Towards Just, Equitable and Sustainable Arctic Economies, Environments and Societies

Comparative Integrated Work Package Report for Justice in Participation and Governance

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NOTES

1) The European Commission terminated NARFU's participation in JUSTNORTH on 9 April 2022 in accordance with Article 50.3.1(b) of the Grant Agreement and based on Council Regulation (EU) No 833/20141, as subsequently amended, in response to Russia's military aggression in Ukraine.

2) Due to issues of travel to Russia for fieldwork and the impossibility of conducting fieldwork with remote methodologies by the team in Case Study 17 in the Covid-19 pandemic, this case study has not been included in this deliverable. Further work on the case study was cancelled in consultation with the Commission's Project Officer assigned to JUSTNORTH in late 2021.

EXECUTIVE SUMMARY

This consolidated report evaluates and contrasts the economic sectors examined in the case studies 13-16 and 18 of JUSTNORTH Work Package 4 (WP4). It provides an overview of the analyses of justice based on the results of the case studies, focusing on social, economic, and ecological systems and their interactions. The report integrates the research findings of JUSTNORTH deliverables D4.1-D4.3. It also evaluates and presents local applications of the ethical conditions of economic activities, the risks to stakeholders and ecosystem services, and finally, barriers and pathways to sustainable development under the theme of justice in participation and governance. Mechanisms for reconciling multiple ethics systems, potential national or subnational regulatory solutions, and ethics of sustainability are discussed. Through justice and value perspectives, this report compares the status of the economic activities introduced in the case studies. Based on the findings, stakeholders' ethical perspectives and criteria of sustainable development goals are presented to make recommendations on legal and regulatory pathways towards just and ethical sustainable development in the Arctic.

1. SUMMARY OF THE FINDINGS

Considerable growth in competition over natural resources due to climate change and the changed geopolitical situation increases the risks and impacts on ecosystem services and protected natural territories on which the life and well-being of people and communities in the Arctic depend. Industrial infrastructure development (e.g., wind farms, mines) affects northern traditional livelihoods and cultures, such as reindeer husbandry and nature-based tourism. In the JUSTNORTH Work Package 4 (WP4), case studies (CS) from Finland examined the planned Arctic Railway (CS13), mining (CS14), and wind farm (CS16) development, as well as nature-based livelihoods of salmon fishing, reindeer husbandry, and nature-based tourism (CS15). Carnivore governance affecting reindeer husbandry in Sweden was studied in the CS18. Essential questions of justice were how the land and waters should be used, by whom, who owns the right to use the natural resources, and for what purposes.

While there is a need for a sustainable, green, and just transition, little attention has been paid to the pluralistic meanings of 'justice,' which are inevitably interlinked with the uneven distribution of national benefits based on national policy goals versus local benefits, impacts and risks. For instance, national climate mitigation goals are pushing the development of wind farms but ignoring local negative impacts of this development. Especially cumulative and long-term consequences of Arctic economic development are causing concerns in northern communities.

In this research project, we used a value-based approach to study multiple land-use interests and value conflicts to identify mechanisms to reconcile these. The first value point, the United Nations' *Sustainable Development Goals* (SDGs), offered the possibility to consider each development from numerous vantage points and identify potential problems and trade-offs. Next, the concept of *Ecosystem Services* encompassing the so-called cultural, provisioning, regulating, and supporting services as value points were applied. The *Procedural Values*, in which relevant values of equality, freedom, rights, and transparency, were used to study ethical grounds for sustainability-centric economic decision-making. Furthermore, the *Substantive Values* approach enabled examining the values of human security, belonging, flourishing, and respect.

Sunrise in Enontekiö, Finland. Photo credit: Mia Landauer.

The WP4 results reveal that nature-based livelihoods are substantial and essential for the flourishing of the Fennoscandian Arctic communities, forming the basis of wellbeing in these remote areas. They provide local economic, social, and cultural values and benefits, which are now at risk due to the cumulative impacts of land-use, climate change, and strict nature protection requirements. For northern livelihoods, from the point of view of the SDGs, responsible consumption of natural resources, maintenance of environmental prosperity, and innovations are highly valued, and implementation of policies that support these both at local and national levels are urgently needed. Evaluation of participatory governance and co-production of scientific and local practitioner knowledge is needed to identify what just economic development means to different actors and sectors and what kinds of long-term benefits and opportunities it can provide if planned in a way that reveals potential drivers of value conflicts and diverse meanings of justice. The reconciliation of multiple land-use requires understanding the diverse ethical grounds based on multiple values, the cultural and spatial requirements of the different livelihoods, and regulations that enable the implementation of policies and practises considering these. If the rights and responsibilities regarding natural resource use are unclear, the distribution of risks, costs, and benefits cannot be(come) just.

2. OVERARCHING METHODOLOGY

The findings of this report are based on the JUSTNORTH project's internal deliverables D4.1 'Set of Contextual Case Study Papers on Justice in Participation & Governance' D4.2 "Set of Case Study Value Indicators for Justice in Participation & Governance" and D4.3 "Set of Case Study Discussion Paper on Stakeholder Ethical Perspectives and Barriers to Sustainable Development". These were compiled by the WP4 teams of each Case Study (CS13-16 and CS18). The purpose of this report, D4.4, is to compare and synthesize the CS findings by providing 1) a comprehensive overview of the existing context of the economic activities studied in CS13-16 and CS18, evaluating 2) their ethical condition, 3) the risks to stakeholders and ecosystem services, and finally, 4) barriers and pathways to sustainable development and finally, to make the findings of the WP4 results publicly and freely available, including recommendations.

The data collection methods of D4.1- D4.3 consisted of a comprehensive review of academic literature, policy reports, and legal documents. The legal documents consisted of national or supranational laws and Acts (Appendix I). If available, English translations of the laws were used—the policy reports comprised publicly available policy papers, official strategy documents, and industry reports.

For the D4.2 and D4.3, altogether approximately eighty semi-structured stakeholder interviews were conducted from October 2021 to March 2022. The questions were formulated together with the WP4 team.

The interviewees were local, regional, and national governmental authorities, businesses and industries, local politicians, and residents, of which some of them identify themselves as indigenous, and some of them representing nature-based livelihoods (reindeer herding, salmon fishing, nature-based tourism) in Finland and Sweden. All interviews were audio-recorded and transcribed. The interviews were conducted in Finland and Sweden (except two in Norway) and on Microsoft Teams due to the COVID-19 pandemic. Some key informants were invited to JUSTNORTH roundtable workshops organized in Rovaniemi, Finland, and different locations in Sweden during the project.

Pyhä-Luosto National Park in Finland. Photo credit: Mia Landauer.

To analyse the material for the D4.2, the JUSTNORTH value indicators approach provided by the WP1 was applied (Wood-Donnelly and Sidortsov, unpublished). The Value Indicator Groups encompassed Ecosystem Services Indicators: cultural, provisioning, regulating, and supporting; Procedural Value Indicators: equality, freedom, rights, and transparency; Sustainable Development Goals related Value Indicators: conservation, environmental protection, and sustainability; Substantive Value Indicators: human security, belonging, flourishing, and respect. The JUSTNORTH Analytical Handbook for Justice Research (Ohlsson et al. unpublished) guided the D4.3 empirical analyses.

A content analysis (sensu Neuendorf 2016) was performed for the whole dataset using NVivo qualitative analysis software.

3. HUMAN AND NATURAL SYSTEMS:
the perceived and desired positive and negative impacts, risks, and benefits across the economic sectors

3.1 Comparative summary organized by key actor (stakeholder) type

Table 1 depicts stakeholders' perceptions of the case studies CS13 (Arctic Railway), CS14 (mining), and CS16 (wind power) on positive and negative impacts, benefits, and risks related to these industrial activities in northern Finland. The table shows that stakeholders' perceptions of mining, wind farms, and the Arctic Railway are heterogeneous. The benefits and impacts of industrial projects vary spatially and temporally. For example, although there is consensus among stakeholders about the negative impacts of mining on natural systems locally and regionally, their perceptions differ, particularly considering the impacts affecting local livelihoods directly and in the long term. Wind power development is another example. While wind farms have significant adverse landscape effects locally and potential hindrances of wind mills and power lines to critical infrastructure such as radar systems, they produce clean energy, contributing to national climate mitigation targets. These examples highlight a value conflict due to pluralistic land use interests across scales, in this case national versus local.

The positive local impacts of wind farms and mining development are related to economic benefits, e.g., such as via municipal taxes or employment opportunities. Especially mines bring along local services and employment, thus positively affecting demographics in areas characterized by outmigration. Negative impacts relate to physical effects, such as noise and dust, and aesthetic impacts, such as landscape fragmentation, which affect other livelihoods, such as reindeer husbandry or nature-based tourism. The negative impacts encompass decreasing possibilities to practice these livelihoods due to disturbances and reduced environmental quality affecting the resource base of these nature-based livelihoods – the natural environment.

