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Forest Dispute and Change in Muonio, Northern Finland

ABSTRACT This article examines a forest dispute that took place in the municipality of Muonio in northern Finland. The parties involved in the dispute were the Finnish state forestry enterprise Metsähallitus and a local coalition consisting of representatives of reindeer herders, the municipality, a local environmental NGO, a game association, and tourism entrepreneurs. The primary data for the article was gathered through thematic interviews that took place in 2005 and 2007. The dispute reflects the land-use needs of growing tourism in the area. It also provides an example of how change takes place through a dispute and how it is managed. The adaptive cycle heuristic is utilised to assist in an analysis of the change resulting from the dispute. Secondly, the Muonio case is examined in the light of the adaptive co-management approach in order to examine whether the change was governed adaptively. It is concluded that the dispute worked as a trigger for a policy innovation. That is, Metsähallitus rented the forests to tourism entrepreneurs and the municipality for ten years. The solution contained some features of adaptive co-management: a place-specific solution, interaction and negotiation. The problems were related to knowledge distribution and lack of careful deliberation.

KEYWORDS tourism, forestry, dispute, adaptive co-management, adaptive cycle

Introduction

Tourism is a growing field all over the world, and ecotourism is one of the branches facing rapid growth (e. g. Wenjun et al. 2006; Song & Li 2008). At the same time, other forms of land-use are often dependent on the same resources as tourism, which might result in conflicts between the parties representing different land-use forms. In addition, as

tourism boosts local, regional, and even national economies there is increasing pressure to acknowledge its needs in land-use decisions. Yet, this is often difficult as representatives of other land-use forms are not willing to give up their positions. Thus, the challenge for the future is to combine growing tourism with "older" land-use forms in a sustainable and adaptable manner.

This article asks how change pertaining to forest-use takes place in the municipality of Muonio in north-western Finland, and how this change is governed. The change is examined theoretically using the adaptive cycle heuristics developed by Gunderson & Holling (eds., 2002). To answer the latter question, I will use the approach of adaptive co-management to discuss how change and the resulting uncertainty should be governed in a sustainable manner. Accordingly, there cannot be a predefined state towards which we are inevitably progressing, but instead society should always be ready to adapt to changes (see Folke et al. 2002; Olsson et al. 2004).

In northern Finland, the main land-use forms are forestry, nature conservation, tourism, reindeer herding, and subsistence economies, such as hunting, fishing, and berry picking. There was a dispute over the usage of some old-growth forests in the municipality of Muonio. The parties in the dispute were the Finnish state forestry enterprise Metsähallitus and a local coalition, the key group of which consisted of tourism entrepreneurs, reindeer herders, representatives of a game association, the municipality, and a local nature conservation NGO. The old-growth forests are a basis for many of the products offered by ecotourism entrepreneurs. In addition, the disputed forests provide important winter pastures for the reindeer and they also function as a reservoir along with the adjacent national park for many game animals, such as moose and grouse. On the other hand, Metsähallitus is eager to log the old-growth forests as more cubic metres of wood can be harvested from them than from younger ones. The challenge in Muonio is to combine forestry with the other land-use forms.

In Finland, and especially in the north, forestry has been the most beneficial form of land-use during the latter half of the twentieth century. It has contributed not only to the growth of the national economy, but also to the well-being of the local people. However, the mechanization of forestry has drastically decreased the amount of jobs in the industry. In the 1950s, around half a million men worked in forestry, but in 2004, forestry and the forest industry together employed only around 90,000 people (Laine et al. 2006). On the other hand, tourism has been considered as the solution for the peripheral north because of the increasing income it brings on the local and regional levels (Tuulentie & Järviluoma (eds.) 2005). Especially in Muonio, ecotourism has grown very fast, and the locals have begun to value tourism as a significant and profitable form of land-use.

The data for the article was gathered through fifteen thematic interviews which were conducted in the autumn of 2007. The themes included what happened during the dispute(s), how the forests should or should not be used in the respondent's opinion, the respondent's relations to the other actors active in the dispute, and the meaning of the disputed forests for the respondent or his or her organisation. These themes are fairly wide, and they were complemented with more detailed questions, which were defined based on each actor's position. Another set of interviews was conducted in 2005, partly with the same actors. Interviewees included representatives of the Metsähalitus, reindeer herders, tourism entrepreneurs, local nature conservationists, representatives of the local game association, and the municipality of Muonio. Most of the interviewees were key actors in the forest dispute, which took place in 2007. They were identified based on discussions in media. Then the snowball method was used to interview additional people; I asked the interviewees who I should interview in relation to the forest dispute.

Adaptive Cycles and Adaptive Co-Management

How Does Change Take Place?

In order to understand how we can make governance more adaptable, we must understand how change takes place. Holling & Gunderson (2002) have developed a four-phased heuristics to comprehend change and dynamics in socio-ecological systems. The phases are called *exploitation*, *conservation*, *release* and *reorganization*, and movement through the loop is called the *adaptive cycle*. During the *conservation* phase, resources are locked in existing structures and the situation is relatively stable as the resources are used, for example, by those who control them. *Conservation* is followed by a rapid phase of *release*, at which time the resources are literally released, for example, from existing power structures. The *release* phase leads to *reorganization* which is when the actors *reorganize* themselves in order to *exploit* the resource again. The rapid growth in *exploiting* the resource is followed again by another *conservation* phase. However, adaptive cycles do not function in an isolated manner but as nested cycles between different scales and between different ecological and social systems. Major changes usually take place during the phase of *reorganization*, which is the time when new policy innovations are possible. And when the system moves from *reorganization* to the *exploitation* phase, some of the potential leaks away from the system. This is the time, for example, of redefining use and access rights, and the time when some actors might be replaced or excluded by others. According to the model change never ends but continues through the different phases (Resilience alliance 2007; Holling & Gunderson 2002; Holling 1986).

