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RESEARCH ARTICLE

Wind energy projects and reindeer herders' rights in Finnish Lapland: A legal framework

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Reindeer herding is both a traditional livelihood and a business still practiced in the northern parts of Eurasia. In the Nordic countries, reindeer herding has contributed to keeping remote northern areas inhabited while maintaining Indigenous cultures. Reindeer herders have also been able to adapt to new circumstances, and many of them have invested in value-adding production or secondary occupations, such as tourism. The main challenge for reindeer herding is the loss of pastures to other industries and infrastructure projects. The growing investment in wind farms—which not only compete for the same land with reindeer herding but may also disturb the herding practices—has emerged as a recent competitor to reindeer herding in the context of land use. In this article, we study the rights and opportunities of reindeer herders to participate in decision making on land use for infrastructure projects in general and wind farm projects in particular. Our focus is on the situation in Finland, but we also use examples of reported land use conflicts between reindeer herders and wind farms from other Nordic countries. The aim of this article is, on the one hand, to find out how the rights of reindeer herders in planning and making decisions on wind farms are regulated and, on the other hand, how these rights function in practice. In addition to national legislation on participation in land use, there exists a growing number of international conventions to protect the environment and the rights of Indigenous people. Wind farms are particularly interesting in that renewable energy is now internationally preferred and subsidized as "green energy" in the fight against climate change. The challenge remains how to protect traditional livelihoods and human rights while targeting to reduce greenhouse gas emissions.

Keywords: Reindeer herding, Participation, Land use, Wind turbines, Indigenous rights

Introduction

Green energy v. reindeer herding

As a member of the European Union, Finland is committed to a 2030 national target for reducing greenhouse gas emissions by 39% compared to 2005. An additional aim is to increase the share of renewable energy to at least 51% of the final energy use and to 30% of the final energy use in road transport. With regard to energy efficiency, the target is that the final energy consumption does not exceed 290 TWh (Finland's Integrated Energy and Climate Plan, 2019).

Given these targets and the pressure at the national level, Finland is now turning to wind energy as the key source of sustainable renewable energy, which could substitute for fossil fuels and mitigate climate change. The construction of wind turbines is subsidized in many countries. In Europe, Germany and Denmark were the forerunners whose large-scale wind power programs started in the 1980s. Sweden started in the 1990s and showed significant growth from the mid-2000s onward (Pettersson and Söderholm, 2011). Finland and Norway have invested more in wind energy starting from the 2000s. In 2018, wind power covered 7% of Finland's electricity production. The corresponding figures were 2% in Norway, 11% in Sweden, and 50% in Denmark (Energy Industry 2018).[1] In Finland, during the previous government term (May 2015–June 2019), a new support system for renewable energy was built. With the help of subsidies, wind energy production has gradually become market-based, and long-term power purchase agreements have protected both sellers and buyers from market fluctuations. Investments in wind farms nowadays depend on market prices, not subsidies. By 2022, the wind energy capacity in Finland is calculated to be 3,500–4,000 MW and 7,000–9,000 MW by 2030. Finland aims at carbon neutrality by 2035,

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1. The main forms of electricity production in Finland are nuclear power (33%) and hydropower (23%), in Sweden nuclear power (40%) and hydropower (40%). Norway produces 96% of its electricity with hydropower, while in Denmark hydropower and nuclear power are not in use, but 13% of production consists of biomass and 30% of fossil fuels. Finland is not self-sufficient in electricity production; 23% of its electricity consumption is covered with electricity imports—mostly from the joint Nordic electricity markets (Survey, 29 May 2020). In 2019, the share of wind energy grew from 7% to 9% in Finland (Energy Industry, 2020).

and the EU (except for Poland) has agreed to reach carbon neutrality by 2050 (Survey on Finnish Wind Power, 2020).

Despite the hype surrounding the potential of wind power to cut down carbon emissions, wind power is not without negative impacts and drawbacks. For instance, the demand for many different metals as materials for wind turbine technology increases nonrenewable mining. In addition, used wind turbine wings have turned out to be nonrenewable waste which cannot be recycled (Wind Power or Reindeer Husbandry, 2020). Furthermore, wind turbines produce noise and are dangerous for birds and bats (Thaxter et al., 2017; Fernández-Bellon et al., 2019). In Finland, a recent report by the energy company *Gasum* anticipates opposition from the Finnish Defence Forces on the grounds of adverse impact of wind turbines on their radar system (Survey on Finnish Wind Power, 2020).

However, in its report, *Gasum* does not identify or recognize an obstacle that energy companies, states, environmental organizations, and the Nordic societies have generally tended to ignore the conflict between wind energy development and one of the oldest existing Nordic livelihoods—reindeer herding—which constitutes the focus of our article. There are currently 14 wind power projects in progress in Finnish Lapland. If all of them were implemented, wind power would cover more than half of Lapland's electricity generation capacity (Finnish Wind Power Association, 2020).

However, from the perspective of reindeer husbandry, the situation in Finnish Lapland is challenging not only because of wind power construction but also due to the extensive presence of other competing land-use forms: forestry, along with fragmentation through infrastructure such as roads, power lines, mines, industrial construction sites, and population centers. In Lapland, it is considered that quite a lot has already been "abandoned" in the name of common interest: deforestation (revenue to the state) and hydropower building after the World War II. All these developments have reduced the grazing areas used for reindeer husbandry and they continue to prevent reindeer from selecting optimal grazing land and using their available forage resources effectively (e.g., Anttonen et al., 2011; Helle et al., 2012). Against this background, the conflict between reindeer herding and wind energy development is understandable—and even referred to as "green colonialism" by some (Fjellheim and Carl, 2020).

The problems presented by the growing number of wind turbines on the reindeer pastures have been circumvented by research arguing that adaptation of reindeer occurs. Motvind, a new Nordic nongovernmental organization (NGO) opposing wind turbines, claims that research has been done without proper participation of reindeer herders and without understanding reindeer herding as a livelihood and a business (Wind Power or Reindeer Husbandry, 2020). We may ask whether the enthusiasm for green energy has blinded us from properly finding out who would lose with an extensive construction of wind turbines and other infrastructures and what costs to the Nordic societies and cultures would ensue. Or, we may ask whether this is yet another manifestation of Foucault's (1980) "apparatus" ignoring the knowledge and interests of a marginalized minority.

The aim, methodology, research questions, and the structure of this article

In this article, following Larsen et al. (2019), we propose a holistic risk analysis in developing the Arctic. If all the consequences are not taken into consideration, we might lose something, the importance of which we did not realize when the decisions were made. The loss may be cultural or human suffering.

We examine how the state in Finland has managed to balance its obligations in legislation and its implementation regarding natural resources governance, with a particular focus on the perspective of reindeer herding. Approaching our subject largely through the lens of participation, we examine both national legislation and international law protecting the rights of Indigenous peoples. Effective and equitable governance processes are critical to both human well-being and long-term protection of ecosystems. Our aim is to develop a multidimensional view and build a proper framework for studying the contradictory aims of increasing wind energy production and preserving reindeer herding.

The extant literature on the relationship between wind farm construction and reindeer herding largely focuses on a natural science approach to reindeer migration, movement corridors, and the effects of noise, lights, and actual construction of wind turbines on reindeer (Skarin et al., 2008, 2015, 2018; Flydal et al., 2019). The research clearly shows that reindeer avoid wind turbines both under construction and during operation, which as such is already an alarming result and should be taken into consideration in areas where reindeer herding is practiced.