The negative impacts are critical because compared to these large-scale industries, nature-based livelihoods are practiced by local businesses and entrepreneurs and are tightly interconnected with the environment, local culture, and way of life in

the North. In addition to positive impacts of the nature-based livelihoods on local economies, they represent age-old traditions such as reindeer herding and salmon fishing with high cultural values. While their negative impacts on natural systems are mostly minor and mainly local, the benefits to the human systems, such as employment benefits, intra- and intergenerational socio-cultural benefits, and food security, are significant.

The justice implications of large-scale industrial projects cannot be understood without assessing their (cumulative) impacts on nature-based livelihoods, which drive the land-use conflicts in Lapland, as they are all operating in the same area. This is visible in the land-use situation in the reindeer husbandry area of Finland (Fig 1.). These conflicts cannot be resolved without considering the different ethical and value systems playing a role in these complex social-ecological-economic systems. Environmental impacts of industrial projects are affecting not only environmental values but also the values of human systems, such as socio-cultural values.

Table 1: Comparative summary of the perceived and desired positive and negative impacts, risks, and benefits across the *industrial* activities (CS13, CS14, and CS16), organized by the stakeholder types. Impacts on human systems are represented as light-blue columns and on natural systems as light-yellow columns. The plus and minus signs denote perceptions of which the interviewees of the stakeholder group agreed upon the risks and impacts, whereas the tilde -sign "~" denotes if they disagreed.

Economic activity / Stakeholder type	Arctic Railway		Mining		Wind power	
Large industry	+	~	+	-	+	+
Local business	+	~	+	-	~	-
Indigenous organization	-	-	-	-	n.a	n.a
Non-governmental organisation (NGO)	n.a	n.a	~	-	+	+
Local government	~	~	+	-	+	~
Regional government	~	~	+	-	+	~
National government	+	~	+	-	+	+
Local community members	n.a	n.a	~	-	-	-
Indigenous community members	-	-	n.a	n.a	-	-

Note: Each row represents the perceptions of a stakeholder group within each case study, e.g., local business representatives interviewed in the CS13 were not the same group as those interviewed for the CS14.

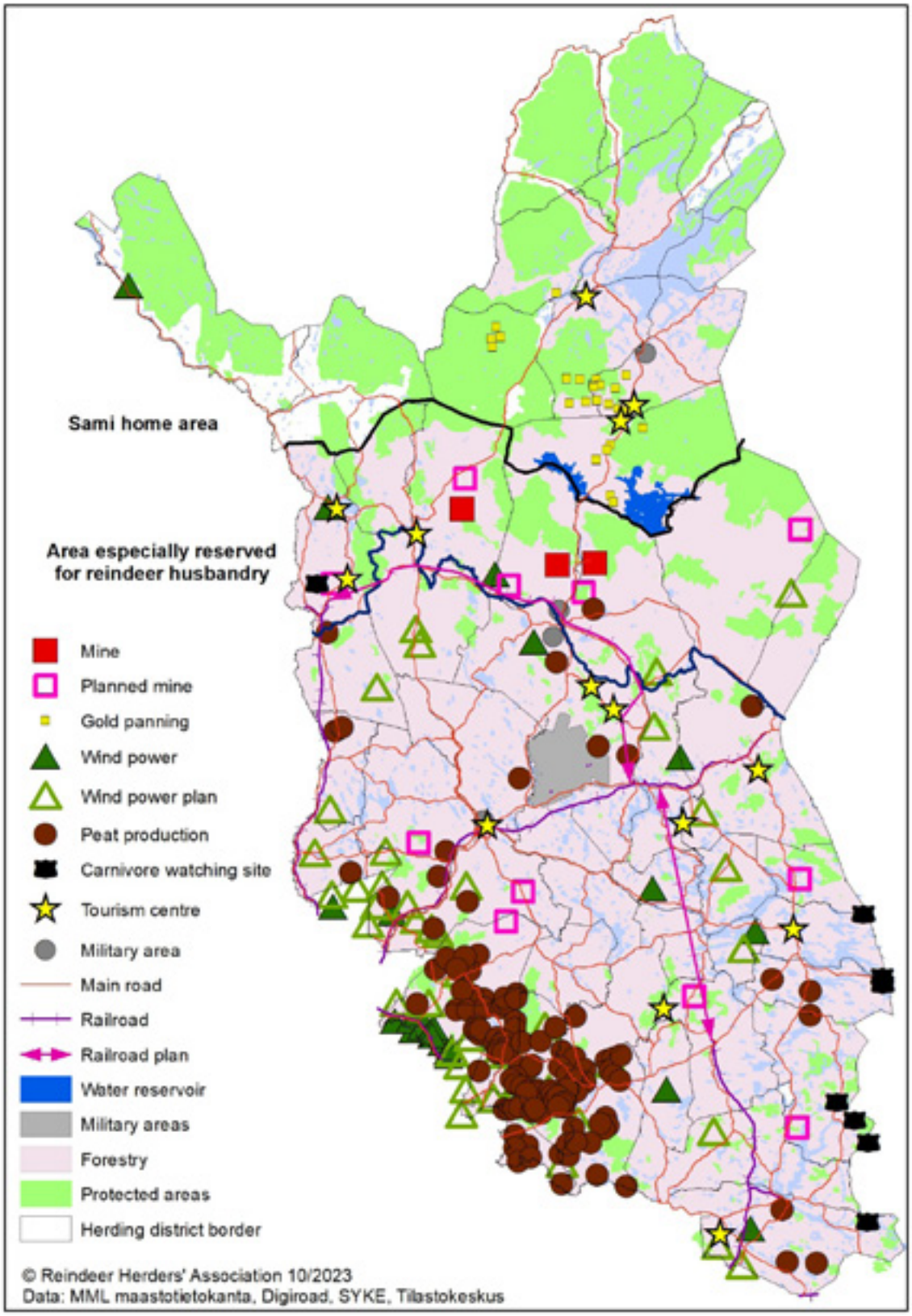

Figure 1: Land use in the reindeer husbandry area of Finland. Map credit: Reindeer Herders' Association 10/2023. Printed with permission.

3.2 Comparative summary organized by the applicable SDG

For the above-mentioned stakeholder perceptions of the risks, benefits, and impacts, the sustainable development goals (SDGs) that could be identified as the most applicable to WP4 are 8, 10, 11, and 15. Reasons for their applicability in Finnish and Swedishg Lapland are presented as follows:

SDG 8: Decent Work and Economic Growth

Employment and long-term maintenance of the local livelihoods are the central benefits perceived by the stakeholders related to the activities examined in the case studies. The employment opportunities offered by large-scale industrial projects and traditional livelihoods that benefit the local communities were emphasized across the cases where these were studied. However, according to the findings, the current industrial resource development projects tend to have high educational and know-how requirements for workers due to high-end technologies (e.g., mining projects). In addition, these projects tend to attract and demand workers outside the local region, reducing the direct employment benefits to the local communities. In any case, local knowledge and expertise are needed to evaluate risks and impacts on local livelihoods and residents. Nevertheless, it should be mentioned that economic growth per se was not an explicit point of discussion compared to the demand for environmentally and socially sustainable use of natural resources, a major theme within all case studies.

SDG 10: Reduced Inequalities

An issue frequently discussed in all case studies concerns "historical wrongdoings" and cumulative impacts and how to manage these. Northern Fennoscandia has a considerable history of large-scale industrial development, such as hydropower, mining, and forestry. New infrastructure projects, such as new mines, the planned Arctic Railway, and wind farms, are the latest additions to this development. At the local level, these are sometimes perceived as resource colonialism by some local communities and an issue of generational inequality related to rural vs. urban relations. At the national level, these are perceived as an essential part of the ongoing green transition, including the EU Green Deal. Such large-scale projects may, however, reaffirm the perceptions of resource colonialism. Nevertheless, as already mentioned, the projects create local jobs and opportunities and contribute directly to local and regional economies. Tradeoffs are inevitable and must be negotiated, both locally and nationally.

River Teno in Utsjoki, Finland. Photo credit: Jussi Kestilä.

SDG 11: Sustainable Cities and Communities

Nature is an integral part of everyday life in the rural Arctic and its livelihoods, such as reindeer husbandry, which follows a seasonal cycle and is practiced in natural environments and pristine landscapes. For local people in the North, nature relations often begin as a "hobby." It is fun to go fishing, it is lovely to get a catch, one is proud to get a hunting license, and there are memorable moments spent by the campfire after picking berries in the forest. At the same time, one can observe nature and teach kids the ancient names of the hills, lakes, and rivers and how to respect and live alongside nature. This natural bond, which might seem self-evident for local people, would be an essential factor to consider for anybody to be able to understand the interconnectedness of the values given to natural and human systems: the cultures, lifestyles, and diversity. Often, locals feel that decision-makers outside the region are asserting their way of life and the values of the northern communities. Understanding this requires an exceptional ability and sense by the officials and policymakers.

