



# https://helda.helsinki.fi

# Reindeer husbandry vs. wind energy : Analysis of the Pauträsk and Norrbäck court decisions in Sweden

Cambou, Dorothee

Routledge 2021-12

Cambou , D , Sandström , P , Skarin , A & Borg , E 2021 , Reindeer husbandry vs. wind energy : Analysis of the Pauträsk and Norrbäck court decisions in Sweden . in M Tennberg , E G Broderstad & H-K Hernes (eds) , Indigenous Peoples, Natural Resources and Governance : Agencies and Interactions . Routledge Research in Polar Regions , Routledge , Abingdon , pp. 39-58 . https://doi.org/10.4324/9781003131274-3

http://hdl.handle.net/10138/342787 https://doi.org/10.4324/9781003131274-3

cc\_by\_nc\_nd publishedVersion

Downloaded from Helda, University of Helsinki institutional repository. This is an electronic reprint of the original article. This reprint may differ from the original in pagination and typographic detail.

Please cite the original version.

# 3 Reindeer husbandry vs. wind energy

Analysis of the Pauträsk and Norrbäck court decisions in Sweden

Dorothée Cambou, Per Sandström, Anna Skarin and Emma Borg

#### Introduction

The rights of the Indigenous Sámi people to conduct reindeer husbandry is based on immemorial prescription and customary law (SFS 1971:437; SOU 2020:73). It is enshrined in the Swedish framework for land use planning and decisionmaking, which also clearly stipulates that all owners and stakeholders of the land within the Reindeer Husbandry Area must safeguard and respect the grazing rights as defined in the Swedish Constitution (SFS 1974:152, 2 kap. 17 §), the Reindeer Husbandry Act (SFS 1971:437) and the Swedish Environmental Code (SFS 1998:808). Furthermore, the right of the Indigenous Sámi people to conduct reindeer husbandry is also a human right that is recognized at international and national levels, as part of the rights of Indigenous peoples (Ivan Kitok vs. Sweden, 1988; Prop. 1976/77:80). Yet, Sámi reindeer husbandry, which has a long history of colonial subjugation, forced adjustments and adaptations, continues to be challenged by ever increasing co-occurring land uses (Lantto and Mörkenstam, 2008; Lawrence, 2014; Össbo and Lantto, 2011; Sköld, 2015; Sandström, 2015). Starting with settlers and tax collectors in the eighteenth century and followed by epochs of forestry, hydropower and mining intrusions (Sandström et al., 2016; Skarin and Åhman, 2014; Vistnes and Nellemann, 2008; Klein, 1971), wind power development is now the latest activity affecting the conduct of reindeer husbandry on traditional Sámi lands.

The negative impact of wind energy projects on reindeer husbandry has been addressed and recognized in several recent studies (Skarin et al., 2015; Skarin, Sandström and Alam, 2018; Skarin and Alam, 2017). Wind energy constitutes a current form of industrial development that jeopardizes reindeer husbandry as a traditional livelihood of the Sámi and their rights as an Indigenous people (Anaya, 2011; Tauli-Corpuz, 2014). In this regard, the development of wind energy is considered by Sámi representatives as a form of neo-colonialism and has triggered an increasing number of lawsuits in both Sweden and Norway, leaving the judicial system to tackle and resolve the issue (Cambou, 2020). In this chapter, we examine this topic through the analysis of two court decisions issued in the Norrbäck and Pauträsk cases, which concern the establishment of two wind energy projects within an important area of reindeer husbandry on the winter pastures of Vapsten reindeer herding community in northern Sweden (Figure 3.1).

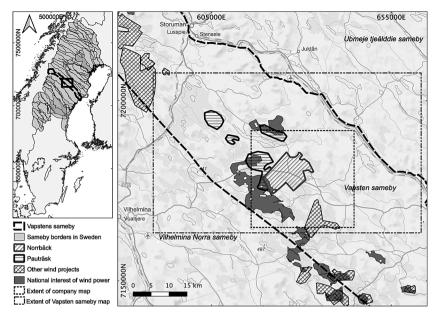


Figure 3.1 The projects areas of Norrbäck and Pauträsk. ©Lantmäteriet.

Several reasons have motivated the selection of these cases. First, the Norrbäck and Pauträsk cases epitomize the decisions of most court cases concerning legal disputes between reindeer herding communities (*samebyar* in Swedish plural and hereafter named "*sameby*," in singular) and wind energy developers. As in the majority of court decisions, these cases, too, resulted in the authorization of the wind energy projects despite impacts on reindeer husbandry (Cambou, 2020). Second, both cases illustrate the complexity of assessing the impact of wind energy projects on reindeer husbandry. Moreover, the specificity of the cases is also linked to the fact that the land and environmental court (*in Swedish* Mark och miljödomstolen) and the court of appeal (*in Swedish* Mark och miljööverdomstolen) did not agree in their final decisions. This raises questions about the courts' assessment and decision to license the projects. Finally, we selected these cases because two of the authors of this chapter participated in the case proceedings as expert witnesses, providing important insights into the background and final decisions of the court cases.

Drawing on the expertise of each author in the field of law, ecology, reindeer husbandry and land use planning, the goal of this chapter is to examine the content of the court decisions and analyze the implications for the protection of the Sámi right to practice reindeer husbandry. We have used working translations of the courts' decisions, academic and legal documents relevant for the interpretation of the decisions and informal facts provided by key informants such as the lawyers of the Vapsten *sameby*. The analysis thus focuses on how information from the companies' environmental impact assessments (EIA) and testimonies by reindeer herders and scientific expert witnesses was interpreted and used en route to the final rulings by the courts.

The first section of the study provides a contextual background, including the legal framework applying to the issue. Section Two examines the courts' assessments and presents an analysis of the decisions of both the land and environmental court and the appeal court, and the underlying factors behind the diverging assessments. The final section discusses the limitations of the appeal court decisions to protect the right of the Sámi to practice reindeer husbandry. Here, we analyze the assessment of the court and its application of the principle of sustainable development with regard to the human rights of the Sámi as an Indigenous people. In line with the theoretical underpinnings of this tome, the chapter also considers the role of the judiciary system and the principle of sustainable development as second and third orders of the meta-governance system of conflict mediation between the promotion of renewable energy and the protection of the Sámi Indigenous people's right to practice reindeer husbandry.

