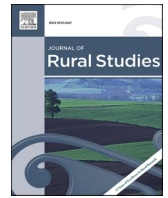




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# Public contestations against the disturbance, degradation, and destruction of Sámi pastoral landscapes in northern Sweden

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## ABSTRACT

A new wave of encroachments is unfolding in Northern Sweden on the lands of Indigenous Sámi reindeer pastoralists. Even if the State and corporations may accept that landscape transformations represent threats to reindeer pastoralists' cultural and livelihood practices, attempts to redress these grievances often involve money to cover costs associated with feeding practices or mechanized transport. This paper considers these landscape transformations as driven by industrial capitalist expansion and underlying colonial relations, examining their broader implications on human-animal relations in pastoral landscapes. We apply an ecologically informed radical geography approach and conduct a content analysis of claims-making instances around the new wave of encroachments and their associated compensation schemes, complemented with basic GIS data. Relying on three cases of public contestations, we argue that encroachments represent threats that disturb, degrade, and destroy pastoral landscapes, and that while counter-hegemonic struggles try to diminish the reach of capital into these landscapes to maintain human-animal relations based on natural pastures, hegemonic actors seek to alter such relations to deepen capital's reach. Although reindeer pastoralists have many allies, we argue that broader coalitions are likely necessary to push for reforms of planning regimes that can enable multi-functionality and sustainability of landscapes in rural areas.

## 1. Introduction

Pastoral landscapes are mostly located in rural areas, and although their ecologies vary greatly across temperate and Arctic environments, multi-purpose and continuous landscapes serve as the underlying material basis for the human-animal relations of pastoralism (Scoones, 2020; Postigo, 2021). The landscapes of reindeer pastoralists among the Indigenous Sámi people in Northern Fennoscandia represent a set of human-animal relations where land uses are organized after seasonal migration patterns, with specific areas representing multiple and interconnected functions across the eight pastoral seasons (Horstkotte et al., 2022; Harnesk, 2022). These practices are highly dynamic, captured in the Sámi concept of *jahkodat*, which highlights "the distinctiveness of any given year, not as a mutually interchangeable unit of time, but as a particular and unique succession of specific conditions, with variable and cumulative effects" (Benjaminsen et al., 2015: p. 226; see also Horstkotte et al., 2017). And as such, encroachments on pastoral landscapes, in Northern Sweden and elsewhere, are often highly contested (e.g., Harnesk, 2023; Snorek et al., 2017).

This paper investigates how actions of hegemonic actors in Sweden such as State representatives and corporations may push Sámi reindeer herding communities (RHCs) towards increased dependency on capital

input through landscape transformations triggered by a new wave of encroachments. These encroachments occur in an already heavily exploited and fragmented landscape due to non-pastoralist land uses, such as intensive forestry, mining, hydro power, wind power, and other and related infrastructure (Horstkotte et al., 2022) alongside a threatening predator pressure shaped by conservation policies (Åhman et al., 2022a) and changing snow conditions due to climate change (Rasmus et al., 2022). As cursory redress to the grievances caused by further encroachments, companies may offer RHCs "compensation schemes", e.g., money to cover costs associated with transport and feeding practices (Österlin and Raitio, 2020). But while mechanized transport and feeding practices are important for reindeer pastoralists, many fear that further landscape transformations and increased dependency on capital input threatens traditional cultural and livelihood practices (see Horstkotte et al., 2021). In turn, the struggles of reindeer pastoralists often involve the rejection of encroachments and demands for ecosystem restoration or other improvements (Harnesk, 2023). It is the broader implications that landscape transformations triggered by encroachments and compensation schemes has on human-animal relations, and the counterclaims around them, that we focus on in this article.

Through an ecologically informed radical geography approach, we will argue that landscape transformations triggered by the new wave of

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encroachments and compensation schemes are driven by accumulation processes that are also associated with concerns at a higher level of abstraction: that the worsening conditions for natural pasture-based responses to poor snow conditions risks deepening the reach of capital circulation into Sámi reindeer pastoralism. For capital, the landscape is ideally transformed in ways that facilitate the production, exchange, and consumption of profitable commodities. To achieve such ends, this may warrant States and corporations to integrate semi-autonomous livelihoods and cultural practices into this process through revenue redistribution and make such groups co-dependent on reproducing capitalist social relations. Instead, to improve the ecological conditions for natural pasture-based reindeer pastoralism, and thereby also reduce the risk of deepening the reach of capital circulation into it, we promote coalition building around counter-hegemonic struggles that seeks to diminish capital's reach, e.g., demanding reforms of planning regimes to increase the multi-functionality and sustainability of landscapes in rural areas (e.g., Zachrisson et al., 2021).

We conduct a case study of three public contestations around the new wave of encroachments and their associated compensation schemes for RHCs in Sweden through a content analysis of media and written material available online and complemented with basic GIS data. Within a Sámi pastoral landscape scale, we develop and combine a *3D threat model* of disturbance, degradation, and destruction with a *2D struggle gradient* of deepening and diminishing outcomes to investigate: (1) what ecological functions in the Sámi pastoral landscape do the specific encroachments transform; (2) what forms of compensation companies present in the public sphere as redress, and (3) what counterclaims RHCs and their allies present in their contestations within the public sphere. The three public contestations concern public claims-making instances around wind farms in Jijnjevaerie RHC, mining in Jåhkågaska tjiellde RHC and forestry in Luokta-Mávas RHC.

The paper has the following disposition. In section 2, we introduce the historical context of Sámi struggles over landscape transformations. In section 3, we present our theoretical framework that combines radical geography and ecological research at the pastoral landscape scale. In section 4, we present our material and methods. In section 5, we present the analysis of our case study. In section 6 we discuss our findings, and in section 7 draw conclusions.

## 2. Historical overview

Historical research focusing on State-Sámi relations in Sweden has revealed that the experiences of the Sámi people are profoundly shaped by a long colonization process that intensified in the 1800s (Lantto, 2000; see also Holand et al., 2022), when the State and corporations mobilized to seize control over and utilize natural resources located within the northern Fennoscandian territory inhabited by the Indigenous Sámi (*ibid.*). The intensification of the colonization process dates back at least to the mid-1600s, when the State promoted people to go north as agricultural settlers e.g., by exemption from taxes and military services (Päiviö, 2011). Key to the intensification that occurred in the late 1800s were the State's Sámi institutions, which included Social Darwinist, paternalistic, and economic utilitarian ideological positions, which in turn underpinned several harmful and oppressive institutions, such as forced resettlement programs, cultural assimilation politics, and race biological institutes (Lantto, 2000; Lantto and Mörkenstam, 2016). The State gradually changed its institutions in ways that greatly reduced

the influence that Sámi reindeer pastoralists had on decision-making concerning land, water, and natural resources – not least via the “Reindeer Grazing Acts” and the “Lapp Administration” (Lantto, 2018). These colonial institutions also constructed a divide amongst the Sámi people: as only reindeer pastoralists were institutionalized as holders of (limited) grazing, hunting, fishing, and resource rights through the formalization of RHCs,<sup>1</sup> despite representing a minority of the diverse Sámi ethnic group (Beach, 2007; Mörkenstam, 1999).

In terms of struggles, colonization faced social and political resistance. A Sámi movement emerged during the early 1900s and made claims against the State, arguing that “the position of the Sámi in society should be improved and that they should be recognized the same civil rights and responsibilities as other citizens” (Lantto, 2000: p. 292; own translation). The Sámi movement developed to include different actors, organizations, and strategies as well as political visions, which to this day make up its mobilizing structure (Lantto and Mörkenstam, 2015; Lantto, 2018; Harnesk, 2023). Today the movement seeks to address Sámi challenges by pursuing Sámi rights, often framed in terms of Indigenous rights and self-determination, and often through the legal system and against the State (Lantto and Mörkenstam, 2008b; 2015; Harnesk, 2023). Although the role of reindeer pastoralism and its organizations within the broader Sámi movement is complex, not least due to historical State-Sámi relations (Lantto and Mörkenstam, 2015), the importance of reindeer to Sámi cultural and livelihood practices remains widely recognized among the Sámi people in Sweden (Sámediggi, 2023).

In terms of political economy, the period before the 20th century also relates to the establishment of property rights regimes by the State; important to facilitate capitalist social relations (i.e., primitive accumulation). Property rights regimes associated with liberal society were established in Sápmi by the late 1800s (Päiviö, 2011), which is also when the Swedish agrarian political economy had begun a process of industrialization, 1790–1850 (Schön, 2014). The latter roughly corresponds to when the timber frontiers expanded to the northern region (Östlund and Norstedt, 2021) which Moore (2010) argues to have been pivotal for the economic success of the Swedish territory's capitalist economy. The proceeding process of capitalist development eventually led to the breakthrough and high-point of industrial society, 1890–1975, mostly under social democratic hegemony, including changes to the land-based production regimes associated with each different land uses and its surrounding infrastructural development (Schön, 2014). It was during the breakthrough of the State-led industrialization that Sámi pastoral landscapes across Swedish Sápmi were most radically transformed by multiple industrial land use practices.