Here, we, however, approach wind turbine construction and reindeer herding from the point of view of law, legislation, and political decision making. In studying application of law, finding out how legislation is written and how it should be applied is not enough. Understanding law in practice requires empirical research (Llewellyn, 1931; Macaulay, 1963). However, the effects of wind farm projects on Indigenous and/or traditional livelihoods from the national and international legal point of view have been quite scarcely studied so far (see, e.g., Szpak, 2019; Cambou, 2020). Wind turbines can naturally have human rights implications toward humans (Mitchell, 2016), but we leave this out of the scope of this article.

The authors participate in the JustNorth research project, which will produce more empirical data on reindeer herders' and other stakeholders' experiences of economic development projects in the Arctic. At this stage, we focus on building a framework for analysis of the data, which are still being collected. Thus, the starting point of this article is an analysis of regulation on national and international level. The method presented here can be described as triangulation, using different methods to examine the same issue with the same unit of analysis, thus cross-checking one result against another and consequently increasing the reliability of the result (see Olsen, 2004). Contradictory results often bring up problems with question design and help in understanding the topic.

The methodological starting point for this article is jurisprudence, that is, legal dogmatics, which examines

valid law. Thus, our data consist mainly of current legislation: Reindeer Husbandry Act (Finland, 1990a), Act on the Sámi Parliament (Finland, 1995b), the Constitution of Finland (1999), Land Use and Building Act (LBA/Finland 1999), international conventions: United Nations (UN) International Covenant on Civil and Political Rights (ICCPR) (International Covenant, 1976), UN Declaration on the Rights of Indigenous Peoples (United Nations, 2007), the International Labor Organization (ILO) Convention on the Rights of Tribal and Indigenous Peoples No 169 (International Labor, 1989), analysis in the media, public information available on websites of public authorities, companies and NGOs, literature on the history and development of reindeer herding, and literature and research reports on the obstacles to reindeer herding. Reports on wind power projects, which have been opposed in Sweden and Norway, have mostly been gathered from various websites. Our one Finnish case, "The Palovaara-Ahkiomaa wind turbine project in Pello," has already offered some empirical data in spite of the challenges of conducting interviews with reindeer herders during the COVID-19 pandemic.

By recognizing the importance of the national targets of reducing greenhouse gas emissions and the significant role of international standards applicable to Indigenous peoples, we approach the research topic by asking:

1. How are the special circumstances in the northern parts of Finland, where reindeer herding is practiced, taken into consideration in achieving Finland's carbon neutrality targets by 2035 when implementing a policy promoting wind energy?
2. How are land-use planning and participation in wind energy planning regulated and implemented in Finnish Lapland, especially at the municipal level?
3. What are the legal and participatory rights of reindeer herders in Finland with regard to economic (energy) development?

In Chapter 2, we begin by presenting the legal framework in order to give an overview of the official part of the apparatus. In Chapter 3, we mirror the official framework with the obstacles faced by reindeer herders in practice. In this chapter, we discuss the results of the research. In Chapter 4, we draw the conclusions and consider and point toward avenues for further research on the contradictions between wind energy and reindeer herding.

Legislative framework of reindeer herding and participation in land-use planning

Regulation and organization of reindeer herding

There is no commonly agreed view among researchers on the origins of reindeer herding. However, it is known that, in Finland, it has been practiced since at least the 17th century (Heikkilä, 2006; Joona, 2019). As a livelihood, reindeer herding has experienced ups and downs during its long history, and although it is often described as a dying way of life, reindeer herders have been able to modernize and continue their livelihood. In the Nordic countries, reindeer herders live in modern dwellings and are integrated in the modern cash economy and consumer society (Heikkilä, 2006).

There is extremely little research on the economic importance of reindeer herding, but based on the most recent research from 2013 covering both Finnish and Swedish reindeer husbandry, the overall value of butchered reindeer in Sweden and Finland was 15.4 million euros in 2013 (Eriksson, 2014). Growing tourism has increased demand for reindeer meat, and local restaurants usually buy most of the meat on the market. The COVID-19 pandemic caused a crisis for tourism, but Finnish people seemed to have noticed the embarrassment of reindeer herdering after a marketing campaign of the Reindeer Herders' Association and started to buy more reindeer meat at lower prices (Finnish Broadcasting Company, 2020/3, 2020/4). In addition to meat production, reindeer skin and antlers are used for handicrafts. Besides its direct value for national economy, reindeer herding has important indirect values. It has kept remote areas in Finnish Lapland inhabited and maintained indigenous Sámi cultures (Finnish Reindeer Herders' Association, 2020).

Historically, it was the Sámi who started reindeer herding in Central Norway, but in northern parts of Finland, also non-Sámi Finns started to practice it—most often alongside agriculture, which alone would not suffice to feed a family in the far north. Thus, Finland chose to keep reindeer herding open to everybody, regardless of their ethnic background, while in Norway and Sweden, reindeer herding was and continues to be an exclusive right of the Sámi people. The Swedish Reindeer Husbandry Act (Sweden, 1971) stipulates that reindeer herders have to be members of a Sámi village (*sameby*) and to be able to show that their ancestors practiced reindeer herding from the time immemorial. Only 10% of the Sámi in Sweden are members of any Sámi village (Swedish Sámi Parliament). According to the current Finnish Reindeer Husbandry Act from 1990 (Finland, 1990a), only citizens of the countries belonging to the European Economic Area, who reside permanently in the reindeer herding area and reindeer herding cooperatives, can own reindeer in Finland (Reindeer Husbandry Act, 1990, Section 4). However, in order to gain ownership of reindeer, a person has first to find a reindeer owner, who is willing to sell reindeer. Furthermore, each reindeer must be marked with the owner's approved and registered reindeer earmark that indicates ownership.

In Finland, there are about 7,000 reindeer owners. Two-thirds of them own fewer than 25 counted reindeer and 3,000 not even 10; only 500 own 100 or more reindeer (Finnish Reindeer Herders' Association, 2020). One explanation for this is that all family members, including children, have their own reindeer. Another explanation is that small-scale reindeer herding can be a secondary activity to some other livelihood—a way of life which continues to be practiced alongside the primary livelihood.

According to the Reindeer Husbandry Act (Finland, 1990a), stemming originally from 1931, reindeer herding co-operatives govern reindeer husbandry. At the moment, there are 54 reindeer herding co-operatives in Northern Finland, and together they form the Reindeer Herders' Association (*Paliskuntain yhdistys*). The rights and responsibilities of each reindeer owner are determined by the number of reindeer owned. The controlling organ is the Ministry of Agriculture and Forestry, which determines the maximum permitted number of reindeer based on the carrying capacity of the pastures used for grazing (Jernsletter and Klokov, 2002). The Reindeer Herders' Association is both a lobbying organ of the reindeer herding co-operatives and an organ responsible for implementing government regulations and policy.

The Reindeer Husbandry Act (Finland, 1990a) safeguards free herding rights, which means that reindeer herding is practiced on *common lands*:

> *Subject to the restrictions provided in this Act, reindeer herding may be practised in the reindeer herding area irrespective of land ownership or possession rights. (Section 3)*

The Reindeer Herding Area (114,000 square kilometers) covers the whole Northern Finland, one-third of the total area of the country (see the map in **Figure 1**). Common lands cover a large area of Northern Finland, since the main forest owner is the State, unlike in Southern Finland, where forests are mostly privately owned. According to Section 53 of the Reindeer Husbandry Act, the State is obliged to *consult* the reindeer herding cooperative in question in land-use matters that will have a substantial effect on the practice of reindeer herding (Finland, 1990a).

Additionally, Section 2 of the Reindeer Husbandry Act recognizes that the northern parts of the Reindeer Herding Area form an area especially intended for reindeer herding (see **Figure 1**). This area may not be used in a manner that may cause significant harm to reindeer herding. Transfer of ownership or leasing of land in this area is possible only on the condition that the landowner or lessee has no right to receive compensation for damage caused by reindeer.

