeer herders (Figure 11). Once the reindeer have been transported down from their autumn pasture on the year-round land in October/November, they are released into a gathering pasture beside the Sikträsk stream. They are then released and slowly graze clockwise round the Laver area for the following 12–16 weeks.

Figure 11. The grazing pattern in Laver during a normal winter

(The map shows the most northwesterly corner of Tjidtjakk's winter pastures.)

Once the reindeer have been released at the Sikträsk stream, they freely drift north under supervision and with some guidance. After a certain amount of time, depending on snow depth and weather conditions, they reach the Laver lakes. The westerly part of the land is composed of upland areas with poorer pasture, so that the reindeer normally veer east towards the Laver area. Some of the reindeer pass to the southeast of the Laver lakes and others pass to the north. The grazing route continues towards the good pastures in the valley between the Småträsken, Långträsket and Åträsket lakes, which are used in midwinter. The community's pastures are bordered to the north by the Ståkke Sami community and a convention area, so the grazing route continues east towards Manjärv and the Vistträsket lake. Then, in early March, the reindeer normally veer south, towards the road between Älvsbyn-Arvidsjaur and the Sikträsk stream. Depending on the weather, during some winters it can be difficult to get across the Laver stream. The good pastures on the heath – parallel to National Road 94 – are used while the condition of the reindeer is at its

109 This is the winter group's own assessment.

110 Most of the members of the Semisjaur Njarg Sami community take an active part in the reindeer herding work in various ways, but "active reindeer herder" here refers to those who generally have reindeer herding as their primary employment. As discussed in section 6.2.2, however, every active reindeer herder is dependent on an entire family for the reindeer herding work to function properly.

111 See SOU 2006:014, p. 313.

worst during the spring–winter. When it is time to migrate west to the calving area and summer land, the reindeer are gathered back into the pasture at the Sikträsk stream. Supplementary feeding is normally required when gathering occurs.

During a normal winter, when the reindeer are utilising natural pasture in Laver, only one of the reindeer herders of the Laver group is required to work around five hours a day directly supervising the reindeer. During the winter, the Sami community also need to carry out an inventory of predators, which requires around 640 hours of work from the community as well as many consultation meetings and a good deal of administration. In other words, a normal winter entails a full-time workload for the winter group, although this work may be split between herding and other activities.

In a bad winter, however, the winter group may be forced to provide supplementary feeding to the reindeer. During the harsh winter of 2012–2013, the winter pasture in Laver came to an end as early as February, and the winter group was then forced to provide supplementary feeding. Some winters have begun so badly that the winter group has been forced to remain on the year-round land and provide supplementary feeding there instead. All three herders, plus another herder, have had to work for six to eight hours a day, with a very heavy physical workload.[112] In other words, feeding and supervising the reindeer takes around six times as many hours of work as when the reindeer are on natural pastures.[113] A winter like this requires around 3.6 tonnes of feed per day.[114] Because it is very difficult to find additional personnel, this involves a very heavy workload for the available reindeer herders when supplementary feeding is required. The workload in winter 2013–2014 was an exception owing to poor weather conditions; dealing with such a workload every winter would be unsustainable in the long term and, as one reindeer herder put it: "I couldn't cope with the thought of knowing we had a winter like that ahead of us every year". A risk assessment carried out according to the guidelines issued by the Swedish Work Environment Authority (and as a part of this impact assessment process) classes this as a workload of 136 points for the herders, far higher than the highest risk category (50 points or more).[115] Add to this the fact that reindeer herders already suffer from higher rates of musculoskeletal symptoms and work strain injuries than those in other manual labour employment, and much higher again than the general population.[116] Supplementary feeding also results in increased wear and tear on both snowmobiles and trailers, which also leads to higher fuel costs. In addition, the winter group cannot manage all the consultations, administration and predator inventories that they would otherwise have managed over the winter.

In addition to Laver being utilised as key pasture areas for the Laver winter group, it is also used by the Sikfors winter group when migrating west. At the north end of Stor-Laver Lake, there is a gathering pasture that is used by the Sikfors winter group as an overnight pasture during migration. That group consists of two reindeer herding enterprises that migrate up along the public road towards the Laver area and across Stor-Laver, and continue west after overnight grazing.

4.2.1.2 Winter: land use in the remaining winter grazing area

Below is a brief description of land use in the remaining winter grazing area in the Semisjaur Njarg Sami community. As previously mentioned, there are three winter groups in Tjidtjakk. As well as the winter group in Laver, there is another winter group to the east of the main railway line in Storsund – a so-called convention area (see section 5.4.1) – and a third winter group further east towards the coast around Sikfors.

The winter group in Storsund consists of two active reindeer herders. The winter group in Storsund was part of the Tjallas group until 2005, and most of its winter pasture is around Fällfors. As competing land uses and deforestation have increased on the Tjallas group's land, however, it has become necessary to find another solution. When the Storsund area became available to the Semisjaur Njarg Sami community, one of the winter groups therefore moved to Storsund. Nonetheless, this solution is only temporary, as the Storsund area is to be returned to a Norwegian reindeer herding district (the equivalent of a Sami community) in the near future (see section 5.4.1).

112 During these bad winters, one of the regular herder's sons was able to help, but this kind of extra help is not usually available.
113 During a good winter, a reindeer herder works five hours a day with the reindeer (five hours in total), compared to four herders each having to devote six to eight hours a day to feeding (24–32 hours in total).
114 1,800 reindeer × 2 kg supplementary feed (per reindeer per day) = 3.6 tonnes.
115 This assessment is based solely on lifting and carrying the feed sacks, and does not take into account the additional time that the reindeer herders need to spend driving snowmobiles to transport the feed and supervise the reindeer. See http://www.av.se/dokument/publikationer/adi/adi_627.pdf.
116 Sjölander et al. (2009).

The winter group in Sikfors, which consists of two active reindeer herders, also uses the Storsund area periodically. The pasture used by the winter group in Sikfors is highly fragmented, with many different disturbances (see Chapter 5). This winter group previously used the areas around Nattberget and Laver, but at present these areas are used exclusively by the winter group in Laver.[117]

Within Tjallas, below the Byske River valley, there are another two winter groups: one in Myrheden, west of Fällfors; and one east of Fällfors. There is a very limited amount of good grazing within Tjallas's winter pastures, which is why one winter group moved to the Storsund area. According to the Semisjaur Njarg Sami community, Tjallas has problems with overgrazing due to reindeer from forest Sami communities grazing on land belonging to the Semisjaur Njarg Sami community. This entails significant work for Tjallas due to additional gathering work and supplementary feeding. Because Tjallas's pasture is so limited, it is particularly sensitive to bad weather conditions. The pasture to the west of Fjällfors is near the sea and very sensitive. During bad winters, all the pasture from Fjällfors and below may be blocked off under ice or hard-packed snow, requiring both winter groups to crowd together further west on the same land. During winters with too much snow, the reverse is true: both winter groups are forced down towards the sea to the east of Fällfors and are pushed together there instead.

4.2.2 Spring–winter: March–April

When the surface of the snow becomes harder at night, it is usually time to begin the migration to the spring and calving ground to the west, which normally takes until the end of April. The hard snow bears the reindeers' weight and the scattered reindeer are gathered together into a herd that migrates west. The reindeer are taken up along the migration routes after the reindeer herders have gathered them into various reindeer herding and corralling facilities on the winter pastures. These facilities allow the herders to maintain control over the herd and begin each day of the migration with a coherent herd. The migration generally takes place on foot as it is important for the community to teach the migration route to the reindeer. This way, if they lose a reindeer, there is a higher probability that it will find the western migration route itself and reach the mountains on its own. If the reindeer are in poor condition, or the surface of the snow does not harden, the reindeer are loaded onto a truck and driven to the mountains, with the obvious downside that the reindeer are not given the opportunity to learn the migration route by foot.

The three winter groups in Tjidtjakk essentially follow two migration routes: the winter groups in Laver and Storsund take the route to the south along the Vistån river; and the winter group in Sikfors takes the route to the north along Ljusträsk. From Moskosel there is a migration route via Abraur, Guoblijaure, Kakel and Hornavan. The three winter groups normally migrate separately.

Tjallas has a shared migration route that mainly follows the Byske River to Arvidsjaur, then on to Mellanström and then follows the large lakes of Storavan and Uddjaur to the mountains. The two winter groups in Tjallas migrate separately.

The migration generally takes 10–15 days, depending on the prevailing snow and ice conditions. The migration up to the mountains requires the reindeer herds to be gathered, and each stage begins and ends in strategically situated pastures. The reindeer are given supplementary feed during that time, as there is insufficient resting pasture. The migration route passes through the grazing areas of several forest Sami communities, which is also the main reason why the Semisjaur Njarg Sami community need to have their reindeer gathered to prevent them from intermixing with the forest reindeer. If reindeer from different Sami communities intermix it will require extra work from the herders later in the year to separate them and return them to their respective communities.

The reindeer are intensively monitored for the entire time during the migration – as long as ground conditions allow for herders to use snowmobiles – in order to avoid predator attacks and prevent the reindeer from spreading to other mountain areas.

117 However, it is important to point out that all members of the Semisjaur Njarg Sami community have the right to use the Laver area. This is because the grazing land formally belongs to the Semisjaur Njarg Sami community itself, even though there are informal divisions within the community according to long-standing customary use.

The Semisjaur Njarg Sami community experiences significant impacts from the free movement of snowmobile traffic in their grazing areas. Snowmobile routes channel tourists through key reindeer pastures, meaning that during particularly sensitive times, such as calving, the reindeer are rarely free from disturbances. The herders therefore need to actively work to make the reindeer more domesticated, so that they can "tolerate" snowmobiles better than they would naturally. The community applies to the local municipalities for a snowmobile ban every year, but this is not approved.

During this time, the Semisjaur Njarg Sami community also need to ensure that the work of inventories of predator populations is carried out, which requires a total of 640 hours of work. This is a heavy workload for the community, which has few people who can or are willing to carry it out, because they see it as work forced on them by the Swedish state. On top of this, material such as fuel, firewood and food, needs to be transported to the community's various summer residences and shared reindeer herding and corralling facilities.

4.2.3 Spring: May

The female reindeer return to the area where they were born in order to calve, in a south-facing area where the snow thaws quickly. The calving land must provide protection from inclement weather and have good access to pasture, particularly if the quality of grazing was poor during the winter. The time surrounding calving is a critical period: the reindeer are very sensitive to disturbances and are often supervised intensively by herders to protect them from predator attacks (such as from bears and eagles), public snowmobile traffic and tourism activities.

The Tjidtjakk group

The reindeer are generally released in the eastern part of the Tjidtjakk Vallé mountain and can roam west under supervision. If the availability of snow-free ground is very poor, the reindeer may be released to the west of Arjeplog in the coniferous forest belt north of the Hornavan Lake, but this only happens in exceptional cases. The reindeer naturally seek out their calving grounds. Most of the Tjidtjakk group's reindeer calve on the sunny side of the Tjidtjakk massif. One group releases its reindeer at Njassja, where a number of these reindeer calve.

The Tjallas group

The reindeer are released in the eastern part of the Peljekaise mountain and can then freely roam west under supervision. If the availability of snow-free ground is very poor, the reindeer may be released to the west of Arjeplog in the coniferous forest belt south of the Hornavan Lake, but this only happens in exceptional cases. Most calving takes place along the Lais valley on the southern slopes.

4.2.4 Spring–summer: June

The reindeer are released and allowed to roam into the valleys surrounding the mountains so they can graze on the first green pastures before the mosquitoes come. No supervision takes place; the reindeer can roam freely. From mid-May to midsummer, many reindeer herders undertake extra work outside of herding in order to support the household budget: forest clearing, planting, fence installation, truck runs, mining work and translation and interpretation work in the Sami languages.[118]

4.2.5 Summer: July–August

Calf-marking begins in late June/early July, when the reindeer have moved west towards the Norwegian border of their own accord, and come up out of the valleys to avoid insects. Calf-marking is the year's biggest event, both socio-culturally and in terms of the work required. Calf-marking is the time during which members of the Sami community mark as many of their calves as possible, which means long, intensive working days. It is also the time during which the whole family is involved. Many women in the community, who may otherwise have other jobs outside of herding, usually take holidays so they can

118 Herders and their family members who work in forestry or mining part-time, in addition to herding, express concern that they become dependent upon relatively well-paid part time work in those very industries that undermine the profitability of reindeer herding.

attend together with the children.[119] The children familiarise themselves with the markings and learn how to deal with reindeer in general. It is a special time in the reindeer herding calendar, when everybody gathers together and spends time in the mountains.

The calf-marking work consists of first gathering the reindeer into a large pasture in several batches. Then the herders note which calf follows which female, catch the calf and mark it with the same marking as its mother. A knife is used to mark the calf's ears with the owner's marking. These markings are made up of a combination of different nicks and cuts on the reindeer's ear. Each family usually has what are known as family markings, where the marking image follows the same general pattern. These family markings are very rarely used outside the family, making it easier to identify reindeer that have ended up far beyond the boundaries of the particular Sami community. Identifying the markings requires a lot of experience. The calves to be marked are caught using a lasso in Tjidtjakk, and a long stick with a noose in Tjallas.

Each batch of calves is marked at night, when it is cooler and there are fewer insects. The reindeer are then released onto the pasture and reindeer herders work intensively to keep the reindeer that have already been on the pasture separate from those that have not yet been brought in, to avoid bringing in the same reindeer more than once.

Tjidtjakk

The majority of the group's calf-marking activities take place on the Bäno mountain, which is strategically located immediately adjacent to Guolitis, the group's summer residence. The summer residence consists of approximately six houses along National Road 95, a couple of kilometres apart. The reindeer are gathered on their own initiative in the border mountains of Skärrim, Riva, Jervas and others, and rounded up by helicopter for marking each night. The group has another four marking areas around the summer residence, which are used as needed. The reindeer herders bring in around 800–1,000 reindeer for each marking activity.

Tjallas

The majority of the group's calf-marking activities take place at Verdejaur, which is also the group's summer residence. The group also has five other pastures, which are used as needed. Transportation to the summer residence, which is situated on land with no roads, is done either by helicopter or by motorbike, or alternatively by hiking from Road E6 in Norway.

As well as their own calf-marking activities, the Tjidtjakk reindeer herders also need to visit the neighbouring Sami community of Luokta-Mavas and the Norwegian reindeer herding districts of Balvatn and Saltfjell to mark any of their calves that have intermixed with those herds. Representatives from those districts are also present at the calf-marking activities held by Tjidtjakk, and there is usually a certain level of coordination to avoid holding calf-marking activities on the same night. The Tjallas group visits the neighbouring Sami community of Svaipa and the Saltfjell district in order to do the same.

Once the calf-marking work is complete, the reindeer are released to roam within the summer grazing areas, which are mainly situated on the Swedish side of the mountains bordering Norway, with a small portion of grazing lands on the Norwegian side. In these areas the snow remains longest, which provides the reindeer with cooling and protection from insects. The reindeer shed their fur in July and are therefore very sensitive to insects. In addition, the snow in the high mountains melts during this period and fresh grass grows where the snow has been. The reindeer have good access to fresh vegetation that cannot be found elsewhere. This is important so that the female reindeer can graze and produce plenty of milk, during the peak growth period for their calves.

4.2.6 Summer–autumn: August

During this time, the reindeer leave the high mountains and begin to move further east, down towards the birch forests. Insects decrease as the cooler periods become longer, and the reindeer now have thicker fur, which provides better protection from insects. The reindeer now eat mushrooms in larger quantities, to the extent that they are available, in order to build up their reserves of fat for winter. The males also eat plenty

119 Reindeer herding has become a male-dominated livelihood but there are women herders, and women provide much of the associated labour/logistics in order to support the herders in their work.

to sustain them through the mating season. Supervision by the herders is now marginal and the reindeer can roam freely. This is the time when herders undertake maintenance of infrastructure, such as fencing and reindeer corralling pens. They also spend time fishing and berry-picking together with their families, in order to gather and store supplies for the coming year. A major disturbance during this period is the small game hunting season, which is open to any EU citizen, and which begins on 25 August.

4.2.7 Autumn: September–October

In mid-September, the reindeer start to return and to be gathered up in the mountains. The mushrooms have usually frozen away and are not normally left in sufficient quantities to serve as food for the reindeer. At this time, gathering begins for the slaughter of the male reindeer. During and prior to the 1990s, this used to be the big slaughter from which the reindeer herders would obtain the substantial majority of their yearly income. This has changed with the increase in calf slaughtering, which provides faster revenue and reduces grazing pressure in the winter months. In general, the Semisjaur Njarg Sami community gather the reindeer in three reindeer herding and corralling facilities: Tjidtjakk and Vilstugan for the Tjidtjakk group; and Rebbek for the Tjallas group. Here, the males in the best condition in terms of muscle mass and fat quantity are slaughtered and sold. The herders also make sure to mark those calves that have not been marked already.

When the mating season begins, around 20 September, the reindeer are released onto free pastures. This is because mating requires as few disturbances as possible. During this time, the reindeer herders usually hunt elk, an important secondary source of income, and catch fish to sell on. Each family has different lakes that they use according to customary use: some lakes are used by particular families and others are for general community use. Members of the Semisjaur Njarg Sami community are permitted to fish using nets, but non-members can only use handheld fishing rods and lines. Before 1993, non-members were not permitted to fish at all in these areas; at that time, the right to hunt and fish in the mountains was held exclusively by the Sami community.[120]

4.2.8 Autumn–winter: October–November

After the end of the mating season in early to mid-October, a certain amount of herding supervision begins in order to prevent the reindeer from spreading east on their own down either side of the Hornavan lake. The reindeer are usually more or less gathered together if the pasture is good, and if they are grazing in the lower mountain birch forests and higher on the mountain. However, as the snow becomes deeper, the reindeer leave the lower mountain forests and graze only higher on the mountain, where much of the snow blows away. This leaves a lighter snow cover, meaning that reindeer can more easily access lichen and escape from predator attacks. This is generally when the autumn gathering begins. The reindeer herders begin gathering all the way from Norway and herd the reindeer east under supervision to the reindeer herding and corralling facilities in Tjaktjaure and Rebbek. This is a very work-intensive period, in which the reindeer herders need to herd the reindeer within their own Sami community but also monitor and attend reindeer separation activities organised by the neighbouring Sami communities on the Swedish side, and Sami reindeer herding districts on the Norwegian side (in Norwegian: *reinbeitedistrikt*, the Norwegian equivalent of the Sami communities). It usually takes several weeks to gather all the reindeer, and everything depends on prevailing weather, disturbances from predators and the grazing situation.

The Tjidtjakk group usually separates its reindeer just before Christmas in Tjaktjaure. There the three winter groups separate out their own reindeer and vaccinate all the animals. The reindeer to be slaughtered and sold are singled out. Today it is predominantly older females and a large number of calves that are slaughtered, but a number of castrated males are also selected. The neighbouring Sami communities have representatives that separate their reindeer out from the combined herd. The Tjallas group generally separates a little earlier, in early December, but the work pattern is the same. All family members are involved, time permitting, and additional hired help may also be brought in.

120 This matter is now being considered in what is known as the "Girjas case", in which the Girjas Sami community is suing the state with the support of the National Association of Swedish Sami. The Girjas Sami community claim they have an exclusive right to hunt and fish and that the Swedish State has no parallel right to hunt and fish, and no right to grant permits for others to do so. In its judgement of 3 February 2016, Gällivare District Court found in favour of the Girjas Sami community, i.e. that the community has the exclusive right to practise hunting and fishing (case no. T 323-09). The case was appealed by the State and, on 23 January 2018, the Court of Appeal found that the community had a "better" right to hunt and fish than the State, but not an exclusive right (case no. T 214-16). The judgement was appealed by both parties and is currently being assessed by the Supreme Court of Sweden.

The reindeer are then transported by truck down to their respective groups' winter grazing areas. Migration by truck began in the mid-1970s; before then, the autumn migration from the mountains down to the winter pastures took place on foot. At that time, the forest Sami communities left "night pasture" for the mountain Sami communities so that mountain reindeer could graze overnight while migrating towards the coast. However, as grazing land has become more and more limited due to various competing land uses, the Semisjaur Njarg Sami community has been forced to switch to transportation by truck. In 1967–1968 there were some difficult winters, and in the first years of the 1970s the community found that large portions of the "night pasture" had already disappeared before they had come down from the mountains. This ultimately required abandoning the autumn migration on foot in favour of transporting the reindeer by truck, although as detailed previously, the (reverse) spring migration from the winter pastures up to the mountains still takes place on foot.

5 Competing land uses in traditional territories of the Semisjaur Njarg Sami community

This chapter presents both existing and proposed competing land uses and other restrictions on the Semisjaur Njarg Sami community's land use through a series of descriptions and maps. First it presents the existing competing land uses, then the proposed competing land uses, of which the majority are highly likely to take place. The proposed Boliden mine in Laver is, however, dealt with separately in Chapter 8.

The applicable disturbance zones for each competing land use are shown in Table 1. The mine and its disturbance zone are discussed in Chapter 7.1.

5.1 Disturbance zones

A disturbance zone causes disruption to reindeer and changes in their behaviour. Although some individual reindeer (stray reindeer) can occasionally be found within the disturbance zone, *the majority of the herd* will avoid it.[121] The size of a disturbance zone varies depending on the type of disturbance, the local geography and the type of pasture involved. It is well established that disturbance zones must be considered at a regional or local level – i.e. how the entire herd behaves in the area over a long period of time.[122] Table 1 presents, where relevant, the disturbance zones applicable in this chapter for the various existing and planned competing uses of the Semisjaur Njarg Sami community's land.[123] As previously stated, these are applied very broadly and a much more detailed determination can only be made on the basis of the community's experiences and the topography of the local area.

Table 1. Applicable disturbance zones.

Competing land use	Applicable disturbance zone	Sources
Snowmobile traffic	1.5 km	According to experience of the Semisjaur Njarg Sami community. However, research has shown disturbance zones for semi-domesticated reindeer of up to 4 km; Skarin and Åhman (2014).
Power lines	4 km	According to a report in Skarin and Åhman (2014).
Wind power	5 km	According to a decision by the Swedish courts.[124] See also Skarin et al. (2018) for research on disturbances from wind power in the operating phase.
Urban area	2.5 km	Minimum proven disturbance reported in Skarin and Åhman (2014).
Quarry	3.5 km	Determined in consultation with the Semisjaur Njarg Sami community and the Sami Parliament's GIS officer.
Tourist facility and hiking trail	1.5 km	According to experience of the Semisjaur Njarg Sami community of the minimum disturbance zone; the zone may be larger in some cases. Research has shown disturbance zones of up to 12 km (Skarin and Åhman, 2014).
Railway line	1.5 km	Determined in consultation with the Semisjaur Njarg Sami community and the Sami Parliament's GIS officer.
Roads	1.5 km	Determined in consultation with the Semisjaur Njarg Sami community and the Sami Parliament's GIS officer.
Mines	10 km	See discussion in Section 7.1

5.2 Existing competing land uses and restrictions

There are a number of existing competing land uses and restrictions on the Semisjaur Njarg Sami community's land use. Firstly, there are a number of geographical restrictions in the natural environment, such as height impediments and bodies of water (lakes and rivers) where the reindeer cannot graze. Secondly, there are predators, which are a natural element of the Swedish mountain environment but have

121 Skarin and Åhman (2014).
122 For a review of the research on disturbance zones, see Skarin and Åhman (2014).
123 The above-mentioned disturbance zones have been determined in consultation with Anna Skarin (Swedish University of Agricultural Sciences, a leading researcher in the field), Thomas Kuhmonen (GIS officer in the Sami Parliament) and the Semisjaur Njarg Sami community.
124 Swedish Land and Environment High Court, M 824-11. Jijnjevarie Sami community vs SCA Vind AB; Björkhöjden/Björkvattnet in Sollefteå.

increased significantly in population in recent decades as a result of various protective measures put in place by the Swedish state. The increase has been so great that it has severely limited the sustainability of reindeer herding.

There are also more "conventional" competing land uses, resulting from human activity, including industrial developments such as forestry, hydroelectric development, railway lines, roads, power lines, urban areas and automotive testing, tourist facilities and hiking trails used by people and their stray dogs, and quarries. In addition to this, there are of course also urban areas and snowmobile traffic. Finally, according to the Semisjaur Njarg Sami community, there are problems with overgrazing due to reindeer from forest Sami communities (particularly the Östra Kikkejaure Sami community) grazing on land belonging to the Semisjaur Njarg Sami community and thereby affecting its land use.[125] The result of all this is that the community has to limit its reindeer herd to a much smaller number than the maximum permitted.

Below is a more detailed description of most of the major competing land uses. Two maps showing all the competing land uses are given in this chapter: one map at the scale of the Semisjaur Njarg Sami community (Figure 12) and one at the scale of the Tjidtjakk pastures (Figure 13).

5.2.1 Forestry

In winter, reindeer require access to woodland that is rich in lichen in order to survive the harsh subarctic winter. The reindeer herding areas have suffered enormous impacts from modern forestry, which has made the winter pastures a "bottleneck" in the annual herding cycle.[126] The Semisjaur Njarg Sami community have been affected by this development as much as every other Sami community, and forestry has caused them to suffer huge losses of grazing land. Today, for example, there are no old growth forests with hanging lichen remaining on the community's land. Hanging lichen is the reindeer's natural feed when the pastures are blocked off, i.e. when the snow hardens as a result of changes in weather conditions and the reindeer cannot reach the ground lichen. Without hanging lichen, the community has become more dependent on supplementary feeding. Nowadays, deforestation in the form of clear-felling also causes a 25–50% loss of pasture due to ground preparation and the planting of new forests, according to the Semisjaur Njarg Sami community. The reindeer herders' experience is that it takes 15 years for any kind of lichen pasture to return, but the lichen begins to die again if the pine trees grow too close together and the landowner does not maintain the forest. According to the reindeer herders, it takes around 40–50 years in total for the lichen to be fully restored.

5.2.2 Predators

Losses to predators are one of the biggest challenges facing reindeer herders.[127] For example, in 2012 the Semisjaur Njarg Sami community lost approximately 1,800 reindeer to predators,[128] mainly wolverines and lynx. This equates to a loss of around 25% of the community's herd of 7,000 reindeer per year.[129] Approximately 1,640 reindeer were lost in 2013. In 2015–2016, a total of 1,723 reindeer were lost to predators, representing 24% of the total herd.[130] Predators mainly take calves, and the community estimate that 30–50% of their calves are killed by predators each year.

125 This is the Semisjaur Njarg Sami community's view. The Östra Kikkejaure Sami community may take a different view.
126 According to Sandström et al. (2016), the proportion of woodland classified as lichen-type (>50% coverage) fell by 71% between 1953 and 2013.
127 See SSR (2010), for example.
128 According to the predator inventory established for 2012, the population of wolverines in the community increased by 10, giving a total of 60. Each new wolverine takes approximately 132 reindeer per year. This means that, in 2012, the community lost around 1,320 reindeer to wolverines. Wolverines only keep to the year-round pastures, and the community see them as the biggest predatory problem. In addition, in 2012 the lynx population in the Semisjaur Njarg Sami community also increased by 1.5 (one newborn lynx was "shared" with the Östra Kikkejaure Sami community as it was on boundary land), giving a total of nine individuals. Lynx mainly keep to the winter pastures, but can also be found on the year-round pastures. Each new lynx takes approximately 312 reindeer per year. This means that, in 2012, the community lost around 468 reindeer to lynx. In total in 2012, the community lost around 1,788 reindeer to wolverines and lynx. There are also eagles and bears in the mountains, but they are considered to be less problematic. The occasional wolf can be found on the winter pastures. New predators can move around from year to year but, regardless of where exactly they are located, the majority of losses to predators suffered by the Semisjaur Njarg Sami community take place on the year-round pastures.
129 The government suggests that the tolerance level for harm caused to reindeer by predators should be a maximum of 10% of the actual number of reindeer in the Sami community. The National Association of Swedish Sami, on the other hand, believe that the tolerance level should be no more than 5% (Prop. 2012/13:191). Currently, actual predator losses are around 25%.
130 Data sourced from the Sami Parliament intranet for Sami community members.