The industrialization process is clearly associated with landscape transformations. Industrial forestry has with significant spatial coverage profoundly altered biotic and abiotic structures and processes in boreal forests e.g., in ways that have removed, degraded, and fragmented ground and pendulous lichen habitats to the detriment of reindeer forage availability during the pastoral winter and spring seasons, and has worsened migration pathways (see Horstkotte and Djupström, 2021; Harnesk, 2022). Encroachments from other land uses, including mines, gravel pits, hydro power, wind farms, peat pits, as well as their surrounding infrastructure and road networks has also resulted in direct loss and fragmentation of pastures as well as worsened migration pathways through e.g., various barrier effects and by weakening ice on rivers (Horstkotte et al., 2022). Conservation policies surrounding wolf,

<sup>1</sup> The RHC construct dates back to the Reindeer Grazing Act of 1886 and was from the State's perspective supposed to push reindeer pastoralism to become “economically rational” while as also being easier to control as administrative units (Nilsson, 2021). Prior to this, reindeer pastoralism was organized within one or several *siida*, a sort of family groups, within large land areas of more collective and sometimes overlapping character; many of which remain to this day (Päiviö, 2011).

lynx, wolverine, brown bear, and golden eagles also increase the stress on reindeer pastoralism as it increases the density of carnivores in the landscape (Åhman et al., 2022a). These processes of environmental change intersect with climate change which is impacting e.g., snow conditions in ways that worsen the accessibility of reindeer forage between the pastoral winter and spring seasons (Rasmus et al., 2022). Importantly, the impacts of these multiple stressors on reindeer pastoralism are unevenly distributed within and between RHCs.

The current form of Sámi reindeer pastoralism is referred to as “extensive”, meaning that pastoralists spend less time near their reindeer, and instead have them range more freely (Fjellström, 1986). This was in part enabled by mechanization (partly driven by the State’s “economic rationalization programme”) that occurred in the mid-1900s, when transport trucks, snowmobiles, helicopters,<sup>2</sup> and (grains-based) commercial feed were introduced (Horstkotte et al., 2022; Berg et al., 2011; Riseth et al., 2016). Feeding practices date back to early domestication (Berg et al., 2011), and comes in the form of either temporary feeding, which is practiced during “strategic events such as gathering and migration”, or emergency feeding, which is practiced “to prevent acute starvation” (Åhman et al., 2022b: p. 233). Feeding practices can be employed either when reindeer are free-ranging or when they are gathered in enclosures, but require the collection, transportation, and distribution of some type of feed. Ubani et al. (2020) argues that mechanized transport and feeding practices (as well as changed herd structures) have been critical for RHCs to respond to pasture loss and fragmentation, while also being “connected to increased costs, either as pure financial costs or as indirect costs, such as increased workload or stress” (p. 10).

The economic transition towards a service society and the IT-revolution, 1960–2010 (Schön, 2014), created challenges for labour markets and population dynamics in the rural municipalities of northern Sweden, as the urbanization that followed led to a shrinking and aging population with reduced tax incomes as political outcomes at the municipal level (Hedlund et al., 2017). When combined with the shift towards neoliberal ideology by the 1990s – which was accompanied by economic policies that focused on privatization and market forces as redistributive mechanisms – social services such as healthcare started to decline across the rural North (Enlund, 2020). Framed as a way to revitalize rural economic development in the North, conventional market-based climate policies started to emerge within the State by the mid-2010s (Hildingsson et al., 2018). This *corporatist Green State* frames its agenda as decarbonising the energy-intensive natural resource-based industry through new industrial complexes that produce steel and batteries with power generation from renewable energy (*ibid.*). From the perspective of reindeer pastoralism, we refer to this new round of State-led industrialization as *the new wave of encroachments* and remain critical to the “green” framing of the State (see e.g., critique of ecological modernization in York, 2012, or discussions on green grabbing in Fairhead et al., 2012).

### 3. Theoretical framework

A radical geography approach involves critique of how profit-oriented land uses in landscapes relate to much broader, historically specific, circuits of capital and elucidates the social and environmental harms they give rise to. Below we present a theoretical framework that enables us to analyse the geographical expanding process of capital in and through landscapes; elucidating what capitalist social relations of production are, and how they are being struggled over “downstream” around landscape transformations that threaten human-animal relations in the pastoral landscapes of the Indigenous Sámi people.

#### 3.1. A radical geography approach

In terms of the logic of capital, landscape transformations that give rise to struggles over dispossessions (such as the new wave of encroachments) represents specific “moments” in a “totality”. In abstract terms, capitalist social relations of production, exchange, and consumption require that landscapes are *produced* and *reproduced* for purposed ends, centred on commodities and for surplus value appropriation, to assure that landscapes support profit making and economic growth (Harvey 2018; Mitchell, 2008, 2012). In this view, Mitchell (2008) argues that the relations of production are the social driver of landscape transformations under capitalism:

“If we are to understand what a landscape is [under capitalism], what it does, and why it looks the way it does, we need to pay attention to both the broad (societal) and the narrow (e.g., at a particular locality, within a particular firm, in the offices of a design studio) relations of production, relations that are, of course, always historically and technologically conditioned, and always and everywhere struggled over”

p. 34 (emphasis removed)

The industrial landscapes of “nature facing”-sectors (Boyd et al., 2001), and the formations of fixed capital in vast infrastructural arrangements attached to such production, is clearly the making of such a landscape produced for the ends of capital (see Harvey 2018). Different actors forward “spatial fixes” to facilitate accumulation – that is, they invest in locations that can secure and attain such economic growth while avoiding crises of overaccumulation, thereby deepening capital’s reach (*ibid.*).

What is then struggled over, and by whom? On the one hand, the deepening of capital’s reach into pastoral landscapes, we will argue, is at work as hegemonic actors (e.g., State representatives and corporations) seek to radically rework the landscape into one for commodity production. For those in the business of land-based production, redistributing part of their revenue stream toward reindeer pastoralists (for them to move towards temporary ranching models) may be worthwhile if it allows their businesses to produce the landscape into something profitable. On the other hand, counter-hegemonic contestations by reindeer pastoralists and their allies, we will argue, also point to the struggle for alternative, even anti-capitalist, future landscapes produced in ways that, coarsely put, favour other social relations, diminishing the reach of capital. This theory of landscape production under capitalism can, as Taylor (2014) among others have argued, be taken to analyse “the inseparably social and biophysical relations through which lived environments – including their human inhabitants - are brought into being and actively reshaped” (p. 13). It is within such a web of interactions – where the logic of capital interacts with social and environmental processes, such as pasture loss and fragmentation – that pastoral landscapes, with their distinct patterns of human-animal relations, and Indigenous communities are produced and reproduced amidst struggles against capitalist social relations. But to be clear, “downstream” struggles against landscape transformations should not be assumed a-priori to be anti-capitalistic, as social constructions like *Indigeneity* are “without guarantees” as they can be articulated as identities by different political subjects to legitimize their specific claims (Li, 2004), potentially in line with hegemonic forces.

When we invoke “capitalist relations of production”, we do not deny that these are reinforced by extra-economic factors, nor do we deny social tension that are historically produced by colonial power relations. Rather, we respond to Coulthard’s (2014) call to Indigenous activists and scholars to “engage with [Marx’s] important critique of capitalist exploitation and his extensive writings on the entangled relationship between capitalism and colonialism” (p. 8). The critique against Marxist-inspired research in relation to Indigenous struggles and perspectives suggest that it is colonialist, economic deterministic, includes a

<sup>2</sup> Other technologies such as GPS-collars and drones are now used as well.

teleological conception of progress, has a Eurocentric stance, and supports extreme productivism in relation to the environment (see Coulthard, 2014; Foster et al., 2020). Although such positions may exist, we agree with other research that recognizes the “forcible expropriation/dispossession of Indigenous cultures [...] in which] colonialism, rather than simply being an element of the past, continues to be integral to the capitalist domination of peoples and the land [and that out] of this flows an irrepressible resistance that takes many different forms, but nonetheless refuses to subside” (Foster et al., 2020). Relevant to our specific argument, Coulthard (2014) argues that:

“A similar problem informs self-determination efforts that seek to ameliorate our poverty and economic dependency through resource revenue sharing, more comprehensive impact benefit agreements, and affirmative action employment strategies negotiated through the state and with industries currently tearing up Indigenous territories. Even though the capital generated by such an approach could, in theory, be spent subsidizing the revitalization of certain cultural traditions and practices, in the end they would remain dependent on a predatory economy that is entirely at odds with the deep reciprocity that forms the cultural core of many Indigenous peoples’ relationship with land.”

(p. 171)

We believe that such a critique is only strengthened by an understanding of the systemic tendencies of capitalism while incorporating specific colonial histories. We do so by situating our critique of landscape transformation as part of the Sámi movement’s history of counter-hegemonic struggles (see Section 2).