There is also a special area, which is called the Sámi Homeland. The Homeland (35,000 square kilometers) covers the area of only 13 of 54 reindeer herding co-operatives situated in the northern parts of the area especially intended for reindeer herding (see **Figure 1**). This is an area where the Sámi have cultural autonomy according to the Act on the Sámi Parliament. The Sámi cultural rights have been recognized as rights of an Indigenous people in the Constitution of Finland, under which the Sámi "have the right to maintain and develop their own language and culture." For the purposes of Article 17 (3) of the Constitution, the Sámi culture is, inter alia, considered to be reindeer herding, fishing, and hunting (Finland, 1994, Government Bill; Finland, 1990b, Statements of the Constitutional Committee; Finland 2004, 2010a, 2010b).

Sámi cultural autonomy is regulated in the Act on the Sámi Parliament (Finland, 1995b)), which also defines the Sámi Homeland covering the three northernmost municipalities (*Utsjoki*, *Enontekiö*, and *Inari*) and a part of a fourth one (*Sodankylä*). In addition, Article 9 of the Act sets an obligation for authorities to negotiate with the Sámi Parliament "in all far-reaching and important measures, which may directly and in a specific way affect the status of the Sámi as an indigenous people." Since reindeer herding is considered as an important part of the Sámi culture, the authorities have to negotiate with the Sámi Parliament on mining, wind power, or any other project planned for the Homeland area. However, the State authorities and the Sámi understand this obligation differently. From the perspective of the Sámi, the implementation of the obligation has remained vague, and thus, the Ministry of Justice has issued instructions on conducting the negotiations. The instructions emphasize that the duty to negotiate is only about consultation in good faith. The negotiation parties are not required to reach a joint solution, although it would be the most desirable result of the procedure (Finland Ministry of Justice, 2017). The Sámi, however, experience the procedure as one that allows them to be heard but not listened to (Guttorm, 2018).

Most reindeer herders in Finland do not have the status of Sámi according to the Act on the Sámi Parliament. In the Sámi Homeland Area, however, most reindeer herders have the status and thus protected by both the Reindeer Husbandry Act and the Act on the Sámi Parliament, as well as the international legal instruments. There is also a separate Sámi Reindeer Herding Association (*Saamelaispaliskunnat ry, Sámibálgosat rs*), with the view that Sámi reindeer herding differs from reindeer herding practiced by non-Sámi Finns, with the latter dominating reindeer herding policy and regulations.

The challenges facing the Sámi Homeland area and the economic development of the whole Lapland area are complex, since most of the activity takes place south of the Homeland area in what is referred to as Forest Lapland. Given the status of the Sámi Homeland area as an officially recognized "Indigenous" area—although without ownership—many national or international companies avoid entering this area. This is partly due to the complicated consultation/negotiation procedure described above and partly due to the resistance from the Sámi Parliament. As the maps (**Figures 1** and **2**) show, there are only three wind turbines in the Homeland area (*Lammasoaivi*) and these are not currently in operation. In addition, there is no other industrial land use in the area. Because of this situation, there is a strong pressure for such activities in Forest Lapland which, however, as recent research (Joona, 2019; see also Korpijaakko-Labba, 1989) indicates, does not differ historically from the Homeland area. Actually, this is exactly how the situation of "Indigenous lands" is seen in Sweden with whom Finland has shared 350 years of legal history. The Homeland area was established by Law in 1995 and was based on interviews made in the 1960s (Joona, 2012, 2019).

This fundamental dilemma between the officially recognized Homeland area and Forest Lapland is one of the injustices related to the economic development of the entire Lapland area. The Sámi were still considered

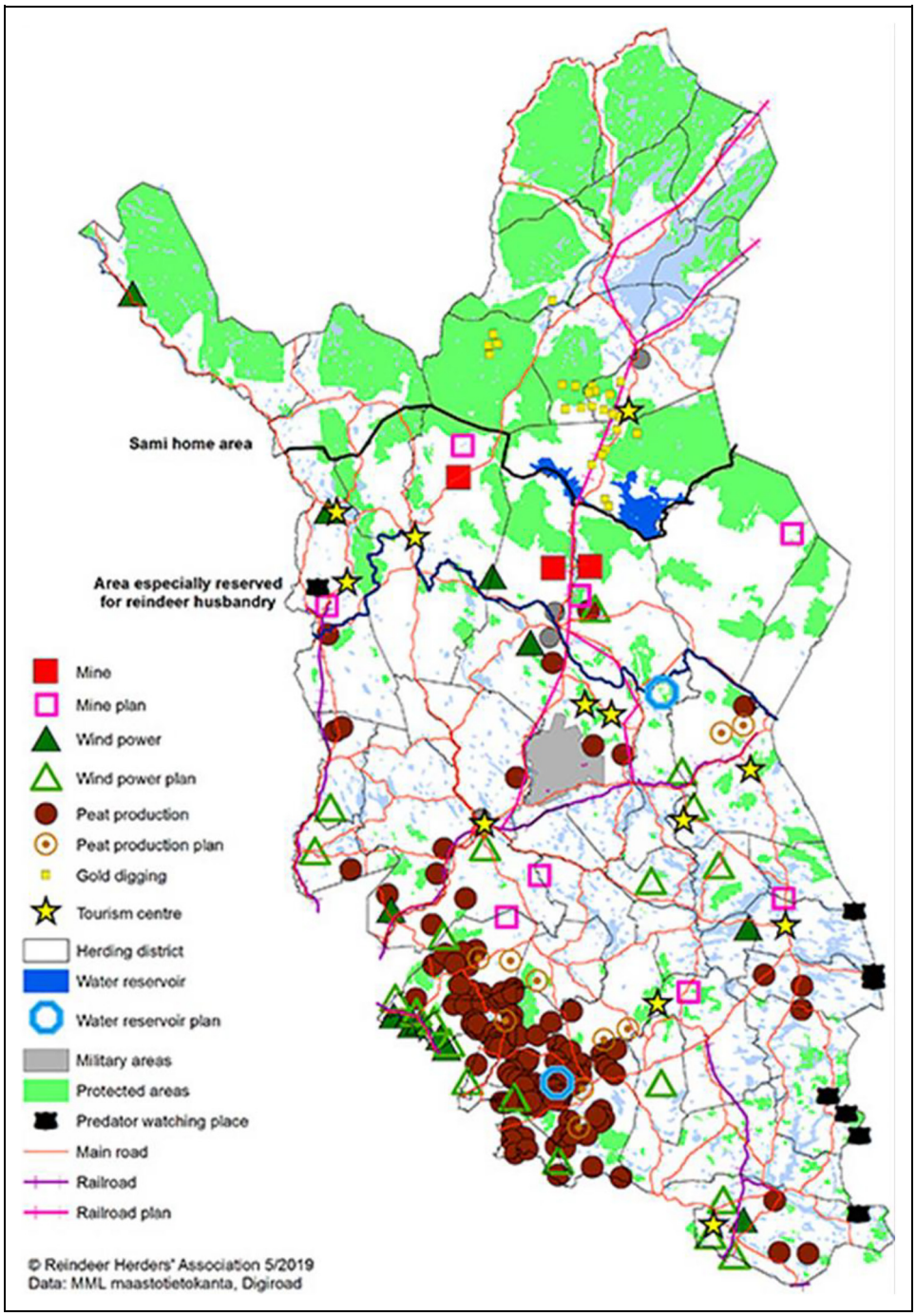

Figure 1. Current land use within the reindeer husbandry area and planned land use projects. Map drawn by Marja Anttonen (Finnish Reindeer Herders' Association, 2020, https://paliskunnat.fi/reindeer-herders-association). DOI: https://doi.org/10.1525/elementa.2020.00037.f1

landowners north of the Lapland border in the 18th century. The view was based, among other things, on the ordinances of two Swedish kings, Charles IX and John III. According to them, the Sámi own their land north of the Lapland border (Korpijaakko-Labba, 1989; Joona, 2019).