The large number of predators has economic, social, cultural and ecological impacts on reindeer herding. In economic terms, the impacts are calculated at three or four times more than the actual predator compensation allocated by the state. This is primarily a result of severe reductions in income from slaughter combined with increased operating costs. Added to this are similar losses at the processing stage due to the reduced availability of reindeer meat. In some areas, predation levels are estimated to be higher than is biologically sustainable, meaning that the herd will not be able to maintain its size through reproduction.[131] For a number of years, the Semisjaur Njarg Sami community has been slaughtering earlier than was customary in order to minimise the number of calves lost to predators. A number of calves are now slaughtered in late November/early December instead of in mid/late December.

5.2.3 Snowmobile traffic

Disturbances from snowmobilers occur primarily in March–May. The biggest problem according to the Semisjaur Njarg Sami community is that there are no areas with permanent snowmobile bans. The community needs to submit a new snowmobile ban application every year. In many cases the municipalities have rejected the applications, but the community has won on appeal. The members of the community believe that a ban should be in place by default and that others should have to apply for exceptions to the ban, which would be the reverse of the current situation. The snowmobile ban on the Norwegian side of the border leads many Norwegians to drive their snowmobiles on the Semisjaur Njarg Sami community's land.[132]

5.2.4 Power lines

Power lines require open corridors in the forest with widths of 50–60 m. The biggest problem for the Semisjaur Njarg Sami community when it comes to power lines is that the forest corridors attract snowmobilers, causing significant disturbances to the reindeer. Tracks left by snowmobiles make it easier for reindeer to move around on the terrain, causing the herd to fragment and spread and creating additional gathering work for the reindeer herders. However, there is also research indicating that reindeer avoid power lines even without human intervention, because of noise and UV radiation from the lines.[133]

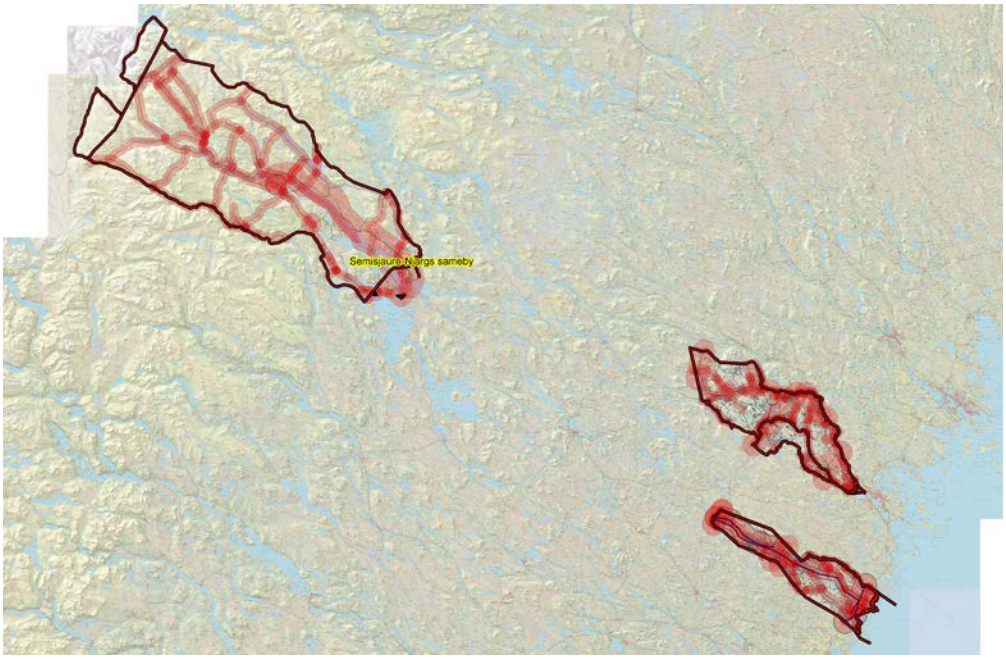
5.2.5 Climate change

The Semisjaur Njarg Sami community's land use has been more and more strongly affected by unpredictable snow and ice conditions due to climate change. Among other things, this makes some grazing areas inaccessible because the pasture is blocked off by hard compacted snow, or ice. As mentioned above, the community suffered a "bad" winter in 2013–2014 and were forced to provide their reindeer with supplementary feeding on the year-round pastures. The effects of climate change can be seen all over Sápmi, and constitute a clear disturbance that makes life more difficult for reindeer herders. These impacts and future risks are not examined in detail in this study, although they certainly warrant further investigation, given climate change poses one of the greatest threats to reindeer herding.[134]

131 Se e.g. Hobbs et al. (2012).
132 The snowmobile routes are not fully mapped in this impact analysis; only those that cause the biggest problems for the Semisjaur Njarg Sami community have been mapped.
133 Vistness and Nelleman (2001).
134 For more information, see Magga et al. (2009), Callaghan et al. (2011), Löf et al. (2012) and Löf (2014).

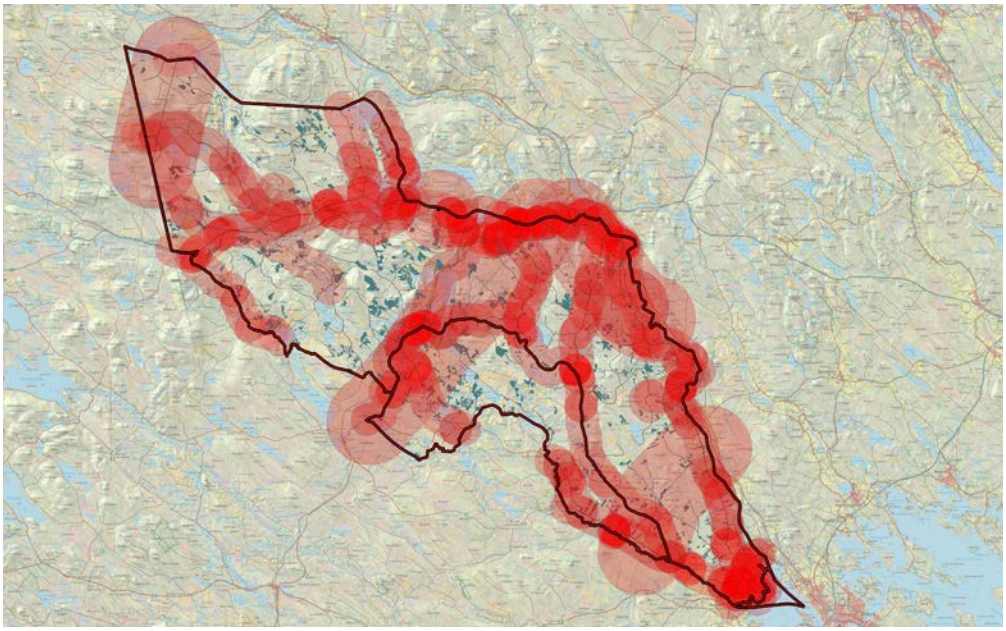
5.3 All existing competing land uses

Figure 12. All existing competing land uses in the Semisjaur Njarg Sami community's territories



[The darker the shade of red, the more overlapping disturbances there are. The following land uses are included: urban area, automotive testing, roads, railway lines, tourist facilities and trails, snowmobile routes, power lines, quarries, clear-felling and young forest (grey).]

Figure 13. All competing land uses in Tjidtjakk



5.4 Proposed competing land uses and restrictions[135]

There are currently four different additional proposed competing land uses and restrictions on the Semisjaur Njarg Sami community that will impact on their land use in the future if realised. These involve (1) loss of winter pastures due to the Reindeer Grazing Convention, (2) increased pressure on winter pastures due to the expansion of Markbygden Wind Farm, (3) increased pressure on summer pastures due to the proposed Nasa Mountain mine and (4) loss of winter pastures due to the planned wind farm in

135 This chapter does not deal with the proposed new quartz mine on Nasa Mountain, as it is still at a very early stage of planning. The establishment of such a mine would impact on Tjallas's summer pastures.

Råliden. The last of these (Råliden), was approved by the Environmental Assessment Delegation at the Country Administration Board of Norbotten during May 2017, which the Sami community has now appealed to the Land and Environment Court. The other two developments (Markbygden and Nasa Mountain) have obtained permits from the Swedish and Norwegian Governments, respectively. There is also the potential competing land use from the mine planned by Boliden in Laver, but this is dealt with separately in Chapter 8 of the report in significantly more detail than the above-mentioned competing land uses, since the Laver mine is the main focus of the report.

This section contains an analysis of how these first four proposed competing land uses could affect future land use by the Semisjaur Njarg Sami community.

5.4.1 Loss of winter pastures as a result of the Reindeer Grazing Convention

Today, the Semisjaur Njarg Sami community has two "convention areas" – in Storsund and Älvsbyn – which they have been able to use as winter pastures since 2005. These areas belonged to Norwegian reindeer herding districts (the equivalent of Sami communities) until 2005, when the 1972 Swedish–Norwegian Reindeer Grazing Convention expired. According to the proposal for a new Reindeer Grazing Convention that has been submitted to the Swedish and Norwegian Governments, these convention areas will be returned to Norwegian herding districts. Because this is the official proposal, this report assumes that this will happen.

The area in Älvsbyn has not been used by the Semisjaur Njarg Sami community since 2005 and is now used by the Luokta-Mavas and Ståkke Sami communities. However, the Storsund area is used by a winter group in the Semisjaur Njarg Sami community, and its loss will have a major impact on the community (Figure 14). According to the chairperson of the Semisjaur Njarg Sami community, the most realistic assumption is that the winter group currently using the Storsund area will have to move to Laver together with the existing winter group. This demonstrates the significance of Laver as a core area with good winter grazing. It will also make the Laver area even more important for the community, as it is likely that two winter groups will be dependent on the area for their winter grazing.

5.4.2 Increased pressure on winter grazing due to expansion of Markbygden Wind Farm

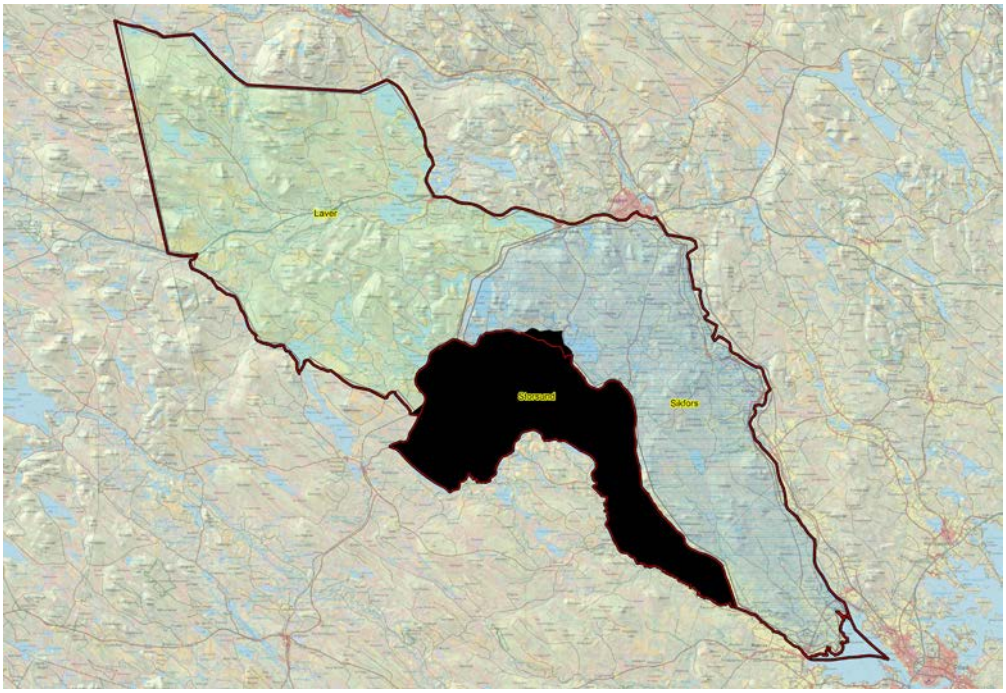
In 2011, the Swedish Government granted Markbygden Vind AB planning permission to build and operate the world's largest wind farm, with a total of 1,101 wind turbines, on land belonging to the Östra Kikkejaure Sami community (Figure 15). Because the Östra Kikkejaure Sami community's land shares a boundary with Laver, this wind farm also impacts greatly on the Semisjaur Njarg Sami community.[136] As detailed above, wind-power farms have a disturbance zone of approximately 5 km. The Semisjaur Njarg Sami community experience difficulties safeguarding their own pastures because of stray reindeer from Östra Kikkejaure resulting from expansion of the Markbygden project.[137] They feel that they already have major problems with stray reindeer from the Östra Kikkejaure Forest Sami community, which are believed to be due in part to avoidance effects from Markbygden. A monitoring programme for Markbygden has been produced by Enetjärn Natur on behalf of Markbygden AB,[138] and has so far resulted in additional fencing being constructed to mitigate the disturbance of reindeer, which indicates that there are indeed displacement effects on reindeer.

136 The report is based on the investigation area on which Markbygden Vind AB has been authorised by the government to build wind turbines. Although the investigation area and the number of wind turbines may decrease in line with ongoing and future permitting procedures, the permissibility decision is the only formal information available for reference at the time of writing.

137 This is the Semisjaur Njarg Sami community's view. The Östra Kikkejaure Sami community may take a different view.

138 While some fencing has been constructed, the purpose of the monitoring program has been contested. The reasoning behind the government's decision on permissibility states "that the company shall investigate how the construction and operation of the wind power facility affects the practice of reindeer herding, and that this investigation shall be carried out in consultation with the affected Sami communities" (Government Decision, M2009/1517/F/M). The Semisjaur Njarg Sami community hope that the monitoring program will be able to demonstrate the disturbance they already feel they have suffered and will suffer as a result of Markbygden from increases in stray reindeer from the Östra Kikkejaure Sami community, in order to provide a basis for future negotiations with Markbygden Vind regarding compensation and actions to be taken. Representatives of the County Administrative Board believe that, "beyond what is stated in the decision on permissibility with regard to monitoring for reindeer herding, the government has not specified what the information will subsequently be used for. However, what emerges in the monitoring program is likely to contain information that can be used or form part of a basis for future negotiations on compensation and actions to be taken" (email correspondence between Lawrence and the Environmental Protection Division of the Administrative Board of Norrbotten County, 02/09/2014; 09/10/2014). In contrast, the Permit Manager of Markbygden Vind believes that the monitoring program is purely "a record for posterity – this is how it was for reindeer herding – but it is not linked to any discussion of compensation or actions to be taken" (telephone interview between Lawrence and the Permit Manager of Markbygden 02/09/2014).

Figure 14. The convention area in Storsund



(The convention area is shaded in black.)

The key problem for the Semisjaur Njarg community is that the winter group's herd is easily fragmented if grazing is poor, which happens when other reindeer herds have already grazed and trampled ground with no snow or limited snow coverage. Layers of ice can also form after reindeer from other forest Sami communities have grazed earlier in the winter, which makes the lichen inaccessible to the winter group's herd. Since its boundaries were fixed in 1996, the Semisjaur Njarg Sami community has had the right to issue alerts for reindeer belonging to other Sami communities within its own grazing area, which requires that the neighbouring reindeer owners must collect their reindeer from Semisjaur Njarg's pastures.[139]

5.4.3 Nasa Mountain

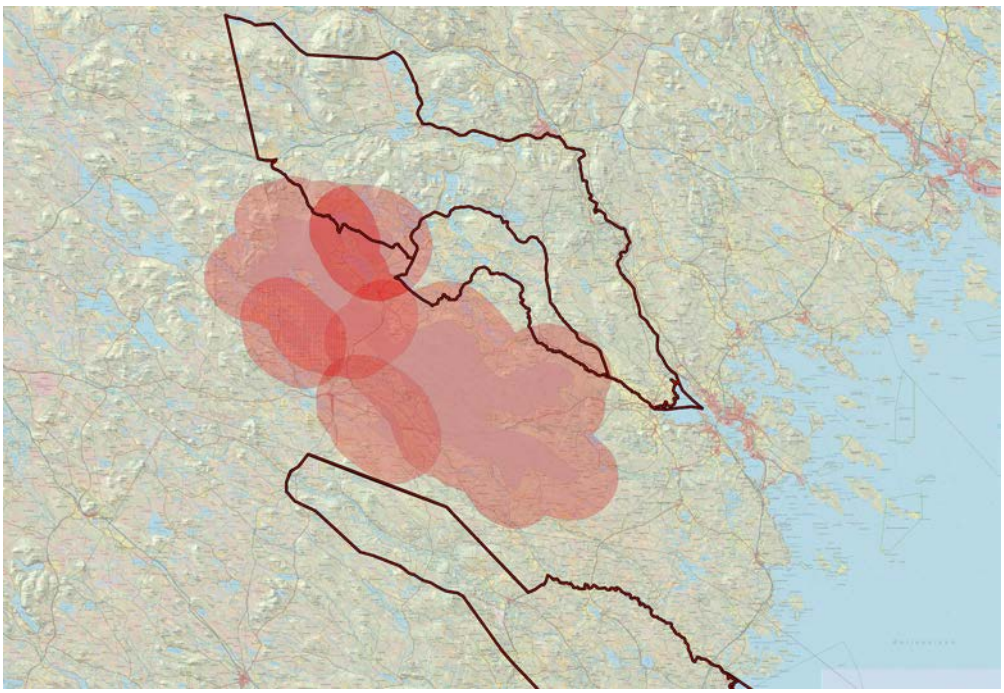
Elkem AS Salten Verk plans to begin mining quartz in an open-pit mine on the Norwegian side of Nasa Mountain. In February 2016, Elkem's plans for the mine on Nasa Mountain were approved by the Norwegian Government.[140]

Nasa Mountain is on the boundary between the Semisjaur Njarg and Svaipa Sami communities and also borders the Saltfjell reindeer herding district.[141] These Sami communities state that the planned activities will cause considerable disturbances – in the form of disturbance of the calm grazing environment required by reindeer, destruction of pastures, significant intermixing between the Sami communities and the affected Norwegian reindeer herding district and a very high level of dust formation that could affect pasture quality within a radius of several kilometres from the actual mine.

If industrial activity on this scale is permitted in the specified location, the Semisjaur Njarg Sami community are concerned about the possibility of increased intermixing of reindeer. The community envisage two scenarios. In the first, they are concerned that reindeer from the Svaipa Sami community will leave Nasa Mountain and head north onto the Semisjaur Njarg Sami community's pastures, leading to intermixing of reindeer and increased use of those pastures. This will result in too many reindeer on the pastures of the Semisjaur Njarg Sami community. Depletion of the pastures will increase and

139 According to the Swedish Reindeer Husbandry Act (Rennäringslagen) 1971:70 regarding alien reindeer.
140 https://www.regjeringen.no/no/aktuelt/sier-ja-til-utvinning-av-kvarts-i-rana-kommune/id2475977/
141 Note that this section is written from the point of view of the Semisjaur Njarg Sami community. The Svaipa Sami community may take a different view of the specific impacts of the planned mine. However, the Svaipa Sami community are of the same general view as the Semisjaur Njarg Sami community – i.e. that the planned mine will significantly impact reindeer herding – and have referred to the Sami Parliament for support in the matter.

Figure 15. Map of the Markbygden investigation area (grey) with 5 km disturbance zone (red)



(The overlapping marking is due to the fact that the total investigation area consists of a number of smaller investigation areas, each with its own disturbance zone.)

the task of separating the reindeer will be burdensome, if not impossible. Later in autumn, the areas to the east of Verdejaur will also be trampled by the intermixed reindeer herd. These areas are important autumn and autumn–winter pastures for the community. Increased use of this land will mean that the Semisjaur Njarg Sami community will need to move their reindeer east to the winter pastures earlier than is desirable. The concern is that this will trigger a domino effect with unforeseeable impacts on reindeer herding in the community.

In the second scenario, the community are concerned that reindeer from the Semisjaur Njarg and Svaipa Sami communities will head west into the Saltfjell reindeer herding district on the Norwegian side of the border, and become intermixed with Norwegian reindeer. In broad terms, this will have the same impact as above: the pastures will become depleted and significant additional work will be generated for the Saltfjell reindeer herding district and the Sami communities of Semisjaur Njarg and Svaipa. A proposed fence along the railway line from Sørelva to Mo i Rana may address the problem of intermixing of Swedish and Norwegian reindeer to some extent. However, there would still be intermixing between reindeer belonging to the Semisjaur Njarg and Svaipa Sami communities.

With regard to dust formation from the mine, the community believe that this will lead to the destruction of pastures far beyond the mine area itself. The mine will be on high alpine terrain, where wind can carry dust several kilometres from the mine in the direction of the wind, impacting on grazing potential over a very large area.

These disturbances will have negative impacts for the reindeer and the community not just in summer, when the reindeer are in the area around the planned mine at Nasa, but also in winter. In the summer/snow-free period, the reindeer require a calm grazing environment – in order to build up the necessary reserves for the coming winter – and good access to fresh vegetation that cannot be found elsewhere. This is important because the calves' growth period is best when the ground is free from snow: the females can produce plenty of milk for the calves, but only if females have access to sufficient fresh pasture. If the females do not have access to a calm grazing environment during the snow-free period, the calves will not get the milk they need to grow and survive the coming winter. In other words, the mine at Nasa Mountain would also make the winters even more difficult for the community by entailing an increased need for supplementary feeding during winter and a higher calf mortality rate.

Because the exact plans for this mine were unclear in 2015, when the participatory GIS mapping was undertaken for the Swedish version of this report, it was not possible to map the mine and its disturbance zone. Nor has it been possible to analyse in detail how the planned mine at Nasa Mountain will interact with the other competing land uses that are already present or planned in the area. This should, however, be done ahead of an assessment of both the mine at Nasa Mountain and the planned Boliden mine in Laver.

5.4.4 Råliden

In May 2017, the Råliden wind-power project was approved by the Environmental Assessment Delegation at the Country Administration Board of Norbotten during May 2017, which the Sami community has now appealed to the Land and Environment Court. The company wpd Onshore Råliden AB (referred to below as wpd) has a permit to construct a wind farm with a maximum of 54 wind turbines with a maximum total height of 250 m, in a project area called Råliden. The project area is located on the boundary between the municipalities of Skellefteå in Västerbotten County and Piteå in Norrbotten County. The southern parts of the project area are in the municipality of Skellefteå, approximately 50 km northwest of Skellefteå itself. The planned wind farm is on the boundary between the Semisjaur Njarg Sami and the Östra Kikkejaure Sami communities.[142] Around half of the planned 54 turbines will be situated on Semisjaur Njarg's reindeer grazing pastures.

As previously described, the Semisjaur Njarg Sami community has two areas for winter grazing, the northern and southern pastures, which are used by different groups within the community: the Tjidtjakk and Tjallas groups, respectively. The Råliden wind farm is situated in the southern winter pasture, i.e. the one used by the Tjallas group. The community's reindeer herding would be negatively impacted by the planned development because one of the winter groups in Tjallas would lose an estimated five to six weeks of autumn and winter grazing. In addition, the disturbance zone would mean that the reindeer would no longer follow the migration routes used today. The consequences would be that the remaining winter grazing groups within Tjallas would need to carry out extensive additional work to gather and guide the herd during times of migration and otherwise.

Regardless of which of these winter pastures is directly affected by the land that is used, this is expected to affect daily operations in the entire Semisjaur Njarg Sami community because access to winter pasture is the most critical element for the community's survival. The northern winter pasture, with around 4,000 reindeer, is currently under a high degree of strain from competing activities, both existing and planned, including the above-mentioned Markbygden Wind Farm, the upcoming loss of the Storsund convention area and Boliden's application to open an open-pit mine in Laver. Overall, the community is facing the risk of losing most of the northern winter pasture. Access to winter pasture is already considered to be severely strained, and winter pasture is already considered insufficient for the number of reindeer that the Semisjaur Njarg Sami community is permitted to have. In summary, the northern winter pasture is considered to be under a lot of pressure, and this is expected to create a need for the southern pasture to be used to a greater extent in the future.

The community is of the view that the establishment of the wind-power farm is not compatible with reindeer herding and that it will cause major disturbances in the form of lost grazing land and disturbance of the required calm grazing environments.

wpd's plans were released in 2015 as the Swedish version of this report was being completed, and so it was not possible to map the disturbance zone for the planned wind farm in Råliden or to analyse its impacts in detail. There have not been resources to do so for this updated report in English either. This should, however, be done ahead of an assessment of both the wind farm and the planned Boliden mine in Laver.

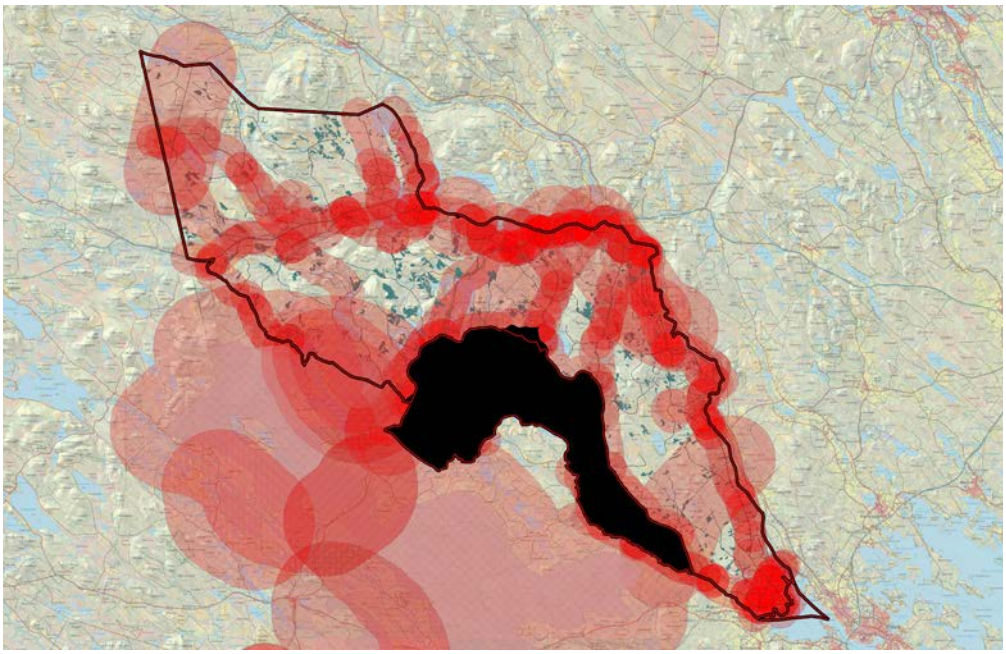
142 The following description of the impact of the wind farm is given from the point of view of the Semisjaur Njarg Sami community. The Östra Kikkejaure Sami community may take a different view.

5.4.5 Multiple pressures – existing and proposed competing land uses (excluding the Laver mine)

The combined competing land uses and restrictions in Tjidtjakk, both existing and proposed (i.e. including the loss of the convention area and the Markbygden expansion), are presented below. There will be very few areas left completely free of disturbances (Figure 16).

