

Between a rock and a hard place

The impact of wind power development in northern Sweden on Sámi reindeer herding in the context of climate change

Laura Niessen

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Supervisor: Sara Gabrielsson, LUCSUS, Lund University

Abstract:

The Swedish government has committed to a steep increase in renewable energy production, with the aim that Sweden's energy supply should become entirely renewable by 2040. One of the renewable energy forms that is currently under expansion is wind power, with approximately a third of existing installed capacity in the four northernmost provinces. In these provinces, however, the wind power developments conflict with Sámi reindeer husbandry, an indigenous livelihood that depends on large grazing lands and freedom of migration. Through the lens of Schlosberg's (2004) environmental justice framework, this thesis scrutinizes the justice claims made by the reindeer herders as well as the developers and Swedish authorities. I find that the competing perceptions of what is just create injustices for the indigenous and less powerful Sámi herders. They can point to several injustices regarding distribution, procedure and recognition in the wind power development. Then, I turn to the broader context of the future of Sámi reindeer herding in the context of climate change. I find that competing land uses, such as wind power, and other factors increase the herders' vulnerability to climate change. Conflicts in the Sámi community and insufficient protection for the indigenous livelihood by the Swedish state can further aggravate the uncertain future of Sámi reindeer herding. Finally, I provide recommendations on how the herders' adaptive capacity could be strengthened.

Keywords: Sámi, wind power, environmental justice, vulnerability, climate change

Word count: 13.989

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List of abbreviations

| | | |
|-----|---|---------------------------------|
| EIA | - | Environmental Impact Assessment |
| RE | - | Renewable energy |
| SSR | - | Svenska Samernas Riksförbund |

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“When you came, great white master
you know
took our grazing lands
dirtied and emptied the rivers
with ugly machines cut deep wounds
in our ancestors’ flesh become earth

And when you came
great white master
you promised us forever
the remnants
of our own pastures
everything that you at that time did not take

Our grazing lands
have shrunk so much
that nothing exists any longer for you
to promise for eternity”

(excerpt from Trekways of the Wind (Nils-Aslak Valkeapää, 1994))

1 Introduction

In order to tackle climate change, the Swedish government has decided to undertake mitigating measures and has set targets for the country to increase its renewable energy (RE) production. REs, such as solar power, hydropower or wind power, generate energy that emits fewer greenhouse gases than conventional fossil fuel energy production (IPCC, 2011). The Swedish RE goal is to have a fully renewable energy supply by 2040 ('Support for renewables', 2016). For this goal, wind power in Sweden is planned to increase considerably, tripling from 10 TWh per year in 2013 to 30 TWh per year in 2020 (Energimyndigheten, 2015; Energimyndigheten, 2016). While the majority of wind turbines in Sweden is currently located in the South of the country, interest in building new wind power in the North has increased in recent years, also due to the low population density (Liljenfeldt & Petersson, 2017). From 48 wind turbines in 2003, construction in the Swedish North soared to 704 turbines in 2014, with another 845 that received permission but are yet to be built (Kløcker Larsen et al., 2016). While this development of wind power is beneficial for climate change mitigation, there is also a flip side to it: the rapid expansion of wind power in the Swedish North clashes with the reindeer herding livelihood of the indigenous Sámi population.

Reindeer husbandry in the traditional way requires vast geographic areas, as the animals are moved between pastures from mountain or forest areas in the west to the coastal east of Sweden (Svensk Vindenergi och Svenska Samernas Riksförbund, 2010). While Sámi reindeer herding has seen considerable changes in the last century, including the adoption of modern technology and a change towards more extensive herding (Williams, 2003), current-day reindeer herding is still based on the traditional nomadic form and highly dependent on environmental and weather conditions (Allard, 2006; Sandström et al., 2016). Due to its dependence on the natural environment, reindeer husbandry is also expected to be highly vulnerable to climate change (SOU, 2007). The wind power developments undertaken in the Swedish North create conflicts because they reduce the available pastures, impact the animals and make herding more difficult and costly for the herders (Länsstyrelsen Västerbotten, 2011; Skarin, Sandström, Alam, Buhot & Nellemann, 2016). While several herding communities have tried to oppose the wind power developments, the Swedish authorities try to promote the coexistence of wind power and reindeer husbandry (Länsstyrelsen Västerbotten, 2011).

This conflict between reindeer herding and wind power development puts the herders 'between a rock and a hard place': they are vulnerable to climate change and generally could be expected to support mitigation, but the solution of wind power to this wicked problem of climate change (Jerneck

et al., 2011) only creates new difficulties for the herders. In fact, mitigation through wind power production renders their climate change adaptation more difficult. Thus, while wind power production is intended to be an energy source for the future and to help mitigating climate change, its expansion in the Swedish North endangers the indigenous Sámi livelihood.

In this thesis, a two-fold analysis highlights different aspects of this conflict between reindeer husbandry and wind power. In the first step of the analysis, I look into the environmental justice implications based on the theory developed by Schlosberg (2004) that rests on three pillars of justice: distribution, procedure and recognition. The justice claims made by both sides to the conflict between herding and wind power development are investigated to provide an understanding of how differing conceptions of justice can create conflict. I argue that the two opposing sides have different perceptions of justice which creates injustices, as one understanding prevails over the other. In the second step of the analysis, I then turn to the broader picture to caution about the vulnerable situation of the reindeer herding livelihood to the impacts of climate change in the near future. Through a vulnerability and adaptability framework, I identify the barriers to adaptation that currently exist for reindeer herding, one of which is the land-use competition with wind power. Based on my own research and literature review, I provide some recommendations on how Sámi reindeer husbandry could regain its adaptive capacity. The adaptation analysis is also highly related to justice considerations, as just adaptation is the one that reduces the vulnerability of the most vulnerable (Adger, 2006).

The aim of this thesis is to highlight the importance of environmental justice in climate change action, both in mitigation and adaptation. In the case of Sámi reindeer herding, climate change mitigation through wind power can carry injustices and constrain the vulnerable herding livelihood from adaptation to climate change. To disclose this vulnerability, I investigate the consequences of climate change and other factors on the livelihood of Sámi reindeer herding and propose some suggestions of what could alleviate injustices and increase adaptability.

The thesis is guided by three research questions (RQ):

RQ1: Within the framework of environmental justice by Schlosberg (2004),

- a) what do the Sámi herders claim as just with regard to wind power development?
- b) what do wind developers and authorities claim as just with regard to Sámi herding communities?

RQ2: Which constraints exist to the adaptation of Sámi reindeer herding to the impacts of climate change?

Throughout the thesis, Sami reindeer herding communities are referred to as *sameby*, the original Swedish term which implies both a geographic grazing area and a community of herders working together (Länsstyrelsen Västerbotten, 2011).

1.1 Scope and limitations

Naturally, this thesis carries some limitations due to its scope and restrictions in data collection. While I could have certainly gathered data from further conflicts regarding reindeer herding and wind power, my research was limited due to time and resource constraints. Despite this, a certain point of saturation was reached in the interview answers. I do not claim that this research can be generalisable to other cases but rather hope to provide a case study of environmental injustices and highlight the threats to adaptation that reindeer husbandry faces in the context of climate change.

The focus of the thesis lies with the Sámi reindeer herding perspective of the conflict, even though I also illuminate justice perceptions of the developers and authorities. This focus is justified, in my opinion, to support the less powerful side of the conflict, which is a threatened livelihood. Thus, while presenting both sides' justice perceptions, I provide more space to the herders' perception of injustices. In this thesis, justice claims by wind power developers and Swedish governmental authorities are merged. While these could have been separated, under the scope of this thesis, they were brought together as both actor groups have been perceived to oppose the Sámi reindeer herders in the conflict with wind power. The analysis of their positions was also mainly based on document analysis, as unfortunately, only few authorities or companies were responsive to my interview requests.

The results of the data collected might be limited due to its way of distribution, for instance regarding the survey. Since the survey was sent out through herders I talked to and distributed at the Sámi week in Umeå, it is possible that a bias was introduced and that rather pro-Sámi respondents would answer it. Nevertheless, the responses generated were quite diverse, including some that openly favoured wind power over Sámi herding interests.

Finally, there has been criticism regarding the Sámi-nature relationship: Valkonen and Valkonen (2014) question whether the Sámi community has any special relationship to their environment. While I am aware of this limitation, I still think that Sámi reindeer herders carry important knowledge and are tightly linked to their surrounding natural environment due to their nature-based livelihood.

1.2 Thesis outline

Following the introduction, I provide some background information on the Sámi and the traditional livelihood of reindeer herding as well as how herding is impacted by climate change and wind power developments (chapter 2). In chapter 3, I present my research strategy and introduce the case researched. Afterwards, I introduce the theoretical framework, positioning my research in sustainability science, presenting the theory on environmental justice and the framework on vulnerability and adaptation (chapter 4). Then follows my first layer of analysis, examining the justice claims of the reindeer herders and the justice claims of the wind developers and Swedish authorities (chapter 5). In my second layer of analysis, in chapter 6, I provide a more holistic picture of the threats to reindeer herding in the context of climate change and provide some recommendations on how these could be approached. Finally, I conclude my thesis and offer entryways for further research.

2 Background

2.1 The Sámi in Sweden

The Sámi are an Indigenous people that live in the northern parts of Norway, Sweden, Finland and the Russian Kola Peninsula (see figure 1).

While nomadic reindeer herding is a traditional Sámi livelihood, only a few thousand still practice the profession in present days. There are estimated to be around 20,000 Sámi in Sweden, of which only around 10% still practice the livelihood of reindeer herding (Furberg, Evengård & Nilsson, 2011). Reindeer husbandry is based on mobility, with herders moving their animals between the west and the coastal east of Sweden (Svensk Vindenergi och Svenska Samernas



Figure 1. Location of Sápmi, the traditional Sámi home-land (Wikimedia commons, n.d.)

Riksförbund, 2010). Despite modernization and more extensive herding in the last decades, reindeer husbandry is still highly dependent on the natural environment (Allard, 2006; Sandström et al., 2016; Williams, 2003).

While the Sámi are generally considered to be the first occupants of the Swedish North, Swedish settlements and agriculture were encouraged by the Swedish Crown since the 1600s and a process of what some have termed “internal colonisation” was initiated (Allard, 2006; Lawrence, 2014; Össbo & Lantto, 2011). Due to Swedish policies in the 19th century that tried to shield the Sámi livelihood from agriculture and Swedish settlements, reindeer herding has been given a special status in Swedish law (Lantto & Mörkenstam, 2008; Lantto, 2010; Lantto, 2014; Lawrence & Mörkenstam, 2016). While the Sámi have the right to use around 52% of Sweden’s land area for reindeer herding through the Reindeer Grazing Act of 1886, they do not own the land and are only allowed to use it for reindeer herding (Lantto & Mörkenstam, 2008). In fact, the customary rights of the Sámi to their land are only legally recognised in reindeer herding: according to Swedish law, only Sámi that are active reindeer herders in a *sameby* retain the rights of herding, fishing and hunting in parts of their former land area (Allard, 2006; Beach, 2007). In Swedish law, a herder cannot change his occupation, since “herding legislation takes the logical, if drastic, position that to the extent a Saami herder strays from his

traditional herding culture so should his special rights be terminated” (Beach, 2007, p. 5). Furthermore, if a pasture is abandoned by herders, it does not fall under the reindeer grazing rights anymore, effectively making it lost to the entire Sámi community (Allard, 2006).

Both the special privileges and the burdens of the reindeer herders divide the Sámi community. Sámi identity or Sáminess has been centred around only herding by Swedish policies for the last centuries (Williams, 2003). However, in recent years, the Sámi have gained more freedom to decide on what is Sáminess apart from reindeer herding. One such example are the voting rights to the Sámi Parliament that have been based on self-identification as a Sámi and Sámi language usage at home (Lantto & Mörkenstam, 2008). Thus, the Sámi identity has not yet been clearly established and, legally, the Sámi rights to their former land still rest only on practicing reindeer herders. Furthermore, the different ways of identifying as Sámi have also created conflicts between reindeer herders and the Sámi Parliament.

Despite receiving constitutional recognition as an Indigenous People in 2010, the Swedish Sámi are still in an ongoing struggle for self-determination (Lawrence & Mörkenstam, 2016). The Sámi Parliament (Sametinget) with popularly elected members has been criticized as it is a Swedish government agency and needs to follow the government over the electorate’s wishes (Lawrence & Mörkenstam, 2016). Sweden has repeatedly been criticized for its Sámi policies and for not joining the International Labour Organisation’s Convention 169 (ILO 169) (UN HRC, 2016). Quite importantly, ILO 169 articles 14 and 15 state that indigenous peoples should have “ownership and possession over the lands which they traditionally occupy” as well as “rights to natural resources on those lands” (ILO, 1989). This is highly relevant regarding land-use conflicts that Sámi communities and especially reindeer herders face in Sweden, as “competing land uses occur basically in most of the reindeer herding area, of more or less serious character for the reindeer husbandry” (Allard, 2006, p. 328). Such competing land-uses include wind power development, which is the focus of this thesis. Additionally, however, reindeer herding is expected to face another threat in the future: the impact of climate change (SOU, 2007).

2.2 Reindeer herding and climate change

Sámi reindeer herding is highly dependent on the natural environment, as the herd needs to be moved between areas several times a year and a main food source of the reindeer are lichens found in the natural vegetation (Allard, 2006; Skarin, Nellesmann, Sandström, Rönnegård & Lundqvist,

2013). Furthermore, the climatic and weather conditions are of outmost importance in the livelihood practiced outside all year round. The Arctic is expected to be amongst the first regions of the world to experience the impacts of climate change, with warming predicted with even low radiative forcing projections (see figure 2).

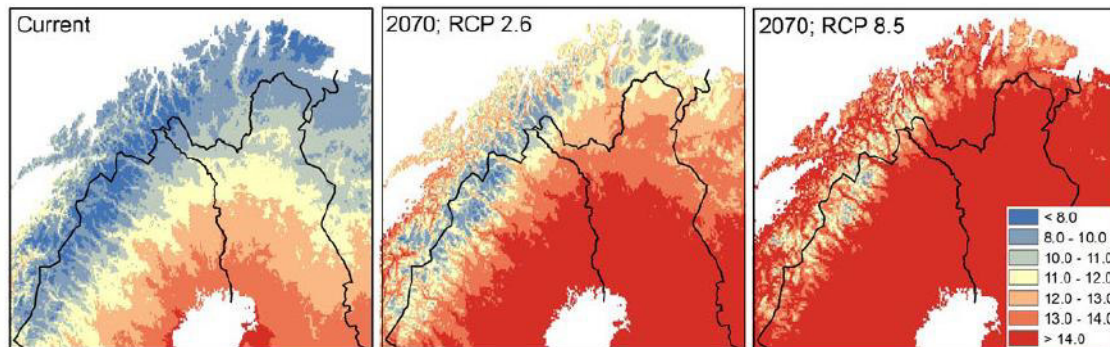


Figure 2. Present-day mean temperature of warmest quarter (left panel) and temperatures projected for 2070 based on RCP 2.6 (middle panel) and RCP 8.5 (right panel) in the tundra of northern Fennoscandia. (Käyhkö & Horstkotte, 2017)

Indigenous people, such as the Sámi, are specifically vulnerable to climate change due to their dependence on nature in reindeer herding (ACIA, 2005; Löf, 2013). A report from the Swedish Commission on Climate and Vulnerability points out expected impacts of climate change on reindeer herding, such as longer vegetation periods but also more insect plagues, increased grazing pressure and more land-use conflicts (SOU, 2007). Herders have already observed changes: more unpredictable weather and changes in vegetation, as well as ice crust building on top of the ground, making lichen inaccessible for reindeer and necessitating artificial fodder (Furberg et al., 2011). A delayed winter and an earlier thawing in spring make crossing of water bodies during migration more dangerous for the herders or make the route impassable (Furberg et al., 2011; SOU, 2007). While historically, reindeer husbandry has adapted to changing conditions for hundreds of years (ACIA, 2005), present-day adaptation options are limited due to governmental policies and competing land-uses (Löf, 2013). Faced with the threat of climate change, reindeer herders could favour climate change mitigation, such as wind power development. However, wind power in reindeer pastures has shown to create conflicts between the developers and the herding communities (Sullivan, 2010).