In the early 18th century, the courts settled disputes according to the provisions of these letters (Joona, 2019). Currently, the question of Sámi land ownership is unresolved and only one-third of this historical area on the Finnish side is officially recognized as an area where the Sámi have *cultural autonomy.* However, the recent *Girjas case* (Girjas sameby v. Swedish State 2020) from the Swedish side shows that the situation could be seen differently also in Finland, in the Forest Lapland[2] (Uusimaa Newspaper, 2020).

One could argue that reindeer herding is protected under the Finnish legal system and Indigenous rights are additionally protected by the international human right instruments, such as the ICCPR as well as the UN Declaration on the Rights

2. The Swedish Supreme Court rules that since the Sámi living in *Girjas sameby* have immemorial rights to the area, they also have the right to decide who can hunt or fish in the area.

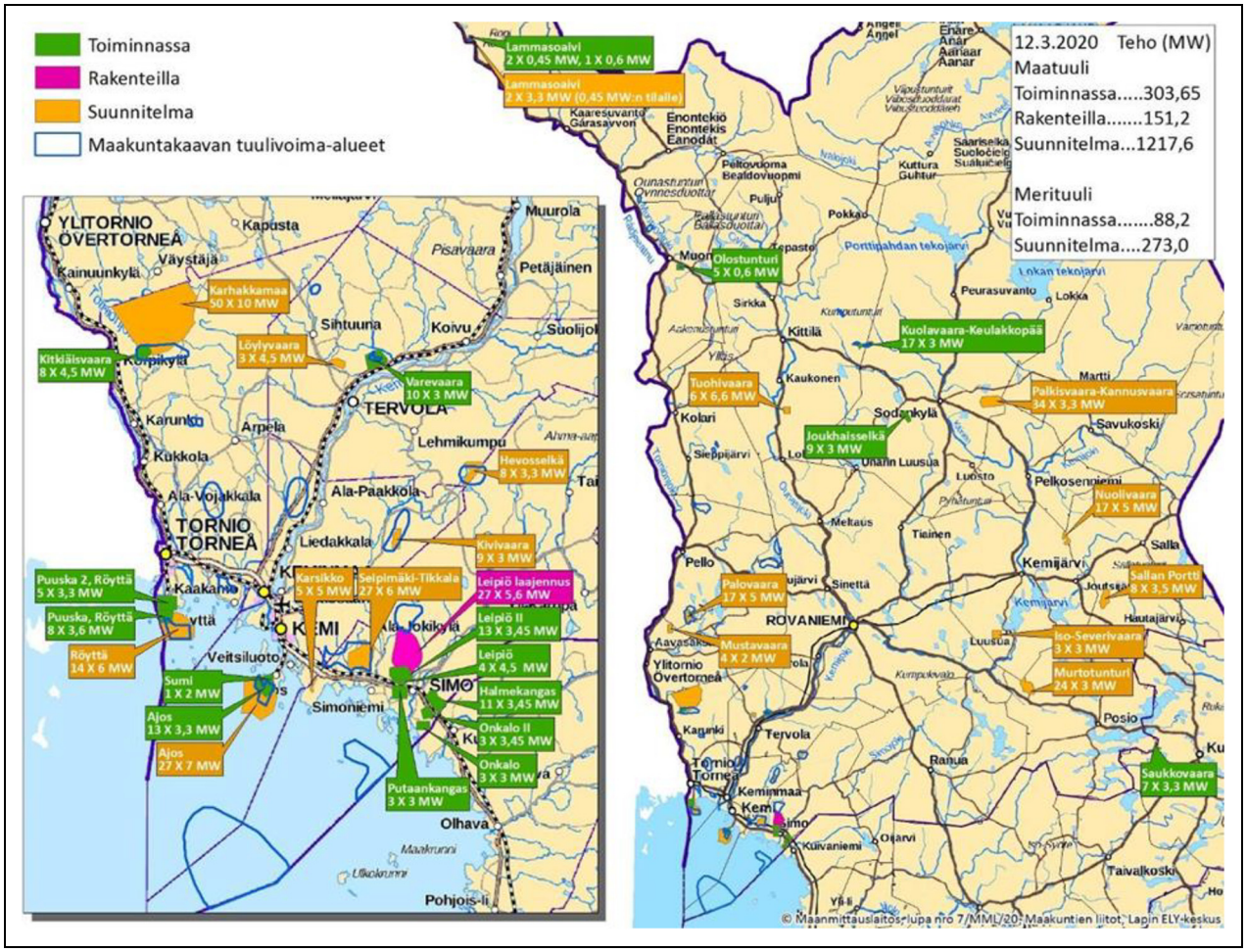

Figure 2. Wind mill planning in Finnish Lapland (Riku Elo, Center for Economic Development, Transport and the Environment, Lapland, 2020). Green = working at the moment; red = is currently being built; orange = planned wind mill(s); circulated area = areas for wind mills in the County plan. DOI: https://doi.org/10.1525/elementa.2020.00037.f2

of Indigenous Peoples. By amending its Constitution and national legislation, Finland aimed at meeting the requirement of the ILO Convention No. 169 concerning the rights of Indigenous peoples—a convention, which Finland still has not ratified. As often, protecting rights by law does not ensure that these rights are implemented in practice. In this article, we discuss the relationship between wind energy and reindeer herding and illustrate the contradictions between the two by presenting some examples. First, however, we discuss how land use planning is organized.

Regulation on land use planning and participation in wind energy planning

Wind power is an attractive and important source of tax revenue for municipalities in Lapland, many of which are balancing between the increased service needs of a shrinking and aging population. Private landowners also see wind power as an attractive opportunity to get a better income on their forest assets, if the area is suitable for wind farm construction. Often the forest owners themselves live far away from the area concerned, which makes it easier to ignore the effects of wind power on humans and animals (Forest Ownership).

The general objective of the Finnish Land Use and Building Act LBA (Finland, 1999) is "to ensure that the use of land and water areas and building activities on them create preconditions for a favorable living environment and promote ecologically, economically, socially, and culturally sustainable development." The principle of sustainable development is reasoned with the long-term ecological impact of land use and transport decisions.

The LBA emphasizes everyone's right to participate in the preparation of land use. Cooperation between planning, negotiating, and assessing the impacts of a project are the starting points for planning. The form of the cooperation is defined more flexibly than in previous legislation and it depends on the significance and effect of the plan. Thus, zoning is not only an instrument for environmental politics, but it is also based on a holistic overview developing the community structure by designating areas for certain activities.

The land use zoning system is hierarchical. National interests are introduced at the regional and municipal levels through national land-use objectives, which are decided on by the government. Regulating land-use objectives at the national level allows the government to

emphasize ecological sustainability and contribute to avoiding environmental hazards at the local level. These may relate to land use, transport, or power networks having impacts beyond the regional level and even internationally. As far as wind power is concerned, the national land-use objectives point toward promoting wind power construction. In regional and municipal planning, national objectives must be taken into consideration in a way that furthers their implementation. Nevertheless, the legally binding land-use plans for siting such projects are made either at the regional or the municipal level.

For most large-scale infrastructure projects that are likely to have considerable negative impacts on the environment, an Environmental Impact Assessment (EIA) is required (Koivurova and Lesser, 2016). Public participation is at the core of the EIA. The "public" can be local residents, representatives of traditional livelihoods, or NGOs. With regard to wind power, the EIA procedure may become applicable if the wind farm consists of more than 10 wind power plants or its total amount of power is more than 3 MW (Act on Environmental Impact Assessment Procedure, Finland, 2017, hereinafter referred as "EIA Act").

