university of groningen

Multiple Threat Analysis and Sámi Environmentalism in Idre Sameby

A Multiple Threat Analysis Using Social Impact Assessment Within a Context of Sámi Environmentalism in Idre, the Most Southern Sameby in Sweden

As long as we have water, where fish swim
As long as we have lands, where reindeer graze and wander
As long as we have grounds, where wild animals hide
Then we have consolation on this earth
When our homes have been destroyed and our lands devastated
– where will we live?

Paulus Utsi, Sámi poet. Translated by Margaret Rainey

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To Peter and Helena, Thomas, Elias, Gunhild, to the people working at Renbiten and to all the other people who helped me in the process of writing this thesis: Jïjnh gyjhteles!

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List of Abbreviations

TEK	**Traditional Ecological Knowledge**
STF	**Svenska Turistföreningen/Swedissh Tourist Association**
RHA	**Reindeer Herding Act**
CBFM	**Community based forest management**
SVT	**Sveriges Television/National broadcaster Sweden**

Introduction

In recent years I have found great comfort in researching environmentalism from both a geographical as well as an anthropological perspective and supported on a fundament of social impact assessment practices. Working from both a geographical as well as an anthropological perspective I have found the perfect equipment for analyzing culture-nature dichotomies in society, and, especially in cosmologies and religion of Indigenous peoples. My interest in Indigenous knowledge is bound to critical assessing our global, capitalist, societies. How do people on the fringes of our continents deal with environment and nature? How does place identity or attachment, or in some cases place dependency affect Indigenous peoples in their interaction with nature? What do their cosmologies tell us about the importance of place in relation to the natural environment? And how can they deal with threats as a result of encroachment?

Two papers I wrote for the master's programme of Cultural Geography were a social impact assessment of the relocation of Kiruna on the Laevas and Gabna samebyar[1] and an analysis of the importance of place in Mapuche cosmology and narrative. In the latter I argued that this cosmology incorporates a different and more holistic approach to nature and environment than Western societies tend to do. With the case of the Mapuche, one does not have to dive deep to understand that land, or nature and place together, means a lot to them. Mapuche literally means 'People of the Land' (*Mapu* = land, *che* = people) (Ray, 2007). As I argued in the paper, this might seem odd to the Western concept of identity, Western ideas of what labels to attach to ourselves, whether they are racial, cultural, religious, geographical or ideological, are almost as various as we are (Ibid). For many Indigenous societies, however, this is slightly different. It is quite simple: they are the people of the land, inextricably bound to it (Turi, 1910). Moreover, what many Indigenous peoples share is the centrality of the importance of the earth, of land, culturally and historically (Ray, 2007). It is an element of their identity. Much of the land, designated for Indigenous peoples, is, however, decreasing as property and as an ecosystem. This makes that Indigenous people are congregating and organizing protests for both land claims as well as for environmental conservation (Akhtar, 2013).

As I will argue in this thesis, environmentalism has been a major aspect of the construction of Indigenous identities, due to the holistic cosmovision of many Indigenous peoples (Key, 1998). Through the intimate bond the people have and had with their ancestral lands, for a multitude of reasons, this environmentalism became a tool in the fight for land rights, conservation of the ecosystems, and a denominator in the construction of identity (Akthar, 2013). Since its arrival in nineteenth-century Europe, modern capitalism has been accompanied by the dismantling of cultural forms, traditions, and meanings that constitute an obstacle to flexibility and the absolute availability of human beings for

[1] A sameby is a geographical area as well as organization and administration for reindeer husbandry. samebyar is plural. In Southern Sámi this is called a Sijte.

continuous mobilization; environmental destruction has been a crucial aspect of this (Kowalczyk, 2013). It has however also created many opportunities. My aim in this thesis is not to condemn capitalism rather as to find ways to mitigate the impacts that come with it for, in this case, the Sámi of Idre sameby. I will do that by asking advice and knowledge from members of Idre sameby.

I mentioned the Mapuche before because I had the privilege to write a paper on their relationship with their environment but to be able to visit, live, research with, and learn from Indigenous people I wanted to return to a place that had struck my attention. When I was on a skiing holiday in Sweden, I visited Peter and Helena. They own a store, called Renbiten, in Storsätern, north of Idre. I went on a tour with them, to see reindeer and to learn a bit more about the Sámi in Idre. Just five minutes after the tour started Peter broke a twig from a tree, covered in lichen. It was for the reindeer he said. He then thanked the tree, took a pinecone from the soil, and buried it. Give and take he said. Peter also told me a little bit about the impacts of Idre Fjäll, of tourism, and of forestry. I went home with a book originally written by Johan Turi. An account of the Sámi. This sparked my interest even more. Being home I started doing more research on the Sámi in Idre.

In an article from Engström and Boluk (2012), called "The Battlefield of The Mountain: Exploring the Conflict of Tourism Development on the Three Peaks in Idre, Sweden" the compromised position of the Sámi came to the fore. A megalomanic project aimed at the enlargement of the ski-resort with little regard of the Sámi of Idre. After doing more research on existing literature, the conclusion was that, besides the Engström and Boluk article, most other articles involve Idre as a case study, at most. Although there is some literature available in Swedish, a more comprehensive study in English, including both anthropological elements as well as elements from cultural geography, did not exist. There are, however, a lot of tourism folders, since Idre sameby is the most southern sameby in the whole of Sápmi (the land of the Sámi) and is therefore best accessible from other countries as well as the majority of both Swedish and Norwegian population centers. After the talk with Peter, the conclusion was that the Sámi in Idre do experience threats regarding their way of life, herding reindeer, just as much as in Northern Sweden. More research on this area was necessary.

Although the Sámi are associated with reindeer husbandry, only a minority (about 10%) is in fact still practicing herding and making this their way of earning a living. For centuries, the Sámi led a nomadic lifestyle: reindeer herding, hunting, fishing, and shamanism have constituted important elements of Sámi's traditional livelihood (Spzak, 2019). In particular, Sámi culture cannot exist without reindeer herding as the reindeer is an inherent part of the Sami culture (Bunikowski, 2014).

In the literature reviewed for the paper on the Sámi in Kiruna, I found that the reindeer is a sensitive animal. The amount of tourism in the area (Idre Fjäll has than 600.000 guest nights per winter) could not be left unnoticed. Indeed, the reindeer in Idre is changing its migration pattern but not only as a result of tourism. Forestry, landownership disputes, and climate change all pose threats to the

reindeer and the reindeer herder, and, therewith, Idre sameby. Answers to these threats lie foremost in Indigenous environmental knowledge, and the fact that due to their sense of place, the Sámi might be considered the best caretakers of their lands, from both adaptive as well as conservationist points of view. Subsequently, the necessity for the recognition and validation of historical land rights of the Sámi in Sweden must be discussed. An important question that rises is: 'Is there such a thing as intrinsic environmentalism when it comes to the Sámi?' And 'What are the impacts as a result from tourism, forestry, landowner disputes and climate change?' 'What are effective mitigation efforts and proposals?' And: 'Do effective mitigation efforts and proposals indeed lie in Indigenous environmental knowledge?' In this thesis I will provide an answer to these questions.

The aim of this thesis is thus to investigate whether there is a form of Sámi environmentalism that, in relation to multiple threats and related impacts in the context of Idre sameby, can be used to mitigate the impacts that these multitude of threats has. Moreover, other mitigation efforts and proposals will be discussed. The first objective of this thesis is to provide a conceptual framework for discussions revolving Indigenous people, Indigenous environmentalism, and, more specifically the Sámi and Sámi environmentalism, and even more specifically, the Sámi in Idre, this, to establish an understanding of the Sámi perspective on the environment emanating from their value system. Subsequently, the threats, trends and stakeholders are introduced followed, in chapter two, by an assessment of these impacts. In chapter three, the extent to which these impacts are, or can be mitigated, what mitigation efforts are being practiced, what forms of mitigation are proposed and whether mitigation is adequate will be discussed. Moreover, the mitigation efforts, and proposals, or recommendations, will be analyzed which can additionally support findings on Sámi environmentalism and the use of Sámi/Indigenous environmental knowledge as adaptive measures to environmental degradation and climate change. Furthermore, based in social impact assessment discourse this thesis is intending to not only be a case study in itself, but an analysis of the social impacts and mitigation attempts applicable to similar situations regarding the Sámi people and reindeer herding livelihoods.

Methodology

The overarching methodological framework is based in case study research, using a multi-methods approach. The analysis in this thesis is based primarily on a qualitative content analysis of semi-structured interviews, conducted in the summer of 2019, which discuss the impacts of forestry, tourism, land disputes and legal issues and climate change on reindeer herding and, as such, traditional Sámi culture and therewith the Sámi people in the context of Idre sameby. Through Google Scholar and the main Google search engine articles and news items were found relating to these issues, the Sámi in Idre, mitigation efforts in practice, and mitigation proposals. A Sámi family in Idre helped in this process by cooperation for the interviews and they provided more literature. This literature is in Swedish and is called: "Samekulturen I Idre" (Sámi culture in Idre) and was written by Maria Lannerbro Norell. By snowballing on the used sources, more sources came up. In other words, process of searching for sources was non-exclusive and open-ended, meaning that all leads to gain more information and material on this specific research subject were followed. There were many articles and items on the researched topics to be found, albeit usually in a more general Sámi setting, or in smaller added case studies. Saturation was achieved only after checking whether all themes that were relevant to the research questions were discussed from all angles.

As discussed in the introduction, the research also included insights from a more in-depth case study on potential expansion of Idre Fjäll, one tourist resorts, in relation to Idre sameby in which members from Idre sameby were also interviewed. Together with the above mentioned and discussions in articles with stakeholders, insights were generated and utilized in this thesis. More formal research interviews but also go-along interviews (Dunn, 2000) were added to the research project, to provide more in-depth information to conclude this thesis while being mindful of research ethics (Vanclay et al., 2013) and line with how social impact assessments are often done (Baines et al., 2013) regarding the utilization of insights from conversations and discussions with stakeholders mentioned above and the respondents. These interviews were subsequently analyzed using 'latent content analysis' by looking for themes. The themes identified were relating to the identified threats, forestry, tourism, landowner disputes, climate change as well as mitigation efforts, proposals for mitigation and Sámi environmental knowledge. In some cases, themes overlapped.

Regarding ethical considerations, I find it important to mention that, throughout this study I try to be constantly conscious of the power structures that exist within and between object/subject relationships. As put by Linda Tuhiwai Smith, professor of Indigenous education at the University of Waikato, New Zealand: "The word itself, 'research', is probably one of the dirtiest words in the Indigenous world's vocabulary" (Smith, 1999). This is true also for the Sámi context, where memories of race biology and skull measuring live vividly on (Sehlin MacNeil, 2015). In this case there also is the

added dimension of being a non-Indigenous researcher doing research on issues that relate to Indigenous peoples. I therefore always wonder, when engaging in this type of research: can these seemingly great obstacles be overcome in order to conduct a successful research project for both the researched as well as the researcher? To overcome these difficulties this impact assessment uses a methodological framework that based on Indigenous methodologies. Using someone else's words to describe a situation is a delicate matter, especially when these words, in some cases, were also already written down by other researchers. In an effort to stay as true as possible to the meaning of the interviewees, this study makes use of direct quotes.

Further explanation of social impact assessment theory and its use in this thesis will follow in the second chapter as an introduction to the actual assessment. In short, as to give a definition of what social impact assessment is I will add the definition that is being used in this thesis, which was found in an article by Vanclay (2002):

"Social impact assessment is the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment."

1. Sketching the scope – Literature review and conceptual framework, historical overview, current projects, threats, trends and involved stakeholders

In this chapter both relevant concepts and academic debates will be discussed as well as the background information on the Sámi people in general, the sameby of Idre in particular, the area of Idre and the history and current trends of the multiple threats that are present in the area of research as well as the related stakeholders involved in these threats in the Idre region. The chapter provides a framework with the necessary information on Sámi environmentalism regarding the legitimation of it for potential land claims, and sustainable use of the land as well as making a case for establishing a better basis for mitigation proposals and measures by the Sámi. The chapter commences with a conceptual framework. Concepts such as Indigenous ecological knowledge, indigeneity, sense of place, and Indigenous environmentalism will be explained for establishing an understanding of the culture-nature relation of the Sámi in Idre. Subsequently, a history of the Sámi in general, Sámi cosmology and Sámi environmentalism will be dealt with. It will be followed by a history of the Sámi in Idre. Afterwards, current threats, trends and impacts will be explored and introduced, such as forestry, landownership disputes, tourism, and climate change as well as related stakeholders. All this is done to provide for an understanding of the situation in Idre so that the next chapter can dive deeper into these trends and its impacts as an impact assessment.

1.1 Conceptual framework: Indigenous ecological knowledge, indigeneity, and sense of place

As written in the methodology section, conducting research on Indigenous people, while being non-Indigenous myself, is challenging if one wants to give credit to the true owners of the knowledge discussed (Porsanger, 2004). A central theme in this thesis is the connection of the Sámi to their ancestral land. Taking care of the locality the Sámi live in, as explained by one participant in this research project, is almost such an intrinsic part of Sámi culture it should be considered just a matter of 'human decency' (T. Andersson, personal communication, 2019). In the section below, the relation between locality and people will be explained by making use of the concept of indigeneity. Discussing the concept of indigeneity allows to include academic debates on what is considered to be Indigenous and what not and on Indigenous environmental knowledge, the latter being an important concept when trying to get an understanding of the embeddedness of environmental concerns in Sámi cosmology.

The term Indigenous has long been used as a designation distinguishing those who are "native" from their "others" in specific locales and with varying scope. In recent decades, this concept has become internationalized, and "indigeneity" has come to also presuppose a sphere of commonality among those who form a world collectivity of "Indigenous peoples" in contrast to their various others (Merlan, 2009). But what is Indigeneity exactly? Indigeneity, as it is explained by Francesca Merlan,

implies first-order connections (usually at small scale) between group and locality. It connotes belonging and originariness and deeply felt processes of attachment and identification, and thus it distinguishes "natives" from others. (Ibid)

Indigeneity as it has expanded in its meaning to define an international category is taken to refer to peoples who have great moral claims on nation-states and on international society, often because of *inhumane, unequal, and exclusionary treatment* (Ibid). Within some of these contexts, there were considerable historical similarities of settlement, colonization, and marginalization of native peoples. But indigeneity in the first-order sense of local connections and belonging is a very general concept, with diverse moral shadings, that has been applied much more broadly than to just those we might understand as "Indigenous peoples." As a general concept, indigeneity is susceptible to arguments for greater or lesser inclusiveness, with a variety of possible (and often contested) implications. (Ibid)

Processes, such as the advancement of western modernity or globalization, have helped to popularize, an at the same time threaten, indigeneity. Indigenous knowledge is to some extent faulted in favor of the hybrid products of modernity, and the idea of indigenous environmental knowledge and conservation is contested. The academic concept of indigeneity was very much impacted by influential scholarship on the invention of traditions and by the related argument that culture itself is a construction. (Dove, 2006)

The plasticity of indigeneity comes to the fore with the very status of Indigenous. For those groups who are eligible for Indigenous status, the concept can be a double-edged sword. Examples are strategic adoption of global images of indigeneity. Indigeneity is mostly about the presentation of the Indigenous peoples. Li states that if people present themselves as too primitive, they risk resettlement, whereas they present themselves as not primitive enough, they risk resettlement on other grounds (Li, 2000). Once Indigenous status had been attained, official expectations of appropriate behaviour can be exacting. Thus, local communities are not just adapting the concept of indigeneity to their own uses but are doing the reverse. Pulido writes of the deployment of romanticized ecological discourses and culturalism in the southwestern United States by indigenous tribes as a means of resistance, using the tools of the 'global.'(Pulido and Pena, 1998)

Now, the interesting thing about indigeneity is that much of the interest in indigeneity and Indigenous knowledge has focused on conservation (Dove, 2006). The debate on whether Indigenous people do care 'more' about the conservation of their ecosystems is called the 'ecologically noble savage' debate. A review article on this debate by Raymond (2007), concluded with the following:

"Following a strict definition of conservation as advocated by behavioral ecologists and conservation biologists, one can conclude that conservation by native peoples is uncommon. Still, it is important to understand fully the factors that permit or work against conservation if we are going to make sensible recommendations to bureaucracies interested in conservation. The issue will move to a more detailed consideration of how people manage (Balee & Erickson 2006) ´ or engineer (Smith & Wishnie 2000) their environment and how management or engineering affects ecosystem stability and biodiversity. It should lead to a renewed and refined interest in how native peoples conceptualize their place in nature and the degree to which that conceptualization affects their conduct toward the environment."