Our theory also speaks to debates on pastoralism (and other forms of rural and mobility-dependent livelihood and cultural practices). Postigo (2021) recently warned about how “independent and synergic impacts of climatic change and capitalist expansion may render pastoral social-ecological systems extinct” (p. 68). This is due to how pastoralists have non-sedentary relations to territory, whereas capitalist social relations facilitate privatization and encroachments from competing land-uses that negatively affect the maintenance of such non-sedentary relations, aggravated by climate change (*ibid.*). While scholarship on pastoralism recognize widely shared patterns across world regions of pastoralist populations being framed by State formations as “backwards” and requiring (by force if necessary) sedentarization (see e.g., overview in Scoones, 2020), we contrast our approach to the articulation of State-pastoralist dynamics in the work of Scott (e.g., 1998, 2009). Scott’s work on the State, with its “simplifications” and projects of “control” over unruly subjects and nature alike, has had pastoralists (alongside other mobility-dependent livelihoods such as shifting cultivators) as a key point of interest, with strong influence in agrarian studies and political ecology (McElwee, 2021; Johnsen and Benjaminen, 2017; Fischer et al., 2022). The “control” that modernist States seek over mobile people like pastoralists is perceived as central to efforts at converting “illegible” livelihoods and associated perceived (by the State) unruly and unmanageable ecosystems, into shapes that are “legible” to States such as, paradigmatically, into settled agriculture. While this approach focuses on State “control”, our rather focuses on hegemonic actors and the circulation of capital in and through specific landscapes.

### 3.2. An ecologically informed framework

Sámi reindeer pastoralism represents a dynamic relationship between reindeer, pastoralists, and pastures, within a particular pastoral landscape (Holand, et al., 2022). Our ambition is not to present a holistic theory of these dynamics across the different seasonal lands of pastoral land uses, nor one that helps infer values and beliefs connected to land or land uses. Instead, we provide a heuristic for examining the material implications of different types of landscape transformations on

human-animal relations. We do so by conceptualizing: 1) landscape transformations through a 3D threat model of destruction, disturbance, and degradation, and 2) implications for human-animal relations along a 2D struggle gradient of deepening and diminishing outcomes (see Fig. 1). In the pastoral landscape, we focus on winter pasturelands where ground and pendulous lichens represent key forage resources; the availability of which are directly affected by the cumulative effects of encroachments, predators, and snow conditions, and that are critical to the survival of reindeer (Harnesk, 2022).

Our 3D model presents three types of landscape transformations that threaten human-animal relations. A first type of landscape transformation relates to *disturbance*, which prevents access to specific ecological functions. This can be illustrated with the establishment of wind farms as well as tourism and recreational activities. These impact the pastoral landscape by establishing ‘disturbance zones’ around and within which reindeer exhibit avoidance behaviour, resulting in barrier effects and worsened grazing peace (Skarin et al., 2015, 2018; Skarin and Åhman, 2014). A second type of landscape transformation relates to *degradation*, which worsens specific ecological functions. This can be illustrated with the intensive forestry regime as well as air pollution. These impact the pastoral landscape by altering habitat structures to the detriment of e.g., the amount and distribution of ground lichens and pendulous lichens by creating denser and younger monocultural forests as well as other ecological mechanisms (Harnesk, 2022; Horstkotte and Djupström, 2021). A third type of landscape transformation relates to *destruction*, which eradicates specific ecological functions. This can be illustrated with the establishment of open pit mines or gravel pits as well as road networks. These impact the pastoral landscape by removing and fragmenting e.g., pastures as well as impacting migration pathways through barrier effects (Horstkotte et al., 2022; Harnesk, 2022). All these illustrations may allow landscapes to produce non-pastoral commodities, and in the process transform their biophysical features to the detriment of reindeer pastoralism.

To be clear, there is overlap between the three types, as with most models. This can be illustrated with plantations of lodgepole pine, *Pinus contorta*. These plantations destroy pastoral landscapes by creating impenetrably dense forests, they disturb pastoral landscapes through barrier effects on migration pathways, and they degrade pastoral landscapes by worsening conditions for ground and pendulous lichens (see Horstkotte and Djupström, 2021). Furthermore, as landscapes that facilitate the circuit of capital require infrastructure such as roads and transmission lines to be established, one type is often accompanied by the others. Similarly, in the abstract sense, reindeer pastoralists also produce commodities designated for markets that benefit from specific landscapes features that may be seen, overall, as compatible with capitalist expansion, although, importantly, in the concrete sense, this form of production can be argued to be more in line with general ecological integrity in boreal forests (see Harnesk, 2022) and it can also be argued that the semi-autonomous organization of these livelihood and cultural practices make them less susceptible to capitalist social relations (Postigo, 2021; Scoones, 2020).

Our 3D model contains analytical categories that represent threats to pastoral landscapes, and consequently, struggles around such encroachments are likely due to their impacts on human-animal relations. To observe these struggles, we look at instances of claims-making, which “entails both the formulation of a political demand with a specific content (the claim), and the public staging of this demand (claims-making)” (Lindekilde, 2013: p. 1). These struggles relate to a variety of power relations between hegemonic and counter-hegemonic forces beyond the scope of our study. We hold that struggles can be observed by examining claims-making instances, that the outcomes of these struggles may result in different impacts on human-animal relations, and that these outcomes can be categorize across a gradient depending on whether they deepen or reduce the reach of capital into human-animal relations.

As for *diminishing outcomes*, we consider anything that improves the

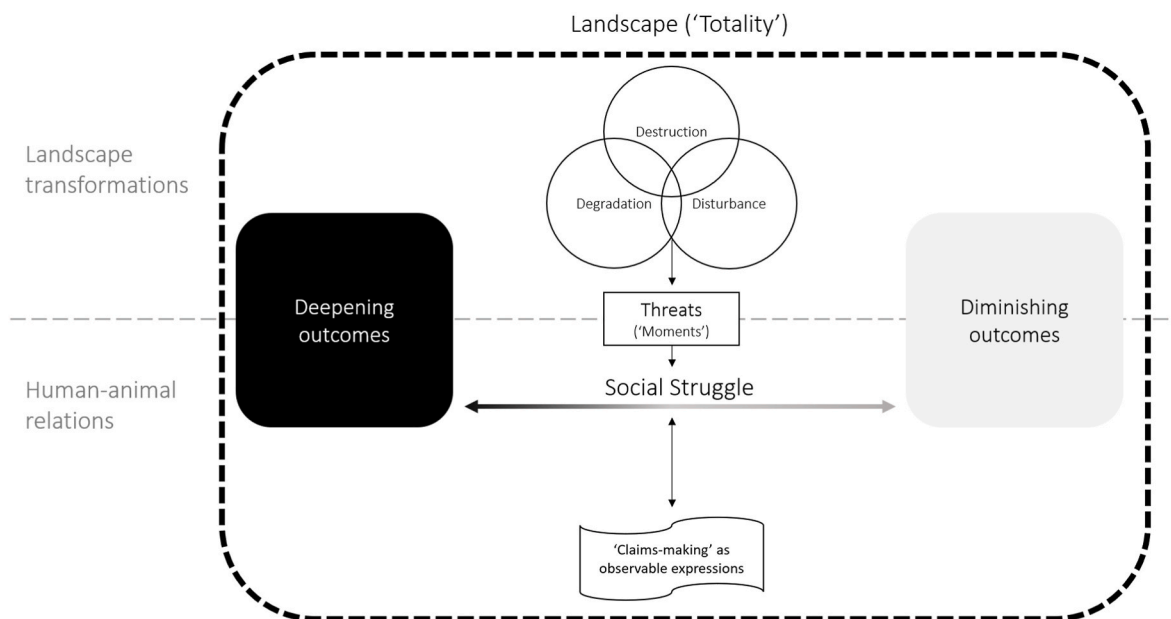


Fig. 1. Visualization of theoretical framework.

ecological conditions for natural pasture-based reindeer pastoralism. We side with Nilsson (2021), who argues that the core of Sámi self-determination lies within the relations of common responsibility that has over time emerged between the landscape and people, including human-animal relations. Nilsson (*ibid.*) argues that control and access to land, water and natural resources is foundational to Sámi livelihoods and cultural practices because it enables the maintenance of such relational and responsibility-based perspectives and practices. To illustrate in terms of human-animal relations in the pastoral landscape, we raise the viewpoints expressed by *Sámiid Riikasearvi* (SSR, the National Association of Swedish Sámi), an organization that emerged from the Sámi movement that mobilizes RHCs and Sámi organizations (Lantto, 2000). Although SSR makes several statements in line with the interests of reindeer pastoralists, they emphasize that:

“Well-functioning and long-term sustainable reindeer pastoralism [...] requires suitable calving areas, functioning migration pathways with resting pastures as well as central continuous seasonal pastures for each season. It also requires grazing peace, especially during calving season and the reindeer’s growing period. The access to safe winter pastures is an absolute necessity for the survival of the livelihood.”