SDG 15: Life on Land

Industrial infrastructure development such as mines, wind farms, and railways cause considerable local environmental impacts and landscape changes. Practitioners of nature-based livelihoods impacted by them face top-down governance mechanisms and regulatory barriers when trying to raise the issue. However, overall, the responsibility of the states and the EU to regulate land use and industrial infrastructure projects plays a significant role in halting biodiversity loss and protecting fragile Arctic terrestrial ecosystems. Positive is also that environmental values are reflected by the current nature-based tourism and outdoor recreation behavior trends and demand for learning from and respecting culture and traditions, experiencing nature, and understanding the health and wellbeing value of its silence and peace.

4. THE ETHICS CONDITION OF THE ECONOMIC SECTORS: a comparative analysis

The socio-cultural and environmental values and practices in the northern communities are strongly connected to nature-based activities (see CS15, 16 and 18) and businesses (see CS13-16) that reflect the long history of Lapland's natural resources use. Common to all case studies is that when comparing the economic activities' justice implications, there is a desire to improve participation, especially for young generations, in the planning processes and have legislation that gives the local people a fair opportunity to be heard in decision-making. In the case studies, we identified ethics conditions of the economic sectors that can be divided into 'awareness of climate and environmental issues' related to rail transport as well as salmon and reindeer, 'socio-economic diversity' related to mining and wind farms, and 'indigenous perspectives on industrial development' in Arctic economic development especially related to Arctic railway, mining, and traditional livelihoods. Furthermore, we discuss ethical conditions in relation to legal and governance mechanisms from the viewpoint of traditional livelihoods regarding the implementation of these mechanisms and related challenges in practice.

Awareness of climate and environmental issues

From the climate mitigation point of view, **rail transport** is a better means of transport than road traffic, considering that transport is likely to increase due to the industrial development of mines and the growth of wind farms. The media and the government in Finland tend to highlight industrial development's positive aspects, such as the climate benefits of wind power, which raises a value conflict at the local level where the development's risks and costs are born among the residents. **Salmon and reindeer** are considered natural products of Lapland in Finland and Sweden, which are economically, culturally, and ecologically important. Among tourists and recreationists, environmental awareness has grown. Growing citizen activism has increased public awareness of **mining and wind power** projects' environmental and social impacts, which tend to help raise the voices of local communities impacted by the projects.

Socio-economic diversity in industrial infrastructure development

Large investments in one type of business such as mining (CS14) can transform local economies into "mono-economies", which can reduce the economic diversity and communities' resilience in case of climate-related disasters, for instance. **Mining and wind power** development currently strengthen the view of Lapland as a natural resource colony if they would rather benefit financial hubs in southern Finland and multinational companies than local people or benefit locals only in the short-term and cause long-term environmental impacts. Indeed, wind farms (CS16) employ very few people locally, even though projects are often marketed in these terms. Instead, many of Lapland's tourism entrepreneurs are local people, including Sami entrepreneurs. Tourism business, e.g., combined with conventional reindeer husbandry, is also one way to preserve traditional livelihoods and culture when the income from conventional reindeer husbandry alone can be modest. This became particularly visible during the COVID pandemic.

Indigenous perspectives on industrial infrastructure development

Large-scale projects exploiting natural resources generally cause strong emotions among the locals because of the historical wrongs the previous generations have encountered with the previous land-use projects. Therefore, from the regulatory perspective, for example, *Article 17 (3)* of the *Constitution* of Finland contains the constitutional basis for the status of the Sami. It aims to protect the Sami's cultural form, including their **traditional livelihoods** such as reindeer husbandry, fishing, and hunting, which are now at risk due to industrial infrastructure development. Furthermore, *Finland's Reindeer Husbandry Act (848/1990)* also states that reindeer husbandry is a central part of Sami culture, which must be protected.

Building the **Arctic Railway** for transporting cargo through the Sami Homeland can be seen as a new step in seeing Lapland as a national and global resource reserve. It would strengthen the resource-extractive industry, such as mining (CS14), but likely weaken possibilities for traditional livelihoods (CS15). A decision not to build the railway could be a step towards recognizing the rights of the Sami by some while showing that their culture and way of living matter and will not be swiped away as a relic of history. This example clearly shows that building dialogue and trust is needed in any negotiations considering land-use development in Lapland (CS13).

Towards sustainable and just governance of nature-based activities: rules and rights

When comparing the regulatory frameworks with reality, i.e., how the rules and laws are implemented in practice, distributive justice issues arise: the distribution of risks, benefits, and costs are not necessarily equally distributed. For instance,

national legislation and binding international agreements on fishing are based on the premise that the fishing of migratory fish such as salmon (CS15) must be on a sustainable basis, regardless of who owns the right to fish. The basis for **salmon fishing** rights is that the right to fish belongs to the owner of the water area. In the case of River Teno in northern Lapland, part of the river basin belongs to the state and part to the private owners of the watershed. However, Teno is a border river, and its fishing is co-agreed in the *Teno Fisheries Agreement* and regulations with Norway. This agreement should guarantee the local population's right to fish salmon. However, according to the stakeholders interviewed, the contract's constitutional legal basis is lacking. Problems appear because different stakeholders compete for a large percentage of salmon fishing. Teno is a major recreational fishing river, and the agreement stipulates that part of the fishing rights will also be reserved for fishing tourists. Local tourism entrepreneurs would also like fishing tourists to have a sufficient share of salmon fishing.

If, based on purely scientific evidence, fish stock is endangered, fishing will be strictly regulated. Ultimately, for such reasons, the government decided to ban salmon fishing at Teno River in 2021, 2022, and again in 2023, based on the current Agreement. This has already caused significant negative economic and cultural impacts on the area's traditional fishing and nature-based tourism. It is estimated that Utsjoki's economy has decreased by more than 5 million euros as a result of the fishing quota since 2017, affecting salmon tourism (details in Knuuttila et al. 2020). Since the almost three years total ban on Teno salmon fishing, both fishing-based tourism in the area and traditional fishing practices have been on hold.

At Tornio River, the use of the Finnish-Swedish border waters has been agreed upon in the *Border River Agreement (SopS 91/2010)*. The primary purpose is to promote cooperation in water and fisheries matters. According to the CS15 findings, the co-production of knowledge between scientists and local fishermen exists, but it has not become a regular practice yet. However, this kind of co-produced data would be needed to gain more holistic knowledge for decision-makers on the environmental, socio-cultural, and economic impacts of such restrictions.

Regarding sustainable and respectful **nature-based tourism** management, the growth of nature-based tourism and outdoor recreation also requires usage restrictions and guidance on resource use to protect recreational areas and avoid conflicts with traditional livelihoods such as reindeer husbandry. This has been considered in the service concept and taken seriously within the national park management in Lapland in Finland by preparing management plans, including rules of order, and providing information along the recreational routes. This shows that

shared knowledge helps implement rules in a way that also considers the values and practices of local livelihoods.

Implementation of compensation mechanisms to maintain reindeer husbandry: fairness or failure?

In the case of **reindeer husbandry** in Finland, the state compensation of climate change-related losses is usually paid to herding cooperatives, not to individual herders directly. This means not necessarily to those herders affected by the impacts the most. Furthermore, the herders consider the government process for compensation decisions very slow (CS15). This circumvents implementing proactive and immediate actions, such as supplementary feeding of reindeer, which is costly and work intensive. Regarding climate change impacts on reindeer husbandry, such as sudden rain-on-snow events that increase reindeer mortality, the herders argue that compensations should be paid right after the damages occur, as has been done in Norway, for instance.

In Sweden, the negative issues are related to how reindeer owners participate in the **carnivore governance** process in which they need to spend time and resources negotiating policy goals they do not even desire (CS18). The CS18 could not identify any transformative processes in the carnivore compensation system in Sweden that would lead to systemic changes that would, in turn, increase justice. Sweden's current carnivore compensation process reiterates and reinforces an asymmetrical and nonreciprocal participation form and lacks recognition of **reindeer herders**. The rights of carnivores over reindeer and the interest of hunters and wildlife protection groups over reindeer herders take precedence in carnivore governance, following colonial conservation patterns. These structures and conservation ideals are reinforced by not adequately including the perspectives of reindeer herders in the planning or decision-making processes. The collective payment of carnivore compensation reinforces democratic deficits and inequality within reindeer herding cooperatives. Compensation is considered low and inadequate, and it alleviates the most urgent need of reindeer owners, which is not only about carnivore damages but also threats from other land use. Focusing solely on compensation increases the monetization of herding but undermines its cultural value and the socio-ecological basis of livelihood. Furthermore, without looking holistically into the conditions shaping reindeer husbandry's viability and sustainable development, compensation will not help in the long term, as found by the CS18.