A logical next step, taking the above into account, would thus be to examine the concept of sense of place relating to Indigenous peoples. Below I will elaborate on sense of place as a conceptual theme in this thesis as well, however, the concluding words in Raymond's (2007) work could be challenged from multiple perspectives and therefore these altering voices should be addressed too, especially relating the inclusion of cosmology in this debate. There have been, for example, elaborate calls for the inclusion of Indigenous environmental knowledge, or traditional ecological knowledge (TEK) in, for example, the legal system regarding conservation and climate change adaptation. Burkett (2013), writes that there is a multitude of case studies that demonstrate there is a wide range of Indigenous traditional practices for ecosystem management, including multiple species management or resource rotation practices. Indigenous peoples, according to Burkett, 'interpret and react to climate impacts in creative ways, drawing on TEK as well as new technologies to find solutions, which may help society at large to cope with impending changes in the environment.' Burkett continues that ecologists with an interest in adaptive management increasingly recognize the importance of a 'class of Indigenous practices' related to the dynamics of complex systems that are seldom found in conventional resource management. This is largely the case because Indigenous peoples develop and cultivate environmental knowledge through hands-on experiences rather than formal education, the knowledge is embedded in culture and unique to specific locations, and, finally, it is holistic. It is a way of life and a worldview (Maragia, 2006) embedded in Indigenous cosmologies. Cosmology forms cultural values, ethics, and the norms and rules of a given society. Common in Indigenous societies is a cosmology in which humans are a part of the interrelated web of living things (Berkes et al., 2000). Emanating from this holistic cosmology there is the notion gaining ground that Indigenous communities may not only know what is best for themselves, but also be capable of offering the Western world some useful pointers for conservation and climate change adaptation (Edington, 2017).

The above is in line with the findings of the most influential anthropologists writing on Indigenous knowledge and ecology such as Darrell Posey and James Fairhead and Melissa Leach. They explored Indigenous perceptions of nature and culture, albeit from two differing perspectives. Posey's

research from the early 1980s emphasizes Indigenous knowledge and Fairhead and Leach (1996) the politics of knowledge. In essence, both works established the viewpoint that what looks natural might be cultural, since the researched areas in their studies are examples of conservation of ecosystem communities by Indigenous peoples, and thus that Indigenous peoples should be seen as models for conservation (Dove and Carpenter, 2008).

As written in the methodology section, discussing indigeneity and Indigenous environmental knowledge and traditional ecological knowledge without adding the viewpoints of Indigenous scholars would be turning a blind eye to any Indigenous intellectual property this research deals with. Indigenous perspectives on the above should therefore also be elaborated on in this section. First, Indigenous knowledge is generally thought of as a body of place-based knowledges accumulated and transmitted across generations within specific cultural contexts (Jessen et al., 2022). According to Native American professor Cajete (1995), Indigenous ways of knowing should be considered science in their own right that differs from science generated through Western knowledge systems. Long term observations by Indigenous peoples amounts to monitoring species and ecosystems, which carries abundant potential for rapid and sensitive detection of contemporary ecological changes (Berkes et al., 2007). Samantha Chisholm Hatfield, from the Oregon State University, explains that she sees people being disconnected from the environment and how the world works. To her, learning about TEK is a way to learn about conservation and she includes in her approach a holistic perspective. Everything is connected, so being aware of the interconnected impacts is important when trying to understand our ecosystems (Rademacher, 2020). Such thinking is central to Indigenous Knowledge, according to Chisholm Hatfield, and she writes that it is critical to look at a minimum of three generations' worth of knowledge before making any decision regarding to our environments. (Ibid). The above is also emphasized by Indigenous scholar Deborah McGregor, writing that, "In contrast to dominant Western society's tendency to view the natural world as a commodity, property or a 'resource', Indigenous understandings are based on regarding the Earth as alive and imbued with spirit. In this view, a reciprocal set of duties and responsibilities between humans and the rest of the natural world exists such that, assuming these obligations are consistently met, relations between human and non-human entities are maintained in a healthy balance (McGregor et al., 2020).

Furthermore, Pamela Silas, an enrolled member of the Menominee tribe of Wisconsin and an associate director for community outreach and engagement in the Center for Native American and Indigenous Research at Northwestern University, says that Indigenous knowledge is incredibly important in environmental education in particular because Indigenous people live so close to the land. Through experience passed down from generation to generation, they have thousands of years of knowledge related to hunting, gathering, and observing changes in the landscape. She says that when people are equipped with such knowledge, it helps them make better decisions about policy and

development that affects the environment because they know the environment and how to connect with it. (Ibid)

As discussed earlier, further elaborating on the concept of sense of place should be considered since criticism on Indigenous environmental motives in Raymond's (2007) work suggests studying sense of place and nature from an Indigenous perspective since an understanding of how Indigenous peoples conceptualize their sense of place and their place in nature might lead to grasping to what extent this conceptualization affects Indigenous peoples' conduct toward their environment (Raymond, 2007).

When it comes to sense of place, connection with ancestral land is a central tenet of Indigenous identity claims (Di Giminiani, 2016). Drawing on criticisms of self-evident and naturalized characterizations of spatiality within human geography, anthropological research in the 1990s moved away from an understanding of place as a heuristic concept within ethnographic practice and the congruent conflation of space and culture to a focus on how experience engenders *senses of place*, that is, emotional attachment to and signification of particular localities (Ibid). The qualitative definition of *sense of place* that is of use for this research will be: "Places are locales of intense emotional attachment, thick with meaning and memory, shaped by both local and translocal phenomena; they possess the 'power to direct and stabilize us, to memorialize and identify us, to tell us who and what we are in terms of where we are (as well as where we are not) (Thomas, 2002).

This shift in the direction of a more anthropological and qualitative approach to place, also implies a phenomenological view on these concepts relating to place. A phenomenologically inspired anthropological approach to place implies that the mutual constitution of people and places, since their relation necessarily 'involves the recognition and cultural elaboration of perceived properties of environments in mutually constituting ways through narrative and praxis' (Low and Lawrence-Zúñiga, 2003). The question is whether people make places or places make people, and at first a question like this will sound very speculative. However, according to Di Giminiani (2016), it brings to light a broader problematisation of human agency in the making and unfolding of the world.

Furthermore, conflicting interests concerning land use and place identity emerge from different meanings and values that are placed on the location (Massey, 1991). According to Kneafsey (2000), different place identities can exist simultaneously within a location, such as seeing economic values associated with any industry or placing more emphasis on emotional and cultural values to a perception of place.

As discussed earlier, central in Indigenous perceptions of their environment, is a holistic and reciprocal view on it. Sense of place from an Indigenous perspective therefore embodies these ideas. David Fortin (2022), a Métis architect and professor at the school of architecture in the University of Waterloo writes:

"An Indigenous sense of place would be one where there is reciprocity with land; where we aren't just taking from land but adding back to it in a way that benefits all of the life forms around us," Fortin said. "I don't want to just call it 'sustainability.' It's a reverence for all life."

Indigenous sense of place is thus fundamentally formed by a holistic relationship to territory and is deeply interconnected with generations of experience on the land. The stories, songs, and symbols of these histories continue to circulate within Indigenous communities. Indigenous landscapes are composed of relationships with physical sites but also a set of cultural essences and intangible structures of belief (Pearce and Louis, 2008). The matrix of relationships within this physical and spiritual landscape is what defines Indigenous ways of being (Johnson and Larsen, 2013).

In the next section of this chapter, I will elaborate on the Sámi, and more specifically, on the Sámi of Idre. Besides the history of the Sámi, the Sámi sense of place, the place of nature from Sámi perspective and its embeddedness in Sámi cosmology will be discussed as well. I will thus navigate the above examined concepts in the specific Sámi context.

1.2 The Sámi, Sámi Indigenous Knowledge, Sámi cosmology, and Sámi Environmentalism

In the section below, I will elaborate on the Sámi, Sámi cosmology, and of place and nature therein, in general. Subsequently, the environmentalism, or conservationism, that is a result of certain values within holistic cosmology, will be addressed from a Sámi perspective. In the section afterwards, the Sámi of Idre will be introduced and elaborated on. Furthermore, I will shortly introduce the impacting factors on the holistic way of life of the Sámi of Idre as well as the involved stakeholders.

The Sámi people have traditionally lived in harmony with nature and the seasons, relying on the land for their livelihood. Like most Indigenous peoples, as described in the section above, they have a deep respect for the environment, and their traditional way of life involves careful use of resources and is based of the principle of 'leaving no trace.' The seasons dictate their activities from day to day, whether by picking cloudberries in the mountains or by driving their reindeer herd towards the coast. They lived traditionally without borders on their land, so Sápmi (the land of the Sámi) was difficult to define on a map, and hence difficult to protect form colonizers and outsiders. When they hunt, they carefully select the "right" individual to take, and they always make use of every last bit of the kill. The Sámi were the first culture known to have herded animals, and they have developed a sophisticated vocabulary for describing snow, ice, animals, and natural terrains. Their traditional settlements, called siida, or sameby in Swedish, are small migratory groups of families, However, with the advent of the industrial revolution and advances in technology, the natural state of Sápmi (the land of the Sámi) has been drastically altered. (Ness and Munkejord, 2021)

1.2.1 Sámi Indigenous Knowledge and Sámi Cosmology

When discussing the Sámi and Sámi Indigenous Knowledge, I find it important to mention that this thesis is influenced by decolonial tradition. In light thereof, writing about Sámi IK can only be done properly when addressing that much of Sámi IK has been lost or destroyed by colonization and submerged and transformed under forced Christianization (Boekraad, 2016). Therefore, engaging with Sámi IK implicitly challenges colonial methods of knowledge production. Fanon's (1967) recognition of the connection between environmental degradation and human oppression on colonized lands supports the approach of this thesis on the importance of Sámi IK on the environment and its conservation as well. Sámi IK on the environment is largely based on Sámi cosmology and the holistic value system therein. The concept of the Sámi cosmology emphasises the connection between the spiritual heritage and the ongoing process of change in the spiritual life of the Sámi people, the central importance of the elders and ancestors as the carriers and teachers of the Sámi traditions, as well as embodying an inseparable unification of people and nature (Porsanger, 2010).

The Sámi have traditionally had a different notion of nature than, for example, urban people. The Sámi concept of nature implies relationships, reciprocity, and a notion of power, both for humans and for the whole surrounding world. There is no one single Sámi word, which is equivalent to the Western concept of nature (Porsanger, 2010). Nature traditionally has been for the Sámi both a physical and spiritual entity, and humans are a natural part of it. For the Sámi, nature represents at the same time a home, a way of life, the source of survival, continuity, and oral history, the present and the future. Traditionally, the aim of the Sámi people has not been to make the most efficient use of the natural resources as a source of income, but rather to use them rationally in a sustainable way, as survival in the North depends on the renewal of the riches of nature. The values and norms regarding nature that the Sámi learn already as children are especially crucial today both for the Sámi themselves and for the world, in general (Porsanger, 2010).

As explained in the section above, many Indigenous peoples nowadays bring forward their values and understandings of their relationships with the natural environment. They emphasize that holistic understanding of the relationships practiced by many Indigenous peoples can teach the world a lesson about sustainability, balance, and respect in the time of climate change and environmental problems. The Sámi have traditionally had a holistic understanding of relationships with nature as well. This can be exemplified by the concept of 'maintenance of life', used in the daily language by the Sámi nowadays. (Porsanger, 2010)

The traditional Sámi outlook on life emphasizes the interconnectedness between humans, animals, nature, and spiritual forces. Humans are seen as an integral part of nature, and nature is considered a source of strength for humans. Maintaining a reciprocal relationship and balance between humans and nature is crucial for the well-being of both. Rituals play a significant role in sustaining this

relationship and ensuring the survival of the Sámi community. Following established practices, showing respect, and engaging in individual and collective dialogue help maintain this balance. The Sámi cosmology recognizes that the well-being of both humans and nature depends on their harmonious coexistence, and constant dialogue between them is necessary. It is therefore that nature, and everything that is part of it, can be spoken to directly or indirectly (Porsanger, 2010).

One of the participants of this research taught me to engage with the environment, with nature, by addressing them, by talking to the elements of nature. For example, washing yourself in a river can be done after expressing something like: 'Thank you, grandmother river.' (P. Andersson, personal communication, 2019).

The above is important because of the spirits that reside in nature. The natural spirits must be taken into consideration when one settles on a new place, starts to fish, goes to hunt, or lives on a lake or a river. People need to follow certain rules to maintain the balance of nature in their nearest environment. The natural spirits control the way humans use nature. The relationship with nature and its forces is not submissive but active. Humans can, when necessary, influence the powers of nature by giving, offering, sharing, asking, promising, taking care of, showing respect to, or assuming the shapes of animals (Porsanger, 2010; T. Andersson, personal communication, 2019).

In the Sámi culture, every geographic location is seen as a holistic entity where the physical and spiritual dimensions are interconnected and in balance. This understanding guides their way of life. The concept of natural spirits is deeply intertwined with Sámi traditions. People recognize that natural forces play a significant role in their hunting and fishing endeavors, and they believe in seeking the favor and assistance of these powers. Consequently, individuals, families, and communities sought out sacred places to worship and connect with these influential forces (Porsanger, 2010).

1.2.2 Sámi Environmentalism

As discussed as concept in the first section of this thesis, indigeneity is one of the concepts at the base of the debate on Indigenous environmentalism, and therewith Sámi environmentalism. The urge for conservation of the land is not a cultural given per definition. In its current form, one can say that this environmentalism is merely a Western product, fueled by land claims as well. Processes of globalization and cultural change had a significant impact on the manifestation of conservation and environmental concerns and therefore also on the position of place for the construction of Indigenous, and Sámi, environmentalism. According to Milton (1993), environmentalism is a quest for a viable future, pursued through the implementation of culturally defined responsibilities. The general nature of these responsibilities distinguishes environmentalism from other such quests. They stem from the recognition that "the environment" – loosely identified as the complex of natural phenomena with which we share the universe and on which we depend – is affected by human activity, and that securing

a viable future depends on such activity being controlled in some way. At the same time, however, it is noted by Milton, that this description is imperfect because it fails to grasp the complexity of the phenomenon and, in addition, there exist multiple visions of what is a viable future (Milton, 1993).