2.3 Wind power policy and reindeer herding

The Swedish government has set high targets for renewable energies, especially wind power, since the early 2000s to mitigate climate change (Lawrence, 2014). Currently, it aims at generating 30 TWh

per year from wind energy to increase its RE supply to at least 50% by 2020 (Energimyndigheten, 2015; Energimyndigheten, 2016). An even more ambitious goal has been set in 2016: by 2040, the entire energy supply of Sweden is supposed to be renewable ('Support for renewables', 2016).

To promote wind power, the Swedish government has dedicated certain areas of national interest (*riksintresse*) to wind power in which conditions for wind turbines are favourable. While a majority of wind power is still situated in the South of Sweden (2855 turbines in 2015), a growing interest in development in northern Sweden has led to a quick increase in permits there (1772 in 2015) (Liljenfeldt & Petersson, 2017). This is also due to the perception that the less densely populated North might have fewer people opposing wind turbines. However, developments in the North oftentimes are situated in reindeer pastures, another area of national interest. While the Swedish government tries to promote the coexistence of wind power and reindeer husbandry, there has been considerable opposition from the herders due to concerns about land loss and impacts on the reindeer. Studies in different *samebys* have shown that the windparks themselves, but also roads and power lines related to the parks, negatively affect the reindeer: a zone of avoidance is created and the reindeer become restless in the surrounding area (Skarin et al, 2013; Skarin & Åhman, 2014; Skarin et al., 2016). Additionally, the clear-cutting of the forest decreases the growth of lichen in the trees, a main food source for the animals, which has already become scarcer in the last decades due to forestry (Sandström et al., 2016). The cumulative effects of competing land uses, such as mining, forestry, tourism, and wind power, all increase the pressure on the *samebys* that are dependent on the natural environment (Allard, 2006; Kløcker-Larson et al., 2016; Kløcker Larson, Raitio, Stinnerbom & Wik-Karlsson, 2017). Additionally, as mentioned, climate change is expected to be a threat to future reindeer herding (SOU, 2007) and the competing land uses limit the flexibility of herders to adapt to it.

3 Research strategy

3.1 Research philosophy

My research is situated in the tradition of constructivism which states that our access to reality is based on the perception of humans and this perception is influenced by context and social interaction (Hepburn, 2009; Moses & Knutsen, 2007). Thus, this research is aimed at uncovering “perceptions of the world, rather than world ‘as it is’” (Moses & Knutsen, 2007, p. 11). In this thesis, I examine different perceptions of justice and how the divergence in perceptions can create conflict. Context, such as the history of repression of the Sámi, is highly important in understanding these perceptions (Bryman, 2012). Rather than ‘explaining’ the conflict and its sources, I try to ‘understand’ it by taking the viewpoints of the conflicting parties (Bryman, 2012). Through investigating the different perceptions, I also try to understand the threats that reindeer herders see for their livelihood.

3.2 Methodological approach

This thesis is based in the practice of qualitative research in that it aims to provide an in-depth analysis of the conflict from an environmental justice and vulnerability perspective. While some argue that qualitative research is usually characterized by an inductive approach, qualitative research can also be used to test an existing theory (Bryman, 2012). I have set off with a theoretical framework in mind that I applied to the case of wind power generation on herding grounds. Nevertheless, my findings shaped my final choice of theory and made me decide to add another level of analysis through looking at the vulnerability of reindeer herding in the future.

The case study researched is that of wind power developments in northern Sweden that impact Sámi reindeer herding communities. A case study can be used to “generate an intensive examination of a single case, in relation to which [one] then engage[s] in a theoretical analysis” (Bryman, 2012, p. 71). The case of Sámi reindeer herding communities affected by wind power developments is thus looked into in order to critically examine the events from an environmental justice perspective. I am aware that “there are multiple perspectives or views of the case that need to be represented, but there is no way to establish, beyond contention, the best view” (Stake, 1995, p. 108). Therefore, through introducing both the herders’ and the opposing side, I provide some perspectives on the conflict and how they relate to environmental justice.

3.3 Case study selection and setting

While competing land-uses on Sámi reindeer herding territory are also being researched (for instance, Össbo & Lantto, 2011), I chose the case of wind power development on herding grounds because it creates a very specific dilemma. Even though wind power is meant to produce clean energy for a sustainable future, it has negative impacts on herding. Climate change, in turn, is a threat to the future of reindeer herding. Thus, both the threat of climate change and its supposed solution actually negatively affect the livelihood of Sámi reindeer herders. Figure 3 exemplifies the connection between the three topics climate change, wind power development, and Sámi reindeer herding. With this dilemma as a background, it is important to also highlight wind developments from an environmental justice perspective and to assess how wind power and other factors affect the future of herding.

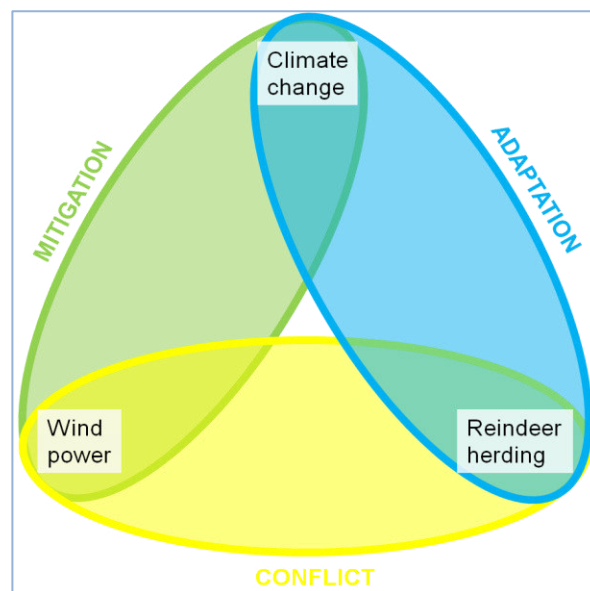


Figure 3. The interplay between wind power, reindeer herding and climate change as researched in this thesis (source: author)

Fieldwork was undertaken with reindeer herders and other informants in areas where conflicts with wind power developments had been reported. Starting from data collection around the wind park Markbygden, by purposive sampling, I went on to contact further herders who had been proposed to me. The geographic locations of the three conflicts I studied is presented in figure 4.

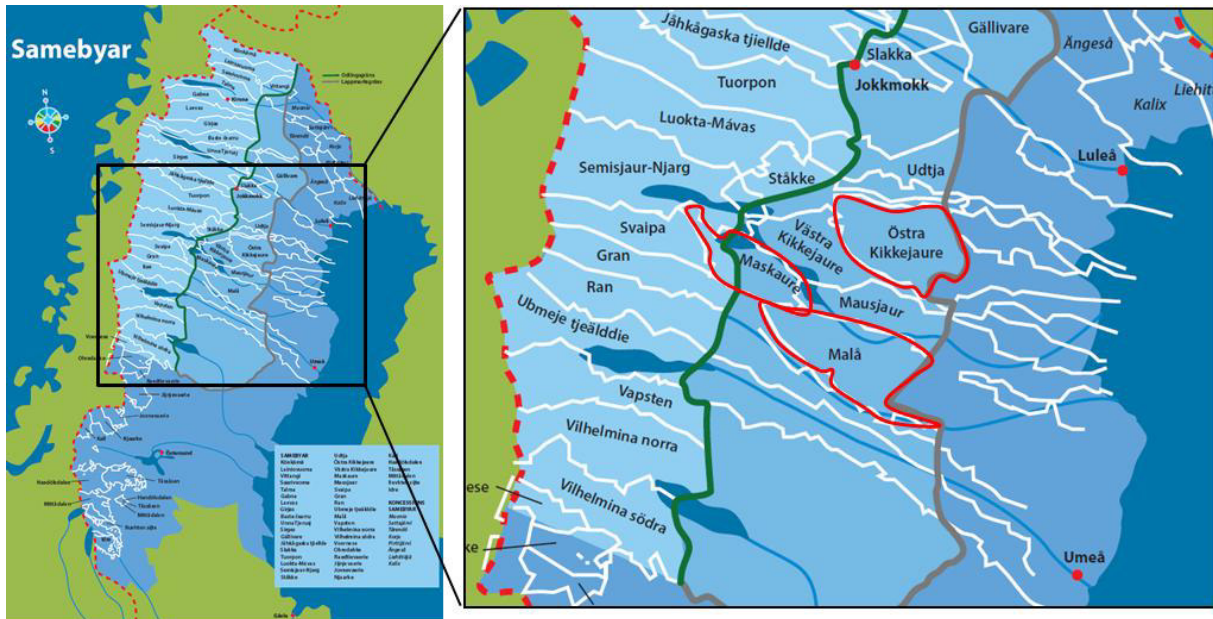


Figure 4. Geographic location of studied *samebys* (broad demarcation in red). Adapted from ‘Karta över samebyarna i Sverige’, n.d..

The first *sameby* researched is Östra Kikkejaure whose winter-grazing land close to Piteå is affected by Markbygden, a wind park of 1101 wind turbines of which only around 40 have been built so far (Svevind, n.d.). The large size of the project is unusual for wind power in northern Sweden. The second conflict was situated in Maskaure *sameby* whose pasture was affected by wind power developments on Uljabuouda in Arjeplog municipality. These turbines were among the first ones to be installed on reindeer pastures, so no formal consultation of the herders took place. Thirdly, the current court appeal of Malå *sameby* against the proposed Ljusvattnet and Blåbergsliden plants was studied. Malå *sameby* already has several wind power developments in its pasture and research on the effects on reindeer has been conducted there (Skarin et al., 2013; Skarin et al., 2016). Despite the three different conflicts, I approach them as one bigger case study, to provide a picture of how wind power can affect different *samebys* under different circumstances. Common experiences of the herders are used to highlight environmental justice aspects and the implications for the future of reindeer herding.

3.4 Why focus on herding?

The focus of the thesis is on wind power generation and its impacts on Sámi reindeer herding rather than the general Sámi community. While there certainly might be non-herding Sámi that oppose wind power developments, there were two reasons for this focus. Firstly, the sole legal basis of Sámi

customary land use in Sweden is reindeer herding. Only reindeer herding Sámi are seen as holding the rights to this activity (Allard, 2006; Beach, 2007). Furthermore, it means that a land area must be actively used for herding in order for the Sámi to claim rights to it. If reindeer herders cannot use a pasture, they lose the rights to it and so does the entire Sámi community (Allard, 2006). Secondly, Sámi reindeer herding communities are usually regarded as affected by wind power developments on their pastures, so companies are expected to consult them (Allard, 2006). This research thus does not portray the magnitude of Sámi attitudes towards wind power but rather looks into reindeer herding as a carrier of culture, traditional livelihood and customary rights for Sámi in Sweden.

3.5 Data collection and analysis

Primarily, data was collected in the form of semi-structured interviews, orally and through email. In total, twelve interviews were conducted with reindeer herders, staff from the Sámi Parliament, Swedish authorities and Svenska Samernas Riksförbund (SSR). Example interview questions can be found in appendix 1 and a list of the interviewees in appendix 2. Data analysis of the interviews was undertaken by coding the transcripts into themes (Bryman, 2012). The focus was on the three justice dimensions proposed by Schlosberg (2004): recognition, procedure and distribution. Furthermore, other overarching themes related to the future of Sámi reindeer herding, the impacts of climate change and the Sámi identity conflict were manually extracted. The extraction matrix can be found in appendix 3.



Figure 5. Pictures taken during the narrative walk. Artificial feeding of reindeer (left) and free roaming herd (right) (source: author).

During the fieldwork, a working day with the reindeer herders provided further insights into the every-day environment of reindeer husbandry and the relationship to nature and the animals (see

figure 5). By talking to the herders during their daily work and learning about the livelihood in its surroundings, this narrative walk helped me produce “context-based empirical material to be continuously validated [...] linking ‘what you see’ with ‘what you hear’” (Jerneck & Olsson, 2013, p. 118).

As another tool of data collection, a survey was created in Swedish asking about opinions on wind power in northern Sweden (template in appendix 4). As the survey was intended to gather further Sámi opinions on wind power in northern Sweden, it was distributed in a purposive fashion, through reindeer herders I met and other friendly locals, in paper and online. Furthermore, it was distributed at the Sámi week in Umea where I held a short presentation about my results to that date (07.03.2017). From this, 71 responses were received from both Sámi and non-Sámi (44 Sámi, 27 non-Sámi respondents). Despite pointing out that I was looking for Sámi opinions, more than a third of the respondents are non-Sámi. Therefore, the answers were analysed to find recurring opinions and outliers, but no generalization from this data was made and the responses rather serve to illustrate the discussion around wind power in northern Sweden.

Finally, document analysis of the wind power developers’ and government authorities’ publications was undertaken to gain insight into their side of the debate. Permit decisions, municipal wind power plans and environmental impact assessments were studied to find out what this other side in the conflict perceives as just (list of documents analysed in appendix 5). The findings from the text analysis were then combined with data collected through interviews with officials from Arvidsjaur municipality and the County Administrative Boards of Västerbotten and Norrbotten.

3.6 Ethical considerations

As pointed out by constructivists, knowledge is situated in a context and relates to power relations (Moses & Knutsen, 2007). Therefore, it is important to reflect on my role as a researcher. I am aware that answers I received might have been related to my position as a young, foreign female research student and that I could have received different answers had I, for instance, posed the questions in Swedish. It is also important to consider that none of my respondents were native English speakers, so in order to avoid misunderstanding them, I offered to all interviewees to send them the transcript for scrutinization. Anonymity was offered to all interviewees and accepted by some; the consent form can be found in appendix 6. As I am looking into a specific case composed of three different

conflicts, I am aware that the results are also influenced by my respondents' views and might not represent an overarching Sámi opinion.

4 Theoretical framework

4.1 My research in sustainability science

Sustainability science focuses on the interactions between nature and society (Clark & Dickson, 2006; Kates et al., 2001). It looks into both “how social change shapes the environment and how environmental change shapes society” (Clark & Dickson, 2006, p. 8059). Research in sustainability science combines different academic disciplines to tackle the ‘wicked’ problems posed by sustainability challenges such as climate change (Jerneck et al., 2011; Kates et al., 2001). Wind power development in the Swedish North can be characterized as a wicked problem, as it tries to mitigate climate change but as a “solution may reveal or create another even more complex problem” (Jerneck et al., 2011, p. 71), in this case threatening the livelihood of Sámi reindeer herding. Through sustainability science, this thesis can look at both the social side of environmental justice and combine it with the natural side of climate change impacts.

Sustainability is based on the different values that communities want to sustain for their future well-being (Miller et al., 2014), such as the traditional values of an indigenous Sámi livelihood. Sustainability science also calls for the incorporation of different kinds of knowledge apart from scientific knowledge (Kates et al., 2001), which I have attempted by bringing in the herders’ experiences. While sustainability science is generally problem-solving, Jerneck et al. (2011) have called for a more critical approach that reflects on the “contemporary institutions and power relations” (p. 77). In this thesis, I have tried to be both critical of the existing situation of wind power developments in northern Sweden and problem-solving by providing recommendations. While it can be argued that an environmental justice framework lies outside of sustainability science research, I argue that sustainability science is inherently value laden and normative and needs to consider ethical questions, such as justice. As pointed out by Miller et al., (2014), “sustainability is a fundamentally ethical concept raising questions regarding the value of nature, responsibilities for future generations and social justice” (p. 241). I have pursued an active role in research and hope this thesis can initiate a dialogue for change (Miller, 2013) and add to the discussion on how indigenous values and needs could be considered in this transition process.

4.2 My research in the broader debate

Research on wind power opposition in recent years has succeeded the debate around NIMBYism (Not-in-my-backyard-ism) and increasingly focused on different kinds of acceptance (Wüstenhagen,

Wolsink & Bürer, 2007) or highlighted, for instance, place-based identities (Devine-Wright, 2009). Furthermore, an increasing amount of research has critically examined justice aspects in wind power developments (Cowell, Bristow & Munday, 2011; Gross, 2007; Liljenfeldt & Petersson, 2017). While the distributional justice aspects of wind power developments in Sweden have been studied by Liljenfeldt and Petersson (2017), the authors argue that research related to recognition is missing and that Sámi land use conflicts warrant specific attention. This thesis aims to fill the gap identified in research by providing an analysis beyond distributional justice with a specific focus on Sámi reindeer herding.

