

Paper for Workshop on the Workshop IV
Indiana University, Bloomington
3-6 June 2009

Panel XY: Protected areas as Common-Pool Resources or Public Goods?

DRAFT do not quote without permission from the authors

“NATIONAL PARKS – FROM PUBLIC PLAYGROUNDS TO REGIONAL COMMONS”

by **Gunn Elin Fedreheim**©, Research Fellow, Nordland Research Institute¹ & **Audun Sandberg**©, Professor, Bodø University College²

Summary:

National parks and protected areas in the northern areas of the planet have for a long period been the prerogative of central governments. With the devolution of responsibilities, powers and property rights to regional authorities and indigenous peoples of the North, the quest for local participation in the governing of protected areas have mounted. At the same time the methods for adaptive ecosystem management have improved considerably and frameworks for analysis of complex Socio-Ecological systems are actively being developed. The paper thus have a diagnostic approach of analysing the evolution of new forms of governing protected areas in Northern Europe at these crossroads of institutional and scientific developments. Of particular interest is a “commons-formation” process on public and protected land and water areas that moves quite slowly in these northern regions. This paper will focus on the changes in the governance of national parks in the Norwegian and Russian parts of the “Barents region”. The region consists of many large, untouched areas with intact original ecosystems. Many of these are transboundary ecosystems, but until recently little efforts have been taken to investigate implications of lack of transboundary governance of larger Socio-ecological systems in these areas. Russian national parks (“Zapovedniks”) have stricter conservation measures than Norwegian national parks. Here no human activity is allowed, except for scientific studies and border protection. In Norway a national strategy has recently opened up for more nature based tourism (ecotourism) in National Parks, also in a “joint” park with Russia and Finland. The slow, but gradual changes in property rights are also an important element in the analysis; in Norway ownership of land is gradually moving from the state to regional land holding authorities. In Russia there are also movements between “federal” and provincial (*oblast*) ownership and management authority. The type of goods that these national parks provide is used as examples of how this evolution takes place in practice, i.e. how the details in regulations and use practices influence the character of the protected areas as common-pool resources. In a comparative perspective, it is also interesting to see what role these protected areas play in their adjacent rural areas: To what extent are these areas reckoned as crucial in securing rural livelihoods and ecosystem services and to what extent are they perceived as serious obstacles to modernisation, and how are these conflicting views reflected in current legislation and operative rules on the ground?

¹ With appreciation of the support from PROBUS – Norwegian Research Council Grant no 173070/I10

² With appreciation of the support from NAPROLD – Norwegian Research Council Grant no 184781/S50

1. The Challenge of Complexity

In 2009 it is a 100 year anniversary for the decision that established the first National Park in the European North. This was the Sarek National Park in Northern Sweden which today would have been classified as an IUCN Category 1a: Strict Nature reserve. The fundamental idea of the policy measure was in 1904 to “set aside untouched nature areas so that future generations also could experience the treasure of pristine nature” (Yngvar Nilesen DNT Annual meeting 1904). During the next 100 years, this policy was consistently followed up with the establishment of a large number of Nature Reserves, National Parks etc. in both the Nordic Countries and in the Russian North. Several policy objectives were added in the course of the 100 years, maybe one of the most influential has been an international commitment of states to work towards an IUCN goal of 15% protected nature area in each country. In essence a protected area is a collection of rules for what humans can do and cannot do within the borders of the park or the reserve. There are no corresponding rules for ecosystem processes, for wildlife procreation or for predator behaviour. There are only in exceptional cases provisions for park constructions, for maintenance of landscapes or for enhancement of nature; it is the combination of rules that is meant to produce the desired nature “set aside for future generations”.

Both the design of rules for a new national park and the change of rules for existing parks are in essence policy experiments. The actors: stakeholders and policy-makers have often limited information about the likely outcomes for ecosystem elements and human participants. Still they advocate, negotiate and decide on complex combinations of rules that they hope will work together more effectively than other combinations. Here it is important to remember that most policies are not panaceas – not even seemingly “final solutions” like National Parks will work for all possible problems related to nature use at all possible futures. They are always experiments in a complex world where the complexities of Ecological Systems and Socioeconomic Systems interact with the complexity of rule systems through a large number of connections and feed-backs with uncertain outcomes (Ostrom 2005: 242-

243). Policies are therefore apt to be monitored closely and likely to be modified or replaced by new policies in order to reach “better” combinations of rules that are more likely to produce the desired policy objectives.

In the case of National Parks in Northern Europe, a very long period of establishing such parks is now coming to an end, and the countries and their communities are embarking on a new period of running and using such parks. However, the processes of protection planning, registration, evaluation, litigation, compensation and legislation have created their own logic, which influence heavily on the governance system of National Parks. After 100 years of conservation battles, this kind of protection plan logic is an intrinsic part of the governance structure of most protected areas in Northern Europe, and the accompanying managerial methodologies of nature value assessment is the major tool available for the new governance tasks.

To analyse how this governance system and these combinations of rules meet a new situation of running and using the National parks, it is necessary to get a clearer picture of how we deal with this kind of complexity where social and ecological processes are intertwined. A challenging point of departure for studying complex systems can be that ecological and social complexity are seen as belonging to the same class of phenomena. They are both characterized by high degrees of diversity and high degrees of connectedness. The more diversity and multitudes there are in eco-cycles and social processes, and the more interconnected these are, the greater the robustness of the system. A multitude of predator-prey relations and a multitude of service-providers-consumer relations in a market, mean that no single system breakdown is fatal for the larger ecosystem – or society – as there will always be another interconnected cycle that “takes over” – or a totally new cycle that emerges. Thus the massive fluctuations we find in a monocropping environment, in a monopolist market or in a totalitarian governance system can to a large extent be avoided.

For a long time, Social Scientists and Economists have been reluctant to plunge wholeheartedly into the field of complexity and strongly connected systems. The physics of static or simple self-correcting dynamic systems has to a large extent been the dominant model of science - and the task of approaching optimality or equilibrium by way of functional models has been the measure of elegance. However, in the real and messy world – and in particular in the ecological chaos of a limited conservation area - such a view of science is probably of little use. Instead such Socio-Ecological systems should be regarded as alike with complex modern engineered systems: there tend to be a number of highly valued ecosystem components, which were the prime reason for the conservation decision and the design of a set of rules to support this. But we should also identify complex back-up systems that are set in motion if other ecosystem components fail. Taken together, this contributes to a high degree of robustness, meaning the system is able to continue working under very changing circumstances (Ostrom 2005).