This map does not include Nasa Mountain (which is on the summer pasture on the year-round land) or Råliden (which is within Tjallas's winter pastures), and therefore does not include their disturbance zones. However, all these competing land uses are interconnected, and will place considerable restrictions on the Semisjaur Njarg Sami community's ability to practise reindeer herding effectively. This is discussed in greater detail in the scenario analysis in Chapter 9.

Figure 16. Multiple pressures in Tjidtjakk: existing and proposed (excluding the Laver mine)



6 Reindeer herding: preconditions for its social, cultural and economic sustainability

This chapter first provides an overview of the Semisjaur Njarg Sami community and its members. It then outlines the social and cultural significance of reindeer herding and the preconditions required for its sustainable development, with a focus on how the members of the Semisjaur Njarg Sami community view these issues. The chapter is mainly based on discussions and workshops with members of the Semisjaur Njarg Sami community, but also makes use of existing research in the area and the experiences of other Sami communities throughout Sweden.

6.1 The Semisjaur Njarg Sami community

The Semisjaur Njarg Sami community consists of some 70 members. Around 30 of them are herding members with voting rights (in accordance with the Reindeer Herding Act 1971:437), and reindeer herding is the primary occupation of about a third of these voting members. Approximately 50 members are involved in different reindeer herding activities at various times. The average age of community members is high, with a limited number of new younger members. The number of reindeer herders in the community with herding as their primary occupation has also decreased over time. In part, this situation is a result of the "rationalisation" of reindeer herding by the Swedish state during the 1970s through the introduction of reforms to the Reindeer Herding Act. The aim was to produce rational – i.e. usually larger and more extensive – operating entities and to eliminate reindeer herders with smaller herds, who were seen as being "underemployed".[143] According to the Semisjaur Njarg Sami community, the introduction of the snowmobile in the 1970s also led to a number of people giving up reindeer herding. This was particularly the case among those with smaller herds, for whom investing in off-road vehicles was not economically viable.

This has led to there being significantly fewer reindeer herders today than a few decades ago. There is also a general feeling among the reindeer herders that they are "vulnerable" and that there are "fewer [of them] than in the north [of Sweden]".[144] The fact that there are fewer reindeer herders today than in the past has put strain on the work situation in the Semisjaur Njarg Sami community. In particular, there are no herders with smaller herds who can "jump in" and help other reindeer herders with larger herds when necessary. For example, there are a number of winter groups consisting of just one or two herders, because others have been forced to give up herding. This has led to greater vulnerability in cases of illness or injury. Many herders have no one to help or replace them if the need arises. This becomes especially evident in harsh winters, when additional work is required in order to feed and supervise the reindeer. There are no margins for illness or time off work due to workplace injuries or accidents because there is no one who can replace the reindeer herders. This is a very real problem, particularly given the fact that workplace injuries and incidents are very frequent in reindeer herding, and are often made worse by the cumulative impacts of the physical and mental stress of reindeer herding.[145]

The members of the Semisjaur Njarg Sami are not alone in experiencing these trends; indeed, there are indications that the number of reindeer herders may be declining in multiple Sami communities because of the combined pressures (this is discussed in greater detail below). In the Mausjaur Sami community, for example, the number of reindeer herding enterprises[146] has been falling. In the 1970s there were some 20 reindeer herding enterprises in the community; in 1980 there were around ten. Since then the number has continued to drop and now stands at four. In recent years, another two reindeer herding enterprises in the community have been wound up; this has not been for age-related reasons. One of the

143 Mörkenstam (1999), pp. 156–158. See also Löf (2014).

144 This quote refers to the sentiment that those Sami communities further north, in areas such as Jokkmokk, where the Sami constitute a larger portion of the overall population, are more protected by virtue of their numbers.

145 The Southern Lapland Research Department (2009b) concluded that: "The occurrence of musculoskeletal disorders is high among both men and women in reindeer herding. Lower back, neck, shoulder, elbow and hand/wrist problems are frequent. In men, the problems are most likely to be linked to physical risk factors such as high exposure to snowmobile and motorcycle driving, while in women the problems are likely to be affected to a large extent by psychosocial risk factors such as a lack of social support, high levels of exertion, low remuneration and low levels of participation in the reindeer herding work. Reindeer herders are also exposed on an almost daily basis to vibrations from driving snowmobiles and motorcycles. A large number of men in reindeer herding have also shown clear indications of injuries caused by vibrations, such as numbness, lack of coordination and 'white fingers'."

146 A reindeer herding enterprise is the formal economic organisational structure reindeer herders are required to form, by law, in order to sell their reindeer meat. The largest sources of income for reindeer herding enterprises are reindeer and elk meat, and their largest costs are vehicle and fuel related. See https://www.sametinget.se/1128.

reasons for reindeer herding enterprises being wound up is the pressure on the community in terms of competing land uses.[147]

For those who do remain in reindeer herding, these competing land uses place enormous psychological burdens on reindeer herders and their families. As a result, consultation fatigue is a persistent and significant challenge for many Sami communities. [148]

6.2 The social and cultural significance of reindeer herding

Sami reindeer herding is a "cultural bearer" for the Sami people, a fact recognised by the Swedish state.[149] Reindeer herding therefore plays a central part in ensuring the survival of the Sami culture, particularly by way of transferring traditional knowledge, customs and language to future generations. Naturally, there are many other cultural expressions and traditional economic activities in Sami culture, such as hunting and fishing, duodji (Sami handicrafts), the Sami languages and joik (Sami singing), but many of these cultural expressions are also intimately associated with reindeer herding and the close relationship between reindeer, people and the environment.

6.2.1 The Sami languages

The Sami languages are primarily spoken through the practice of reindeer herding: their origins can also be found in reindeer herding to a large extent. These languages have an extensive vocabulary for referring to reindeer, reindeer herding, snow conditions and the local environment, with no equivalents in English or the Nordic languages. Because reindeer herding is the context in which the languages are most frequently used, it is also the vehicle by which they are transmitted from one generation to the next.

All the Sami languages spoken in Sweden – Northern Sami, Southern Sami, Lule Sami, Ume Sami and Pite Sami – are classified by the United Nations as endangered languages.[150] Transmission to the next generation – i.e. children learning the language from their parents and other adults around them – is the single most important factor when it comes to the survival of a language.[151] Because reindeer herding is the environment where the Sami languages are transmitted from generation to generation, the Sami languages need reindeer herding in order to survive.[152]

Northern Sami, Southern Sami and Pite Sami are all spoken in the Semisjaur Njarg Sami community. Northern Sami came to the area as a result of forced displacements of Northern Sami people in the early 1900s, and is still actively spoken by some reindeer herding families in the community. Northern Sami has a total of approximately 30,000 speakers in Northern Sweden, Finland and Norway, and is classified by the United Nations as "definitely endangered", i.e. 2 on a 5-point scale, where 5 is an extinct language.[153]

Pite Sami, also known as Arjeplog Sami, is the original, local Sami language spoken in the area. Pite Sami is only spoken by a handful of families (fewer than five). It has a total of 30 speakers, all of whom live in the Arjeplog area. All the adult speakers of the language except one are over 50 years old.[154] For these reasons, the language is "critically endangered", i.e. 4 out of 5 on the United Nations scale of endangered languages where 5 is an extinct language.

Of those few who do speak Pite Sami, all are involved in reindeer herding. In order words, Pite Sami as a language is most alive within the reindeer herding environment, and it is thanks to reindeer herding that the language survives at all.[155] The most natural linguistic environment where children and youth

147 See the EIA "Rennäring invid Eva-fyndigheten i Copperstoneområdet" ("Reindeer Herding beside the Eva Deposit in the Copperstone Area"), written by Malin Brännström, then legal advisor to the National Association of Swedish Sami, in collaboration with the Mausjaur Sami community.
148 Larsen et al. (2017).
149 Prop. 1998/99:143 p. 64. Framework Convention for the Protection of National Minorities, 3rd Opinion of the Advisory Committee on Sweden (2012), ACFC/OP/III(2012)004.
150 According to the 2009 Swedish Language Act (Språklagen), speakers of minority languages must "be given the opportunity to learn, develop and use the minority language" (Section 14.1). Furthermore, "The state [has] a special responsibility to protect and promote the national minority languages" (Section 8).
151 Valijärvi and Wilbur (2011).
152 See Ryd (2007) for a discussion of the 300 different Sami words for snow.
153 See http://www.unesco.org/culture/languages-atlas/index.php
154 Wilbur (2014).
155 See Wilbur (2014).

are exposed to Pite Sami is out in the "reindeer forest", i.e. in various reindeer herding activities such as calf-marking and reindeer separation. Reindeer herding may be a key factor for the survival of the Sami languages in general, but it is absolutely crucial for the transmission of Pite Sami to future generations and for its survival.

6.2.1 Traditional knowledge is passed on from one generation to the next

Traditional reindeer herding knowledge is transmitted from generation to generation. The knowledge is not written down; it is taught orally and through the actual practice of reindeer herding. For generations, reindeer herders have passed on knowledge of the local terrain and how reindeer move in nature:

> *…we have been there and know how reindeer move… I don't need to have been on every hill – I can ask Dad and he'll know: "You can't leave a reindeer there", he might say. It's not something you can learn overnight. It's not written down; it's [passed on from one generation to the next] by word of mouth …*

Reindeer herding is entirely dependent on knowledge being passed on from generation to generation. Because the knowledge is not written down, it is lost if it is not passed on. As one reindeer herder described it:

> *If we stop practising reindeer herding, [the family] won't get it back… the only way is through intergenerational succession… a reindeer herd is built up over time and things need to be learned… If a reindeer herder stops herding, the following generations are lost… the lifestyle disappears.*

According to one woman in the community:

> *If one reindeer herder disappears, it disappears for the entire family. It is so obvious when someone in the older generation passes away – how do you stretch a reindeer hide? That knowledge bank of Sami reindeer herding just disappears…*

Children are therefore a natural part of reindeer herding work, and they are present at many different events and activities, for the specific reason that the knowledge has to be passed on. This sometimes requires them to take time away from school, which can lead to cultural clashes between the formal requirements of the school system and the informal requirements of the reindeer herding world. One woman in the community described the dilemma as follows:

> *There is no understanding from school or work – "Why do you need time off again?" They don't understand that the children and I aren't "taking time off", we're working, it's a different school, [what we learn about reindeer herding].*

6.2.2 Reindeer herding as a "cog" in the wheel

There is an entire family and network of support behind every active reindeer herder, which is needed for reindeer herding to function properly. In reindeer herding there are clear roles and responsibilities for everybody. As one woman in the community described it:

> *It's like a cog in a wheel. Everyone has their responsibilities and roles. If I say, "There's a reindeer separation tomorrow", I don't need to say anything else; everyone knows what's involved… so food and everything that needs to be prepared will be sorted out.*

Many women see themselves as generally doing an invisible but important job within reindeer herding, in which they look after all the "ground service":

> *A woman's job with a reindeer herder is unseen – if no one does it [baking, fixing up the hut, sewing etc.] then people will see it!*

For women who also work actively within reindeer herding, there is often a double workload, both in the home and in reindeer herding work.

Reindeer herding also works as a kind of "social glue" that keeps the community together. For example, in the Semisjaur Njarg Sami community, although the winter groups work alone with their herds in the winter, they work together at various stages of the annual reindeer herding cycle, e.g. at calf-marking and reindeer separation activities: "Without reindeer, we'd never see each other". This provides a form of comfort, according to one young man in the community:

The annual reindeer herding cycle is a kind of comfort, with the reindeer separations and slaughter and everything. We know what's going to happen. Everyone has been part of it the whole time. It's so familiar. It's reindeer herding that brings us together.

Active reindeer herders depend on their families for the reindeer herding to work, but the dependence is mutual. The family network is, in turn, dependent on the reindeer herder for access to traditional Sami food (such as reindeer meat, moose meat and fish), material for Sami art and handicrafts and, in particular, for their Sami identity. Without the active reindeer herder, the family network would lose contact with reindeer herding. According to one woman in the community:

> *Although we don't work in reindeer herding directly, we adapt our lives and jobs to the annual reindeer herding cycle; we ask for time off when there are calf-marking activities and we hope it works. If [my relative] gave up [reindeer herding], I'd have no connection to it any more.*

In other words, reindeer herding is not just a "profession", but a way of life that gives reindeer herders and their families a strong sense of identity. For those who live with reindeer herding, their cultural identity and family life are intimately bound up with reindeer herding and the different seasons of the annual reindeer herding cycle.[156]

6.2.3 Preconditions for reindeer herding

A number of studies have shown the difficulties faced by reindeer herding in managing not just individual competing land uses, but also the combined pressure, or cumulative effects.[157] Many reindeer herders today feel that existence within reindeer herding has become increasingly difficult: the pressure from predators is increasing; the winters are becoming harsher because of climate change;[158] the available pasture is disappearing and becoming fragmented as a result of deforestation, wind farms, mines and tourist facilities, and snowmobile traffic is increasing. One older reindeer herder in the Semisjaur Njarg Sami community gives the following description of how years of deforestation have affected their land:

> *...at first, they [the forestry companies] came with a big map and said they would cut down a bit of forest here and there, and we thought it wouldn't be so bad – that we could do without those areas. But if we had known that they [the forestry companies] would come back every year, year on year, and make the same demands, we might have thought differently. Now there is hardly any [forest with hanging lichen] left...*

These various competing land uses have put a lot of economic pressure on many reindeer herders, with higher costs and lower incomes. When asked what reindeer herding meant, one reindeer herder simply answered: "An empty wallet". Among other things, there are higher costs associated with the transportation of reindeer by truck, as well as supplementary feeding. The need for supplementary feeding has increased in general for many Sami communities in recent years, partly because of the cumulative effects of existing competing land uses and the loss of land, and partly because of a series of harsh winters in recent years. Opinions on supplementary feeding, and the extent to which it is carried out, vary among the different Sami communities. However, most Sami communities are ambivalent towards supplementary feeding: it is viewed as a necessary evil, but not something they want to have to introduce further. This

156 See the Section 4.2 for more information on the annual reindeer herding cycle.
157 For example, see Tyler et al. (2007), Blom et al. (2011) and Löf et al. (2012).
158 "Studies of how ongoing and future changes in climate could impact on reindeer herding show that a varied and continuous area with access to reserve grazing land is very important in order to deal with the combined pressure facing the Sami communities." (Löf et al. 2012).

is mainly because it is not compatible with traditional Sami reindeer herding, which is based on free-roaming reindeer on natural pastures. Other reasons include the various problems that supplementary feeding poses for the health of the reindeer, and the increased workload it entails for the herders (for more information, see section 9.2.2).

A number of researchers maintain that some Sami communities are under so much pressure – from predators and wind farms, for example – that they are heading towards a "collapse" or "breakdown". This occurs when the reproduction of the reindeer herd is no longer able to replace losses, and which eventually leads to the herd structure "collapsing".[159] A collapse within a Sami community could mean that reindeer herding stops completely or that it can no longer adapt. In the latter case, reindeer herding will be forced to undergo such fundamental changes that it will collapse in its current form – i.e. with free natural pastures as its basis – and will instead become dependent on supplementary feeding and other technical means, which is not sustainable in the long term. For example, the Swedish Land and Environment Court recently rejected a permit application for a wind farm on the Jiingevaerie Sami community's land for precisely the above reasons. The proponent argued that supplementary feeding was a suitable mitigation for the loss of pastures, but the Sami community argued it was an unsustainable solution, which was upheld by the Court. However, that decision was an exceptional one: most permit application processes are fragmented, with no systematic assessment of the cumulative effects of the combined competing land use on the reindeer herding area.[160]

In other words, reindeer herding is currently subject to multiple pressures from competing land uses, and thus constitutes a vulnerable traditional land use and way of life. This is perhaps most evident in the health statistics. Research shows that Sami who practice reindeer herding have higher rates of anxiety, depression and suicide than other groups in Swedish society.[161] The cumulative impacts of competing land uses in reindeer herding areas must therefore be assessed holistically, where the establishment of yet another competing land use – such as a mine or wind farm – may be experienced by herders as the "last straw" that pushes them and their community over the edge, making it impossible for them to continue practising traditional reindeer herding.[162]

6.2.4 Ambivalence towards reindeer herding

In fact, it is *thanks to* the significance of reindeer herding in a broader cultural and social context that many reindeer herders choose to continue practising it, despite the poor economic situation and difficult prevailing conditions.[163] Many reindeer herders also feel considerable freedom in being "their own person" and being able to make their own decisions about their day-to-day life, as well as experiencing a real joy in working with reindeer. One reindeer herder described it as follows:

> *I take immense joy in working in reindeer herding, and it feels good to see that the reindeer are doing well in a good winter... I look forward to a good winter because then I only have my own reindeer to look after – if it's a good winter, it is entirely up to me whether I succeed or not, and it's very satisfying.*

A number of reindeer herders described the close connection between themselves and the reindeer: "When the reindeer do well, the Lapp[164] does well", as one herder put it. Many of them describe reindeer herding as a part of their lives, insofar as they are born into it and simply take it for granted. As one young member of the community put it: "I was born and grew up with reindeer, it's a part of me. It's hard to explain." Another young community member simply described reindeer herding as "fun" – it excited him and gave him joy.

159 For example, see Åhman (2012).
160 See Torp (2014).
161 See Kaiser et al. (2010, 2012).
162 For example, see Löf et al. (2012).
163 Nordin, for example, argues that: "It is on ideological grounds that reindeer herding has continued for generations despite the low economic viability. There are values other than purely economic ones that are more important to the reindeer herding household. For many reindeer herding households, reindeer herding is their life and there is no alternative way of life for them. Reindeer herding gives meaning to life, which explains why the reindeer herding households can live on their work despite the problem of low profitability. Their life choices are guided by important values that are not purely economic" (Nordin 2007) pp. 144–145.
164 Lapp is a derogatory term for Sami people, but may still be used by Sami people when referring to themselves and other Sami, often with humour.

At the same time, most members of the community express profound concern about the current conditions for reindeer herding: “How much can we take?” asked one person. One reindeer herder in the community mentioned that there are “many little things” that mean that “many people are reaching the limit” [of what they can cope with]. This leads to a certain ambivalence towards reindeer herding among many herders, which is expressed in different ways: “It’s hard to live with, but I couldn’t live without it,” and: “It’s a heavy burden, but it’s also freeing.” Many described reindeer herding as “a heavy legacy”.

Several members of the Semisjaur Njarg Sami community have also said that they feel that reindeer herding is constantly “called into question” by outsiders and that they are always having to justify their own existence. Research has shown that this is a common experience among Sami reindeer herders and that it can lead to psychological ill health.[165] As one young woman in the community put it: “We are all individuals and we shouldn’t need to justify ourselves as Sami all the time.” These current conditions in turn lead to ambivalence about whether the young members of the community should invest in reindeer herding – an ambivalence expressed both by the young and by their parents/older family members. A number of young community members expressed a desire and a “dream” of being reindeer herders, but at the same time they are uneasy about the future:

> *I need to keep studying “in case” reindeer herding doesn’t work out economically [and I need to get another job], and that feels so hard. I wouldn’t want to have reindeer just in order to show them to tourists – I want to work with it full-time – I don’t want to be a tourist attraction.*

Some young people also felt that they were getting mixed signals from their parents. On the one hand, they feel their parents/elders want them to start herding reindeer, but on the other they are also witness to constant discussions about the negative aspects of reindeer herding, such as problems with predators, poor economic conditions, industrial developments and so on.

Similarly, the parents said that they wanted to provide their children with the right conditions to continue practising reindeer herding because it means so much for their identity, heritage and family, but they also wanted their children to have a good life. These were seen as difficult things to reconcile given that the conditions necessary for practising reindeer herding in the present day are very difficult, in part because of all the competing land uses, which lead to poor economic conditions, as well as prejudices within Swedish society. One woman described it as follows:

> *What knowledge are we passing on to our children? I feel ambivalent – do we want them to carry on practising reindeer herding or not? We need to provide them with the conditions [to carry on]… but we also want them to do well.*

Both the young community members and their families believe that young Sami today are subject to psychological stress directly linked to all the competing land uses and prejudices against reindeer herding from the majority society. As one young woman in the community said:

> *I think we young people have it much harder nowadays. We have fewer grazing lands and we’re doing badly [psychologically]. There’s a clear link.*

165 See Kaiser et al. (2010, 2012).

7 Current state of knowledge: impacts of the mining industry on Sami reindeer herding

7.1 Disturbance zones for mines

There is no published research on the impacts of the mining industry on Sami reindeer husbandry in Sweden. This is surprising given that industrial mining has taken place in traditional Sami areas for over a hundred years. However, there are two relevant sources of knowledge available.

The first of these is the experiences of the Sami communities themselves with the mining industry. The Muonio Sami community states that Northland's mining operations caused a total disturbance zone of 15 km around the entire mine, and their experience was that the herd avoided the area completely. The community believe that the avoidance effect was so great because the mine is situated on the community's calving grounds. Female reindeer, which usually stay in this area with their calves, are particularly sensitive to disturbances. They fled the area despite the community's attempts to guide them back to it. The community state that stray reindeer also avoided the 15 km disturbance zone in winter.[166]

The Malå Sami community state that they experience a disturbance zone of roughly 2 km caused by the Maurliden mine. The reindeer herd passes right through this area without stopping or grazing. The community estimate that this has led to the loss of six weeks' grazing for the reindeer because they move quickly through the area without stopping. In the community's view, the avoidance effect would have been much greater if the mine had been located on winter pasture: "We are surviving thanks to the fact that it's pre-winter pasture; if it had been winter pasture it would have been catastrophic."[167] The Gällivare Forest Sami community state that they are experiencing a disturbance zone of 10–14 km caused by the Aitik mine (see more below in Chapter 7). The Gabna and Laevas Sami communities have indicated that they experience a disturbance zone of 10 km around the Kiruna mine on their autumn/winter pasture.[168]

Chapter 7 also contains a more detailed description of how the Gällivare Forest Sami community in particular have experienced the direct and indirect impacts of the Boliden Aitik mine.

The second relevant source of knowledge is international research. The review by Anna Skarin and Birgitta Åhman (2014) of existing international research shows that the results of research on how reindeer are disturbed by competing land uses in other parts of the world – particularly Canada – are also applicable in Sweden. According to Skarin and Åhman (2014), a mine can produce a disturbance zone of 2–14 km from the site itself. The size of the disturbance zone clearly depends on the type of mine (e.g. open-pit mines cause a larger disturbance) and local topography.

In summary, the experiences of different Sami communities with existing mining operations indicate a similarly wide range, but tending towards the upper size.

7.2 The Gällivare Forest Sami community's experiences with the Aitik mine

7.2.1 Background

This section presents the Gällivare Forest Sami community's experiences with the Aitik mine. This is relevant to the later analysis of the proposed Boliden mine in Laver, because the Gällivare Forest Sami community experienced the actual impacts of another Boliden mine on reindeer herding. The proposed Laver mine is similar in scale and nature to Boliden's Aitik mine further north.[169] It is difficult to draw direct comparisons between different Sami communities (the Semisjaur Njarg community is a mountain Sami community and the Gällivare Forest community is a forest Sami community), but experiences with the Aitik mine nevertheless confirm the adverse impacts predicted by the Semisjaur Njarg Sami community.

166 According to a discussion with Tomas Sevä, former chairperson of the Muonio Sami community, 29/04/2015. Sevä states that the community have GPS data showing this, and expresses frustration that "no one believes us until we have research to prove it" (pers. communication with Rebecca Lawrence).
167 Discussion with Jan Rannerud, chairperson of the Malå Sami community, 29/04/2015.
168 Reindeer herding analysis for the Leveäniemi mine.
169 Laver is commonly referred to colloquially as "Aitik 2".

This chapter is based primarily on information gathered through consultations with members of the Gällivare Forest Sami community. Although there are also certain references to information provided by Boliden about the Aitik mine, collected from Boliden's submissions to the Mining Inspectorate of Sweden, the picture portrayed in the following section is essentially the perspective of the Gällivare Forest Sami community. According to the community, it is an accurate description of their experiences with the Aitik mine. Boliden has criticised earlier drafts of this chapter and takes the view that "the picture painted by the investigation [regarding the Aitik mine], using disconnected and often incorrect statements, is not accurate."[170] However, just as Boliden and the Semisjaur Njarg Sami community have different views of the EIA process commissioned by Boliden for the Laver mine (see section 2.4), Boliden and the Gällivare Forest Sami community have different views and frames of reference regarding the impacts of the Aitik mine on reindeer herding. Research into mining, forestry and wind power shows that this is a common problem, with Sami communities and developers often having very different perspectives and understandings of the impacts that industrial developments have on reindeer herding.[171]

7.2.2 A brief description of the Gällivare Forest Sami community

The Gällivare Forest Sami community comprises 35 active reindeer herding enterprises divided into five winter groups. The Aitik mine is situated in the northern part of the Sami community's land and is primarily used by the Raatukkavaara group, which consists of a small group of active reindeer herders. According to the community, they have a right to use that area by custom, and have been using it for over 100 years.[172] The pasture is mainly used in winter–autumn, when grazing is at its most limited for the community.

The community is affected by a series of competing land uses that make it difficult for them to use their land. Predators, particularly bears, take many of the community's reindeer each year. Several forestry companies (Sveaskog, SCA, Gällivare-Jokkmokk Allmänning and a number of smaller private companies/landowners) are all active on the community's land. At present there is no continuous area of old growth forest and hanging lichen, which further reduces grazing resources, because hanging lichen is an important "back-up" when ground lichen is otherwise unavailable because of poor snow conditions. The energy firm Vasa Vind AB has also applied for a permit from the Country Administration Board to establish the first wind farm on the community's land, which is expected to comprise 150 turbines.

7.2.3 The establishment of Aitik

The Aitik mine was established in 1968 as an open-pit copper mine without any consultation with the Gällivare Forest Sami community. According to the community, the message from Boliden at the time was that it would be a "large gravel pit" that would only be in place for around five years. Since then, the community have had to "grow into" a situation characterised by gradual deterioration due to the impacts of the mine. The Gällivare Forest Sami community have opposed the mine from the start, but have ended up in their present situation: "The general feeling is that it is such a large project that it can't be stopped… because it's there now, we have to try to coexist. It's about finding the best possible solutions and avoiding any further losses of pastures when expansions are carried out."

Today, Aitik operates with a capacity of 36 million tonnes and Boliden has applied for an expansion to 45 million tonnes. At the time of writing, this application is under consideration by the County Administration Board. According to the Gällivare Forest Sami community, Boliden is not planning to use up any more land area on this occasion, but there will be a continued increase and deposit of tailings in the existing tailings reservoir. However, according to the community, there have been informal discussions with Boliden about the possibility of a further expansion to 60 million tonnes in the future, involving the building of a new tailings reservoir on the community's land.

Despite these planned expansions, the community have not been involved in any impact assessment and are not aware of any evaluation of the long-term impacts of the mine on reindeer herding. According

170 Page 7, Boliden's submission, Dnr BS 22-1179-2014, "Bemötande av Semisjaur-Njarg samebys yttrande över ansökan om bearbetningskoncessionen Laver K nr 1".
171 See Lawrence (2007), for example.
172 The Unna tjerusj Sami community take a different view, however. They believe that they have the customary right to use this area.

to the community, they have highlighted in discussions with Boliden that they want an in-depth impact assessment to be carried out before any expansion takes place, but they have received no indication that Boliden is planning any such impact assessment. It is important to note, however, that the community's land use, including the practice of reindeer herding, has changed significantly since the decision to grant the first land use permit for Aitik in 1936, and even since the most recent land use permit was granted in 2001. The community want the impacts of an expansion on their land use to be reanalysed on the basis of today's conditions, and not the conditions that existed several decades ago when the original land permit was approved.