#### Cases background

In 2015, Vattenfall Vindkraft Sverige AB and Hemberg Energi AB submitted their respective applications to the County Administrative Board (CAB) of Västerbotten for permits to construct two adjacent wind energy projects with up to 120 wind turbines in the Pauträsk area and 55 turbines in the Norrbäck area. In accordance with their "monopoly planning right," the municipalities of Lycksele, Storuman and Vilhelmina had already approved the permit applications, while the regional County Administrative Board initially rejected both applications due to the projects' impact on conflicting interests, which included nature conservation, the cultural environment and reindeer husbandry. This situation therefore opposed regional and municipal authorities. It also opposed national and local interests. While small portions of the project areas have been designated as being of national interest for wind energy, the two areas have always been used as winter pasture by Vapsten sameby, and is also close to the winter pastures of Vilhelmina Norra sameby. Furthermore, the project areas are located close to several movement and migration routes designated as national interest for reindeer husbandry (Figure 3.1 and 3.2). The Vapsten and Vilhelmina Norra samebyar are among the 51 samebyar covering the northern half of Sweden, and they both have an exclusive right to carry out reindeer husbandry on their lands. The traditional territory of the Vapsten sameby covers around 10,000 square kilometers, of which 7,000 square kilometers are winter pastures. Several industrial projects have already been approved by the State on Vapsten sameby's traditional territory, including other wind projects. Consequently, and as noted by the United Nations Committee on the Elimination of Racial Discrimination (CERD, 2020, p. 2),

a large part of this territory has already been taken from the reindeer herding community and its pasture land is constantly decreasing, which is creating a real threat to reindeer herding and placing enormous psychological pressure on the community's members.

During the application process, Vapsten *sameby* was scarcely consulted by the companies and duly opposed the application for the establishment of the two wind

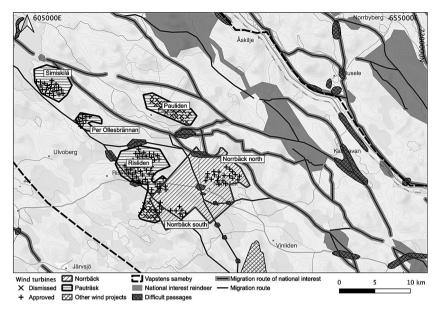


Figure 3.2 The overlapping interest areas. ©Lantmäteriet.

projects (Omma, 2021). That the company did not seek to obtain free, prior and informed consent from Vapsten sameby in accordance with human rights standards did not stop the application process. In Sweden, the legislation for licensing wind energy and other industrial activities recognizes the right of the public to be consulted, but it lacks emphasis on the rights of the Sámi people to participate in decision-making processes (Allard, 2018; Larsen and Raitio, 2019, p. 15). More precisely, the legislation does not single out the right of the Sámi to be consulted as an Indigenous people and "leaves a wide margin of appreciation to the developers about the way to organize and implement consultations" (Cambou, 2020, p. 320). Several scholars and human rights institutions have criticized the Swedish legal framework for failure to guarantee the rights of the Sámi people to free, prior and informed consent, which ensures the right of Indigenous peoples to have a real say in developments affecting their traditional lands (Allard, 2018; Larsen and Raitio, 2019; CERD, 2018). The lack of protection of the rights of the Sámi, including the lack of recognition of their traditional right to land and resources, is one of the factors explaining an increase in the number of lawsuits between samebyar and wind energy developers. In the absence of recognition of Sámi territorial rights and adequate consultation, the court has become the ultimate governance arena where conflicts between opposing parties and interests can be mediated and decided.

In the Norrbäck and Pauträsk cases, the main issue pertained to the impact of the wind projects in an important area of reindeer husbandry as opposed to the value of the area for establishing wind energy projects. In their testimony, the Sámi reindeer herders from Vapsten *sameby* argued that the impact of the project would be too far-reaching in an area that was considered central as winter pasture. At present, this region connects several grazing areas and allows the free roaming of the reindeer. The herders also explained that viable migration routes through the area were necessary to enable reindeer migration between the winter and summer pastures. The area also provides good grazing conditions in winters with otherwise challenging grazing conditions. The rapid climate change, especially pronounced in the Arctic and subarctic regions, often causes difficult grazing conditions during winters due to rain-on-snow events, which create ice-crust layers in the snow as normal freezing temperatures return, making forage inaccessible to reindeer (Forbes et al., 2016). During such winters, upland and rugged terrain usually provide better grazing conditions thanks to a more stable temperature and increased topographical variation. Such conditions were present in both the proposed wind energy development areas. In the court cases, the reindeer herders contended that sustainable reindeer husbandry was based not only on grazing resources within designated national interest areas, but each sameby also depended on areas in wellconnected landscapes where it was possible to find good grazing conditions in varied weathers, as in both Norrbäck and Pauträsk.

In contrast, the companies disputed both the importance of the area for reindeer husbandry and the level of impact caused by the development projects. Presenting their arguments individually, the companies argued that their project areas did not constitute important grazing pastures and that the reindeer herders had not demonstrated that continuous migration on foot had occurred in the area during the last twenty-five years. Instead, the companies stated that reindeer herders often had to use trucks to ensure the transportation of reindeer through the area. Both companies also argued that the operation of the movement and migration routes would not be affected and that their assessment showed that the level of project impact was not significant. However, it is not clear from the court documents from where the companies' gained expert knowledge about how reindeer husbandry is carried out in the area. Against the companies' positions, the reindeer herders argued that the area was indeed important for grazing and that winter migration by foot and stationary grazing still occurred in the area, which should therefore be preserved and protected for the future. The Sami Parliament supported the arguments of the sameby in their testimony to the court, emphasizing the importance of the area in securing the maintenance of reindeer husbandry especially in times of climate change. Finally, the neighboring Vilhelmina Norra sameby argued that the projects risked affecting an area of importance to them. In particular, the planned wind energy projects would make reindeer from Vapsten sameby deviate into their adjacent grazing areas.

Together, the conflicting positions between the *samebyar* and the companies reflect some of the background against which the courts had to arrive at a decision. To reach a decision, the court had to weigh *expert opinions* about the needs of reindeer husbandry and the impacts of wind power developments as presented by the *samebyar* vs. the companies'. It is important to note that the companies' EIA addressed their projects as completely isolated cases with separate impacts on reindeer husbandry, even though the projects were located only five kilometers apart. This scale of assessment differs sharply from the *sameby*'s description of impacts that did not separate the impacts between the two projects.

#### 44 Dorothée Cambou et al.

Figures 3.1 and 3.2 illustrate the wind development projects in relation to reindeer herding and provide a visual background to understanding the issue as it has been addressed by the courts. The mappings of the reindeer grazing areas come from the publicly available iRenmark database and presented together with data from RenGIS (Sandström 2015). All mappings describing the land uses of reindeer husbandry were carried out independent long before the wind development plans became common knowledge.