There have been several attempts to model such multi-complexity in a way that makes it comprehensive for analysts in different social and ecological settings. To be able to grasp the totality of complex systems, it is probably necessary to decompose the complexity into parts which can be comprehended, but without losing the interconnections between them. One such attempt is a “Nested Framework for Analysing Interactions and Outcomes of Linked SESs” developed as part of a strategy for developing a “new sustainability science” (Ostrom 2007). In this framework the complexity of Socio-Ecological systems is assumed to be decomposable, so that the concepts and variables can be partitioned into classes and subclasses. To handle the great complexity without seeking refuge in reductionism, it is necessary to assume that there exist relatively separable subsystems which have many functions independent of each other, but still have the capacity to influence on the other subsystems. This means that adaptability is possible between subsystems and that limited policy experiments can be conducted without risking a large scale collapse of the entire

Socio-Ecological System. But in line with what has been discussed for the cyclical models above, this interpretation of complexity is based on a very important assumption that the dynamics of interaction between subsystems depends on the whole SES being greater than the sum of its parts (Ostrom 2007). Thus the “robustness” or the “brittleness” of a mountain or forest Socio-Ecological system can be generated not only by the interactions of functions within a particular subsystem, but it can also be generated by the conditioning of such interactions by processes in other subsystems in the larger nested framework. This is of great importance because state sector agencies and higher level policy makers are conveniently attracted by the simplicity of an apparently successful model which is believed to offer a recipe for application elsewhere. This belief in panaceas has time and again proved fatal, while more polycentric governance patterns with a higher diversity of institutions and combinations of institutions can show better results (Meinzen-Dick 2007). In analysing the challenges facing the protected areas of Northern Europe at the verge of being governed for “use”, such an analytical approach is tested for the first time in this kind of setting.

2. An Innovative Research design

At the Nordland Research Institute and Bodø University College, some new research approaches are now being tried in order to better understand how governance systems varies in different Socio-Ecological settings. In the NFR-PROBUS Research Programme X National Parks and Y other protected areas in Northern Norway are studied in order to test out various analytical frameworks that take institutional change as a point of departure. In the NFR-NAPROLD project, these changes are compared with institutional changes taking place in similar Ecological systems in the very different social and governance systems of North-Western Russia. The underlying commonality in both these projects is that all these parks and protected areas are in a transition stage where the central – or federal – governments have more or less completed their task of conducting the conservation process and where the issue of how to put these “conservation resources” into sustainable use for the benefit of local enterprises and regional communities are now high on the political agenda. Partly as a

consequence of this change of focus, the more constitutional questions of property rights and governance authority over the vast areas of nature in Northern Europe at the same time receive renewed attention.

This great variety of ecological settings, the many combinations of institutional arrangements and the sharp difference in governance systems thus give us a wide array of diversity from which important lessons can be drawn. However, in this paper we have restricted the use of such cases to two Norwegian National Parks and two Russian State Natural Zapovedniks. These cases have been studied with regard to nature conservation processes and economic and local development processes inside the parks and in the areas and communities bordering on the protected areas:

Sjunkhatten national park is presently under establishment in Nordland County in Norway. It will comprise 416,9 km² across three municipalities which has almost 60 000 inhabitants. The purpose of protecting this area is to conserve a larger substantially untouched area with a varied landscape from fjord to mountains. Further the aim is to secure cultural heritage. Sámi culture is here reckoned as important, and reindeer husbandry will be permitted inside the park and the protection rules are designed to accommodate the needs of the reindeer husbandry (Fylkesmannen i Nordland 2007). The proposed park will also be the National Park in Norway that is closest to an urban center.

Øvre Pasvik national park was established in 1970 and expanded in 2003. It is in Finnmark County with borders to Russia and state natural zapovednik Pasvik. It comprises 119 km² in one municipality with almost 10 000 inhabitants. The purpose of *Øvre Pasvik* is to conserve a larger, coherent area of conifer forest, substantially untouched from technical interventions. Also this area is important for Sámi culture and economic activity, and the area might be used for reindeer husbandry (FOR-2003-08-29-1104 2003).

State natural zapovednik *Pasvik* was established in 1992. It is in Murmansk region and comprises 147,3 km² in one municipality with around 45 000 inhabitants. The purpose of conserving this area, which is located along the borders with Norway, is to conserve and study pine forests of the northern edge of their distribution area, and wetlands and waterfowl fauna. In addition the purpose is also to monitor complex northern ecosystems, and to conserve cultural-historical heritage sites (Fedreheim et al. 2009; Günther 2004).

Lapland state natural biosphere zapovednik was established in 1930 in Murmansk region. It comprises 2784,4 km² across three municipalities. The closest city has around 50 000 inhabitants. The purpose of protecting Lapland was to restore and maintain the only remaining flock of wild reindeers on Kola Peninsula. Later this purpose has been expanded to include also preservation of one of the largest mountain-tundra ecosystems on the Peninsula, preservation of intact ecosystems of the Northern taiga, and preserving some monuments of history and culture of the Sámi (Fedreheim et al. 2009; Günther 2004).

The empirical data has been collected through document studies, interviews and one survey conducted in eight Norwegian protected areas, including the two Norwegian areas in this paper. Interviews have been conducted with representatives from management authorities, as well as monitoring authorities. Further, interviews have been done with business actors and landowners. The survey was sent to business actors and landowners surrounding the chosen protected areas, and an online version was published for practitioners of outdoor recreation.

3. The Mega Socio-Ecological systems of the North

A major task in conducting analysis of the complex processes that takes place in the interface between protected ecosystems and the social systems surrounding them is to search for operational and measurable variables that can aid such an analysis. In order to do this properly, it is of crucial importance to understand the special character of Socio-

Ecological Systems of the North. Contrary to SESs of the tropics or temperate regions, northern SESs are characterized by seasonality, by migratory behaviour and by large fluctuations among relatively few species. The huge cod, herring and capelin stocks of the North Atlantic, the millions of sea-birds of the Arctic Sea, the sea mammals, and the original wild reindeers of Fennoscandia and Kola were all migrating over long distances in order to exploit the summer riches produced by an abundance of sunlight and nutrients in the most efficient way. The northern areas have both an oceanic-continental gradient and an altitude gradient (from sea level to glaciers and nunataks) that ensure ecological diversity and a variety of niches throughout the growing season. A large number of species are hibernating or retreating to more hospitable places to survive the harsh and dark winter. Both the pine forests of the lowlands bordering the Sea of Botnia and the White Sea, the forested valleys on the Arctic coast and the upwelling-holes in the arctic sea-ice (*polynya*), are such crucial “refuges” which play an important part in the larger Socio-Ecological systems of the North. These small and dense ecosystems are then nested in the Mega Socio-Ecological Systems of the north in much the same way as oasis are nested in a larger semi-desert Socio-Ecological system like the Sahara. Like oasis they were also the only “favourable places” where human settlement was possible; thus northerners early occupied the “keystone habitats” of their mega ecological system and could from here take control over the large migrating stocks of herbivores, fish and birds. This constituted the original Socio-Ecological system of the north, a large-scale non-homogenous system with 2000 year old large scale seasonal fisheries on migrating herring and cod and a large scale hunting of fur animals and of migrating reindeer that during the 16th century was gradually transformed into the contemporary nomadic reindeer husbandry that today is the material base for much of the Sàmi culture of Northern Europe.