(SSR, 2022; own translation)

We capture these relational sentiments under the umbrella term of *natural pasture-based reindeer pastoralism* and consider these to include specific human-animal relations within a Sámi pastoral landscape perspective, such as winter pastures on which reindeer can feed on natural pastures and not artificial feed. Improving the landscape in such a direction may diminish the reach of capital into the culture and livelihood as pastoralists become less dependent on capital input, and better equipped to maintain their relational and responsibility-based perspectives and practices to the landscape (which includes values and beliefs beyond the scope of our study).

As for *deepening outcomes*, we use encroachments and compensation schemes to illustrate how landscape transformations may deepen the reach of capital in ways that affect human-animal relations, to different extents. Much of the compensation schemes that we will discuss concern money to cover costs associated with various mobility responses and feeding practices of which there is a wide variety and that are important in the everyday lives of Sámi reindeer pastoralists (see Moen et al., 2022;

Åhman et al., 2022b; Uboni et al., 2020). Recognizing their benefits, and not faulting any individual pastoralist, we present some concerns associated with increased *mechanized transport* and *feeding practices in enclosures* raised in the academic literature, focusing on their implications on human-animal relations.

Regime shifts toward increased feeding practices in enclosures may change human-animal relations in reindeer pastoralism, by e.g., creating more domesticated behaviours among reindeer (Åhman et al., 2022b; Horstkotte et al., 2021) and increasing stress and the risk of disease (Tryland et al., 2022). It can also result in reindeer losing “their willingness or ability to search for forage on their own (including the skill of digging through snow) [...] which] compromises their ability to live and survive on natural pastures” (Åhman et al., 2022b: p. 243); and pastures may be impacted as “increased grazing and trampling pressure on vegetation and soil due to high animal densities around feeding stations [...] may cause changes in the soil and in vegetation composition” (*ibid.*: p. 241). Regime shifts towards increased mechanized transport is associated with increased monetary expenses as it costs money to buy, maintain and run a fleet of vehicles, as does buying services from local helicopter companies and truck transports. For both regime shifts, as Moen et al. (2022) put it, “increased use of technologies [...] has further required a large monetary input into the herding enterprises” (p. 271), which in turn subject them to market volatilities associated with different capital inputs, such as price shocks on petrol and diesel. Both are also associated with increased material throughput.

But most fundamentally, as highlighted by Sámi pastoralists in the study by Horstkotte et al. (2021), increased dependency on feeding in enclosures may push reindeer pastoralists away from what they consider to be ecologically sustainable and in line with their livelihood and cultural practices. For the people involved, the current situation is connected to social harms. Studies have shown that, compared to urban and other rural populations, reindeer pastoralists have higher levels of anxiety and depression (Kaiser, et al., 2010), and that the increasing costs are mentioned as a reason for why older pastoralists have more difficulties in motivating young people to become pastoralists (Lépy et al., 2018). We see these concerns pointing not only to the variegated impacts of deepening capital circulation in Sámi pastoral landscapes, but also how some responses to landscape transformations deepens the necessity of incorporating capitalist social relations into reindeer pastoralism itself.

#### 4. Material and methods

We collected empirical material through a media analysis of the Sámi public news media *Sveriges Radio Öddasat* by the first author. This data collection focused on identifying grievances of Sámi reindeer pastoralists, and instances of claims-making in line with their interests, from a wide range of actors between 2012 and 2022. From this, three well-publicized sites of contention in the new wave of encroachments located on winter pasturelands and based on different encroachments were selected to capture similarities and differences in accumulation dynamics. The first site represents conflicts over wind farms, between Jinjevaerie RHC and the company Statkraft, owned by the Norwegian State. The second site represents conflicts over a mine, in Gállok between Jåhkågaska tjiellde RHC (and Sirges RHC) and the private corporation Beowulf Mining. The third site represents conflicts over intensive forestry practices, between Luokta-Mávas RHC and the company Sveaskog, owned by the Swedish State. For these three, we examined claims-making instances identified in media as well as available data on the compensation schemes found online. All quotes in text have been translated from Swedish to English, except if coming from an English publication. Complementary GIS data was also used to illustrate the case study areas. We provide links and references to all data in the Appendix.

The data and methods have four limitations. First, we have not been able to attain detailed accounts of the compensation schemes e.g., in monetary terms, beyond what is available online in public and corporate reports, hearings and notes. Second, two of our cases are still ongoing struggles, and situated within a broader set of contentious politics. These two limitations add uncertainties to discussion on concrete outcomes. Third, the materials that we use are all publicly available and have been presented in the public sphere in some way. In such claims-making, actors actively seek public contention and may frame their claims in ways that advance their cause. This is a particular form of mobilization which can include different meanings than e.g., the hidden transcripts found in everyday resistance (see [Johnsen and Benjaminsen, 2017](#)). Fourth, the data sample did not include any voices of pastoralists that may have been positive about compensation schemes, nor competition or conflicts within and between RHCs. These two limitations have shaped the scope of the study, as we cannot discuss potential conflicts of

interests, or clashes of values and beliefs, involved in landscape transformations. Nevertheless, we consider the decisions of the selected RHCs to actively engage in public contestations and the content of claims as clear indications of community-level agreements that encroachments and associated compensations as representing threats (see also literature reviewed in Section 3.2).

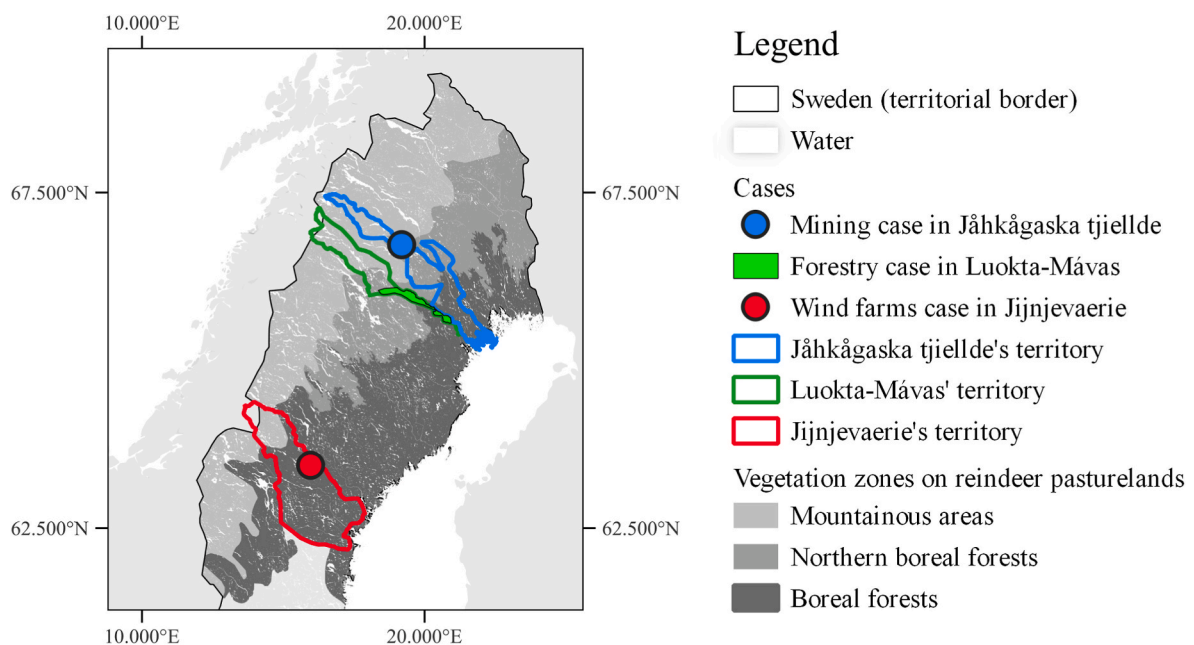
#### 5. Public contestations of encroachments and compensations

The three pastoral landscapes that we have selected are located both in arctic and sub-arctic environments, including mountainous and boreal forest ecosystems (see [Fig. 2](#)). The specific encroachments are located within boreal forests, on the winter pasturelands of the affected RHCs.

##### 5.1. Wind farms in jijnjevaerie

In the mid-00s, the company Statkraft SCA Vind AB (SSVAB), 60 % of which is owned by the Norwegian State's electricity utility company Statkraft, and the rest by the Swedish forestry company SCA, sought to build wind farms in Ögonfågna and Björkhöjden. When combined with the adjacent Stamåsen wind farms, this would amount to 149–180 wind power units, making it among the largest continuous wind power parks in Sweden; all located on the lands of the Jijnjevaerie (see [Fig. 3](#)). This RHC, with five siidas, had at one point around 1900 wind power units in different phases of permits to construction on their winter pasturelands.

An environmental impact assessment (EIA) part of SSVAB's application for concession in 2018 held that the wind farms would not affect migration, and that although forests were to be logged and land subjected to intense soil preparation, only 5% of the surface would be permanently lost. The EIA suggested that reindeer behaviour is (probably) not affected by wind farms. It further highlighted that parts of the wind farm were in reserve pastures. While recognizing risks of fragmentation from road infrastructures, it held impacts to be limited. The construction period was seen as the main challenge to reindeer pastoralism due to human activity and road traffic, but this would be limited thereafter. The need to plough key roads to the wind park was nevertheless viewed as a potential threat to migration pathways during winter, leading to increased logistics needed for gathering herds.