The three-level planning system functions in all the three Nordic countries where reindeer herding is practiced. The differences lie at the level of decentralization. The Norwegian nature planning system stands out as the most centralized and vertically integrated one. The national planning level sets out the general objectives, which the minister is obliged to pursue at the regional and municipal levels. The regional plans then function as a link between the national and the municipal planning. The legal process of wind power permitting is also quite centralized compared to Sweden and Finland. The Norwegian Energy Act of 1991 defines the rules for installation and area concessions. The government has provided guidelines for planning and location of wind turbines (Pettersson and Söderholm, 2011). Neither municipalities nor environmental authorities play a role in the planning process. The energy administration (Norwegian Water Resources and Energy Directorate) controls the construction licensing process from the beginning to the end. A Wind power plan cannot be rejected until the final licensing process and after that with an appeal to Oil and Energy Ministry (OED; Wind Power or Reindeer Husbandry, 2020).

In Sweden, the planning process is about balancing of different interests. If competition for land is intense, Swedish municipalities must participate in planning the establishment of wind turbines. In remote areas, a more detailed plan is not required. However, in 2008, Swedish municipalities were given explicit veto rights with respect to wind power development (Pettersson and Söderholm, 2011). Furthermore, large wind power plants are regarded as environmentally hazardous activities requiring a permission from the regional administration (länstyrelse). The decisions can be further appealed to the Land and Environmental Court. Almost one-third of the applications are rejected (Wind Power or Reindeer Husbandry, 2020). Based on case law, Maria Pettersson has assessed that the decisions are unpredictable and constitute an obstacle to the promotion of wind power (Pettersson, 2008).

In Finland, the State does not play a major role in decision making on land use, since municipalities have a monopoly on land-use planning, meaning that they control the statutory land-use planning within their jurisdictions. Municipalities decide when an area needs to have a detailed local plan; landowners or project developers do not have a subjective right to have their land planned for detailed use. Even in large-scale projects with national significance, such as large wind power fields, the municipality in which the project will be sited has a monopoly on deciding whether the area designated for the project will be planned in detail for the purpose or not.

The power of the municipal land-use monopoly in wind power planning can be perceived in the following case by the Supreme Administrative Court of Finland (KHO). In the case (KHO, 2015, p. 116), the regional land-use plan for Fell Lapland had set aside an area for the construction of a wind farm in the Mielmukkavaara Hill district of the municipality of Muonio. This reservation of land served the national land-use objective of promoting the use of wind power. The municipality, the National Forestry Service as the landowner, and a wind power company had concluded an agreement to draw up a local detailed plan for the area that allowed for the construction of 10–15 wind turbines.

The municipal council, however, did not approve the drafted plan. In the reasoning for its decision, the council mentioned that the project was sited in a scenically sensitive landscape and that businesses in the municipality felt that the wind farm would seriously detract from the scenic appeal of the area. This would severely impact businesses relying on nature-based tourism. Local residents' associations also felt that the wind farm would significantly diminish the area's natural beauty. In short, the reasons given for rejecting the draft plan were that wind power was not compatible with the other land use forms in the area.

In the end, the wind power company filed an appeal based on the council's decision to the Supreme Administrative Court, which rejected it. The legal issue highlighted by the court in the summary of its judgment was that the decision demonstrates the opportunity municipalities have through self-government to plan how land is used, a power known as the "planning monopoly." Although the draft detailed plan adhered to the use specified for the designated area and the local plan furthered national land-use goals, the municipality had the discretion to decide as it saw fit. This discretion is provided through the self-government guaranteed it in the Local Government Act (Finland, 1995a) and the planning system set out in the LBA.

Even if municipalities have a strong autonomy, the State has provided powerful incentives for wind turbine projects. Especially, remote municipalities with low tax revenues have difficulty in resisting high property tax incomes from wind farms. In Sweden, large-scale wind turbine projects have moved to forest-based areas where municipalities experience high unemployment and out-

migration rates (Pettersson and Söderholm, 2018). A similar tendency can be observed in Finland. There are no municipalities in Finland in which reindeer herders comprise the majority of inhabitants, and the herders are afraid that the municipalities may be attracted by the lure of higher property tax revenues from wind farms. However, so far, the Sámi Homeland has remained quite free of wind turbine or mining projects.

Results and discussion

Summary of results

In principle, reindeer herding enjoys legislative protection. Section 3 of the Reindeer Husbandry Act (Finland, 1990a) enables the practice of reindeer herding. However, when assessing the legal status of reindeer herding, also other legislation, that is, international treaties binding Finland and legal historical starting points must be taken into consideration. Unlike in Sweden and Norway, case law concerning reindeer herding is very limited (Joona, 1993). The protection of the cultural autonomy of the indigenous Sámi offers more legislative tools for Sámi reindeer herders in the Sámi Homeland. In addition, the Sámi are protected by international law. Land-use planning and wind turbine concessions are also subordinated to democratic participation processes. It, however, seems that there are other, even stronger interests which override the protection of a livelihood practiced by a small minority. We agree with Malin Brännström, who in her doctoral dissertation on reindeer herding and forest management in Sweden argues that the reindeer herding right has always been considered secondary, when infrastructure or industry building is decided upon (Brännström, 2017). In Finland, reindeer herding has been forced to adapt to new circumstances with diminishing pastures giving way to the rapidly expanding industrial infrastructure. Applying the Foucauldian concept of "apparatus" to this context, it seems that, although legislation provides the impression of protecting reindeer herding, the apparatus as a whole does not support a minority in remote areas—a minority, which does not own the land on which it operates. Interests of reindeer herders have to give way to interests of the majority.

Research on disturbance from wind farms to reindeer

It is challenging for reindeer herders to express their views in official participatory procedures, since research on wind turbines as a potential source of disturbance to reindeer continues to remain scarce. Reindeer herders complain that the noise of wind turbines disturbs reindeer, especially on the reindeer calving grounds. Direct or indirect impacts can include injuries caused by ice throw and falling ice fragments to reindeer present in the vicinity of wind turbines in winter. Reindeer may start to avoid pastures, change their routes to areas where they cause damage to agriculture, or they may mingle with other herds or cause traffic accidents. In other words, change of reindeer migration routes significantly increases the workload of the herders. Other land use in reindeer pastures may cause fragmentation and high grazing pressure on pastures in certain areas. The pressure may be transferred to other pastures, which will further deplete these areas (Kumpula, 2001; Wind Power or Reindeer Husbandry, 2020).

In Finland, there are not yet many wind farms in the reindeer herding area, which may be among the reasons why the phenomenon remains underresearched. In Sweden, research on reindeer movements has been conducted by using GPS-tracking and by examining reindeer droppings. The Swedish research indicates that reindeer avoid areas where wind farms are either under construction or in operation. The calving period is particularly sensitive time for reindeer. However, there can be other simultaneous disturbances for reindeer, for example, other infrastructure than wind farms. The type of pasture area and availability of other pasture areas also influence reindeer behavior. Reindeer can change their routes and calving areas due to wind farms if there are other pastures available. Skarin et al. (2015) suggest that the impacts of wind farms need to be studied on a case-by-case basis from the beginning of the project in order to diminish negative effects through planning. They recommend GPS-tracking before the project as well as during the building and operating time to find out the reactions of reindeer (Skarin et al., 2008, 2018).