Boliden states that "consultation is already taking place with regard to existing and planned operations".[173] The Gällivare Forest Sami community state that, in their view, the meetings to which Boliden refers have indeed improved over the years, but they are informational rather than consultation meetings and do not involve any discussions of a possible impact assessment. They feel that the current meetings with Boliden focus more on ad-hoc solutions and technical issues such as fencing to prevent reindeer entering the mine site. Instead, the community want an impact assessment that takes an overall approach to the historical and future impacts on reindeer herding.

7.2.4 The winter group: unsustainable workload forcing reindeer herders to give up herding

In addition to the direct loss of grazing land, the Raatukkavaara group has been affected by the mine in various other ways. According to the community, poorly maintained fencing and gates that Boliden staff have forgotten to close has allowed stray reindeer to wander into the area. In the summer, reindeer look for cool temperatures and wind in the open industrial area to avoid insects. Once inside the area, many animals disappear each year: "...the reindeer get in and drown... mainly in the tailings reservoirs, which are like quicksand in some places... There is a lot of traffic and obstacles in the area when we try to get the reindeer out... they are killed by trucks and machinery." The Gällivare Forest Sami community has signed a subcontracting agreement with Boliden allowing the community to monitor the reindeer fencing. However, this agreement only covers an inspection of the fencing twice a year. The community believe that the agreement is insufficient, as damage occurs much more frequently than this throughout the year and the Sami community are unable to conduct the necessary repairs within the framework of the agreement. One incident, for example, involved a contractor cutting a hole in the fence in order to get through, which occurred immediately after an inspection.

Gathering and searching for lost reindeer has increased the workload for individual reindeer herders and for the community as a whole. The workload has also increased because of the need to channel the reindeer past the mine's western passage to the pasture closest to Gällivare. Although there is an ecoduct (an asphalt bridge across the road), it does not work in practice because of traffic and disturbances. The reindeer need to be gathered and herded across. The sound from the mining machinery creates periods during which it is impossible for the herders to listen out for reindeer noises in the area, and it is also difficult to gather reindeer because there are many obstacles such as roads, trenches and verges. The reindeer herders also describe stress and a general sense of anxiety arising from the constant need to be alert for telephone calls from the company and to be prepared to collect dead reindeer.

Despite the increased workload, the community states that Boliden pays no compensation for the general, indirect costs that have arisen because of the mine. The Sami community has agreements in place with Boliden for compensation for actual costs arising in the mine area. However, these agreements do not govern (1) compensation for the reindeer herders' working hours (in terms of extra work), (2) costs arising outside the mine area as an indirect consequence of mining operations (e.g. additional monitoring that herders need to carry out on the E10 motorway because of the difficult passage between the mine and the road) or (3) compensation for extra work due to disturbances associated with general noise from the mine or exploration drilling in nearby areas.

173 Boliden's submission, Dnr BS 22-1179-2014, "Bemötande av Semisjaur-Njarg samebys yttrande över ansökan om bearbetningskoncessionen Laver K nr 1".

Boliden only provides compensation for reindeer for which proof of disappearance can be provided, for example by producing dead reindeer or their ears as evidence. This means that no compensation can be claimed for animals that simply disappear into the industrial area and are never found. The Gällivare Forest Sami community testify that reindeer herders see reindeer disappear into the industrial area and never see them again, alive or dead. The reindeer herders suspect that they drown in the tailings dams but, because they simply disappear, this is impossible to prove and the community therefore receive no compensation. One reindeer herder in the Raatukkavara group described the problem as follows: "For 40 years I've been working to get reindeer out of the mining area and I haven't seen a single penny…."

The increased need for supplementary feeding due to the loss of pastures has not led to any compensation from Boliden either, according to the Gällivare Forest Sami community. The group itself has paid for, and built, several enclosed pastures in the mining area to deal with reindeer that get through the fencing. These are old pasture enclosures that were built when Aitik was still a new challenge for the community, and the community was not able to make demands from the company nor accustomed to doing so. For the community, however, their sense of injustice around having had to build and maintain these pasture enclosures – in order to mitigate impacts of the mine – is still a relevant issue. Hence, their experiences of the impacts of the Aitik mine concern not only the current situation, but also its history. When the mine was established, Boliden proposed that the reindeer herders in the Raatukkavaara group should receive a one-off payment and sign an agreement to waive the right to claim damages, but not all herders signed that agreement. Since then, the governing board of the Gällivare Forest Sami community and Boliden have signed an agreement governing the consultations between them. However, as mentioned above, these consultations appear to focus on ad-hoc solutions and technical issues such as fencing to prevent reindeer entering the mine site, rather than any retroactive or future impact and benefit agreement in line with international best practice.[174]

A number of people in the Raatukkavara group have been forced to give up reindeer herding. The primary reason given for this is the lack of good pastures, for which the mine is considered to be a contributing factor. The loss of this winter pasture was "the last straw" for many reindeer herders, particularly because there was no other available grazing land in the community. If the planned expansion to 60 million tonnes goes ahead, the new tailings reservoir is likely to be situated to the south of the mine, directly in the marshlands that form the calving grounds for the Raatukkavara group. This is likely to mean that more of the remaining reindeer herders will have to give up herding because of the lack of pasture and key areas.

7.2.5 The Gällivare Forest Sami community: disturbances and reduced intergenerational succession

The Gällivare Forest Sami community has been affected in a number of different ways by the mine and its indirect impacts, such as increased population density, tourism and outdoor life, hunting pressure and energy and logistics infrastructure. For example, three new power lines were built in connection with the mine: "These create 'roads' 70 metres wide through the forest, which are now used for snowmobile traffic… this is on pastures that were previously almost untouched." This traffic consists mainly of snowmobiles which, despite the regulations in force, are not regulated in practice and which destroy pasture and cause other disturbances for reindeer. According to the reindeer herders themselves, there is also a significant dust problem. Dust from the mine spreads over an area of several tens of kilometres from the mine, creating "dust clouds" and depositing dust on the ground. The community has been informed by Boliden that the company's own studies show that heavy metal deposits do not pose a health risk to animals or humans. However, the reindeer herders are still very concerned about the long-term effects when metals accumulate in grazing plants, which are eaten by reindeer, and potentially bioaccumulate in humans.[175]

174 See O'Faircheallaigh (2016) for a discussion of international best practice in regards to impact and benefit agreements between Indigenous peoples and the mining industry people; see also Lawrence and Åhrén (2016), Larsen (2017) and Larsen et al. (2018) for a critique of the Swedish system.

175 Boliden has previously referenced its study of the metal content of reindeer grazing plants, which shows that the metal content is below the limits set by the EU (Makkaur Miljö AB 2011).

The loss of pasture combined with other competing land uses creates a situation for reindeer herding that is both economically and socially challenging. The community is gradually losing active reindeer herders, and more and more members are looking for new jobs outside reindeer herding. As one reindeer herder put it: "...yes, all we can do is pick up a spade and a wheelbarrow and head to the mine." This development is linked to significant problems with succession in the community, as young members are reluctant to invest in making a living from reindeer herding. This is described by one reindeer herder as follows: "It [reindeer herding] doesn't feel like a reliable livelihood... [a number of people] try to do it but have to give up when it doesn't work out...." For Sami youth, it is increasingly difficult to take up reindeer herding as a traditional livelihood and learn the traditions from their parents and elders. The result is that reindeer herding knowledge is not passed on to future generations.

8 The proposed Boliden mine in Laver

This chapter deals with the proposed Boliden mine in Laver and its estimated disturbance zone. It shows several maps of the mine and its disturbance zone, first on its own and then together with existing and planned competing land uses in the Semisjaur Njarg Sami community's northern winter pastures in Tjidtjakk.

The proposed location of the Laver mine is in a key winter pasture for the Semisjaur Njarg Sami community. Because none of the previously mentioned Sami communities have experience with a mine in a key winter pasture, it is difficult to draw any direct comparisons. However, the winter grazing and calving periods are the periods during which reindeer are most sensitive to disturbances (Skarin and Åhman 2014). Because the planned location of the Laver mine is in a key winter pasture, a disturbance zone of 10 km has been assumed.

Within this 10-km zone, it is expected that there will be disturbances for reindeer. It is difficult to specify exactly how much of the herd are likely remain in the area, but the evidence indicates that the majority of the herd will avoid the area inside the disturbance zone. The precautionary principle applies here.[176] There has been no research into reindeer's reactions to a mine of this size *on a winter pasture*. However, there is research and experience available from other Sami communities to indicate that the disturbances can be so extensive that the herd avoid the disturbance zone entirely. With this in mind, it is assumed that the same will apply to Laver, given that the mine is located in a winter pasture and that the reindeer are most sensitive to disturbances in the winter (and in the calving period).

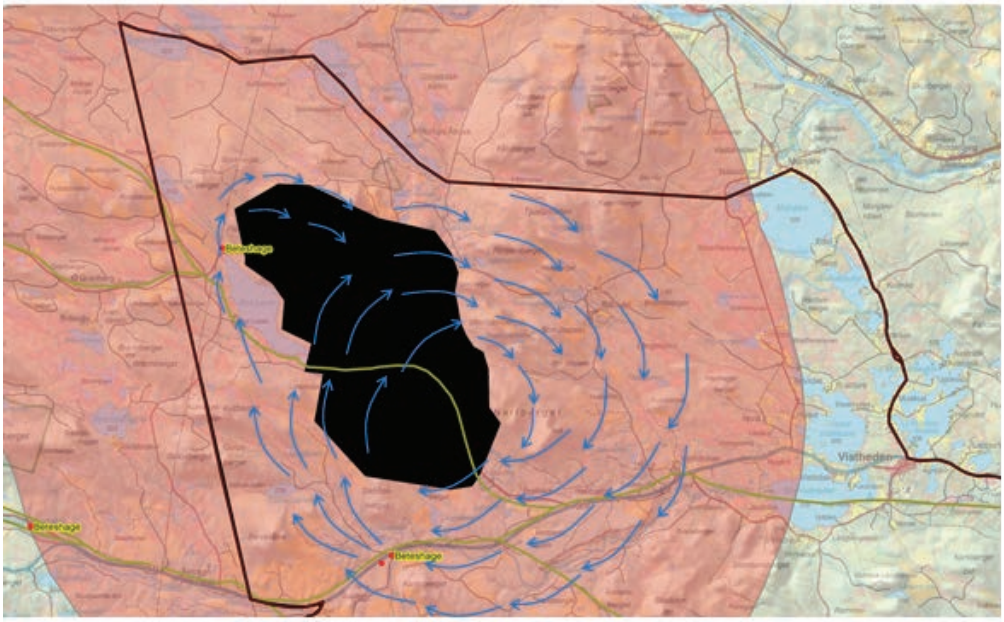
8.1 The proposed Laver mine

This section presents the impacts of the proposed Laver mine at a number of different scales. The first of these is at the scale of the winter group's land use in Laver; although its current land use has already been described, it is presented again here (Figure 17) for clarity and ease of comparison with the impacts of the mine (Figure 18). The second scale is that of Tjidtjakk's land use (Figure 19). The third is that of all the Sami communities in the area whose land use will be affected by the mine and its disturbance zone (Figure 20). Finally, the mine's impacts are presented together with other existing and planned competing land uses from the point of view of Tjidtjakk's land use (Figure 21). As this final map shows, the multiple pressures on the community will be immense and there will in fact be very few remaining undisturbed pastures.

176 See Vanclay (2003).

Figure 17. Current land use patterns in Laver. Arrows indicate the grazing pattern of reindeer throughout winter

Figure 18. The mine (black) and its disturbance zone (red) from the viewpoint of the winter group's land use



(Note: The blue arrows show the current land use and the reindeer's migration patterns in winter, and not what the community's land use will look like in the presence of a mine.)

Figure 19. Impacts of the mine from the viewpoint of Tjidtjakk's pastures

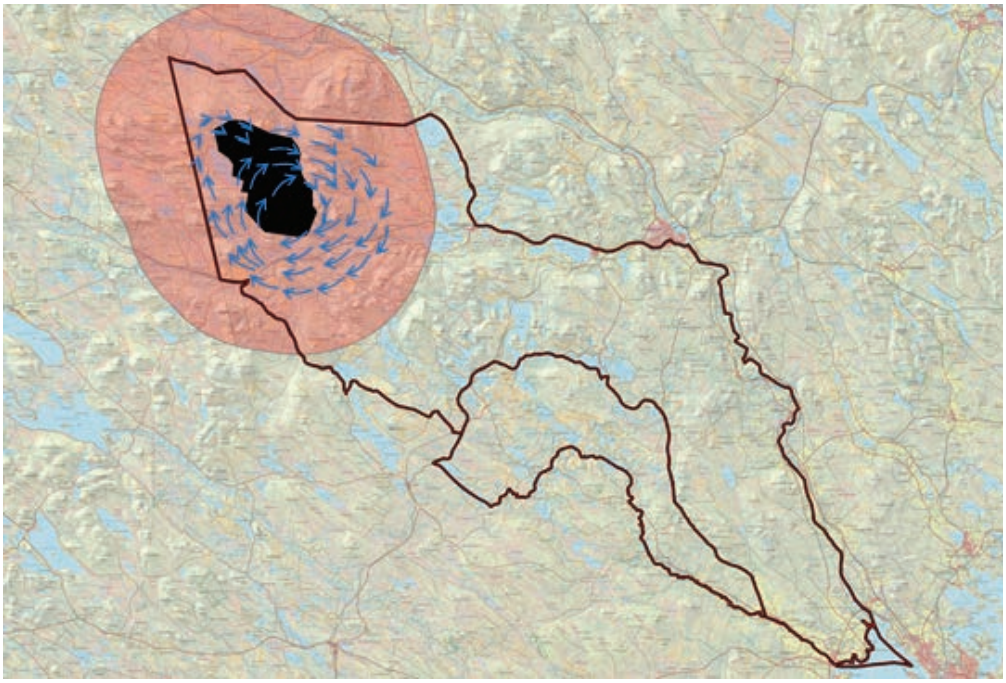
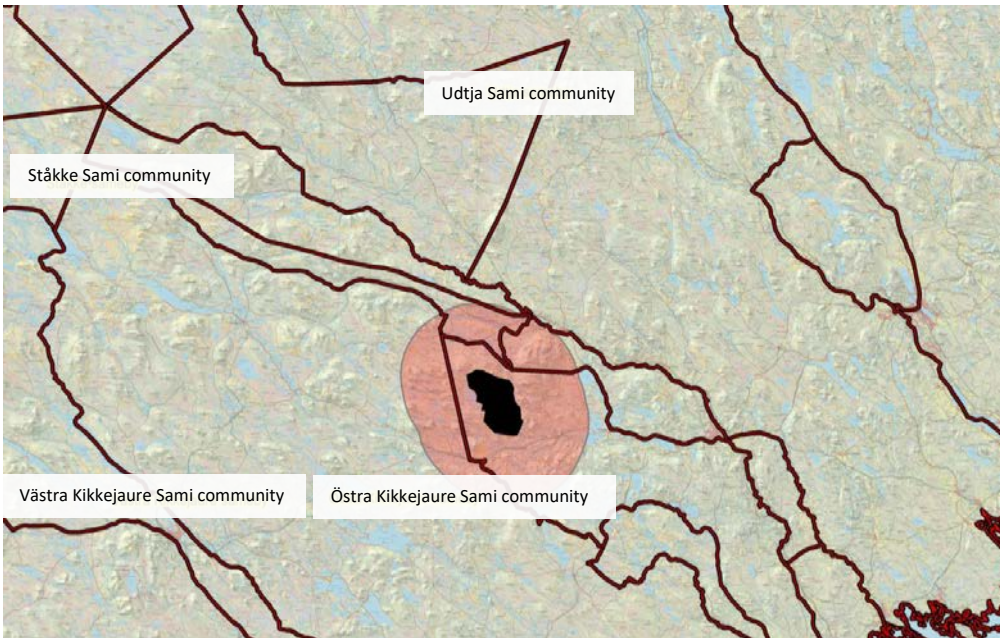
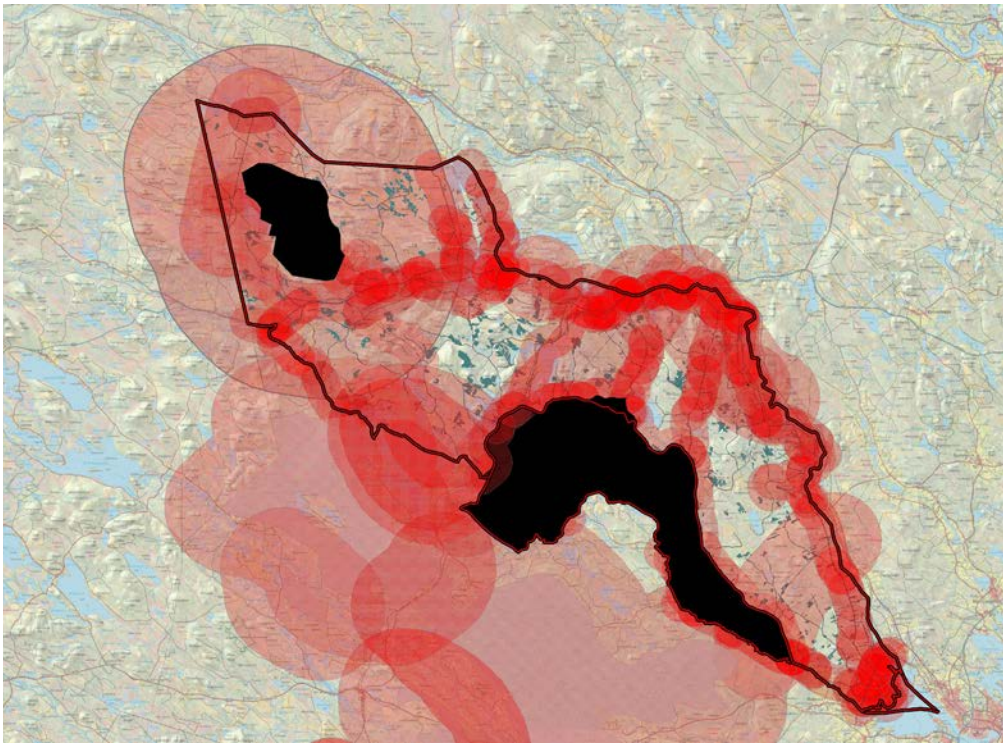


Figure 20. Impacts of the mine on other Sami communities



8.2 Multiple pressures – existing and proposed competing land uses (including the proposed Laver mine)

Figure 21. Multiple pressures: existing and proposed competing land uses (including the proposed Laver mine)



9 Impact assessment: a scenario analysis

The following chapter describes two main scenarios: the first scenario without a mine and the second with a mine. The scenario with a mine is divided into two sub-scenarios: 2A and 2B. All the scenarios – or accounts – describe the most likely future if certain things happen and certain decisions are taken.[177] The scenarios are based on interviews and meetings with the Semisjaur Njarg Sami community, the experiences that other Sami reindeer herding communities have had with existing mines, and relevant research. Both scenarios begin to play out about five years in the future and continue from there – i.e. starting around 2025, given that this is when the proposed mine is expected to be fully operational. For the Semisjaur Njarg Sami community, these are not equivalent scenarios – they are resolute that their desired scenario is without a mine, as shown in the scenario analyses below.

9.1 Scenario 1: viable reindeer herding with manageable challenges

This scenario is that the Laver mine does not go ahead. In 2025, there are approximately 2,000 reindeer in the Laver area: during 2019–2025 the number of reindeer has risen from around 1,800 to 2,000. Many younger reindeer herders have built up their reindeer herds, thereby ensuring intergenerational succession. One of the three original reindeer herders in the winter group is still fully active. The other two have scaled down their activities, but still have smaller herds remaining. Moreover, they are involved at many points in the annual reindeer herding cycle, contributing primarily by sharing their traditional knowledge and experience with the younger herders.[178] A requirement for the transmission of traditional knowledge, as well as for intergenerational succession, is for older and younger generations to work in reindeer herding in parallel and together, so that knowledge, tradition and customs are taught, and learnt, through the practice of reindeer herding itself.

The winter group that previously used the Storsund area have also moved to Laver with their reindeer, as the Storsund area has now been returned to Norwegian reindeer herders.[179] In other words, the Laver area has become even more significant as a grazing resource for the Semisjaur Njarg Sami community in 2025. This, along with intergenerational succession, has led to increased grazing pressure on the Laver pastures, but this pressure can be managed because the pasture is of sufficiently good quality and the Laver area is relatively undisturbed by competing land uses such as wind power, mines, tourism and other human disturbances.

The Laver area offers the essential requirements for practising viable, sustainable reindeer herding based on the free grazing of reindeer on natural pastures. This is reindeer herding founded on traditional knowledge passed on from generation to generation, in which young Sami can see a future for themselves. This also provides the requirements for passing the Sami culture on to future generations.

The Semisjaur Njarg Sami community still face a number of challenges, both on their year-round pastures and on their winter pastures, but they see these challenges as “manageable”. Forestry, predators, snowmobile traffic and, above all, unpredictable and intensifying weather conditions resulting from climate change are putting pressure on the community and causing considerable stress for reindeer and herders alike. Markbydgen Wind Farm is expanded to a total of over 1,000 wind turbines on the Östra Kikkejaure Sami community’s traditional lands. There are no wind turbines on the Semisjaur Njarg Sami community’s lands, but there is a significant rise in the number of Östra Kikkejaure reindeer straying onto Semisjaur Njarg lands.[180]

177 Note that the proposed Nasa mine and proposed wind farm in Råliden have not been included in this scenario analysis. They were not included in the GIS mapping in 2015 as they were at the proposal stage, and in 2019, when this report was republished in English, they were both under appeal. However, expansion of the Markbygden Wind Farm and the loss of the convention area in Storsund have been included, since they are both highly likely to go ahead. At the same time it is important to note that, if the Råliden and Laver projects both go ahead, there would be absolutely no flexibility remaining for either the Tjidtjakk group or the Tjallas group. The maximum total number of reindeer in both winter pastures would therefore have to be reduced.

178 Most retired reindeer herders still keep a small herd of reindeer as a type of “pension”, slaughtering them as the need for income arises. For various tax-related reasons, it may be disadvantageous to slaughter their herd all at once.

179 This scenario assumes that the convention negotiations are completed before the mine is up and running, entailing a return of the Storsund area to the Norwegian Sami. The winter group that was using the Storsund area cannot go back to the land they used before 2005, which was in the Byske River valley, because the area has been subjected to so much deforestation since 2005 that there is no longer sufficient grazing available. Instead, the Storsund winter group has to move west to the Laver area, because that is where the best winter pastures are. It is the only winter grazing area that can accommodate another winter group.

180 The Semisjaur Njarg Sami community have expressed concern about this. The Östra Kikkejaure Sami community may take a different view.

Since the implementation of the decision by the Swedish Parliament on tolerance levels for losses of reindeer to predators in the reindeer herding area, predator culling now takes place on the community's lands.[181] This has led to a significant fall in the number of predators, directly resulting in a substantial decrease in the number of reindeer lost by the community. Consequently, the community's production of reindeer meat for sale has risen and the reindeer herders' proceeds have increased significantly, because the state compensation for predators did not cover the actual economic losses.[182]

Reindeer herders are generally becoming less dependent on secondary employment to cover losses to predators than has been the case in the past, which reduces the economic stress that many reindeer herders previously experienced. The losses to predators that occurred in the past made it impossible to provide for an entire family through reindeer herding alone. However, some of the women in the community who previously needed to take other employment to help provide for the family can now also be supported by the family's reindeer herd. Women can now therefore play a greater part in the shared reindeer herding work.

The workload has also generally decreased because the herders do not need to maintain the same level of supervision of their reindeer to protect them from predators. Fewer losses to predators, a reduction in workload and an increase in income are restoring a positive sentiment among the reindeer herders and their families. They feel assured that Sami reindeer herding can be sustained in the long term.

9.2 Scenario 2: the mine and its impacts

Below is a presentation of the direct and indirect losses of grazing land in the scenario in which a mine goes ahead. This is followed by descriptions of the two different sub-scenarios that further elaborate the indirect impacts of the losses of grazing land on the Semisjaur Njarg Sami community. The first scenario (2A) assumes that the winter group has remained in the Laver area, but is practising an entirely different type of reindeer herding based on extensive artificial feeding. The second scenario (2B) assumes that the Laver winter group is using other winter pastures within the community's lands, as well as using the community's year-round pastures to a greater extent. In both scenarios in which the mine goes ahead, some herders are forced to give up herding entirely. This has far-reaching impacts on those herders who give up herding, as well as on future generations and the community as a whole.

9.2.1 Direct and indirect losses of grazing land

The mine's footprint takes up a total of some 4,900 hectares of land for the open-pit mine, storage, the tailings reservoir, industrial areas, roads and the risk area for projectile rubble.[183] This entire industrial area is fenced off. The winter group's pastures to the north and west of the mine are thereby stranded and isolated from the other pastures and it is no longer possible to make any functional use of them for the purposes of a free-grazing reindeer herd. The remaining pastures to the east and southeast of the mine are within the mine's disturbance zone and are also no longer functional; the majority of the reindeer herd avoid the area entirely. This means that all of the winter group's winter pastures are covered either by the mine itself or its disturbance zone (Figure 15). The disturbance zone also stretches across the lands of other Sami communities, specifically those of Östra Kikkejaure and Ståkke, as well as the Luokta-Mávas Sami community's migration route (Figure 17). The Norwegian reindeer herding district of Saltfjell, which is likely to be granted a convention area in Älvsbyn, is also affected.

The mine's disturbance causes stress for the herd, and the majority of the reindeer avoid the area. The reindeer are frightened off by noise both from mining activities and the crushing and sifting of ore, as well as noise and movement from heavy ore transportation. The reindeer are also disturbed by the high volume of traffic caused by employees and contractors travelling to and from the mine site. Added to this are disturbances from the roads and power lines that are developed in connection with the mine, partly inside the disturbance zone but also outside it. According to the community, both the mine itself and the transportation of ore create a lot of dust, which spreads over an area of up to 14 km from the fenced-off

181 See report to the Swedish Parliament 2013/14:MJU7, En hållbar rovdjurspolitik (A Sustainable Predator Policy).
182 See section 5.2.2 and footnote 125.
183 See Lindeström and Eriksson (2015).

area.[184] The various competing land uses in the area – including the mine – leave very few of the winter pastures in Tjidtjakk undisturbed (Figure 18).

Before the mine was established, the Laver area could sustain some 2,000 reindeer on natural pastures for up to three months annually. With the mine and its disturbance zone, however, it is not possible to sustain any reindeer in the area in keeping with Sami reindeer herding tradition, which is based on the free grazing of reindeer on natural pastures. Before the mine was established, reindeer could graze slowly and freely around the Laver area in a clockwise direction. They were gathered once during the winter, after having grazed round the entire area. Now the reindeer are stressed and frightened away from the area, because they are particularly sensitive at this time of year and require a calm grazing environment in order to conserve valuable energy through the harsh winter (see more in section 4.2.1 on the annual reindeer herding cycle).

9.2.2 Scenario A with a mine: "corporate-financed reindeer farming" in the Laver area

> *"Sami reindeer herding cannot be practised in the area if there is a mine there. Corporate-financed reindeer farming is a theoretical possibility, but we don't want to do that because that's not reindeer herding."*
> Chairperson, Semisjaur Njarg Sami community.

For a number of reasons, the Laver winter group decides to try to remain in the Laver area. The reindeer herders and their families have strong links and "emotional ties to the area: it's not just a case of moving". The winter group also has its winter residences, schools for their children and work for the non-herding partner near Laver, which cannot be moved.