An environmental justice framework appealed to me due to the “capacity of a justice analysis both to render inequities visible and to be critical of them” (Martin, 2013, p. 99). Thus, utilizing the ‘pair of glasses’ of environmental justice theory enables this thesis to point out problems and to provide possible suggestions to alleviate inequities. The Sámi opposition to wind power can be researched from a justice perspective since the development threatens a traditional indigenous livelihood. Environmental justice has been demanded by indigenous peoples and their claims tend to “go beyond distributional equity to emphasize the defense and very functioning of indigenous communities – their ability to continue and reproduce the traditions, practices, cosmologies, and the relationships with nature that tie native peoples to their ancestral lands” (Schlosberg & Carruthers, 2010, p. 13).

Environmental justice evolved in the United States of America in the 1960s and 70s where environmental pollution was observed to correlate with racial aspects: the harms of environmental pollution were more badly affecting ethnic minorities (Liljenfeldt & Petersson, 2017; McCauley, Heffron, Stephan & Jenkins, 2013; Schlosberg & Carruthers, 2010). At the basis of environmental justice are social justice claims and the extent to which these claims should be broadened to other countries and other conflicts is still debated (Schlosberg & Carruthers, 2010). Nevertheless, environmental movements and indigenous people have taken up environmental justice to substantiate their claims and it is utilized on a global scale, in different local contexts and to address global issues, such as climate change (Martin, 2013).

It can be argued that this thesis would benefit from an energy justice perspective rather than environmental justice, as wind power developments relate to the global energy system. However, these theories are highly related, since energy justice is based on the ideas of environmental justice (Liljenfeldt & Petersson, 2017; McCauley et al., 2013). I decided to employ the environmental justice theory of participation, distribution and recognition as laid out by Schlosberg (2004). This theory has also found favour in energy justice literature and has been applied to the case of hydropower

generation (Islar, 2012; Jenkins, McCauley, Heffron, Stephan & Rehner, 2016; McCauley et al., 2013), so I would argue that the commonalities of the two justice perspectives allow for me to focus on one without abandoning the other.

4.3 The three tenets of environmental justice

The idea of a tripartite justice theory emerged from the criticism of mainstream justice theory that focuses on distributional justice as well as from observations of environmental justice movements (Schlosberg, 2004). The need to consider procedural justice and recognition arises from looking beyond the situation of unjust distribution to the underlying causes: distributional justice always necessitates procedural justice and recognition of the actors (Fraser, 1996; Schlosberg, 2004). While criticism has stated that recognition and procedural justice need not be discussed separately because they are subsumed under distributional justice, Schlosberg (2004) has argued that this might be true in theory but does not hold true in reality where misrecognition is a key cause for injustice. Other research has substantiated his claim to move beyond distributional justice (Martin, 2013; Mascarenhas, 2007; Page, 2007; Walker & Day, 2012). None of the three tenets is sufficient in itself, all three need to be fulfilled in order to achieve justice (see figure 6).

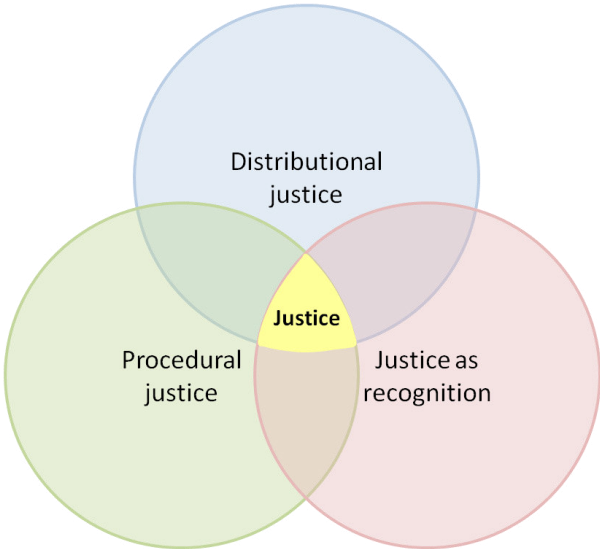


Figure 6. Illustration of the environmental justice theory of three tenets based on Schlosberg (2004) (source: author)

Distributional justice theory is highly influenced by the works of John Rawls and his 'Theory of Justice' (1971) in which he proposes a neutral starting point, the 'veil of ignorance', that society has to take upon itself to find just outcomes for all. According to Rawls (1971), the veil of ignorance would support the poorer and marginalized sections of society, as an individual would rather chose policies supporting the margins of society was she not to know her own position. In environmental and energy justice, distribution has mainly been concerned with how the benefits and burdens of a certain policy or development are shared (Jenkins et al., 2016; Martin, 2013). While some research focuses entirely on distributional justice, this has been criticized as insufficient and attention has been called to the causes of unjust distribution (Fraser, 1996; Schlosberg, 2004).

Procedural justice looks into the process that can lead to unequal distribution (Walker & Day, 2012). It is concerned with including "all stakeholders in a non-discriminatory way" (Jenkins et al., 2016, p. 178). Some principles have been laid out by the UN Aarhus Convention (Walker & Day, 2012) and by research, such as Jones, Sovacool and Sidortsov (2015): just procedure requires adequate and timely information, the opportunity for meaningful participation, informed consent, access to legal process that can be afforded and including all stakeholders. Just procedure also means including local knowledge (Jenkins et al., 2016). Procedural justice is highly linked to recognition because "[i]f you are not recognised, you do not participate" (Schlosberg, 2004, p. 519). A lack of recognition and respect can cause exclusion from genuine participation, so justice as recognition is highly interrelated (Walker & Day, 2012).

Justice as recognition looks into which groups or individuals are misrepresented or excluded (Jenkins et al., 2016). Different forms of misrecognition have been pointed out by Fraser (1996): cultural domination, non-recognition or disrespect can all lead to recognition injustice. As stated by Martin, recognition is "about power and respect – about whose culture and knowledge dominates or is dominated, and the social and economic structures that reproduce domination" (2013, p. 98). Recognition justice tries to promote equality by considering specific needs and differences between social groups (Walker & Day, 2012; Jenkins et al., 2016). Injustices in recognition can be seen as the basis for both procedural and distributional injustices. They are also highly related to power imbalances within society (Islar, 2012).

4.4 Vulnerability and adaptation to climate change

After the environmental justice analysis, this thesis adds a second layer of analysis regarding the future of reindeer herding in Sweden. The vulnerability of the herding livelihood to climate change and the need for the reindeer herders to adapt to it have been pointed out by several authors (Furberg et al., 2011; Kløcker Larsen et al., 2016; Kløcker Larsen et al., 2017; Käyhkö & Horstkotte, 2017; SOU, 2007; Tyler et al., 2007). However, many of the studies focus on the natural threats to the livelihood and only touch upon barriers to adaptation. Others, like Danell (2005) or Löf (2013) highlight the barriers to adaptation, but even there, barriers internal to the Sámi community are not sufficiently discussed. Thus, the second analysis of this thesis merges findings from existing research on Sámi herders' vulnerability with findings from my own data to provide a more thorough overview of how Sámi reindeer herding is constrained in its adaptation to climate change.

For this context, vulnerability and adaptation theory are utilized to inform the analysis. Vulnerability to climate change can be defined as “the propensity of human ecological systems to suffer harm and their ability to respond to stresses imposed as a result of climate change effects” (Adger et al., 2007, p. 720). Vulnerability to climate change is not just based on climate impacts but also affected by social processes and power relations (Adger, 2006). Vulnerability is characterized by some research as a result of exposure, sensitivity and adaptive capacity (O'Brien, Eriksen, Schjolden & Nygaard, 2004; Weis et al., 2016). Exposure relates to the extent to which a system goes through environmental or socio-political stress and sensitivity can be defined as the degree to which this system is then affected by the disruption (Adger, 2006). The third component, adaptive capacity can be stated as “the potential or ability of a system, region, or community to adapt to the effects or impacts of climate change” (Smit & Pilifosova, 2001, p. 881). It is the prerequisite for a community to take adaptive action and if adaptive capacity is low, the vulnerability of the community is high. Adaptation then can be seen as the materialization of adaptive capacity (Smit & Wandel, 2006). The purpose of adaptive action is generally to reduce vulnerability to climate change or to enhance resilience (Adger et al., 2009). Constraints or limits to adaptation thus can exacerbate the vulnerability of communities (Klein et al., 2014). Such barriers or limits can be of different natures, for instance economic, technological or social (Adger et al., 2009; Löf, 2013). In this thesis, I focus on vulnerability as a starting point, in which “vulnerability is a characteristic or state generated by multiple environmental and social processes, but exacerbated by climate change” (O'Brien et al., 2004, p. 1). This initial vulnerability is explained by pointing out the limits and barriers to adaptation that exist for Sámi reindeer herding.

While some researchers argue that resilience and vulnerability as concepts can inform each other and have more similarities than differences (Adger, 2006), it has also been argued that resilience as a concept is incompatible with social science (Olsson et al., 2015). Part of the criticism is the focus of resilience theory on resisting change rather than on transformation, as resilience “aims to [hinder] the collapse of a productive system” (Olsson, Jerneck, Thoren, Persson & O’Byrne, 2015, p. 6). In the social sciences, as well as in this paper, transformation can be a desirable option and adaptation might involve changes that go beyond the existing status quo. The decision on what is a desirable future should ultimately lie with the Sámi community and if adaptation goes beyond ‘traditional’ reindeer herding, then it would go beyond the resilience of the system. Therefore, while including resilience research to highlight the pressures on reindeer husbandry, I instead frame it in the context of vulnerability and adaptability.

While the vulnerability theory will inform the second layer of analysis, I will now turn to the analysis of environmental justice between Sámi reindeer herders and wind power informed by Schlosberg’s (2004) environmental justice theory.

5 Environmental justice conflicts between Sámi reindeer herders and wind power

In line with Martin (2013), I argue that “any decision or process might be considered just by some and unjust by others, either because they prioritise different justice dimensions or they attach different principles to them” (p. 99). A perception of injustice is thus produced through conflicting views of justice which do not converge. Since one understanding of justice prevails over the other, injustices then are created for the less powerful side. In this section, I first examine the justice understanding of the Sámi reindeer herders and then contrast it with the justice claims of the developers and Swedish authorities.

5.1 The reindeer herders’ side of justice

5.1.1 Distribution: Who pays and who benefits from wind power?

Distributional justice looks into how the benefits and burdens of a development are shared by different parts of society. In the case of Swedish wind power, Liljenfeldt and Petersson (2017) have analysed distributional justice of wind power plant sitings and point out a clear north-south divide. The majority of wind turbines that were approved by 2015 was situated in the South of Sweden (2855 windmills in the South, 1772 in the North); however, new permissions were much more readily granted by the authorities in the North despite possible burdens on the local population. Only around one per-cent of all applications for wind power in the Swedish North was not granted (Liljenfeldt & Petersson, 2017). The authors relate that to the image of the North as “an area with vast empty spaces, but also with great potential for natural resource exploitation” (Liljenfeldt & Petersson, 2017, p. 6).

The north-south divide in wind power developments also has another dimension: the electricity is produced in the North but is intended to be sent to the Swedish South so that the northern energy surplus can meet the demand there (‘Sveriges fyra elområden’, 2016). Interestingly, 24 respondents (both Sámi and non-Sámi) to the survey independently stated this as a negative effect of wind power in northern Sweden despite no question referring to this aspect. One respondent stated:

“Since almost all electricity is already produced in northern Sweden [...], one should build wind power plants in southern Sweden where everyone lives, instead of in northern Sweden.” (Non-Sámi, female)

This feeling of carrying the burden of electricity production for the South has similarly been expressed by several interviewed reindeer herders. As one of them states:

"[...] we already have the water power. And we also have mines who bring damage to the landscape. I think that the wind power, they could have it in the South of Sweden. [...] the North of Sweden, we give so much electricity power away from it. So I think we have given enough."
(Interview 8)

This quote illustrates the feeling that the energy production in the North creates burdens for the local population. While the general public in northern Sweden might perceive burdens through wind power developments, reindeer husbandry is specifically affected due to the competition for land, the effect on the animals and increased work and monetary burdens on the herders. Wind power together with other competing land uses creates cumulative effects that decrease the flexibility and future adaptability of reindeer husbandry.

There are also benefits that are created through wind power installments and that have been acknowledged by most of the reindeer herders interviewed. Firstly, wind turbine developments are often expected to provide benefits for the surrounding community, mainly in the form of employment. This seems to be of high importance for communities in the North where many rural municipalities lose their inhabitants to urban areas along the coast or in the South ("Swedes lead European race to the city", 2012). Interviewed herders recognized the benefit of job creation through wind power but they also pointed out that they mainly observed employment of non-Swedish workers in the construction of the turbines. Furthermore, one herder's experience showed an added employment of only one worker for a wind farm of 25 turbines in his pasture. The limited impact on employment is supported by research. Ejdemo and Söderholm (2015) look at the impact of the Markbygden plant on employment: at full capacity without any benefit-sharing, it is estimated that not more than 70 jobs will be newly created, a modest impact on employment in the area considering the size of 1,101 turbines.

Secondly, a benefit of wind power development is the mitigation of climate change. Mitigating climate change is a benefit for future generations but also for vulnerable populations, such as the Sámi reindeer herders who already observe changes in climate (Furberg et al., 2011; Löf, 2013; SOU, 2007). Several of the interviewees acknowledged the will to 'do their part' to mitigate climate change but they also pointed out that mitigation through wind power creates problems for them:

"of course, we want to do our share to have green infrastructure and green electricity and so on. [...] we don't want to stop developing. We want to develop in a sustainable way for both us and the society and Sweden in general. We want to contribute to that but not for every price"
(Interview 11)

Thus, while the reindeer herders want to be sustainable and acknowledge the importance of mitigation, they also worry about the problems wind power creates for them.

In order to balance out the burdens of wind power on Sámi reindeer herding, a common condition set by Swedish authorities is to provide compensation to the affected herders. The compensation can then be used to buy fodder for the animals or for additional expenses, such as moving the animals by truck or renting helicopters (Interview 8). However, several interviewees stated that money cannot compensate the land loss. One interviewee explained that the loss of traditional knowledge and the unrest for the animals due to construction cannot be compensated. Several respondents highlighted that the pasture is needed to feed the reindeer and to be adaptive to different conditions. Furthermore, due to the Swedish legislation on reindeer herding rights, an area needs to be grazed in order for the Sámi to have rights over it. This means that land given to other land uses is effectively lost to reindeer herding: “if we don’t graze, our rights will be invalid. So we need to graze and we need to be there” (Interview 11). With this in mind, it can be questioned whether any compensation is sufficient for the land area lost through wind power developments or other competing land uses.

Regarding distributional justice, there appears to be a clear north-south divide in Sweden regarding where electricity is produced and where it is used. General community benefits such as employment creation are estimated to be in fact quite small despite the continuous emphasis on the argument (Ejdemo & Söderholm, 2015). The Sámi herders state that they want to contribute to climate change mitigation and increased employment but the negative effects of wind power on herding cannot be adequately compensated by the possible benefits or monetary payment.

5.1.2 Procedure: Whose voice is listened to in the permit process?

This section illuminates the procedural justice aspects of the case. Procedural justice is characterized by how communities are included in decision-making (Jenkins et al., 2016). Amongst the principles laid out for such just procedure are timely information, the possibility to participate, informed consent and the ability to afford legal redress (Jones et al., 2015). These conditions, amongst others, are discussed in this section.

Herders reported that they were usually informed about the projects quite early, several years ahead of the planned construction. However, it was also mentioned by one herder that they were not always the first to be informed. Instead, the landowners of their pastures were contacted and agreed to developments in advance, making it more difficult for herders to oppose.

Consultation is a necessary prerequisite in the case of wind power developments. While the developing companies are obliged to include the affected *samebys* in their consultation, there are no government requirements regarding how the consultation is done or how many meetings take place (Allard, 2006). As the full responsibility lies with the developer, strategies to discourage effective participation can be employed. In the conflict around wind power on Uljabuouda, no consultation at all took place with Maskaure *sameby*. However, an interviewed herder from the *sameby* also pointed out that this was an exception since it was in the early stages of wind power exploration in northern Sweden and in recent years, consultation has become the norm.