# Legal background

The legal background to the Norrbäck and Pauträsk court rulings is based mainly on the environmental code adopted by Sweden in 1999 (SFS 1998:808) and the case law that has since interpreted the stipulations of the code. The Environmental Code sets several directing principles, among them the promotion of sustainable development, as a basis to regulate the launching of industrial activities such as wind energy projects (Chapter 1, Section 1). Although the purpose to promote wind energy is not explicitly stated, the code gives "[p]reference to renewable energy sources." The court decisions have stressed several times that increased energy production based on wind power can contribute to achieving the environmental code's goals for sustainable development. Accordingly, the court argues that "it is therefore essential that areas suitable for wind power production can be used for this purpose," but it also reiterates that the promotion of wind energy must "take place with due regard to the protection interests of the site" (Norrbäck and Pauträsk cases 2019). In other words, the promotion of wind energy in Sweden is encouraged and regulated by law. In accordance with the Environmental Code, wind projects must comply with certain environmental requirements, including basic and specific resource management provisions and localization requirements as well as the protection of certain interests such as those of reindeer husbandry.

While the legal framework regulating the wind energy process has been described elsewhere (Pettersson et al., 2010; Larsson and Emmelin, 2016; Solbär, Marcianó and Pettersson, 2019), it pays to recall the rules concerning the protection of reindeer husbandry, which play an instrumental role in the decisions to authorize activities on the traditional lands of Sámi reindeer herders. Section 5 of Chapter 3 of the Environmental Code stipulates: "Land and water areas that are important for reindeer husbandry, ... to the extent possible, shall be protected against measures that may significantly interfere with the operation of these industries" (emphasis added). This provision seeks to protect generally the right of Sámi reindeer herders to use their traditional land and is considered to meet the commitments Sweden has under Article 27 of the International Covenant on Civil and Political Rights (ICCPR) in relation to the right of the Sámi people to culture. Paragraph 2 of Section 5 in Chapter 3 of the code further mentions "[a]reas that are of national interest for the purposes of reindeer husbandry." This provision implies that areas that are designated as being of national interest for reindeer husbandry will be protected against activities that may *significantly* interfere with the interest of the reindeer industry, whereas other areas are usually safeguarded only "to the extent possible." However, when an area is concomitantly designated

as being of national interest for both wind energy projects and reindeer husbandry, the code indicates that priority shall be given to the purposes that are most likely to promote the sustainable management of land (Chapter 3, Section 10). This vague formulation stands in the way of any predictions of how governing institutions, including the courts, will balance competing interests between different land uses that equally promote sustainable development (Pettersson, 2008, p. 40).

Nonetheless, the application of these provisions in the legal disputes concerning wind energy development and its impact on reindeer husbandry has started to provide some insights into the ways the court interprets the provisions in practice. For example, in a growing number of lawsuits (at least twenty-nine since 2008) the Land and Environmental Court of Appeal has begun to assess what impact the establishment of wind power could have on conducting reindeer husbandry. In its latest rulings, the court has confirmed that research clearly indicates that wind energy projects lead to avoidance effects of reindeer at significant distances from wind power (Pauträsk case 2019), suggesting that wind energy projects can have negative effects on reindeer husbandry. However, according to several court rulings, it is difficult to specify the exact distance when the effects of wind energy projects will be such that the impact on reindeer herding is clearly indisputable. As a result of this uncertainty, most controversies in many legal disputes revolve around two central issues. The first is that of knowing whether the impact of wind energy projects can significantly affect and jeopardize reindeer husbandry. The second is to decide which interests best promote the objective of sustainable development when wind energy projects conflict with the needs of reindeer husbandry.

Although the case law concerning these issues is still developing, a survey of the decisions since 2008 demonstrates that the court has rarely rejected permits because of the impacts that wind projects have on reindeer husbandry (Cambou, 2020). Among these decisions is the Ava Case, which concerns a project application for nineteen wind turbines in the area of Vilhelmina Norra sameby. In its decision the court annulled the construction permit after concluding that the impacts of the project on reindeer husbandry would be significant since the Gabrielsberget wind project operated in the same area (Ava Case, 2018). Given the great risk of putting an end to traditional reindeer husbandry in the area if the wind energy project were expanded according to the application, the court considered that the interest of protecting the reindeer husbandry industry outweighed that of wind power expansion. The assessment of the court was based on reindeer herders' testimonies and scientific studies describing the impacts of the existing turbines on reindeer in the Gabrielsberget area. These studies provided evidence that the existing wind project made it significantly more difficult to conduct reindeer husbandry in the area and entailed the risk of long-term deterioration of the viability of grazing lands. The court also concluded that no safeguarding measures would be able to counteract or prevent the inconvenience for reindeer husbandry if the area's natural function disappeared. Consequently, the court rejected the permit application for the new project.

Apart from the Ava Case, however, the Swedish courts have seldom assessed that a wind energy project's impacts on reindeer husbandry would be sufficiently significant to justify the rejection of a permit. In effect "it appears that the courts are more likely to reject a permit for wind energy if compelling evidence demonstrates that reindeer husbandry might completely cease as a result of the disturbance caused by the project in question" (Cambou, 2020). However, because it is difficult to prove in practice that a wind project would cause the cessation of reindeer husbandry, the court has in most cases decided to grant a license provided that measures will be taken to mitigate the potential impacts (Cambou, 2020). In other words, the court often concludes that the impact of wind energy projects on the conduct of reindeer husbandry can be mitigated and compensated by measures which will ensure that reindeer husbandry does not cease in practice. The Pauträsk and Norrbäck decisions thus illustrate cases in which the court has authorized wind energy projects despite the impacts on reindeer husbandry, but the two cases also raise questions about the assessment of the court and the justifications provided to allow a permit in view of the impacts on reindeer husbandry. These questions will be the focus of the following sections.

# Court assessments

In the adjacent Norrbäck and Pauträsk cases, the environmental and appeal courts respectively issued two separate decisions in 2017 and 2019 in response to the permit applications of the two wind energy companies. Because both cases involved identical plaintiffs and similar application areas, the courts replicated their arguments in both cases with almost identical wordings. And yet, while the decisions in the Norrbäck and Pauträsk cases were based on similar grounds, the land and environmental court came to a different conclusion than the court of appeal. The differences are reviewed in the next sections. First, the analysis focuses on the judgments of the land and environmental court, which rejected the permits for wind projects. The second section then examines the decisions of the court of appeal and its justification to authorize the wind projects despite the impact on the practice of reindeer husbandry and other conflicting interests.

# Decisions of the land and environmental court (2017)

In both the Norrbäck and Pauträsk cases, the court agreed that the area targeted by the wind energy developers constituted a critical area for several opposing land uses, including reindeer husbandry. The potential significance of the impacts of the projects on reindeer husbandry was in fact one of the central assessments for the court. In accordance with the Environmental Code, the court was specifically bound to assess whether any *significant* impact could threaten reindeer husbandry, only areas affected by *significant interference* come under the protection of the Environmental Code (Chapter 3, Section 5). The court pointed out that the number of studies on the impact of wind power developments on reindeer has gradually increased and that the studies show avoidance effects, albeit with different disturbance zones (Skarin et al., 2015; Skarin and Alam, 2017; Skarin et al., 2016; Skarin, Sandström and Alam, 2018). As stated by Skarin in her expert opinion in the Norrbäck and Pauträsk cases, studies show that reindeer avoid or decrease their use of wind energy

sites, both within calving and winter pastures, and a decrease in use has been observed up to three to five kilometers away from wind energy sites. Skarin's testimony also acknowledges a likely variation in reindeer avoidance of wind farms depending on local conditions. According to studies, then, wind energy projects have a negative impact on reindeer habitat selection and behavior.