5. COMPARATIVE ANALYSIS OF THE VALUE INDICATORS ACROSS THE ECONOMIC SECTORS

In the case studies, we used the value-based approach of JUSTNORTH (Wood-Donnelly and Sidortsov, unpublished) to study multiple land-use interests and value conflicts to identify mechanisms to reconcile these. Regarding the given JUSTNORTH value-framework, in this section, we present examples from the case studies on how these values (see the sub-section titles below) appeared among different types of actors and what challenges were associated with their interpretation and identification in practice.

Procedural values: equality, freedom, rights, transparency

In the case of the **Arctic Railway**, the perceived lack of procedural values, transparency, rights, and equality has increased mistrust in decision-making. Legal rights and recognition of indigenous communities in the planning procedures are called for. In the case of industrial "megaprojects," early consultations with the local communities are considered very important: the rights and well-being of Sami are the critical values from the land use and regulatory perspectives.

Procedural values regarding **mining** are also the ones that all stakeholders highlighted: Equality of participation in planning mining activities and related processes is considered critical. The transparency of decision-making processes, open communication, and knowledge production were seen as core values of these processes, which need to be strengthened. Local stakeholders emphasized that a proper understanding of the history and culture of the region is essential for equal participation. The uneven distribution of resources and lack of (local) knowledge, transparency, and power in processes and negotiations caused concerns among locals.

Regarding participatory processes related to **windfarm** planning in Finland, there have been significant problems with public hearings, as local people feel that they are not heard. Although the hearings required by law have been organised, they have not resulted in changes that would benefit residents bearing most of the risks.

As a result of such processes, the local people do not find the procedure reliable or transparent. Nevertheless, according to government officials, for **nature-based tourism** management in national parks, equal treatment of local entrepreneurs operating in the area is considered important.

Equal participatory processes in land use planning are considered of utmost importance for **traditional livelihoods**, especially from the local communities' point of view. Local knowledge is needed as strict fishing restrictions and regulatory changes considering **salmon fishing** rights limit local economic possibilities, such as salmon tourism and maintaining traditions based on salmon fishing. NGOs argue that there should be a legal basis that reduces disputes between different groups of people. For instance, they call for more equality when determining catch quotas; they cannot tolerate the "power of money" of the wealthier to retain higher quotas.

Local **reindeer herding** communities in Finland stress that they should have a legal obligation in the entire reindeer husbandry area, considering the right to negotiate when planning land use that affects reindeer husbandry. They think it is essential to be transparent and provide reliable information and guidance. Reindeer herders in Sweden perceive a lack of justice in procedural measures and clarity in enforcing **carnivore management** tolerance levels. The authorities do not fully recognize reindeer herders' estimations of the damage caused by carnivores. In negotiating with authorities, traditional knowledge is subordinated to the knowledge system enforced by authorities for documentation and a legitimate evidence base.

Ecosystem services: cultural, provisioning, regulating, and supporting services

From the nature-based livelihoods studied in this work package, both **reindeer** and **salmon** are considered a valuable part of the ecosystem services, as they provide particularly cultural and provisioning services, according to all interviewed stakeholders of the CS15. Particularly local tourism entrepreneurs fear that the value of cultural services may decline due to biodiversity losses and sudden habitat changes caused by **wind farms**, as revealed by the CS16. Wind power companies, on the other hand, largely see that different issues can be reconciled. However, the Finnish Wind Power Association stated that Finland may also have "no-go" areas. The values associated with the ecosystem services did not appear in the data from industrial infrastructure actors. This might indicate a lack of priority or lack of awareness of ecosystem service values in the planning and development of these industries.

Atlantic salmon (Salmo salar). Photo credit: Jussi Kestilä.

Substantive values: human security, belonging, flourishing, respect

The analyses of the values of respect and human security especially indicated a strong tension among local communities due to a lack of respect within the planning process of the **Arctic Railway**. Human security was considered a local and national security supply issue in the CS13.

The **mining** industry is a significant contributor to local and regional economic wellbeing. It provides opportunities for decent work and can create a sense of belonging and inclusivity in remote regions. But modern mining is technology-intensive, and the requirements for skilled labour are sometimes beyond local labour markets. Furthermore, the economic values gained from mining can be contradictory to the flourishing of other economic sectors or social well-being. Moreover, mines are often the single most significant contributor to the local economy, but only for a limited time. Without long-term planning, the local economy can become unbalanced and face social and economic risks.

According to the stakeholders, **reindeer herding**, **nature-based tourism**, and **salmon fishing** increase northern communities' capability to flourish and strengthen the inclusivity of the livelihoods in the North. The injustice claims of herders regarding carnivore management in Sweden are centrally rooted in substantive value conflicts concerning issues of (dis)respect to traditional know-how, which undermines human rights.

Sustainable Development Goals (SDGs): conservation, environmental protection, sustainability

Mining can undermine environmental values and values related to human security and health as mines have direct environmental impacts. All mining stakeholders considered environmental and social sustainability as the fundamental value of mining development. They agreed that environmental protection and restoration must be at the core of decision-making and planning.

Environmental protection, the need for further conservation measures, but also fears of overly strong conservation were highlighted in the **Arctic Railway** case.

Carnivores are seen as key to biological diversity and as part of the value of environmental protection. Still, in this context, the ecosystem services provided by reindeer husbandry are undervalued, according to **reindeer herders** in Sweden.

For **nature-based tourism** management in Finland, the same principles should apply to everyone, considering the diversity of local businesses, but it should not undermine the region's environmental values. National parks management follows the principles of sustainable tourism while they value conservation and emphasize responsible consumption and production, applying the *Law on Metsähallitus* (234/2016). To maintain sustainability, demand for innovative thinking exists. The **reindeer herders** reflected that even more attention in tourism management should be paid to preservation.

6. COMPARATIVE ANALYSIS OF THE ECONOMIC ACTIVITIES

through the lens of barriers and/or opportunities for sustainable development

The opportunities for industrial infrastructure development are employment and economic diversification opportunities. However, the diverse interests across local, regional, and national scales create confronting ideas about social justice, sustainable land use, and conflicts between multiple land users. The preference and value differences are barriers leading to tensions and perceived injustices related to rights to the utilization of ecosystem services. The justice issues concerning traditional livelihoods are rooted in the historical developments of the use (and abuse) of common goods. Especially the postcolonial, indigenous, and landscape justice perspectives applied in the case studies reflected this.

The questions of rights and implementation of the law are particularly relevant when considering to whom the land and water rights belong, whether the use of natural resources is distributed fairly, or who can participate in decision-making. Very heterogeneous stakeholder preferences of these were found across the different case studies. The unequal distribution of benefits and opportunities on human systems versus the distribution of environmental impacts is at the crux of the experienced injustice by the locals. Considerably intense polarisation of some stakeholder groups' opinions, attitudes, and values emerged, which seems to be a significant barrier to industrial infrastructure development, such as in the case of the Arctic Railway. A vital concern of the local stakeholders is whether adverse environmental risks and impacts of industrial development could outweigh its benefits in the long run.

One strong driver of conflicts is the ‚top-down' regulatory steering: to protect certain fish species or carnivores, land-use guidelines, and municipal zoning to earmark certain areas for specific land use (e.g., mines and wind farms or railways).

Pyhä-Luosto National Park in Finland. Photo credit: Mia Landauer.

Lack of consideration of potential cumulative impacts in land-use governance, or lack of participatory governance and local knowledge, were frequently mentioned barriers to holistic planning processes and outcomes.

Indeed, the most significant value conflict between different stakeholders seemed to be procedural: The power of industrial development over local people's voices in land-use governance has led to injustices and even violations of indigenous and human rights. Equality of participation and information transparency were deemed important requirements for any successful planning and evaluation process. The biggest problem is that decision-making has been taken too far from the local level, there is no "common language" to speak, and there is a lack of trust between the parties. Even the concepts used in the different phases of the process are difficult to understand for those participating in the hearings and the different stages of the processes are unclear. Participants would require an interpreter or even their own lawyer to accompany them, but resources for these are lacking.

7. COMPARATIVE ANALYSIS OF THE MECHANISMS FOR RECONCILING MULTIPLE ETHICS SYSTEMS

for aligning ethical grounds for sustainability-centric economic decision-making with the desired positive impacts and benefits and acceptable negative impacts and risks

What is needed to be able to reconcile different interests and values? The way of life in the Arctic remote areas is centered around nature and ecosystem services. The biggest contradiction and problem with the current policy statements, industry, and government outlooks is the ignorance or lack of knowledge of the way of life of the northern people. In the communities of the North, cultural growth occurs in a social environment where family and kin relationships are essential. National authorities and policymakers require an exceptional **ability to understand the meaning and value of culture and its lifestyles, nature, and diversity**. Although the risk perceptions, risk tolerance, and perceptions on just participatory processes related to natural resources management differ among the stakeholders interviewed in the WP4, consensus on the formation of (systemic) risks, wicked problems, and related negative impacts seems to exist: Land use, climate change, and state (top-down) governance of natural resources are the main drivers of them. Difficult trade-offs must be negotiated, such as whether culture should be preserved or economic development implemented at any cost.