**Fig. 2.** Map of reindeer pasturelands in Sweden and case study areas ([Länsstyrelsernas geodatakatalog, n.d.](#)). Vegetation zones are adapted from [Dinerstein et al. \(2017\)](#) and [Moen \(1999\)](#), in [Holand et al. \(2022\)](#).

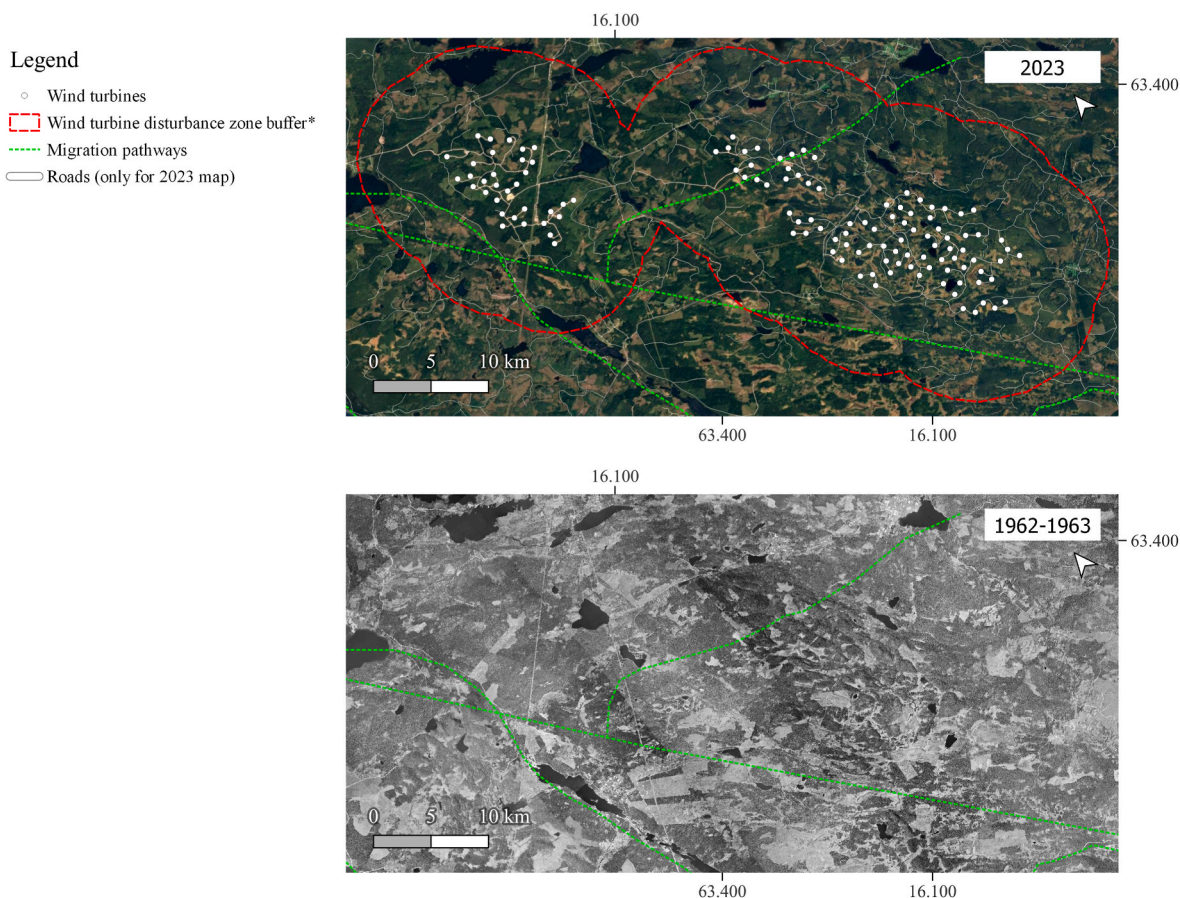


Fig. 3. Maps of areas with wind farms, roads and migration pathways in Ögonfågnađen and Björkhöjden on Jijnjevaerie's territory (Länsstyrelsernas geodatakatalog, n.d.) with a \*3.5 km disturbance zone buffer for wind turbines informed by Skarin et al. (2015). Background images: satellite image from Google Maps (n.d.), and historical orthophotos © Lantmäteriet (1962, 1963).

A 2010 decision by the Environmental Court held the company's assessments to be incomplete and held to the contrary that the establishment of the wind farms would make the entire area unfit for reindeer pastoralism and affect migration pathways. To countervail such effects would, in turn, demand extensive systems of transportation of animals by trucks to winter pasturelands. The court suggested, moreover, supplementary feeding with pellets would compensate for the loss of the RHC's reserve pasturelands being unavailable.

In an appeal to the Land and Environment Courts, 2012, Jijnjevaerie stated that the Country Administrative Board had based their decision on understatements on impacts of the "disturbance zones" of wind power units on pasture availability and argued that the company SSVAB should at least cover supplementary feed expenses for the entire RHC. Around this time, the RHC also challenged the encroachments by submitting an appeal to OECD. Jijnjevaerie argued that the projects threaten a core area for the pastoralists, and thereby infringe on the rights of the Indigenous Sámi people in Sweden. Critical of the "green" framing of a profit-seeking investment, the chair of the community held that by now "it is difficult to stop this process now that they have gotten a permit, so the goal is to at least get a fair settlement around the damages that we suffer from."

In 2013, the Norwegian OECD contact point called Jijnjevaerie and SSVAB to a meeting. This was the first time that an OECD-organization addressed Sámi rights, which garnered some media attention. However, the OECD contact point released a statement siding with SSVAB, recommending "that the parties show renewed will to negotiate an agreement", declaring how it was "pleased to see that Statkraft/SSVAB and Jijnjevaerie Saami village have reached an agreement on compensation for the impact and negative effects of the windmills", and celebrating

how "the parties have many years of co-existence ahead of them".

The parties did come to some agreement on compensation for losses caused by these projects, although the details of these are not publicly disclosed. Yet the critique remains. The chair voiced the RHC's concerns about disturbance zones and reduced pasture availability, and their discontent with increased dependence on supplementary feed, explicitly communicating the immediate reason behind the use of feed in Jijnjevaerie:

"We feed reindeer to compensate for the loss of pastures. It is a decision that the court has taken, and it is called a 'preventive measure'. They mean that it is this measure that allows for the co-existence between wind power and reindeer pastoralism."

By 2015, the RHC had five large silos alongside a road in Jämtland, one for each siida, and the RHC may feed for months at the time, using hundreds of tons of feed. The feed purchased at the time contained palm-oil residues, which the RHC connected to deforestation, poor working conditions and forced resettlements of Indigenous people in Indonesia. The chair did not want to feel complicit in such processes elsewhere and raised demands to the feed producer Lantmännen to remove palm-oil based products, leading to an ambiguous and non-committal response.

Jijnjevaerie publicly expressed its discontent with SSVAB during the opening ceremony of the wind farms in Björkhöjden and Ögonfågnađen in 2016. Members of the community had a "silent manifestation" in stark contrast to the celebrations organized by the company with food, drinks and cheers. In media, the chair summarized the RHC's concerns as the following:

“They have destroyed a migration pathway. It is also a gathering land, land where the reindeer naturally move towards – which we used to be able to use as gathering land, but now that is not possible anymore. They have destroyed winter pastures for us. [...] But there is not so much more we can do here at Björkhöjden, unfortunately – we have gone to Court and to the OECD ... But we have lost everything, and we have tried all options to stop this. [...] We just have to continue and struggle to try to protect what remains. And really hold on to what does remain.”

By 2022, RHC members expressed how “the disturbance effects are larger”, and “the preventive measures are worse and much more labourious”. An active pastoralist declared that:

“The reindeer can go in a completely different direction than what they did previously. Before one could release the reindeer herd on the spring lands here and they went west, but that does not work anymore. You must follow them through the park and towards the mountains, so it has become much more heavy labour and more work than we had thought.”

The public contestations of Jijnjevaerie garnered support from some organizations. The Sámi Parliament issued a statement that emphasized how the wind farms in Jijnjevaerie have devastating consequences for the RHC to maintain reindeer pastoralism, and therefore go against UN declarations on human rights and Indigenous rights to self-determination. In the list of demands, the Sámi parliament called for more power to Sámi actors to influence decision making in planning, emphasizing that “the needs of the Sámi people for functional land and water should weigh heavier than interests of profit-seeking risk capitalists”.