However, the court also remarked that there was uncertainty about the extent of such impact. These uncertainties were also evidenced throughout the arguments of the companies and the *sameby*, supporting different views about the distance at which wind energy projects could cause negative effects on reindeer husbandry. Whereas the evidence presented by the *sameby* supported the view that avoidance effects could be seen at a distance of three to four kilometers from wind energy projects, the company referred to recent studies which showed that negative effects could only occur within a one-kilometer zone. In the light of these uncertainties but given the importance of the area for reindeer husbandry, the court found—on the available research basis—that it could not rule out the possibility of significant harms to reindeer husbandry in Vapsten *sameby* caused by the establishment of wind power within the license application area (Pauträsk case 2017).

Subsequently, another point for the court to assess was whether any protective measures could safeguard the continuation of reindeer husbandry against the impacts of a wind energy project. The court noted that the companies had expressed a positive attitude to discussing mitigation measures. However, the court also established that the companies had not been able to present safeguards and precautionary measures that would ensure that the wind energy projects could coexist with reindeer husbandry. According to the court, "one of the basic prerequisites for reindeer husbandry as a general interest is that the industry is practiced in the traditional Sámi way, where the reindeer graze natural pastures on large continuous lands." (Norrbäck Case.) The court indicated that financial compensation to an individual sameby to replace the loss of natural pastures and substitute natural nourishment with feed on a continuous basis, as suggested by the companies, could not be such a measure. As a consequence, the court decided that the measures provided by the companies could not ensure that the *sameby* could continue to carry out traditional reindeer husbandry based on natural pastures and maintain its economic viability in accordance with their traditional values.

The land and environmental court therefore decided in both the Norrbäck and Pauträsk cases that the interests of energy production should be disregarded to protect the opposing interests, namely the protection of nature, cultural environment and reindeer husbandry. Together these interests would better promote the long-term management of the area compared with the wind energy projects. On July 3, 2017, the Umeå Land and Environmental Court rejected both permit applications for the establishment of wind energy projects in the Norrbäck and Pauträsk areas.

#### Decisions of the Land and Environmental Court of Appeal (2019)

After an appeal was launched on September 4, 2019, the court of appeal overturned the decisions of the land and environmental court and judged that it would be permissible for the companies to construct and operate their wind energy projects. The appeal court made its decisions in light of the companies' adjustments to the applications in terms of the projects' scope and localization of the wind turbines. The main purpose of some of these adjustments was to accommodate the protection of the natural and cultural values of the environment in the project area, while other adjustments were directly linked to the protection of reindeer husbandry. In contrast, the *sameby* contested the company investigations, which according to the Sámi did not give a correct picture of reindeer land use in the area.

As a primary adjustment to accommodate the interests of reindeer husbandry in the Pauträsk case, the company suggested removing the Pauliden sub-area from the project application. By preventing the construction of any wind turbine in this sub-area, the company argued that the project would be adequately distanced from areas that are regularly used by reindeer. Exempting the Pauliden area from the project application, the company claimed, would ensure that all remaining subareas would be located in the southern part of Pauträsket. This would guarantee that the reindeer's main movement and migration routes of national interest would not be flanked with wind turbines. The company also pointed out that this adjustment would increase the distance between the project sites and the nearest national interest main migration routes from 800 meters to 1,600 meters. According to the company, these adjustments were specifically made to meet the demands of the sameby and ensure that the project would not affect their activities. The County Administrative Board had initially rejected the permits, but now decided to support such an adjustment and the licensing application in the appeal case. In agreement with the company, the County Administrative Board indicated that the exclusion of Pauliden from the project application constituted "a better alternative with less impact on opposing interests." Provided that adequate conditions were established to protect reindeer husbandry, the County Administrative Board also argued that the proposal to exclude Pauliden would enable both reindeer husbandry and the development of renewable energy on the site (Pauträsk case 2019), and therefore found in favor of permit authorization.

In its decision, the court concluded that the exemption of the Pauliden sub-area was a valid means of ensuring that the Pauträsk project would not significantly impact reindeer husbandry. Despite the lack of consensus about the importance of the Pauträsk area for reindeer husbandry, the court agreed that the Pauliden sub-area was of importance for reindeer husbandry and therefore required specific protection. For the court, the importance of this sub-area—800 meters away from the original planning site—was linked to the fact that the construction of wind turbines in Pauliden would risk obstructing reindeer husbandry to a significant degree, mainly through disruptions to the movement and migration routes classified as being of national interest. Also, the hearing with the scientific expert Anna Skarin and supporting research had, according to the court, demonstrated the existence of a risk that the reindeer could be negatively affected if wind turbines were to be constructed in Pauliden. These factors justified the exclusion of the area from the project application.

In contrast to the *sameby*'s testimony, the court considered that the other subareas of the Pauträsk project were not of importance for reindeer husbandry. The decision was based on the court's own interpretation of GPS data and their interpretation that the reindeer herders' testimony did not provide any evidence of continuous use of the Risliden, Per-Ollesbrännan and Simiskilä areas during the last twenty-five years. On this basis the court found court thus found that the establishment of the wind energy projects would not significantly obstruct the practice of reindeer husbandry in these areas. Although the court agreed that the project might cause some difficulties for the *sameby* to conduct reindeer husbandry, it also argued that any disruption in the use of winter pastures and migration routes would be considered acceptable. In its decision, it suggested that two factors mitigated the disruption: the importance of increased production of renewable energy to reach nationally set renewable energy targets, and the fact that the company had undertaken to compensate the *sameby* for the difficulties that the project might incur. Apart from Pauliden, the court therefore decided that there were no obstacles to granting a permit for the construction of wind energy projects in the Pauträsk area.