Following the establishment of nation states and the advance of national jurisdiction in the North, these mega ecological systems have been gradually fragmented and forced to function in accordance with the rules established by the social systems of the respective

countries. During the long period from 1327 (the peace treaty in Novgorod) to 1852 (the closure of the Norwegian/Finnish border for nomadic reindeer herding), the European North was a “shared resources region”, where both herbivores, predators and humans could move freely across the whole European North. Russian traders from the White Sea ventured to the Lofoten Islands to exchange flour and timber with dried cod and herring, Norwegian fishers and hunters ventured seasonally to the “East Ice” around Novaja Semlja and Finnish peasants vent regularly to the shores of the Arctic Sea to secure sea fish. The “Iron curtain” closing the border between Norway and the Soviet Union from 1917 until 1990 effectively partitioned these great northern Socio-Ecological systems into Western systems on one side and Eastern systems on the other side, between which only birds, fish and predators could move. Thus distinctly different Socio-Ecological systems developed in the East and in the West, with widely different governance systems for fishing, different systems for farming and reindeer herding – even different patterns of human settlement different stakeholder involvement in environmental affairs. Much of this legacy is still part of the Socio-Ecological systems of the North, and the wildlife fences are still intact - even after the Norwegian/Russian border is re-opened and Sweden and Finland has joined the European Union.

It is in this context that we must diagnose the problems and the potentialities of the Socio-Ecological systems that the National Parks and the other protected areas of the North present to the analyst in the contemporary world. The carving out of certain inhospitable and undeveloped areas and giving them a status as National Parks represent in many respects a further fragmentation of the original mega socio-ecological systems of the north. Few species can rely entirely on the ecosystems that are found within one park alone and need both seasonal and long term migration options to other habitats under adverse climatic conditions, like recurrent icing of winter pastures, cyclical crash in the small rodent population etc. If migration corridors then are obstructed by human constructs like highways, railroads, recreational home development or tourist activity, this prevents this specie the optimal use of

their niche in the larger ecological system. Thus, the socially conditioned eco-systems of most National Parks are from the outset constrained by the borders of the National Park and will over time change character. In principle this change will be in the direction of favouring species that can adapt to living their entire life-cycle within the national park. But depending on hunting rules and strategies, climatic changes and the impact of human leisure activities, such changes can also have surprising and unintended outcomes. In addition predators are important co-managers of these ecosystems; and because they are constantly present they do not only influence on the population size of their prey, but also on the behaviour of grass-eaters and rodents. Human control with predators therefore also has ecosystem effects through a long chain of impacts that ends up with changes in vegetation cover and thus has feed-backs on the living conditions of most actors in the new socio-ecological systems that develops in the different protected areas in the North.

On this background we shall attempt to define some variables that can be used in analysis of contemporary National Parks as Socio-Ecological systems. This is based on the Nested framework for Analysing Interactions and Outcomes of linked SESs that has been advocated by Elinor Ostrom (Ostrom 2007). The challenge is here to operationalize this highly abstract diagnostic approach and make it applicable to the real-life situations that managers and users of the protected areas in the European North are facing. In embarking on this task, it is important to deal with complexity without complicate the analysis unnecessary, i.e. to introduce as few variables as possible and still get the analysis done. Such a minimum of applied variables on the 2nd and 3rd tier are presented below and employed in the analysis of some northern cases in section 5.

National Park's RS

- RS 2 Clarity of System boundaries
 - RS2-a Zoning boundaries
- RS3 Size of Resource System
 - RS3-a Size of IUCN categories I-VI
- RS4 Human constructed facilities
 - RS4-a Cabin and trails infrastructure
 - RS4-b Park gate and visitor capacity
- RS5 Productivity of the system
 - RS5-a Harvest of wildlife (hunting)
 - RS5-b Harvest from herded reindeer
- RS7 Predictability of system Dynamics
 - RS7 Small rodents (lemmings & mice) cycles
- RS9 Location

National Park's RU

- RU1 Resource unit mobility
 - RU1-a Mobility of small rodents
 - RU1-b Mobility of herbivores
 - RU1-c Mobility of predators
- RU2 Growth or replacement rate
 - RU2-a Growth rate of key prey species
- RU3 Interaction among resource units
 - RU3-b Known predator/prey interaction rates
- RU4 Economic Value
- RU6 Distinctive Markings
- RU7 Spatial & temporal distribution

National Park's GS

- GS1 Government organisations
- GS2 Non-government organisations
- GS3 Network structure
- GS4 Property-rights systems
- GS5 Operational rules
 - GS5-a Formal rules
 - GS5-b Informal rules in use
- GS6 Collective-choice rules
- GS7 Constitutional rules
- GS8 Monitoring & sanctioning processes

National Park's U

- U1 Number of users
- U2 Socio-economic attributes of users
- U3 History of use
- U4 Location (of users)
- U5 Leadership/entrepreneurship
- U6 Norms/social capital
- U8 Dependence on resource
- U9 Technology used

4. Protection, Conservation, Sustainability and the dynamics of the IUCN categories

Many national protected area systems are based on the protected area management categories developed by IUCN. Also the systems in Northern Europe are based on this, although there are variances both across the various nations as well as in each nation's interpretation and implementation of these categories. Hence we find the same protected area category represented in several IUCN categories both inside nations and across nations. IUCN defines protected areas as

“a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve long-term conservation of nature with associated ecosystem services and cultural values” (Dudley 2008: 8).

Supporting the definition of protected areas developed by IUCN is not difficult, due to its broad and inclusive definition. The challenges arise when it comes to adopting IUCN's categories to the complex systems already existing in these countries. As stated earlier protected areas are combinations of rules, and for certain protected areas these rules do not always reflect the concurrent protected area mentioned in IUCN's protected area management categories. Today IUCN operates with seven categories, a system which has gone through several revisions. In Table 1 these categories are defined and compared with protected area categories in Norway and Russia.