Permits for wind power development in Northern Sweden are usually granted by the County Administrative Board (*länsstyrelsen*). Conflicts of interests with herders are considered in the Environmental Impact Assessment (EIA) that is part of the developer's application. To submit such an EIA, the company has to hire consultants that talk to the affected *samebys* and assess the possible impact of wind power on the herders. This EIA process has been criticized as highly susceptible to corruption since the consultants that undertake it and assess the impacts are both hired and paid by the wind power developer (Allard, 2006). Several interviewees pointed out that this part of the permit process that considers the *sameby's* opinion is paid for, created and owned by the wind power developers. The consultants that are paid and hired by the company are more likely to write something that favours their contracting employers, as pointed out by an interviewee: "you won't bite the one that feeds you" (Interview 11). Also, the company can edit the report before it is submitted to the authorities in the permit process, so any finding that might not be appreciated can be removed. Even if this is the extreme case and most developers might be interested in an honest EIA, hired consultants are unlikely to write something controversial.

While consultation is the norm in the permit application process for wind power, participation can only be meaningful if the stakeholders feel that they have a choice. Contrary to this, the interviews revealed that reindeer herders felt helpless or powerless in opposition to wind power:

"We didn't want [the wind power development]. But if seven Sámi people who own reindeer in an area [go] against the big power, the big company, and lots of jobs in Norrbotten, which is also important for this area, [...] then these eight Sámi people, they don't have so much to say about it." (Interview 8)

The herders felt that they did not have a chance to stop the development so, as another herder explained, after a few years of resistance, the *sameby* realized they cannot stop the development and had to accept it. Several herders also expressed the feeling that both authorities and land-owners supported the wind power development, so that there was no support for the herders' side.

An independent assessment of the different actors' attitudes for Markbygden agrees with the herders' impression, showing that the influential actors in the process were majorly pro-wind power establishment (Johansson, 2010). This mirrors the herders' experiences:

"The people in Piteå [municipality][...] said "of course it's important with the reindeer herding but we must think about it, it will make us a lot of [jobs], so people in Piteå can get work." So, we have no help from them. [...] they don't think [herding] is important" (Interview 5)

Generally, several herders in different conflicts pointed out that they would have needed more support from the government, also in the light of Sámi reindeer herding as a traditional livelihood:

"Somehow, I want that the [Country Administrative Board], the government, they could have supported us a bit more. It's a company from another country, come here and take. And we have some really long tradition to do reindeer herding and they were ready to offer that to nothing, actually." (Interview 7)

While the herders have a right to go to court against a permit that has been granted, they do not receive any financial or legal support for redress. In the case of Markbygden, the *sameby* had to ask for help from a lawyer-friend who took the case on in his free time. Also, Jenny Wik-Karlsson, a lawyer from SSR, provides help with legal redress but she explained that she needs to choose certain cases since there is not sufficient time for her to help all *samebys*.

Finally, some aspects arose from the interviews that touch upon both procedural and recognition justice: it seems that the herders perceive an unequal playing field in the negotiations with wind power producers. *Samebys* need to find the time and resources to go against developments that they think might harm them. An interviewee explained that herders need to take time from their herding work to participate in consultations and negotiations or appear in court to go against wind power. This is especially difficult if the *sameby* is small and there is no time for such administration, so one herder clarified that he simply accepts certain developments and concentrates on the ones he considers most severe:

"And everything that happens in the landscape, like forestry, the gravels,[...] wind mills, water,[...] everything is so big. So we have to sift and sort. And you also have to choose your battles. [...] Because if you are going to start to say no to everything, you will drown." (Interview 10)

An investigation by SSR revealed that every *sameby* has to spend approximately 40 to 50 hours per month on consultation with different parties only (Interview 11). Furthermore, only few herders have the expertise or education needed to successfully oppose a wind power development, e.g. in court. An interviewee stated herders have to go against a company with environmental consultants, legal service and a considerable supply of money, which creates an unequal balance of power. Additionally, opposition is not only a strain on time and money for the herders but also on their well-

being. Several herders admitted that they felt exhausted from managing conflicting interests and continuous negotiations. For instance, consultation with companies is a considerable part of herders' work nowadays and they usually have to explain their livelihood to the competing land-users:

"So at the tenth meeting, with the tenth company, you start again, trying to explain what is a reindeer, so this is quite tiring." (Interview 11)

This imbalance of power in the participation process is highly related to misrecognition. It is this pillar of the theoretical framework that I will turn to now.

5.1.3 Recognition: Whose livelihood is recognized and valued?

Justice as recognition relates to both procedural and distributional justice, as a lack of recognition leads to unfair conditions in the process or in the distribution of benefits and burdens. Recognition justice is based on power and the notion described earlier of an unequal playing field in the negotiations provides an insight into the power imbalances between the herders and the developers. There is also another important dimension that needs to be considered since the Sámi reindeer husbandry is an indigenous traditional livelihood. The conflict with wind power shows what is being valued, regarding nature and livelihood. The indigenous Sámi claim a close relationship to nature (Valkonen & Valkonen, 2014) and an interviewee highlighted that the Sámi herders try to protect values that are not accepted or considered by the legal system:

"[authorities and wind developers] [don't] really understand the values that we're trying to describe or protect; [...] always when you come to the process, even if it's a consultation or a negotiation, or in court, it's based on a [...] western way of thinking. [...] we are forced to fit in this system that's not necessarily suitable for us. [...] Social values, [...] it's spiritual values we need to protect, the livelihood values, it's quite hard to describe that for a technical process such as the environmental law." (Interview 11)

Misrecognition is highly related to "whose culture and knowledge dominates or is dominated" (Martin, 2013, p. 98), so this 'western way of thinking', as described by the interviewee, illustrates a case of cultural domination as a form of misrecognition (Fraser, 1996).

Furthermore, herders interviewed perceive a considerable lack of knowledge about reindeer herding in both the Swedish public and in decision-making authorities. As the Sámi Parliament staff pointed out, there is a knowledge gap about Sámi culture and reindeer herding in the Swedish public. One herder described the situation in this way: *"the children in school, they know more about the American Indians than they know about the Sámi people"* (Interview 8). This has been related to a similar lack of expertise about herding in the authorities that decide in land-use conflicts, such as wind power permits. One interviewee stated that there is a need to educate the authorities about

reindeer husbandry: *“You can see at the authorities, you have a specialist in environment, you have a specialist in wildlife, birdlife, and so on, but you don’t have specialists in reindeer herding”* (Interview 11). This relates to the point raised regarding procedural justice: the *samebys* have the burden to inform developers about their livelihood and how they use the land. This has been perceived as unfair by some interviewees, as they carry the burden of informing a company and raising awareness about their interests while the companies should have to inform themselves instead when they want to use the pasture lands.

Similarly, while there is a lack of knowledge about reindeer herding, there is also a lack of recognition of the knowledge that herders hold. In the conflicts that I studied, the herders’ observations that wind power affects their animals negatively were not seen as credible. In all three *samebys*, there had been scientific research undertaken regarding the impact of wind power on reindeer, such as the work done by Anna Skarin and colleagues in Malå (Skarin et al., 2013; Skarin et al., 2016). This cooperation with scientists that support the herders’ observations is necessary for the herders to make their observations believable:

“If the reindeer herders say something, it’s not credible, so we need to have research to valid[ate] our statements. And often they show the same thing. What the herder said, the researcher can confirm.” (Interview 11)

Undermining the traditional knowledge of indigenous people is a practice that has also been observed in Australia in conflicts between extractive industries and aboriginal peoples (O’Faircheallaigh, 2013). As pointed out by O’Faircheallaigh, such denial can “undermine Indigenous social and cultural values and Indigenous self-esteem” (2013, p. 22). Furthermore, Nadasdy (1999) has pointed out that traditional ecological knowledge is not easily incorporated in bureaucratic structures, as it is contrasted with scientific knowledge which is seen as ‘professional’. Therefore, even if the knowledge is accepted, it is usually seen “(at best) as a supplementary body of information” (Nadasdy, 1999, p. 5) in addition to scientific knowledge.

This lack of recognition of Sámi values and knowledge has entailed that the herders are perceived as a hindrance to important developments. Rather than feeling that they are supported as an indigenous community, an interviewed herder expressed that he felt the general public saw the Sámi as troublemakers:

“They think the Sámi people will complain a lot. And it’s hard, it’s a difficult thing to make your voice heard and say: “This is the problem we have and we want to have help with this”. And then when you try to do that, easily it gets complaining.” (Interview 7)

Two herders also told me that with competing land-uses, it is generally expected that the Sámi herders adjust to changes, not that adjustments are made to accommodate herding. One herder even stated that wind power developers commented that reindeer herding should better “disappear” (Interview 7) as a livelihood and make space for wind power developments instead of opposing them. Such a statement is highly relevant regarding recognition since “ways of life are being lost, and they are lost simply because they are not recognized and are devalued as ways of life” (Schlosberg, 2004, p. 526). The devaluation of herders’ knowledge, the unequal power balance in negotiations and the way herding is portrayed as a hindrance all add to an impression that reindeer herding is devalued as a livelihood and might be losing the fight against competing land-uses.

After portraying the Sámi herders’ perspective on justice in this conflict, it is visible that the herders perceive injustices in all three domains of the environmental justice theory: distribution, procedure and recognition. However, these perceptions of injustices are produced because the other side of the conflict has a different understanding of what is just. Therefore, the following section sheds light on the justice claims of developers and Swedish authorities.

5.2 The justice perspective of developers and government authorities

As pointed out earlier, I concur with Martin (2013) on a pluralistic view of justice in which injustice might arise from competing understandings of what is just. Therefore, in this section, I investigate the other side of the conflict: what justice claims do wind power developers and government authorities base their decisions on? For comparability reasons, the justice claims are considered along the components of the tripartite environmental justice theory.

Regarding *distributional justice*, all documents reviewed stated the environmental benefits of wind power in mitigating climate change. Also, both municipalities and companies talked about the benefit of creating employment or generating community benefits (Documents 1.2a-c; Document 2.3; Document 2.4). Interestingly, however, Arjeplog and Arvidsjaur municipalities stated that they expect the job creation by wind power to be insignificant and do not plan further wind power in their area (Document 3.1; Interview 1). While the herders and many respondents of the questionnaire were strongly against the distribution of electricity to the South, only two documents touched upon the issue. Piteå municipality explicitly states that it sees itself as an energy exporter in the future, and one EIA analysed emphasized the need to bring electricity to the South when there is a surplus in the North (Document 1.2a; Document 2.3). Finally, regarding the impacts on reindeer herding, it seems

that both authorities and developers think a fair distribution can be reached through compensation. The permits issued by the County Administrative Board and the Ministry of Environment all rely on compensation as a condition for settling the conflict between herders and wind power developers (Document 1.1; Document 2.1; Document 2.2). Generally, compensation is seen as sufficient to make up for the harms inflicted upon the *sameby*:

“Under the condition that the company will compensate for the intrusion [...], the government assesses [...] that reindeer husbandry [...] will not be significantly aggravated” (Document 1.1).

Interestingly, the **procedural dimension** of justice was stressed as necessary in every document analysed. The municipalities stressed the importance of consultation of all citizens in wind power planning (Document 1.2a-c; Document 2.4), while the EIAs and permit decisions emphasized the need to develop the specific projects in continuous dialogue with the affected stakeholders and *samebys* (Document 1.1; Document 2.1; Document 2.2; Document 2.3). However, some documents also explicitly stated that the consultation is rather meant to settle on an agreeable compensation for the herders than to take their opposition into account (Document 2.1; Document 2.2). Additionally, the sufficiency of consultation and dialogue with the herders is decided on the basis of documents that the wind developers provide. Thus, while for instance the permit for Markbygden assures that consultation was sufficient (Document 1.1) that is concluded on the basis of an EIA from the developer and the independent assessment of Johansson (2010) has criticized the consultation process as exclusive.

In the **recognition dimension** of justice, the Sámi herders demand recognition for their livelihood, their values and their knowledge. Several of the documents analysed provided in-depth examinations of reindeer herding and some even recognize that the future of herding is threatened by wind power developments (Document 4.1). Nevertheless, this knowledge generates different decisions in the authorities and developers than in the reindeer herders. With the specific exception of Arjeplog and Arvidsjaur municipality (that both decided against further wind power), all authorities decided that reindeer herding should be considered less important than the national interest of wind power. This is formulated quite distinctly in the permit to build the Markbygden plant:

“Measures ought to be taken to the extent that it can be regarded as possible and reasonable for reindeer husbandry interests and wind power interests to coexist in the area. However, the judgment is made that wind power interests ought to hold priority in the case that coexistence is not judged as possible.” (Document 1.1, p. 13)

This illustrates the preference of wind power over reindeer herding by the authority. Also, it shows that the authorities expect a co-existence of both interests. This is actually the general standpoint of

the documents reviewed and it contradicts the herders' perspective. Additionally, the justice perspective of the herders showed that their knowledge is not taken into consideration and that they are not considered credible. This has been confirmed in most of the documents reviewed which call for further scientific research to determine the impacts of wind power on herding (Document 1.1; Document 2.1; Document 2.2).

The document analysis shows that the wind developers as well as the authorities have a different understanding of what is just in this conflict. While procedural justice is seen as highly important, justice in distribution only depends on the amount of compensation the herders receive. Regarding the recognition of herding, there are documents that showed a good understanding of the livelihood but herding is still not valued as highly as the national interest in wind power, creating a lack of recognition justice.

Comparing the justice claims of the developers and authorities with the herders' perspective on justice, clear differences emerge in what is seen as 'fair'. The different perceptions of justice in this case create conflict and lead to injustices for the Sámi reindeer herders. Since the developers' and authorities' perception of justice is the dominant one, the Sámi side is not considered sufficiently. As stated by Schlosberg (2013), such conflicts of justice can only be solved through the "negotiation of different conceptions of (in)justice in and across different participants [...] [and] it requires recognition, conceptions of disadvantage and political engagement" (p. 45). While my fieldwork showed that both authorities and developers increasingly consider reindeer herding, such as through workshops and discussions with herders (Interview 12), the injustices perceived by the herders can only be tackled by improved dialogue and the recognition of Sámi needs. This includes acknowledging the vulnerable position of Sámi reindeer herding regarding climate change and the barriers to herders' adaptability. It is this problem that I turn to in the following section.

6 The future of reindeer herding

When I set out to collect data for this thesis, I had decided to focus on the conflict between wind power development and Sámi reindeer herding. Yet, during my fieldwork, I continuously encountered a different theme: threats to the future of Sámi reindeer herding. While wind power was perceived as an issue, I realized that it needs to be seen in the broader context in order to provide a holistic picture of the impacts on reindeer herding. The geographic area in which reindeer husbandry is conducted is expected to be affected by climate change in the future (SOU, 2007). Thus, herding will have to adapt to changes and its adaptive capacity is limited through other impacts. This part of the thesis merges findings from previous research and findings from my own data to provide an aggregation of the threats to adaptation that reindeer husbandry currently faces and which exacerbate the vulnerability of herding to climate change. The picture from Kløcker Larson et al. (2017) visualizes present-day cumulative effects on husbandry: Sámi reindeer herding faces several competing land uses, such as mining, hydropower, roadwork, construction, transmission networks, forestry and wind power but also natural challenges, such as predators (see figure 7).



Figure 7. Schematic of the cumulative effects on Sami reindeer herding (artwork by Simon Kneebone), (Kløcker Larson et al., 2017, p. 69)

Additionally, the identity conflict within the Sámi community should be taken into account when assessing future adaptability of Sámi reindeer husbandry. This is an advantage of approaching the

topic from a sustainability science angle: it allows looking into both natural and social science aspects of future herders' adaptive capacity and, thereby, uncovering the depth of the issue.