In the Norrbäck case, the company similarly suggested decreasing the scope of the project and designated several exemption areas for construction to mitigate the impact of the project on natural and cultural environmental values and on reindeer husbandry. Specifically, the companies proposed the removal of the Björnberget site in their revised application to take into account the protection of reindeer husbandry. This adjustment was also considered adequate by the court, as the project would then be located at "an appropriate distance" from the main movement and migration routes of national interest. As in the Pauträsk application, the court considered that the rest of the project area did not compromise reindeer husbandry, because the company had provided adequate measures to ensure that the project would not significantly impact the activity in the other areas. These measures included an adaptation of the construction work schedule during two grazing seasons when the area was not used for reindeer husbandry. It also included some financial support to compensate for the loss of pasture, the cost of additional labor for the reindeer herders, the purchase of a snowmobile and the construction of a corral. Given the importance of increased production of renewable energy and the fact that the company had also undertaken to compensate the sameby, the court concluded that the establishment of the wind energy project in the Norrbäck area did not create any obstacles to reindeer husbandry. Similarly to the Pauträsk case, the court of appeal therefore decided to grant the permit for the establishment of the wind energy project in the Norrbäck area.

#### Limits of court decisions

While the court decisions provide a basis to conciliating the interests of wind energy development with the protection of reindeer husbandry, the capacity of the judiciary to ensure the protection and sustainability of reindeer husbandry has been questioned (Cambou, 2020). Drawing on the Norrbäck and Pauträsk decisions, we will discuss some of the limitations of the court decisions which address the conflicts between wind energy developers and *samebyar*. In particular, the following section focuses on the role of the court and its assessment of the impacts of the wind energy projects on reindeer husbandry, and specifically the technical uncertainties that the decisions raised. Beyond the technicality of the assessment, the analysis also considers the application of the principle of sustainable development as a meta-governance tenet and its role in guiding the court decisions. While the court decisions support the objective of promoting sustainable development in accordance with the Environmental Code, this section questions whether the court decisions to promote sustainable development at the national level undermine the sustainability of reindeer husbandry based on the Sámi rights as an Indigenous people at the local level.

#### Uncertainties of court assessment

From the outset, it is important to note that the decision of the environmental court of appeal in the Norrbäck case was not unanimous. In a dissenting opinion, Chief Justice Roger Wikström, one of the three judges appointed to the case, opposed the final decision issued by the court of appeal. Wikström raised two main arguments against the ruling: first, he found that a part of the area in Norrbäck, which could "be described as a backbone for the biodiversity in the county" was not adequately considered in the decision of the court and should have "in this case be[en] given priority over the production of renewable energy." Second, and more importantly for this analysis, Wikström also criticized how the court of appeal had struck a balance between the interests of renewable energy and the protection of reindeer husbandry. He specifically underlined that "areas that are important for reindeer husbandry are to be protected as far as possible against measures that can significantly hamper the business activity." For this purpose, he also explained that protecting nature in the area against wind energy projects the size of the Norrbäck project would also have safeguarded continued reindeer husbandry in the area. In his view it was clear from the information received "that the area is important for the reindeer industry, especially for Vapsten sameby, particularly as a number of other developments have been allowed in their area." Considering the negative impact that the establishment of the wind energy project would entail for the natural conditions of the area and for the reindeer industry, Judge Wikström therefore concluded that the application for the establishment of the Norrbäck project and the appeal should have been rejected in its entirety.

This dissenting opinion raises several uncertainties about the assessment of the court, including its methods and scale of appraisal. First, the dissenting opinion challenges the decision of the court to disregard the importance of the entire area for the conduct of reindeer husbandry. The court's reliance on the description of certain areas and migration routes as being "of national interest" to justify the protection of certain sub-areas but exclude others is questionable. In line with Wikström's dissenting opinion, reindeer herders have repeatedly argued that all grazing lands are of great importance during certain periods. In contrast, the court assessment supports an ecological understanding that fragments land use and decreases landscape connectivity by authorizing new projects and forces reindeer herders to adapt to new circumstances. Land fragmentation and the failure to provide for quality grazing areas have both been underlined as a threat to the Sámi way of life (Löfmarck and Lidskog, 2019).

Second, the court assessment of the impact of the project on reindeer husbandry and its conclusion that the project would not significantly affect reindeer husbandry is also questionable. In fact, it is striking how little information has been provided in the decisions about the ways the court of appeal has carried out its assessment of the impact of the wind energy projects. In particular, it is not transparent what scientific research or other evidence were taken into account in either of the two cases to motivate the assessment that the impact of the project outside the exemption locations would not risk obstructing reindeer herding to a significant degree in the exploitation area. The final court rulings also lack details to explain how the new project application and its adjustments provided better protection than the former application. In this regard, whether the companies' mitigation measures meet the threshold of appropriate precautionary efforts to avert the negative effects of wind power development on reindeer husbandry can certainly be challenged.

Looking at the assessment methods, it also appears that the court decisions have made limited and inadequate use of maps to improve their understanding of the cases. The maps presented by the companies to the courts were produced on a local scale, making evaluation difficult on the landscape scale (Figure 3.1). This becomes clear from the reproduction of the map provided by the companies in the Norrbäck case. By submitting a map focused solely on the wind energy project areas, the companies limit the opportunity for both the County Administrative Board and the courts to fully understand and examine the aggregated impacts of all developments in the area. In opposition, the reindeer herders argue that the maps must show larger areas to give a full overview that illustrates the reindeer's use of the landscape. The maps supplied in court by the sameby, which describe the entire winter grazing area and show both adjacent wind energy projects (Figure 3.1) stand in sharp contrast to the local maps presented by the companies. In addition, the limited use of maps and the emphasis on maps at a local scale together with a reliance on verbal testimonies steered the court assessment toward an incomplete description of the impacts of the projects. This makes it more difficult to explain complex and conflicting land uses in the area (Sandström, 2015) and the importance of landscape and ecological connectivity. These limitations also become apparent when two projects such as Norrbäck and Pauträsk are evaluated separately and independently of each other, even though they are located only about five kilometers apart and consequently have overlapping impacts. Furthermore, several other wind energy projects approved within the Vapsten sameby winter grazing area (or with pending applications), were outside the scope of the maps presented by the companies (Figures 3.1 and 3.2). The scale of the assessment therefore raises important issues, especially as it fails to uncover the totality of the impacts that cumulatively burden reindeer husbandry in the area (Larsen et al., 2016).

In fact, the appeal court's decisions largely left undiscussed the issue of cumulative impacts. Vapsten *sameby* is 33 kilometers wide at the latitude of the projects. According to the development plan, the wind energy projects would occupy nineteen kilometers of this width, leaving a fourteen-kilometer corridor outside the wind energy projects (Figure 3.2). Within this fourteen-kilometer wide corridor, there is ongoing industrial forestry, the E12 highway, the Lycksele to Storuman railroad and several hydroelectric developments along the river Umeälven. Before the wind energy project applications, these other land uses already prevented or hampered the use of several migration and movement routes of national interest. These prior land uses had already led to major impacts, making co-existence with additional new wind power developments particularly difficult to achieve. Such complex land use situations call for implementation of the precautionary principle when assessing additional new development projects. Yet, the court paid little or no attention to the cumulative impacts of the new wind energy projects in relation to existing development projects.