Avoiding wind turbines is a good strategy for reindeer as long as there are enough substitute pastures. It is here that the core of the problem lies. According to a report evaluating the sustainability of the reindeer herding industry, diminishing of pasture areas was identified as the major challenge facing the reindeer herding industry worldwide. In Fennoscandia in particular, the reason for diminishing reindeer grazing pastures is the growing need for infrastructure and other land use (Jernsletter and Klokov, 2002). Based on legislation, the state has a dual role in this development. On the one hand, it should protect reindeer herding, and on the other, it should promote industrial development. Promoting green energy, in particular, is a widely accepted objective in Nordic societies (Finnish Wind Power Association). Thus, the policy of the state toward the pressure on grazing pastures appears to be to require reindeer herding cooperatives to reduce the number of reindeer. Through the various mechanisms of action mentioned above, and as a result of the combined effects of other land use projects, the profitability of reindeer husbandry may be impaired in certain areas if the cost of rebuilding structures increases significantly and reindeer losses increase (EIA concerning the *Pello Palovaaran-Ahkiovaaran Wind energy project*, FCG Consulting 2016).

The abovementioned EIA report actually mentions this point—one that seems particularly difficult to grasp for those not familiar with reindeer herding. Reindeer herding requires a lot of space, and gradual loss of pastures may finally cause reindeer herding as business and a livelihood to perish. Throughout its history, reindeer herding has been forced to adjust to changing circumstances, such as closing borders, diminishing of the pasture areas, national legislation changing the herding practices, and diminishing the allowed number of reindeer. Reindeer herders often complain that this kind of policy is followed on purpose in order to kill reindeer herding (e.g., Wind Power or Reindeer Husbandry, 2020). A Foucauldian

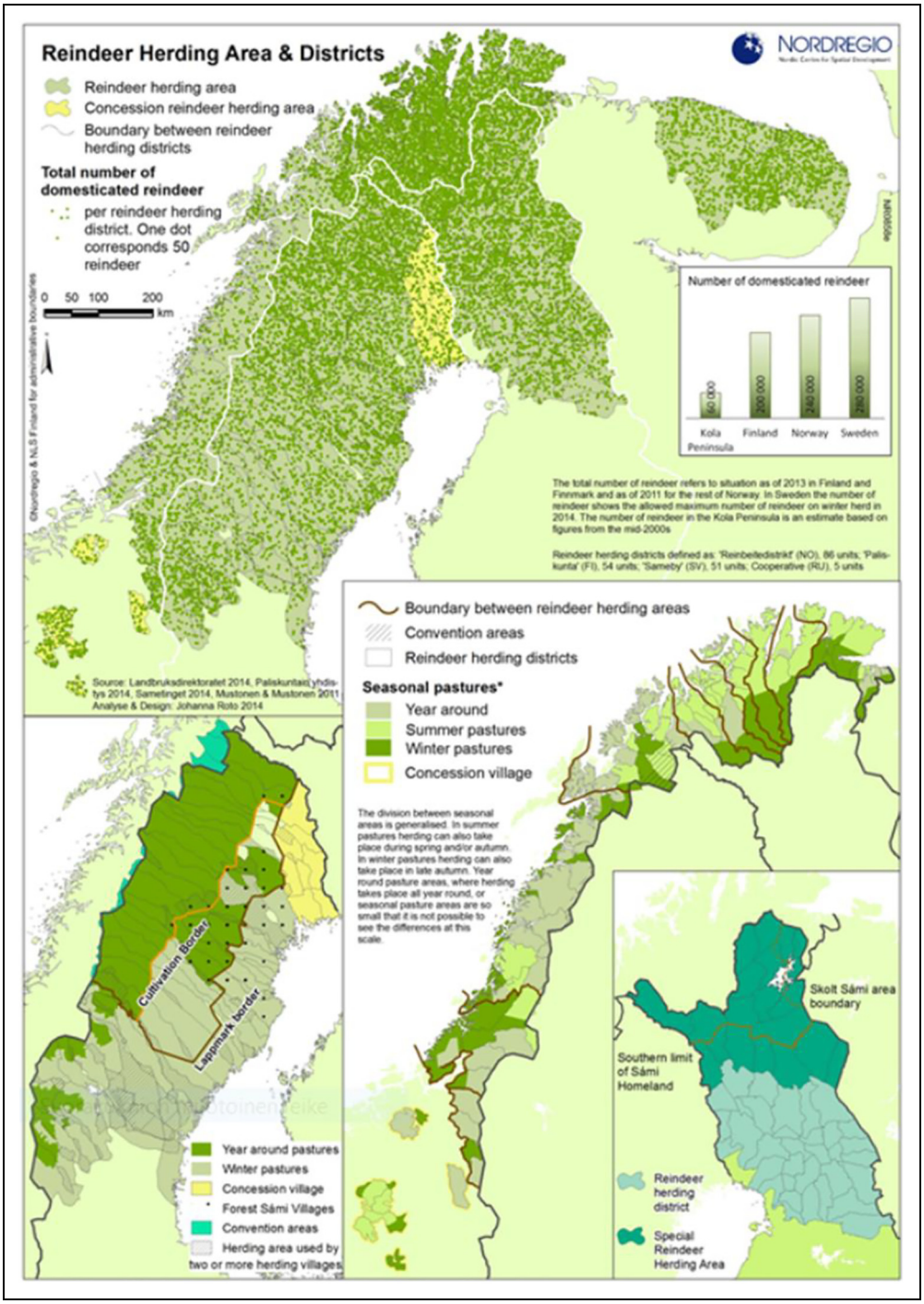

Figure 3. Map of reindeer herding areas in Norway, Sweden, and Finland (Nordregio/Johanna Roto, 2020, https://nordregio.org/maps/). DOI: https://doi.org/10.1525/elementa.2020.00037.f3

explanation is that refusing to understand the worries of minorities is in-built in the apparatus (Foucault, 1980).

Developments in Sweden and Norway

It is important to follow the developments that have taken and are taking place in the neighboring countries of Finland—Norway and Sweden—since all of the three countries are balancing with the needs of energy industry as well as the maintenance of traditional livelihoods and the human rights obligations attached to them (see the map on reindeer herding areas in Norway, Sweden, and Finland in **Figure 3**). The development in Sweden, where wind energy has been developed from the 1990s onward, reveals a pattern: First, reindeer herders were certainly suspicious, but since they had no previous experience of wind turbines, they did not resist and accepted the compensation that the companies offered to them (Wind Power or Reindeer Husbandry, 2020). Soon, however, construction of wind farms increased in the northern forest areas because of land-use conflicts in more inhabited areas (Pettersson and Söderholm, 2011; Survey, 2020). This marked the emergence of disagreements between wind power companies and reindeer herders regarding the potential impacts of wind power on reindeer and reindeer herding.

After more Swedish research supporting reindeer herders' point of view has been conducted, wind power companies have turned to research done in other countries to find continued support for their view that reindeer can become habituated to the presence of wind turbines (Wind Power or Reindeer Husbandry, 2020).

Europe's largest wind power plant with 1,100 turbines covering 450 square kilometers is under development in the municipality of Piteå. Half of the winter pastures of the Sámi Village *Östra Kikkejaur* are covered by wind turbines and the herders have to provide far more supplementary forage to their reindeer far more than before. The Swedish Government has promised to propose a consultation scheme with the Swedish Sámi Parliament on wind power development in 2020, yet the Sámi villages are the inferior party in the dialogue with the developers (Wind Power or Reindeer Husbandry, 2020).

In Norway, where the government started to invest in wind energy later than in Sweden, there are close to a 100 development projects at different stages in reindeer herding areas, with some of them already in operation. According to Motvind, the new NGO established to oppose wind power, these wind turbine constructions are the most large-scale infrastructural developments that have ever taken place in Norwegian nature (Wind Power or Reindeer Husbandry, 2020). In 2004, the Norwegian Water and Energy Directorate (NVD) and the Norwegian Reindeer Husbandry Administration together released a report on Wind power and reindeer husbandry (*Vindkraft og reindrift*). The idea behind this report was to develop a way for these two to coexist. Since then, resistance has grown exponentially, and an NGO has been established for the sole purpose of resisting wind energy. Even many environmental NGOs have revised their former positive attitudes to wind power toward the negative or, at least, less positive. Motvind recently published a report entitled "Wind Power or Reindeer Husbandry?" to summarize the experiences of reindeer herders.