The Sámi reindeer husbandry has historically been able to adapt to changing conditions through both mobility and diversity and this adaptive capacity was based on knowledge transferred between herders to the new generations (Löf, 2013; Tyler et al., 2007). For the future of Sámi reindeer husbandry, the herders have to adapt to the impacts of climate change. Climatic variability has already been observed by herders, for instance less predictable weather and changes in vegetation (Furberg et al., 2011). Despite the historical adaptability of reindeer herding, the livelihood strategy has become increasingly vulnerable in the last century, as mobility is limited by competing land uses and adaptive capacity is restricted by legislation, for instance in not allowing the herders to diversify their livelihood (Danell, 2005; Tyler et al., 2007). Thus, adaptive capacity in the future is limited by such constraints¹. Figure 8 provides a simplified representation of how barriers, such as legislation or decision-making can constrain the adaptive capacity of reindeer husbandry and lead to future scenarios that are less successful in adapting to climate change.

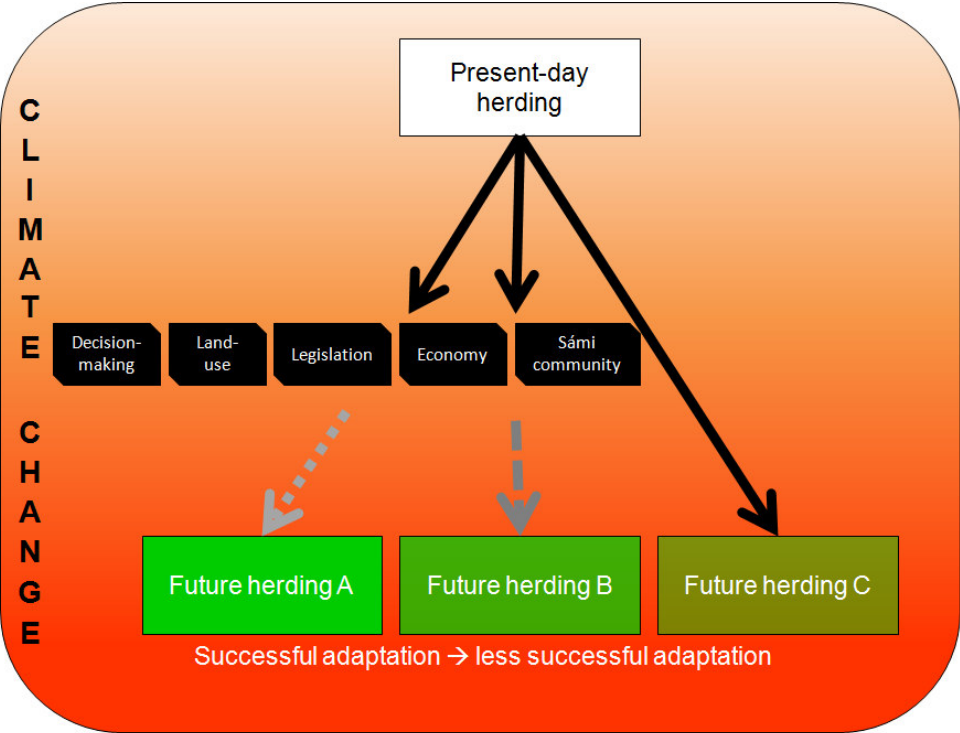


Figure 8. Simplified representation of how barriers (black boxes) restrict future herding scenarios and herders' adaptive capacity (source: author).

¹ I use “constraint” in the context understood by Klein et al. (2014) where it is synonymous with an adaptation barrier: it is “a factor or process that makes adaptation planning and makes implementation more difficult” (p. 906) but not impossible.

From the situation of herding in the present-day, different adaptation pathways are possible but barriers that obstruct the successful adaptation instead make less successful adaptation more likely. These barriers decrease the adaptive capacity of reindeer herders and increase their vulnerability to climate change. The following section will exemplify these barriers that are considered threats to the future of reindeer herding, collected from both academic research and herders' perceptions in my own data.

6.1 The adaptation constraints of herding

Table 1 summarises the findings regarding barriers to adaptation that have emerged from both literature review and interviews with herders during my fieldwork. While this list is certainly not comprehensive, it provides some insights into key barriers that could be targeted and changed in order to decrease the vulnerability of Sámi reindeer herding.

Table 1. Barriers to adaptation for reindeer herding and suggested solutions taken from literature and own data (source: author).

| Area | Adaptation barrier | How to increase adaptive capacity? (with sources for suggestions) |
|---------------------------|--|---|
| Decision-making | Powerlessness and unequal discussion in consultation | - Recognizing Sámi needs and knowledge (Klæcker Larsen et al., 2017; Käyhkö & Horstkotte, 2017; Tyler et al., 2007; own research), - mediator organisation (Käyhkö & Horstkotte, 2017) |
| | Lack of knowledge about herding | Increase knowledge (Käyhkö & Horstkotte, 2017; own research) |
| | Fragmented decision-making | Common database on planning, reduced fragmentation (Klæcker Larsen et al., 2016) |
| | High demand on herders | Sufficient resources to herders (Klæcker Larsen et al., 2016) |
| Competing Land-use | Shrinking grazing lands and cumulative effects | - Regulate land-use (e.g. tourism (SOU, 2007)) - involve Sámi herders in decision-making (Klæcker Larsen et al., 2017; Käyhkö & Horstkotte, 2017; SOU, 2007), - independent EIAs (Klæcker Larsen et al., 2016; own research) - EIA includes cumulative effects (Klæcker Larsen et al., 2017; own research) |
| Legislation | Sámi rights based on herding only | Change Sámi rights basis (Danell, 2005) |
| | Cannot diversify livelihood | Allow for diversification of livelihood (SOU, 2007) |
| Economy | Dependence on market, low income, uncertain money flow | Provide (further) monetary support (Klæcker Larsen et al., 2016; Tyler et al., 2007) |
| | Economic efficiency vs. traditional livelihood | Valuing non-economic characteristics of herding (SOU, 2007; own research) |
| Sámi community | Different definitions of Sámi identity, lacking support from Sámi Parliament, threat of losing knowledge | Provide for self-determination of Sámi identity, enhancing community, developing a common vision for future (own research) |

In **decision-making**, identified barriers are the sense of powerlessness of herders as well as the unequal power distribution between the herders and both authorities and competing land-users (Furberg et al., 2011; Löf, 2013; Kløcker Larsen et al., 2017; Käyhkö & Horstkotte, 2017). This perception has been confirmed in my research on wind power conflicting with herding. Even if consultation was provided, the herders felt that they were not able to exert any influence (see section 5.1.2). Relatedly, there is a perceived lack of knowledge about reindeer husbandry as a livelihood in the authorities that are involved in decision-making. Another barrier in decision-making identified by Kløcker Larsen et al. (2016) is the fragmented governance in authorities: “permit authorities do not have knowledge of on-going permit applications overseen by different authorities within the same land area” (72). Both a wind power plant and a mine can be planned in the same area without the deciding authorities knowing of the other project. Such fragmented decision-making increases the pressure on herding, as more competing land claims can be built without consideration of the cumulative effects. Furthermore, pressure on herders is increased through the demands of authorities on them (Kløcker-Larsen et al., 2017): as also experienced by herders in wind power conflicts, the authorities demand participation and information provision from the herders which creates additional burdens on them next to their daily livelihood of herding.

Barriers in decision-making are highly related to **competing land-uses** that constrain the adaptive capacity of herders. The shrinking pastures, taken over by forestry, hydropower, wind power, etc. decrease the flexibility of herders to move their animals to other pastures (Danell, 2005; Käyhkö & Horstkotte, 2017; Tyler et al., 2007). This is especially problematic as migration and mobility were amongst the most important historical adaptation strategies used by herders (Tyler et al., 2007). The importance of flexibility was also highlighted by several interviewees for my thesis, stating that adaptation is not possible anymore, since areas have been cut for forestry (Interview 4). Furthermore, industrial activities such as forestry have led to a decrease in lichen occurrence, a major food source for the reindeer (Sandström et al., 2016).

In Swedish **legislation**, there are two important barriers to adaptation. As mentioned earlier, the Sámi rights to land are based solely on the use by reindeer herding. If reindeer herding has to adapt to climate change, these rights to land could be lost, making the land lost to the entire Sámi community (Danell, 2005). As pointed out by Danell (2005), “[t]his will likely have serious negative consequences for the viability of the Sami culture” (p. 40). The second barrier in legislation is related: herding communities are not allowed to conduct business outside of herding or to take up another

main occupation (Beach, 2007). However, the diversification of livelihood can be an adaptation strategy (Käyhkö & Horstkotte, 2017; SOU, 2007).

Furthermore, herders face barriers in their **economic** situation. Herding provides a rather low income with an uncertain money flow, as also expressed by one of the interviewees: “[Herding] has some dark sides. It’s hard to make it go around the whole year economically” (Interview 5). The income of herders is dependent on the market price for reindeer meat which is dependent on the market price (Danell, 2005; Käyhkö & Horstkotte, 2017; Tyler et al., 2007). Ultimately, if the herders lose animals due to predation, sickness or malnutrition, they can only be compensated to a certain extent (Danell, 2005) and interviewees stated that the compensation for predation, for instance, is far from covering the losses.

Finally, some barriers or threats to the future of reindeer herding are in fact internal to the **Sámi community**. Firstly, there is a threat of losing traditional knowledge that has historically created the herders’ adaptive capacity (Furberg et al., 2011). Secondly, there is also fragmentation in the Sámi community that leads to internal conflicts. As mentioned in the background section, who is a Sámi is defined differently by Swedish law and by the law of electing the Sámi Parliament (Lantto & Mörkenstam, 2008). Since all Sámi rights to the land are contingent on herding, discontent fragments the Sámi community between Sámi that herd and those Sámi that do not (Williams, 2003; Lantto & Mörkenstam, 2008). Clearly, in this context, one cannot ignore that the basis of this fragmentation were historical Swedish policies rather than clashes in the Sámi community itself. The Swedish government’s assimilation policies of non-herding Sámi and the ‘Lapp shall remain Lapp’ policies of the Swedish government created this divide (Lantto & Mörkenstam, 2008; Lantto, 2010; Lantto, 2014). This artificial division has found its way into the Sámi community and, in the present-day, creates conflict between some herders and non-herding Sámi:

“When I grew up, we were just a few who were called Sámi or Lapp. And the only one who was called that was the one working with the reindeers, not anyone else. I have some friends of mine who have studied with me in school and so on and they were never ever called Lapp or they even teased me for it. And like now, they are sitting in the Sámi Parliament. So that’s an issue. So I think inside the reindeer herding communities, [...] that’s a huge issue because [...], this Sámi Parliament and so on, it has been popular now [...] to be a Sámi.” (Interview 9)

Several herders I interviewed stated that they felt disadvantaged by decisions taken in the Sámi Parliament and that the Parliament, in its ability to distribute the budget, provides insufficient amounts for reindeer herding, effectively working against them. Such statements illustrate the fragmentation within the community. However, more unity and support from the Parliament could be essential for the future of herding. It could bring herders more leverage in negotiations with

competing land uses or the authorities and it could also help to develop a common vision for the future of the Sámi community:

“We always need to be reactive on other issues. Other parties want to come in and be within the land, so we don’t really have the time to work within the communities, trying to figure out what do we want, how do we want our society to be in, say, 50, 100 years. And what should be the best to reach that in order to be responsible?” (Interview 8)

As pointed out by Miller et al. (2014), sustainability science “has a crucial role to play in working with [...] communities in crafting a viable vision of the future” (240). In the case of the Sámi, the community should be given the opportunity to deliberate on a common vision for the future and to decide what kind of adaptation might be desirable. Demanding the resilience of ‘traditional’ reindeer herding and expecting Sámi herding to stay within its ‘traditional’ ways can be considered a continuation of the historical Swedish policies to conserve the reindeer-herding Sámi. Such a “colonial framing of Indigenous peoples as local and traditional” (Cameron, 2012, p. 105) limits the possible choices the Sámi can take regarding their desirable future. Even the term ‘traditional’ in itself allows for outsiders to define what makes up the real native culture of the Sámi (Nadasdy, 1999). Considering all these barriers, it is important to provide the Sámi community with support and more political power to change the situation “where they at present can merely address symptoms [of climate change] at the margin” (Löf, 2013, p. 336).

6.2 Recommendations: How can Sámi reindeer herding continue?

Based on the barriers discussed in the previous section, table 1 also presents specific suggestions to tackle the barriers. In this section, I turn to some of these suggestions to provide recommendations on how the adaptive capacity of Sámi reindeer husbandry can be increased. This section also provides recommendations on how to approach the conflict between reindeer herding and wind power, as the adaptation constraints identified ‘in the broader picture’ are highly related to the conflict between wind power and herding.

Wind power constitutes one of the competing land-uses in northern Sweden that come into conflict with reindeer husbandry as practiced by the Sámi herders. The many **competing land-uses** lead to shrinking pastures with additional cumulative effects on herders. As seen in the analysis of environmental justice, the land-use permits and what is needed for a permit is highly dependent on the **decision-making** of the Swedish authorities. For both barrier areas, there were some suggestions: generally, a call for better participation and consultation of the herders in decision-

making can be made. Furthermore, knowledge about the herding livelihood amongst decision-makers is small and herders' own knowledge is not seen as reliable. This barrier could be approached by increasing knowledge about reindeer herding, such as in workshops conducted by SSR (Interview 10) and by recognizing Sámi needs and knowledge (Kløcker Larsen et al., 2017; Käyhkö & Horstkotte, 2017; Tyler et al., 2007). This includes consideration of the resources herders need to meet the high demand on their time (Kløcker Larsen et al., 2016) and might necessitate a mediating organization between the herders and the authorities (Käyhkö & Horstkotte, 2017). Specifically regarding land-use decisions, it has been argued that the standards for EIAs need to be changed: they should be conducted by independent consultants and the inclusion of cumulative impacts should be a prerequisite, as is actually demanded in EU legislation (Kløcker Larsen et al., 2016).

Legislation on Sámi land rights and herding could be changed to allow for a diversification of livelihoods (SOU, 2007) and to provide a basis for Sámi rights that is not so vulnerable to the impacts of climate change (Danell, 2005). Regarding the **economic** situation of the herders, it has been suggested that the already existing financial support from the state is and will remain important to the survival of the herding livelihood (Tyler et al., 2007). Furthermore, the SOU report (2007) points out the need to acknowledge the value of herding in non-economic terms.

Finally, it would be beneficial to the entire **Sámi community** (in Sweden and beyond) if they had the liberty to develop a common vision for the future and decide on who is a Sámi beyond the definitions of Swedish legislation. Creating a stronger sense of community could reduce conflicts within the Sámi population and provide more support for the herders in, for instance, land-use conflicts and decision-making. A stronger and united Sámi vision for the future would also strengthen the herders in facing current and future threats to reindeer herding. Already existing initiatives such as the workshops offered by SSR and position papers on wind power development by the Sámi Parliament can be a good starting point for that.

7 Conclusion

Sámi reindeer herding is caught in a situation 'between a rock and a hard place' where it is both threatened by wind power developments and by the impacts of climate change. Herders find themselves in a situation where the Swedish government's action to mitigate climate change, increasing wind power generation, limits their own adaptive capacity to climate change and makes them more vulnerable. Therefore, several herders have attempted to oppose wind power developments on their grazing lands and conflict between reindeer herders and wind power developers occurs.

In this thesis, I provided two interconnected analyses of the present-day situation of Sámi reindeer herding in Sweden. Firstly, I looked into the conflict of wind power developments on Sámi herding grounds and applied an environmental justice lens to examine both the herders' justice perceptions and the claims of the opposing side, the developers and Swedish authorities. My analysis showed that differing perceptions of justice between the opposing sides created the conflict. Since the justice perception of the more powerful authorities and developers prevails, injustices for the Sámi reindeer herders are created. In order to alleviate these injustices, it is necessary that meaningful discussion can take place and the needs and wishes of the Sámi herders are recognized. This relates to the second layer of analysis: the vulnerability of Sámi reindeer herding in the context of climate change. In this second layer of analysis, I investigated the barriers that reindeer herders face in adapting to climate change. Among these are external factors, such as Swedish legislation or competing land-uses, but also internal factors, namely friction within the Swedish Sámi community. Based on other research and my own data, I provided some suggestions for tackling these barriers in order to increase the adaptive capacity of the herders in the face of climate change. Since this thesis is based in sustainability science, it was possible to research both the social and natural factors influencing the future of reindeer herding.