In addition, the Laver area is now not only used by the original winter group, but also by another winter group that needs access to the area. The winter group that previously used the Storsund area was forced to move to Laver when the Storsund area was returned to the Norwegian reindeer herding districts under the new Reindeer Grazing Convention (Figure 14).

Artificial feeding[185] of reindeer: loss of traditional knowledge, land degradation and poorer animal welfare

Assuming that the reindeer herders have been able to remain in the Laver area, they have now been forced to fundamentally change their herding practices. Because of the high degree of uncertainty about whether it is possible to keep any free-grazing reindeer in the area at all, they have to feed the reindeer artificial feed (i.e. pellets) in an attempt to keep them in the area. Otherwise, the risk of the reindeer herd completely avoiding the area and instead scattering over the lands of other Sami communities is too great.

According to the Semisjaur Njarg Sami community, the results of this would only become evident later on: their reindeer would end up as "stray reindeer" among other winter groups and neighbouring communities, leading to overgrazing. This would give rise to extensive additional work and conflicts between winter groups and with neighbouring communities, which would in turn cause psychosocial stress for the herders and their families.

There is also a great risk of the reindeers' condition deteriorating too much because they would be using excessive amounts of energy through constantly being herded back and forth. The reindeer would be unable to bear this in the winter, when they require a calm grazing environment in order to conserve energy. The herders are therefore forced to feed the reindeer in Laver artificially for two to three months each winter in an attempt to keep them in the area.

184 The Gällivare Forest Sami community state that, in their experience, dust from the mine has affected grazing quality over an area of up to 14 km from the Aitik mine.

185 Note that the terms "artificial feeding" and "supplementary feeding" have thus far been used synonymously in this report to describe the practice of feeding reindeer pellets (*utfodring*), rather than them relying on natural pastures. However, in this chapter, the term "artificial feeding" is explicitly and solely used, because it is carried out to such a large extent that it is often the main method by which the reindeer are fed, and therefore no longer supplementary. The authors wish to thank Paul Williams, who translated this text, for drawing their attention to this important distinction.

Loss of traditional knowledge, poorer animal welfare and increased land degradation

Because the reindeer are now being fed artificially, there is no longer any need for the traditional knowledge of the reindeer's natural grazing patterns in Laver. Once the traditional knowledge is no longer needed, it stops being used and is quickly forgotten: "You can look at the reindeer when the pasture is starting to run out and know when it's time to move them on – that knowledge is going to be lost." The extent to which the reindeer herders in Laver are forced to artificially feed their reindeer is so great that the question of what "Sami reindeer herding" actually is has been pushed to its limit. Instead of allowing the reindeer to graze freely, reindeer herding becomes a kind of "corporate-financed reindeer farming", in which the reindeer depend on artificial feeding and the nomadic practice of reindeer herding turns into a more static form of land use. The winter group sees this as being in direct conflict with traditional reindeer herding. After a few years of feeding the whole winter herd artificially throughout the winter, there is no longer any interest among the herders in continuing with a form of herding that is so far removed from their cultural values.

Artificial feeding is also causing increased land degradation and negatively affecting the health of reindeer in a number of different ways. Over the coming years, the reindeer in the Laver area suffer increasingly from various diseases, such as diarrhoea caused by *E. coli* bacteria, contagious eye infections, clostridial bacteria, necrobacillosis and parasites.[186] Artificial feeding even leads to a mortality rate of close to 10%.[187] In the reindeer herders' view, reindeer are not meant to live on artificial feed – "reindeer should graze on natural pastures" – and the herders suffer mentally from the increased exposure of the reindeer to various health problems due to artificial feeding.[188]

Unsustainable workload

Before the mine was established, winter was a much-needed time for both reindeer and herder to recuperate after the intensive autumn. The Sami community also need to carry out an inventory of predators during winter, which requires around 640 hours of work from the community as well as many consultation meetings. Now that the mine has been established, however, the winter group no longer have any time for predator inventories, consultations or other administrative tasks. Instead, the reindeer herders have several months of full artificial feeding ahead of them. Artificial feeding entails a heavy and, in the long term, unsustainable workload for herders. Instead of having to perform only minor tasks such as supervising the fringes of the herd (which was previously necessary when the reindeer were grazing freely in the Laver area), herders now have to spend around six times as much time on feeding and monitoring the reindeer as when the reindeer were grazing on natural pasture in the Laver area.[189]

Artificial feeding therefore entails a degree of mental and physical exertion that is unsustainable in the long term. Furthermore, work-related injuries from snowmobiling already constitute a significant problem among reindeer herders. These injuries are worsening as a result of the extensive artificial feeding now required every winter, because artificial feeding requires a significant increase in time spent on snowmobiles. There are no margins for illness because there is nobody who can "jump in" and replace a herder who is ill or injured, given the limited number of active reindeer herders in the Semisjaur Njarg Sami community.

There are also problems with reindeer getting into the fenced-off industrial area. Although the herd as a whole naturally avoids the mine and disturbance zones, some stray reindeer still get into the fenced-off industrial area. This happens when employees and suppliers forget to close gates or when fences begin to fall apart. Reindeer end up inside the industrial area and drown in the tailings reservoir. This entails significant work for the winter group and causes them considerable mental stress.[190]

The herders who have remained in the Laver area have become dependent on compensation from Boliden to cover increased artificial feeding and work costs. This, too, is unsustainable in the long term. Although

186 See Åhman (2002) and Nilsson (2003), for example.

187 The Semisjaur Njarg Sami community has direct experience of artificial feeding in crisis situations leading to a mortality rate of close to 10%.

188 As semi-domesticated animals, reindeer are not adapted for extensive artificial feeding. The effects of measures like this are therefore also linked to animal welfare issues that are not currently regulated by the Swedish authorities.

189 See footnote 35.

190 See Chapter 7 for more information about the experiences of the Gällivare Forest Sami community with the Aitik mine, where significant stress was caused by reindeer drowning in the tailings reservoir. The Laevas Sami community also reports problems with reindeer ending up in LKAB's industrial area.

intergenerational succession is considered important for the community, increasingly adults are actively discouraging their children from taking up reindeer herding because the conditions are so bad. Young Sami no longer want to invest in reindeer herding. Who would want to invest in reindeer herding if it meant being unable, as the members of the community put it, to "be their own boss" and having to depend instead on compensation from the mining company? Young Sami simply do not see reindeer herding in its current form as an attractive option.

Reindeer herders are forced to give up herding and slaughter the rest of their herds

Now, several years after the mine has been in operation, the reindeer herders in the Laver area find themselves in an untenable situation. They have made it through a few winters, but this cannot be sustained in the long term. They have no flexibility left in their winter pastures; they rely entirely on artificial feeding. They are also extremely vulnerable to future challenges such as illnesses and work-related injuries. All the lifting and carrying of artificial feed is physically unsustainable for the herders. Above all, however, the herders do not want to practise this form of reindeer herding because they see it as being entirely in conflict with traditional Sami land use. One by one, the herders are forced to give up reindeer herding in the Laver area and slaughter the remainder of their herds. In the end, there are no herders left who are able, or willing, to practise reindeer herding in the Laver area.

Those herders who are forced to give up herding are hit hard financially. For older reindeer herders it is the worst age because they are too young to survive on their pension, but too old to find another job. Although Boliden pays some compensation to the community, no form of compensation will be payable indefinitely. This means that the children and grandchildren of those herders who are forced out of reindeer herding will be left with no traditional land, and no compensation.

Furthermore, there are various far-reaching impacts for which no financial compensation would be sufficient. The reindeer herders will not only lose "income", but also the ability to practise reindeer herding, which is intimately linked to their cultural identity and that of their families. As one herder described it: "It would feel so empty without reindeer. I wouldn't want to have anything to do with reindeer herding then." When an active herder gives up reindeer herding, this not only affects the individual herder, but also an entire family network that is linked to reindeer herding through the active herder. This family network depends on the herder for access to traditional Sami food (e.g. reindeer meat, elk meat and fish) and material for art and Sami handicrafts, and the connection to reindeer herding is also important for their Sami identity.

The winter group that graze on the winter pasture near Sikfors are also affected. They are forced to change their migration route, which previously passed through Laver, making their migration to the mountains much more complicated and difficult. This raises the question of whether it will be feasible for the group to migrate on foot through the same area through which they and their ancestors have always migrated according to tradition. There is a risk that they will eventually be forced to switch to transportation by truck.

Intergenerational succession comes to an end

In the long term, this brings an end to the intergenerational succession of reindeer herding in Laver. The diminished pastures make it difficult, if not impossible, for young Sami in the winter group to establish themselves in reindeer herding. This is because, in the transitional periods in which new reindeer herders are establishing themselves, original established herders are still in place, and there is therefore a need for additional pastures to carry the increased pressure. However, these additional pastures are no longer available. This causes not just a temporary break in intergenerational succession during the operational life of the mine, but most likely a permanent one for those families who are forced out of reindeer herding. The reason for this is that traditional reindeer herding knowledge is passed on from generation to generation: it is therefore not possible to take up herding again a few generations later if the knowledge has not been passed on.

In the absence of intergenerational succession for reindeer herding in the Laver area, there is no longer any natural environment in which speakers of Pite Sami can speak their native language. Because the only speakers of Pite Sami are involved in reindeer herding in this specific area, this eliminates the language's

only chance of being passed on to a new generation.[191] This means the loss of not only the Pite Sami language, but also a unique way of communicating about reindeer herding and Sami culture, which is an important part of the Pite Sami identity.

There are also a number of impacts on the Semisjaur Njarg Sami community as a whole. For example, if the Laver winter group has a smaller herd, this will result in more reindeer in other winter groups being killed by predators. This is because losses to predators are constant regardless of the size of the herd; predators kill the same number of reindeer whether the total number in the herd is 7,000 or 5,000.

The collective work in Tjidtjakk is also affected. The decrease in the number of herders in the Laver area also affects the working capacity in summer and autumn, when the Tjidtjakk group work collectively on separating and gathering the reindeer and supervising the fringes of the herd. A critical mass is required to carry out the collective work within reindeer herding, and so the sustainability of reindeer herding for the whole of Tjidtjakk deteriorates as the number of people working in reindeer herding decreases. The community is increasingly concerned about the long-term impacts of the mine and how they might affect the future of the whole community: if still more herders give up the practice, could it soon trigger a "domino effect" for the entire community?

9.2.3 Scenario B with a mine: the winter group moves to another pasture

> *"Then we'll all be hit… Where will we go then?"*
> Member of the Semisjaur Njarg Sami community

In this scenario, the winter group takes the view that, because of the problems described above, it is not worth remaining in the Laver area in winter. The winter group therefore leaves the Laver area as soon as mine construction begins. The inability to use the Laver pasture forces them to use other winter pastures within the community's lands instead, as well as using the community's year-round pastures to a greater extent. This land cannot sustain all the community's reindeer, however. In such a scenario, the number of reindeer in the community's herds must be reduced and artificial feeding is also required. In the previous scenario, the majority of the negative impacts are focused on the affected Laver winter group, but in this scenario "everyone suffers".

Conflicts within the Semisjaur Njarg Sami community

Moving to another winter grazing area would require a renegotiation of the current distribution of pastures within the community, whereby the land is divided between the winter groups according to customary rights. The winter pastures are already a limiting factor for the number of reindeer, and redistribution would be a source of conflict within the community.[192] As of 2019, there were three different winter grazing areas for the three different winter groups, but now there is only one area left for all three groups: the Sikfors area. This is because the Storsund area has been returned to the Norwegian Sami, and the Semisjaur Njarg Sami community considers the Laver area to be unusable. There are other winter pastures in Tjallas, but these are also severely restricted.

This means that the community need to reduce their reindeer numbers significantly. A reduced number of reindeer in turn means that many reindeer herders have to give up herding, which leads to conflicts within

191 Thanks to the linguist Dr Joshua Wilbur (University of Freiburg) for this reasoning. Josh Wilbur has been researching the Pite Sami language since 2008. He has lived and worked with Pite Sami speakers in Arjeplog for over two years in order to document the language and the links between the language and the culture, and has published work on the subject.

192 The internal division of the pastures varies between the different Sami communities. In some communities, the winter groups use different winter pastures, while others have a more traditional division whereby certain families/groups use the same winter pastures year on year. Semisjaur Njarg appears to be a community in which the same winter groups use the same winter pastures year on year, meaning that the pastures are divided internally within the community according to customary rights. One question that arises is therefore whether the winter group that currently uses the Laver area can use other pastures in the community without creating serious internal conflicts. Other winter groups may see this as an inadmissible intrusion within the context of Sami custom, despite the fact that the basic premise of the legislation in force is that all the groups have an equal right to the community's pastures. The Swedish Reindeer Herding Act stipulates that only the Sami communities can represent reindeer herders in joint matters. The Sami community is the relevant legal entity in this matter. The issue of whether a particular group within a Sami community, typically a winter group, can represent itself and hold grazing rights has not been tried in court. It is worth noting, however, that under Norwegian law, different groups (siida in Sami) within a reindeer herding district (in Norwegian: reinbeitedistrikt, the equivalent of a Sami community) are now considered to be separate legal entities in legislation and practice (see the Seiland judgement, Rt. 2000 p. 1578). Under Norwegian law, therefore, a winter group can receive compensation for damage to or intrusion into the pastures to which the siida has customary rights.

the community regarding who will have to give it up and who will continue. This increases the psychosocial stress already felt by many in the community. At the same time, more and more young Sami begin to question their future in reindeer herding.

The artificial feeding problem remains

Even if the community reduce their total number of reindeer, they still need to increase the extent of artificial feeding. This entails the same kinds of problem as described above: a greater workload for herders and a higher frequency of disease among reindeer, but above all a form of reindeer herding that the community see as being in direct conflict with their Sami culture.

Problems with year-round pastures

The loss of winter pastures also means that more winter groups need to stay up in the mountains until later in autumn, thus coming down to the winter pasture later than they did before the mine was established, and to leave the winter pastures and go back up to the mountains earlier in spring. As well as the increased deterioration of the year-round pastures, this also creates a series of negative impacts for the Semisjaur Njarg Sami community as a whole.

In particular, the herders need to supervise and manage the reindeer to a much greater extent when they are on the year-round pastures in the mountains in the late autumn and spring–winter. This is primarily linked to three problems. Firstly, the majority of predators are on the year-round pastures and it is difficult to protect the reindeer when there are more hours of darkness in the day – which is the case in early and late winter – and many more reindeer are therefore lost to predators.

Secondly, the reindeer will by nature look for other pastures when grazing on the year-round pastures runs out (as happens in autumn) or is difficult to reach (as is the case in spring when snow has not yet thawed). If the herders bring the reindeer up to the mountains too early, there are also problems finding snow-free patches of ground for them. The snow is usually "rock hard" until about mid-April; it is not until mid-May that there are enough snow-free patches of ground. The condition of the reindeer can also be jeopardised if they are moved too early in spring because they are at their weakest towards the end of winter.

Thirdly, the year-round pastures experience the worst disturbances from snowmobilers.[193] All of this means that the herders need to give the reindeer much more supervision and management. The female reindeer do not get the calm grazing environment they need, which means they cannot produce enough milk for their calves before the coming winter. Consequently, the calves cannot build up their reserves in summer and more of them die in winter.

In summary, the winter pastures have been limited to such a large extent by the Laver mine that they are no longer usable. Nor can reindeer herding be practised effectively in the mountains because there are too many disturbances, and now also too few herders to carry out the collective work on the year-round pastures.

Rights called into question

Because the land can no longer be used in the Laver area in accordance with reindeer herding rights in the same way as before, there is an increased risk of customary rights being lost in the long term as a result of landowners calling grazing rights into question and initiating legal proceedings in the future. It is uncertain what judgement a court would reach with regard to grazing rights, although the Nordmaling judgement indicates that circumstances outside the control of a Sami community do not entail the termination of reindeer herding rights.[194] One problem in this context, however, is that the boundaries of winter pastures are generally unclear, and this does not work in the community's favour. Before the arrival of the mine, the community's rights were already generally questioned by the public. Now it is becoming even more difficult to assert the community's customary rights given that the mine is preventing reindeer from grazing in the area. People outside the Sami community are increasingly beginning to dispute whether reindeer herding rights have ever existed in the area.

193 Note that if the proposed Nasa mine goes ahead, it would impact upon these very same year-round pastures of Semisjaur Njarg's, thus making their use of these pastures even more difficult. The disturbances from the Nasa mine would make it very difficult to keep the herd together. Intermixing between Semisjaur Njarg and Svaipa reindeer would increase significantly, requiring more work from both Sami communities.

194 See item 14 in the grounds for the Supreme Court judgement, NJA 2011 p. 109. We would like to thank Christina Allard for this legal reasoning.

Furthermore, the community regard the Laver mine with great concern. They know that the Aitik mine has been extended and that the impacts on the affected Sami communities have worsened. They worry that the Laver mine, like Aitik, will get larger over the years and take up even more pastures in the future.

10 Conclusions

This report examined some of the impacts of the mine proposed by Boliden in Laver, Älvsbyn, in Northern Sweden, from the point of view of the Semisjaur Njarg Sami community. The report used a scenario analysis to investigate two different main scenarios: with and without a mine.

In a future scenario without a mine, there would be opportunities for the continuation of viable reindeer herding and, although the community would still face a number of challenges, it would have good prospects for passing on reindeer herding, traditional knowledge and the Sami language – and thus the Sami culture – to future generations.

In a future scenario in which the mine goes ahead, it would be impossible to continue the practice of traditional Sami reindeer herding in the Laver area based on the free grazing of reindeer on open pastures. Instead herders would have two alternatives. In the first, herders would be forced to artificially feed their reindeer in Laver throughout the entire winter (i.e. supply the reindeer with pellets). As well as having adverse impacts on animal welfare and the unsustainable workload it would entail, this artificial feeding would so fundamentally change the essential character and annual cycle of reindeer herding that, according to the Sami community, it would no longer be "traditional Sami reindeer herding" based on natural pasture, whereby the reindeer use different pastures throughout different seasons. Instead, it would be equated with "reindeer farming" – whereby reindeer are kept in large pens or fed artificially like "cattle or sheep" – which, according to the community, would fundamentally deviate from the Sami culture and the Sami view of reindeer herding. Furthermore, these technical measures would not be sustainable in the long term and the herders would gradually be forced to give up reindeer herding, meaning that the intergenerational succession within the winter group would cease, and the local traditional knowledge of reindeer herding in the area would be lost.

In the second alternative for the scenario in which the mine goes ahead, the winter group in Laver abandon the pastures in the Laver area immediately and entirely. Instead, they are forced to use other winter pastures within the community's traditional lands, as well as to use the community's year-round pastures to a greater extent. In this scenario, several herders in the community would have to reduce the size of their herds to adapt to the total loss of the winter pastures. Even in this scenario, however, a number of herders would still be forced to give up reindeer herding. This in turn would lead to conflicts within the community, as well as overgrazing on both winter and year-round pastures. A substantial increase in artificial feeding would be required, with attendant problems, because of significant restrictions on the remaining pastures. This scenario would also place intergenerational succession in jeopardy. There are already grave concerns among young Sami people about their future in reindeer herding, and such a development would add to young people's reluctance to invest their future in reindeer herding.

Both alternatives would have far-reaching consequences for everyone in the Sami community. There would, for instance, be fewer reindeer herders to undertake the collective herding work within the community. The Sami community feel that there are already too few of them, and the workload for all members of the community would become even greater. According to the community, there is a risk of this triggering a "domino effect", causing more and more herders to give up reindeer herding.

This analysis is supported by the Gällivare Forest Sami community's experiences with the Aitik mine. According to the Gällivare Forest Sami community, several reindeer herders have been forced to give up herding because of a lack of available pasture and an insurmountable workload. Young people, in turn, do not want to risk investing in reindeer herding, which leads to the loss of intergenerational succession. The experiences with the Aitik mine also show how disruptions to a Sami community (such as those caused by traffic and infrastructure) may become much greater than originally assumed in initial impact assessments. A mine and its infrastructure, such as the associated road and power lines, can also expand and claim greater and greater areas of land, as has occurred in the case of the Aitik mine. These lessons from the Aitik mine are a strong indication that a similar situation is likely for the Semisjaur Njarg Sami community if the Laver mine goes into operation.

These conclusions must also be understood from a broader perspective. Both the proposed mine in Laver and the existing mine in Aitik clearly illustrate how a mine can be seen as the "last straw" by a Sami

community, who are already subject to other developments and competing land use pressures. A closer look at the experiences of Sami communities with various industrial projects reveals such a trend. Various Sami communities are discussing how more and more herders are considering leaving reindeer herding, precisely because of the multiple pressures on them. Many herders in Sweden today are saying that they have "reached their limits", that they "cannot withstand any more competing land uses" and that "the last of our lands are disappearing". Similarly, many young Sami people see it as very difficult to establish themselves as reindeer herders given the current conditions. When reindeer herding is threatened by industrial activities, so too is the Sami culture. This is precisely the connection that is made by many reindeer herders and their families: they see the multiple pressures from different industrial developments as a threat to their culture.[195]

These experiences on the part of various Sami communities contrast with the usual assumption of mining companies, authorities and courts, namely that reindeer herding can coexist with mining without impacting on reindeer herding in any "significant" way.[196] The key question here is – what is deemed to be a significant impact on reindeer herding? Whose interpretation takes precedence with regard to the impact of a mine on Sami land use: that of an outsider, such as a mining company, permitting authority or court, or that of the affected Sami community?

Reindeer herders have extensive knowledge of the potential and actual impacts of different competing land uses, but that knowledge is rarely documented and its inclusion in mining EIAs, reindeer herding analyses and official and court decisions is therefore the exception rather than the rule. The purpose of this report was to help highlight Sami knowledge surrounding reindeer herding[197] – to ensure that herders' voices are heard – so that their knowledge can be better considered in permit processes. These processes all too often fail to incorporate the traditional knowledge of indigenous peoples.[198]

Alongside this failure is a more general disregard for Sami views of the cultural basis of reindeer herding. The technical solutions usually suggested by mining companies and permitting authorities, such as supplementary feeding and using trucks to transport reindeer, hence fail to consider the specific cultural characteristics of reindeer herding as a traditional Sami land use. For example, in Boliden's EIA process, there was no assessment or analysis of whether a mine could impact on the rights of the affected Sami as indigenous people. There was no assessment of whether the property rights of the Sami community could be breached, nor was there any assessment of potential breaches of the rights of the individual reindeer herders to their culture. This is in stark contrast to international laws and norms that require such assessments be made when indigenous peoples are affected by proposed projects on their traditional lands (see Chapter 2).

Even in cases where authorities, courts or mining companies reach the conclusion that coexistence is not possible, practice demonstrates that little consideration is given to the human rights enjoyed by the Sami as an indigenous people.[199] By law, Sami communities have property rights over their traditional territories, and individual reindeer herders have a right to practice their culture – through reindeer herding – without significant harm from industrial development. This report is not intended to be a full human rights impact assessment of the Laver mine. Based on the evidence presented, however, it is clear that a mine in Laver would entail significant breaches of the Semisjaur Njarg Sami community's property rights, because of the mine's proposed location in the middle of the community's winter pastures. It would also constitute breaches of individual reindeer herders' right to their culture, as several herders would be forced out of reindeer herding.

195 These are views that have often been expressed by reindeer herders that Lawrence has met in the course of her research and work with various Sami organisations in the past ten years – in formal interviews, workshops and meetings as well as in informal conversations. See also Löf (2014).

196 Although courts and official authorities in permitting processes often see that new industrial developments may have an impact on reindeer herding, it is often debatable whether this impact is "significant" enough to provide motivation to protect reindeer herding. In practice, the Sami community bears the burden of proof that the impact is "significant" (Bengtsson and Torp 2012).

197 See Oskal and Sara (2001), Sara (2009) and Turi et al. (2014) on traditional Sami knowledge.

198 It must be noted that the work involved in producing this report has placed significant demands on the time and resources of both the community and the researchers. It is not a realistic option for a Sami community to go through an independent assessment process like this one every time a new industrial development is proposed. Even if the financial resources were available for Sami communities to carry out similar processes (which they are not at present), Sami communities simply cannot spare the necessary working hours – reindeer herding is their livelihood and requires their time and energy. The work involved in this report cannot therefore be regarded as a model for the future, but only as an interim solution given the prevailing conditions.

199 See Chapter 8.

A full human rights impact assessment would therefore be appropriate in conjunction with a further assessment of the mine's impact on Sami rights. This is necessary in order to determine whether a mining permit is consistent on the one hand with the international conventions by which Sweden is bound,[200] and on the other hand with the human rights commitments that Boliden, and its investors, have made in their own corporate policies.[201] Anything less would be to ignore the fundamental rights of the Sami people as an indigenous people.

200 See the UN Guiding Principles on Business and Human Rights (Ruggie, 2011). See also the Swedish state's plan of action for the implementation of these principles in Sweden, which also highlights the importance of companies that operate in Sweden carrying out human rights due diligence in situations where there is a high risk of human rights breaches: http://www.regeringen.se/informationsmaterial/2015/08/handlingsplan-for-foretagande-och-manskliga-rattigheter/

201 Boliden has undertaken to defend and respect internationally recognised human rights (see http://www.boliden.com/Documents/About/Strategies%20and%20values/Policies/BOL_MAIN-%23649110-v8-Corporate_Responsibility_Business_Principles.pdf). However, Boliden does not conduct any human rights due diligence in relation to the human rights of Sami people.

References

Alexandersson, U. (2005). *MKB för Renskötsel vid Gruvetableringar. Bättre Integrerad Markanvändning [EIAs for Reindeer Herding when Establishing Mines. Better Integrated Land Use]*. Consultant's report for the Swedish Board of Agriculture

Allard, C. (2006). *Two Sides of the Coin: Rights and Duties: The Interface between Environmental Law and Saami Law on a Comparison with Aoteoaroa/New Zealand and Canada*. Phd Thesis. Luleå University of Technology

Anaya, J. (2011). The situation of the Sami people in the Sápmi region of Norway, Sweden and Finland. Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya. A/HRC/18/35/Add.2

Anaya, J. (2013). *Extractive Industries and Indigenous Peoples*. Report of the Special Rapporteur on the rights of indigenous peoples. A/HRC/24/41

Aoluguya Declaration (2013). Declaration on the Occasion of the 5th World Reindeer Herders' Congress in China July 25-28, 2013. Association of World Reindeer Herders. www.reindeerportal.org

Bengtsson, B. (2004). *Samerätt: En översikt [Sami Law: An Overview]*, Institute for Jurisprudential Research. Nordstedts Juridik AB

Bengtsson, B. (2011). Nordmalingdomen – en kort kommentar (The Nordmaling judgement – a brief comment). *Svensk Juristtidning*, 2011 (5–6). 527–533

Bengtsson, B. and Torp, E. (2012). Svensk samerätt: Något om den senaste utvecklingen [Swedish Sami law: Comments on the most recent developments]. In *Juss i Nord: Hav, Fisk og Urfolk [Law in the North: Ocean, Fish and Indigenous People]*. Ravna, Ø. and Henriksen, T. (eds). Gyldendal, Oslo

Benjaminsen, T.A., Eira, I.M.G. and Sara, M.N., eds. (2016). *Samisk Reindrift, Norske Myter [Sami Reindeer Herding: Norwegian Myths]*. Fagbokforlaget, Vigmostad and Bjørke, Oslo

Benjaminsen, T.A., Maganga, F.P. and Abdallah, J.M. (2009). The Kilosa killings: political ecology of a farmer-herder conflict in Tanzania. *Development and Change*, 40. 423–445

Berkes, F. (2012). *Sacred Ecology*, 3rd edition. Routledge Taylor & Francis Group, New York and London

Blanchette, M.L. and Lund, M.A. (2016). Pit lakes are a global legacy of mining: an integrated approach to achieving sustainable ecosystems and value for communities. *Current Opinion in Environmental Sustainability,* 23. 28–34

Blom, A., Wik-Karlsson, J., Lindberget, M. and Persson, M. (2011). Rovdjurssituationen i Jijnjevaerie [The Predator Situation in Jijnjevaerie]. Report, Svenska Samernas Riksförbund [The National Swedish Sami Association].