Table 1: Russian and Norwegian protected areas compared with IUCN's protected area management categories (Source: Fedreheim et al. 2009)

IUCN	Definition	NORWAY³	RUSSIA
<i>Category Ia</i> Strict nature reserve	“strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring” (Dudley 2008: 13)	Some nature reserves	Zapovedniks
<i>Category Ib</i> Wilderness area	“large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition” (Dudley 2008: 14)	Some few national parks and larger nature reserves	Some zakazniks
<i>Category II</i> National park	“large natural or near natural areas set aside to protect large – scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities” (Dudley 2008: 16)	National parks	Biosphere zapovedniks with biosphere polygon National parks Nature parks
<i>Category III</i> Natural monument or feature	“set aside to protect a specific natural monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value” (Dudley 2008: 17)	Natural monuments	Some nature monuments
<i>Category IV</i> Habitat/species management area	“to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category” (Dudley 2008: 19)	Biotope preservation	Some zakazniks Some nature monuments
<i>Category V</i> Protected landscape/seascape	“where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values” (Dudley 2008: 20).	Protected landscapes	Some zakazniks
<i>Category VI</i> Protected area with sustainable use of natural resources	“where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values” (Dudley 2008: 20)		Some zakazniks

³ This distinction is based on NOU 2004: 28. 2004. *Lov om bevaring av natur, landskap og biologisk mangfold (Naturmangfoldloven)* in which the nature conservation act is used as foundation for such a distinction.

According to this table, it is evident that Norway has adhered to IUCN's guidelines to a larger extent than Russia, and Norway's categories are more in accordance with those recently developed by IUCN. Further Norway has developed clearer distinctions between its categories than the case is with Russia. This distinction also applies to the legal framework for establishing protected areas. In Norway all these areas are protected under one single Act; the Act of Nature Conservation⁴ (LOV 1970-06-19 nr. 63 1970) while in Russia there are several acts relating to nature protection at both the federal and at the regional level, reflecting also the variances in protected area categories (Fedreheim et al. 2009). Hence, comparing Norwegian and Russian governance systems must take into account great variances in constitutional rules between the two countries. Yet, while Norway seems to follow the IUCN guidelines to a larger extent than Russia, this does not necessarily mean that the Norwegian protected areas are managed and governed more in accordance with international guidelines and the needs of complex ecosystems. In order to move away from any belief in panacea, it is necessary to acknowledge that each protected area represents a socio-ecological system in its own, and that simple models developed for one area will not succeed in all other areas. This is also connected to the fact that protected areas might develop in some way or another. Both ecological and socio-economic factors are under constant change, thus affecting the entire Socio-Ecological System. The overriding question that needs to be asked is to what extent existing protected area rule combinations really are constructed to accommodate such changes in Socio-Ecological systems.

IUCN has to some extent realised that there are a great variety under each protected area category, and has attempted to connect this to the known variety in governance types, hence expanding the distinctions from Table 1 into a matrix. The IUCN protected area matrix can be useful in several ways; first of all it provides a valuable tool to classify protected areas across borders and inside nations according to how these are in fact governed. Further the matrix will help structure comparisons across borders, and thus contribute to identifying possible

⁴ This will be replaced by a proposed new Law of Diversity in Nature, cfr. Ot.prp.nr. 52 (2008-2009).

governance gaps. Land ownership and management authority is not included in the matrix, but rather an acknowledgement of the fact that several different governance types might be legitimate for the same conservation category. Still land ownership is included in this article both because of great variances between Norway and Russia in land ownership and because land ownership is rapidly changing due to the growing number of local and indigenous land claims in northern areas.

Four main types of governance are presented; governance by government, shared governance, private governance and governance by indigenous peoples and local communities. In addition 11 sub-types are presented (see Table 2 for further details). The various governance types are presented according to a continuum allowing for analysis of the degree of stakeholder participation: The stronger the involvement of various stakeholders, the closer we get to collective (commons) or private governance and/or governance by indigenous peoples and local communities (Borrini-Fereyabend 2007).

Table 2: "The IUCN protected area matrix": a classification system for protected areas comprising both management and governance type (Source: Dudley 2008).

Governance types	A:Governance by government			B:Shared governance		C: Private governance			D:Governance by indigenous peoples and local communities		
	Federal or national ministry or agency in charge	Sub-national ministry or agency in charge	Governmental-delegated management (e.g. to an NGO)	Transboundary management	Collaborative management (various forms of pluralist influence)	Joint management (pluralist management board)	Declared and run by individual landowners	...by non-profit organisations (e.g., NGOs, universities)	...by non-profit organisations (e.g., corporate owners, cooperatives)	Indigenous peoples' protected areas and territories – established and run by indigenous people	Community conserved areas – declared and run by local communities
Protected area categories											
Ia. Strict Nature Reserve											
Ib. Wilderness Area											
II. National Park											
Trials Norway	■	→									
Norway	■	■	→	→	→						
Russia	■	■	→	→	→						
III. Natural Monument											
IV. Habitat/Species Management											
V. Protected landscape/Seascape											
VI. Protected Area with Sustainable Use of Natural Resources											

In this matrix “governance by government” is recognised by enforcement of rules and simple information or consulting regarding management decisions. “Shared governance” will have more participation, and government agency might seek consensus to a greater extent, also sharing benefits. Further towards “governance by indigenous peoples and local communities”

also a governmental agency can negotiate and formally share authority and responsibility, as the case is with the large Natural Heritage Site (UNESCO) of Lapponia in Northern Sweden. At the very end of the continuum the government can recognise full collective or private customary rights and even assists in the management, monitoring and sanctions related to the exercising of such rights (Borrini-Fereyabend 2007).

As this system of conservation categories and governance systems always will be dynamic, there will be movements between the various sub-types according to government policies and according to the role of a governmental agency, a role that might change and vary both inside a certain protected area over time, and between protected areas. There might also be trials testing of various governance types. In Norway such governance experiments have been carried out from 2001 through 2008 in four protected areas, with delegated management authority and responsibility from the state to local municipal governments. Traditionally, management responsibilities in protected areas are the state's responsibility, but due to local opposition to nature protection and long and deep conflicts between central and local levels, decision was taken to test different management models in 1996 (Innst. O. nr. 64 (1995-1996) 1996). An evaluation of these experiments shows that local councils would prioritize local development rather than serve as local implementers of state policies. Hence they would focus more on promoting socioeconomic factors rather than on ecological factors. However, the government's guidelines and norms were in principle followed, and the evaluation concludes that local management formally followed the framework for the trials, but with certain local adaptations (Falleth and Hovik 2008, 2009). These trials show a movement from "federal or national ministry or agency in charge" to "sub-national ministry or agency in charge", still under main category A: Government managed protected areas. Even though the responsibility was delegated to local municipal governments, these areas had been established by the state and were run on behalf of the state, hence not qualifying to be placed under category D: Governance by indigenous peoples and local communities. The evaluation of the trials is now with the Ministry of Environment for further elucidation, yet it is not to be expected that the

Norwegian government will embark on a major devolution of the responsibility for protected areas towards private, indigenous or local governance. Hence movements inside and between category A and B are more feasible management models in Norway, due to the fact that protected areas are established by the state in Norway and due to the fact that the local institutions as of today are not yet strong enough to handle the deep political conflicts that nature protection still represent in Norwegian communities (Falleth and Hovik 2009). As of today nature protection is a state responsibility and the state is reckoned as the main caretaker of national and international conservation values.