The findings generated in this thesis can hopefully instigate discussion on both the environmental justice of wind power developments in northern Sweden and the justice implications of mitigative action in general. I furthermore hope that this thesis can raise awareness about the imperiled situation of the Sámi reindeer herding livelihood and initiate action to challenge existing barriers to adaptation.

The thesis is aimed at filling the gaps identified in existing research: it is meant to provide a detailed analysis of the environmental justice implications of wind power developments as well as offer a thorough overview of how Sámi reindeer herding is constrained in its adaptation to climate change.

Nevertheless, further research is needed in both research areas. A more in-depth analysis of the dynamics within the Sámi community would be of high value. Furthermore, questioning the justice implications of climate change mitigation and adaptation action is essential for a socially sustainable future.

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9 Appendices

Appendix 1 – Example interview questions (excerpts from Interview 5)

- Can you tell me when you heard about Markbygden being built and whether you were informed or whether you heard it in the newspapers?
- Do you think that in the future, there will still be reindeer herding in Arvidsjaur?
- So, [herding in the future] is possible, also with the wind turbines?
- Do you think you will still be in contact with [the developer]?
- Do you feel that reindeer herding was taken [...] as important from the beginning by the wind company or was it also a problem that came up? Do you think they saw it as very important and you should be talked to?
- Do you think wind power is a good idea in general and it's maybe just not a good idea here? Or do you think it's just not a good solution?
- Do you feel that there is anything that maybe could have been done better for the Markbygden development?
- Did you have a lot of contact with Piteå kommun when they were planning the project because they had to agree to it?
- When the sameby decided that they would rather not have the wind power, was that any problem with the people here?

Appendix 2 – List of interviewees

| | Group affiliation | Interviewees |
|---------------------|---|--|
| Interview 1 | Government authorities | Åsa Andersson, Arvidsjaur municipality |
| Interview 2 | | Kenneth Fors, Länsstyrelsen (County Administrative Board) Norrbotten |
| Interview 3 | | Joacim Jacobsson, Länsstyrelsen (County Administrative Board) Västerbotten |
| Interview 4 | Sámi Parliament | Two staff members of the Sámi Parliament (Sametinget) |
| Interview 5 | Reindeer herders | Reindeer herder 1, Östra Kikkejaur sameby |
| Interview 6 | | Reindeer herder 2, Östra Kikkejaur sameby |
| Interview 7 | | Reindeer herder 3, Östra Kikkejaur sameby |
| Interview 8 | | Reindeer herder 4, Östra Kikkejaur sameby |
| Interview 9 | | Reindeer herder 5, Maskaure sameby |
| Interview 10 | | Reindeer herder 6, Gran sameby |
| Interview 11 | SSR (Svenska Samernas Riksförbund) | Jenny Wik-Karlsson, CEO and lawyer at SSR |
| Interview 12 | | Maria Boström, project leader at SSR |

Appendix 3 – Themes extracted from the interviews

| Topic | Theme | Quote | Interview | Notes |
|-------------------------------|------------------------------------|---|--------------|--|
| Distributional justice | Doing their share | “Of course, on one side, we see we have climate changes and we must think what can we do, [...] which car should we drive [...]. So, of course, sun, wind power, it’s good for the climate. But in another part of me, of course, it’s making problems, not for so many people but it’s so big, it’s so huge [...]. It’s good for one thing but you make other problems.” (p. 5) | Interview 5 | Try to do their share against climate change but wind power still problem for them |
| | Doing their share | “some generation after us, they’re going to thank us, definitely” [for allowing wind] | Interview 7 | |
| | Doing their share | “if you could cope with that park, of course, we want to do our share to have green infrastructure and green electricity and so on. But it should be also, we shouldn’t be forced to take 70% of that. [...] But I think, we don’t want to stop developing. We want to develop in a sustainable way for both us and the society and Sweden in general. We want to contribute to that but not every price. We want to be a part but in a suitable way and sustainable for all parties.” | Interview 11 | |
| | Doing their share | a) “So, but we didn’t know so much and we were not so experienced, so we thought about it like we’ll do it our part to the green electricity.” b) “I think the winds have definitely changed because in the beginning, people thought it was interesting. And we also did think it was interesting. Our thoughts in the community were we are going to take our share and produce some green electricity. Now, I mean inside the communities [...] we’re starting to see the changes in things and the long-term effects we haven’t seen yet.” | Interview 10 | |
| | Power will be sent away | “And maybe it’s in the south of Sweden where we need the power. So why should we put them here? But we are not so many people, so...” (p. 5) | Interview 5 | Power needed in south, should build there but less population in north |
| | Power will be sent away | Not fair, all people around the area feel the same: we don’t need so much energy, it’s going to be send away, so why produce here? | Interview 6 | |
| | Power will be sent away | The electricity produced in Northern Sweden goes to the south of Sweden or is exported to Europe. The companies that want to build oftentimes write in their application “we place it in the north because there are not so many people demonstrating”. Rather than 20,000 people opposing in the south, only 2,000 will oppose it in the north, so it’s easier for the company. | Interview 4 | Also mentions it’s built in North because of fewer people/less opposition |
| | Acknowledging economic benefits of | “Some people said: “you must understand, it’s important for the area that people can have work”. And I answered them “of course, I understand that but just in this situation, I must speak for us. Just for the Sámi village.” (p. 7) | Interview 5 | Understands need for jobs but also need to speak for Sámi |

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|--|---|---|--------------|---|
| | plants | | | |
| | Acknowledging economic benefits of plants | Can understand the need for growth in employment and wants to be friends with people in the area, does not want to cross people | Interview 6 | |
| | Acknowledging economic benefits of plants | In small villages, like Arvidsjaur, it is also about getting jobs from the wind power. Reindeer herders themselves have families that need jobs, so they might agree to wind power for that reason. | Interview 4 | |
| | Only few jobs created | They were promised to be taken over for work after the wind power plant is built but they usually were only hired for around one month and then let go, as their work was needed. Rather, foreign workers were hired to built the plant and operate it. | Interview 4 | |
| | Only few jobs created | Yes, the municipality thinks it will be a lot of work but afterwards it's foreign people that are employed. | Interview 9 | |
| | Only few jobs created | "it was promised it was going to be houses and workers and not a problem, the big things. But now they have seen that is has quite not been like that. It's like in the park, we have 25 mills, it's only one person who works there." | Interview 10 | |
| | Cannot compensate land | Compensation is not enough for reindeer herders. [...] One cannot compensate the land. The County Board says one should compensate with fodder but feeding freely in the wild cannot be compensated. | Interview 4 | |
| | Cannot compensate land | "But this is a condition to try to compensate a damage that can't be compensated in a way. Loss of land, how can you compensate that?" | Interview 11 | Related to process, court action more pro-herding |
| | Cannot compensate land (and knowledge) | "Renen kan inte äta pengar. De avtalsersättningar som skrivs mellan exploatör och sameby är hemliga så de kan jag inte kommentera. Nej, jag anser inte att ekonomisk ersättning för förlorad betesmark är tillräcklig. Pengarna kan inte ersätta allt som går förlorat; betesmark, överföring av traditionell kunskap mellan generationer, betesro för renen mm." | Interview 12 | |
| | Need for compensation to continue | "the reaction was that if they built it and we don't get any compensation, then it's over, we can't do the things that we have to do and it will cost a lot of more to give them food." | Interview 7 | |
| | Only little compensation | When Skelleftea Kraft bought it, they did an agreement with us but the project already stood there. Then we got a small amount of money but we were not in a good position. | Interview 9 | |

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|---------------------------|---|---|--------------|---|
| | Compensation dependent on amount of turbines built | a) "it was a big project. It was the biggest in whole Europe. It's just ... the roads, they make the roads and then they put up some stations and then they stop. And they say "You get the money when we have so many wind power [...] turbines." [...] But the damage is already done" b) "when they take the first spade, then they should pay, [...] directly, if you do this, you must pay so we can feed them out for the whole winter in lots of years. When they take the first move to the ground.[...] Because the roads, they're already made and the area is destroyed. [...] we can go around it and we can pass it and they [reindeer] cannot eat" | Interview 8 | |
| | Compensation can be enough but not always | "In some cases, if the reindeer herder community has the ability to actually compensate with other pasture lands and other areas, but you can see that we don't have flexibility as we had 50 years ago." | Interview 11 | Related to future of herding |
| | Compensation for food as standard | "That's also an issue about this with the wind mill industry. There has been like a standard now when they discuss how to replace the grazing [...] "We give the community money so they can buy reindeer food, artificial reindeer food." But we wonder about that in our communities and we wouldn't take that way at all because we don't know how that will affect the reindeer in a period of time." | Interview 10 | |
| | Economic benefit for developers but endangering herding | "Är det rätt att exploatörer gör ingrepp i betesmarkerna, tjänar stora pengar till sina ägare men samtidigt genererar stora utgifter och hinder för renskötsel företaget och som gör att dessa företag får mycket små möjligheter att utvecklas eller att ens finnas kvar?" | Interview 12 | |
| Procedural justice | Need to mobilize and make pressure to be heard | a) Government decision: "We have a lot of phone calls and after [pressure], we called them a lot of times, and then they said: "ok, come here, we invite you"." (p. 2) b) Financer: "We write letters and contact the bank: "do you know what's going to happen here? Then, urfolk, indigenous peoples, will get big problems"" (p.2) | Interview 5 | Both pressure on government and on developer, use indigenous status to their advantage. |
| | Feeling of helplessness | a) "When we got this decisions, we thought it was a big problem for us, it's hard for a little...., we are not so many in our Sámi village so we thought we can't stop this, it's not possible" (p. 2) b) "the people in pitea kommun [...], the chiefs up, they said "of course it's important with the reindeer herding but we must think about it, it will make us a lot of [jobs], so people in Pitea can get work." So, we have no help from them. [...] they don't think [herding] is important" (p. 7) | Interview 5 | Feel they are too few to stop development; no help from Pitea kommun |
| | Feeling of helplessness | Realized we can't stop it, everyone was so hopeful about the project: Pitea municipality, Länsstyrelsen Norrbotten, the Swedish government. Reindeer herders felt "left alone", did not get support from any governmental authority | Interview 6 | |

| | | | | |
|--|--|--|-------------|-------------------------------|
| | Feeling of helplessness/ powerlessness | “We didn’t want it [the wind power development]. But if seven Sámi people who own reindeer in an area [go] against the big power, the big company, and lots of jobs in Norrbotten, which is also important for this area, that we have jobs... so then this eight Sámi people, they don’t have so much to say about it.” | Interview 8 | |
| | Authorities support wind | Much earlier in the process, Pitea municipality, Länsstyrelsen Norrbotten and Swedish government should have said it’s necessary to make reindeer herders accept it. The developers were nonchalant at first, didn’t worry or care because they had all the government agencies’ support. Swedish government could have said it four years earlier [before their final decision including herder compensation] that reindeer herders need to be compensated and are important | Interview 6 | Also related to recognition |
| | Land owners support wind | When a wind power project is planned, the owner of the forest gets a lot of money. Usually, the connection is started to them, they decide whether they want the project or not, and only then, others are consulted. Sometimes, the Sámi village is not even the second to be asked after the owner and then the developer will say they have a right to use the land because they have the permission. | Interview 4 | |
| | Consultation process but ignorance regarding herding | “Of course, they knew that they must talk to us [...]. [...] They can’t understand reindeer herding and when you can’t understand it, you can’t know what’s going to happen and what is our [...] responsibility” (p. 3) | Interview 5 | Highly related to recognition |
| | Free Prior Informed Consent | a) Free Prior Informed Consent does not work in Sweden. b) It is the Swedish government’s fault. The government does not say that it should be the local people that decide whether wind power is built or not. The government does not care about FPIC. | Interview 4 | |
| | Environmental Impact Assessment | a) When the wind power company plans to build a wind project, they conduct and Environmental Impact Assessment. Some companies might also look at the social and cultural impact of the project but that does not necessarily happen. The consultants that conduct the EIA are paid by the company, so they might write an assessment in favour of the company’s interests. There should be a special, independent authority that conducts the EIAs. b) The follow-up reports on the effect of Markbygden on the reindeer herders is written by a consultant, so it is likely that not every herder’s opinions is shown in it. They might write that no negative consequences could be found but that might not be really true. The consultants also do not fully understand the effects on the reindeer. | Interview 4 | |

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| | Environmental Impact Assessment | “It’s that it’s the company that does the MKB. In my opinion, it should be an authority that provides that because, as a matter of fact, it’s a company project. The company owns it, the company chooses which consultant, who wants to do that and actually within this earlier project, we have heard between the lines and in private conversations, that a lot of consultants say that: Of course you don’t be too controversial because you won’t bite the one that feeds you. And of course it’s human. So if you would like to have an objective opinion about something, it should be more proper to have a special MKB authority which of course the company should pay for when they do that. But in order to make it objective. I think that should be a better system. [...] But actually we have some quite horrifying example when you have a consultant that has written that this is going to have a huge impact on different... and on reindeer herding and so on and so on and the company actually takes that away.” | Interview 11 | |
| | Information early on | “I think we heard it first from the company actually [...]. And then we started to hear it from Länsstyrelsen. And then it was a lot of discussion and meetings.” | Interview 7 | |
| | Information early on | “They were actually quite early in informing us about the park, it was like 2007.” | Interview 10 | |
| | Tiring to oppose | “We tried to do everything we could to make our voice heard but it was a lot of phone calling and talking with people and make us really... it was tough years” | Interview 7 | |
| | Tiring to oppose | a) “I know a lot of communities and herders, are quite tired to always inform and always to explain from the beginning with each company. The ongoing process with no ending. So at the tenth meeting, with the tenth company, you start again, trying to explain what is a reindeer, so this is quite tiring. I can understand that because the responsibility to do that has been forced to us. And that’s not quite fair either. It’s the company that wants to come in to our land and we need to tell them. It should be the opposite way, that they need to inform themselves.” b) “But it also takes a lot of time to do that and a lot of energy. To always try to fight for what we mean is our right to be there. But always trying to fight for some compensation.” | Interview 11 | Also, responsibility to inform should not be with herders. |
| | No financial help for legal process | “we had to hire a lawyer by ourselves. So he had some connections to the reindeers also and he did it on some free time. It wasn’t so expensive but he did good work” | Interview 7 | |
| | No consultation | a) We were against it all the time but nobody cared. They had decided already. We were the first ones who had wind power, so they didn’t have any consultation. The Environmental Impact Assessment was around one paragraph | Interview 9 | |

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| | | <p>long for the project and it just said “there is reindeer herding in the area”. Now, in new projects, they have dialogue but we didn’t have the chance. We were in a bad situation for negotiation, they already had the permission.</p> <p>b) We tried to talk against it and to go against it in court but we were denied our opinion. It was very badly handled. Then we tried to talk to Skelleftea Kraft and now we have a better dialogue.</p> | | |
| | Only some sameby members know about ‘secret’ deal | <p>a) “It’s only the Sámi people who work full-time that see what the deal is. We, that only work part-time, we don’t see it. It’s only for the members of the Sámi village that are, we call it aktiv”</p> <p>b) “It [the money] goes to the Sámi village and for the money that comes to the Sámi village, we use helicopters and we give them food [...] so my reindeers also get, in a way, the money from that. But it isn’t so much money now”</p> | Interview 8 | Details of contract remain secret to even some sameby members, but money also used for their animals. |
| | Bringing developments to court | <p>a) “Some cases we provide legal action, not all and not with all communities. It’s a matter of time and it’s a matter of how principal the case might get in a bigger context. So you often pick cases to get into.”</p> <p>b) “you could also see some court decisions now are talking in favour of reindeer herding, so you actually can see that happening.”</p> <p>c) “Until this year [2016], you can see that wind power has advantage [over herding] but it has changed now, you could actually see that [...] . So you can see a difference, a small change. The biggest change is actually on the conditions. So you have all the conditions in favour for reindeer herding.”</p> | Interview 11 | Can help with legal action for some communities, wind power only part of court cases (also mining etc.); courts more pro-herding now but still compensation not fair (see distribution) |
| | Unequal playing field in negotiations | <p>“we do have today, in the process, the reindeer herders mainly. And they want to be reindeer herders but are now forced to be negotiators and sit in this court room or consult with these companies and don’t really have a proper education and don’t really always have the time to read because you need to keep in mind about ... we did an investigation about two years ago and each community has about 40 to 50 hours a month just negotiation with different parties. So this is a lot of time and if you’re a small village with a few members, you need to get from your daily job, reindeer herding, to be within this consultation. So you don’t have the money, you don’t have the people, and sometimes you don’t have the knowledge, and most certainly you don’t know the rules, the playing rules. And you’re meeting a company that has consulting for environmental issues, you have lawyers, you have a whole staff with you in each project. So this isn’t equal, it’s not fair, actually.”</p> | Interview 11 | |