Land-use conflicts in Lapland cannot be solved only with legislative means. The values of stakeholder groups are sometimes so different that we can talk about pluralistic worldviews. Some see industrialization and economic growth as an obvious development that will gradually supersede traditional livelihoods. In contrast, others defend the possibility of continuing opportunities for ages-old traditional ways of living. The current debate forces actors to **take responsibility** because local people are aware of their rights and see values in their environment besides economic ones. All stakeholders value the environment but still, there are

varying preferences on how and by whom land-use planning and conservation measures should be done. To assess these, **participatory governance** is needed because contemporary top-down governance is considered old-fashioned and inefficient in regulating and reconciling economic development or traditional livelihood practices in a just and sustainable way.

Furthermore, to ensure the long-term social, cultural, and economic sustainability of the traditional livelihoods and maintain possibilities for future generations to practice them, some fundamental issues in the current legislation and policy on land and water use should be noticed and revisited. **Decentralisation of power** and more self-governance of traditional livelihoods would be needed to include **local knowledge** in decision-making and planning. This would also help **build trust** between actors across different levels of governance and **increase knowledge and awareness** of the needs of the livelihoods. More **resources** would also be needed for local communities and livelihoods to prepare for the changes and for the participatory processes.

According to local people, tourism entrepreneurs, and reindeer herders affected by the wind power projects, the planning processes have been unclear due to a lack of **transparency in communication**. The whole process causes stress and affects the wellbeing of individual families and communities. The public hearing situations can be very emotional, so people should be offered **psychosocial and legal support** because they must think about serious questions about their families' and livelihoods' future.

The CS18 from Sweden illustrates that the current carnivore **compensation** system is not able to accomplish the desired outcome to significantly reduce the impact felt by carnivore damage on reindeer husbandry. The carnivore governance system lacks **inclusivity** as it does not acknowledge reindeer herders' traditional knowledge of carnivore damage, thus failing to provide peaceful and inclusive societies for sustainable development. Carnivore governance needs to **build on indigenous rights of consultation and self-governance**. Indigenous claims on carnivore damage are not classifiable by data collection legitimized by authorities and need to be acknowledged by accumulating a **local knowledge base** for how carnivore damage and presence could be approved using traditional ways of knowing.

Wind mills in Northern Finland. Photo credit: Mia Landauer.

Balancing between differing worldviews is, in principle, the purpose of the state in Finland. Still, in practice, past historical wrongs have eroded the locals' confidence in the national aims and made land-use conflicts extremely difficult to solve. The case of the Arctic Railway shows that historical wrongs, together with diminishing space for engaging in various old and new business activities, make conflicts of values between stakeholders sometimes irreconcilable justice issues. **Early consultations and dialogues** to build trust would help.

Public authorities and mining companies should use **more time and resources to interact** with those potentially affected. Moreover, continuous interaction after formal decisions would help understand local people's needs. The government of Finland has also achieved a political agreement that it will introduce a mining tax. The ***Mining Act* reform** and related **mining tax reform** can significantly change the role of local governments. The regulation concerning pollution is quite strict. The lack of obligatory **ecological compensation** for mining is considered a significant deficiency in case of biodiversity loss.

So far, a mining permit has always been granted if a mining project fulfills specific technical requirements, and environmental permits are given if the project meets environmental standards. Social implications of mining for the area may be considered only if there is a clear and observable link between environmental and social impacts. **Spatial planning** will allow a local government to make decisions from a larger perspective. It can prevent the realization of a new mining project if it considers that negative impacts on other livelihoods and local people exceed the benefits. Consequently, the crucial issue is whether or how **democratic decision-making** functions locally.

Although a mining company should cover the direct monitoring costs according to the "polluter pays" principle, the local government could **strengthen its expertise and abilities** to contribute **to collaborative monitoring** programs with local people. However, there is a challenge to which new reforms are unlikely to bring improvements. For example, due to the loss of pastures, reindeer herding suffers from mining. Because no new pastures are available, spatial planning or increased revenues cannot directly solve this problem.

Linking the justice issues identified in our empirical material to **EU policy and law** is challenging. Local people are drawing attention to concrete and visible matters at the local level, and the role of strategic decisions made at high political levels might be less visible. While the EU environmental law has to some extent shaped national-level environmental legislation, particularly those related to pollution and nature conservation, our interviewees do not think that EU policy and law would be a significant reason behind injustices experienced at the local level (see CS14). Issues in the hands of **regional or national governments** seem to play a more prominent role. For instance, the mining industry would face severe setbacks; it could create a need for **funding mechanisms** relevant to the revival of the economy or monitoring, cleaning, and restoring the environment also in the long term.

8. SUMMARY OF THE POTENTIAL LEGAL AND REGULATORY SOLUTIONS FOR THE IMPLEMENTATION OF SUCH MECHANISMS

In the following sections we provide a summary of the available legal and regulatory mechanisms (see also Appendix I) which can provide some solutions for reconciling multiple ethics systems for aligning ethical grounds for sustainability-centric economic decision-making. These can help in achieving the desired positive impacts and benefits and avoiding or reducing potential negative impacts and risks.

It should be noted that the JUSTNORTH Work Package 6 has built a Regulatory and Policy Database which is available at: https://arcticcentre.ulapland.fi/justnorth/. It contains policy and regulatory instruments and documents relevant to Arctic economic development. It has been compiled based on the JUSTNORTH research themes. The database is publicly available.

Rights to use land and water areas for recreation and traditional livelihoods

Nature conservation requires certain restrictions for outdoor recreation to maintain environmental values. The so-called Everyman's Right in Finland (Ministry of the Environment 2021) constitutes a very relevant part of the steering of nature-based activities since 96% of land falls under this rule (see also Konu et al. 2017). This right allows recreational access to nature (e.g., hiking, berry-picking) anywhere in the Finnish countryside, regardless of land ownership. However, specific permits, such as using motor vehicles, camping, fishing, or hunting, are beyond this Right.

Salmon fishing is subject to national legislation in Finland and Sweden (*Fishing Act 379/2015*). Finland and Sweden share the management of the salmon-rich border river Tornio. The current *Border River Agreement* (2010) established the Border River Commission, a cooperation body between Sweden and Finland at River Tornio. It has the power to decide on matters relating to the use of the river. According to Finnish law, the right to fish belongs to the owner of the water area. However, there are several exceptions to this general rule. One such exception is the so-called *salmon prerogative*, 'lohiregaali' (Joona 2015). It means that while the

fishing of other fish species belongs to the owner of the water area, fishing for salmon and trout belongs to the state in rivers that flow to the Baltic Sea. This is the most important rule in Finland, although very controversial, specifically for the Tornio River watershed. In the case of the other significant salmon river, the Teno, the fishing rule divides those entitled to fish into three categories in which fishing rights differ (CS15). The first group consists of persons permanently residing in the Teno River valley, the second group consists of permanent residents whose right to fish is based on ownership or a special right, and the third group consists of non-residents or persons with either fishing rights (see ELY Centre 2019). As the Teno River does not flow into the Baltic Sea, it is not claimed on behalf of the Finnish state through the 'lohiregaali'.

Based on the *Reindeer Husbandry Act* (848/1990) in Finland, reindeer may only be owned by citizens of the countries belonging to the European Economic Area who have permanent residence in the reindeer herding area and reindeer herding co-operatives. This means also that reindeer herding in Finland is not restricted to indigenous Sámi. Reindeer can graze freely, independent of land ownership, in the reindeer husbandry area, which covers 36 percent of Finland, although reindeer are themselves privately owned. Reindeer husbandry as a subsector of agriculture is governed by the EU and the Ministry of Agriculture and Forestry of Finland. Regional governmental authorities (ELY Centres) are responsible for the implementation of laws and regulations concerning reindeer management and land use in the reindeer management area set by the state. The Ministry of Agriculture and Forestry steers the number of reindeer in the reindeer husbandry area of Finland to ensure sustainable use of pastures.

In Sweden, the right to reindeer herding is restricted to members of a reindeer herding cooperative (RHC), which also has hunting, fishing, and forest use rights. The economic functions of the RHCs are regulated since the RHC cannot engage in other economic activities than distributing the right to herding according to 9 § of the *Reindeer Husbandry Law* (Rennäringslagen: SFS 1971:437 t.o.m. SFS 2018:364) with the help of a Reindeer Use Plan (Renbruksplan). The county administrative boards (Länsstyrelse) decide how many reindeer the land can withstand concerning grazing pressure. The number of reindeer that each RHC can allow to feed on the pasture is regulated by the county authority in consideration. Meanwhile, state intervention has been more decisive in countervailing other harmful factors.