In Russia the situation is somewhat similar to the Norwegian system. Nature protection is also here a state responsibility, divided between the federal and the regional authorities. Some regional authorities in the north of Russia have had a more active role in framing an environmental policy independent of the Ministry of Natural resources' policy, and major cooperation between the federal offices at the regional level and regional authorities take place even though the institutional content is formulated by the federal authorities (Hønneland and Jørgensen 2006). But when it comes to institutional potentials for decentralising management authority to local authorities, there is a substantial difference between Norway and Russia. Norway has a longer history of local self-government (mainly in other fields than environment) than Russia, and has developed stronger local institutions (Didyk et al. 2008; Fedreheim et al. 2009). Therefore it seems unlikely that Russian municipalities will be given management authorities for federal protected areas in the near future. Hence it is improbable that we in Russia will experience a rapid transfer of governance to category C and D of the IUCN protected area matrix.

Dudley expresses that many protected areas might change their governance types over time, but not directly from state governance varieties to collective or private varieties. With Sámi interests as part of the purpose of protecting these areas, there are possibilities for movements from category A to B, also in relation to the Pasvik border area where transboundary

management might be a realistic alternative. Yet, in order to succeed with transboundary management there are many obstacles to solve for the Russian and Norwegian government, among the question of territorial jurisdiction. And at present it seems doubtful whether the Russian or the Norwegian governments will give away their international commitments for securing biodiversity to the local authorities. Norway is in the process of deciding upon a new act related to nature protection, here stating that local management models will be considered, but still giving the state final supervision authority over this (Ot.prp.nr. 52 (2008-2009) 2009).

5. Some illustrative cases in the European North

In order to approach the difficult task of analysing how changes in governance of protected areas are affected by the characteristics of the resources and the users and the way these interact, we will use examples from the four cases briefly presented above. We have already stated that governance does not need to be static and might develop and evolve throughout time, and we have also discussed the probability for this to happen in Norway and Russia. Here we conclude that generous experiments are undertaken in order to try out new institutional approaches, but that the local level is not yet ready in developing robust institutions capable of managing the various objectives of modern ecosystem management of protected areas. One reason is that municipalities often are too small in relation to larger protected areas. Thus, within the governance models for state run management there are some possibilities for changes, and both Norway and Russia seem to have more dynamic systems for state run governance than for transfer of management to private individuals, to corporate groups or to indigenous people. It is therefore more likely that co-management between state agencies and voluntary associations will appear as a model rather than self-governance by territorial groups. In an ecological setting in Sweden, quite similar to Norway and Russia, a recent study shows that self-governance is most suitable for very small-scale situations, and that co-management is more capable of handling more complex situations (Zachrisson 2008). On the basis of this we can now discuss why the Norwegian and Russian systems do not easily allow for dynamic governance systems changes utilizing the whole continuum of the IUCN protected area matrix. Here we shall attempt

to use the SES diagnostic framework introduced above. This brief review will show that institutions for self-governance of natural resources are not yet fully developed in these two countries, therefore variances of co-management based on existing institutions are the varieties most likely to occur. But, as we discuss more in detail below, in both Northern Russia and in Northern Norway, large scale experiments related to redistribution of property rights are currently taking place that can be used to test this hypothesis.

The **resource systems** and **resource units** in protected areas are varied and there might be more of them inside one protected area than in another area. Further on they might also be transboundary and cross the borders between the protected area and surrounding areas. Norway covers a total number of 29 natural geographical areas and 73 sub-regions, based on the distinction developed by the Nordic Council of Ministers in 1977 and 1984 (St.meld.nr.62 (1991-1992) 1992). Northern Norway covers four natural geographical areas and 32 sub-regions. The distinction is founded on geological and plant geographical criteria, as well as on criteria based on climate and landscape properties. The Norwegian protected areas in this paper cover three (Sjunkhatten) and one (Øvre Pasvik) sub-region, and this might also be interpreted to increase the understanding of the ecological systems in these areas. Generally speaking, both the resource systems themselves and the resource units in them will be more diverse and multiple in protected areas covering several sub-regions than in more homogenous areas. The Pasvik area (Øvre Pasvik and Pasvik) is a well known wetland area of great importance for several wetland birds. The vegetation is mainly dominated by pine forests and birch forests, with a typical northern boreal fauna. The river running through the wetland area is rich with fish, both eastern species as well as more traditional Norwegian species (Günther 2004). Lapland is characterised by undulating hills, valleys and watercourses. A large area is located within the mountain tundra belt with five separate ridges. There are eight lake and river systems in the area, and 169 lakes. Primeval old-growth forests are one of the main values of the Zapovednik. The vegetation is mainly dominated by pine forests and Siberian spruce. Flora and fauna is rich; there are registered 591 species of vascular plants, 31 mammals, and 198

birds (Günther 2004). The Sjunkhatten area is topographical varied, but does not have the same variance in vegetation, geology and game population that is evident in the region. The area is rich with lakes and rivers, and the landscape is characterised by the results of glacier erosion. The landscape qualities are ranked as having great national value. Apart from that the area is poor in species without potential for uncommon and demanding vegetation (Fylkesmannen i Nordland and Nordland Fylkeskommune 2006).