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| | Conversation with consultants | “Yeah, actually, they [developers] didn’t talk to us. They had consultants who talk to us and so on. But we work with the consultants in the one who is built and also in the one who got the permission and this one who is applying, we are starting to work with the consultants just now.” | Interview 10 | |
| | Need to chose battles, too much work | “If I was to chose to talk to everything that we’re involved in, I would do that every day... every day, every day. But you have to sift and sort. Because we as a community don’t have the administration to deal with this mass of things. It’s like a kommun, ja community. It’s like big things. And everything that happens in the landscape, like forestry, the gravels, when they make gravel, wind mills, water, they manage some water, everything, is so big. So we have to sift and sort. And you also have to chose your battles. That’s one thing you have to learn in the beginning. Because if you are going to start to say no to everything, you will drown, you will drown.” | Interview 10 | |
| Recognition justice | Lack of knowledge about herding | “So we have the consultants with us out when we are herding the reindeers. We try to explain this is what we do and they have no idea what reindeer herding is, so it was a lot of explanation” (p.1) | Interview 5 | Neither developers nor laymen (people in Arvidsjaur) understand herding well |
| | Lack of knowledge about herding | Developers didn’t understand how herders use the area, said “you can go to other places”, but that doesn’t work, there are other herders there | Interview 6 | |
| | Lack of knowledge in authorities/decision-making | a) In the County Board in Jokkmokk, a few people work specifically with reindeer herding. They might understand the work and the impact of wind turbines but they do not decide whether a project is permitted, they can only give opinions. A delegation of the County Board decides. b) The people in, for example, the County Board do not understand reindeer herding, the knowledge about Sámi culture and herding is very low. [...] In Swedish schools, there should be more knowledge taught about the Sámi culture and way of life. The ignorance follows up to the County Board where they do not know about Sámi culture. | Interview 4 | |
| | Lack of knowledge about herding | “You know, the children in school, they know more about the American Indians than they know about the Sámi people. So, that’s the government of this country. I don’t think that they care so much.” | Interview 8 | |
| | Lack of knowledge in authorities/decision-making | a) “A lot who come here and work within Northern Sweden don’t have a clue about reindeer herding or Sámi rights or how it affects, so of course, it’s better knowledge [that SSR tries to create]” b) “So this is, for me, one big issue, trying to educate them [the authorities] | Interview 11 | |

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| | | because they're not very well educated today when it comes to reindeer and grazing. You can see at the authorities, you have a specialist in environment, you have a specialist in wildlife, birdlife, and so on, but you don't have specialists in reindeer herding. So that's a lack of knowledge within the authorities. And it's making their work harder." | | |
| | Reindeer herding as the life | "For me, of course, it's my life. And other people can say "you can do something else to get more money to your family", but it's not the thing. The thing, for me, is reindeer herding. It's my life and it's more than important. | Interview 5 | Reindeer herding as the only option |
| | Reindeer herding as the life | "And we work the whole time for the reindeer, to have the best for them and when they get sick and pain, then it's a terrible thing to see." | Interview 7 | |
| | Sámi as the troublemaker | "I think [the treatment of Sámi by the state] will be better but it's so many times and many examples that the feeling is "we are a problem"" (p. 5) | Interview 5 | |
| | Sámi as the troublemaker | "They think the Sámi people will complain a lot. And it's hard, it's a difficult thing to make your voice heard and say: "This is the problem we have and we want to have help worth this". And then when you try to do that, easily it gets complaining. It's not that I want people to feel sorry for me because I have some problems with maybe the predators or a company wants to build on the land or they're cutting down the forest. And everything who builds where we have reindeers, on the land, everything who builds or they cut off the wood and stuff, it affects us. So, it's the whole picture who makes it a little bit harder every year because it's so many things." | Interview 7 | Also relates to cumulative effects; future of herding |
| | Sámi as the troublemaker | I think it's a big problem [small budget for Sametinget, interests not taken seriously], they will get us out of the way. For culture, it's ok but not for reindeer. It's nice to see us in the theatre. | Interview 9 | |
| | Sámi as the troublemaker | "We're just part of a game, I think. Many, many times. We only look good if they want to see us in our clothes and we have the Sámi people and that's it. You know, the children in school, they know more about the American Indians than they know about the Sámi people. So, that's the government of this country. I don't think that they care so much." | Interview 8 | Also related to lack of knowledge! |
| | Sámi as the troublemaker | "And we often are pointed out as no-speaker, [...] as a stop for development in the Northern part of Sweden. And of course, this is a consequence of the state's action. It's the state that actually has made this happen because they haven't... the arena is that the company and the Sámi community should solve this issue, the interest conflicts, themselves, rather than the state actually saying "This is Sámi traditional land, we should have reindeer herding"" | Interview 11 | |

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| | Sámi need to adapt | Not first time there are other interests on the land, herders have to be adaptable/accommodative, generation before also felt reindeer herding was not seen as that important. But: more respect now. | Interview 6 | |
| | Improvements in recognition | There has been a little change in some County Boards, they have tried to bring in conditions, such as one cannot built wind turbines in a certain area in winter or the turbines have to stop operating in winter time if reindeer are in the area. | Interview 4 | |
| | Values in Swedish environmental law | a) In Sweden, environmental law is economic at the bottom. When it is interpreted, it is about what is best for the economy. b) One should not only look at reindeer herding from an economic perspective as it does not bring so much value to the Swedish economy but it brings big value to the Sámi people and also economic value for tourism or Sámi that work with handicraft etc. c) It is important when working with such cases as wind power that one also highlights the environment and the culture rather than just the economy. | Interview 4 | |
| | Not valuing herders' knowledge | The reindeer herders have experience in nature, and including their family members, Sweden has around 2000 field experts that could provide knowledge about the environment but are not listened to. | Interview 4 | Also related to procedure. |
| | Need to create mutual respect | "one of the main purposes [of SSR's work] is to actually have learning platforms for projects for the industry or the authorities to meet with the communities and to learn from each other and try to have a platform for dialogue and understanding and, in a way, maybe have mutual respect for each other" | Interview 11 | |
| | Western system, unequal playing field | "And I think you can't come there to be equal because it's a matter of system failure. [...] you never could be equal because the other part doesn't really understand the values that we're trying to describe or protect, when it comes to indigenous peoples towards the industry especially. So, it's a long way to be equal because it's always when you come to the process, even if it's a consultation or a negotiation, or in court, it's based on a western system, on a western way of thinking. And in matter, you can never be equal because we are forced to fit in this system that's not necessarily suitable for us. It's hard to describe. Social values, from the ground; it's spiritual values we need to protect, the livelihood values, it's quite hard to describe that for a technical process such as the environmental law." | Interview 11 | Also related to procedural justice (what is valued) |
| Mixed/unclear justice aspects | Recognition of knowledge & procedure | There is research that sates negative impacts of wind power on reindeer and there is research that states the opposite. Currently, the wind power company can simply chose what research they like. The traditional knowledge of the Sámi is not accepted. Impacts on reindeer need to be proven but even if it is shown | Interview 4 | |

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| | | with GPS sensors that reindeer avoid the area, research says they cannot be sure that is due to the wind park rather than the climate or other factors. | | |
| | Doing their share and cannot stop it anymore | When the construction of wind power started, many Sámi villages wanted to allow some but they did not expect it was going to be so much. Now, the wind developers think the Sámi villages have already accepted some turbines, so why should they not accept more. And even if the Sámi village says it is too much, the developers do not listen. | Interview 4 | |
| | Dependence on land; trying to make developers understand | “So if you take the land, it will be very expensive to have the reindeers to survive. And the company didn’t understand that. If they took our land, we don’t have anywhere to be. That was the problem for us to make them understand that they’re going to make us a big damage and it was not an easy way.” | Interview 7 | |
| | Feeling of helplessness; resignation | a) “we didn’t have so much choice. We couldn’t stop it so it was a difficult way to go. [...] We try to accept that and the best had been that they had built somewhere else, absolutely, but somehow you had to face the fact.” b) “It was a lot of ways there but you have to somehow, somehow, you have to accept the fact that it’s going to be built and you can’t stop the development” | Interview 7 | |
| | Support from authorities; even against herders | “they had a lot of support and at some point, they also said, it’s not on the paper but; that they had, it was better to build and that we disappear. There was almost some point in the few years they had some statements that it wasn’t good.” | Interview 7 | |
| | Giving away land to foreigners | “Somehow I want that the Länsstyrelsen, the government, they could have supported us a bit more. It’s a company from another country, come here and take. And we have some really long tradition to do reindeer herding and they were ready to offer that to nothing, actually. Just because there don’t live so many people up here. So it’s a really strange situation. [...] that’s a new problem with a company from Germany who come and built and they do what they could do and if they got the Swedish government on their side, it’s not their fault.” | Interview 7 | |
| | Need for dialogue but money talks | They have to talk. Nowadays, it’s a good dialogue, SSR does a lot for the dialogue. But to the end, it’s money talks. | Interview 9 | |
| | Cumulative effects, north-south divide | “I think that we already have the water power. And we also have mines who bring damage to the landscape. I think that the windpower, they could have it in the south of Sweden. [...] I think that the north of Sweden, we give so much electricity power away from it. So I think we have given enough.” | Interview 8 | |
| | Doing their part and accepting no as no | “a mutual understanding [would be ideal] because I think it’s important to understand that reindeer herders or the Sámi in general don’t want to say no to | Interview 11 | |

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| | | everything because we are a part of society. But [...] sometimes, you are on a tipping point, especially if you come to a village, a community, that has all different kinds of [exploitation] on their ground. So sometimes no is a no and it needs to be respected. So this is a balance and that's the ideal situation. But this is a question about money and towards our interests, so often we are losing that battle" | | |
| | Ethical burden of giving away land | "How can I set a price for my children's future and their children's? And what price is that? And this is quite a hard issue [to] deal with at that moment. So therefore, I believe that you could never be equal because the one you're looking at doesn't really need to consider that. They want to build wind power or start mining and of course they want to do it in a good way, mostly, they want to have social responsibility and environmental responsibility. But they are really hard to understand this battle inside of the herders, that we are giving away our lands. And this is a colonial perspective that we have with us and has been for a long time." | Interview 11 | |
| | Only reactive not proactive and need to use land for rights | "We always need to be reactive on other issues. Other parties want to come in and be within the land, so we don't really have the time to work within the communities, trying to figure out what do we want, how do we want our society to be in, say, 50, 100 years. And what should be the best to reach that in order to be responsible? [...] we haven't landed there yet but at the moment, we're trying to get tools to explain, trying to fight for some land areas to still have grazing land for the herders, to still have reindeer on because in Sweden, the Sámi rights are based on customary law and based on reindeer grazing. So if we don't graze, our rights will be invalid. So we need to graze and we need to be there." | Interview 11 | |
| | Herders regret agreement | "Talking to the herders within Östra [Kikkejaur], often [they] say to me: "If we knew what we know today, we should have never had an agreement, we should have fought until the end." And that's often happening when you have this agreement, when you see the effects at the land. It's a lot of regrets." | Interview 11 | |
| | Communities affected differently | "When the location is totally wrong and it's totally unacceptable. You have to take that from case to case. We have different criteria in different communities, so it's a wide range there. Some are more intense in the reindeer herding communities and they will prefer it a different way and some are not so intense, they will prefer it another way." | Interview 10 | BUT: Gran is a mountain sameby, not forest; so they have more space to move. For them, mountain wind power is unacceptable. |

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| | Problem of reindeer moving to different sameby | <p>a) "it is related to the wind power. I mean you can see on the research that Anna Skarin has done there that they are affected. And I mean that's in the time of the year that I think they are probably most affected by the wind mills because they are standing in the year-round areas, so they come there in like May, June, July, August, September, too, I think."</p> <p>b) "We started getting their reindeers on our winter grazing and it's really, really bad to have the reindeers on that type of land, I mean it's really bad for the lichens because they don't graze on it in summertime. But when they walk, they stamp on it and it just sort of disappears, it shatters, it becomes... yeah, powder of it. So we have had this problem for a long time and I actually didn't know this about the windmills and the effects of the wind mills before Anna showed me the research of it. And we have been discussing this with Malå, I mean, a long time, and we've been quite upset at each other, too. A lot actually, there have been a lot of hard words there, too, because of this."</p> <p>c) "We have to find a solution, I mean, actually it's like a disaster because in that area, the winter grazing has actually sort of destroyed now for these years and we don't know how to handle this at all."</p> | Interview 10 | |
| | Effort to provide local fodder | "We are talking [...] with our farmer on this local project because we think this is insane of us taking some ingredients from the pellets from the other side of the world. We talked about this [palm oil] who was imported from like Indonesia where they cut down rain forest and it's insane. So that's why we started to look in a different direction like this and then look at how we can manage this locally instead." | Interview 10 | |
| | Gambling with permits | "You know that's also a different thing, if a permit is given, you don't know if it's even going to be built. Because it's just a permit. So they sort of, some companies sell them like stocks in some way and it's crazy. So sometimes when you are like working with the... looking at how to handle a permit inside a community, you don't know even if it's going to be built. But you have to work as if it's going to be built." | Interview 10 | |
| Impacts of climate change | Changes in weather, need to feed | <p>a) "And from November it's snow, rain, plus degrees, minus degrees, so we have a lot of ice on the ground, so we can't go near the coast [...], they can't find food." (p. 4)</p> <p>b) "And we have many years now, it's not normal. Maybe it's the climate change but it's a problem for us." (p. 4)</p> | Interview 5 | Observation of CC, need fodder, several years already, fodder very expensive |
| | Changes in weather | "And I also believe that people living in the Northern region, in the Arctic also feel the effects of the climate change, it's quite nearby you, you can see it. Such | Interview 11 | |

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| | | as, now it's snowing, one month ago, it was raining and seven degree plus [...]." | | |
| | Changes in weather, go to other areas | "And actually this year, they have been in the park. A colleague of mine is there and he has them just inside the park because of the harsh grazing this year. [...] they went there by themselves, just because of the grazing because on the lower areas it became stuck, frozen, icy crust, so they went somewhere else and they went up in the hills, just to graze in the trees there." | Interview 10 | |
| Future of herding | Optimism, wish to carry on herding in future generations | a) Question: "And do you think that in the future, there will still be reindeer herding [...]?" Answer: "Absolutely." b) "We have done an agreement and if I don't think it would be possible for my children to be reindeer herders, I [would] have never agreed because it's so important for me [...], we must give our children a good chance to take it from us and continue with reindeer herding" (p. 3) | Interview 5 | Positive about herding with the agreement and compensation |
| | Optimism about future | Think we can manage it and have the money to make it possible but don't know | Interview 6 | |
| | Optimism about future; uncertainty | "I think we could [continue herding], we don't know but we hope we will manage to continue to have this life as we want. I really hope so but it's for the future to see." | Interview 7 | |
| | Wish to carry on herding in future generations | Future generations are important for the Sametinget; the land should be in a state that future generations can also do reindeer herding on it. | Interview 4 | |
| | Wish to carry on herding; Sámi should determine future | "and the right to remain [in] a traditional livelihood and also to develop your own livelihood. It's important to remember, it's not only about remaining, it's also about having a chance to develop yourself and to secure next generations' opportunities to be on the land." | Interview 11 | |
| | Uncertainty in future | "So, we can't really say what's happening in the future, we must have resources to handle all kind of problems" (p. 3) | Interview 5 | |
| | Limits to adaptation | Now, with the exploitation and climate change, there is no flexibility or adaptation possible anymore. In old times, Sámis could cope with it and just move to another area to adjust to a different weather but now many areas have also been taken away by forest companies. | Interview 4 | |
| | Limits to adaptation | "In some cases, if the reindeer herder community has the ability to actually compensate with other pasture lands and other areas, but you can see that we don't have flexibility as we had 50 years ago. We still had the ability to be flexible using different lands. But today I would say you have smaller and smaller | Interview 11 | Linking to compensation (distribution) |