Even as SSVAB got permission to expand the Björkhöjden park with 30 new units, the RHC continued its practices to appeal these decisions. New claims emphasized the impacts of road networks as well as a more explicit critique of the “green” framing:

“The time when the western world built its wealth, it did so on Indigenous lands; and today the western world, suddenly, is supposed to become green, and aware of nature, something that Indigenous peoples always have been, then that should also be done at the expense of the Indigenous people. [...] It is a paradox that the green transition of the western world is to suck the blood out of the reindeer’s throat. [...] The reindeer has carried the burden for hundreds of years, first to accrue wealth for Sweden, the reindeer has been taxed to give the Crown money and fur for wars, and the reindeer has contributed with its pasturelands, for far, far too long. There are other lands to produce green electricity from rather than on pasturelands, on Indigenous lands.”

The community is at the time of submission looking to developments in Norway, where a court case on wind power in Fosen resulted in the decision to remove built wind power units on reindeer pasturelands based on Indigenous rights. All the while, the forestry company SCA, co-owner of SSVAB, see the potential to build 65 TWh of new wind power units on their property in northern Sweden, roughly the same production capacity of Swedish hydro power, which the Group CEO deems critical to the “new green industrialization” and that the authorities and government should “let go of the break”.

## 5.2. Mining in Jåhkågaska tjiellde

In the 1940s, an iron ore deposit was found in Gállok outside of Jokkmokk on the land of Jåhkågaska tjiellde. In 2006, a Swedish subsidiary of Beowulf Mining got an exploration license at that location,

which is in an area where the RHC’s territory exceptionally thin, as well as partly interconnected to the land of Sirges RHC (see Fig. 4).<sup>3</sup>

An EIA from 2013 held that an area of 2000 ha would be impacted by the mine and its associated infrastructure, much of which of national interest for reindeer pastoralism. The EIA stated that a migration pathway would be cut, and two resting pastures would be made entirely or partly inaccessible by the mine. It held that the cumulative effects of a mine might comprise significant negative ramifications for Jåhkågaska tjiellde. A municipal report held that these pasturelands are of such central importance to reindeer pastoralism in the region that, devoid of these (or access to them), pastoralists would depend on transportation using trucks to alternative pasturelands.

The mine was highly contested. Both Jåhkågaska tjiellde and Sirges RHCs have, with the support of SSR, challenged the mine project through formal processes on numerous occasions, including the approval of the test mining programme issued in November 2012. Beyond the RHC, in June 2013, activists set up camps in the area, and a road blockade managed to postpone test mining sample programme in July. Meanwhile, the RHC sent a representative to the company’s annual meeting to voice their concerns (via allies in The London Mining Network whom owned stocks in the mining company). The road blockades continued through August; at times in direct conflict with police and including a manifestation with over 500 attendees. During this period, representatives from the two RHCs together with SSR and the Sámi Council’s Human Rights Unit wrote an opinion piece in the largest daily newspaper, Dagens Nyheter (DN), stating that if the mine were to be established: “Jåhkågaska and Sirges cannot move between summer and winter lands which is a precondition for Sámi reindeer pastoralism. Spring and autumn pasturelands which are of critical importance to the survival of reindeer would also be destroyed.”

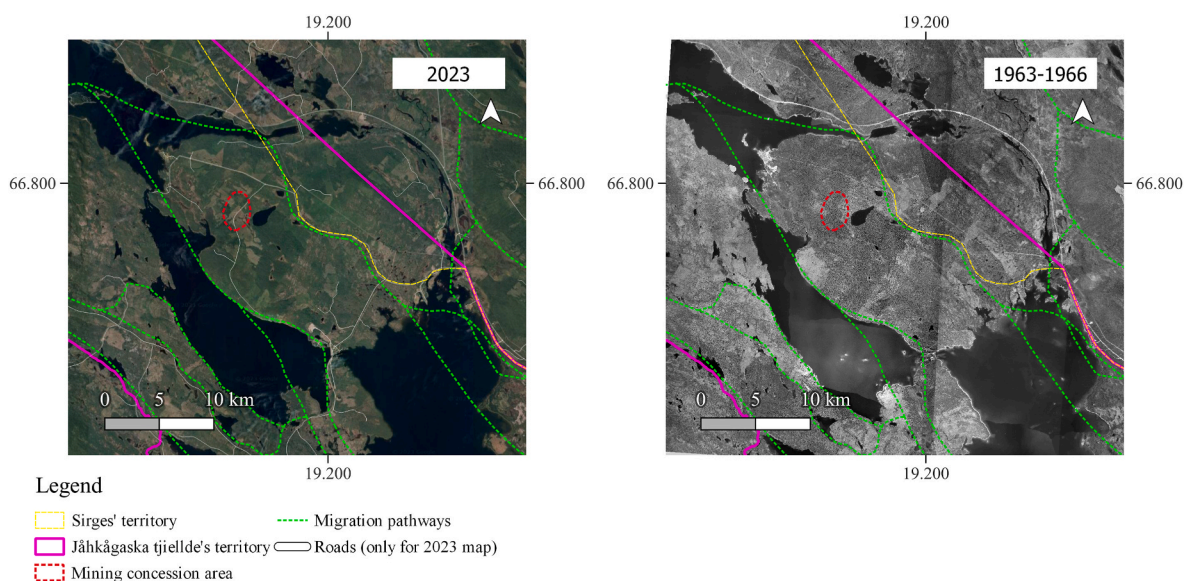
Many instances of claims-making followed until September 2013. The RHCs and SSR met with the responsible minister. Although the Sámi Parliament’s Youth Council early on had expressed their support, a RHC representative criticized the Sámi Parliament for not taking a stance; whom after having its members bussed to the manifestation issued a statement against mines in Sápmi. The mining project was debated in national television, artists threatened to boycott the famous Jokkmokk market if the municipality did not take a stance against the mine, the Swedish Tourist Association criticized the State’s mining policy, and more.

In September 2013, the Land and Environment Court approved the company’s right to conduct a test mining programme. Jåhkågaska tjiellde’s appeal includes three salient additions on the implications of an open pit mine in the area. First, the exploration license is located within a core area that is used as a gathering site with pastures while also being important for connectivity at the landscape scale as the area includes patches where reindeer like to graze over longer periods, migration pathways and resting pastures. Second, the migration between winter and summer pastures is difficult for pregnant does and increased stress levels due to the proposed encroachments may cause does to abort their calves to survive. Third, for the siida that frequently uses the area, there are no alternative pasturelands available. If the RHC cannot use the area e.g., as winter pasturelands, it would be an economic catastrophe for the RHC.

The CEO of the subsidiary of Beowulf Mining called the RHC’s assessment a lie, which was criticized by Jåhkågaska tjiellde’s lawyer and others. In October 2013, representatives from the two affected RHCs joined a mass demonstration in Stockholm calling for reforms of the Swedish mineral laws. Human rights organizations also got involved in claims-making, including critique from the UN’s Committee on the Elimination of Racial Discrimination. The Sámi Parliament issued a statement against the specific mining project, emphasizing the

<sup>3</sup> In this text, we focus on Jåhkågaska tjiellde, but a mine would also impact the neighbouring Sirges RHC.





**Fig. 4.** Maps of exploration areas, roads and migration pathways in Gállok outside of Jokkmokk on the territories of Jåhkågaska tjiellde and Sirges ([Länsstyrelsernas geodatakatalog](#), n.d.). Background images: satellite image from Google Maps (n.d.), and historical orthophotos © [Lantmäteriet](#) (1963, 1965, 1966).

importance of protecting functional relations at the landscape scale, and that these relations “are not allowed to be disturbed by exploitations to the degree that the cumulative effect of exploitations lead to the continuous annual cycle being threatened”.

In 2017, a new EIA noted that pastoralists currently reliant on the impacted winter pasturelands would need to move their reindeer to other pasturelands. But as these are already used by other siidas within the RHC, this would result in increased grazing pressure and additional workload to gather and separate reindeer belonging to different siidas. The 2017 EIA found that compensation would be “temporary” in that the affected landscapes would be restored to their “natural state” and eventually returned to original use – after how long, however, remained unspecified. It also mentioned that the possibility of impacts from human activity as well as from changes located elsewhere in the pastoral landscape. The surrounding mining logistics, whether roads or railways, emerged as key for compensation schemes in the EIA. The mine would involve massive amounts of material goods, centrally the transport of iron ore – one figure is that of 180 trucks carrying goods passing through daily. To minimize impact, the EIA suggests wildlife crossings for animals, or as suggested by Beowulf Mining in an assessment from 2021: “With regards to migration, for example, reindeer can be moved around an obstacle, such as a mine, using specific fenced corridors, Eco ducts or even trucks”. With such in passing mentioning, the company argues that “all the evidence shows that mining and reindeer herding could coexist at Kallak”.

Admitted by industry representatives, the company handled the conflicts poorly, and a larger mining-sceptical movement managed to mobilize enough support to politicize the mine in Gállok (see [Fjellborg et al., 2022](#); [Persson et al., 2017](#)). By 2017, the process slowed down as a final decision on the matter was to be decided on by the Swedish government. In March 2022, after years of postponements, and shortly following the Green Party leaving the coalition government in November 2021, the one party Social Democratic government approved Beowulf Mining’s permit application, now framing benefits of the mine in relation to the emerging “green transition”, while also stipulating compensation schemes to be adopted. To the extent that animal transport would be needed to compensate for loss of migration pathways, the company would have to pay for it, as well as for any needed protective measures around road infrastructure. The company would be responsible for returning the area to a condition conducive to reindeer pastoralism after the concession period.