All in all, the court decisions do not entail a comprehensive examination of the sustainability of reindeer husbandry on the project sites and remaining lands as a whole. As a result, there is significant uncertainty about the impact of the wind projects on reindeer husbandry. In this context, the argument that functioning and sustainable co-existence between reindeer husbandry and wind turbines is possible in Sweden can be called into question, especially when the cumulative impacts of all ongoing projects are considered. As explained by the Sámi Parliament in the Norrbäck case, the area of available grazing pastures is shrinking to such an extent that it threatens the economy of reindeer husbandry and exacerbates its ecological vulnerability. In the absence of scientific certainties regarding the possible impact of the wind projects on reindeer husbandry, the court decisions therefore pose a risk for the future conduct of reindeer herding in the area. This is even more the case as there is a lack of evidence that the companies' mitigation measures will adequately alleviate damages in practice.

#### Balancing of national and local sustainability interests

Whereas the precautionary principle did not guide the court in its decisionmaking, sustainable development is the meta-governance principle that has informed the court in its decision regarding which public interest should prevail in the management of the land. Although sustainable development does not have a precise definition, it is clear from the court statements that the national policy goal to promote renewable energy, including wind energy, is in accordance with the objective to promote sustainable development in Sweden. The importance afforded to wind energy for promoting sustainable development and the meeting of environmental targets set by parliament in 2016/17 recurred in the court decisions. In contrast, it is unclear from the cases how much the practice of reindeer husbandry as a sustainable activity is valued by the court in comparison to wind energy. Despite the disruption wind energy projects may cause to the environment and reindeer husbandry, the court argued that these risks "may be considered acceptable given the weight of increased production of renewable energy" (Norrbäck case 2019). In this context, the court of appeal asserted the importance of achieving the national renewable energy goals as an underlying motivation for the decisions in favor of wind energy developments.

The decision to promote wind energy to the detriment of reindeer husbandry may be valid from the standpoint of national law and Sweden's ambitious goal to achieving negative carbon emissions by 2045, but it can nonetheless be more fundamentally challenged from the perspective of the consequences for local sustainability and the right of the Sámi to conduct reindeer husbandry. The court decisions emphasized an understanding of sustainable development which tends to promote sustainable development at a national level rather than ecological and cultural preservation at the local level. This is largely because the court can only examine the application of domestic law, which does not effectively recognize the territorial rights of the Sámi people to lands nor protect their traditional livelihoods. As a result, the decisions of the court buttress national aspirations for sustainable development but depreciate the consequences of its implementation, including the specific risks this policy has for ensuring the sustainability of the traditional Sámi livelihoods. In fact, although the court decisions are symptomatic of the obligation for the court to examine and apply domestic law, the decisions favor a majoritarian market-oriented perspective of sustainable development which complies with national law but largely bypasses the rights of the Sámi Indigenous minority to ecological and cultural preservation at the local level as recognized under human rights law.

Seen through this lens, an important limitation of the court judgment thus lies in its failure to fully consider the status and rights of the Sámi reindeer herders as an Indigenous people recognized under international human rights law (Cambou, 2020). The court decisions are in fact the result of the application by the court of a legal framework which does not acknowledge the right of the Sámi as an Indigenous people, including their territorial rights, and which is therefore in breach of their human rights. In other words, the court decisions are confined by the assumption that the Swedish policy and legal framework comply with the rights of the Sámi as an Indigenous people. According to the court, "Swedish law is in accordance with its obligations/commitments under international law," in particular Article 27 of the ICCPR (Pauträsk and Norrbäck, 2019). However, this assumption can certainly be challenged considering Sweden's lack of compliance with a duty to respect and protect the rights of the Sámi in accordance with international human rights law (Cambou 2020).

Several international reports, academic contributions and recent court decisions (Girjas case, 2020; CERD, 2020) have questioned and challenged Sweden's commitments to the human rights of the Sámi as an Indigenous people. In its decision in 2020 regarding the adjacent Rönnbäck mining case, the UN Committee on the Elimination of Racial Discrimination (CERD) even concluded that Sweden had violated the right of the Vapsten *sameby* to property as enshrined in Article 5 (d) (v) of the Convention, notably because

it has not complied with its international obligations to protect the Vapsten Sami reindeer herding community against racial discrimination by adequately or effectively consulting the community in the granting of the concessions.

(CERD, 2020, para. 6.12)

This violation is a consequence of the lack of state engagement with the Sámi in relation to the governance and development of their land and natural resources

(Brännström, 2020; Allard, 2018; Larsen, 2019; Tauli-Corpuz, 2014). This situation is also similar to the wind energy context where governing institutions have continuously failed to recognize the right of the Sámi as an Indigenous people, treating them only as stakeholders and "industry," and neglecting their unique position as rights holders when making land use decisions (Larsen and Raitio, 2019; Cambou, 2020).

Intriguingly, a majoritarian and market-oriented understanding of sustainable development aimed at ensuring the sustainable growth of the Swedish economy is in fact applied to reindeer husbandry in so far as the court often refers to reindeer husbandry as an "industry." However, by weighing the interests of one industry against another, the court overlooks the importance of ensuring the maintenance of the reindeer "industry" in a way that is viable not only in the market sense but also culturally and ecologically, as established in human rights law. It is also notable that compensation provided to feed reindeer, support their transport by trucks and for the construction of barriers and corrals are unsatisfactory remedies, as they do not enable the practice of reindeer husbandry in a way that ensures animal welfare and meets Sámi economic and cultural needs (Tryland et al., 2019; Milner et al., 2014). These compensations offer a temporary "solution" that cannot account for the aggregated impacts caused by land fragmentation and the overall loss of grazing areas. In sum, the remedies offered by the court provide a quick fix to a situation that risks eroding Sámi traditional livelihoods in the long term and violates their human rights.

The responsibility of the court to protect the right of the Sámi as an Indigenous people is constrained by the dualistic approach of the Swedish system (Bogdan, 1994), which prevents the court from fully taking into consideration the human rights of the Sámi people in its decision-making. As a result, by seeking to ensure co-existence of wind energy development and reindeer husbandry in order to promote sustainable development, the court supports a governance structure that jeopardizes Sámi culture and their human rights. The judicial system does not confront the political imbalance between the two: national environmental and economic interests trumping the interests of the Sámi as an Indigenous people and the sustainability of their traditional lands and livelihoods at the local level. It may be beyond the scope of this analysis to question the role of the court in applying human rights law, but it can nonetheless be concluded that the court decisions are clearly limited in their ability to provide an adequate response for protecting the rights of Sámi reindeer herders as an Indigenous people. Equally, these conclusions also call into question the application of the principle of sustainable development insofar as it does not support a just transition for all that also respects the human rights of the Sámi people.