Governance systems often reflects land ownership (Dudley 2008). All the three existing national parks analysed in this paper are state owned, and according to Dudley they will thus have governance types reflecting the current property rights. Sjunkhatten, on the other side, will have a large amount of private landowners, hence it can more probably end up with a more local variant of governance. Yet, the dynamics of land ownership changes are not reflected in governance models in Norway. This could imply that there will not be any change in the governing of a protected area according to whether it is private, a commons or state land. But as we shall see below, it is highly unlikely that changing property rights and the formation of new types of governing councils will not affect both the collective decisions and the operational rules and through that - the daily management of these areas. Non-government organisations participating in managing protected areas are few, but important, both in Russia and in Norway. The Norwegian Trekking Association with its 223.000 members has a 140 year tradition, and almost a monopolistic position in the **T**- marking of hiking trails and establishing cabins for recreational purposes. They are also lobbying for securing recreational areas and defending the “right to roam” in all non-cultivated areas (private, common and public) - including the various categories of protected areas. Other organisations, like the Norwegian Association for Fishers and Hunters, Environmentalists’ organisations and the Norwegian Red Cross’ Search and Rescue Corps, play a role in protected areas. But no non-governmental organisation has today any formal place in any management models in Norway; they are usually defined as “organised interests” rather than “rights holders”. In Russia there seems to be more collaboration between environmental authorities and environmental NGOs. Greenpeace has since 1994 been

responsible for planning and establishing natural sites for the World Heritage List, and there exists agreements between Russian authorities and other organisations like World Wildlife Foundation (Sandersen 2009). But even though these international environmentalists' organisations in Russia appear more directly involved in environmental issues than their sister organizations in Norway, they have weaker institutional foundation for functioning. In 2006 a law was passed in Russia reducing the action span for NGOs, resulting in fragmented, weak and small NGOs with lack of funding and without strong parent organisations (Hønneland and Jørgensen 2006).

Rules are prescriptions that define what actions (or outcomes) are required, prohibited, or permitted, and which sanctions will be authorized if the rules are not followed (Crawford and Ostrom 2000 (1995); Ostrom 2000 (1986); Ostrom et al. 1994). These rules must not necessarily be formal laws, but might also be hidden in the structures of a certain society. There are rules at various levels, nested into each other. Changes at one level will thus influence rules at other levels. Rules are present in all areas and at all levels; here operational rules are most relevant. These are rules that affect day-to-day decisions (Ostrom et al. 1994).

Analysis of rules-in-use can therefore be used to explain why some protected areas are in the danger of being overused, either by subtracting too many harvestable resource units or by overcrowding and erosion of the nature experience itself. Closing an area for **users'** access (the public) appears seldom in Norway, but more often in Russia. The two Russian cases here are both protected *from* people, while they allow scientists inside these parks. In Norway outdoor recreation is often one of the aims of protecting nature, and Sjunghatten will have *universal access* as one of the aims in its regulations. Further, Sjunghatten is also in near proximity to the regional centre and the area is as of today to a great extent used by recreationists. Both Sjunghatten and Øvre Pasvik are open for visitors and are to a great extent used by fishers, hunters, harvesters and hikers (Bjørnu et al. 2005; Fylkesmannen i Finnmark 2007; Fylkesmannen i Nordland and Nordland Fylkeskommune 2006). These visitors are not

depending on the resources they extract for their living, since these resources might as well be extracted outside the protected area. But both areas are used for economic purposes by reindeer herders, and therefore represent the livelihood for these Sámi reindeer owning families. Sjunghatten has one herding district with three shares, 17 persons and a fixed number of 900 reindeers. In Øvre Pasvik there is one herding district with six shares, 26 persons and a fixed number of 2500 reindeers (Fedreheim et al. 2008). In the Russian areas there is not the same dependence on the resources in the protected areas as we see on the Norwegian side. Since the two Zapoveniks are only supposed to be used for scientific purposes one might say that the community dependence on them is low, even though they are of great importance for science.

To summarise both the discussion above, an initial table has been constructed presenting possible variables that can be used for analysing SES in protected areas, based on the four cases in this paper. Table 3 under gives an overview of which variables could be included.

Table 3: Key variables for governance of four protected areas in Norway and Russia

	Sjunkhatten	Øvre Pasvik	Pasvik	Lapland
National park's Resource Systems				
RS2 – Clarity of system boundaries	- ⁵	-	-	-
RS3 – Size of resource system	416,9 km ²	119 km ²	147,3 km ²	2784,4 km ²
RS4 – Human-constructed facilities	Restricted	Restricted	Restricted	Restricted
National Park's Resource Units				
RU4 – Economic value	Small	Small	Small	Small
National park's governance systems				
GS1 – Government organisations	Strong state	Strong state	Strong state	Strong state
GS2 – Non-government organisations	Few, strong	Few, strong	Few, weak	Few, weak
GS4 – Property-rights systems	Mostly private (75 %)	Legal entity (FEFO)	State	State
GS5 – Operational rules	Present	Present	Present	Present
GS8 – Monitoring & sanctioning processes	Weak	Weak	Strong	Strong
National park's users				
U1 – Number of users	High	Medium	Low – only science	Low – only science
U8 – Dependence on resource	High	High	Low	Low

⁵ - marks that knowledge about this second-tier variable remains to be investigated

6. Indigenous and local rights and the changing character of the “protected goods”

As the analysis of the 4 cases has shown, there are some important differences in the way protected areas are constituted in Russia and in Norway. As one move from west to east in Northern Europe, the ecosystem properties does not change dramatically, only gradually along an oceanic–continental gradient. Still the combinations of rules that form the base for the governing of protected areas are very different in the two countries (Sandersen 2009). This difference becomes even more pronounced when we start to look in detail at the dynamics of institutional change in the two different governance systems. Some more work need to be done on the comparison of these two processes, but some initial tendencies appear as relatively clear at this early stage:

One is the impact of state-initiated “devolution” processes in the Circumpolar North, which during the last 30 years have spearheaded the institutional developments of the North. With the end of the Cold War and the disappearance of the primary concern with military security in the north, the road was open for the decentralization of authority and decision power to elected bodies within the North itself (Sandberg 2009). Apart from state-initiatives, it can be difficult to determine whether increased “people to people” cooperation and increased self-governing capacity was a prerequisite or an effect of these devolution processes. What is clear is that in Russia, where the federal rule is still relatively strong, the processes of devolution are slower and the development of self-governing capacity in northern communities for use of northern resources is not high on the political agenda.

A second tendency is the impact on regional and local political processes of the adoption of ILO-convention 169 and the acknowledgement of indigenous (Sámi) rights to land and water. This is in Norway always interpreted as “indigenous and local rights” and has led to an increased level of political awareness of the connection between political activity and control with the material base for livelihood and culture. Russia has not yet acknowledged such

indigenous rights and has not experienced this impetus for local political awareness. But parallel claims to indigenous rights are voiced by RAIPON, Russian Association of Indigenous Peoples of the North, Siberia and Far East, who has special consultative status with the Economic and Social Council of the United Nations (ECOSOC); and is very active in participating in UN Working Groups on Indigenous Peoples' Issues, thereby being able to influence on the policies of the Russian federation.