Regulations for industrial land use in Finland

Land-use targets help mitigate and adapt to climate change, safeguard biodiversity and the values of the cultural environment, and improve economic renewal

opportunities (Ministry of Environment, 2017). The Ministry of Transport and Communications of Finland approves railway track plans and road plans by the Centre for Economic Development, Transport and the Environment (ELY Centre). In principle, plans must be based on a legally binding formula (provincial plan, master plan, and town plan). Furthermore, there must be a proper plan on land use (*Land Use and Building Act* 199/132) and Environmental Impact Assessment (EIA). The planning process occurs in zoning, and disagreements are resolved in administrative courts.

The mineral ownership regime is fundamental for regulating mining activities. Finland is based on a claim system, one of the three basic types of regimes worldwide, the two others being the concession system and the land ownership system (Liedholm Johnson 2010). The company that discovers a mineral deposit has a legal right to exploit it regardless of the will of landowners on the condition that the activity fulfills environmental and other legal requirements. There is a need to acquire a mining and mining safety permit to establish a mine and undertake mining activity and an exploration permit for exploration projects. A land use planning decision under the *Land Use and Building Act* (132/1999) precedes the granting of a mining permit. This is the most important decision made at the local level during a mining project in Finland. The *Mining Act* 621/2011 serves as the legal basis for any mining permit application submitted after it enters into force. As the authorization was called previously, applications for a mining patent are subject to different rules under the old *Mining Act* (503/1965.) Permits are valuable assets and can be transferred to another company. On 20 February 2023 the Parliament of Finland approved the Act amending the *Mining Act* (505/2023). The law entered into force on 1 June 2023. On 1 January 2024, a tax on mining minerals mined in Finland (*Tax on mined minerals* 314/2023) was introduced. The procedural provisions of excise taxation and self-initiated taxation are mainly applied to the taxation of mining minerals. The aim of the tax is to direct society to a reasonable compensation for the use of non-renewable natural resources.

Wind farm construction is based on the same regulations as other construction in Finland. Whether an area is suitable for wind farms is decided in a provincial plan, master plan, or town plan. The *Land Use and Building Act* is used to determine whether the site should be zoned for the construction of wind farms or whether the power plants can be built based on permit solutions. When the wind power area is in the provincial plan or master plan, wind power plants' siting can be implemented with permit solutions without a detailed plan (Ministry of the Environment, 2011.) Based on permit solutions alone, a wind farm can only be built in areas with little need for coordination between wind power construction

Reindeer (Rangifer tarandus) in Sodankylä, Finland. Photo credit: Mia Landauer.

and other land uses and no specific environmental values. Such sites may include, for example, industrial, port, and storage areas and their immediate surroundings. In wind power construction projects, the *Territorial Surveillance Act* (755/2000) requires the Air Force Headquarters' opinion and the regional administrative authority (military county) of the Defence Forces competent in the area.

Indigenous and human rights, human security

It is necessary to pay close attention to the specificity of the rights attached to Indigenous peoples' status under international law. Finland is committed to several international human rights treaties. These agreements include e.g. the International Covenant on Civil and Political Rights (ICCPR), the *UN Declaration on the Rights of Indigenous Peoples*, and the *UN Human Rights Conventions*. By amending its *Constitution* and national legislation, Finland has aimed to meet the requirement of the *ILO Convention No. 169* concerning the rights of Indigenous peoples – a Convention that Finland has not ratified. Still, the Convention is used more as an ethical guideline to safeguard and implement indigenous peoples' rights. The national legislation on the Sami Parliament, the Sami Language, and Article 17 of the *Constitution* are stipulated in line with the *Convention* (Joona 2020). On a national level in Finland, the *Act on Sámi Parliament* (974/1995) gives cultural autonomy to the indigenous Sami. The organ governing this autonomy is the Sami Parliament. In Sweden, the *Reindeer Husbandry Law* (Rennäringslagen: SFS 1971:437) formulates

the state's intentions to support reindeer husbandry's maintenance as the base for Sami ways of living with economic means.

In the case of mining, landowners are entitled to full compensation for economic losses and a small exploration fee. The *Council Directive* 92/91/EEC sets the minimum requirements for improving workers' safety and health protection in the mineral-extracting industries through drilling.

If there are settlements in the vicinity of wind farm construction, the construction may require an environmental permit issued according to the *Environmental Protection Act* (527/2014) An environmental permit is always needed if the wind power plant may cause an unreasonable burden within the meaning of the *Law on Certain Neighbourhoods* (26/1920). Such effects can arise from a wind turbine's operation, such as running noise and flickering of rotating blades. Municipal Environmental Protection Authority addresses that environmental permit issue.

The EU's agricultural and nature conservation policies provide financial mechanisms to substitute or compensate for losses of reindeer herders. The subsidies consist of agricultural subsidies and predation compensation regimes. For example, in Sweden, different types of compensation are the following: Catastrophe compensation (Ordinance of Compensation, Förordning om ersättning: SFS 1994:246)) (Sametinget 2009, 2020a), Grazing compensation (Rennäringsförordning: SFS 1993:384), Wildlife Damage Ordinance (Viltskadeförordning: SFS 2001:724) for damages caused by predators (Sametinget, 2013). There are also compensations for reindeer killed by traffic accidents (Trafikförsäkringsföreningen 2013).

Rights to participate in planning and decision-making processes

According to the Act on Railroads (304/2011) and the *Wilderness Law* (62/1991), planning a railway through wilderness involves negotiations with those locals who practice traditional livelihoods in the area. Negotiations must occur when industrial activity may affect the Sami cultural rights (*Act on Sámi Parliament* 974/1995: §9). The *Act on the Sámi Parliament* means that the project must be negotiated with the Sami Parliament when planning construction in the Sami Homeland. However, this is a controversial issue of justice since Sami are living outside the Homeland and practicing traditional livelihoods. The Supreme Administrative Court of Finland just ruled on this in a recent case concerning the planned Sokli mine in Eastern Finland (Supreme Administrative Court 2022:38, 24.3.2022).

For any land-use projects in Finland, evaluating the project's effects on reindeer husbandry and negotiating and requesting opinions from the relevant herding cooperatives and the Reindeer Herders' Association (Paliskuntain yhdistys) is

necessary. Reindeer herding as a traditional Sami livelihood is considered part of the Sami culture. *The Reindeer Husbandry Act's* restrictions on the use of sites must be considered in the reindeer husbandry area. The mining authority granting a permit under the Mining Act must assess, in cooperation with the Sami Parliament, reindeer herders' cooperatives, and other impacts of the activity on the maintenance and development of the Sami language and culture how to mitigate or avoid adverse effects. However, this and other provisions of the Mining Act concerning reindeer husbandry and the various forms of involvement of reindeer herding cooperatives apply only to the northern part of the reindeer husbandry area under the *Reindeer Husbandry Act*, i.e., the so-called 'Area specifically intended for reindeer husbandry.'

The EIA procedure pertains to all environmental impacts (emissions, biodiversity, landscape, etc.) and is procedurally separate from the permitting processes. It consists of obligatory participatory processes, such as public hearings that must be implemented in large-scale land-use projects and consultations that are not necessarily obligatory (Fig. 2).

Environmental protection

The way how the state sets the highest permissible number of reindeer is driven by the needs of other land use and the ecological carrying capacity of pastures, and it is therefore strict (Kumpula and Siitari 2020). In the case of salmon fishing, legislation, and binding international agreements are based on the premise that migratory fish fishing must be sustainable, regardless of who owns the right to fish.

The Espoo Convention, 25 February 1997 (Koivurova et al., 2012), agreed upon the assessment of transboundary environmental impacts. The EIA procedure precedes all permit and land-use planning processes but does not have legal effects. The assessment produces information but does not result in immediate changes in the legal rights and obligations; however, this information must be considered in the permitting and land-use planning processes, such as the Arctic Railway.

As of 2011, the construction of a wind farm requires the application of the EIA procedure following the *EIA Act* in situations where the project includes at least ten windmills or the wind farm's full capacity is at least 30 megawatts. Besides, the *Wilderness Act* restricts wind power construction to wilderness areas, so the structure of permanent roads in these areas is prohibited. Hydroelectric construction of wind farms requires a permit under the Water Act, and if the construction of a wind farm on land impacts waters, it also requires such a permit.

The evolution of most national environmental laws is strongly linked to the development of the EU law. The Natura 2000 network of protected areas and the *Habitats and Birds Directives* (92/43/EEC and 2009/147/EC); *Water Framework Directive* (*Directive* 2000/60/EC); *Directive* 2006/21/EC on the management of waste from the extractive industries; *Directive* 2008/1/EC concerning integrated pollution prevention and control; Directive 2012/18/EU on the control of significant accident hazards involving dangerous substances; and *Regulation* (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation, and Restriction of Chemicals.