According to the report, the effects of wind power on reindeer husbandry reflect, among other things, direct grazing damage, the circumvention of wind turbines, the closure of traditional reindeer culture routes, and animal welfare. Grazing damage means turbine racks and power transmission systems being built on pastures, roads, and everything that needs to be done in the area to get the wind turbines in place. Grazing damage can also occur when nature changes due to construction, for example, swamp areas can become dried out. By increasing green energy and wind power, the Norwegian state aims to be carbon neutral by 2050. The Norwegian government also intends to invest in the development of floating offshore wind power, which is also seen as a solution to wind power problems. Although offshore wind power is one of the priorities of Norway's research and development strategy, its large-scale construction does not appear to be profitable in the short or medium term. Hydropower and onshore wind are seen as more cost-effective options (Wind Power or Reindeer Husbandry, 2020). According to energy companies, wind circumstances are as good on the fells as offshore (Finnish Broadcasting Company, 2020/1).

There are several examples of success of an organized opposition to prevent wind turbines from being constructed in reindeer herding areas. *Kalvvatnan* was a plan of *Fred Olsen Renewable* to build a 40-square kilometer wind farm on the border between *Trondelag* and *Nordland*, which happens to be the calving and summer grazing area of two reindeer grazing districts. Representatives of reindeer husbandry opposed, but the NVD granted the license. After that, the opposition increased, and the Sámi organizations turned to the UN Special Rapporteur on Indigenous issues. Since Norway has ratified the ILO convention 169, the opponents of wind energy emphasized the impact of the project on Sámi language and culture. Under this pressure, the OED overturned the license decision of the NVD based on the Article 27 of the UN convention on Political and Civil Rights (International Covenant, 1976). Yet later, another company tried a new development plan, which the grazing districts rejected (Wind Power or Reindeer Husbandry, 2020).

Another case which has been widely reported in the media is *Davvi*. It is a plan for one of Europe's largest wind power plants in the middle of Norway's second largest natural park on the border between municipalities *Lebesby* and *Tana* (Wind Power or Reindeer Husbandry, 2020). Wind turbines are planned to be erected on a Lappish fell *Rástigáisá*, which the Sámi honored as a sacred fell (Finnish Broadcasting Company, 2020/1). Rástigáisá is seen from *Utsjoki*, on the Finnish side of the border, and has thus given the issue international prominence (Sámi Council News Archive, 2020). The companies behind the project are *Grenselandet AS15* and a Finnish oil company *St1*. A local energy company *Finnmark Kraft* took part in the project in the beginning, but later withdrew (Wind Power or Reindeer Husbandry, 2020). Grenselandet AS submitted a message to state authorities in 2017 regarding their plan to build the Davvi Wind Park. There were 50 hearing statements, most of which were negative. The Norwegian Sámi Parliament protested and the *Naturvernforbundet*, a national ENGO has prioritized the case, since the project is planned to site in the middle of protected pristine nature. Despite the protests, the impact assessments were prepared by *Multiconsult*, a company chosen by the project owners. Reindeer herding organizations and some environmental NGOs ordered their own report from the foundation *Protect Sápmi* in order to involve knowledge and experience of reindeer and reindeer herding. The two reports contradicted each other sharply in assessing the impacts of the project on reindeer herding. *Grenselandet AS* offered the grazing districts a large amount of money for an agreement. One reindeer district accepted the agreement while all the others rejected it.

Davvi was originally excluded from the proposal for the National Framework for the Wind Industry, but after the framework was rejected, building the area became topical again along with the construction of a new main power line through Northern Norway to the East. License application for the power line was submitted in 2019 (Wind Power or Reindeer Husbandry, 2020). The Finnish company St1's original idea was to build a power line to

Finland down to Ostrobothnia. Even if this power line plan does not seem viable now, the company still stands behind the *Davvi* project and claims the EIA to be impartial (Finnish Broadcasting Company, 2000/1). The Finnish Minister of the Environment also expressed the opinion that even if wind energy is needed, building wind turbines is not suitable everywhere (Finnish Broadcasting Company, 2020/2). We can be certain that should the project plans advance, the Sámi organizations will turn to the tools of international human rights bodies, which are available for them as an Indigenous people.

Wind farms in the Finnish reindeer herding area

In Finland, there are not yet many wind farms in the reindeer herding area. There are the Olos wind farms located close to tourist resorts in Muonio and in Enontekiö in the North. In the Sámi Homeland area, *Lammasoaivi* fell in Kilpisjärvi is the oldest Arctic wind farm, however, only with three minor wind turbines, which are not operating any more. South of the Homeland, there are rather large wind farms in Tervola and in Simo, both close to the Highway 4 (crossing Finland from south to north). However, there are several wind farm projects being planned in the reindeer herding area (see **Figure 1**).

In terms of a recent wind turbine project in Finland (2019) in the area of the *Palojärvi* reindeer herding cooperative, three municipalities (*Rovaniemi*, *Pello*, and *Ylitornio*) voted against the project, which could have been the largest in Finland with 130 wind turbines. In an interview, Tapio Vuolo, the Chief of *Palojärvi* Reindeer herding cooperative, is worried about his livelihood:

> *I am scared, scared. Because for centuries we have been doing these things in these forests. There has been teaching from father to son, from father to father, and now we have to teach the younger generation. All this will be destroyed (if the wind turbines are built). (Finnish Broadcasting Company, 2019)*

The residents of the village were not enthusiastic about the wind project in the public meeting held at the end of January 2019. It is feared, among other things, that power plants will hinder the movement of reindeer, spoil the landscape, and put off tourists to the area (Finnish Broadcasting Company, 2019). According to the chief of the reindeer herding cooperative, the project would be a catastrophe for himself and for the entire cooperative in that it virtually cuts off the realm in the east–west direction, and it is exactly the key area for calving. The major disadvantage is that they do not have any substitute for the lands (Finnish Broadcasting Company, 2019). The project was, however, voted against in the three municipalities, and according to a statement of the Finnish Ministry of Defence (June 27, 2019), the planned wind power project is located within the scope of the air surveillance radars of the Air Force. The Generals of Finland estimated that the radar effects of this wind power project would be so significant that they would have a wide-ranging adverse effect on the fulfillment of the control mission of the statutory area of the armed forces. The impact would be so significant that the defense forces cannot accept the construction of the planned wind turbines.

A similar kind of, although somewhat smaller, project is currently being planned in *Nuttio/Joukhaisselkä* in the municipality of Sodankylä and the *Sattasniemi* reindeer herding cooperative. There, too, reindeer herders are afraid of losing their livelihood (see **Figure 2**).

Public participation such as the EIA, which is not always required of small-scale projects, enables local communities to discuss and provide feedback on the environmental, social, and economic challenges of wind power projects. Ideally, participation can enable social learning for all parties involved and lead to codeveloped sustainable solutions (Landauer and Komendantova, 2018). Participation of reindeer herders is not particularly well arranged, since even in reindeer herding areas, the EIA procedure is not always required. Small-scale projects can be planned and implemented through zoning. However, the impact on reindeer herding has to be estimated and taken into consideration from the very beginning of the project. Especially in Norway, it is complained that the EIA starts too late, when the company has already invested considerable sums in the project (Wind Power or Reindeer Husbandry, 2020). It is thus no wonder that companies try to make secret private deals with reindeer herders to be able to continue their projects. In Finland, the Sámi Parliament demands to be heard throughout the process, even before a project exists.