# Conclusion

There is a paradox in the development of renewable energy: the objective to promote sustainable development may also lead to a situation where renewable energy could compromise sustainability. This paradox is vividly illustrated by the conflicts between wind energy developers and *samebyar* as discussed through the analyses of the court decisions in the Norrbäck and Pauträsk cases. In Sweden, the development of wind energy raises important governance challenges especially in light of the rapidly increasing pressures from other industrial developments on reindeer grazing land during the last decades. Now, wind energy presents itself as an additional challenge. Our analysis demonstrates how the promotion of wind energy in Sweden as a means to promoting sustainable development at the national level could jeopardize local sustainability by undermining the protection of the right of Indigenous Sámi reindeer herders to maintain their traditional livelihoods.

In the governance triangle, the Swedish court system has become an important arena for addressing these issues. However, the findings of our analysis stress the limitations of the court as an inadequate mediator to solve this conflict and ensure the protection of the Sámi right to conduct reindeer husbandry. The court decisions in the Norrbäck and Pauträsk cases demonstrate that there are several uncertainties in the balancing of interests between the goal to promote wind energy and the objective to protect and maintain reindeer husbandry. Some of these uncertainties lie in the difficulties of the court to conduct adequate assessments of the negative effects that wind energy projects can have on reindeer husbandry, specifically due to the lack of consensus about the way scientific results should be interpreted and regarding the scale and content of this assessment. The courts also appear to struggle with how to weigh information provided by true knowledge holders—the Sámi reindeer husbandry provided by wind power companies.

Beyond the assessment issue, another shortcoming in the court decisions concerns the application of the principle of sustainable development as a metagovernance tenet guiding the court's decision-making. An analysis of the court rulings indicates that the decisions are framed and restrained by a legal and policy framework that favors national sustainable development but undermines the sustainability of Sámi reindeer husbandry at the local level. This is the result of the endorsement of domestic law which fails to fully recognize the right of the Sámi as an Indigenous people and which is therefore in breach of their human rights. In the absence of adequate recognition of the status and rights of the Sámi reindeer herders as an Indigenous people in Sweden, the conclusion of this analysis calls into question whether the court can successfully ensure a fair balance between the national goal to promote green energy and the rights of Sámi reindeer herders to conduct reindeer husbandry within their sameby. Ultimately, the decisions in the Norrbäck and Pauträsk cases epitomize the persistent challenges faced by the Swedish courts to guarantee sustainability at all levels in the face of increasing demands to promote sustainable development for all.

#### References

- Allard, C. (2018) "The rationale for the duty to consult Indigenous peoples: comparative reflections from Nordic and Canadian legal contexts," *Arctic Review*, 9, pp. 25–43. Available at: https://doi.org/10.23865/arctic.v9.729
- Anaya, J. (2011) Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya. Addendum: The situation of the Sámi people in the Sápmi region of Norway, Sweden and Finland. A/HRC/18/35/Add.2. United Nations General Assembly, Human Rights Council.

#### 56 Dorothée Cambou et al.

- Ava Case, No. M 10984-16 (2018) Svea Hovrätt Mark- och miljööverdomstolen [Svea Court of Appeal, Land and Environmental Court of Appeal]. Available at: https://www.domstol.se/mark--och-miljooverdomstolen/mark--och-miljooverdomstolens-avgoranden/2018/67492/
- Bogdan, M. (1994) "Application of public international law by Swedish courts," Nordic Journal of International Law, 63, pp. 3–16. Available at: https://doi.org/10.1163/157181094X00734
- Brännström, M. (2020) "The Girjas case—court proceedings as a strategy to enforce Sámi land rights," in T. Koivurova, E.G. Broderstad, D. Cambou, D. Dorough, and F. Stammler (eds.) Routledge handbook of Indigenous peoples in the Arctic. London: Routledge, pp. 174–186.
- Cambou, D. (2020) "Uncovering injustices in the green transition: Sámi rights in the development of wind energy in Sweden," *Arctic Review*, 11, pp. 310–333. Available at: https:// doi.org/10.23865/arctic.v11.2293
- CERD, Committee on the Elimination of Racial Discrimination (2018) Concluding observations on the combined twenty-second and twenty-third periodic reports of Sweden. CERD/C/ SWE/CO/22-23. United Nations International Convention on the Elimination of All Forms of Racial Discrimination.
- CERD, Committee on the Elimination of Racial Discrimination (2020) Opinion adopted by the Committee under article 14 of the Convention concerning communication No. 54/2013. CERD/C/102/D/54/2013. United Nations International Convention on the Elimination of All Forms of Racial Discrimination.
- Forbes, B.C., Kumpula, T., Meschtyb, N., Laptander, R., Macias-Fauria, M., Zetterberg, P., Verdonen, M., Skarin, A., Kim, K.-Y., Boisvert, L.N., Stroeve, J.C. and Bartsch, A. (2016) "Sea ice, rain-on-snow and tundra reindeer nomadism in Arctic Russia," *Biology Letters*, 12(11), 20160466.
- Girjas Case, No. T 853-18 (2020) Supreme Court of Sweden, January 23. Available at: https://www.domstol.se/hogsta-domstolen/avgoranden/2020/47294/
- Ivan Kitok vs. Sweden (1988) Human Rights Communication No. 197/1985; UN Doc. CCPR/C/33/D/197/1985.
- Klein, D.R. (1971) "Reaction of reindeer to obstructions and disturbances," *Science*, 173, pp. 393–398. Available at: https://doi.org/10.1126/science.173.3995.393
- Lantto, P. and Mörkenstam, U. (2008) "Sámi rights and Sámi challenges: the modernization process and the Swedish Sámi movement, 1886–2006," *Scandinavian Journal of History*, 33, pp. 26–51.
- Larsen, R.K. and Raitio, K. (2019) "Implementing the state duty to consult in land and resource decisions: perspectives from Sámi communities and Swedish state officials," *Arctic Review on Law and Politics*, 10, pp. 4–23. Available at: https://doi.org/10.23865/arctic. v10.1323
- Larsen, R.K., Raitio, K., Sandström, P., Skarin, A., Stinnerbom, M., Wik-Karlsson, J., Sandström, S., Österlin, C. and Buhot, Y. (2016) *Kumulativa effekter av exploateringar på* renskötseln: vad behöver göras inom tillståndsprocesser [Cumulative impacts of land and natural resource exploitation on reindeer husbandry: what needs to be done in permit processes]. Rapport 6722. Stockholm: Naturvårdsverket.
- Larsson, S. and Emmelin, L. (2016) "Objectively best or most acceptable Expert and lay knowledge in Swedish wind power permit processes," *Journal of Environmental Planning* and Management, 59, pp. 1360–1376. Available at: https://doi.org/10.1080/09640568. 2015.1076383
- Lawrence, R. (2014) "Internal colonisation and Indigenous resource sovereignty: wind power developments on traditional Saami lands," *Environment and Planning D: Society and Space*, 32(6), pp. 1036–1053. Available at: https://doi.org/10.1068/d9012