Figure 2: Public hearing on wind farm development in Finnish Lapland.
Photo credit: Tanja Joona.

Exploration projects do not require permits other than those defined in the *Mining Act* unless they take place in a protected area or otherwise cause risks to nature conservation values under the *Nature Conservation Act*. Mining projects are bound by environmental and other laws, which touch upon various economic, environmental, and social sustainability aspects.

The environmental permit under the *Environmental Protection Act* is the key instrument for pollution control, which transposes the *Industrial Emissions Directive* (2010/75/EC). It is the critical instrument that Good Ecological Status, as defined in the *EU Water Framework Directive*, is achieved or maintained. Establishing a mine in a protected area is prohibited unless a derogation is granted. It is noteworthy that the European Commission seems not to see any principal objection to a mining project in the Natura 2000 protected areas so long as necessary safeguarding measures are taken (European Commission 2011).

9. ETHICS OF SUSTAINABILITY – METHODOLOGICAL RECOMMENDATIONS

The Arctic region is often described as a test laboratory and an early warning system when discussing climate change and its effects. These effects are said to be more pronounced in the Arctic than in other parts of the world. To restrain climate change and consider the new geopolitical situation of Finland and Sweden, it is necessary **to find new ways, e.g., for energy production** (Fig. 3). The operating environment changes continuously and quickly. Due to the changed geopolitical situation, the overall security of the North has become an important factor when looking at questions related to the security of supply in the area. **Securing critical infrastructure** enables the security of the area's maintenance such as roads, railways, power lines, and telecommunications connections. Wind power cannot be built on the Eastern Border of Finland due to the development of radar systems. Possible **property tax compensation** should be negotiated.

When looking into the information produced in the project and the WP4 case studies, it is relatively straightforward that the situation in terms of preserving the natural environment and ecosystems, on the one hand, and the use of natural resources for the sustainable economic development of the Arctic region, on the other hand, is paradoxical. The changed situation requires **a strategic and comprehensive assessment of the region**. The green transition creates opportunities, but challenges are also associated with it, such as **inadequate funding**, **complicated and lengthy permit processes**, **and lack of regional development funding**. To increase acceptability, clarification of implementation bottlenecks is needed. One should consider the following: i) increasing benefits and efficiency requires **systemic thinking and responsibility**, and ii) pay **more attention to value chains**, **suppliers**, **transport and logistics**, **and the role of human rights and the environment** in developing these.

When we examined stakeholders' ethical perspectives and values regarding the impact of the development of new economic projects on their community, and the ecosystem services they enjoy and rely upon and analysed the value indicators to identify barriers to sustainable development, we paid particular **attention to**

how projects are implemented. We considered whether they are sustainable in people's minds and in practice, whether the processes are transparent, and whether everyone has an equal opportunity to participate in planning and decision-making. We noticed **shortcomings in the planning processes and gaps in legislation** such as in the Mining Act reformation and salmon fishing regulation presented in this report.

It is necessary to find ways to mitigate the harm and minimize the harmful effects. These include, for example, **consideration of the needs and wishes of the local communities** when placing infrastructure **minimizing environmental changes by centralizing functions and routes**. For instance, from the viewpoint of reindeer herding, ensuring that movement and transporting animals are not obstructed, fencing off dangerous areas, improving safety, reporting road and rail accidents, and maintaining continuous dialogue with the local actors. Prevention and mitigation of harms caused by economic development are always case-specific, and actions must be negotiated and agreed upon with the local communities. Sometimes **compensation** can be a solution, but as the case study from Sweden showed, it is not always as straightforward as it should be,

We also considered whether top-down decision-making is the only way 'to go'. Regarding the implementation of the restoration decree, the means are to be decided nationally. Akwé Kon guidelines should cover the entire reindeer husbandry area (e.g., Sokli's decision in connection with the *Mining Act*). A biodiversity strategy implemented on a national level helps protect old-growth forests needed for reindeer husbandry and nature-based tourism. The *Raw Minerals Act* steers how critical minerals are utilized on state lands, which is implemented nationally, but benefits can also be local.

However, considering individual rights, **decentralisation of power**, and their importance in the context of large industrial projects also came up very strongly in the case results. People have felt powerless in the past and considered the possibilities and resources to act very limited due to top-down governance. In this context, it is also worth mentioning the rights of the indigenous people, which have not been sufficiently recognized. It should also be noted that the **legal protection of traditional livelihoods**, such as reindeer husbandry and salmon fishing, is currently weak. Based on the analysed material, it can be said that the benefits and harms of industrial infrastructure projects are not distributed fairly. This can be seen particularly clearly in connection with wind power construction and the Arctic Railway, where local voices were not recognized in the way they should be.

Figure 3: Wind farms in the northern landscape.
Photo credit: Finnish Wind Power Association.

The key finding of this project is that **just economic development means different things to different actors and sectors**. The views on how economic development should be implemented vary across multiple levels of governance. For instance, on a national level, wind power is seen as an essential part of green transition, whereas nature-based livelihoods are negatively affected at the local level. Nature protection requirements can secure the existence of protected species (e.g., certain predators) but can demolish reindeer herding possibilities locally due to increased losses and damages caused by predators.

Long-term benefits and opportunities can be secured only if economic development is planned in concert **with local communities and across multiple economic sectors**. Engaging actors from different sectors and scales makes it possible to identify potential drivers of value conflicts and gain shared views of the diverse meanings of justice, and in turn, better understand factors that constitute just Arctic economic development where "no one is left behind."

To conclude, it can be stated that the topics of the WP4 case studies are even more relevant than at the beginning of the JUSTNORTH project. In 2020, we only experienced the start of the COVID-19 pandemic era, which has been going on for several years. The global pandemic has affected the project in many ways and

the world has transformed into a "new normal". In February 2022, Russia's invasion of Ukraine started a discussion about energy supply and security of supply, and Finland became a member of NATO in 2023. So far, rising prices, especially related to food and energy, have caused uncertainty about the future. People all over Europe want to show solidarity with the people of Ukraine. However, Finland and Sweden are remote countries in northern Europe. As the cold winter approaches, it is hard to handle the rising energy prices: heating with electricity and fossil fuels has become expensive and limited and alternative energy sources are needed. In the far North, private cars are almost the only alternative for getting around, and heating houses with electricity are very common. A plan to construct an Arctic railway to the Arctic Ocean may not be entirely out of the question if it is said to be of public interest, like the reconstruction of Finland after the war and the damming of the rivers connected with it. However, it can be concluded that Europe, including Finland and Sweden, has so far not been well-prepared for the situation we are currently living in, and it can be difficult for people to endure.

Based on the findings of this research project, recommendations for pathways towards sustainable development are given. These are presented as research highlights (see Tables 2a and 2b). Still, **more empirical transdisciplinary research** is needed. **Including youth and the elderly** to research would be important, as well as **developing participatory methods** such as citizen science, e.g., participatory GIS and visualisation methods. From the point of view of natural resource management of the Arctic region and transformation towards just, greener societies, it is necessary to **approach land use development through a comprehensive**, **holistic vision** that considers the **values and worldviews of different local stakeholders** and the **cumulative effects** of various economic development projects. Based on the findings, it is evident that **local knowledge and expertise** are valuable in the multi-level governance of land use and natural resources. **An inclusive approach** reveals a more nuanced picture of the current situation and provides future visions that reflect the pluralistic views of various stakeholders and sectors.

Table 2a: Research highlights - Relevance of the study.

Why was this research needed?	This study provided **pluralistic views of justice**, revealed value conflicts related to land use and natural resource management, identified **mechanisms to reconcile** these, and **tools to negotiate tradeoffs**. This contributes to understanding how to "construct" sustainable economic development in the Arctic.
What benefits did the selected methods provide?	Co-production of knowledge was found essential **to understand the different values and gain local knowledge** for the research. The legal analysis enabled **evidence-based reasoning** to claim statements. The value-based approach made it possible to **understand the plurality of worldviews**, which helps create shared visions of sustainable and just Arctic development.
Why were these case studies chosen?	We selected mining, wind power, Arctic railway, carnivore protection, salmon fishing, reindeer herding, and nature-based tourism as they **provide concrete examples of the distribution of risks, barriers, and benefits that impede sustainable economic development** in the Arctic. They also **shed light on the value conflicts** often fueled by the unequal distribution of risks and benefits, along with the **diverse preferences** regarding land-use governance and natural resource management.

Table 2b: Research highlights - Recommendations based on the findings.