It is evident that when wind farms are built on areas where infrastructure already exists, they will be less harmful to both nature and reindeer herding. However, the map in **Figure 1** depicts the overall pressure from other land use projects in the reindeer herding area in Finland. It also clearly shows how different areas are treated very differently; the three northernmost municipalities forming the Sámi Homeland Area have practically no projects, while there is much more pressure on the middle and southern parts of the reindeer herding area. This certainly causes feelings of injustice among the people living outside the Homeland Area.

Impact of international law and a holistic approach

Finding support from the growing amount of international regulation for protecting Indigenous rights has turned out to be a successful strategy. Focusing strongly on indigenous rights managed to stop the Kalvvatnan project in Norway and will probably stop the Davvi project. However, it seems to have worked best in Finland, where the duty to negotiate with the Sámi is limited to the Homeland (Finland, 1995b). The same duty based on the Reindeer Husbandry Act (Finland, 1990a) does not seem to be as effective when Indigenous rights are not involved. On the other hand, Norway has ratified the ILO convention 169 and has quite similar rights of the Sámi in its Constitution (Constitution of Norway Article 108) as Finland, but the Sámi there have had to fight against the wind turbines even in nature protected areas. The reason is that the reindeer herding area in Norway extends far to the south, and Norway tried to enable its ambitious wind energy policy with centralized decision making. Norway,

besides having ratified the ILO convention, has the largest Indigenous Sámi population of the Nordic countries.[3] It is not difficult to forecast that the protests will go on and get louder. Norway may have to turn to the costlier offshore alternative.

However, according to Brendan Tobin, free, prior, and informed consent is a mandatory prerequisite in projects involving such fields as carbon fuels extraction and processing, logging, palm oil farming, protected areas, programs aiming to mitigate climate change effects, and energy projects including building dams; it is also mandatory in gaining access to genetic resources and cultural heritage (including traditional knowledge) of indigenous peoples (Tobin, 2014). This results from the obligation emerging from article 7(3) of the ILO Convention 169 on Indigenous and Tribal Peoples in Independent Countries that "Governments shall ensure that, whenever appropriate, studies are carried out, in cooperation with the peoples concerned, to assess the social, spiritual, cultural and environmental impact on them of planned development activities. The results of these studies shall be considered as fundamental criteria for the implementation of these activities." Even though Finland has not ratified the ILO Convention 169, it has tried to meet the criteria of the Convention whenever drafting legislation concerning the Sámi (see more United Nations, 2007; Heinämäki, 2017; Inter-American Court of Human Rights, Kichwa Indigenous People of Sarayaku v. Ecuador, 2012, para. 204–205).

Larsen et al. (2019) suggest a holistic view, which does not necessarily equal to majoritarian democratic decision making but calls for the values and livelihoods of minorities taken into consideration in assessing risks of industrial development in remote areas in the Arctic. If diminishing of pastures continues, reindeer herding gradually becomes unprofitable and simply dies out as a business and a livelihood. The majority of municipal decision makers may not realize this danger when making decisions on building green, renewable energy for the local people. Thus, the indirect consequences of destroying a livelihood and damaging indigenous culture may come as an unpleasant surprise, which future generations are going to criticize as shortsighted destruction of cultural diversity.

The human rights aspect of international law protecting Indigenous rights can be seen as an approach focusing on values and cultural diversities. The human-rights-based approach recognizes a culturally embedded understanding of laws and customs governing the use of natural resources. In most situations, natural resources are valued according to their economic potential, while human rights law supports a more culturally based approach to natural resources by recognizing and protecting the value of natural resources from this point of view (see more Gilbert, 2018). Although international cultural heritage law and international environmental law also support biocultural rights, sustainable development, and more local management of natural resources, these processes are still very much state-centered and remain fragmented. Under the broad heading of cultural rights, human rights law offers a more holistic approach to ensure the protection of cultural heritage, traditional knowledge, and spiritual ties to natural resources. A holistic view can also be attained by combining sustainable environmental, social, and economic approaches with a special emphasis on local and indigenous rights.

Additionally, human rights law can address some of the past damage done through the top-down approaches to environmental protection. It supports reconciliation between conservation goals that emerged under the paradigm of pristine nature on the one hand and local communities' traditional rights and management of natural resources on the other (Gilbert, 2018).

For the majority of the people, and the people usually deciding on land use projects, the interdependence between humans, the lands, waters and "nonhuman relatives"—which is integral to Indigenous world views and ancestral practices—comes as a surprise and a totally new approach. However, this kind of reciprocity should also be central to finding new and more effective solutions to current global challenges, such as sustainable food production, community resilience, and land use. As democratic processes led by majoritarian societies fail to include Indigenous perspectives, exhausting and expensive lawsuits become one of the only pathways left for these communities. Yet, at the core, these kinds of conflicts are not merely legal problems. They call into question the fundamental principles underlying our ways of organizing as societies (Fjellheim & Carl, 2020). Through majoritarian democracy, the apparatus ignores small minorities. This is something we also want to bring into discussion.

Conclusions

An increasing number of infrastructure projects are rapidly changing the Arctic. Construction of wind turbines, as the most recent industrial trend, both benefits local communities and creates conflicts. With regard to reindeer herding, conflicts emerge from and are linked with the deterioration of traditional livelihoods and Indigenous cultures.

Wind power is a valuable and clean energy product, which is well in line with the climatic goals of Finland and the whole globe. However, like all new promising solutions in combating climate change, wind power is not without negative impacts. With regard to the reindeer herding area of Finland, there are particular challenges: loss of pasture areas and the disturbance caused by wind turbines are concrete and real impacts on reindeer herding and, as such, cannot be ignored. After all, for the last 500 years, reindeer herders have had to constantly surrender their pasture land to other forms of land use—such as forestry, mining, peat production, and tourism—even when the issue of state land ownership is unclear. The fact that reindeer herding is practiced on common lands puts reindeer herders in an inferior position with weaker property rights compared to land owners or lessees. Indigenous

3. There are 50,000–70,000 Sámi in Norway (depending on the way they are counted), 15,000–20,000 in Sweden, about 10,500 in Finland, and in Russia 2,000 (Finland, 2016–2019).

peoples' rights guarantee the right to culture, but if you don't have actual means to practice the culture, the words remain meaningless.

Finland has tried to develop its national legislation based on new trends in international human rights law, although it seems that, in practice, top-down decision-making habits are not easy to change. However, it is time to focus on developing participatory rights of those, who are the most vulnerable to negative impacts of industrial development. Participatory governance can help develop solutions based on compromises between different opinions and world views. Having said this, it should not be forgotten that participation is based on the rules created by the majority. It is thus important to try and understand the workings of the apparatus in order not to judge the minority as incapable of cooperation at the outset.

There is a long road ahead toward the development of participatory rights and time is needed to achieve its goals. Given the acute nature of the problem, we suggest that wind power should be further developed and made available in areas where reindeer husbandry is not affected and where conflicts with other land-use forms are minimized. Investigation and investment into offshore wind power should be pursued. If it is possible in the English Channel and the Danish coast, Finland could try the same in the Gulf of Bothnia. However, if wind power is to be built in the reindeer herding area, the disadvantages for reindeer herders should be compensated for. This, however, is a complex issue, since reindeer herding represents a traditional way of life and the idea of compensation in this context is seen in many cases as an impossible solution—one that would require setting a monetary value on the Indigenous culture and way of life. In Finland, in Forest Lapland, there are, however, cases where compensation is paid and kept as a trade secret. For the future and continuation of traditional livelihoods in the north, open and transparent choices of values, planning at the regional (county) level and more holistic views are needed.

Our research is about building a framework for studying the relationship between reindeer herders and wind power projects. More empirical data are needed for a more complex research. Models of participation, compensation, and benefit sharing could also be studied in order to find new solutions for conflicts between wind power and reindeer herding.

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Author contributions

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