Although conservationism and environmentalism have been used interchangeably throughout this thesis so far, it is important to note that they are not the same. In the first place, relations and responsibilities to an environment can be captured by the term 'conservation', which Dowie has defined as: the preservation, management, and care of natural and cultural resources (2009). While the application of the term has been monopolized by Western conservationism (McFadden, 2022) there are many ways to preserve, manage and care for an environment (Dowie, 2009). Conservationism focuses on the sustainable use and management of natural resources. Conservationists aim to ensure that natural resources, such as forests, wildlife, and water, are used responsibly and in a way that maintains their long-term availability. They often prioritize the wise utilization of resources, seeking to strike a balance between human needs and the protection of the environment (ONHCR). Environmentalism is a broader movement that emphasizes the protection of the environment as a whole. Environmentalists are concerned with the overall health and well-being of the planet, including its ecosystems, biodiversity, and climate. They often focus on preventing or mitigating human-caused environmental degradation, such as pollution, deforestation, habitat destruction, and climate change. Environmentalists advocate for systemic changes in human behavior, policies, and practices to create a more sustainable and ecologically balanced world (Ibid).

The emergence of environmentalism marked a material change of approach to nature compared to nature conservation. Most visibly, it signified a shift in the focus of concern from nature to environment. The birth of the concept 'environment' in Western society is usually dated back to 1960s and 1970s with the emerging environmentalist awakening and environmentalist movements. According to Haila & Jokinen (2001), 'environment' which earlier had referred to the entity surrounding a person, creature, or matter, by that time, came to refer to the material foundation of human life comprising all the aspects defining the existence of society. A combining factor to early environmentalist movements was the existence of a tangible, locally acute environmental problem, and a shared concern that the life exigencies of humankind were threatened. In addition, the early environmental awakening also contained a distinct moral protest towards the modern, industrialized society and lifestyle, as Grove-White (1997) and Haila & Jokinen (2001) point out.

Neither Sámi nor environmentalists are homogenous groups (McFadden, 2022). First of all, 'Sami' is not purely a group of ethnic individuals alive today but constitutes the historical culture of an Indigenous past reflected into the present; simultaneously a changing and growing culture of today grounded in ancestral traditions (McFadden, 2022). Besides, the Sámi as an ethnic group is also not homogenous with differences between the varying areas that constitute Sápmi, with multiple

languages and differences in culture. This thesis focuses on Idre, where the Southern Sámi language is spoken, and which is part of the South Sámi cultural landscape. However, important values remain the same in an overlapping Sámi culture (Ibid). Overall, 'Sami' refers to a living, Indigenous culture as it is engaged with by its people, whether that is by Northern, Eastern, Lule, or Southern Sámi people.

Furthermore, Western environmentalism, can be roughly identified by two intertwined groups, organized by the kind of activities they prioritize. The first is focused on environmental goals through the maintenance of national parks, the protection of wildlife and limiting human intervention through lobbying and activism. The second, by protesting extractivist projects in order to try to halt ecological destruction. Overall, they share a relation with Sápmi that is mostly separated, abstract and remotely decided, compared to Indigenous environmental relations that are situated, engaged, and grounded (Adams, 2005). This is because their ecological values have emerged from urban-industrial society, often in defiance of the destructive activities of said society, rather than through direct and consistent physical contact with Sápmi (McFadden, 2022). Hence environmental activists have been shown to identify first with political activism rather than nature (Ibid). This 'politicized identity' means they are guided by what kind of environmental structures they are up against, which has been incredibly valuable in combating ongoing social and environmental injustices. However, concluding from the above, it is important to note that this is not the same as Sámi environmentalism due different motives as well as differences in situating, engaging, and grounding in Sápmi (McFadden, 2022). Implicit within conflicting environmentalist paradigms, is what nature is and what it means to be human in contact with it (Ibid).

A Sámi approach to environmentalism is based on the conservation of Sápmi in the first place but emanating from Sámi cosmology one can argue that the stewardship of Sápmi, but in a broader sense, the entire planet, is Sámi environmentalism, and that it is different than a dominant Western paradigm of environmentalism (Ibid).

Another debate central to Indigenous environmentalism and, thus, Sámi environmentalism is centering around the previously discussed concept of indigeneity. Li, holding a Century Research Chair at the University of Toronto, worked intensively on the concept of indigeneity, and stated that Indigenous peoples articulate their 'indigeneity' in terms of language, political-economic autonomy, unique culture, capacity for environmental management, and, most important for this project, spiritual attachment to their local landscape. (Li, 2000)

However, at the very time that the concept of indigeneity was being popularized beyond anthropology, it began to be critiqued within the discipline, as the result of the world system studies that showed that even apparently isolated communities have been caught up in global historical processes; a turn that questioned drawing sharp lines of discrimination like that between Indigenous and non-Indigenous; and a rise in interest in hybridity, which is the antithesis of indigeneity (Dove and

Carpenter, 2008).

The players and sides that line up in this debate are governments, state elites and some scholars who simply dispute the empirical validity of the idea of indigeneity (Ibid). Others question the validity of "Indigenous knowledge" (Ibid). And besides this there is a debate as to whether Indigenous resource management can conserve the environment. The risk that Indigenous peoples face when they adopt 'indigeneity' is that, as discussed in the first section, they have to navigate between presenting themselves not too primitive, since they will not be taken seriously, or not primitive enough, since this leads to the loss of credibility (Li, 2000). So, once Indigenous status has been attained, they have to meet some "official" ideas about behavior as such as well. People thus seem to adapt to and adopt a global vision on how Indigenous people should behave, amongst others, when it comes to the environment (Dove and Carpenter, 2008). However, conservation projects can coincide with Indigenous community interests (Ibid). From this perspective, coalitions can be formed to confront a menace to biodiversity and livelihoods (Ibid). The formation of these kind of partnerships has mutual benefits, where Indigenous interests serve environmentalist and conservationist interests, and vice versa (Meza, 2009). However, such partnerships might foster the debate on the origins of Sámi environmentalism since the tools they use to preserve their land are global.

Because of this, ideas on Sámi environmentalism and, in the broader sense of Indigenous peoples, "ecological natives" as Montalba and Stephens call it, are best understood as encounters between global culture and local cultures (Montalba and Stephens, 2014). Given the growing awareness of unprecedented ecological destruction caused by processes of globalization, it is understandable that the Sámi are identified as environmentalists and that their efforts can be categorized as environmentalism (Ibid). It is both a way of highlighting a subjective reality as well as a rhetorically powerful way to call attention to the land, both in a political way, as well as the indifference of the global capitalist culture and ecological stability (Ibid).

1.3 Idre Sameby

This thesis focuses on Idre sameby, Eajra sijte in Southern Sami language. It is the southernmost and one of the smallest of Sweden's 51 samebyar and is found in the northern part of Älvdalen municipality in the province of Dalarna and a small part in Härjedalen in the province of Jämtland. Most of the members of the sameby live in the village Storsätern, next to the Grövelsjön lake. The number of members is currently around 36 people, of which 13 are reindeer owners. Within the sameby there are four operating units and a total of no more than 2,700 reindeer in the winter herd. Among the Sámi population of Idre there is a fairly even gender distribution, although the majority of the reindeer herders are men, who are also responsible for the daily care of the reindeer. Most of the women have work in the town or a nearby town and help when the reindeer herding is most intensive during

relocation, reindeer separation, calf marking and slaughter. The children go to school in Idre, where Sámi education is conducted in an integrated form. Learning about (south) Sámi culture, South Sámi language, reindeer husbandry and the preservation of Idre sameby are central in this education. (Norell, 2006)

The net area of Idre sameby's grazing lands is estimated at 1038 square kilometers. The year-round grazing lands are managed by the County Administrative Board in Dalarna and reindeer management by the County Administrative Board in Jämtland. There are, however, no established boundaries for the winter grazing lands. (Norell, 2006)

Most researchers today believe that the ancestors of the Southern Sami can be found in the prehistoric hunting culture in Central Scandinavia. From Falun and up to the border with Jämtland County there are many place names, and archeologists found ancient and cultural relics with a Sámi connection. Some of them are dated to between 500 AD until the 20th century. In 1500 AD the Southern Sámi are believed to still live in areas around Gävle, 100 kilometres north of Uppsala, on the coast of the Baltic Sea (T. Andersson, personal communication, 2019). Inventories, documentation work and Excavations carried out in Idre sameby during the last few years have provided knowledge that shows that the Sámi lived here continuously for thousands of years (Norell, 2006, T. Andersson, personal communication, 2019).

1.3.1 Reindeer herding in Idre

Reindeer herding in Idre is based on an annual cycle based on eight seasons. Below, the annual cycle will be discussed, as the annual cycle affects the migration patterns of the reindeer. This, in turn, is of importance because the biggest threats to reindeer herding in Idre revolve around changes in the migration patterns due to several differing causes, as explained before.

The annual cycle of reindeer husbandry is based on the reindeer's need for different types of pasture and seasonal migrations. The annual cycle also includes other aspects of the reindeer herder's work and the reindeer herder's livelihood. These eight seasons are spring (April-May), early summer (June), summer (June-July), hot summer (August), Autumn (September-October), cold winter (November-December), winter (January-March), and spring winter (April) (Lannerbro Norell, 2006).

During the spring, the reindeer calves are born in the lower mountains. The reindeer and their calves seek locations that lay in the southern part of the sameby, since access to pasture is relatively easy here and the snow melts earlier. The cows usually calve at the same time and place year after year, in a place where there is some protection from the wind. If there is too much disturbance, the cow's leave their newborn calves. It shows how sensitive reindeer can be. Therefore, the reindeer are guarded around the clock during this period. In early summer, after calving, there is a period of relative quietness for both the reindeer as well as the reindeer herders. The reindeer now seek out birch

forests, marshlands, and streams where the ice and snow are melting. Early summer is usually a recovering and rebuilding period for the reindeer. They can graze in peace and quiet until heat and troublesome insects arrive. For the reindeer herder, this time of year consists of construction and repair work on the rengärden (reindeer enclosures), or other reindeer husbandry facilities. During the summer, the reindeer move up towards the higher mountains or out into the open spaces where they are less disturbed by the heat or insects. At the end of June, the reindeer herders begin gathering the reindeer for calf marking in the rengärden. Calf marking consists of different combinations of cuts in the reindeer's antlers, by which the calves are distributed over the several families that make up Idre sameby. During August, the reindeer graze in the birch forest and on the marshes. They still have good access to green pastures and eat leaves, grasses, herbs, and mushrooms, which are rich in protein and phosphorus. The period from the end of July onwards is an important period since they can build up the muscle mass and the fat layer which is necessary to survive the winter. The summer grazing grounds are therefore indispensable because the amount of fat a reindeer has is decisive for the reindeer's ability to stand a chance in cold temperatures. In late August and the beginning of September, before the reindeer's rutting period, the reindeer that will be slaughtered are collected because the slaughter must be completed before the rutting period starts. The reindeer can be found in the forests of the nature reserve region, south of the Långfjället mountain range (see map 1 in the appendix). The rut itself lasts two to three weeks and is usually a quiet time for the herders. In October, the first snow affects the reindeer's ability of grazing plants, and they shift to graze on various lichens which grow on specific places and on specific trees. From October onwards, the reindeer's diet is shifting slowly towards lichen. When the snow cover reaches 30 cm, during November and December, the reindeer surrenders to lichen only and migrates towards the winter grazing land where there are more trees on which the lichen grows. The winter grazing land can be found south and east of Idre and south of Fjätervålen (see map 1 in the appendix). From December until March, the herd migrates from and to different pastures (see map 1 in the appendix) eating, as said, almost solely lichen. The availability of winter pasture depends not only on the size of the area and the presence of lichen, but primarily on the availability of the pasture. It is the winter grazing lands and the threats to them that poses the largest risk for the reindeer herd as an industry and therewith as a culture in the end (P. Andersson, personal communication, 2019). In the section below on threats and trends I will elaborate more on these specific threats, however, the problems with, in this case mostly forestry, are the icing of pastures due to cutting trees. It leads to deteriorating snow conditions due to large clearings, the unfavorable snow texture that is a result of it and destroyed and damaged lichen cover. The lack of hanging lichen means that the lack of nutrition for the reindeer can become acute when the ground pasture becomes inaccessible. In such situations, the reindeer herders introduce supplemental feeding or, in the worst case, complete feeding, to prevent extensive reindeer death. In the spring winter (March and April),

the reindeer migrate from the winter grazing lands to the spring and calving grounds at Långfjället and Slugufjället (see map 1 in the appendix). The timing of the migration varies depending on the snow and grazing conditions. The diet consists, again, mostly of lichens. The availability of tree lichens is very important because the ground vegetation is not available during this time of year. (Lannerbro Norrel, 2006, P. Andersson, personal communication, 2019).

The reindeer herding is of Idre is based on Sami norms and values, management and development of a Sami cultural heritage that includes hunting, fishing, and crafts, as well as ecological and sustainable adaptation to limited resources. These norms and values have been discussed above and will be elaborated on more in detail in impact assessment in the next chapter. Reindeer herding is, for Idre sameby, important for social and cultural cohesion since it is a carrier of tradition and culture and the basis for Sami language (Norell, 2006; T. Andersson, personal communication, 2019). More so, many South Sámi believe that reindeer herding is the most important culture carrier where the threats against the possibility for reindeer to graze is a threat against an entire culture (B. Maehlum, 2019). Since reindeer follow a migration pattern that is based on delicate cycle in balance with the environment, Sámi participation in the management of the natural environment is important so that the Sámi who work with reindeer husbandry can feel secure in their livelihood. The values that were explained earlier as being an integral part of Sámi culture and form a basis for Sámi environmentalism are so also because of this delicate balance between nature and culture. Idre sameby's environmental work includes foremost adapting its own operations to the environment but also the challenging of companies and their operations to obtain certificates that might ensure less degradation of the environment (Lannerbro Norell, 2006).

1.3.2 Idre Sameby: preservation of South Sámi culture

There are various other initiatives in order to preserve the Sámi culture of Idre besides the above-mentioned reindeer-and environment-based approaches. One of these initiatives is found in education, at Strandskolan in Idre. The main goal is for the Sámi students to be encouraged to strengthen their Sámi identity and gain more insight into the Sámi culture and its diversity. The local curriculum includes fieldwork and other activities related to the traditional activities, such as reindeer selection for slaughter or cleaning reindeer. In year 9, non-Sámi students can also take part in some of these activities. The South Sámi language is also being taught for at least two hours per week. The students also do Sámi crafts for at least one hour per week (Lannerbro Norell, 2006). The Southern Sámi are a minority within a minority and its language is endangered since it has only around only between 500 and 800 speakers today (Totalregnskap for Reindriftsnaeringen, 2012). Education in the language and on the culture are therefore important for the Southern Sámi culture to survive (B. Maehlum, 2019; P. Andersson, personal communication, 2019).