Brysk, A. (2009). *Global Good Samaritans: Human Rights as Foreign Policy*. Oxford University Press, New York.

Callaghan, T.V., Johansson, M., Brown, R.D., Groisman, P.Y., Labba, N., Radionov, V., Bradley, R.S., Blangy, S., Bulygina, O.N., Christensen, T.R. and Colman, J.E. (2011). Multiple effects of changes in arctic snow cover. *Ambio*, 40. 32–45

Duinker, P.N. and Greig, L.A. (2007). Scenario analysis in environmental impact assessment: Improving explorations of the future. *Environmental Impact Assessment Review*, 27(3). 206–219

Eira, I.M.G. (2012). *Muohttaga Jávohis Giella, Sámi Árbevirolaš Máhttu Muohttaga Birra Dálkkádat Rievdanáiggis – [The Silent Language of Snow, Sámi Traditional Knowledge of Snow in Times of Climate Change]*. PhD Dissertation, University of Tromsø, Norway

Frittaion, C.M., Duinker, P.N. and Grant, J.L. (2010). Narratives of the future: suspending disbelief in forest–sector scenarios. *Futures*, 42(10). 1156–1165

Geological Survey of Sweden (2013). *Vägledning för Prövning av Gruvverksamhet [Guidelines for the Assessment of Mining Activities]*. Reference 04-2288/2012. Geological Survey of Sweden.

Greenwood, D.J. and Levin, M. (2007). *Introduction to Action Research: Social Research for Social Change*. Sage, London

Hobbs, N.T., Andrén, H., Persson, J., Aronsson, M. and Chapron, G. (2012). Native predators reduce harvest of reindeer by Sámi pastoralists. *Ecological Applications*, 22(5). 1640–1654

Howitt, R. (2005). The importance of process in social impact assessment: ethics, methods and process for cross-cultural engagement. *Ethics, Place and Environment*, 8(2). 209–221

Howitt, R., Connell, J. and Hirsch, P., eds. (1996). *Resources, Nations and Indigenous Peoples*. Oxford University Press, Sydney

IPCC (2014). *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. WGII AR5. IPCC

Ison, R.L. (2008). Systems thinking and practice for action research. In *The Sage Handbook of Action Research Participative Inquiry and Practice* (2nd edition). Reason, P.W. and Bradbury, H. (eds). Sage Publications, London. 139–158

Kaiser, N. and Salander Renberg, E. (2012). Suicidal expressions among the Swedish reindeer-herding Sami population. *Suicidology Online*, 3. 102–113

Kaiser, N., Sjölander, P., Edin Liljegren, A., Jacobsson, L. and Salander Renberg, E. (2010). Depression and anxiety in the reindeer-herding Sami population of Sweden. *International Journal of Circumpolar Health*, 69(4). 383–393

Kivinen, S., Moen, J., Berg, A. and Eriksson, A. (2010). Effects of modern forest management on winter grazing resources for reindeer in Sweden. *Ambio*, 39. 269–278

Lantto, P. (2012). *Lappväsendet: Tillämpningen av Svensk Samepolitik 1885–1971 [The Lapp System: Application of Swedish Sami Policy]*. Centre for Sami Research, Umeå University, Umeå

Larsen, R. (2017). Impact assessment and indigenous self-determination: a scalar framework of participation options. *Impact Assessment and Project Appraisal*, 36(3). 208–219

Larsen, R.K. and Mamosso, C.A. (2014). Aid with blinkers: environmental governance of uranium mining in Niger. *World Development*, 56C. 62–76

Larsen, R., Österlin, C. and Guia, L. (2018). Do voluntary corporate actions improve cumulative effects assessment? Mining companies' performance on Sami lands. *The Extractive Industries and Society*, 5(3). 375–383

Larsen, R., Raitio, K., Stinnerbom, M. and Wik-Karlsson, J. (2017). Sami-State collaboration in the governance of cumulative effects assessment: a critical action research approach. *Environmental Impact Assessment Review*, 64. 67–76

Lawrence, R. (2007). Corporate social responsibility, supply-chains and Saami claims: tracing the political in the Finnish forestry industry. *Geographical Research*, 45(2). 167–176

Lawrence, R. (2008). NGO campaigns and banks: constituting risk and uncertainty. *Research in Economic Anthropology*, 28. 241–269

Lawrence, R. (2014). Internal colonisation and indigenous resource sovereignty: wind power developments on traditional Saami lands. *Environment and Planning D: Society and Space*, 32(6). 1036-1053

Lawrence, R. and Moritz, S. (2019). Mining industry perspectives on indigenous rights: Corporate complacency and political uncertainty. *The Extractive Industries and Society*, 6(1) 41-49

Lawrence, R. and Mörkenstam, U. (2012). Självbestämmande genom myndighetsutövning? Sametingets dubbla roller [Self-determination through the exercise of public authority? The double role of the Sami Parliament]. *Statsvetenskaplig Tidsskrift* 114(2). 207-239

Lawrence, R. and Raitio, K. (2016). Academia and activism in Saami research: negotiating the blurred spaces between. In Ethics in *Indigenous Research – Past Experiences, Future Challenges*. Drugge, A.-L. (ed.). Vaartoe/CeSam series of publications, Centre for Sami Research, Umeå

Lawrence, R. and Åhrén, M. (2016). Mining as colonisation: the need for restorative justice and restitution of traditional Sami lands. In *Nature, Temporality and Environmental Management: Scandinavian and Australian Perspectives on Landscapes and Peoples*. Head, L., Saltzman, S., Setten, G., and Stenseke, M. (eds). Taylor and Francis, UK

Lindblom, U. (2010). *Studie av SKB för Verksamhet som Påverkar Samisk Kultur och Renskötsel. Bedömning av Metoder för Social Konsekvensbedömning i Utvalda Utredningar [Study by Social Impact Assessments for Activities Affecting Sami Culture and Reindeer Herding. Evaluation of Methods for Social Impact Assessment in Selected Investigations]*. Report commissioned by The National Swedish Sami Association.

Lindeström, L., and Eriksson, N., (2015) *Laver- Ansökan om bearbetningskoncession, Miljökonsekvensbeskrivning [Laver-application for a mining concession: environmental impact assessment]* Svensk MKB & Zitroworks. Dated. 2014-09-15

Löf, A. (2014). *Challenging Adaptability. Analysing the Governance of Reindeer Husbandry in Sweden*. Doctoral dissertation. Department of Political Science, Umeå University

Löf, A., Sandström, P., Baer, K., Stinnerbom, M. and Sandström, C. (2012). *Renskötsel och Anpassningsmöjligheter i Vilhelmina Norra Sameby [Reindeer Herding and Adaptation Opportunities in the Vilhelmina Norra Sami Community]*. Research Report 2012:4, Department of Social Science, Umeå University

Magga, O.H., Mathiesen, S.D., Correll, R.W. and Oskal, A. (2009). *Reindeer Herders' Voice: Reindeer Herding, Traditional Knowledge and Adaptation to Climate Change and Loss of Grazing Land*. Rapport via: Arctic Council, Sustainable Development Working Group (SDWG)

Magga, O.H., Mathiesen, S.D., Corell, R.W. and Oskal, A. (Eds) (2011). *Reindeer Herding, Traditional Knowledge and Adaptation to Climate Change and Loss of Grazing Land*. Arctic Council report, SDWG and WRH. International Centre for Reindeer Husbandry (ICR), Fagtrykk, Alta

Makkaur Miljö AB (2011). *Kartläggning av Metaller i Väggmossa Kring Bolidens och LKAB:s Gruvor i Gällivare Kommun 2011 [Mapping of Metals in Wall Moss around Boliden's and LKAB's Mines in Gällivare Municipality 2011]*.

Mathiesen, S.D, Alfthan, B., Corell, R.W, Eira, R.B.M., Eira, I.M.G., Degteva, A., Johnsen, K.I., Oskal, A., Roué, M., Sara, M.N., Skum, E.R., Turi, E.I. and Turi, J.M. (2013). Strategies to enhance the resilience of Sámi reindeer husbandry to rapid changes in the Arctic. In Arctic Resilience Interim Report 2013. Arctic Council Arctic Resilience Report/ Stockholm Environment Institute (SEI) and Stockholm Resilience Centre, Stockholm, Sweden. 109–112

McCarthy, J.J., Long-Martello, M., Corell, R.W., Eckley-Selin, N., Fox, S., Hovelsrud-Broda, G., Mathiesen, S.D., Polsky, C., Selin, H., Tyler, N.J.C., Strøm-Bull, K., Eira, I.M.G., Eira, N.I., Eriksen, S., Hanssen-Bauer, I., Kalstad, J.K., Nellemann, C., Oskal, N., Reinert, E.S., Siegel-Causey, D., Storeheier, P.-V. and Turi, J.M. (2005). climate change in the context of multiple stressors and resilience. In ACIA, 2005. Arctic Climate Impact Assessment. Cambridge University Press. 945–988

Mörkenstam, U. (1999). *Om 'Lapparnes privilegier': Föreställningar om samiskhet i svensk samepolitik 1883–1997 [On 'the Privileges of the Lapps': Notions of Saminess in Swedish Sami Policy 1883–1997]*. Department of Political Science, Stockholm University

Naykanchina, A. (2012). Indigenous reindeer husbandry: the impacts of land use change and climate change on indigenous reindeer herders' livelihoods and land management, and culturally adjusted criteria for indigenous land uses. Report by UNPFII Special Rapporteur and Member Anna Naykanchina for the 11th Session of the United Nations Permanent Forum on Indigenous Issues (UNPFII), New York, 7–18 May 2012

Nilsson, A. (2003). *Adaptation of Semi-domesticated Reindeer to Emergency Feeding*. Doctoral thesis. Swedish University of Agricultural Sciences

Nordin, Å. (2007). *Renskötseln är Mitt Liv: Analys av den Samiska Renskötselns Ekonomiska Anpassning [Reindeer Herding Is My Life: Analysis of the Economic Adaptation of Sami Reindeer Herding]*. Centre for Sami Research, Umeå University, Umeå

Nymand-Larsen, J., Anisimov, O., Constable, A., Hollowed, A., Maynard, N., Prestrud, P., Prowse, T., Stone, J., Callaghan, T., Carey, M., Convey, P., Derocher, A., Fretwell, P.T., Forbes, B.C., Glomsrød, S., Hodgson, D., Hofmann, E., Hovelsrud, G.K., Ljubicic, G.L., Loeng, H., Murphy, E., Nicol, S., Oskal, A., Reist, J.D., Trathan, P., Weinecke, B., Wrona, F., Ananicheva, M., Chapin III, F.S. and Kokorev, V. (2014). Polar Regions Chapter. In *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Fields, C. (ed). WGII AR5. Intergovernmental Panel on Climate Change (IPCC). 1567–1612

O'Faircheallaigh, C. (2016). *Negotiations in the Indigenous World: Aboriginal Peoples and the Extractive Industries in Australia and Canada*. Routledge, New York and London

Oskal, N. (2000). On nature and reindeer luck. *Rangifer*, 20 (2–3). 175–180

Oskal, N. and Sara, M.N. (2001). Reindriftssamiske sedvaner og rettsoppfatninger om land [Customs and conceptions of the law among reindeer herding Sami in relation to land]. in: *Reindriften i Finnmark: Rettshistorie 1852–1960 [Reindeer Herding in Finnmark: Legal History]*. Bull, K., Oskal, N. and Sara, M.N. (eds). Cappelen Akademisk Forlag, Oslo. 280–333

Paine, R. (1996). Saami reindeer pastoralism & the Norwegian state, 1960s–1990s. Nomadic Peoples, 38. 125–136, cited in Johnsen, K.I., Benjaminsen, T.A. and Eira, I.M.G. (2015). Seeing like the state or like pastoralists? Conflicting narratives on the governance of Sámi reindeer husbandry in Finnmark, Norway. *Norwegian Journal of Geography*, http://dx.doi.org/10.1080/00291951.2015.1033747

Pedersen J. and Benjaminsen, T.A. (2008). One leg or two? Food security and pastoralism in the northern Sahel. *Human Ecology*, 36. 43–57

Reinert, E. (2016). Årsaker til at Planøkonomien er Blitt Varig Ødeleggende for Verdiskapningen i Samisk Reindrift [Why the planned economy has been destructive for value-creation in Sami reindeer herding]. In *Samisk Reindrift, Norske Myter [Sami Reindeer Herding, Norwegian Myths]*. Benjaminsen, T.A., Eira, I.M.G., and Sara, M.N. (eds). Fagbokforlaget, Vigmostad & Bjørke, Oslo. 145–174

Reinert, E.S., Aslaksen, J., Eira, I.M.G., Mathiesen, S.D., Reinert, H. and Turi, E.I. (2009). Adapting to climate change in reindeer herding: the nation-state as problem and solution. In *Adapting to Climate Change: Thresholds, Values, Governance*. Adger, N., Lorenzoni, I., and O'Brien, K. (eds.). Cambridge University Press, Cambridge. 417–432

Ruggie, J. (2011). *Report of the Special Representative of the Secretary-General on the Issue of Human Rights and Transnational Corporations and other Business Enterprises. Guiding Principles on Business and Human Rights: Implementing the United Nations "Protect, Respect and Remedy" Framework*. UN Human Rights Council, A/HCR//17/31

Ryd, Y. (2007). *Snö: Renskötaren Johan Rassa Berättar [Snow: Reindeer Herder Johan Rassa Recounts]*. Natur Kultur Allmänlitteratur

Sandström, P., Cory, N., Svensson, J., Hedenås, H., Jougda, L. and Borchert, N. (2016). On the decline in ground lichen and ground lichen forests in the Swedish boreal landscape – implications for indigenous reindeer husbandry land use and sustainable landscape management. *Ambio*, 45(4). 415–429

Sandström, P., Pahlen, T.G., Edenius, L., Tömmervik, H., Hagner, O., Hemberg, L., Oisson, H., Baer, K., Stenlund, T., Brandt, L.G. and Egberth, M. (2003). Conflict resolution by participatory management: remote sensing and GIS as tools for communicating land – use needs for reindeer herding in northern Sweden. *Ambio*, 32(8). 557–567

Sara, M.N. (2009). Siida and traditional Sámi reindeer herding knowledge. *The Northern Review*, 30. 153–178

Scott, J.C. (1998). *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press, New Haven CT

Secretariat of the Convention on Biological Diversity (2004). *Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessment regarding Developments Proposed to Take Place on, or which are Likely to Impact on, Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities*. CBD Guidelines Series, Montreal. https://www.cbd.int/doc/publications/akwe-brochure-en.pdf

Sjölander, P., Daerga, L., Edin-Liljegren, A. and Jacobsson, L. (2009). Musculoskeletal symptoms and perceived work strain among reindeer herders in Sweden. *Occupational Medicine*, 58(8). 572–579

Skarin, A., Sandström, P. and Alam, M. (2018). Out of sight of wind turbines—Reindeer response to wind farms in operation. *Ecology and Evolution*, 8(19). 9906–9919

Skarin, A. and Åhman, B. (2014). Do human activity and infrastructure disturb domesticated reindeer? The need for the reindeer's perspective. *Polar Biology*, DOI 10.1007/s00300-014-1499-5

SOU 2006:14 (2006) *Samernas sedvanemarker: Betänkande av Gränsdragningskommissionen för renskötselområdet [The Samis Customary Lands: Final report from the Boundary Drawing Comission for the Reindeer Herding Area]*, Statens offentliga utredningar [Public Government Inquiry], Stockholm 2006.

Southern Lapland Research Department (2009a). *Vägledning för Sociala Konsekvensbeskrivningar. Förslag på Innehåll och Process Inriktad mot Exploateringskonsekvenser för Samebyar [Guidelines for Social Impact Assessments. Suggested Content and Processes Directed at the Impacts of Industrial Development on Sami Communities]*.

Southern Lapland Research Department (2009b). *Samernas Hälsosituation i Sverige – en Kunskapsöversikt [The Health Situation of Sami People in Sweden – Overview of Current Knowledge]*.

SSR (2010). *Vi Plågas och Renarnas Plågas av Rovdjuren, en Vägledning i Utarbetandet av Toleransnivåer [We and the Reindeer are Tormented by Predators, a Guide to the Development of Tolerance Levels]*. National Association of Swedish Sami. http://www.sametinget.se/23481

Svonni, R. (2010). *Samisk Markanvändning och MKB [Sami Land Use and EIAs]*. Sami Parliament. http://www.sametinget.se/26843

Swedish Equality Ombudsman (2014). *Preliminary Study in the Project "Diskriminering av Samer Som Urfolk" ["Discrimination against Sami as an Indigenous People"]*.

Thornberry, P. (2011). Integrating the UN Declaration on the Rights of Indigenous Peoples into CERD practice. In *Reflections on the UN Declaration on the Rights of Indigenous Peoples*. Allen, S., and Xanthaki, A. (eds). Studies in International Law. Hart Publishing. 61–92

Torp, E. (2007). Samebys talerätt i civilrättsliga ärenden [Sami Community's Right to be Heard In Civil Matters] *Förvaltningsrättslig Tidskrift*: 3.

Torp, E. (2014). Det rättsliga skyddet av samisk renskötsel? [Legal protection for Sami reindeer herding?] *Svensk Jurist Tidning*, 99(2), 122–148

Turi J.M. (2009), EALÁT – a model for local competence building in the north. In *EALÁT – Reindeer Herders' Voice: Reindeer Herding, Traditional Knowledge and Adaptation to Climate Change and Loss of Grazing Land*. Oskal, A., Turi, J.M., Mathiesen, S.D. and Burgess, P. (eds). Arctic Council, SDWG & WRH. International Centre for Reindeer Husbandry (ICR) Report 2. Fagtrykk, Alta

Turi, E.I. and Keskitalo, E.C.H. (2014). Governing reindeer husbandry in western Finnmark: barriers for incorporating traditional knowledge in local-level policy implementation. *Polar Geography*, 37(3). 234–251

Tyler, N.J.C., Turi, J.M., Sundset, M.A., Strøm Bull, K., Sara, M.N., Reinert, E., Oskal, N., Nellemann, C., McCarthy, J.J., Mathiesen, S.D., Martello, M.L., Magga, O.H., Hovelsrud, G.K., Hanssen-Bauer, I., Eira, N.I., Eira, I.M.G. and Corell, R.W. (2007). Saami reindeer pastoralism under climate change: applying a generalized framework for vulnerability studies to a sub-arctic social-ecological system. *Global Environmental Change*, 17. 191–206

Tveitdal, O. Grøn and T.S. Larsen. GLOBIO. *Global Methodology for Mapping Human Impacts on the Biosphere*. UNEP/DEWA/TR.01-3

UNEP (2001). C. Nellemann, L. Kullerud, I. Vistnes, B.C. Forbes, E. Husby, G.P. Kofinas, B. P. Kaltenborn, J. Rouaud, M. Magomedova, R. Bobiwash, C. Lambrechts, P.J. Schei, S. UN-REDD Programme (2013). *Legal Companion to the UN-REDD Programme Guidelines on Free, Prior and Informed Consent (FPIC) International Law and Jurisprudence Affirming the Requirement of FPIC*. http://www.un-redd.org

Valijärvi, R.-L. and Wilbur, J. (2011). The past, present and future of the Pite Saami language: Sociological factors and revitalization efforts. *Nordic Journal of Linguistics*, 34(03). 295–329

Vanclay, F. (2003). International principles for social impact assessment. SIA principles. *Impact Assessment and Project Appraisal*, 21(1). 5–11

Vanclay F. and Esteves M.A. (eds) (2015). *New Directions in Social Impact Assessment: Conceptual and Methodological Advances*. Edward Elgar Press, Cheltenham

Vanclay, F., Esteves, A.M., Aucamp, I. and Franks, D.M. (2015). *Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects*. International Association of Impact Assessment

Vistnes, I.I., Burgess, P., Mathiesen, S.D., Nellemann, C., Oskal, A. and Turi, J.M. (2009). *Reindeer Husbandry and the Barents. Impacts of Future Petroleum Development on Reindeer Husbandry in the Barents Region*. Report prepared by the International Centre for Reindeer Husbandry for StatoilHydro ASA

Vistnes, I. and Nellemann, C. (2001). Avoidance of cabins, roads, and power lines by reindeer during calving. *The Journal of Wildlife Management*, 65(4). 915–925

Ward, T. (2011). The right to free, prior, and informed consent: indigenous peoples participation rights within international law. *Northwestern Journal of International Human Right*s 10(2). 54

Wilbur, J. (2014). *A Grammar of Pite Saami*. Language Science Press, Berlin

Åhman, B. (2002). *Utfodring av Renar (2:a Upplagan) [Supplementary Feeding of Reindeer (2nd Edition)]*. SSR Research Agency

Åhman, B. (2012). *Renhjord i Kollaps (Reindeer Herds in Collapse)*. Report 285. Department of Animal Nutrition and Management, Swedish University of Agricultural Sciences

Åhren, J.M. (2014). International human rights law relevant to natural resource extraction in indigenous territories – an overview. *Nordisk Miljörättslig Tidskrift*, 1. 21–38

Åhren, M. (2016). *Indigenous Peoples' Status in the International Legal System*. Oxford University Press

Appendices

Appendix A. Ovdasátni (Foreword, Northern Sami)

Boazodoallu lea davviguovlluid fenomena mii doaimmahuvvo miehtá árktalaš sirkumpolára guovlluin. Dat ovddasta 24 iešguđet árktalaš álgoálbmogiid árbevirolaš, nomádalaš eallinvuogi, ja sis lea buohkain guhkes historjá davvin. Dat guoská lagabui 100 000 olbmui ja sullii 2,5 miljovnna bohccui Ruoŧas, Norggas, Suomas, Ruoššas, Mongolias, Kinnas, Davvi-Amerihkás/Alaskas, Kanada, Ruonáeatnamis/Danmárkkus ja Skottlánddas. Váikko boazodoallu gávdno miehta árktalaš guovlluin, ja máŋga iešguđetlágan kultuvrraiguin, de lea dan organiseren mearkkašahtti seammá láhkái gos ain gávdno; dat lea nomádalaš eallinvuohki, man vuođđu lea bearašvuđot bargoservodat, dat ovddasta hui mihtilmas eallinvuogi álgoálbmogiidda. Boazodoalu sáhttá geahčastit olmmoš-ekovuogádat čanastahkan.[202] Dan sáhttá maid geahčastit modeallan dasa mo bistevaččat geavahit ja hálddašit davvi eatnamiid ekovuogádagaid, ja man vuođđu leat vásáhusat mat leat čoggon buolvvaid bokte, seailluhuvvon, ovdánahtton ja heivehuvvon davviguovlluid dálkkádagaide ja politihkalaš ekonomiija vuogádagaide.[203]

Boazodoalloservodagat miehtá árktalaš guovlluin vásihit dál máŋga ođđa hástalusa. Váikko dálkkádatrievdamat, globaliseren ja sosio-ekonomalaš rievdamat mielddisbuktet mearkkašahtti rievdamiid, de leat guohtuneatnamiid massimat mat čuvvot infrastruktuvrraid huksema, resurssaid ávkkástallan ja lassi olmmošlaš doaimmaid geažil, muhtun dain stuorámus váikkuhusain dálá boazodollui. Jus geahčasta dála dili, de lea Fennoskándia dat guovlu gos guohtuneatnamat leat jávkán eanemusat árktalaš sirkumpolára guovlluin, ja integrerejuvvon hálddašanplánat eatnamiidda eai leat hábmejuvvon Barentsguovllu dáfus.[204] Dáid áššiid dehálašvuohta lea maid čielgasit čállon Aoluguya julggaštusas, dohkkehuvvon 2013.[205]

Boazodoallu jođihuvvo stáhtaid iešguđetlágan regulerenráđđevugiid vuolde. Muhto hástalus mii čađat ihttá buot oktavuođain, lea ahte stáhtaid eiseválddiid bealis váilu obbalaš ipmárdus ja dohkkeheapmi pasturalismmas,[206] hástalus mii maid guoská boazodollui.[207] Stáhta boazodoallohálddašeapmi lea dávjá huksejuvvon eará álbmogiid eanadoallovugiid ja eanageavaheami ipmárdusaid ala, ja dainna lágiin ii govve dievaslaččat ahte boazodoallu lea álgoálbmogiid árbevirolaš, nomádalaš eallinvuohki. Defineremis ja dahkamis bistevaš boazodoalu "ođđaáigásaš" eanandoallun, addá ovdamearkka dihte stáhtaide fámu defineret mii boazodoallu *galggašii* leat.[208] Dáid definišuvnnaid maid stáhta lea mearridan, dávjá eai heive álgoálbmogiid iežaset máilmmiipmárdusaiguin, árbevirolaš eanangeavahemiin ja kultuvrralaš vieruiguin.

Oanehaččat oažžu dadjat ahte álgoálbmogiid boazodoalu vuođđu lea ahte *badjeolbmot čuvvodit bohcco, iige nuppe láhkái*. Nuppe dáfus lea eanadoallu vuosttažettiin vuođđuduvvon olbmo áigumušaid ala ahte kontrolleret elliid čađa áigge, - dahje maiddái, geahččalit kontrolleret luonddu. Nugo vuorraset badjeolmmoš ja Máilmmi Boazoálbmogiid Searvvi generálačálli Johan Mathis Turi lea dadjan: "... *Boazoálbmogat leat álo diehtán ahte sii fertejit bargat ovttas luondduin iige dan vuostá*".[209] Badjeolbmuid máilmmiipmárdusat lea ahte it don soađa máilmmi vuostá, muhto geahččalat eallit das ja soabadit dainna.[210]

Álgoálbmogiid árbevirolaš máhttu, kultuvra ja giella addet dehálaš vuođu heivehit ja hukset dávggasvuođa jođánis rievdamiid dáfus árktalaš boazodoalloservodagain.[211] Muhto nugo stuoraservodat ii dievaslaččat ipmir boazodoalu eanangeavaheaddjin, nu maiddái ii geavahuvvo badjeolbmuid árbevirolaš máhttu dievaslaččat dálá hálddašeamis.[212]

Dát čuoččáldahttá hástaleaddji gažaldagaid: Makkár kapasitehta lea stáhta eiseválddiin ja sisabahkkejeddjiin dievaslaččat ipmirdit ja bargat boazodoalločuohcci váikkuhusaiguin? Makkár ipmárdus lea sis boazodoalu máŋggabealat eanageavaheamis molssašuddi diliid vuolde? Man muddui sáhttet dálá váikkuhusguorahallamiid ráđđenvuogit ja dábit duođaid ipmirdit dáid duohtavuođaid?

202 Tyler et al. (2007) and Berkes (2012).
203 Magga et al. (2011).
204 Vistnes et al. (2009).
205 Aoluguya Declaration (2013).
206 Scott (1998), Pedersen and Benjaminsen (2008) and Benjaminsen et al. (2009).
207 Benjaminsen et al. (2016).
208 Paine (1996)
209 Turi (2009).
210 Oskal (2000).
211 Magga et al. (2011) and Mathiesen et al. (2013).
212 Eira (2012) and Turi and Keskitalo (2014).