Around 2022, new dynamics of claims-making emerged, dating back to previous activities. In 2020, the Sámi youth organization Sáminuorra had invited Greta Thunberg to Jokkmokk. Together with a delegation from Fridays for Future, she attended a protest event in Jokkmokk in February 2022, in part prompted by rumours of a pending government decision to grant a permit after the Green Party had left the government. At this time, Sáminuorra, Fridays for Future, Jåhkågaska tjiellde and Sirges and several other organizations, including activists from Luokta-Mávas, demanded the government to stop the mining plans in an opinion piece published in largest evening news magazine *Aftonbladet*. The Swedish Church sent out an open letter against the mine, and a petition campaign launched by activists amounted to 70 000 signatures, also delivered in February to the minister by the chair of Sáminuorra, the chair of the Sámi Parliament, and an author. These claims-making instances and those that followed included substantive critiques of the “green” re-framing of the project, invoked “climate justice” and “green colonialism” and garnered international media attention.

But contesting a mine is costly. In 2013, Jåhkågaska tjiellde could not afford to gather reindeer in the wide Lapponia area as planned, and as a result they had to alter their plans around buck slaughter (which is conducted in autumn and is a source of income). A study showed negative health impacts on Jåhkågaska tjiellde’s members: due to fighting more powerful actors that are also ignorant to Sámi livelihood and cultural practices; due to living with the uncertainty of if there will be a mine or not; due to the fear of losing possibilities for natural pasture-based pastoralism; and due to distress caused by actual environmental and climatic change. It is against this backdrop that, in November 2022, Jåhkågaska tjiellde received 2 million SEK financial support from the Greta Thunberg Foundation to advance their legal struggle for preventing the landscape transformation – which is where the struggles are as of the point of submission.

### 5.3. Forestry in Luokta-Mávas

In the mid-1800s, the timber frontier expanded up along the Piteå river throughout the lands of the Luokta-Mávas RHC ([Östlund and Norstedt, 2021](#)). By the mid-1900s, the intensive forestry regime, that includes silvicultural methods such as clear-cutting, monocultures, intense soil preparation, short rotation cycles and dense reforestation, had established itself in the region ([Lundmark et al., 2013](#)). By the 1960s, the lodgepole pine had been introduced in large scale ([Bäcklund,](#)

2016). Nowadays the “remaining un-logged forests are often protected in reserves or national parks” (Östlund and Norstedt, 2021), which means most forests have been managed in ways that create younger, denser, and more fragmented forests that worsen the amount and distribution of ground and pendulous lichens (see Horstkotte and Djupström, 2021; Harnesk, 2022).

Late in 2020, after years of intense negotiations, the State forest property owner and forestry company Sveaskog, in their deliberations with the Luokta-Mávas RHC announced plans to log 715 ha of their winter pasturelands (see Fig. 5). According to statements by representatives from Sveaskog, this move was prompted after years of negotiations “not having led to any agreement and that we have not conducted any forestry for several years”. In turn, Luokta-Mávas’ chair emphasized how they have continuously appealed logging permits but have limited hope in getting their concerns addressed. Instead, the chair expressed a perceived necessity of political actions through the legal system, similar to the prominent court case over hunting and fishing rights in the Girjas RHC.

Although the exact 715 ha are not publicly disclosed, Luokta-Mávas representatives claim that these forests represented much of the remaining un-logged forests in the area. Due to the already worsened amount and distribution of winter forage, and that it has the most Contorta (that “destroy our pasturelands”) out of all RHCs, the chair stated that the Luokta-Mávas RHC has 3000 less reindeer than their allowed 10 000 limit. Other representatives also highlighted the importance of continuous old-growth forests with pendulous lichens to deal with e.g., basal ice formation that makes ground lichens inaccessible, associated with increased frequencies due to climate change.

The announcement from Sveaskog prompted several protest actions. Activists from the RHC launched a social media campaign called #StandWithLuoktaMávas, referencing other prominent Indigenous protest campaigns, and were ready to block harvest machines if necessary. A press-release was published online, including statements from the chair that re-iterated the importance of lichens for reindeer pastoralism and articulated the colonial nature of the company’s actions:

“We’ve always been using the land. Sveaskog is abusing the land. They are well aware of our dependence on these lands. The government is well aware of us having the right to protect our ancestral land. Our lives don’t seem to carry the same worth as money.”

The press-release also contained support statements from Protect the Forest, the Swedish Society for Nature Conservation, and a human rights expert; criticizing the company’s actions as increasing greenhouse gas

emissions, reducing biodiversity, and worsening the RHC’s possibilities to practice their constitutional right to maintain and develop their culture. This was followed up by a digital petition that gathered over 33 000 signatures demanding Sveaskog “to officially and permanently withdraw their 700 ha clear-cutting plans”. The logging of “1000 football fields of natural forests” was framed as a death sentence to reindeer pastoralism and Sámi culture, as a misrecognition of Indigenous rights, and as a step towards failing to meet the Paris Agreement. This campaign quickly gathered support from youth, environmental, climate and human rights organizations, including Fridays for Future.

In November 2020, 29 RHCs, including Luokta-Mávas wrote an opinion piece in Aftonbladet; demanding that “Clear-cutting of hanging lichen forests and any other kind of natural forests in Sápmi must come to an immediate end.” Shortly thereafter, large Sámi organizations such as SSR, the Sámi Council, and the Sámi Parliament in Sweden also released public statements issuing forestry in Sweden to adapt its practices in ways that secures that the constitutional rights of the Sámi people are respected. The campaign was reported on internationally, framed by *Vogue* as the “Greta Thunberg-backed campaign” with Luokta-Mávas representatives politicizing the issue in the following way:

“My mother always says, and her father said before her, as long as the reindeer can live here, so can we. Now we’re facing a scenario where the reindeer will starve to death if this logging continues. As Indigenous people, our identity is in our surroundings. That’s why seeing all these forests getting cut down is like a wound to our heart. This land is our story — in destroying these forests, our home, they are not only destroying our history, but also our future.”

As a form of compensation, still in November, the company announced their cancellation of the plans to log all but the limited amount of forest that Luokta-Mávas had already agreed to log. The CEO said that this was done to “create space for dialogue with the RHC on how we together can create conditions for how forestry and reindeer husbandry can co-exist on these lands”. Shortly thereafter, due to “too much focus around the company being put on the conflicts with Sámi and environmentalists” the company forced the CEO to resign from her position to make for a new leadership capable of rebuilding the relationship with Sweden’s RHCs.

In 2021, claims came from more youth, environmentalist, climate, and human rights organizations such as Fridays for Future, the Field Biologists, Greenpeace, Amnesty, Solidarity Sweden–Latin America, who released (joint) statements and organized events in solidarity with

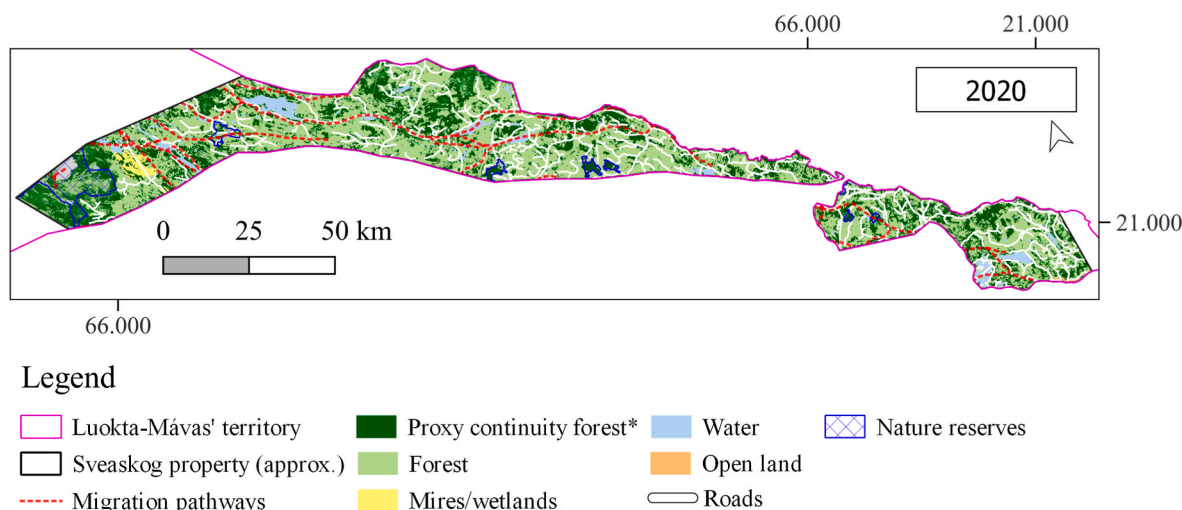


Fig. 5. Map of migration pathways, roads and land categories on land formally owned by Sveaskog in Luokta-Mávas’ territory (Länsstyrelsernas geodatakatalog, n.d.; Lantmäteriet n.d.-a, n.d.-b; Skogsindustrierna, n.d.). \* Proxy continuity forest shows forests not subjected to clear-cutting based on analysis of aerial photographs and satellite imagery from the 1960s until 2020 (Naturvårdsverket, 2022).

the struggles of the reindeer pastoralists. Claims in the public sphere mostly focused on criticizing the intensive forestry regime and protecting the remaining “unlogged forests” (e.g., continuity forests, natural forests, old-growth forests), and included protest actions in other RHCs. In another opinion piece in Aftonbladet, Luokta-Mávas and 34 other RHCs (as well as 20 non-Sámi actors and organizations standing in solidarity) criticized how 85% of Contorta plantations are located on reindeer pasturelands despite these creating impenetrable barrier effects in the landscape and areas where reindeer cannot find forage; demanding a ban on Contorta on reindeer pasturelands as well as plans to remove remaining Contorta, as demanded by SSR in 2017.