The third tendency which is important in interpreting the difference in governing protected areas in Norway and Russia is the recent institutional changes that are taken place with regard to property rights in Northern Norway. Rooted not only in the acknowledgement of indigenous rights, but also in a long history of "inner colonization of the north", a number of institutional changes are being implemented that implies quite dramatic changes in ownership of land and water in the northern areas of Norway. In essence the public lands of the north are being handed back to the Northerners for them to govern through specially designed owner bodies; FeFo in the Finnmark Province and a proposed "Hålogaland Commons" in Troms and Nordland Provinces (NOU 2007:13 Bind A 2007; NOU 2007:13 Bind B 2007; LOV 2005-06-17-85 2005). Corresponding dramatic transfers of property rights are not observed in northern Russia, although in some instances the decision authorities over public lands are transferred from the federal level to the provincial (oblast) level.

The deep constitutional changes that such a change in basic property rights represents, will take some time to be reflected in the governing systems of the protected areas of the North. But when the governing bodies for the ground are constituted in a different way and their composition is changing and new rights' holders and new interests start to participate in management decisions, this will gradually influence on the design of rules at the collective decision level and on the practising of these rules at the operational level. As discussed more in detail below, one government policy in Norway is geared to transform conservation policies from a stage where the protection process itself is crucial – to a stage where the utilization of the

Park is given priority, if this policy succeeds, the role of various stakeholder groups becomes more significant. The analysis of the SES Governing System component (GS) does not yet fully reflect this constitutional change and need to be further elaborated to be able to handle these more dynamic aspects of the Governance System.

With a gradual transfer of governing authority for mountains, forests and lakes to regional authorities based on state acknowledgment of local & indigenous rights, the nature of the goods that can be enjoyed in National Parks will change character. From a situation with state ownership and open and equal access for the public of the whole nation – and the whole of Europe, some of the “goods” will be more difficult to enjoy – or more expensive - for certain groups. Most harvesting activities in protected areas, both fishing, hunting and the picking of certain berries will be more restricted and/or more expensive for “out-of region inhabitants”. These goods could thus gradually assume a more collective character rather than remaining a public goods. Especially in years with shortage of game (e.g. ptarmigan) there will be strong local stakeholder pressure in the new governing bodies to reserve quotas for local or regional hunters. But also the more active utilization of protected areas for economic enterprises, ecotourism etc. will be a theme for these collective decision making bodies. In this there is a possibility for favouring the local and regional entrepreneurs in order to stimulate local business development based on the resources of the adjacent National Park. When the supply of guided tours, husky safari and all-inclusive hunting week-ends increases and become the main “products” offered to the “out of region customers”, the “goods” of the protected area have changed character. In a governance perspective the Northern National Parks can change their character from a Public Playground to a Regional Commons. But in relation to a complete SES diagnostic approach to explain the changes taking place, it will then also be necessary to look more in detail at the Resource Units (RU and specify variables at the 3rd tier that can catch the changing character of the different kinds of units as “goods” to be enjoyed by various categories of users. This is a challenging task in the years ahead.

7. The Use of Protected areas for Human Activities - constituting a new kind of Socio-Ecological Systems

This study has shown that both Norway and Russia's protected areas are managed by the state in more traditional top-down processes. Still, we have shown that there are trends and movements towards more participatory and deliberative processes, and that there are possibilities for varied forms of co-management also in these countries. These new developments are in accordance with the rest of the European North, following from Finland and Sweden, as well as Norway having ratified numerous international conventions related to increasing local knowledge and participation in various processes (Sandström et al. 2008). While the Russian areas are closed for users, the Norwegian areas are open for visitors, and Norwegian policies also aim at intensifying the use protected areas and increasing the number of visitors (Direktoratet for Naturforvaltning 2006, 2009a, 2009b; Miljøverndepartementet and Landbruks- og matdepartementet 2005; Nærings- og handelsdepartementet 2007; St.meld.nr. 26 (2006-2007) 2007). The ideas behind this can be traced back to 1992 and the new (and second) Norwegian national park plan (St.meld.nr.62 1991-1992). Then Norway had 18 national parks, mainly in the mountainous areas. Norway was criticised internationally for conserving only the mountains, and other nature types were therefore involved in a greater extent in the new plan. But in order to reach IUCN's goal of conserving 15 % of all nature types, Norway needed to make some new and controversial steps. The first one was to conserve a larger proportion of private property. This would of course have impacts on the property owner's use of the nature. Second, they also needed to conserve other areas. Conserving the mountains was not the most controversial case, since these areas were less used than the new areas in the conservation plan. But with the conservation of more intensely used areas close to more densely populated areas, new challenges arise. This brings us to the third point and to the fact that there is a need to incorporate other aspects of use in these areas now.

“But there are accessible areas for more people in the mountains, and it is desirable that more people are given the possibility to experience the mountainous areas, both out of

consideration for health and welfare for the individual, out of consideration for business development in mountain villages, and in order to establish increased legitimacy for the measures necessary to take care of these values” (Finansdepartementet 2003: 142)

The above citation shows some of the reasons for why commercial tourism in national parks in Norway was allowed from 2003. Up until then all kind of commercial activities had been banned in many of Norwegian national parks. Through the “Mountain text” (Finansdepartementet 2003) nature-based tourism became legal, as long as this is done in a sustainable manner. Further, an ecosystem approach was chosen in managing national parks, focusing on both conservation and use of conserved areas.

The measures introduced in order to increase nature-based tourism are also initiated by the Government or the Directorate for Nature Management. Hence the focus on continued protection of natural values is strong, but we can see here a lack of involvement of local knowledge and business interests into these processes. The prospects for mass-tourism are, according to the Ministry of Environment and the Directorate for Nature Management, relatively small, and it is expected that increased tourism will not harm the values that are protected. Hence, there is an assumption underlying the new policies that that increased number of users will not affect the national park’s resource systems and resource units. But as shown earlier, monitoring and sanctioning violations of regulations is low in Norway compared with Russia. It is therefore possible to assume that Russia would be better capable of dealing with increased tourism than Norway, even though the local institutions are less developed there.