One of the respondents explains that the culture of the Sámi in Idre is being confirmed by their surroundings, which, is a necessary stimulus for the preservation of it (E. Andersson, personal communication, 2019). Lannerbro Norell writes, in 'Samekulturen i Idre' (2006), that the cultural landscape of the Sámi can only be maintained through an interaction between man, his way of using natural resources and the landscape. There have been multiple projects in order to preserve and maintain this interaction, one of them being the Samiska Kulturmiljöer – Inventering och Documentation (Sami Cultural Environment – Inventory and Documentation) project that was carried out between 1998 and 2000. The project aimed to increase awareness of cultural-historical values and historical context in the four southernmost Sami villages, among which is Idre sameby (Edvinger and Danielsen, 2001). Another project that aims to preserve the South Sámi culture and specifically the South Sámi culture of Idre can be found in the establishment of the Aernie foundation. Aernie, means hearth in South Sámi. In 1988, members of Idre sameby and Älvdalen municipality formed the Aernie foundation, which aims to strengthen the Sámi industry in Älvdalen, increase understanding and awareness of the Sámi presence in the area and shed light on for example the threats that are being discussed in this thesis and tensions between Idre sameby and other stakeholders that may occur as a result of these threats (Lannerbro Norell, 2006).

That tensions may occur is explained by Nilssen (2019), who conducted fieldwork on the South Sámi in Norway, as a reaction on the fact that changes that come with these threats can be epochal. He writes:

"The mobilization for preserving the South Sámi culture and memory landscape highlights features of the community, where the culture and memory environments, understanding of time and the representations give substance to the formation of identity, and to the South Sámi orientation in the present and the future. The relationship to the landscape and its management changes its character and becomes clearer when the threats against it are concrete and comprehensive. Threats may be perceived as an epochal change in their life and culture in the long term. Consideration of the collective and coming generations of South Sámi is the aspect that is generally highlighted, or in the words of a South Sámi: 'This is not about me, it is about the future for my descendants' (Adresseavisen 05.03.17)." (Nilssen, 2019).

1.4 Current threats, impacts, trends, and stakeholders involved

Idre Sameby is tightly squeezed between other large land users in the area and is confronted with multiple threats when it comes to reindeer herding and, therewith, its cultural heritage. In the section below current threats, trends, and related impacts will be introduced, among which are problems that arise from the presence of a border fence between Norway and Sweden which blocks reindeer migration, legal and practical issues that arise out of landownership, tourism, being divided into the

development of Idre Fjäll, otherwise known as the Tre Toppar project, on one hand and snowmobile and mountainbike trails on the other, forestry, and climate change. All threats influence each other, placing them in a specific order that fits the researcher the most is therefore undesirable and not in line with Indigenous methodologies. An understanding of the complex amalgamation of the issues might be best placed in the order by which the respondents of the interviews described them. Although the respondents gave different orders, due to the unstructured nature of the interviews and questions that followed each other up, both seem to be most concerned with forestry tailed by problems revolving around landownership. Tourism, often recognized as a means for development (Brown and Hall, 2008), especially in remote and rural areas (Weiler and Hall, 1992), is a double-edged sword when it comes to the Sámi, according to one of the respondents. The Sámi of Idre make money in the tourism industry and they see it as a way to educate on the other threats being discussed in this study. However, companies such as Idre Fjäll seem to be eager to exploit Sámi land. Due to the ambiguous position of the tourism threat, it will be discussed after forestry and landownership related issues. Other threats that were discussed in the interviews were climate change related issues and the limitation of reindeer migration by the Swedish-Norwegian border fence.

1.4.1 Forestry

There are several studies that investigate the relationship between forestry and reindeer husbandry in Sweden and Finland (Berg et al., 2008; Korosuo et al., 2014; Sandström et al., 2016; Turunen et al., 2020). This literature shares a common understanding of a rapid decrease in lichen-rich winter grazing grounds. Lichen, as described earlier, is the primary source of food for reindeer in the winter. Decrease of it also means a limitation to reindeer husbandry. Sweden has experienced a loss of 30–50% of these grazing grounds during the last part of the 20th century, according to Parkatti and Tahvonen (2021). Studies observe an inherent conflict between reindeer pasture conditions and intensive forest management that aim to increase timber production. The problems follow from clearcutting, both supported by literature on the relation between reindeer pasture conditions and intensive forest management for timber production as well as on the interviews held for this specific study (Parkatti and Tahvonen, 2021; P. Andersson, personal communication, 2019).

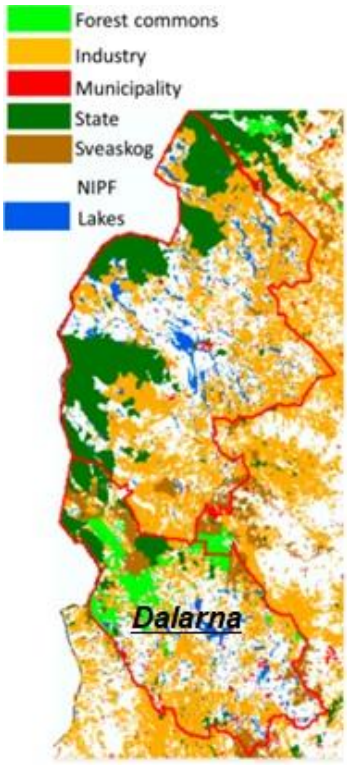
Moreover, variations in grazing availability and weather conditions mean that the land where the reindeer graze on can change from year to year (Lannerbro Norell, 2006). This means that the reindeer can only stay on specific places for a relatively short period. The clearcutting can result in a lack of lichen and hanging lichen and make it more difficult for the reindeer to access the layer that contains the vital resources for reindeer since, during winter, the consistency of the snow changes and becomes more harder (Lannerbro Norell, 2006; P. Andersson, personal communication, 2019). Other problems arise around the construction of forest roads specifically made for the timber industry. These

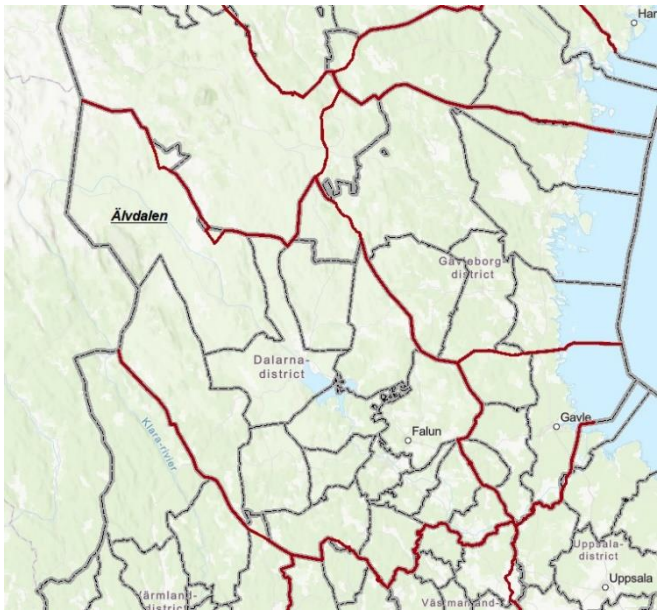
kind issues mean that, in addition to the loss of grazing land and a decrease in the quality of the grazing land, migration patterns of reindeer are changing. Reindeer stay shorter in certain areas, migrate more often, and migrate to areas where they haven't been before in the past, making it harder for them to survive but also harder for the herders to find them (Lannerbro Norell, 2006).

In the case of forestry, the stakeholders involved other that Idre sameby, are nature conservationists, Sveaskog and the Swedish state. The threats on landownership and legal issues will be discussed below in detail, however, it also relates to forestry. This is because the land is co-owned, which will be elaborated on in detail in the next section. The Swedish government owns 49% of the forestry company Sveaskog and allocates areas for cutting (P. Andersson, personal communication, 2019). In an interview with Thomas Andersson, a reindeer herder in Idre, the complex situation is explained as follows:

"It's the big companies like Sveaskog they own a lot of land. Also, the church owns a lot of land on which they chop the woods to get income from their land. But it's often state-owned companies, because we have the right to live on state owned land and they sell the woods that we use." (T. Andersson, personal communication, 2019).

Sveaskog is one of the largest forest owners in Europe, controlling 4 million hectares of public forest (Sveaskog, 2021). It states that it operates under the principles of responsible forestry and that it faces both opportunities and challenges in striking the right balance between economic interests and environmental stewardship (Sveaskog, 2023). In Dalarna, Sveaskog owns 16% of the forests, see map 2 below. However, zooming in on Älvdalen municipality, we see that these 16% of forests owned by Sveaskog in Dalarna are located almost entirely here (see map 3 below). More specifically even, it is located almost solely in Idre sameby (see map 1: Idre sameby in the appendix). Sveaskog has not replied on questions or requests for interviews on the situation. The impact assessment in chapter two will therefore be based on accounts of the respondents of the interviews held with the Sámi.





Left: map 1, showing the owner rights of forest in Dalarna and Jämtland (Angelstam and Manton, 2021) | Above: map 2, showing the borders of Älvdalen municipality.

1.4.2 Landownership and Legal Issues

Ongoing legal procedures and practical issues, aside from the legal issues that are mentioned above regarding Sveaskog, that arise from disputes with private landowners pose another threat. Private landowners can claim the reindeer have no right to graze on their land. The increase of private land and fragmentation of reindeer grazing land, the legal procedures, and practicalities such as being called multiple times per day to remove reindeer pose a heavy burden on the Sámi of Idre (Lannerbro Norell, 2006; P. Andersson, personal communication, 2019; T. Andersson, personal communication, 2019).

At the same time, reindeer husbandry is, in theory, legally protected by the Reindeer Husbandry Act (1971). The RHA foremost states that reindeer herding is an exclusively Sámi occupation and that the reindeer herder may use the land and water it needs for their herd, immemorially (Torp, 2013). It also regulates the borders of the samebyar and, in case of Northern Sweden, the amount of reindeer that is allowed in each sameby (Jernsletten and Klokov, 2002; Sámi Parliament, sametinget.se, 2021). The RHA does not explicitly grant private landowners the authority to prohibit the Sámi from letting the reindeer graze on pastures. However, there have been many instances, mostly relating to the southern samebyar in Sweden, where conflicts arise between the Sámi and private landowners over the use of the land. These conflicts stem from different interpretations and applications of the Act's provisions (Torp, 2013). The Sámi base their right to let reindeer graze on pastures on immemorial prescription, as it is written in the Act. On the other hand, private landowners in Sweden legally own parcels of land through property rights. The RHA and the standard legal framework of Sweden have,

thus, both a legal basis when cases are taken to court, making more clarity necessary since legal procedures take a long time, resulting in stress and costing a lot of energy from the Sámi involved (P. Andersson, personal communication, 2019; Lannerbro Norell, 2006).

There have been proposals to change legislation, such as the report "A New Reindeer Management Policy" by the Swedish Government (SOU, 2001). An important proposal in the report is the equality of ownership to land and pasturing rights. In praxis this means that in conflict situations both parties - landowners and reindeer owners - have the same strong case in the legal system (Jernsletten and Klokov, 2002). Until today, it seems that, according to Mörkenstam (2019), the landownership rights fall under a form of organized hypocrisy in which promises, talk, decisions and actions regarding the implementation of a better legal framework for the Sámi is decoupled or counter coupled. A report by the Swedish ombudsman, published by OHCHR (Pikkarainen and Brodin, 2008), even states that the Sámi in Sweden have been denied the rights and land rights that international law grants them as Indigenous People. Adding to this, the Swedish government never ratified the ILO convention 69 on Indigenous and Tribal Peoples, although being one of the co-writers on the articles, and, by not doing so, hindered the Swedish Sámi from gaining recognition as Indigenous people and obtaining corresponding legal protection (T. Andersson, personal communication, 2019; Habbestad, 2021).

Another threat relating to landownership that came up in the interviews is the existence of a border fence between Sweden and Norway, which had been placed specifically to stop reindeer from crossing the border (T. Andersson, personal communication, 2019). It is another example of the organized hypocrisy that Mörkenstam writes about and, although Norway did ratify the above-mentioned convention, a combined violation of rights that should apply to Indigenous people and, in particular, of article 36 of the UN Declaration on the Rights of Indigenous Peoples (2007), which states the following:

1. Indigenous peoples, in particular those divided by international borders, have the right to maintain and develop contacts, relations, and cooperation, including activities for spiritual, cultural, political, economic, and social purposes, with their own members as well as other peoples across borders.
2. 2. States, in consultation and cooperation with Indigenous peoples, shall take effective measures to facilitate the exercise and ensure the implementation of this right.

When the current border between Sweden and Norway was established in 1751, the Sámi were also guaranteed the continued right of passage, since their summer and winter pastures were divided over both Sweden and Norway. As mentioned, nowadays there is a fence that prevents the reindeer from crossing the border. The current fence was erected in the years after the Swedish-Norwegian

reindeer grazing act of 1971. In one of the interviews held for this research project, the respondent explained that the Norwegians built the fence to prevent masses of reindeer to cross into Norway and destroy local farmers' crops and overgrazing mountains, causing vegetation degradation (T. Andersson, personal communication, 2019; Moen and Danell, 2003).

The border fence that was erected as a result of the Swedish-Norwegian reindeer grazing act of 1971 has dramatically changed migratory routes and caused reindeer to spend the summer in more vulnerable mountain areas, which a century or more ago were grazed mainly in spring and autumn. However, this situation may be at least partly rectified if more suggestions from a Swedish-Norwegian Grazing Convention that was held in 2001 are adopted. So far there have not been any improvements for the Sámi in Idre (P. Andersson, personal communication, 2019; T. Andersson, personal communication, 2019). Furthermore, since the border fence makes it impossible for reindeer to migrate to areas across the border, the fence could actually be more problematic when it comes to overgrazing then not having a border fence (Moen and Danell, 2003).

The stakeholders involved regarding landownership, legal issues and the existence of the border fence are Idre sameby, private landowners and the Swedish and, to an extent, the Norwegian governments. The Swedish government, in the end, is responsible for jurisdiction on the matters. Another private landowner is Idre Fjäll company. It is the main driver behind the tourism industry. The section below will discuss tourism and tourism in Idre in detail.

1.4.3 Tourism

As explained before, tourism can bring both benefits and challenges for the Sámi in Idre. The threats associated with tourism for Idre sameby are further development of the (ski) resort Idre Fjäll, such as the Three Peaks (Tre Toppar) project, an 18-hole golf course in the middle of the winter pastures, hiking, snowmobile tourism and mountain bike tourism, combined with a lack of legislation to curtail the latter two (P. Andersson, personal communication, 2019; Lannerbro Norell, 2006). The section below will firstly provide an overview of a literature analysis on tourism in rural areas in order to get a better understanding of the opportunities and challenges surrounding the tourism industry. Subsequently, the situation for Idre sameby will be discussed and the projects and stakeholders will be elaborated on.