- Löfmarck, E. and Lidskog, R. (2019) "Coping with fragmentation. On the role of technoscientific knowledge within the Sámi community," *Society & Natural Resources*, 32(11), pp. 1293–1311. Available at: https://doi.org/10.1080/08941920.2019.1633449
- Milner, J.M., Beest, F.M.V., Schmidt, K.T., Brook, R.K. and Storaas, T. (2014) "To feed or not to feed? Evidence of the intended and unintended effects of feeding wild ungulates," *The Journal of Wildlife Management*, 78(8), pp. 1322–1334. Available at: https://doi.org/10.1002/ jwmg.798
- Norrbäck Case, No. M3053-15 (2017) (Umeå Mark- och miljödomstolen [Umeå Land and Environmental Court]). In file with the authors.
- Norrbäck Case, No. M6974-17 (2019) (Svea Hovrätt Mark- och miljööverdomstolen [Svea Court of Appeal; Land and Environmental Court of Appeal]). Available at: https://www. domstol.se/mark--och-miljooverdomstolen/mark--och-miljooverdomstolensavgoranden/2019/65429/
- Omma, I.-A. (2021) Lawyer of the Vapsten *sameby*, personal correspondence with the authors.
- Össbo, Å. and Lantto, P. (2011) "Colonial tutelage and industrial colonialism: reindeer husbandry and early 20th-century hydroelectric development in Sweden," *Scandinavian Journal of History*, 36(3), pp. 324–348. Available at: https://doi.org/10.1080/03468755.20 11.580077
- Pauträsk Case, No. M 3051-15 (2017) (Umeå Mark- och miljödomstolen [Umeå Land and Environmental Court]). In file with the authors.
- Pauträsk Case, No. M 6860-17 (2019) (Svea Hovrätt Mark- och miljööverdomstolen [Svea Court of Appeal; Land and Environmental Court of Appeal]). Available at: https://www. domstol.se/mark--och-miljooverdomstolen/mark--och-miljooverdomstolensavgoranden/2019/65441/
- Pettersson, M. (2008) Renewable energy development and the function of law: a comparative study of legal rules related to the planning, installation and operation of windmills. Doctoral dissertation. Luleå: Department of Business Administration and Social Sciences, Luleå University of Technology.
- Pettersson, M., Ek, K., Söderholm, K. and Söderholm, P. (2010) "Wind power planning and permitting: comparative perspectives from the Nordic countries," *Renewable and Sustainable Energy Reviews*, 14, pp. 3116–3123. Available at: https://doi.org/10.1016/j.rser.2010. 07.008.
- Prop. 1976/77: 80. Regeringens proposition 1976/77:80 om insatser för samerna [Government bill 1976/77:80 on initiatives for the Sami].
- Rasmus, R. and Raitio, K. (2019) "Implementing the state duty to consult in land and resource decisions: perspectives from Sámi communities and Swedish state officials," *Arctic Review on Law and Politics*, 10, pp. 4–23. Available at: https://doi.org/10.23865/arctic. v10.1323
- Sandström, P. (2015) A toolbox for co-production of knowledge and improved land use dialogues— The perspective of reindeer husbandry. Doctoral dissertation. Umeå: Swedish University of Agricultural Sciences.
- Sandström, P., Cory, N., Svensson, J., Hedenås, H., Jougda, L. and Brochert, N. (2016) "On the decline of ground lichen forests in the Swedish boreal landscape: implications for reindeer husbandry and sustainable forest management," *Ambio*, 45(4), pp. 415–429.
- SFS 1971:437, Reindeer Husbandry Act.
- SFS 1974:152 (as Amended to December 7, 2010), Swedish Constitution.
- SFS 1998:808, Swedish Environmental Code.
- SOU 2020:73, Stärkt äganderätt, flexibla skyddsformer och naturvård i skogen [Strengthened property rights, flexible forms of protection and nature conservation in the forest].

#### 58 Dorothée Cambou et al.

- Skarin, A. and Åhman, B. (2014) "Do human activity and infrastructure disturb domesticated reindeer? The need for the reindeer's perspective," *Polar Biology*, 37(7), pp. 1041–1054. Available at: https://doi.org/10.1007/s00300-014-1499-5
- Skarin, A. and Alam, M. (2017) "Reindeer habitat use in relation to two small wind farms, during preconstruction, construction, and operation," *Ecology and Evolution*, 7, pp. 3870– 3882. Available at: https://doi.org/10.1002/ece3.2941
- Skarin, A., Nellemann, C., Rönnegård, L., Sandström, P. and Lundqvist, H. (2015) "Wind farm construction impacts reindeer migration and movement corridors," *Landscape Ecology*, 30, pp. 1527–1540. Available at: https://doi.org/10.1007/s10980-015-0210-8
- Skarin, A., Sandström, P., Alam, M., Buhot, Y. and Nellemann, C. (2016) Renar och vindkraft II – Vindkraft i drift och effekter på renar och renskötsel [Reindeer and wind power II—Wind power in operation and effects on reindeer and reindeer husbandry]. Rapport 294. Uppsala: Sveriges lantbruksuniversitet SLU (Swedish University of Agricultural Sciences).
- Skarin A., Sandström P. and Alam M. (2018) "Out of sight of wind turbines—reindeer response to wind farms in operation," *Ecology and Evolution*, 8(19), pp. 9906–9919.
- Sköld, P. (2015) "Perpetual adaption? Challenges for the Sámi and reindeer husbandry in Sweden" in B. Evengård, J. Nymand Larsen, and Ø. Paasche (eds.) The new Arctic. Cham: Springer International Publishing, pp. 39–55.
- Solbär, L., Marcianó, P. and Pettersson, M. (2019) "Land-use planning and designated national interests in Sweden: Arctic perspectives on landscape multifunctionality," *Journal* of Environmental Planning and Management, 62, pp. 2145–2165. Available at: https://doi.org/ 10.1080/09640568.2018.1535430
- Tauli-Corpuz, V. (2014) Report of the Special Rapporteur on the rights of indigenous peoples. A/ HRC/27/52. United Nations General Assembly, Human Rights Council.
- Tryland, M., Nymo, I.H., Sánchez Romano, J., Mørk, T., Klein, J. and Rockström, U. (2019) "Infectious disease outbreak associated with supplementary feeding of semi-domesticated reindeer," *Frontiers in Veterinary Science*, 6, article 126. Available at: https://doi.org/10.3389/ fvets.2019.00126
- Vistnes, I. and Nellemann, C. (2008) "The matter of spatial and temporal scales: a review of reindeer and caribou response to human activity," *Polar Biology*, 31, pp. 399–407.