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| | | opportunities to go there.” | | |
| | Limits to adaptation | “Renen och renskötaren är och har alltid varit duktiga på att anpassa sig efter förutsättningarna, men det kommer en gräns när det inte går längre. Är det rätt att exploatörer ska få ta och ta av renens betesmarker tills traditionell renskötsel inte längre går att bedriva?” | Interview 12 | |
| | Conflicts about predators | There is a different value given to reindeer than to predators, for example wolves. Some wolves are given names by the County Board directors, so they have a different value. | Interview 4 | |
| | Need for information | There needs to be more information on Sámi culture in the schools. | Interview 4 | |
| | Need for Sámi rights and self-determination | Something needs to happen quickly regarding Sámi rights and self-determination because things are moving so quickly in the Swedish North. For instance, what would happen to the land if a Sámi village was to die out? Whom would it belong to? | Interview 4 | Raises question of future of land rights if sameby disappears |
| | Unknown new disease | “we don’t have so much knowledge about it. It’s a new thing for us, so it’s not funny. [...] But when it started a couple of years ago, then we didn’t see it at the beginning. So it went too long, so the eyes went broken and a lot of pain for them. | Interview 7 | |
| | Difficult economic situation of herders | “[Herding] has some dark sides. It’s hard to make it go around the whole year economically.” | Interview 7 | |
| | Questioning herding | “In some point in life, you get a little bit: “Is this really what I want to do with the rest of my life?” I think every people think that and then when it’s a lot of work, it’s every day, seven days a week, long days and you are really tired and your body is in pain and you don’t earn as much as you want then it’s some time you can... then it comes to the wind power or something and you say: “Fuck it, I don’t want to do this anymore.” [...] And [...] sometimes [...] “Am I insane doing this or what is it?” You can’t do it just because it’s fun. You have to earn some money also. | Interview 7 | |
| | Danger of ice throw | It’s dangerous in wintertime, there are iceblocks flying around. The developers didn’t know it was going to be dangerous. | Interview 9 | |
| | Noticeable impact of wind on reindeer | We still go there with the reindeer in summer but the reindeer avoid it and the moose as well. There is a lot of noise. | Interview 9 | |
| | Fragmentation | There are so many things, also mines, hydropower, cutting the wood; all that together, it’s not so good. It’s getting very complicated to do reindeer herding, | Interview 9 | |

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| | | the area is fragmented. | | |
| | Importance of herding for land rights | They [Sametinget] don't realize that when herding is gone, it's over. When the herding is gone, there are no rights for the land anymore. | Interview 9 | Also related to identity conflict. |
| | Need to consider cumulative effects | "I think the authorities need to learn more about the impacts on the landscape base for the community and also consider a lot of cumulative effects when they do their work." | Interview 11 | |
| | New different technologies? | "And also, I think, [in] about ten years, do we know what is the next electricity phenomenon? Is it sun panels? Or is ti...? So this is still developing all the time" | Interview 11 | |
| | New different exploitation? | ". Nästa vecka kommer nytt ingrepp i betesmarkerna från en annan exploatör och då är inte avtalet om ersättning med det första exploatören tillräcklig för då har förutsättningarna påverkats och ändrats." | Interview 12 | |
| | Adapting to wind possible | "If they can arrange it a little bit different and maybe take some of the wind mills out, probably we will be able to handle it in some way." | Interview 10 | |
| | Long-term effects of fodder | a) "The feeding, if they get used to being fed. How does that turn out in 20 years? Are they all going to be used to just being fed? So if it comes [to] a harsh winter and they are not going to be fed, are they going to easily die then and so on?" b) "[With] the peelets they got stomach issues and they get sick and so on." | Interview 10 | |
| Sámi identity conflict | Importance of herding for Sámi culture | Reindeer herding is a ground for Sámi culture. The Sametinget tries to remind the Sámi and Swedes of its importance. One should not only look at reindeer herding from an economic perspective as it does not bring so much value to the Swedish economy but it brings big value to the Sámi people and also economic value for tourism or Sámi that work with handicraft etc. | Interview 4 | Also points out measuring in economic terms |
| | No help from non-herding Sámi | Maybe some care but if they care they use little energy to help the Sámi village in its opposition to wind power. They do not go to the Sámi village and offer to help stop the wind power development. | Interview 4 | |
| | Collective rights and division of Sámi | Every Sámi is affected by such developments because of their connection to the land. Sámi have a collective right for all Sámi but the reindeer herding right only applies to members of a Sámi village. However, you can also be affected if you are not part of a Sámi village. | Interview 4 | |
| | Collective right to herd possible? | "the Sametinget who are in the leading group now, they want that all the Sámi people should have the right to work with the reindeer. But it's impossible! It doesn't work that way. You must have a lot of reindeers, so you can live, so you | Interview 8 | |

| | | | | |
|--|--|--|--------------|-------------------|
| | | can slaughter and you can get money and you can live on [it]. If all Sámi people should have the right to own reindeer, then we only could have two reindeer [...] each! And you cannot live on two reindeer.” | | |
| | Sametinget vs. herders | The majority of the parliament is not reindeer herders. They work against herding, it's very sad. They don't realize that when herding is gone, it's over. When the herding is gone, there are no rights for the land anymore. [...] They strangle the budget, also to SSR. They see that the herders don't get a piece of the cake. | Interview 9 | |
| | Sametinget vs. herders | “So, there's a little group of Sámi people who still work with the reindeer. And then the people who don't, they perhaps have the language but they haven't the right to be herders. So, in Sametinget, the most people don't work with the reindeer and they don't see it the same way as we do who have reindeer. Sametinget wasn't like it should be. The Sámi people who own reindeer, they want the power to go back to Länsstyrelsen and they give the money to us when we need. But now it's Sametinget who decides if we get some money for reindeer food during the winter. And it's not so good.” | Interview 8 | Internal conflict |
| | Sametinget as government authority | “Sametinget for me is still a Swedish authority. So in that way, no, because it's the government that actually says that Sametinget can and can't do. It's not in my way of thinking about self-determination to have a state-owned government and the state says it's a Sámi government, because it isn't. | Interview 11 | |
| | Sametinget as government authority | “Sametinget är ingen samisk organisation, det är en av svenska staten utsedd myndighet, även om den är speciell på så sätt att den styrs delvis av samiska politiker.” | Interview 12 | |
| | Being Sámi more popular; difficult for herders | “When I grew up, we were just a few who were called Sámi or Lapp. And the only one who was called that was the one working with the reindeers, not anyone else. I have some friends of mine who have studied with me in school and so on and they were never ever called Lapp or they even teased me for it. And like now, they are sitting in the Sámi Parliament. So that's an issue. So I think inside the reindeer herding communities, I think that's a huge issue because from my point of view, this Sámi Parliament and so on that has been popular now to have, to be a Sámi. And that has been working against us reindeer herders in one way. Because we have been looked at like we have such a privilege. So I think it's wrong from a different way. Before we have been looked like from the general, from the state, we have been looked on in... treated a little bit differently. And now we are treated little bit different from the other Sámi communities, the one who is not reindeer-herders.” | Interview 10 | |

| | | | | |
|--|--------------------------------|---|--------------|-------------------------|
| | Sámi were herders historically | “Because then if you were a farmer, you weren’t a Sámi. If you were a Sámi, you were a Sámi and if you were a farmer, you were a farmer.” | Interview 10 | Not necessarily true(?) |
|--|--------------------------------|---|--------------|-------------------------|

Appendix 4 – Survey template

Master thesis on wind power in Northern Sweden (Engelska)
Masteruppsats om vindkraft i Norra Sverige



Jag är student vid master programmet i miljö- och hållbarhetsvetenskap på Lunds Universitet. För min masteruppsats forskar jag om vindkraft i Norra Sverige och Samiska åsikter om den. Enkäten tar maximalt 10 minuter och jag kommer behandla all svar konfidentiellt. Tack så mycket för din hjälp!

1. Är du?

Kvinna Man Annat

2. Hur gammal är du?

Under 20 20-35 36-50 Över 50

3. Vad tycker du i allmänhet om vindkraft för att producera energi?

Mycket bra Bra Neutral Dåligt Mycket dåligt

4. Har du hört om några vindkraftsprojekt i Norra Sverige?

Ja Nej

4.1 Om ja, finns det vindkraftverk nära där du bor? Eller finns det planer för vindkraftverk?

Ja Nej

5. Vad tycker du om vindkraftverk i Norra Sverige?

Mycket bra Bra Neutral Dåligt Mycket dåligt

6. Vad tror du kan vara **positivt** med vindkraftsverk i Norra Sverige?

7. Vad tror du kan vara **negativt** med vindkraftsverk i Norra Sverige?

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Master thesis on wind power in Northern Sweden (Engelska)
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8. I ett påhittat scenario planeras vindkraftverk att byggas i en kommun som också har renskötsel. Det är bara en plan men de lokala renskötarna är oroliga för att kraftverken skulle ha negativa effekter för renarna. Hur rättvis tycker du att exempel a) till d) är? (Vänligen välj ett svar per situation)

| Situationer | Väldigt rättvist | Rättvist | Neutral | Inte rättvist | Inte alls rättvist |
|--|------------------|----------|---------|---------------|--------------------|
| a) Vindkraftverk byggs trots att renskötarna är oroliga eftersom de producerar förnybar energi för Sverige. | | | | | |
| b) Renskötarna har erbjudits kompensation eftersom vindkraftsverken är nära deras renskötelsområdet. De är inte involverade ytterligare i planeringsprocessen. | | | | | |
| c) Renskötarna är involverade i planeringsprocessen och deras åsikter bli hörda. Därefter beslutas att renskötarna inte får någon kompensation och att planen inte behöver ändras. | | | | | |
| d) Planen i området annulleras och en ny plan är utvecklad. I den nya planen är vindkraftsverken placerade i ett område utan renskötsel. | | | | | |

Finns det något som du tycker skulle vara ännu mer rättvist?

9. Är du same?

Ja

Nej, jag är _____

10. Hur viktigt tycker du att renskötsel är för samisk kultur?

Mycket viktigt

Viktigt

Neutral

Inte viktigt

Inte alls viktigt

11. Har du någonsin arbetat som renskötare?

Ja

Nej

Tack så mycket för din hjälp! Om du är intresserad av resultat av min forskning, vänligen kontakta mig.

Researcher/Forskare: Laura Niessen, Master student Environmental Studies and Sustainability Science
Email: lniessen@web.de
Telephone: 0046 73 847 75 61

Appendix 5 – List of documents analysed

| | Document name | Relates to sameby |
|------|--|-------------------|
| 1.1 | Miljödepartementet Regeringen (2010, April 3). <i>Tillåtighetsprövning enligt 17 kap. miljöbalken av vindkraft i Markbygden</i> (Regeringsbeslut M2009/1517/F/M). Piteå, Sweden: Piteå kommun. | Östra Kikkejaur |
| 1.2a | Piteå Kommun (2014a). <i>Vindbruksplan – Tematiskt tillägg till översiktsplanen avseende vindbruk</i> . Piteå, Sweden: Piteå kommun. Retrieved from https://www.pitea.se/Invanare/Boende-miljo/Planer-och-fysisk-planering/oversiktsplan-2030/Vindbruksplan/ . | Östra Kikkejaur |
| 1.2b | Piteå Kommun (2014b). <i>Planeringsföresättningar – Tematiskt tillägg till översiktsplanen avseende vindbruk</i> . Piteå, Sweden: Piteå kommun. Retrieved from https://www.pitea.se/Invanare/Boende-miljo/Planer-och-fysisk-planering/oversiktsplan-2030/Vindbruksplan/ . | Östra Kikkejaur |
| 1.2c | Piteå Kommun (2014c). <i>MKB Miljökonsekvensbeskrivning – Tematiskt tillägg till översiktsplanen avseende vindbruk</i> . Piteå, Sweden: Piteå kommun. Retrieved from https://www.pitea.se/Invanare/Boende-miljo/Planer-och-fysisk-planering/oversiktsplan-2030/Vindbruksplan/ . | Östra Kikkejaur |
| 1.3 | Svevind (2011a). <i>Markbygdens Vindkraftspark, etapp 1, Miljökonsekvensbeskrivning</i> . Svevind. Retrieved from https://svevind.se/Project/Etapp%201 . | Östra Kikkejaur |
| 1.4 | Svevind (2010). <i>Vindkraft i Markbygden, Etapp 1, Samrådshandling</i> . Svevind. Retrieved from https://svevind.se/Project/Etapp%201 . | Östra Kikkejaur |
| 1.5 | Svevind (2011b). <i>Markbygdens Vindkraftspark, etapp 1, Bilaga 4 Rennäringsanalys</i> . Svevind. Retrieved from https://svevind.se/Project/Etapp%201 . | Östra Kikkejaur |
| 2.1 | Länsstyrelsen Västerbotten (2016, August 25a). <i>Tillstånd till uppförande och drift av vindkraft vid Ljusvattnet, Skellefteå kommun</i> (Beslut 2482-501-04). Umeå, Sweden: Länsstyrelsen Västerbotten. | Malå |
| 2.2 | Länsstyrelsen Västerbotten (2016, August 25b). <i>Tillstånd till uppförande och drift av vindkraft vid Blåbergsliden Skellefteå kommun</i> (Beslut 2482-501-03). Umeå, Sweden: Länsstyrelsen Västerbotten. | Malå |
| 2.3 | Enejtjärn natur AB (2012). <i>Gruppstation för vindkraft vid Ljusvattnet i Skellefteå kommun, Västerbottens län, Miljökonsekvensbeskrivning</i> . Retrieved from http://fbbyggkonsult.se/projekt/ljusvattnet/ . | Malå |
| 2.4 | Skellefteå Kommun (2014). <i>Vindkraft – Tematiskt tillägg till översiktsplan. Skellefteå, Sweden</i> . Skellefteå, Sweden: Skellefteå kommun. Retrieved from http://www.skelleftea.se/trafik/samhallsutveckling-och-planering/planer-for-skelleftea/vindkraftplan . | Malå |
| 3.1 | Arjeplogs Kommun (2011). <i>Vindkraftsutredning för Arjeplogs Kommun, Tillägg till översiktsplan – Miljökonsekvensbeskrivning Antagandehandling</i> . Arjeplog, Sweden: Arjeplogs kommun. Retrieved from http://www.arjeplog.se/download/18.62e2b04814d439a87472327d/1431413814090/Utreddningsomr%C3%A5den+f%C3%B6r+vindkraft+i+Arjeplogs+kommun.pdf | Maskaure |
| 3.2 | Skellefteå Kraft AB (2011). <i>Pilotprojekt Uljabuouda – Slutrapport</i> . Energimyndigheten & Skellefteå Kraft AB. Retrieved from https://www.energimyndigheten.se/globalassets/fornybart/framjande-av-vindkraft/vindpilotprojekt/slutrapport---uljabuouda.pdf | Maskaure |
| 4.1 | Länsstyrelsen Västerbotten (2011). <i>Vindbruk och rennärning – Om kumulativa effekter</i> (Meddelande 12). Umeå, Sweden: Länsstyrelsen Västerbotten. Retrieved from http://www.lansstyrelsen.se/vasterbotten/SiteCollectionDocuments/Sv/Publikationer/2011/Nr%2012%20Vindbruk%20och%20renn%C3%A4ring%20webb.pdf | |

Appendix 6 – Consent form for interviews

Lund University Centre for Sustainability Studies



LUNDS
UNIVERSITET
LUCSUS
Lund University Centre for
Sustainability Studies

Informed Consent Form

Researcher: Laura Niessen

I, the researcher, am a Master's student of Environmental Studies and Sustainability Science at Lund University.

For my master thesis, I am conducting semi-structured interviews of around 30 -60 minutes.

At any point of the interview, you can ask questions or decide against taking part in the interview. Furthermore, you can demand that certain statements are not published.

By signing this form, you agree to participate in the interview. Anonymity will be ensured during the entire research process if wished for.

Do you agree to being recorded?

Yes No

Do you want to remain anonymous?

Yes No

The results of my research can be shared with you if you are interested.

Thank you very much for your time!

Date _____

Signature _____