Literature suggests that rural tourism has the potential to stimulate the development of other sectors through local purchasing (Hall and Jenkins, 1998) and provide opportunities for local governments to benefit from increasing revenues (Frederick, 1993; Shaw and Williams, 1994). The Swedish Mountain range exemplifies some of the dilemmas associated with the process of economic transition in rural areas. Previous dominating economic activities in northern Sweden, such forestry, have become less labour intensive with the onset of technological advances. As a result, the area has faced significant rates of unemployment and out-migration (Lundmark, 2006). Regional development

policies created at state and EU level suggests that tourism could attract the workforce formerly occupied in forestry and curb the negative migration trend in the region (Wilson et al., 2001; Ribeiro and Marques, 2002, Lundmark, 2010). Idre sameby also experienced problems with decreasing profitability of reindeer herding, and a number of Sámi had to leave the region in search of alternative employment opportunities (Engström and Boluk, 2012). In this context, tourism could equate to new sources of income and enable the inhabitants to remain in the area (Müller and Huuva, 2009).

Furthermore, the tourism activity in the area needs to be placed in the context of both physical and cultural factors, such as local resources and existing values. Hence, tourism development challenges already existing conditions of both a physical and social nature and can result in diverging opinions on if/how the development should be constructed (Healey, 2005). As explained earlier in the section on sense of place, conflicting interests concerning land use and place identity emerge from different meanings and values that are placed on the location (Massey, 2008).

The suggestion by Müller and Huuva (2009) that tourism could equate to new sources of income and enable inhabitants to remain in an area, as discussed above, is, taking Lundmark (2006) into consideration, not satisfying there is little evidence indicating that tourism has had a positive effect on either the population figures or the economy in the mountain region due to failure from the tourism industry to consider the local labour force. Since tourism in the Swedish mountain range is mostly concentrated on the winter season, a substantial part of the workforce involved consists of non-residential seasonal migrants that leave the destination as soon as the season is over (Lundmark, 2006; Engström and Boluk, 2012).

Moreover, tourism is often recognized as being exploitative. A number of issues have been discussed in the literature in regard to some of the prevailing issues faced by Indigenous people and their involvement in tourism-related activities (Engström and Boluk, 2012). Dann (2001) and Tuulentie (2006) highlight that tourism brochures reinforce a global discourse that Indigenous people are exotic or tend to be primitive, or highly spiritual. Such stereotypical images are used in marketing, denying any modern features of Indigenous people and thus reinforcing the significance of providing “authentic” experiences for those willing to pay (Engström and Boluk, 2012).

The above is also reflected in different situations where the Sámi are involved in conflicts of interests. An existing asymmetric power structure has been acknowledged where the Sami have been placed in a position of disadvantage (Green, 2009). Engström and Boluk (2012) state that, in situations where the Sámi are being confronted with other community members, they often surrender their rights, fearing more segregating from the local community.

In this specific case, a further introduction to the Three Peaks project and the developer of the project, Idre Fjäll company, is necessary. Estimates claim that 52% of the residents in Idre are employed within the tourism sector and most of them for the company Idre Fjäll (Environmental Assessment for

Idre Tre Toppar, 2005). The company was founded in the 1960s and is the main actor within tourism in the region. It is considered one of the most important skiing facilities in Sweden with more than 600.000 guest nights in the winter of 2019 which places Idre Fjäll in Sweden's top five skiing destinations (Longden, 2019). Idre Fjäll also made substantial ventures into summer activities and currently the destination offers gold, mountain biking, horse riding, hiking and snowmobile tours. Hence, Idre is an all-year-round tourism destination with a range of accommodation types on offer (Idre Fjäll, 2023).

The Three Peaks project is the result of an EU-financed project called "Drömmen om Framtiden" ("The Dream About the Future"), intended to enhance the attractiveness and competitiveness of Älvdalen municipality and the area around Idre as a tourist destination (Engström and Boluk, 2012). The project soon shifted towards the development, extension, and connection of the existing skiing facilities of Idre Fjäll and a smaller nearby skiing area, Fjätervålen, by adding the unexploited mountain in between the facilities, called Städjan mountain. This development would then result in the "Three Peaks" ("Tre Toppar") where the already existing facilities of Idre Fjäll and Fjätervålen would be connected by a new system of ski-lifts at Städjan mountain. The developers and supporters of the project argued that this would radically enhance employment opportunities and create a variety of economic advantages for the local community. Additionally, the project planners advocated that such developments were a necessity for the future, in order to remain competitive on the skiing tourism market and to secure the future existence of the local community. For Idre sameby, the exploitation of the mountain would mean that their main livelihood, reindeer herding, would be seriously affected. Städjan facilitates a passage for the reindeer when they move to the summer grazing areas. The passage is already narrow as it is and bypassing it is hardly possible, meaning that large parts of the winter pastures would be inaccessible (P. Andersson, personal communication, 2019; Engström and Boluk, 2012). In March 2007, the Swedish government announced that they rejected the expansion of the area with reference to the sensitivity of the valuable nature environments (Swedish Government, 2007). However, the project managers still seek ways to increase the skiing facilities, add new ski-lifts and other options to realize at least parts of the original plan or seek ways to expand in different directions such the realization of a connecting ski-lift between Idre Fjäll and Himmelfjäll, another ski facility but owned by Idre Fjäll (P. Andersson, personal communication, 2019; Lind, 2023).

When it comes to media coverage of the above projects, Engström and Boluk found an asymmetric representation as well. The project developer's perspective was referred to in 76 of the 95 newspaper articles. This contrasts with the arguments made about nature conservation identified in 57 articles. The interests of the Sami were mentioned in 17 articles reviewed. The frequency of which each discourse is represented in the newspapers during the conflict reveals that the proponents of the project received substantial attention in the media, whereas Sami interests were only moderately

conveyed (Engström and Boluk, 2012).

Other developments of the tourism sector, such as mountain biking and snowmobile tours are also prevalent in the area. Both the respondents of the interviews held for this study, as well as a spokesperson of STF, the Swedish Tourist Association, mention that they hope the number of mountain bikers will decrease. Mountain bikers, due to their speed, tend to scare away the reindeer, making the reindeer more anxious of people in general and more prone to avoid certain areas that are important for the reindeer to survive (P. Andersson, personal communication, 2019; C.J. Ingeström, personal communication, 2019). The snowmobiles tend to create the same problems. An additional problem with snowmobiles are the tracks that force the reindeer to migrate in a different pattern (P. Andersson, personal communication, 2019).

The stakeholders involved in threats relating to tourism are, as mentioned above, Idre sameby, Idre Fjäll company, STF (the Swedish Tourist Association), Älvdalen municipality and nature conservationists. Idre Fjäll company has not replied to requests for interviews for this research project. The regional director of STF replied and one interview with STF, mostly active maintaining hiking trails and the provision of huts on these trails, proved to be very fruitful. The director was also sceptic of the increase in mountain bike trails since mountain biking tends to make hiking less attractive (C.J. Ingeström, personal communication, 2019). The point of view of nature conservationists on the development of tourism in Idre was voiced in media coverage and a few academic articles being used for the social impact assessment in the next chapter.

1.4.4 Climate change

Another threat to reindeer herding and, therewith, the unique, to herding connected Sámi livelihood and culture, is climate change (EJF, 2019). The Arctic is warming almost twice as fast as the global average. This is known as 'Arctic amplification' and is projected to strengthen in coming years (Ibid, 2019). Moreover, Indigenous people tend to feel the effects of climate change first, as their livelihoods often depend on natural resources. Both the fastening processes of climate change in the Arctic and the dependence of reindeer herding on natural resources make the Sámi particularly vulnerable for the effects of climate change. As described, not only are Sámi livelihoods, culture and identity fundamentally linked to reindeer husbandry, making it vital for the Sámi that reindeer survive the changing climate.

Reindeer are specially adapted to an environment that has met their needs for millennia, as explained before. Now, as a result of human-driven climate change, the environment is changing much faster than the reindeer can keep up with (EJF, 2019, Allsopp et al., 2012; Magga et al., 2011). Unusually high temperatures above freezing are causing more frequent rain, which freezes on the ground into ice. Reindeer, trying to break through this ice layer to access the lichen, expend large amounts of energy

which they can ill afford at this harsh time of year (EJF, 2019). Often, they fail entirely to break the ice, and starve to death. In 2013 alone, a total of 61,000 died as a result of these conditions in Arctic Russia (EJF, 2019). This problem even gets amplified in combination with forestry and clearcutting areas, fastening the icing process (EJF, 2019). Warmer summers are also leading to greater numbers of parasitic and disease-spreading insects and widespread melting of ice-covered rivers, which are usually crossed during the seasonal migration (EJF, 2019). In order to survive in the changing climate, Sami herders are purchasing feed pellets to sustain their herds through winter, assisted by the Emergency Fund from the Sami Parliament. However, this supplementary feeding is less than ideal. Not only have reindeer herders observed higher instances of disease among reindeer fed with pellets, but as it is expensive and requires external resources, this practice also makes herding a less economically and environmentally sustainable way of life (Philippot et al., 2023). The sharp decline in reindeer numbers in recent years is threatening Sami herders and the situation is only growing worse as temperatures increase.

Furthermore, the reindeer herders increasingly suffer from eco-anxiety and stress, according to Arcanjo (2019). Stress is not only a result of climate change but also a result of all the above-mentioned threats and their related impacts (T. Andersson, personal communication, 2019). As discussed in this chapter, forestry, legal procedures and landownership issues, tourism, and climate change all pose, in their own way, a threat to and impact reindeer herding and therewith Sámi culture. Examples of the impacts of these threats are the fragmentation of reindeer pastures, stress but also effects on interpersonal and relational levels with other inhabitants or companies in the area besides cultural disruption and loss of cultural heritage. Moreover, the lack of recognition of land rights result in similar impacts. Therefore, proposals for mitigation of these threats from Idre sameby consist of calls for more recognition of their rights and a more holistic approach on issues such as forestry and tourism in order to curtail these threats and, concurrently, slow down the effects of climate change. In the next chapter the social impacts of these threats will be examined in detail in order to subsequently provide an analysis of mitigation efforts, and, more importantly of proposals by the Sámi of Idre to decrease the impacts of the above mentioned and discussed threats.

2. Assessment of impacts

This chapter will commence with an explanation of the differences between expected and experienced impacts, a section on the question as to whether a classification of social impact variables should be considered in this thesis as well as an introduction to potentially invoked social change processes. It would, however, in accordance with SIA literature, be undesirable to detail all dimensions of social change since social change has a way of creating other changes, which comes to the fore clearly in this thesis' holistic attempt in exploring a community's entirety and interconnectedness of threats, related impacts and changes (Vanclay, 2002). Subsequently, it will analyze various impacts as a result of the in chapter one introduced threats and impacts. The impacts of the discussed threats on reindeer herding lead to other impacts and social change processes. Therefore, the assessment will take reindeer herding as a starting point to discuss the impacts and social change processes as a result of forestry, landownership and legal issues, tourism, and climate change. It is important to note that, in line with SIA literature (Vanclay, 2002), one has to understand that the impacts and social changes influence each other and can only be seen in a holistic context of interconnectedness.

2.1 Expected and experienced impacts, social impact classifications and social change processes

Before exploring the several impacts that forestry, landownership and legal issues, tourism, and climate change have on Idre sameby, it is important to consider that there are different phases regarding impacts and therewith the nature of impacts change. A study by Suopajärvi et al. (2016), found that the social impacts experienced by an entity are also dependent on the phase of the processes and projects that are to impact. Experienced impacts in the planning phase are mostly expectations and affects, feelings, and emotions, for example, the fear for possible changes in the environment or hope for viability of the local life. In the second phase, the impacts become more tangible, such as increased pollution, or demographic changes, etc (Suopajärvi et al., 2016). The impacts and related social change processes that have been identified as consequences of the beforementioned threats can be categorized as expectations as well as experiences, depending on the phase of the project or threat and will be discussed accordingly in the assessments below.

Moreover, the social impacts discussed in this chapter are of differing nature. Although all of them are centered around Idre sameby and foremost impact reindeer herding, they can be classified in different types of social impacts. Vanclay (1999), expanding a list by Audrey Armour (1990) has identified the following eight types of social impacts:

- people's way of life — that is, how they live, work, play, and interact with one another on a day-to-day basis;
- their culture — that is, their shared beliefs, customs, values, and language or dialect;

- their community — its cohesion, stability, character, services, and facilities;
- their political systems — the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose;
- their environment — the quality of the air and water that people use; the availability and quality of the food that they eat; the level of hazard or risk, dust, and noise in which they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources;
- their health and well-being — where 'health' is understood in a manner similar to the World Health Organisation definition: ''a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity'';
- their personal and property rights — particularly whether people are economically affected, or experience personal disadvantage, which may include a violation of their civil liberties; and
- their fears and aspirations — their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

The list above is one of many lists of social impacts. This is, according to Vanclay (2002), that where lists are provided in SIA literature, there are substantial differences both in terms of the range of impacts that are included and in the way impacts are categorized or grouped. Also, potential social impacts can be missed on some of these lists since there is a tendency to focus on negative impacts only and because impacts are described in ethnocentric terms (Ibid). This proves that there are different understandings of what constitutes social impacts. Nonetheless, the list above proved to be very useful in categorizing the experienced and perceived impacts that were identified in relation to the projects and threats that came up in this study. It is, however, important to stress that, although categorization into the above-mentioned types of social impacts is possible, all the impacts identified are context related and therefore unique, which is not different in the case of the identified impacts in relation to the Idre context.

Furthermore, the assessed impacts result in different social change processes that will be addressed. According to Vanclay (2002) it is impossible to identity all social change processes that can occur in a project or, in this case, a range of projects and threats. On top of that, there are always background social change processes that are taking place in society. However, according to Vanclay (2002), it is likely that the categorization of social change processes into groupings is appropriate. The processes that Vanclay (2002) mentions are:

- Demographic processes (changes in the number and composition of people);

- Economic processes (relating to the way in which people make a living and economic activity in the society);
- Geographical processes (changes in land use patterns);
- Institutional and legal processes (relating to the efficiency and effectiveness of institutional structures including government and nongovernment organisations);
- Emancipatory and empowerment processes (increasing influence in decision making processes);
- Sociocultural processes (affecting the culture of a society); and
- Other processes.

For this thesis, the above given categories of social change are adequate to cover the social change processes that have been identified as a result of the impacts of the analyzed projects and threats. The thesis will continue with the assessment of the impacts and, subsequently, related social change processes.

2.2 Assessment of impacts as a result of current projects and threats

After conducting and analyzing the interviews, analyzing already conducted interviews and doing literature review on the various projects and threats and related impacts on Idre sameby, there is a multitude of impacts that can be identified, among which are the loss of cultural heritage and traditional knowledge, increased social tensions, negative health impacts, impacts on tourism, economic impacts, and, specifically for reindeer herding, and therewith relating to all the above: loss of grazing lands, fragmentation of grazing lands, disruption of migration patterns and changes to the natural environment. The loss and fragmentation of grazing lands are a direct result of the in chapter one discussed projects and threats, ranging from forestry to landownership and legal issues to tourism and climate change and is therefore a recurring theme in all the impact assessments.

The forest industry in Älvdalen, introduced and elaborated on in chapter one, has large impacts on the way of life of the members of Idre sameby, their culture, their environment, their health and wellbeing, their fears and aspirations and has a profound impact on the reinforcement of already existing asymmetric power structures, relating to their political influence and their rights. They are experienced impacts since it is a process of which the effectuation is ongoing and lead to a multitude of social change processes, that is, at least of the mentioned social change processes in the list above.