Badjeolbmot miehtá davviguovlluid vásihit dál ahte sii leat ovddemusas dálkkádatrievdamiid dáfus; dálkkádat árktalaš guovlluin lieggana joðáneappot go gaskamearálaččat muđui máilmmis.[213] Dan oktavuođas boahtá leat ain deháleappot badjeolbmuide ahte gávdnojit guohtuneatnamat gosa besset ealuideasetguin.[214] Badjeolbmuid báikkálaš heiveheapmi dálkkádatrievdamiidda lea maid geográfalaš beliid duohken, gos máŋggabealatvuohta já friddjavuohta johttát ealuin sáhttá leat mearrideaddjin vissis dilálašvuođaid ja diliid vuolde.[215] ON Dálkkádatpanela 5.Raporta leage čujuhan ahte "*...guohtuneatnamiid suodjaleapmi boahtáge leat deháleamos heivehallanstrategiija badjeolbmuide dálkkádatrievdamiid oktavuođas*".[216] Ovttas servodatrievdamiiguin, ekonomalaš rievdamiiguin ja politihkalaš rievdamiiguin mielddisbuktá dát mearkkašahtti ja áibbas ođđa hástalusaid boazodoalu boahtteáigái.[217] Go dán čuovggas geahčča, de lea jierpmálaš geavahit prinsihpa "ovddalgihtii leat várrogas" buot evttohuvvon areálaovdánahttimiid oktavuođas boazodoalloguovlluin dálá ja boahtteáigge hástalusaide dáfus, maid dálá dálkkádatrievdamat juo váikkuhit.

Dát leage juste manin váikkuhusguorahallamiid buresdoaibmi ráđđenvuogit leat mearrideaddjin bistevaš ovdáneapmái davvin. Váikkuhusguorahallamat, go čađahuvvojit albmaláhkái, addet neavvu geavahit buoremus máhtu mii gávdno, vuođđun dahkat buoremus hálddašanmearrádusaid. Okta dain stuorámus hástalusain resursageavaheami plánaproseassas boazodoalloguovlluin, lea ahte dat dávjá guorahallo sierra dáhpáhussan dálá ja boahttevaš sisabahkkemiid ektui. Muhto boazodoalloservodagaid oainnuid mielde lea dárbu váldet vuhtii ollislaš gova sisabahkkemiid dáfus. Lea dávjá nu ahte dat leat buot sisabahkkemiid čoggon váikkuhusat mat garraseamos čuhcet boazodollui.

Ferte maid váldit vuhtii ahte boazodoallu ovddasta vuogádaga mii leat sorjavaš ollislašvuođas. Ovdamearkka dihte geavaha professor Erik Reinert tearpma "bákkolaš manahat", ja geavaha dán gova čilget eaŋkilit:. "*Dat soaitá orru leamen buorre sadji duoddaris, juste seammá láhkái ahte soaitá leamen ollu lanja muhtin guovttegeardásaš norgga viesus, nu ahte ii galggašii mearkkašit maidege jos vel mássátge moadde njealjádasmehtera. Muhto jos leat nu lihkoheapme ahte dat moadde njealjádasmehtera, maid mássát, lea juste dakko gokko tráhppa manná vuosttáš gearddis nuppi geardái, dalle don leat mássán beali du orrunsajis.*"[218] Duohtavuođas lea boazodoalu eanangeavaheapmi huksejuvvon máŋga diekkár "rájáid" birra, mat sáhttet ráddjet olles vuogádaga ollislašvuođa. Boazodoalu eanangeavaheami máŋggabealatvuođa beliid ferte čielgasit ipmirdit vai ipmirda sisabahkkemiid duohta váikkuhusaid boazodollui.

Min bargguid bokte sirkumpolára boazodoalloservodagain mat vásihit sisabahkkemiid iežaset eatnamiidda, duođaštuvvo čielgasit ahte sisabahkkenproseassat dávjá eai čađahuvvo doarvái bures. Váikkuhuvvon boazodoalloservodagaiguin eai leat gulahallan eaige dat leat váldon mielde proseassaide, ja dávjá váilu dain alddiineaset kapasitehta gozihit ja oasálastit daid ollu sisabahkkenprošeavttain mat leat jođus. Váldohástalus lea dávjá ahte boazodoalloservodagat váldojit mielde sisabahkkenproseassaide beare maŋŋit. Dábálaččat go bohtet mielde proseassaide – dávjá dušše symbolalaččat, de leat prošeavttat mearriduvvon ja váldoinvesteremat lea juo dahkkon, nu ahte badjeolbmot eai beasa váikkuhit prošeavtta dahje proseassa.

Maid mun áiggun dadjat lea ahte go dát dáhpáhuvvá, de mii – stuoraservodat – vásihit dili mas leat mássán vejolašvuođaid: Maŋŋit inkluderen proseassaide mearkkaša ahte lea beare maŋŋit ásahit luohttevašvuođa ja duohta ovttasbarggu gaskal bealládagaid, ahte lea beare maŋŋit ráhkadit goabbatbeallásaš heivehanproseassaid, ja beare maŋŋit váldit atnui badjeolbmuid árbevirolaš máhtu. Nuppiin sániiguin, mii massit buoremus máhtu buoremus čovdosiidda. Leat máŋga ovdamearkka dasa mo investerejeaddjit leat mássán ruđa ovdánahttit luondduriggodagaid mat eai lean čađahahtti, dahje eai lean gánnáhahtti prošeavttat, dušše danin go eai váldán mielde buot beliid, buot perspektiivvaid ja buot vejolaš máhtuid. Váikko lea mihá álkit lohkat ahte váldit mielde váikkuhuvvon báikkálaš servodagaid ja daid árbevirolaš máhtu váikkuhusaid guorahallanproseassaide, go dan dahkat, de lea dan ain vejolaš bargat. Duohtavuođas mii sáhttit ákkastallat ahte dát lea áibbas dárbbašlaš jos mii ieža galgat oažžut dohkálaš máhtu man vuođul sáhttit dahkat dehálaš birashálddašanmearrádusaid.

213 IPCC (2014)
214 McCarthy (2005), Tyler et al. (2007) and Magga et al. (2011).
215 Tyler et al. (2007).
216 Nymand-Larsen et al. (2014).
217 Magga et al. (2011) and Nymand-Larsen et al. (2014).
218 Reinert (2016).

Muhto fertet maid deattuhit ahte badjeolbmuin, dábálaš riekteguoddin ja sin ruovttuguovlluid árbevirolaš geavaheaddjit, lea lágalaš vuoigatvuođat biehttalit mieđiheamis, geassit mieđiheami ja maiddái biehttalit oppanassiige gulahallat. Dát vuoigatvuođat leat čállon riikkaidgaskasaš lágaide,[219] váikko máŋga ráđđenvuogi ja fitnodagat ain eai sáhte dohkkehit dáid vuoigatvuođaid.

Dál geavahuvvojit iešguđetlágán váikkuhusguorahallamat sirkumpolára davvin, nugo mat "Environmental Impact Assessments" (EIA-Biraslaš Váikkuhusguorahallan), "Social Impact Assessments" (SIA-Sosiála Váikkuhusguorahallan), Biodiversity Assessments (Biologalaš Máŋggabealatvuođaguorahallan), ja maŋimus áiggi maiddái "Resilience Assessment" (Dávggasvuođaguorahallan).[220] Dakkár guorahallamiid sáhttá maid ovttastit, jearaldat makkár dilli lea. Dattege orru leamen ahte eai leat mearriduvvon njuolggadusat dasa makkár guorahallamat, daid sisdoallu dahje proseassat galget dahkkot láhkageatnegas váikkuhusguorahallamiid dáfus.

Lea dárbu buoridit standárddaid maid geavahit váikkuhusguorahallamiin ja soahpamušain badjeolbmuiguin nu ahte maiddái sisttisdollet sin árbevirolaš máhtu, oainnuid ja vásáhusaid.[221] Jođánis rievdamiid oktavuođas árktalaš guovlluin mii fertet geavahit dan buoremus máhtu mii gávdno luondduhálddašeamis, ávkkástallamis sihke dieđalaš ja árbevirolaš máhtu ja ovttastit dán "guokte diehtinvuogi".[222] Geavaheamis árbevirolaš máhtu mearkkaša maid báikkálaš servodagaid aktiivvalaš oasálastima daid árbevirolaš máhtu earenoamáš sisdoalu geažil.

Dát raporta lea **dehálaš lávki ovdánahttit ođđa vugiid mo čađahit váikkuhusguorahallamiid** maid vuođđu lea ahte váikkuhuvvon álgoálbmogiid servodagat aktiivvalaččat oasálastet guorahallamiin, fátmmastit sin árbevirolaš máhtu, ja vuhtiiváldit sin vuoigatvuođaid álgoálbmogin. Riikkaidgaskasaš Boazodoalloguovddáža bealis lean hui duhtavaš dán raportta ovttasbargguin Stockholm Luonddu Instituhtain ja Stockholm Universitehtain. Mii sávvat ahte dát raporta šaddá dehálaš ovdamearkan, man sáhttá máŋget, čuovvut ja maiddái buoridit.

Guovdageaidnu, Norga, miessemánnu 2019

Anders Oskal
Direktora, Riikkaidgaskasaš Boazodoalloguovddáš (ICR)

Elna Sara,
Riikkaidgaskasaš Boazodoalloguovddážis lea jorgalan ovdasáni sámegillii.

219 e.g. Åhren (2016).
220 Mathiesen et al. (2013).
221 Naykanchina (2012).
222 33Magga et al. (2011), Berkes (2012) and Eira (2012).

Appendix B. Förord (Foreword, Swedish)

Renskötsel är ett nordiskt fenomen som förekommer i områdena kring polcirkeln i Arktis. Det är en traditionell nomadisk livsstil med familjebaserade arbetssamhällen som utövas av 24 olika urfolk runtom i Arktis, som samtliga har en lång historia i Norden. Det rör sig om nära på 100 000 människor och cirka 2,5 miljoner semidomesticerade renar i Sverige, Norge, Finland, Ryssland, Mongoliet, Kina, USA/Alaska, Canada, Grönland/Danmark och Skottland. Renskötsel förekommer runt om i denna region och praktiseras av många olika kulturer, men organisationen är mycket lik överallt. Det kan ses som ett mänskligt ekosystem. Man kan också se renskötsel som en förebild i hållbarhet och användning av mark i jordbaserade ekosystem. Dessa bygger på generationers samlade erfarenhet som utvecklats och anpassats till klimatet och till de politiska och ekonomiska systemen i norr.

Idag står renskötarsamhällen runt om i Arktis inför många nya utmaningar såsom klimatförändringar, socioekonomiska förändringar och globalisering. Bristen på betesmark och splittringen av betesområden på grund av bebyggelse, exploatering och ökad mänsklig aktivitet utgör idag ett allvarligt problem för renskötarna. För närvarande är Fennoskandien den region som sammanlagt har den största förlusten av betesmarker vid polcirkeln i Arktis, och det finns inga ledningsplaner just nu för de landbaserade områdena i Barent-regionen. Vikten av dessa frågor är också klart definierade i Aoluguya-deklarationen från 2013.

Renskötsel styrs utifrån olika bestämmelser och riktlinjer i varje land. En återkommande utmaning i detta sammanhang är dock generellt de statliga myndigheternas brist på förståelse och erkännande av frigående bete. Detta är en utmaning som också påverkar renskötseln. Statlig reglering av renskötsel bygger ofta på majoritetssamhällets syn på jordbruk och nyttjande av mark, och återspeglar därför inte urfolkets syn på renskötsel som en traditionell, nomadisk livsstil. När hållbar renskötsel beskrivs i termer av 'modernt' jordbruk, får exempelvis statliga organ makt att definiera vad renskötsel borde vara. Dessa definitioner, som är påtvingande av staten, överensstämmer sällan med urfolkens egen världsbild och kultur, eller med deras traditionella nyttjande av mark.

Sammanfattningsvis kan sägas att kärnan i ett urfolks renskötsel innebär att renskötarna följer renen, inte tvärtom. Jordbruk kontrasterar helt med detta då jordbruk först och främst bygger på en mänsklig strävan att kontrollera djuren - kanske också att kontrollera naturen själv. Som Johan Mathis Turi, senior samisk renskötare och generalsekreterare i Association of World Reindeer Herders, uttryckte det; *"Renskötare har alltid utgått ifrån att man måste arbeta med naturen, inte mot naturen."* Renskötarnas världsbild går alltså inte ut på att erövra världen utan att komma överens med den och förstå den.

Urfolks traditionella kunskap, kultur och språk erbjuder en grund för anpassning och motståndskraft mot snabba arktiska förändringar i renskötarsamhällen. Men precis på samma sätt som man i majoritetssamhället inte helt förstår renskötarnas nyttjande av mark, så tar man inte heller tillvara på renskötarnas traditionella kunskap i dagens ledarskap.

Således uppstår ett antal frågeställningar: Vad har myndigheter och exploatörer för reell möjlighet att förstå och interagera med den påverkan som renskötselsystemen är utsatta för? Vilken förståelse har de av komplexiteten i renskötseln under villkor som är i ständig förändring? I vilken grad kan man förstå denna verklighet utifrån konsekvensanalyser och studier?

Renskötare i norr befinner sig i frontlinjen för klimatförändringar. Klimatet i Arktis värms upp mycket fortare än det globala genomsnittet och tillgång till betesmark och betesresurser kommer därför att bli ännu viktigare för renskötare. Renskötarnas lokala anpassning till klimatförändring beror också på den geografiska dimensionen där mångfald och renhjordens rörelsefrihet blir helt avgörande under de givna omständigheterna och variationen. I Intergovernmental Panel on Climate Change 5th Assessment Report har man påpekat att *"...skyddet av betesmark kommer att bli den viktigaste anpassningsstrategin för renhjordar vid klimatförändring."* I kombination med ekonomiska och politiska förändringar i samhället innebär detta utmaningar utan motstycke för renskötselns framtid. Det är därför relevant att applicera en förebyggande princip för tilltänkta markexploateringar i renskötaområden, med tanke på både nuvarande och framtida utmaningar med klimatförändring som vi redan står inför.

Det är precis av detta skäl som väl fungerande riktlinjer för konsekvensanalys är avgörande för en verkligt hållbar utveckling av Norden. En välgjord konsekvensanalys är ett verktyg för att uppnå den bästa tillgängliga kunskapen som grund för optimala ledarskapsbeslut. En av de huvudsakliga utmaningarna i planeringsprocesser för exploatering och intrång irenbetesområden är att dessa ofta studeras isolerat från både existerande och framtida intrång. Ur renskötarnas perspektiv måste dock helheten tas i beaktande. Det är ofta den kumulativa påverkan som medför de allvarligaste konsekvenserna.

Man måste även ta i beaktande att renskötsel utgör ett helhetssystem. Professor Erik Reinert använder till exempel uttrycket *Mandatory Passage Points*, och gör följande enkla analogi som illustration: *"Det kan verka som att det finns mycket plats på tundran, precis som det finns gott om plats i en norsk tvåvånings-villa. Så man tänker att det spelar ingen roll om man förlorar några kvadratmeter. Men om de kvadratmetrarna i villan råkar vara i trappan mellan första och andra våningen så förlorar man ju halva boytan."* I verkligheten ligger renbetesmarker ofta vid många sådana gränslinjer vilket kan komma att begränsa helheten. Frågor som gäller komplexiteten i renskötares nyttjande av mark måste tas i beaktande för att förstå den verkliga påverkan på renskötarsamhället.

I vårt arbete med renskötarsamhällen vid polcirkeln, som är utsatta för intrång, är det uppenbart att utvecklingsprocesser ofta inte räcker. De renskötarsamhällen som utsätts för påverkan bemöts inte på ett lämpligt och inkluderade sätt, och de saknar ofta kapacitet att själva se över och delta i vidden av den pågående exploateringen. En återkommande stor utmaning är att renskötarsamhällena inkluderas alltför sent i utvecklingsprocessen. Och när de väl är inkluderade, ofta endast symboliskt, är projekten redan satta i sten. Stora investeringar har då redan gjorts och renskötarna har således inte möjlighet till något som helst inflytande över projektet eller processen.

Poängen här är att när detta sker står samhället i stort inför en situation av förlorade möjligheter. Den sena inkluderingen av urfolken i processen betyder att det är för sent att etablera tillit och verklig interaktion mellan parterna. Det är för sent att förverkliga en god process av ömsesidig anpassning, samt att inkludera och omsätta renskötarnas traditionella kunskap i konkret handling. Med andra ord förlorar vi den mest nödvändiga kunskapen för de bästa lösningarna. Det finns många exempel där investerare har förlorat pengar på att utveckla projekt som rör naturresurser. Dessa projekt var inte genomförbara eller icke så vinstgivande som man trott - helt enkelt på grund av brist på inkludering av alla parters perspektiv och tillgängliga kunskap. Det är mycket lättare att tala om inkludering av de påverkade samhällen och deras traditionella kunskap i konsekvensanalys-processerna än att faktiskt omsätta det i praktiken. Vi menar dock att detta inte bara är genomförbart utan helt nödvändigt om vi vill ha tillgång till en adekvat kunskapsbas utifrån vilken vi ska ta viktiga miljöbeslut.

Det måste också understrykas att renskötare, som har sedvanerätt som traditionella brukare av marken, har legitim rätt att vägra eller ta tillbaka medgivande, samt även att helt vägra dialog. Dessa rättigheter omfattas av internationell rätt även om många statliga regelverk och företag fortfarande inte erkänner dem.

Idag används olika typer av konsekvensanalyser i området kring polcirkeln. Dessa omfattar analyser av miljöpåverkan, social påverkan, biologisk mångfald, och på senare år, även analys av s.k. resiliens. Sådana analyser kan också kombineras, beroende på situation. Det verkar dock som att regelverken ofta inte är specifika i termer av vilken typ av analys, innehåll eller process som krävs enligt lag.

Det finns ett behov av att förbättra standarden som används i konsekvensanalyser och överenskommelser med renskötare så att även deras traditionella kunskap, perspektiv och erfarenheter inkluderas. I och med den snabba förändringen i Arktis får vi den bästa kunskapen i miljöfrågor genom att dra nytta av och kombinera både vetenskap och traditionella kunskapssystem. Att ta tillvara på traditionell kunskap innebär implicit också en naturlig involvering av urfolkssamhällena, just på grund av den traditionella kunskapens natur.

Denna rapport *är ett viktigt steg mot att utveckla nya sätt att göra konsekvensanalyser* som bygger på ett aktivt deltagande av de påverkade urfolksamhällena, inkluderandet av deras traditionella kunskap och respekt för deras rättigheter som urfolk. Å International Centre for Reindeer Husbandry:s vägnar

är jag mycket nöjd med samarbetet med denna rapport med Stockholm Environment Institute (SEI) och Stockholms Universitet. Vi hoppas att rapporten kan fungera som en viktig förebild som kan upprepas, följas och även förbättras.

Guovdageaidnu/ Kautokeino, Norway. April, 2019

Anders Oskal
Executive Director, International Centre for Reindeer Husbandry (ICR)

Appendix C. Tjåhkkájgiessem (Executive Summary, Pite Sami)

Tjuvvusa gruvvarahpamist Laverin, Älvsbynan, Semisjávr-Njárga tjälldáj

Dát tjála duohtadallá tjuvvusijt Bolidena plänidum gruvvast Laverin, Älvsbynan, Norrbottena länan, Semisjávr-Njárga tjielden, Svierje bielen. Plänidum gruvva lä Semisjávr-Njárga tjielde dállveguohtomiednamin ja jur dállveguohtomiednama lä gu “slieŋatjåddåg” båtsojviessoj. Tjällde lä juo dále nåvt garrasit gártjedum iedna ietjá näggimijst ja ävttjimusajst. Sebrulatja Semisjávr-Njárga tjielden sihti aj båhtej ájgen iemeláhkáj buhtsujt sujjtet dan dáfon. Sihti aj iemeláhkáj máhttet iednamav danne adnet båhtej buolvajda. Tjällde tuhttji gruvva hiereda dav adnemav ja vuasstala gruvvaplánajt Laverin.

Tjála lä tjáledum njuallga tjälldáj ja aj mierrádusdahkejijda åvvdåmärrkan åjváladtjajn, duobmoståvlåjn ja rärridusan, ja Bolidenij ja Bolidena lágedäjjijda (investerijijda). Ussjolmis lä gájjka åsáladtja gillgi ådtjot tjuhkkidum gåvåv dasste gukkte Semisjávr-Njárga tjällde vuajdná båhtjejájggáj ja mav gruvva Laverin maŋelt buakktá.

Dán tjállagin lä åjjveåmen guäkkte biehke. Vuostas biehken gävdnuj gruvva vuorrotjielgadus dálátj vijjurist (nåv guhtjudum “baseline-studie”). Dánne viddi gájjkásatj gåvåv Semisjávr-Njárga tjieldest ja dárrkelis gåvåv tjielde iednamadnemist. Maŋŋel vuosedi dálátj ja båhtej gártjedimijt man åvdån tjällde tjudtju.

Dan maŋŋel viddi gájjkásatj gåvåv båtsojsujto sosiálalatj ja kultuvralatj árvost ja jur Semisjávr-Njárga tjälldáj. Danne aj vuosedi gájjkásatj ävvtjimusajt man åvdån båtsojviesso tjudtju, daj lassánam industrijjalatj bargo ieme sáme dáfojn.

Tjállaga vuostas bähkke hiejteduvvu dajna gukkte gruvva bájdná båtsojviesov ja tjiegŋalup gukkte Jielleváre vuävvdetjällde dubbdi tjuvvusijt Bolidena Aitikgruvvast. Jielleváre vuävvdetjällde hulli åvvdåmärrkan mådde båtsojiejgáda lä virrtim häjjtet båtsojviesost binná guohtoma ja garra barrgonåre dehti. Idni gruvva lä åsse dan sivan. Nuora ie duosta állget båtsojviessoj ja de buallvamålssom nåhká. Åtsådallama Aitikgruvvast vuosedi gukkte himmsima majt tjällde dåbbdá (trafijka ja infrastruktuvra dehti) mähtti stuorábun sjaddat tjälldáj gu lä åvdep tjielgadusajn arrvedam. Gruvva ja dan infrastruktuvvra, nåv gu viega ja fábmolinja, mähtti aj stuorrot, ja ienap iednamijt anodit, jur gukkte Jielleváre vuävvdetjällde lä dåbbdåm Aitikgruvvast.

Tjállaga mubbe bähkke lä tjuovosanalysa Bolidena plänidum gruvvast Laverin. Kártajn vuosedi vuostak ietj gruvvav ja himmsidum dáfov, ja de gájjká dálátj ja plänidum näggimijt Semisjávr-Njárga dállveguohtomiednamij nuarrtan. Kárta vuosedi jus gruvva sjaddá de hallva gájka dállveguohtomiednama nuarrtan bájneduvvuji näggimist jalá himmsimist. Dan maŋŋel dihki kvalitatijvalatj tjiegŋalisanalysav gukkte dal vijor Semisjávr-Njárga tjielden máhttá åvvdånit jus plänidum gruvva sjaddá vaj ij sjadda, maggár njuallga jalá ietjá tjuvvusa da alternatijva bukkti. Vaj struktuvrav dahkat de senárionanalysa tjaraduvvu. Senárioanalysan åtsådi guäkkte åjjvesenáriojt: nåv guhtjudum nållå-senário gåsse vijor åvvdåna udnátj biejve máhttelisvuoda mehti ja jus gruvva ij sjadda, ja senário gåsse gruvva állgá. Gåbbátjak senário lä 2025 rájest, dan bájken gu arrvedi gruvva lä ållásit bargon.

Båhtejájjgesenárion gåsse vijor åvvdåna udnátj biejve máhttelisvuoda mehti ja gåsse gruvva ij sjadda, de gävdnu vuorro nanos båtsojviessoj, vajgu tjällde lijjká tjudtju umas ävvtjimusaj åvdån. Tjielden lij gujt buorak máhttelisvuoda båhtejájgen åvdåsbuäkktet båtsojviesov, iemelágátj máhtov, sámegielav ja dan tjara aj sáme kultuvrav båhtej buolvajda.

Båhtejájjgesenárion gåsse gruvva rahppasa de sáme båtsojviesso, gu buhtsu väjjto guhtu, ij lä máhttelis Laverin. Båtsojsujtára idni guäkkte alternatijva dan sajen. Vuostas alternatijvan båtsojsujtára näggiduvvuji bäbbmat buhtsujt foderijn gietjo dálvev. Buhtsubäbbmam galgaj vuoron virrtodit båtsojviesov ja båtsojjábev. Tjielde miela mehti ij lä desti iemelágátj sáme båtsojsujjto natuvvraguohtoma vuoron gånne buhtsu idni umas guohtomiednamijt jábe tjara. Dat lij sämmá gu “buhtsufarming” gånne buhtsu lä gierdan ja gånne bebbmi buhtsujt gunnik “klihtarijt jalá sávtsajt”. Dat lä tjielde mielan ullu ietjá gu sáme kultuvvra ja sáme vuojdno båtsojsujjtoj: “Dal dat ij lä båtsojviesso”, mij lä dán tjállaga namma. Da teknijka ällä nåv ninnusa gu dagadi gårådup vijjurijt juhtusijda ja ilá lussis

barrgonårev. Båtsojsujtára verrtiji ájge mehti häjjtet båtsojviesost. Buallvamållsom dállvesijdan nåhká dan tjara ja dán dáfo iemelágátj máhtto båtsojvieso birra aj nåhká.

Mubbe alternatijjva båhtejájjgesenárion gånne gruvva sjaddá lä jut dállvesijjda verrti guorret Laverav ållásit. Dan sajen verrtiji adnet ietjá dállveguohtomiednamijt tjielde sinne ja adnet birrajábeiednamijt ienabut. Dan senárion verrtiji tjielde sinne unnedit ielojt sjiehtadit ietjase årrå gártjedimijda. Dat dahká konfliktajt tjielden ja bajjelguohtomav dállveguohtomiednamijn ja birrajábeiednamijn. Dat rávvká stuora lasedimev biebmojst ja dasste buhti tjuolma danen gu ietjá guohtomiednama gártjeduvvuji garrasit. Iedna båtsojsujtára verrtiji häjjtet båtsojviesost dán senárion aj binná guohtoma ja lussis barrgonåre dehti. Dan tjara nihteduvvu buallvamållsoma aj. Nuora vujdni juo udnátj biejve stuora huksuv båhtejájge båtsojviessoj ja daggár åvdedibme dahká ienap nuora e duosta båtsojviessoj állget.

Gåbbátjak alternatijva bukkti vijdáp tjuvvusijt gájkajda tjielden. Åvvdåmärrkan sjiddi binnáp (binnu) båtsojsujtára kollektijva barrgoj. Tjällde tuhttjij lä juo ilá binná båtsojsujtára ja danen barrgonårre galgaj vil lassánit gájkajda tjielden. Gävdnu várrá, tjielde miela mehti, jut dagada “domino-effäkkta” tjielden, gunne ienap ja ienap hejjti båtsojviesost. Jielleváre vuävvdetjielde dåbdo Aitikgruvva hárráj dajt konklusjuvnajt dårjodi.