Research-based solutions	Values and ethics-based research	To understand heterogeneous preferences and worldviews
	Systems analysis of impacts and their distribution	To monitor, e.g., cumulative effects, and interrelationships between social-economic-ecological risks and impacts
	Legal analysis	To identify rules and laws that support implementation of just economic development
	Participatory research approaches	To identify gaps and flaws in decision-making and planning processes
Planning and implementation of solutions	Use of local knowledge and expertise; early communication, consultations and dialogues	To build trust and shared knowledge and visions, and to raise awareness and increase transparency
	Development of co-produced knowledge base	For long-term policy-making and planning; awareness raising
	Attention to diversity	For balancing between differing worldviews, values, lifestyles
	Inclusiveness	To increase engagement with local actors for shared knowledge and responsibility and better communication
Governance solutions to support implementation in practice	Decentralization of power	Revised spatial planning processes and laws supporting participation
	Resources and compensation revisited	Psychosocial and legal support, new and fair compensation and funding mechanisms, e.g., from the EU, national and local governments and tax

BIBLIOGRAPHY

ELY Centre (2019). Fishing rules and prices for 2019. https://www.tenonkalaluvat.fi/fishing_regulations.pdf

Joona, J., (2015). Valtion lohiregaali: tutkimus valtion erityisestä oikeudesta lohen ja meritaimenen kalastukseen Pohjanlahteen laskevissa suurissa virroissa. Juridica Lapponica 40. Rovaniemi: University of Lapland.

Joona, J. (2020). One of the Finland's largest minings coming to Forest Sámi reindeer management area. Current Developments in Arctic Law. Vol. 8. University of Lapland. https://urn.fi/URN:NBN:fi-fe2020120999968

Knuuttila, M., Lankia, T., Länsman, M., Pouta, E., Vatanen, E., & Venesjärvi, R. (2020). Tenojoen lohen aluetaloudelliset vaikutukset ja kalastusmatkailun kehittäminen. Luonnonvara- ja biotalouden tutkimus 85/2020. Luonnonvarakeskus (LUKE). http://urn.fi/URN:ISBN:978-952-380-087-8

Koivurova, T. Craik, N., & Torkkeli, M. (2012). Valtioiden rajat ylittävien ympäristövaikutusten arviointi Suomessa. YVA-lain toimivuus kansainvälistä kuulemista koskevien velvoitteiden näkökulmasta. Ympäristöministeriön raportteja 7.

Konu, H., Tyrväinen, L., Pesonen, J., Tuulentie, S., Pasanen, K., & Tuohino, A. (2017). Uutta liiketoimintaa kestävän luontomatkailun ja virkistyskäytön ympärille – Kirjallisuuskatsaus. Valtioneuvoston kanslia. https://julkaisut.valtioneuvosto.fi/handle/10024/79836

Kumpula, J., & Siitari, S. (2020). Kestävä biotalous porolaitumilla-hankkeen osaraportit, johtopäätökset ja toimenpide-ehdotukset. Luonnonvara- ja biotalouden tutkimus 29/2020. Luonnonvarakeskus. http://urn.fi/URN:ISBN:978-952-326-959-0

Liedholm Johnson, E. (2010). Mineral Rights: Legal Systems Governing Exploration and Exploitation (PhD dissertation). KTH, Stockholm. https://kth.diva-portal.org/smash/record.jsf?pid=diva2%3A300248&dswid=3088

Ministry of the Environment (2011). Tuulivoimarakentamisen suunnittelu. Työryhmän ehdotus tuulivoimarakentamisen kaavoitusta, vaikutusten arviointia ja lupamenettelyjä koskevaksi ohjeistukseksi. Ympäristöministeriön raportteja 19/2011. Helsinki. https://julkaisut.valtioneuvosto.fi/handle/10138/41512?show=full

Ministry of the Environment (2017). Uudistetut valtakunnalliset alueidenkäyttötavoitteet vievät kohti vähähiilistä yhteiskuntaa. https://valtioneuvosto.fi/-//1410903/uudistetut-valtakunnalliset-alueidenkayttotavoitteet-vievat-kohti-vahahiilista-yhteiskuntaa

Ministry of the Environment (2021). Nature Conservation Legislation. Everyman's Right. https://www.ymparisto.fi/en/nature-waters-and-sea/recreational-use-nature

Neuendorf, K. A. (2016). The content analysis guidebook. California, Thousand Oaks: Sage Publications.

Pohja-Mykrä, M., Matilainen, A., Kujala, S., Hakala, O., Harvio, V., Törmä, H., & Kurki, S. (2018). Erätalouteen liittyvän yritystoiminnan nykytila ja kehittämisedellytykset. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 40/2018. http://urn.fi/URN:ISBN:978-952-287-546-4

Supreme Administrative Court 2022:38, 24 March, 2022. Diaarinumero(t): 1616/1/20, 1659/1/20, 1713/1/20, 1715/1/20, 1716/1/20 ja 1718/1/20. https://www.kho.fi/fi/index/paatokset/vuosikirjapaatokset/1647851309062.html

Appendix I.

LEGAL DOCUMENTS RELEVANT TO THE CASE STUDIES

Finland

Act on Developing Regions and Implementation of the EU Regional and Structural policy (756/2021)

Act on Environmental Impact Assessment Procedure (468/1994; amendments up to 1812/2009 included)

Act on Metsähallitus (1378/2004 and 234/2016)

Act on Railroads (304/2011)

Act on Remediation of Damages for Reindeer Husbandry (2011/987)

Act on the Defence Forces (551/2007; amendments up to 591/2019 included)

Act on the Sámi Parliament (974/1995; amendments up to 1026/2003 included)

Act on the Skolt Sámi (1995/253)

Act on Traffic system and roads (2005/503)

Border River Agreement (SopS 91/2010)

Decree on the Use of Vehicles on the Road (1257/1992, amendments up to 1227/2011 included)

Environmental Protection Act (527/2014)

Fishing Act (379/2015)

Fishing Ordinance (1360/2015)

Governmental Decree on remedying Losses for Reindeer Husbandry (2016/656)

Land Use and Building Act (132/1999, amendment 222/2003 included)

Law on Certain Neighbourhoods (26/1920)

Mining Act (621/2011), Act amending the Mining Act: Laki kaivoslain muuttamisesta (796/2023)

and Tax on mined minerals: Kaivomineraaliverolaki (314/2023)

Nature Conservation Act (1096/1996)

Offroad Traffic Act (22.12.1995/1710)

Outdoor Recreation Act (13.7.1973/606)

Railway Act (2.2.2007/110)

Reindeer Husbandry Act (848/1990; amendments up to 54/2000 included)

Teno Fishing Agreement (42/2017)

Territorial Surveillance Act (755/2000, amendments up to 846/2006 included)

The Constitution of Finland (731/1999)

Traffic System Act (2005/503)

Water Act (587/2011)

Wilderness Act (17.1.1991/62)

Sweden

Förordning om ändring i förordningen [Ordinance of the changes in the ordinance] (SFS 1986:255)

Förordning om ersättning [Ordinance of compensation] (SFS 1994:246)

Förordning om ersättning för vissa merkostnader och förluster med anledning av Tjernobylolyckan [Ordinance of compensation for certain additional expenses and losses with reference to Chernobyl accident] (SFS 1994:246)

Förordning om förvaltning av björn, varg, järv, lo och kungsörn [Ordinance on the management of bear, wolf, wolverine, lynx and golden eagle] (SFS 2009:1263)

Förordning om pristillägg på renkött [Ordinance of the price subsidy on reindeer meat] (Svensk författningssamling (SFS 1986:255)

Lagen om ändring i rennäringslagen [Law on change of the Reindeer Husbandry Act (SFS 1971:437)]

Lagen om ändring i rennäringslagen [Law on change of the Reindeer Husbandry Act (SFS 1993:36)]

Regeringsformen [Government Form] (SFS 1974:152)

Regeringsproposition [Government Proposition] [Prop]1976/77:80.

Renbeteslagen [Reindeer Grazing Law] (SFS 1886:38)

Renbeteslagen [Reindeer Grazing Law] (SFS 1928:309)

Rennäringsförordning [Reindeer Husbandry Ordinance] (SFS 1993:384)

Rennäringslag [Reindeer Husbandry Law] (SFS 1971:437)

Viltskadeförordning [Wildlife Damage Ordinance] (SFS 2001:724)

International/EU

Council Directive 92/91/EEC concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling

Directive 2006/21/EC on the management of waste from the extractive industries

Directive 2008/1/EC concerning integrated pollution prevention and control

Directive 2012/18/EU on the control of significant accident hazards involving dangerous substances

Directive 2000/60/EC Water Framework Directive

Habitats and Birds Directives (92/43/EEC and 2009/147/EC)

Directive (2010/75/EC) Industrial Emissions Directive

European Commission Regulation No. 1907/2006 concerning the Registration, Evaluation, Authorisation, and Restriction of Chemicals

Espoo Convention, 25 February 1997

European Convention on Human Rights

UN Human Rights Convention

ILO (International Labour Organisation) (1989) Indigenous and Tribal Peoples Convention, 169.

International Covenant on Civil and Political Rights (ICCPR)

Protocol to the Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocol No. 11. Paris 20.III.1952

UNDRIP The UN Declaration on the Rights of Indigenous Peoples