As described, forestry largely contributes to the fragmentation of grazing lands and a decrease in quality of grazing lands. This is, as explained, a result of clearcutting and the creation of roads meant to facilitate the timber industry. The clearcutting in turn decreases the quality of lichen and makes it harder for reindeer to look for food when snow turns into ice, which happens faster in open areas. It creates islands of usable pastures amid areas where forest has been removed. Moreover, the reindeer

have specific migration patterns and stay on specific areas for a set timeframe. This all depends on when for example, the snow melts, when lichen, the main food source of the reindeer, is available in certain areas, when ice melts, on the amount of wind, making calving in certain areas more likely, as well as many other factors (Raitio et al., 2020). These migration patterns were therefore linked to the specific makeup of a certain areas within the Idre sameby. The expansion of forestry activities leads to changes in the natural environment in turn directly leading to a change in migration patterns due to the depletion of resources for the reindeer in certain areas, and, therewith to an unpredictable and unstable relation between the herds and the lands (Raitio et al., 2020). Further, the forest companies seem to have a legal advantage over the Sámi, leaving the Sámi powerless to do anything about it. The most impact is therefore found on environmental and legal levels, leading, in turn, to other impacts on health, culture, their community, and their fears and aspirations.

Another problem for reindeer herding when it comes to forestry is the planting of new trees which all serve forestry since only trees that grow fast are picked for planting (P. Andersson, personal communication, 2019). An example of this it he lodgepole pine. The lodgepole pine has thicker branches then the Swedish pine, with longer and more numerous needles. The forests therefore also become thicker, with less light reaching the soil which is detrimental for soil lichens. The large amount of pine needles, three times higher than what occurs on a Swedish pine, when falling to the forest floor form a thick carpet over the soil lichens. This further impedes its growth causing a decrease in lichens (Sámiid Riikkasearvi, 2010).

In interviews with Thomas and Peter Andersson, reindeer herders of Idre sameby and the latter being the owner of Renbiten, a store where reindeer products are sold and the Sámi life can be experienced by tourists, the impacts forestry has on the reindeer herding, the migration of reindeer, and the relation between the herds and the herders, becomes clear:

"The most impactful thing on our reindeer herding is the forestry. We have big lands with lots of forest and it is getting smaller and smaller. It is more or less fine today, but if it continues in the same speed, it won't be that good in 10 years or so. The reindeers need big areas, big unspoiled areas, because they are very selective in what they eat. You simply need a big area for a good herd, but the areas keep shrinking every year. The problem for us is the forestry." (T. Andersson, personal communication, 2019).

"Yeah. They cut, it's hard to stop. So that's also why we cannot have our reindeer so long on the same place, it's not like thirty years ago. They must move, it's small islands with good trees and food. So, we also split the reindeer. Now we must have them on a bigger area so it's hard to track them." (P. Andersson, personal communication, 2019).

Moreover, the words of Thomas show that there are also fears for the future. Since Sámi culture is so inextricably bound to reindeer herding, he does not only fear for reindeer herding as an occupation, but for the existence of Sámi culture in Idre. Sveaskog, the forest company that owns most of the forests that are being removed, writes that it strives to ensure that a viable reindeer industry and viable forestry can coexist and develop (Sveaskog, 2021). In an interview with the coordinator of the Fjällstation, a hiking hub in Grövelsjön, Carl Johan Ingeström mentions that Sveaskog is cutting not close to Grövelsjön but close to Idre (C.J. Ingeström, personal communication, 2019). This, however, is part of the winter grazing lands of the reindeer or are important parts of migration routes. In map 1 in the appendix the areas where Sveaskog has left open spots in the landscape due to clearcutting are visible. Ingeström also mentions that Sveaskog is trying to engage more in tourism.

"Well, the big forestry owners in Sweden today, like for example, Sveaskog, they tend to see that tourism is also important for them, for the future. So, they're putting a lot more effort to get closer to the tourism industry." (C.J. Ingeström, personal communication, 2019).

Sveaskog intends to fuse nature conservation with tourism in their so called ecoparks but the arguments to do so clearly show that in Sveaskog's 'normal' land use financial incentives are more important than ecological incentives. Moreover, one of the ecoparks can be found in Idre sameby where there are still substantial clear-cutting areas (map 1, appendix; P. Andersson, personal communication, 2019). In a report (2022) Sveaskog writes:

"The ecoparks are one of Sveaskog's tools for working with nature conservation. Our aim is to preserve, recreate and develop high natural values. At least half of the productive forest land is used for nature conservation. Wood production is conducted in most ecoparks, albeit adapted to the area's particular natural and cultural interest. Ecological values take precedence over financial values in the ecoparks." (Sveaskog, 2022).

However, the fact that financial incentives seem to be playing a bigger role than Sveaskog's striving for coexisting viable forestry and viable reindeer industries is also demonstrated by the following:

"The biggest one is Sveaskog. It is the biggest forest company. And it's owned for 49 percent of Sweden's Government and 51 percent private. And that is why they say we cannot do anything because the government owns only 49 percent. So the private part wants 20 percent vinst. The top wants twenty percent of that. They want the money. Yeah. So, when I try to say to the forest company: "Why do you, if you take smaller places, it should be better, not good but it will be better for us." But they don't listen." (P. Andersson, personal communication, 2019).

Furthermore, Greenpeace published a report where the same practices can be found in other areas of Swedish Sápmi (Sevä, Greenpeace, 2021). The above furthermore stresses both the ambiguous role the government plays regarding having any authority to step in and step up for Sámi rights and the in chapter one described asymmetric power relations that exist when it comes to landownership.

The landownership and legal issues that relate to reindeer herding that were discussed in the interviews address, among others, the asymmetric power relations between Sveaskog, and the Swedish government on one hand, and Idre sameby on the other as well as the legal issues that are a result of vague laws that state there is a form of co-ownership. In the end, at least in Idre sameby, it is Sveaskog and the state who have a final say in matters relating to forestry. According to Thomas, Sveaskog often does not keep to their agreements but there is little Idre sameby can do. The following conversation illustrates this:

"Thomas: They do that sometimes, sometimes we got an agreement that they just take this and this and after they've been there, they take most of everything and left a smaller part that we agreed of."

"Wouter: You mean they take a bigger piece of forest than what you agreed on?"

"Thomas: Yes, they take a bigger part than what we agreed of, because: "oh I'm sorry we have another one driving and he didn't know" … and then the excuses come. "But the next time we do better". We don't have the right to stop it as we should have." (T. Andersson, personal communication, 2019).

Other landownership and legal issues revolve around private owned land. As explained in chapter one, the legal status of the land, being owned both by private owners as well as by the Sámi, also seems to work disadvantageous for the Sámi in these cases. A good example is provided by Lannerbro Norell (2006) on the so called 'Mora-Process'. The ruling in this case in practice means that the private landowner's claim is upheld and, consequently, the reindeer have no right of grazing on lands by people who don't want the reindeer there. The 'Mora-Process' relates to a court ruling in the Härjedalsmålet district, where a unanimous district court found that the Sami villages have no right to reindeer grazing on the majority of winter pastures. This ruling is used and can be used in the future, in other court rulings in the advantage of private landowners. Further, it means that, the sameby involved, when losing the case, is forced to bear their own and the other party's legal costs.

In an interview with Peter, he demonstrates the struggle that is the result of these asymmetric power structures and the lack of legal protection:

"When the reindeer is coming there, to the private house, it is a problem to some people. The most people they think it's okay if the reindeer are there. But some people say the reindeer are a problem when they come close to their house. Even when you know you're buying a house here and you know the reindeer can come close to your house, even if the people know it, they think it is a problem and

they call us and: "Oh no, it's a reindeer here and it's eating my flowers." And we have to come up because we want to be friendly to the people." (P. Andersson, personal communication, 2019).

There are more landownership and legal issues that impact reindeer herding as introduced in chapter one. Another example is the existence of a border fence. According to both Peter, the Norwegian government wants to limit the number of 'Swedish' reindeer on their side of the border because of overgrazing. The fence was solely erected to stop the reindeer from crossing the border, as explained by Peter as well.

"The idea of the fence is to … stop reindeer from crossing the border." (P. Andersson, personal communication, 2019).

The initiative for the fence lies with Norwegian concerns regarding overgrazing on their side of the border during the summer (Allen and Lundmark, 2023). However, there is no scientific proof of large-scale vegetation degradation or erosion by reindeer husbandry, and the goal of decreasing continuous overgrazing and damage by reindeer over large areas is not be a valid issue, especially not in summer grazing ground (Moen and Danell, 2003; Swedish Environmental Protection Agency, 2000).

Ironically, due to the border fence overgrazing becomes a larger problem than it was. Moen and Danell (2003) found that "heavy grazing impacts may be seen around infrastructures such as enclosures and fences, and these should be continuously monitored, and reindeer management techniques need to be constantly adapted to counteract undesired changes, such as occurred in Mittåkläppen where the fence was subsequently removed by the herding community as a result of overgrazing issues." Additionally, the border fence between Norway and Sweden has dramatically changed migration routes of, among others, the reindeer of Idre sameby, causing the reindeer to spend the summer in more vulnerable mountain areas, which a century or more ago were grazed mainly in spring and autumn (Moen and Danell, 2003; T. Andersson, personal communication, 2019). Although the Swedish government seems to be more helpful in resolving the border fence issue (Nilsen, 2017), Thomas Andersson addressed his issues with the Swedish government and the Sámi legal status in the following:

"Have I told you that you don't get that much of help from the Swedish government? They would like to, the Swedish government they love to preserve other Indigenous people around the world, or even any kind of people that is having a hard time. They intermingle in all kinds of countries to tell them to take better care of their minorities. The Kurds in Iran and Iraq, the Swedes like to fight for them, or for the Palestinians, the Swedes like to stand up for them too. But when it comes to their own people you don't hear anything about it. They don't get the rights that they should have according to the UN. The

UN criticises Sweden every year for the way they treat the Sámi. And the Swedish government doesn't do anything about it." (T. Andersson, personal communication, 2019).

The above illustrates that the rights of the Sámi when it comes to their own perception of it are not adequately regulated and implemented.

In addition to forestry, related landownership disputes, landownership disputes with private property owners and the above-mentioned issues regarding the border fence, there are the impacts as a result of tourism. The largest stakeholder in the tourism industry for Idre sameby, Idre Fjäll company, cannot pursue with its original plans making up the "Three Peaks" project (Engström and Boluk, 2012). This, however, have not led to a decrease of fears for other forms of expansion of Idre Fjäll due to other projects and a continuing sense of distrust that the "Three Peaks" project has left (P. Andersson, personal communication, 2019). This is illustrated by the following:

So, here (pointing at a map) they wanted to extent the resort. But we said: "No you can't do that." I hope that the plans are stopped now but some people really believe in this idea, I'm afraid. (P. Andersson, personal communication, 2019).

Proponents of the project however stated that further development of the tourism sector was a necessity for the community in order to lower unemployment rates as well as the need to increase competitiveness regarding other skiing areas in Sweden (Engström and Boluk, 2012). These standpoints appear in a newspaper in which tourism was positioned as an employment engine as well as, regarding competitiveness, the words from the former CEO of Idre Fjäll, mr. Schmidt:

"We have an unemployment rate of 18% in the municipality and the depopulation trend is continuing. Something needs to be done". (Berggren, 1998).

"This project is an absolute necessity in order to meet the tougher competition on the market and the loss of market shares that comes [along] with that. At this moment, Idre Fjäll has reached a point where we cannot develop our facilities any more without using new land." (Schmidt, 2002).

"The development will lead to new working opportunities and an estimated population growth of 1500 people. We have now reached a crossroads . . . where we can choose to develop a facility that meets customer demand or we can simply give up. Skiing conditions in Idre is good but not good enough to meet the demands of tomorrow. (Schmidt, 2003)

Engström and Boluk (2012) further found that the development of the tourism industry was also described as a way to prioritize the community. They quote an article in which the following was written:

"The community interests are substantial. If the community will have a chance of future survival, we need to expand tourism". (Hellekant, 2004).

The main opponents to the project were conservationist groups reiterating their fundamental interest in preservation. Moreover, conservationist groups drew attention to the lack of ethics demonstrated by the tourism developers, suggesting that the developers were aware of environmental implications but were primarily concerned with financial imperatives (Engström and Boluk, 2012). Conservationist groups also questioned arguments suggesting that the development would be a necessity for the future of the community (Ibid):

"The area they want to exploit can't cope with additional mass-tourism. The mountain of Städjan needs to be unexploited . . . Indispensable natural values are, yet again, threatened by tourism exploitation. Tourism is important for the future of the region, but do we really need to sacrifice our environment because of jobs?". (Rehnström, 2002)

The opposition to the project by Idre sameby did see some shifting discourses. According to Engström and Boluk (2012) the Sámi were fiercely against the project at first as the following also demonstrates:

"The Reindeer Husbandry Act [formed by the national Sámi parliament] forbids the cutting off of reindeer trails. We are the affected parties and have a strong position. If they don't take us seriously, we will be forced to go into battle. The Sámi village must be able to conduct a rational reindeer herding and slaughter without constant conflicts with other businesses and locals." (Jonsson, 2006).

However, as the project and the arisen conflict proceeded, the Sami's determination to protect their interests began to diminish and their firm opposition to tourism development was substituted with expressions of compromise and negotiation (Engström and Boluk, 2012). This changing discourse is recognizable when the Chairman of the Idre sameby had this to say:

"Representatives from the reindeer husbandry demand that the project managers Idre Fjäll will ensure a provision of new grazing lands. Additionally, the reindeer slaughterhouse . . . needs replacement in order for the Sámi to accept the project. We don't object to the project if our demands are being met and we get compensated for the additional costs we might suffer. If we were to be ignored and they don't take our demands into account, it will be a different matter." (Chairman of Idre sameby, Mora Tidning, 2006*).*

The above demonstrates the Sámi's changed perspective. Even if the Sámi did not express a direct acknowledgement of the necessity of the project (as expressed by the supporters of the project) they stated that they did not necessarily object to the development of tourism. Thus, the Sami discourse

shifted from an oppositional stance to a discourse of negotiation and possible acceptance if their demands were adequately met (Engström and Boluk, 2012). Important is also that Engström and Boluk (2012) found that many of the objections to the project were brought up by conservationist groups articulating the protection of the environment as the main priority and by doing so reinforcing their arguments by promoting Sámi rights. They, however, also found that the change in the official approach by Idre sameby towards the project could be a result of external pressure where the Sámi feared that resistance towards the project would result in more segregation from the majority of the local community (Engström and Boluk, 2012). This would represent a form of insecurity on behalf of the Sámi, suggesting that if they chose not to conform to the dominant discourse regarding tourism development, they and their offspring would be at risk of being ostracized by the supporters of the project in their community, in Älvdalen municipality (Ibid). The article by Engström and Boluk (2012) further identified feelings of mediocrity among the Sámi regarding the project and state that the position of the Sámi was influenced by hegemonic discourses representative of the developers. Österlin and Raitio (2020) found that this is often this case in Sápmi. The following quote supports this sentiment:

"The projects are going to happen anyway, so then it is hard to say no, then it is better to be as constructive as possible . . . and try to see that there are as little impacts on reindeer herding as possible" Chairman in a Sámi community (Österlin and Raitio, 2020).