Tjállaga konklusjuvna verrtiji diedon stuoráp perspektijvan skeniduvvut. Gåbbátjak Laver ja Aitik vuosedi tjällgasit gukkte gruvva máhttá “miŋijmus gujkudasan” dubbdut tjälldáj mij lä juo garrasit gártjedum. Jus lagabujt giehtjadallá tjielde dåbddoj umas industrijjalatj projektajda de vujdnu daggár trännda. Tjeldijn ságastilli gukkte ienap ja ienap båtsojsujtára usjudi båtsojviesost häjjtet jur tjuhkkidum dieddo dehti. Iedna båtsojsujtára Svierjen udnátj biejven hulli da lä “ullim raddev”; “e gierda ienap näggimijt”; ja “miŋijmus iednama lä gáhtomin”. Sämmáláhkáj iedna sáme nuora dubbdi man vájjve lä álgget båtsojviessoj udnátj vijjurijn. Gu industrija bargo nihtti båtsojviesov de nihtti aj sáme kultuvrav. Iedna båtsojsujtára ja daj fuolke dav skeniji. Dán tjállaga ulbme lä vuosedit jur Semisjávr-Njárga vuojnov dán tjualbmaj.

Miŋijmust ij lä dát åvdåsbarrgo rahtjam ålles almatjräkktaguoradallamav Lavergruvvaj dahkat. Tjeldijn lä lága mehti åbmesuojje iednamijda ja akktagatj båtsojsujtár adná riektav ietjas kultuvvraj - båtsojvieso tjara. Ij aktak máhte tjuodtjodit ja bielostit exploateringist. Lä gujt tjielgas, dasste majt vuosedi, jus gruvva Laverin sjaddá de näggi guhka ájgev 1) tjielde åbmeriektav, gruvva plänidum sajje gassko dállveguohtomiednamij dehti, ja 2) akktagatj båtsojsujtára räkkta ietjas kultuvvraj, danen gu mådde båtsojsujtárijt båtsojviesost bagesti. Ålles almatjräkktaguoradallam Lavergruvvaj sjähttá gu gallgá vijdábut gähttjalit gruvva bájdnemav sáme riektajda. Verrti danne mierredit jus låhpe gruvvarahpamij tjuvvu rijkajgasskasatj konvensjuvnajt majt Svärdje lä låhpedam ullidit ja aj Bolidena policiajt majt Boliden lä välldám ietjas vidno dehti.

Appendix D. Čoahkkáigeassu (Executive Summary, Northern Sami)

Raporta gieđahallá Bolidena plánen ruvkke čuovvumušaid Semisjaur Njarg čerrui Lávareguorbbas, Ientjaválles, Norrbottena leanas Ruoŧa bealde Sámis. Plánejuvvon ruvke lea čearu dálveguohtumiin ja aiddo dálveguohtumat leat “boahtalčotta” boazodollui. Čearru lea jo dál deddon ollu sisabahkkemiiguin ja hástalusaiguin. Semisjaur Njarg háliida sáhttit doallat rievttis joatkit árbevirolaš boazodoalu guovllus. Sii maiddái háliidit hálddašit sin árbevirolaš eanangeavaheami guovllus boahttevaš buolvvaide. Čearru oaidná, ahte ruvke livččii dahkan dan veadjemeahttumin ja vuosttilda danin ruvkeásaheami Lávareguorbbas.

Raporta lea oaivvilduvvon čearuide, muhto maiddái mearrádusdahkkiide ee. eiseválddiide, duopmostuoluide ja ráđđehussii, seammás Bolidenii ja Bolidena berošteddjiide (nugo investerejeddjiide). Áigumuš lea ahte buot oassálaččat ožžot čoahkkáigesson gova mo Semisjaur Njarg oaidná boahttevuođas ja maid Lávareguorbba ruvke mielddisbuvttášii sidjiide.

Raporta sisttisdoallá guokte oasi. Vuosttas oassi sisttisdoallá ovtta vuođđočielggadeami otná dilis (dahje nu gohčoduvvon ”vuođđolinnjá”-dutkosa). Das addo oppalaš govvádus Semisjaur Njarg čearu birra ja detaljerejuvvon govvádus sin eanangeavaheamis. Dasto čielggaduvvo sin dálá ja boahttevaš sisabahkkemat maid vuostá čearru čuožžu dál. Dan maŋŋá čielggaduvvo boazodoalu sosiála ja kultuvrralaš mearkkašupmi oppalaččat ja erenomážit Semisjaur Njarg čearu birra. Das govviduvvo maid boazodoalu oppalaš hástalusat nugo lássanan industriála doaimmat árbevirolaš sámi guovlluin.

Vuosttas oassi raporttas loahpahuvvo oppalaš máhttogeahčastagain ruvkedoalu váikkuhusain boazodollui čiekŋalis čiekŋudemiin mo Jiellevári vuovdečearru vásiha Bolidena Aitika ruvkke čuovvumušaid. Jiellevári vuovdečearru muitala ovdamearkka dihtii, ahte ollu boazodoallit bákkuin šadde heaitit boazodoaluin dan geažil go ii lean šat guohttun ja lei mielahis bargonoađđi, dieppe gos ruvke oidnojuvvo váikkuheaddji sivvan. Nuorat, vuorustis eai duostta áŋgiruššat boazodoalu ovddas ja sohkabuolvamolsun ii leat dáhpáhuvvan. Vásáhusat Aitik-ruvkkes čájehit maiddái mo čearu vásihan hehttehusat (johtolaga ja infrastruktuvrra geažil) sáhttet šaddá stuorit go navdojuvvo ovdačielggademiin. Ruvke ja dan infrastruktuvra nugo geainnut ja elfápmolinnját sáhttet maiddái ”stuorrut” ja dahkat vahága eanet eatnamiidda, aiddo nugo Jiellevári čearru lea vásihan Aitika oktavuođas.

Raportta nubbi oassi lea čuovvumušguorahallan Bolidena plánen ruvkke birra Lávareguorbbas. Das čielggaduvvo kárttaiguin vuos ruvkke ja dan hehttenguovllut ja dan maŋŋá ovttas jo dálá ja plánejuvvon sisabahkkemat Semisjaur Njárgga davvedálveguohtumiin. Kárttat čájehit, ahte jus ruvke šaddá de measta buot Semisjaur Njárgga davvedálveguohtumat váikkuhuvvojit sisabahkkemiiguin dahje hehttehusaiguin. Dan maŋŋá dahkko čiekŋalis guorahallan mo dilli Semisjaur Njárggas sáhttá ovdánit plánejuvvon Lávareguorbba ruvkke šattaš dahje ii ja makkár njuolggo ja eahpenjuolgga čuovvumušaid dat sierralágan molssaeavttut sáhttet sisttisdoallat. Vai sáhteš struktureret dán de heivehuvvo dás nu gohččoduvvon senárioguorahallan. Senárioguorahallamis dutkojuvvo guokte sierra váldosenário: okta nu gohččoduvvon nollasenário, goas dilli ovdána dálá eavttuiguin ja ruvkedoallu ii boađe doibmii, ja maid senárioin goas ruvke doaibmagoahtá. Guktot senáriot dáhpáhuvvet 2025 rájes dan dihtii go dat lea sullii dalle go vejolaš ruvke livččii olles doaimmas.

Dakkár boahttevuođasenários mas dilli ovdána dálá eavttuiguin ja ruvkedoallu ii boađe doibmii, das livčče eavttut joatki ealli boazodoalu, vaikko čearus goittotge livčče eatnat hástalusat. Čearru livččii sáhttán atnit buorre boahttevuođavejolašvuođaid fievrridit boazodoalu, árbevirolaš máhtu, sámegiela - ja dasa lassin sámekultuvrra – boahttevaš buolvvaide.

Boahttevuođasenários, mas ruvke boahtá, de dat sisttisdoalašii ahte sámi boazodoallu dahkko veadjemeahttumin Lávareguorbba guovllus. Dalle boazodolliin livčče guokte molssaeavttu. Vuosttas molssaeavttus boazodoallit bággejuvvošedje biebmat bohccuidis Lávareguorbbas dálvvi badjel. Bohccuid biebman rievddašii boazodoalu jahkegierddu ja boazodoalu nu ahte čearu mielde, ii šat livččii gažaldat ”árbevirolaš sámi boazodoalus” mii vuođđuduvvá guohtumii gos bohccot ávkkástallet sierralágan guohtuneatnamiid sierra áigodagaid áigge miehtá jagi. Dat livččii nappoge ”boazofarmen” – gos bohccot áidojuvvojit dahje bibmojit nugo ”oamit dahje sávzzat”. Dat lea juoidá čearu mielde mii vuđolaččat spiehkasta sámekultuvrras ja sámi oainnus boazodoalu hárrá. Das duohko dat teknihkalaš doaibmabijut eai leat doallevaččat guhkkit áigge – dan geažil ahte heittogut eallibirgemis ja mearihis bargonoađis

– ja boazodoallit bággejuvvošedje veházid mielde heaitit bohccuiguin. Dat sisttisdoalašii, ahte sohkabuolvamolsun siiddas nogašii ja báikkálaš árbevirolaš boazodoallomáhtu jávkkašii guovllus.

Nubbi boahttevuođasenário molssaeavttus, das ahte ruvke boađášii lea dat, ahte Lávareguorbba siida guođđá ollásit Lávareguorbbas. Dan sajis bággejuvvojit dat geavahit eará dálveguohtumiid gilis seammás go ávkkástallat birrajagieatnamiid viehka olu eanet. Dan senários dárbbašivčče olusat čearus geahpidit ealuset heivehan dihtii ođđa ráddjemiidda, muhto maiddái eatnáš boazodoallit bággejuvvošedje heaitit. Dat fas dagahivčči konflivttaid čearu siste ja maid guorbama nu dálveguohtumiin go birrajagieatnamiin. Dat gáibidivčči biebmama garra lassáneapmi, mii mielddisbuvttášii váttisvuođaid buorre guohtuneatnamiid ráddjemiid geažil. Maiddái dán senários sohkabuolvamolson livčči áitaga vuolde. Nuorat oidnet otná beaivve jo boahttevuohta boazodoalus stuorra fuolastuvvamiin ja dakkár ovdáneapmi dagahivčči ahte eambbo nuorat eai duosttaše áŋgiruššat boazodollui ektui.

Guktot molssaeavttut buvttášedje guhkesáigásaš čuovvumušaid buohkaide čearus. Dat livčče ee. vátnásut boazodoallit kollektiiva bargui. Čearru vásiha ahte dat dál jo lea beare vánis ja bargonoađđi šattašii eanet buohkaide čearus. Dat lea uhkki dasa, čearu mielde, dolvvošii domino-váikkuhussii čearus, gos eambbosat ja eambbosat heaittášedje. Jiellevári vuovdečearu vásáhusat Aitik-ruvkkes dorjot daid gávnnahemiid.

Raportta gávnnaheamit berrejit máid áddejuvvot stuorat geahččanguovllus. Sihke Lávareguorbba ja Aitik govvidit bures mo ruvke vásihuvvo ”maŋemuš goaikkanassan” čerrui mii dál jo lea deddon ávkkástallamiiguin ja sisabahkkemiiguin. Geahčadettiin čearu vásáhusaid industriála prošeavttain de fuomáša treandda. Ollu čearut ságastallet mo eanet ah eanet boazodolliin leat jurdagat guođđit boazodoalu aiddo fal deattu geažil. Ollu boazodoallit Ruoŧas addet odne čájehit ahte otná beaivvi dilis leat ”rájá alde”; ahte dat ”eai gierdda eambbo sisabahkkemiid”; ja ahte dat leat ”maŋemuš eatnamat mat leat jávkamin”. Seammá láhkái áddejit ollu nuorat ahte dat lea hirbmat váttis álggahit boazodoalus otná eavttuiguin. Go boazodoallu uhkiduvvo industriála doaimmaiguin, de uhkiduvvo maiddái sámekultuvra ja dat lea aiddo dat čanus ollu boazodolliide ja bearrašiidda. Raporta ulbmilin lea čájehit juste Semisjaur Njárgga čearu oaivila dán problematihkkii.

Loahpas, dutkamušas ii leamaš viggamuš čađahit oppalaš olmmošriektečielggadeami Lávareguorbba ruvkke oktavuođas. Lága mielde čearuin lea opmodatsuodji eatnamiidda ja ovttaskas boazodolliin lea riekti hárjehit kultuvrraset – boazodoalu bokte – almma dan haga ahte čielgasit bealuštuvvo sisabahkkemiin. Dat lea goittotge čielggas, daid duođaštusaid vehkiin mat dás čájehuvvojit ahte Lávareguorbba ruvke sisttisdoalašii guhkes geahpidemiid 1) čearu oamastanrievtti govdu dan geažil go ruvkke plánejuvvon báiki lea guovdu čearu dálveguohtumiid ja 2) ovttaskas boazodolliid rievtti iežas kultuvrii danin go ollu boazodoallit livčče bággejuvvon eret boazodoalus. Dievaslaš olmmošriektečielggadus Lávareguorbba ruvkke guovdu leaš heivvolaš ruvkke sámerievttálaš váikkuhusaid iskkademiid oktavuođas. Dat čielggadan dihtii, ahte doallágo ruvkelohpi riikkaidgaskasaš konvenšuvnnaid maid Ruoŧŧa lea geatnegahtton ollašuhttit ja maiddái Boliden iežas policiaid dihtii.

Appendix E. Sammanfattning (Executive Summary, Swedish)

Denna rapport berör konsekvenserna av Bolidens planerade gruva på den svenska sidan av Sápmi i Laver, Älvsbyn, Norrbottens län, för Semisjaur Njarg sameby. Den planerade gruvan ligger på Semisjaur Njarg samebys vinterbetesmarker, och just vinterbetesmarkerna är “flaskhalsen” för renskötseln. Samebyn är redan idag hårt utsatt för ett flertal andra intrång och utmaningar. Medlemmarna i Semisjaur Njarg sameby vill även fortsättningsvis kunna åtnjuta sin rätt att bedriva traditionell renskötsel i området. De vill också kunna förvalta sin traditionella markanvändning i området för kommande generationer. Samebyn anser att en gruva skulle omöjliggöra detta och motsätter sig därför en gruvetablering i Laver.

Rapporten riktar sig dels till själva samebyn, men också till beslutsfattare bl.a. på myndigheter, domstolar och i regeringen, samt även till Boliden och Bolidens intressenter (t.ex. investerare). Tanken är att alla inblandade parter ska få en samlad bild på hur Semisjaur Njarg sameby ser på sin framtid och vad en gruva i Laver skulle innebära för dem.

Denna rapport består i huvudsak av två delar. Den första delen innefattar en grundutredning av dagens situation (dvs. en så kallad ”baseline-studie”). Här ges en övergripande beskrivning av Semisjaur Njarg sameby, samt en detaljerad beskrivning av samebyns markanvändning. Sedan redovisas de nuvarande och kommande intrång samebyn står inför. Därefter ges en generell beskrivning av renskötselns sociala och kulturella betydelse, samt specifikt för just Semisjaur Njarg sameby. Här beskrivs även de generella utmaningar renskötseln står inför, med de ökade industriella aktiviteterna i traditionella samiska områden.

Första delen av rapporten avslutas med en kunskapsöversikt av gruvnäringens påverkan på renskötseln samt en djupdykning i hur Gällivare skogssameby upplever konsekvenserna av Bolidens Aitikgruva. Gällivare skogssameby uppger exempelvis att ett flertal renskötare varit tvungna att lägga ner med sin renskötsel pga. betesbrist och orimlig arbetsbörda, där gruvan anses vara en bidragande orsak. Ungdomar, i sin tur, vågar inte satsa på renskötseln och generationsväxlingen har uteblivit. Erfarenheterna från Aitikgruvan visar också hur de störningar en sameby upplever (pga. trafik och infrastruktur) kan bli mycket större än det som antas i de inledande utredningar som görs. En gruva och dess infrastruktur, såsom vägar och kraftledningar, kan också ”växa” och göra anspråk på allt mer mark, precis som Gällivare skogssameby har upplevt i fallet med Aitik.

Den andra delen i rapporten består av själva konsekvensanalysen av Bolidens planerade gruva i Laver. Här redovisas på kartor först själva gruvan med dess störningszon, och sedan tillsammans med samtliga befintliga och planerade intrång i Semisjaur Njargs norra vinterbetesmarker. Dessa kartor visar att om gruvan blir av kommer nästan samtliga av Semisjaur Njargs norra vinterbetesmarker vara påverkade av ett intrång eller störning. Därefter görs en kvalitativ djupanalys av hur situationen för Semisjaur Njarg sameby kan utvecklas om den planerade gruvan i Laver blir av/inte blir av, och vilka direkta och indirekta konsekvenser dessa olika alternativ kan innebära. För att strukturera upp detta tillämpas en så kallad scenarioanalys. I scenarioanalysen undersöks två olika huvudscenarion: ett så kallat noll-scenario, då situationen utvecklas enligt dagens förutsättningar och gruvdriften inte kommer till stånd, samt ett scenario där gruvan kommer i drift. Båda scenarion utspelar sig från år 2025, eftersom det är ungefär då en eventuell gruva antas vara i full gång.

I ett framtidsscenario där situationen utvecklas enligt dagens förutsättningar och gruvdriften inte kommer till stånd, skulle det finnas förutsättningar för en fortsatt livskraftig renskötseln, även om samebyn ändå skulle stå inför en rad utmaningar. Samebyn skulle dock ha goda framtidsmöjligheter att föra vidare renskötsel, traditionell kunskap, det samiska språket och därmed också den samiska kulturen till kommande generationer.

I ett framtidsscenario där gruvan blir av, skulle detta innebära att samisk renskötsel - baserat på friströvande renar på naturbete - omöjliggörs i Laverområdet. Istället skulle renskötarna ha två olika alternativ. I det första alternativet skulle renskötarna tvingas utfodra sina renar i Laver under hela vintern. Utfodringar av renar skulle så fundamentalt ändra på renskötseln och dess årscykel, att det, enligt samebyn, inte längre skulle vara en fråga om traditionell samisk renskötsel, baserad på naturbete där renarna nyttjar olika betesmarker under årets olika säsonger. Det skulle istället likställas med

”renfarmning” där renar hålls i häng, eller utfodras som ”boskap eller får”. Detta är något som enligt samebyn fundamentalt avviker från den samiska kulturen och den samiska synen på renskötsel. Vidare skulle dessa tekniska åtgärder inte vara hållbara i längden pga. en sämre djurvälfärd och en ohållbar arbetsbelastning. Renskötarna skulle så småningom tvingas sluta med renskötseln. Detta skulle innebära att generationsväxlingen inom vinterguppen upphör, och den lokala traditionella kunskapen om renskötseln i området går förlorad.

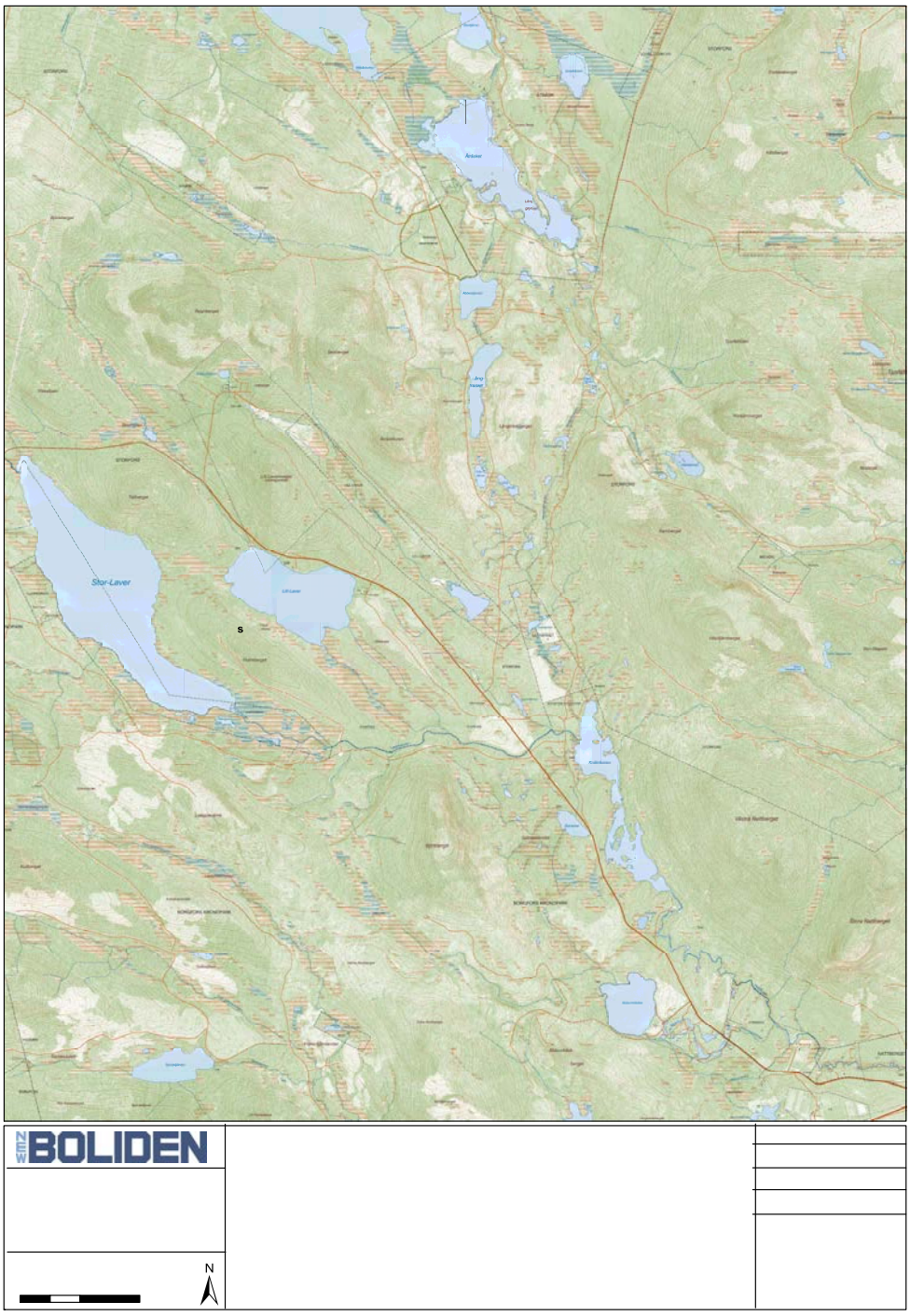
Ett andra alternativ i det framtidsscenario där gruvan blir av är att vintergruppen i Laver lämnar Laver helt. Istället tvingas de nyttja andra vinterbetesmarker inom samebyn samt nyttja året-runt-markerna i högre grad. I detta scenario skulle fler inom samebyn behöva minska på sina hjordar för att anpassa sig till de nya begränsningarna. Detta, i sin tur, skulle leda till konflikter inom samebyn, samt överbetning på både vinterbetesmarkerna och året-runt-markerna. En rejäl utökning av utfodringen skulle krävas, med medföljande problem, på grund av väsentliga begränsningar i de övriga betesmarkerna. Men även i detta scenario skulle ett flertal renskötare tvingas sluta på grund av betesbrist och oöverkomlig arbetsbörda. Därmed skulle också generationsväxlingen äventyras. Ungdomarna ser redan idag med stor oro på sin framtid inom renskötseln och en sådan utveckling skulle bidra till att flera ungdomar inte vågar satsa på renskötseln.

Bägge alternativ skulle få långtgående konsekvenser för samtliga i samebyn. Det skulle bl.a. finnas färre renskötare till det kollektiva arbetet. Samebyn upplever att de redan är för få och arbetsbelastningen skulle bli än högre för alla i samebyn. Det finns risk att detta, enligt samebyn, skulle leda till en ”domino-effekt” i byn, där fler och fler lägger ner. Dessa slutsatser stöds av de erfarenheter Gällivare skogssameby har av Aitikgruvan.

Rapportens slutsatser måste även förstås ur ett större perspektiv. Både Laver och Aitik illustrerar tydligt hur en gruva kan upplevas som ”sista droppen” för en sameby som redan är hårt utsatt av andra exploateringar och intrång. Tittar man närmare på samebyars erfarenheter av olika industriella projekt så märks en sådan trend. Det diskuteras inom olika samebyar hur allt fler renskötare har funderingar på att lämna renskötseln just på grund av det samlade trycket. Många renskötare i Sverige ger idag utryck för att de i dagsläget är ”på gränsen”; att de ”inte tål flera intrång”; och att det är ”de sista markerna som håller på att försvinna”. På samma sätt uppfattar många samiska ungdomar att det är svårt att ta sig in i renskötseln med dagens förutsättningar. När renskötseln hotas av industriella aktiviteter, så hotas även den samiska kulturen, och det är precis den kopplingen många renskötare och deras familjer gör. Denna rapport syftar till att redovisa just Semisjaur Njargs samebys syn på denna problematik.

Slutligen har denna studie inte haft som ambition att genomföra en fullständig människorättsutredning för Lavergruvan. Samebyar har enligt lag ett egendomsskydd för sina marker, och enskilda renskötare har en rätt att utöva sin kultur – via renskötseln – utan att den påtagligt försvaras av exploateringar. Det är dock tydligt, utifrån den evidens som redovisas, att en gruva i Laver skulle innebära långtgående inskränkningar i 1) samebyns egendomsrätt, p.g.a. av gruvans planerade placering mitt i samebyns vinterbetesmarker, samt 2) de enskilda renskötarnas rätt till sin kultur, eftersom ett flertal renskötare skulle slås ut ur renskötseln. En fullständig människorättsutredning för Lavergruvan torde därför vara lämplig inför en vidare prövning av gruvans påverkan på samiska rättigheter. Detta för att fastställa om ett tillstånd till gruvan skulle vara förenligt, dels med de internationella konventioner som Sverige har att förhålla sig till, dels med de åtaganden som Boliden gör i sina egna företagsriktlinjer.

Appendix F. Land ownership map of Laver concession area



The concession area covers the following properties and land owners: Storfors 4:2 (Boliden); Storfors 4:3 (Boliden); Lill-Laver 1:2 (Boliden); and Storfors 4:6 (Sveaskog).

Source: Lindeström and Eriksson (2015).

SEI Headquarters

Linnégatan 87D Box 24218
104 51 Stockholm Sweden
Tel: +46 8 30 80 44
info@sei.org

Måns Nilsson
Executive Director

SEI Africa

World Agroforestry Centre
United Nations Avenue
Gigiri P.O. Box 30677
Nairobi 00100 Kenya
Tel: +254 20 722 4886
info-Africa@sei.org

Philip Osano
Centre Director

SEI Asia

15th Floor Witthyakit Building
254 Chulalongkorn University
Chulalongkorn Soi 64 Phyathai Road
Pathumwan Bangkok 10330 Thailand
Tel: +66 2 251 4415
info-Asia@sei.org

Niall O'Connor
Centre Director

SEI Tallinn

Arsenal Centre
Erika 14, 10416
Tallinn, Estonia
info-Tallinn@sei.org

Lauri Tammiste
Centre Director

SEI Oxford

Florence House 29 Grove Street
Summertown Oxford
OX2 7JT UK
Tel: +44 1865 42 6316
info-Oxford@sei.org

Ruth Butterfield
Centre Director

SEI US
Main Office

11 Curtis Avenue
Somerville MA 02144-1224 USA
Tel: +1 617 627 3786
info-US@sei.org

Michael Lazarus
Centre Director

SEI US
Davis Office

400 F Street
Davis CA 95616 USA
Tel: +1 530 753 3035

SEI US
Seattle Office

1402 Third Avenue Suite 900
Seattle WA 98101 USA
Tel: +1 206 547 4000

SEI York

University of York
Heslington York
YO10 5DD UK
Tel: +44 1904 32 2897
info-York@sei.org

Lisa Emberson
Centre Director

SEI Latin America

Calle 71 # 11–10
Oficina 801
Bogota Colombia
Tel: +57 1 6355319
info-LatinAmerica@sei.org

David Purkey
Centre Director

SEI Stockholm Environment Institute

sei.org

@SEIresearch @SEIclimate