In their Sustainability Report for 2020, the company recognized the “strong public opinion, despite a completed negotiation process, against Sveaskog’s planned logging on the winter pasturelands of the Luokta-Mávas RHC in Norrbotten” and that “the reindeer herding community had, together with several influential individuals and organizations, expressed their critique of logging plans”. As a form of compensation, early 2021, the new CEO expressed a willingness to take the company in another direction; announcing an intent to increase pre-commercial thinning in reindeer pasturelands to promote ground lichen growth and sustenance by increasing light availability and to improve mobility (which at some places might require increased logging). But in April, as one out of many articles and opinion pieces on the topic in DN, representatives from Luokta-Mávas, SSR and Sáminourra alongside youth and environmentalist organizations demanded Sveaskog to instead base its practices on sustainable reindeer pastoralism, Indigenous and human rights, and climate justice:

“If natural pasture-based reindeer pastoralism should continue to exist, cleaning and pre-commercial thinning in previously managed forests is not enough. If Sveaskog really is to pursue functionality for multiple land uses, it starts with respecting the right of reindeer herding communities to their traditional livelihood, and a serious negotiation on what constitutes forestry adapted to reindeer pastoralism. Sveaskog claims that they want to implement joint landscape planning in dialogue with reindeer pastoralism. But the first step for this to actually work, Sveaskog must be willing to discuss the forms of their forestry. As long as landscape planning does not start with the question of IF an area should be clear-cut, but only WHEN and WHERE it should be logged, the situation between reindeer herding communities and Sveaskog can never be considered as “joint landscape planning”.”

In mid-2022, referring to reindeer pastoralism as one of the reasons, the company announced that they will for the next 5-year period reduce their final felling levels with about 1 million m<sup>3</sup>sub per year on their forest property that is categorized as productive forest land, and final felling levels will now be a 3.8 million m<sup>3</sup>sub and pre-commercial thinning 1,3 million m<sup>3</sup>sub. The company has since had new dialogues with RHC, including Luokta-Mávas. But for how long this will last, especially with the new capital friendly right-wing coalition government in control over the company’s ownership directives as of October 2022, and what, if any, alternative forest management and planning practices will emerge remains highly uncertain.

## 6. Discussion

Human-animal relations are profoundly affected by the status of multiple ecological functions across the landscape. Our theoretical framework opened for observing different and interrelated processes in the struggles around how Sámi pastoral landscapes are produced and contested under conditions of current industrial capitalist expansion of land-based production.

Our *3D threat model* provided heuristics on the possible implications of different types of landscape transformations on human-animal relations. In terms of *destruction*, our material in all three cases showed struggles against encroachments that would immediately eradicate

specific ecological functions. These not only included the specific forms of production, but also their surrounding infrastructure. Similarly, *disturbance* was connected to specific encroachments, mainly wind farms but also to Contorta plantations and surrounding human activity such as mining logistics, that prevents access to ecological functions during specific moments in time. In contrast, *degradation* worsened ecological functions over time e.g., amount and distribution of critical forage resources as was the case for forestry, but also in the land use change connected to wind farms. Our results also showed testimonies of pastoral landscapes already being significantly transformed and that the new wave of encroachments threatened human-animal relations, warranting redress. Although the 3D model itself was analytically useful, one should recognize that destruction, disturbance, and degradation overlap in practice at the pastoral landscape scale.

Our *2D struggle gradient* suggested that people may struggle against landscape transformations that threaten human-animal relations, and in our cases, the three RHCs (and their allies) made claims to protect and maintain such relations within their pastoral landscapes. All proposed compensation mechanisms represent *deepening outcomes*, as they all involved substituting ecological functions in the landscape with capital input, be it feed or means of transportation, or labour. Not only do statements from pastoralists in our material and the academic literature highlight risks with such outcomes in terms of human-animal relations, but our argument suggests that such deepening outcomes allow capital to further penetrate the livelihood and cultural practices of Sámi reindeer pastoralism. External threats are also costly to challenge, as are responses to actual landscape transformations, and although our material demonstrates an impressive will and capacity to contest encroachments, the social structural barriers to successful contestation are as clear here as well as elsewhere in the academic literature. In the logic of capital in the production of landscapes, if reindeer pastoralism is not profitable enough, hegemonic forces will likely continue to push for its gradual removal in favour of more profitable enterprises with support from prevailing institutions. In the three cases that we analysed, “downstream” struggles against landscape transformations at least sought to deliver *diminishing outcomes*.

In terms of *diminishing outcomes*, we find two salient points through our material. First, rejecting encroachments succeed at maintaining the status-quo. From the perspective of reindeer pastoralists, this is good news, but given the social structural conditions that continuously push for more encroachments (as long as they can be profitable), and the impacts of climate change on snow conditions, reforms at the State-level seems necessary to move towards net improvements for the possibilities for natural pasture-based reindeer pastoralism in ways that also diminishes the reach of capital. Second, two out of three cases have been successful at politicizing the new wave of encroachments. If considered as expressions of counter-hegemonic forces, it is good news that a State-owned forestry company decided to temporarily reduce its logging demand (i.e., infringements on profits-making), but here, too, reforms at the State-level could represent more stable outcomes in a net-positive direction. Since, under capitalism, hegemonic actors will tend to promote the production of most profitable landscape configurations, we believe that the successful implementation of such reforms for diminishing outcomes requires a push from a broader coalition of counter-hegemonic forces.

## 7. Conclusions

We approached our cases as representing struggles around the deepening reach of capital into the pastoral landscape on the one side, and the reorientation to diminish this process on the other. We considered the current expansion of land-based production into Sámi pastoral landscapes as driven by capitalist social relations, supported by underlying colonial and sedentary relations, and that these landscape transformations undermine natural pasture-based reindeer pastoralism, causing concerns for the Sámi reindeer pastoralists. These concerns, we

argued, simultaneously offer new opportunities for capital circulation through the integration of the semi-autonomous livelihood and cultural practices of reindeer pastoralists into circuits of capital through compensation schemes promoted by companies and facilitated by the State. Specifically, these compensation schemes may provide reindeer pastoralists with money to cover costs associated with supplementary feed and mechanized transport, which can serve as a re-enforcing mechanism that further deepens the reach of capital into pastoral livelihood and cultural practices in addition to the landscape transformation that justifies them.

Our ecologically informed radical geography perspective offered a new perspective on Sámi pastoral landscapes that is also relevant for the analysis of broader, both spatially and temporally, systemic movements of capital in and through landscapes in rural areas – and surrounding contestations. This approach enabled us to incorporate processes and phenomena that would not necessarily appear relevant from an analysis more narrowly focused on struggles over dispossession, such as contestations over supplementary feeding and animal transport and their role as conduits for deepening the reach of capital into semi-autonomous pastoral livelihoods and cultural practices. Our 3D model, moreover, enabled us to operationalize this perspective further, deciphering three different modes of landscape transformation with their distinct, parallel modes of capital circulation relevant for the study of pastoralism and other forms of rural and mobility-dependent livelihood and cultural practices. Adding to this picture, our 2D struggle gradient also allows for the analysis to show how rural populations, here reindeer pastoralists and their allies, at different ‘moments’ in the ‘totality’, actively challenge outcomes they find as problematic, which we conceptualized along the lines of deepening or diminishing outcomes for the reach of capital into human-animal relations. Although pastoralists that sought to maintain natural pasture-based reindeer pastoralism through public contestations had allies, the role of capital in driving landscape transformations would suggest the need for counter-hegemonic forces to build broader coalitions to combat hegemonic forces to promote alternative landscape transformations more powerfully.

#### CRedit authorship contribution statement

**David Harnesk:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Visualization, Funding acquisition. **Jostein Jakobsen:** Conceptualization, Formal analysis, Investigation, Writing – original draft, Writing – review & editing.

#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### Data availability

Links and references to our data can be found in the Appendix.

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#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jrurstud.2023.103162>.

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