Engström and Boluk conclude by stating that the Sámi position regarding the project was considerably manipulated which is another demonstration of a lack ensuring the rights of the Sámi.

The development of Idre Fjäll does not stop now the project of the "Three Peaks" is halted by the Swedish government. The management sought other ways to increase their revenues by exploring options for further expansion of the company's attractiveness, regarding both winter as well as summer activities (P. Andersson, personal communication, 2019). A newly proposed ski-lift from Idre Fjäll to Himmelfjäll, being described in chapter one, is an example of another project that will affect reindeer migration routes. About this project Peter Andersson, in an interview with the Swedish national broadcaster SVT, says the following:

*"The developers and those who build must see us as owners - that we in the Sami village have the right to be here - and not talk to us in the final stage. " (*P. Andersson, SVT, 2023).

Andersson added that he wants more dialogue with the developers, although he does believe that dialogue has improved in the last decade (SVT, 2023).

Other tourist activities such as mountain biking and hiking seem to impact reindeer herding as well. Both wild and semidomesticated reindeer tend to avoid tourists and tourist resorts and especially

females and calves (which constitute the majority of the herds) are particularly sensitive to human disturbance (Helle and Särkela, 1993; Nellemann et al., 2000). Short-term disturbances, such as hikers and mountain bikers, cause reindeer to move more frequently than otherwise (Moen and Danell, 2003). The herds of Idre sameby are, as shown on map 1 in the appendix, in the summer on their grazing lands on Långfjället, which also constitutes 25% of their entire grazing land. Långfjället is a popular area for mountain biking and hiking and the southwestern part is easily reached by car. Several tourist resorts are situated here, such as Lövåsgården, Storsätern, and Grövelsjön fjällstation, and more than 11 000 tourists visit the area during summer months each year (Moen and Danell, 2003; STF, 2002; P. Andersson, personal communication, 2019). Andersson seems to be most concerned about the mountain bikers in the area as demonstrated by the following:

"Especially people who ride bikes, cycling. Because it's easier to more people to come into the mountain. And the tires are bad for the ground and they go fast so they scare the reindeer. The reindeer are more shy. So, if you go up to them, they can see you. If the reindeer are here and you walk slowly you can see them and they see you. But if you come with the bicycle, they go very fast so it really scares them and over time it is getting harder for us to go to them too. So that's why the reindeer have to run more as well. And that is not so good because they have to rest as well." (P. Andersson, personal communication, 2019).

Although hikers make up the largest portion of tourists on Långfjället, the effects of mountain biking on the reindeer seem to be more devastating. Although there are no scientific findings on the effects of mountain biking on reindeer behaviour specific, there is a multitude of studies on the effects of mountain biking on wildlife in general. There is no doubt that terrestrial recreation in ecological systems is impacting wildlife (Marzano and Dandy, 2012; Larson et al., 2016; Marion et al., 2016; Bateman and Fleming, 2017). Impacts are either immediate and lead to direct behavioural responses like alert and flight (Marzano and Dandy, 2012; Marion et al., 2016) as described by Andersson (personal communication, 2019) as well, or relate to long-term effects, such as habitat degradation, soil degradation or fragmentation of migration routes by trails (Marzano and Dandy, 2012; Marion et al., 2016). Ingeström (personal communication, 2019) from STF states that mountain biking is increasingly becoming a problem although not in the area of Långfjället.

"It (mountain biking) is becoming more and more a problem in the Swedish mountains, although not here, because we don't run any adds on it and we don't develop any downhill courses or mountain bike courses here. If you look at Idre Fjäll, there they have a lot of mountain bike tracks. But it's built on their own land and so forth. And it doesn't affect the overall wilderness. But if you up to Jämtland, mountain biking on hiking tracks is one of our main concerns, it's becoming a real problem.

The mountain bikers, however, use, according to both Thomas and Peter Andersson (personal communication, 2019) hiking trails on Långfjället. The several hiking trails cross Långfjället, are easily accessible and it is very common for day hikers, but in an increasing amount also mountain bikers, to make short trips from the beforementioned tourist stations. In fact, in 2000 already, the County Administration Board was so concerned over damage to vegetation and erosion along some of the more visited trails that they have started to construct graveled trails which hopefully will reduce wear on the vegetation along the trails (Mora Tidning newspaper, 2000). Moen and Danell (2003) expected that there is a direct effect of human trampling on vegetation, such as lichen, on Långfjället, having an impact on the environment that supports the reindeer. Moreover, the suggestion by Ingeström that the mountain bike trails in Idre Fjäll do not affect the overall wilderness does not seem to be in line with the analyzed literature on the impact of mountain bike trails on the environment. In addition, the mountain bike trails on Idre Fjäll sometimes also cross reindeer migration routes and find themselves in the winter pastures of Idre sameby. Furthermore, the mountain tourism seems to scare away the reindeer from their water resources:

"And you also see that, all the people who want to see the mountains, it's good that you want to see the mountain, but … we cannot have it open to do anything in the mountain because we see it now that when there are reindeer near to the lake, all the people want to stay near the lake, they have their tents. So, the reindeer don't go down to the water, so they drink too little. And the most problems are in the spring when there are calves. So, I tell the kommun that they have to close some of the lakes in April, and then they say it's just one or two people who come skiing to the lake to fish but it's the same with the ski as with the mountain bike. So, if they're coming, even one person, to the lake the reindeer don't want to because they're so shy when they have babies." (P. Andersson, personal communication, 2019).

All the abovementioned threats and related impacts seem to be aggravated by climate change. The fragmentation of land, whether it caused by forestry, legal challenges, tourism, or, in some cases, the combination of these, puts more pressure on the ecosystem that the reindeer need to survive. In combination with changing snow conditions, in winter, or warmer temperatures in summer, this fragmentation is intensified (Rosqvist et al., 2022). As described, in winter, the amount and quality (density, hardness, and wetness) of the snow are key in determining reindeer access to ground and arboreal lichens (Skogland, 1978; Roturier and Roué, 2009; Callaghan et al., 2011; Kivinen and Rasmus, 2014; Forbes et al., 2016; Turunen et al., 2016; Rosqvist et al., 2022). If the ground remains unfrozen and moist, ice crystals often form on the ground and on the vegetation covering the ground, on which further build-up of ice easily occurs which impact the whole ecosystem (Kausrud et al., 2008; Bokhorst et al., 2016; Rosqvist et al., 2022). Rain-on-snow events, followed by refreezing, often create hard and icy layers at the surface and in the snowpack (Bokhorst et al. 2016; Rasmus et al. 2018; Rosqvist et al.,

2022). Such conditions radically decrease the accessibility of and sometimes also even the ability to smell and identify ground lichens. Moreover, wet snow can stimulate the growth of mycotoxin-producing molds and toxic lichens (Kumpula et al. 2000).

The above relates to clear cutting since reindeer seem to avoid clear-cuts where large volumes of logging residues hinder digging through the snow to reach ground lichens (Helle et al., 1990; Kivinen et al., 2010). Furthermore, removal of trees has an impact on snow conditions. Snow depth and snow melt are determined by the forest stand characteristics. In general, snow cover has been found to be deeper in clear-cuts than in forests (Golding and Swanson, 1986; Kivinen et al., 2010). Sámi reindeer herders interviewed for the study of Roturier and Roué (2009) all agreed that clear-cutting has a negative effect on winter grazing as snow becomes too hard to be dug by the reindeer, only intensified by climate change (Kivinen et al., 2010).

During summer, the reindeer in Idre mainly feed on leaves, grasses, herbs and mushrooms and they build energy reserves for the next winter, as described in chapter one (Lannerbro Norell, 2006). If summer days are hot reindeer migrate to areas with a higher altitude, seeking relief from heat and insects (Kivinen et al., 2010). At these higher elevations, there is less food and therefore vegetation is also too sparse to support a large number of animals. The reindeer then risk a low overall nutrient intake (Ibid). Herders have noted that during cooler periods in summer, or indeed during the night, reindeer tend to move down-valley several kilometers to graze nutrient-richer pastures. Even if warmth persists, the shorter days and cooler and more humid nights of the early autumn attract reindeer to lower laying areas (Ibid). The consequences of climate change, both in summer and winter, show how essential preserved ecosystems and interconnected grazing areas are for adaptive strategies to succeed in a warmer climate with uncertain environmental consequences (Ibid).

Moreover, climate change is often mentioned by Sámi as a cause of stress and other mental health issues (Schreiber, 2016; EJF, 2019). Half of Sámi adults in Sweden suffer from anxiety and depression, and 1 in 3 young Indigenous reindeer herders have contemplated suicide (Ibid). Suicide rates in Sweden among the Sámi people can be up to four times higher than the national average (Ibid). In general, the above-mentioned impacts and threats seem to be leading to an underpinning of the quality of life for the Sámi. According to Morris (2009), this is an indirect result of a lack of rights to their traditional lands. Blåhed and San Sebastián (2021) found that symptoms related to psychosocial distress (anxiety, stress, worry) seem to be a result of long processes of uncertainty. This can all be caused by ongoing legal issues regarding landownership, fragmentation of land as a result of this or the effects of climate change and may also apply to members of Idre sameby. Literature suggests that both community relations as well as mental health decrease as a result of attempts by the Sámi to stop new encroachments through appeals, since these have led to conflicts with corporations and other actors (Österlin and Raitio, 2020).

2.3 Social Change Processes

To conclude this chapter, the threats and impacts can have various social change processes as a result. Many of them have already been mentioned either directly or indirectly but the most important ones will be listed below. The different identified social change processes are described in relation to the fragmentation of reindeer pastures. Although other social change processes may also occur as a result of the described impacts and threats, most social change processes are either direct or indirect a result of the fragmentation of reindeer land. It will be mentioned when the described threats and impacts lead to social change processes that can be seen separately from pasture fragmentation. Not all mentioned social change processes are happening already. It can also be an expected social change if situations continue in the same way as they do now.

First, the fragmentation of reindeer pastures can lead to changes in the number and composition of people involved in reindeer herding, therefore impacting demographic processes. As pastures shrink and become less accessible, herding communities might experience a decline in their traditional way of life, resulting in migration to urban areas in search of alternative livelihoods. This could lead to a shift in the demographic makeup of these communities, with younger generations opting for non-traditional careers, and a potential decrease in the overall population of reindeer herders. Furthermore, disputes over land creates uncertainty and instability, which may lead to prompting some herders to seek other opportunities elsewhere. This is also the case for Idre sameby. Many young Sámi from Idre sameby leave and migrate to cities such as Falun, Stockholm, or Oslo (E. Andersson, personal communication, 2019).

The economic activities of the reindeer herding communities are directly affected by the fragmentation of pastures and uncertain land tenure. The reduced availability of grazing land can lead to decreased herd sizes and subsequently impact the income generated from the sale of reindeer products (Blåhed and San Sebastián, 2021). As a result, herders might be compelled to seek other economic opportunities, such as engaging in tourism-related activities. A good example for this in Idre sameby is the store Renbiten, owned by Peter and Helena Andersson. A large part of their income is generated through the store, whether it is by selling reindeer products or giving tours in the area to tourists (P. Andersson, personal communication, 2019).

Thirdly, the fragmentation of reindeer pastures, as described in both chapter one and in the sections above, causes significant changes in land use patterns. With forestry, tourism, and landownership issues encroaching on traditional grazing areas, the spatial distribution of reindeer herding in Idre is drastically altered as extensively discussed.

Reindeer herding is, as explained, deeply intertwined with the culture and identity of Idre sameby. As younger generations migrate to urban areas, there might be a loss of cultural transmission and erosion of traditional practices. Further, adaptation and integration of new practices driven by

economic changes and exposure to tourism also influences the existing sociocultural dynamics. Moreover, the described landownership disputes lead to social tensions and conflicts between different stakeholder groups, impacting the social cohesion of Älvdalen community.

In summary, legal issues over landownership, forestry, tourism, and climate change contribute to the fragmentation of reindeer pastures. Forestry, tourism, and landownership disputes disrupt migration routes leading to a loss of grazing areas for the reindeer and, therewith, disrupting cultural practices and traditions. Moreover, increased tourism can offer economic opportunities, but it can also put pressure on the preservation of authentic cultural practices, leading to cultural commodification. Moreover, the results of fragmentation, legal pressure and climate change can lead to financial stress, uncertainty about the future, anxiety, and a sense of powerlessness, all of which can contribute to mental health challenges within the community. The limited involvement of the Sámi community in decision-making processes regarding land use and resource management leads to a sense of marginalization and exclusion. This lack of agency may contribute to feelings of hopelessness and frustration, again impacting mental health. The complex web of social changes that is triggered by the interconnected threats of forestry, landowner disputes, tourism, climate change emanating in fragmentation and identified in this study include demographic shifts, economic transformations, changes in land use patterns, institutional challenges and sociocultural adaptations. Mitigation of the effects of these impacts and social change processes is therefore necessary. In the next chapter mitigation efforts and proposals will be discussed as well as connected to a context of Sámi environmentalism.

3. Mitigation

In the following chapter mitigation efforts for the mentioned threats and related impacts will be discussed, as well as proposals by the Sámi to mitigate these. Furthermore, the discussion of mitigation proposals by the Sámi of Idre will serve to proof that the preservation of Indigenous environmental knowledge is important to lessen the impacts of mentioned threats as well as to bolster the claim that one can speak of Sámi environmentalism.

3.1 Mitigation efforts and proposals regarding forestry

Different stakeholder groups differ in the importance they give to roles they envision forests should have in, for example, the national economy, the protection of biodiversity and sustainable use of ecosystem services, and in mitigating climate change and that is why little mitigation efforts find their way into practice (Sandström et al., 2020). In a study by Sandström et al. (2020) it was found that forestry companies and private forest owners did identify measures that may contribute to create a future for forests in Sweden in which the Sámi may have more chance of articulating their concerns and influence certain policies. One of them consists of a National Forest Program, being a participatory process that include relevant stakeholders with the aim to contribute to the formulation, planning and implementation of sustainable forest management (Johansson, 2016). Criticism of the environmental quality of such an objective by scholars highlighted the need to operationalize the objective properly and to create an equal structure in such a participatory process. According to forestry stakeholders, this should be a task for the Swedish government and the responsible authority, the Swedish Environmental Protection Agency (Sandström et al. 2020).

Although Sveaskog writes that it seeks to ensure that a viable reindeer industry and viable forestry can coexist and develop (Sveaskog 2021), it seems not to be willing to listen to proposals from Idre sameby to arrange forestry in a way that has less effect on the reindeer and the Sámi. Proposals include, among others, stopping with clearcutting and continue with selective cutting. Selective cutting refers to a system that removes only a small proportion of trees, usually the oldest or the largest (Puettmann et al., 2009). Peter Andersson also explained that to him this was a more desirable form of forestry, not only because it influences the reindeer, but because he beliefs in a more holistic approach on life:

"So, you don't take all the trees on one place. You take one there, and one there and one there. You don't do it like the big forest companies, they take everything. You have to make a choice which tree you'll take and ask the tree, so you can take them in correspondence with nature. The tree has a life…" (P. Andersson, personal communication, 2019).

Peter's mother, who was in the same room, added:

"The way they use forests, well, you don't, the tree is… they have a life. So, you cannot just take it. You must thank the tree because the tree gave you a house to live in, the tree gives you (…) the food inside it. You don't just take it… "(G. Andersson, personal communication, 2019).