Bibliography:

- Bjørn, Ronald, Håvard Berg, and Lars Henrik Kristiansen. 2005. *Konsekvensutredning Sjunkan - Misten, delutredning friluftsliv*. p.
- Borrini-Fereyabend, Grazia. 2007. "The "IUCN protected area matrix" - A tool towards effective protected area systems." *IUCN World Commission on Protected Areas Task Force: IUCN Protected Area Categories* February 2007:12.
- Crawford, Sue E. S., and Elinor Ostrom. 2000 (1995). "A Grammar of Institutions." In *Polycentric Games and Institutions*, 114-55, ed. M. D. McGinnis: The University of Michigan Press.
- Didyk, Vladimir, Larissa Riabova, and Lyudmila Ivanova. 2008. "Regional-Municipal Relationship: The Case of Kirovsk Municipality." In *Practicing Local Governance: Northern Perspectives*, 45-60, ed. N. Aarsæther, A. Røiseland and S. Jenssen. New York: Nova Science Publishers.
- Direktoratet for Naturforvaltning. 2006. *Rapport til Miljøverndepartementet. Handlingsplan for bærekraftig bruk, forvaltning og skjøtsel av verneområder*. p. Oslo/Trondheim
- . 2009a. *Nasjonalparkkomune/landsby*.
<http://www.dirnat.no/content.ap?thisId=500028097>
- . 2009b. *Naturarven som verdiskaper - Et verdiskapingsprogram for naturarven*. 12 p.
- Dudley, Nigel (Ed.). 2008. *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: International Union for Conservation of Nature.
- Falleth, Eva Irene, and Sissel Hovik. 2008. *Lokal forvaltning av store verneområder. Erfaringer fra fire forsøk*. NIBR-rapport 2008:11. 54 p. Oslo
- . 2009. "Local government and nature conservation in Norway: decentralisation as a strategy in environmental policy." *Local Environment* 14 (3):221-31.
- Fedreheim, Gunn Elin, Ingrid Bay-Larsen, and Irene Ojala. 2008. *Aktiviteter i vernet natur i Nord-Norge*. Arbeidsnotat nr. 1017/2008. 42 p. Bodø
- Fedreheim, Gunn Elin, Ludmila Isaeva, Victor Petrov, and Ingrid Bay-Larsen. 2009. *Nature protection in Northern Norway and North-West Russia. Main characteristics of protected areas included in the NAPROLD-project*. NF Working Paper no. 1004/2009. 52 p. Bodø
- Finansdepartementet. 2003. *Tilleggsbevilgninger og omprioriteringer i statsbudsjettet medregnet folketrygden 2003*. St.prp. nr 65 (2002-2003). 140-53 p.
- FOR-2003-08-29-1104. 2003. *Forskrift om vern av Øvre Pasvik nasjonalpark/Báhčaveaji*
- Fylkesmannen i Finnmark, Miljøvernavdelingen. 2007. *Brukerundersøkelse i Øvre Pasvik nasjonalpark og omegn. Sommer og høst 2006*. RAPPORT nr. 1-2007. p.
- Fylkesmannen i Nordland. 2007. *Forslag til forskrift for Sjunkhatten - Barnas nasjonalpark, Bodø, Fauske og Sørfold kommuner i Nordland fylke. Tilrådning om opprettelsen av Sjunkhatten – Barnas nasjonalpark*
- fra Fylkesmannen i Nordland til Direktoratet for naturforvaltning september 2007. p. Bodø
- Fylkesmannen i Nordland, and Nordland Fylkeskommune. 2006. *Bruk og vern i Sjunkan-Misten. Høring av fylkesdelplan etter plan- og bygningsloven, verneplan etter naturvernloven og konsekvensutredning etter plan- og bygningsloven*. Bodø.
- Günther, Morten (Ed.). 2004. *Field Guide to Protected Areas in the Barents Region*. Svanvik: Svanhovd Environmental Centre.
- Hønneland, Geir, and Jørgen Holten Jørgensen. 2006. *Moderne russisk politikk. En innføring i Russlands politiske system*. Bergen: Fagbokforlaget.
- Innst. O. nr. 64 (1995-1996). 1996. *Innstilling fra energi- og miljøkomiteen om lov om statlig naturoppsyn*. p.
- LOV 1970-06-19 nr. 63. 1970. *Lov om naturvern*. p. Oslo
- LOV 2005-06-17-85. 2005. *Lov om rettsforhold og forvaltning av grunn og naturressurser i Finnmark fylke (finnmarsloven)*. p.

- Meinzen-Dick, Ruth. 2007. "Beyond panaceas in water institutions." *PNAS* 104 (39):15200-5.
- Miljøverndepartementet, and Landbruks- og matdepartementet. 2005. *Plan- og bygningsloven og Landbruk Pluss. Hvordan kan plan- og bygningsloven brukes for tilrettelegging av ny landbrukstilknyttet næringsvirksomhet?* Veileder T-1443. 18 p. Oslo
- NOU 2007:13 Bind A. 2007. *Den nye sameretten. Bind A.* p. Oslo
- NOU 2007:13 Bind B. 2007. *Den nye sameretten. Bind B.* p. Oslo
- Nærings- og handelsdepartementet. 2007. *Verdifulle opplevelser. Nasjonal strategi for reiselivsnæringen.* 78 p.
- Ostrom, Elinor. 2000 (1986). "An agenda for the study of institutions." In *Polycetric Games and Institutions. Readings from the Workshop in Political Theory and Policy Analysis*, 89-113, ed. M. D. McGinnis: The University of Michigan Press.
- . 2005. *Understanding institutional diversity.* Princeton: Princeton University Press.
- . 2007. "A diagnostic approach for going beyond panaceas." *PNAS* 104 (39):15181-7.
- Ostrom, Elinor, Roy Gardner, and James Walker. 1994. *Rules, games and common-pool resources.* Ann Arbor: The University of Michigan Press.
- Ot.prp.nr. 52 (2008-2009). 2009. *Om lov om forvaltning av naturens mangfold (naturmangfoldloven).* 480 p. Oslo
- Sandberg, Audun. 2009. "Constituting a New Order in the European North." In *The Practice of Constitutional Development: Vincent Ostrom's quest to understand human affairs*, 227-45, ed. F. Sabetti, B. Allen and M. Sproule-Jones. Lanham: Lexington Books.
- Sandersen, Håkan. 2009. "The differences that make the differences - A Comparative Study of Protected Areas in Northern Norway and North-Western Russia." FORTHCOMING.
- Sandström, Camilla, Sissel Hovik, and Eva Irene Falleth. 2008. *Omstridd Natur. Trender & Utmaningar i Nordisk Naturförvaltning.* Umeå: Boréa.
- St.meld.nr.62, (1991-1992). 1991-1992. *Ny landsplan for nasjonalparker og andre større verneområder i Norge.* St.meld.nr.62 (1991-1992). p. Oslo
- St.meld.nr.62 (1991-1992). 1992. *Ny landsplan for nasjonalparker og andre større verneområder i Norge.* 120 p. Oslo
- St.meld.nr. 26 (2006-2007). 2007. *Regjeringens miljøpolitikk og rikets miljøtilstand.* 168 p. Oslo
- Zachrisson, Anna. 2008. "Who should manage protected areas in the Swedish mountain region? A survey approach to co-management." *Journal of Environmental Management* 87:154-64.