Thomas Andersson explained why clear cutting is so devastating for his herd and added the following suggestion:

"They shouldn't just chop everything; they should leave many trees. If you chop every tree in one area the area becomes quite open and because of that the moss gets a lot of sun and little shadow and then there will be less moss every year. If you kept some trees, quite a lot of trees, then the moss could continue to grow. So, you could still leave your herd there and they could eat and dig. When companies chop the trees, they leave the stump and roots, the leftovers of the tree and because of this the reindeer can still smell the moss and they dig but they can't reach the moss. You have to get rid of the leftovers of the trees so they can reach it."

The above illustrates not only a form of forestry that would be more sustainable, which selective cutting is (Huang et al., 2020), it also illustrates that Indigenous Sámi knowledge of how to relate to the environment is therewith intrinsically environmental. The following three segments of interview also supports this idea:

"When you build a gåetie (tipi), you have all the atmosphere in there. Because it's alive. It's not dead. You must see it like it has a life. So, you must learn that you only use what you need. People use more than they need. And she (his mother) said that it's also that you can see in every place where the Indigenous people live, when they cut down the tree it's the same. So, it's uh.. I think also that you never see a big gåetie, that it is bigger than you need. Because everything you have there in the gåetie, is has a place, uh, like function. So, you don't have to fill it with something you don't need." (P. Andersson, personal communication, 2019).

"Everybody should think: What do I need? And take just what you need. For today I don't need that soda over there, I need the water here, I just need that meat and that potatoe, that's my meal. I don't need anything else, just use what you need. I think it will be quite a big difference if everybody starts thinking that and live after that." (T. Andersson, personal communication, 2019).

It is clear that for Idre sameby, selective cutting is the preferred method of cutting. Other mitigation efforts that have to be considered are those that create more equal power structures between Idre sameby and Sveaskog, although, as of today, there does not seem to be any improvement regarding this (T. Andersson, personal communication, 2019).

Other mitigation efforts that do seem to be working are those in public awareness and education. As written in chapter one, the Strandskolan in Idre teaches, not only for community member of Idre sameby, on Sámi knowledge (Lannerbro Norell, 2006). Expanding these efforts in public awareness on elementary and high schools in Sweden and referring to the general context in which the Sámi find themselves, might help reducing the impact of forestry on the Sámi.

Other proposals to mitigate the impacts of forestry could include community-based forest management (CBFM) to empower the Sámi of Idre to have a more significant role in managing the forests (Pulhin et al., 2007). However, CBFM can only work if there are more equal power relations between Sveaskog and the Sámi (Pulhin et al., 2007). The relations between reindeer husbandry and forestry have improved during the past decades mainly due to the development of a consultation procedure between representatives of the state forestry companies, such as Sveaskog, and reindeer herders (Turunen, 2020). However, there is a need for establishing more correspondence, albeit voluntary, between private and shared ownership of the Swedish forests (Ibid). Also, more monitoring and assessment could potentially mitigate the impacts of forestry activities on the Sámi.

3.2 Mitigation efforts and proposals regarding landownership disputes

One of the fundamental steps in resolving landownership disputes is the recognition and validation of traditional land rights. Putting into practice immemorial prescription and giving it more legal basis. This recognition can be achieved though reforms, policy changes, and acknowledgment of historical grievances. Therefore, it is important that strengthening land tenure security, ensuring that the Sámi rights to use, access, and manage their traditional lands are legally protected and recognized. There is, however, still a long way to go. In 2017 Larsen et al. for example wrote that there still is an urgent need for the improvement regarding how Sámi communities can participate and influence in permit processes. Although the verdict in a 2011 lawsuit, in favour of Sámi land rights, can be a step in the right direction (Sasvari and Beach, 2011), other authors and the Sámi involved in this study stress that there is little improvement regarding the legal status of the Sámi (Savaşan, 2023; T. Andersson, personal communication, 2019). Where landownership disputes seem to improve in the Idre context, it is often dialogue between stakeholders that facilitates a more constructive form of communication in landownership disputes. There are multiple examples of this, such as:

"I think, in some places now, such as the new Himmelfjäll resort, people buy a lot of houses, there are a lot of tourist houses for people to buy. So, we are writing in the papers that there are reindeer there and they can come close to your house, so they know it. It should not be our problem, to drive our cars there every day and have our dogs and put the reindeer away from all the houses. But now we have to do that with some house owners." (P. Andersson, personal communication, 2019).

Also, in relation to the tourism industry, dialogue seems to be a working modus operandi to some extent. Peter Andersson said to the Swedish national broadcaster that he beliefs dialogue with for example Idre Fjäll is improving, as discussed in chapter two as well (SVT, 2023).

Other forms of mitigation efforts that might help in relation to landownership disputes consist of forms of collaborative land use planning, involving all stakeholders. This however, can, again, only work if the legal status of the Sámi is improved. It could, however, be beneficiary if in collaborative planning the Indigenous environmental knowledge of the Sámi is also used (Savaşan, 2023). This would both acknowledge the valuable insights of Idre sameby as well as creating a more sustainable form of land use.

3.3 Mitigation efforts and proposals regarding tourism

Mitigation of the impacts of tourism in Idre sameby has been substantial. This can be largely attributed to the efforts of Idre sameby. Dialogue, as mentioned above, also prove to be an important way of mitigating the impacts of tourism.

Yeah yeah. These two weeks the reindeer have to be on that place on the mountain and they need peace, so we close it. That could be one way to do it. Because, I also, I think it is also good, in some way it is good for people, all the tourists I have met, when you talk with them and you tell them how we live, they can take care of the nature in a better. I think that people who know the nature and want to take care of it, they will say: "Okay maybe we cannot go to this place for two weeks." And yeah, they will understand it. It's also a way to safe the nature.

However, regarding the new lift from Idre Fjäll to Himmelfjäll, opinions differ on the quality of dialogue. Idre sameby thinks dialogue has been 'somewhat worse' (P. Andersson, SVT, 2023). The current CEO of Idre Fjäll admits that he is aware of the problems that tourism can create, especially regarding the fragmentation of reindeer pastures. He thinks that the dialogue has been good and does not see any problems with certain adjustments to avoid reindeer husbandry being affected. To SVT he said the following:

"The expansion will affect to a certain extent and above all affects their transportation routes, so we have to adapt our operations. And during those periods when the reindeer are moved, we simply have to be adaptable." (A. Starenhed, SVT, 2023)

Although dialogue, also according to Idre sameby, has improved over the last ten years, there still appears to be a discrepancy in how the different parties value the dialogue. The efforts of Idre sameby, in combination with conservationist groups, and, in the end, the Swedish government to stop the expansion of Idre Fjäll regarding the "Three Peaks" project can be largely attributed to benefit

sharing with conservationist groups.

Moreover, ways of offering cultural orientation and educational programs for tourists to help them better understand the situation in Idre sameby can help as well. Sitting in a *gåetie* and talking about it with more people at least makes people more familiar with Sámi culture, history, and their way of life, and, therewith, their fears (personal observation, 2019). Thomas Andersson explains his relationship to tourism, and how he thinks tourism can be mitigated in the following:

"Well, if you can't beat them join them you know. It's the way it all works. You can't get the tourists out of here so why don't take advantage of the tourists that come here. And that will also make that they get a better understanding of the herding, of the Sámi people that are living here. So that when they go out in the mountains they think maybe a little bit more, I don't walk over that mountain because I see a herd of reindeers up there, then I won't go up there I will stay here just to watch them from a distance. Because if I go there then I would disturb them. So, it's quite good that I can inform the people even more. They like the nature, and they get more aware to not disturb the reindeers." (T. Andersson, personal communication, 2019).

Carl Johan Ingeström, from STF, says that being in nature also makes people more aware of it. Also, he mentions that public awareness through magazines seems to increase:

"I think that, since tourism within nature, being in the nature, is a lot more popular now than it was ten years ago. So, people are getting more aware and there are more and more magazines on these topics and so forth. So yes, they are. We also don't have that many problems with littering either. Uhm, the only place that is a problem is along the fishing paths. "
(C.J. Ingeström, personal communication, 2019).

What both Ingeström and Idre sameby agree on is that capacity management could help limiting the amount of mountain bikers in order to minimize the environmental disturbances, especially regarding the reindeer (C.J. Ingeström, personal communication, 2019; P. Andersson, personal communication, 2019). Literature indeed suggests that this method can prove to be successful (Pullman and Rodgers, 2010). The following is a suggestion by Andersson when it comes to capacity management:

"The first thing they can do is maybe not allow people to cycle everywhere… Because, now many people who just want to cycle everywhere, they do not walk, they just want cycling. If you cannot do this, they will not come. If you can stop the new tourist things… you cannot do everything in the mountains. You can have, like Idre Fjäll, one place where people can cycle. Or one mountain here, but not everywhere. They cannot be everywhere. Like the snowmobiles, you cannot, you must have areas where they are

stopped. In Jämtland, they have closed now one areas for cycling, because the Sami there have the calf marking in that area for two weeks, so they said in this area we will stop it. So that is one way to do it. That there are different times you can go to places." (P. Andersson, personal communication, 2019).

3.4 Mitigation efforts and proposals regarding climate change

Since climate change is a worldwide phenomenon and the effects of climate change are so widespread, mitigation efforts include adaptation strategies. From a Sámi perspective, adaptive measures and mitigation efforts to climate change are rooted in Indigenous environmental knowledge, or, traditional ecological knowledge (TEK), that have been honed over generation in response to changing environmental conditions. The Sámi in Idre, and the Sámi in general, have a deep understanding of their local ecosystems and a strong connection to the land, which they identify as vital for them. This is demonstrated by the following:

"The whole area that we use it is vital for us, we need this area, everything, every area is important. The mountains and every forest that we have is important." (T. Andersson, personal communication, 2019).

Since Indigenous environmental knowledge, or TEK, also in the Sámi context, depends on adaptive skills and a certain, as in chapter one described, sense of place, it results in extensive bonding with and detailed knowledge of the land, for example, when it comes to snow and ice conditions and their effects (Riseth et al., 2011) or how the Sámi experience their relation to the land. Moreover, it was found that TEK/science cooperation has a lot of potential for climate change studies (Ibid.) In particular, TEK attention to shifts in nature can be a useful guide for science. Further, if Sámi land use practices are maintained, the preservation of ecosystems might withstand climate impacts (Ibid.). In order to do so, the preservation of Sámi cultural heritage is crucial for adaptive capacities. Also, traditional weather forecasting methods, based on observations of nature, can complement modern meteorological forecasts and, therewith, enhance preparedness for extreme weather events (Balehegn et al., 2019).

Of course, the above is only possible if, again, Sámi rights get more recognition and are protected. It will enable the Sámi, also in Idre, to have a stronger voice in climate change discussions and policymaking. In the end, increasing awareness about climate change and its impacts on the Sámi community and beyond fosters a sense of shared responsibility and encourages collective action and is the most important mitigation effort of all. Promoting an idea of 'borrowing' the land could help creating this sense of shared responsibility and furthermore relates to intrinsic environmental values in Sámi cosmology as discussed in chapter one. About the idea of borrowing, Thomas Andersson said the following:

"People are starting to get enlightened, but you can't live as you do now if you press on the nature. You have to change your way of living and it's starting to happen. I don't know if it's happening fast enough, but most people are starting to think and they know they can't continue this way of living for a thousand more years. Sámi and many other Indigenous people see it as borrowing the land. We have to preserve it for the generations to come after us so they can continue doing what we do." (T. Andersson, personal communication, 2019)

Furthermore, Ingold (2000) advocated an Indigenous approach to conservation in Sápmi that could help creating a mindset that might be important in mitigating the effects of climate change. She writes that we should be taking Sámi ecology more seriously, by challenging our own ways of "comprehending human action, perception and cognition […] our very understanding of the environment and of our relations and responsibilities towards it." An increase in awareness of this is therefore important. Projects, such as the "Samiska Kulturmiljöer – Inventering och Dokumentation (Sami Cultural Environment – Inventory and Documentation), described in chapter one and aimed at increasing awareness should therefore also find their way into the present day, since it was last carried out between 1998 and 2000 (Lannerbro Norell, 2006). The abovementioned chapter shows clearly that mitigation efforts are hard to find from the hand of private stakeholders and that, where proposals by the Sámi are done, they relate to Sámi values that could be considered intrinsically environmentally concerned. Furthermore, an important need in implementing these proposals is the necessity to recognize and protect Sámi rights.

Conclusion

In conclusion, this thesis delved into the multifaceted realm of threats and related impacts regarding Idre sameby in the context of Sámi environmentalism. It explored the interconnectedness of tourism, forestry, landownership disputes, and climate change, having devastating impacts on reindeer grazing pastures due to fragmentation. This in turn leads to other impacts on the Sámi community's social fabric, it's cultural heritage as well as on the mental health of its members.

Chapter one elaborated on discussions regarding the legality of the notion of Indigenous, and in this case, Sámi environmentalism. It furthermore introduced Idre sameby and its experienced threats, such as forestry, legal procedures and landownership issues, tourism, and climate change. These threats all pose, in their own way, a threat to reindeer herding and therewith Sámi culture. The investigation uncovers the crucial role of forestry practices in Idre Sameby as well as the fact that tourism, while providing economic opportunities, can also present challenges in terms of cultural commodification and environmental degradation. The chapter furthermore introduces the threats revolving around landownership disputes, which, together with the fragmentation of reindeer pastures seem to be to most persistent. Chapter one also introduces the threat of climate change on the Sámi community and their environment. As being highly dependent on nature, the Sámi people face unique challenges brought about by climate related impacts.

In the second chapter, the impacts of these threats were further assessed. The results of fragmentation, legal pressure and climate change can lead to financial stress, uncertainty about the future, anxiety, and a sense of powerlessness, all of which can contribute to mental health challenges within the community, aside from the already mentioned challenges around cultural modification, or community relations. The complex web of social changes that is triggered by the interconnected threats and related impacts due to forestry, landowner disputes, tourism, climate change, emanating in fragmentation, and identified in this study include demographic shifts, economic transformations, changes in land use patterns, institutional challenges, and sociocultural adaptations.

Lastly, in chapter three it was clearly shown that mitigation efforts are hard to find from the hand of private stakeholders and that, where proposals by the Sámi are done, they relate to Sámi values that could be considered intrinsically environmentally concerned. Furthermore, an important need in implementing these proposals is the necessity to recognize and protect Sámi rights. By integrating Sámi environmental knowledge into climate change mitigation and adaptation strategies, the research highlights the Sámi community's resilience and the importance of incorporating their perspectives into broader environmental policies.

In sum, this thesis underscores the significance of an inclusive and sustainable approach to Sámi environmentalism in Idre sameby, and in Sápmi in general. By acknowledging the intricate

interplay between tourism, forestry, landownership disputes, and climate change, and implementing thoughtful mitigation measures, it is possible to foster a harmonious coexistence that preserves the Sámi cultural heritage, safeguards the environment, and ensures the prosperity and well-being of the community for generations to come. Moving forward, it is imperative for policymakers, stakeholders, and the wider society to recognize and support the agency of the Sámi people.

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Appendix I

Map 1 of Idre sameby

Based on a basemap of the Swedish Sámi Parliament

Rotate page to use. Legend on next page.

Appendix II: Map legend