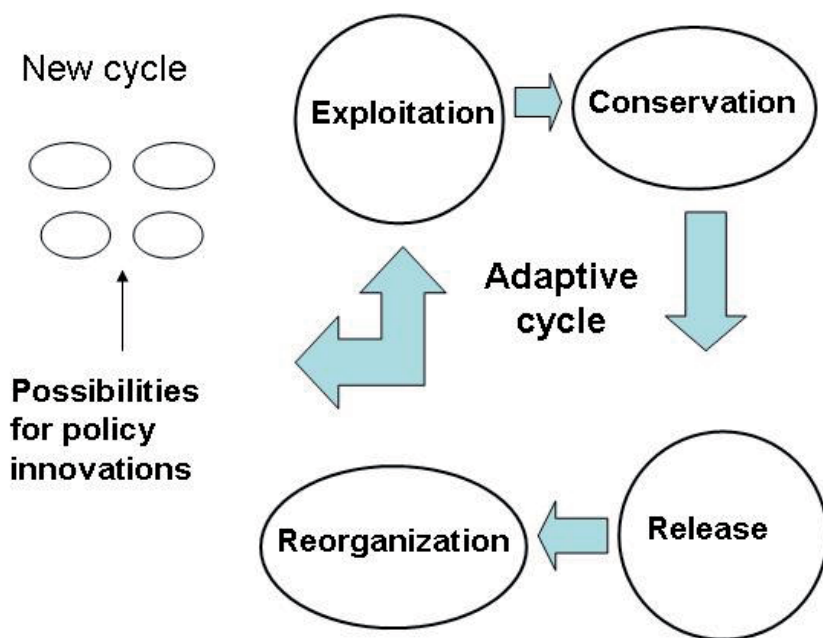


Fig. 1. Model applied from Gunderson & Holling 2002.

Transformability is described by Walker et al. (2004) as:

The capacity to create a fundamentally new system when ecological, economic, or social (including political) conditions make the existing system untenable. Transformability means defining and creating new stability landscapes by introducing new components and ways of making a living, thereby changing the state variables, and often the scale, that define the system.

Hence, transformability means the ability of, for example, an institution to change its structures in order to achieve a more desirable state of the system. On the other hand, “undesirable states may be extremely resilient, becoming traps that constrain future options” (Gunderson & Folke 2007). The history of an institution affects its current forms and institutions are described as being path-dependent. In particular, the policy choices that are made when the institution is formed will have a continuing effect far into the future, and transitions away from these paths may be difficult. However, path dependency does not mean that there is no change and evolu-

tion in the institutional development; instead, it implies that the range of possibilities is limited by the initial purpose and vision of the institution (Peters 2005).

Sometimes conflicts are needed to generate change. Conflicts are not always destructive but can also be constructive, leading to new systems which can be more sustainable than the previous ones (see Peltonen & Villanen 2004; see Kyllönen et al. 2006, and Deutsch 1973). Hence, conflicts can resolve problems related to low transformability and lead to policy innovations. Further, constructive conflict management can lead to unlocking the possibly polarised views of the conflict parties. On the other hand, conflict parties often form coalitions pertaining to the issue at hand. The members of a coalition can be diverse and even in contradiction with each other, but they still share a common opinion about the conflict case, and at least present their view as if it were unified during the struggle for the control of, for example, land-use policy (cf. Cohen 2000). If these kinds of coalitions are driving for a change, they have a better chance of generating policy innovations than a single stakeholder (see Hajer 1995).

How is Change Governed?

Changing eco-social environments call for adaptability in management institutions which are faced with the new circumstances. Practices which were sustainable before might be unsustainable today because of the constant change and uncertainty (cf. Hukkinen 2006, and cf. Wilson 2002). This is why management institutions should have auditing systems in order to interpret, learn from, and act on the change taking place in their socio-ecological environments (see Olsson et al. 2004). In the face of change and uncertainty, adaptability is needed in order to adjust the management practices to the situations at hand in a sustainable manner.

Several decades ago it was proposed that the solution to the problems pertaining to sustainable land-use in common lands would be either privatisation or state intervention (Hardin 1968). The current view stresses that adaptive approaches are needed to solve the problems linked to sustainability and the management of uncertainty and change (e.g. Dietz et al. 2003). Adaptive governance takes place through adaptive co-management systems, which stress networks and trust (Folke et al. 2005). Adaptive co-management highlights dynamic and continuous learning, horizontal and vertical linkages, and the sharing of rights and responsibilities (Olsson et al. 2004). The goal of adaptive co-management is to form a place-specific management system which is able to interpret and act on the social and ecological feedback received from the socio-ecological systems. This should aid in producing sustainable and adaptable management systems. Other goals

of adaptive co-management are: 1) to foster dialogue between various stakeholders, 2) to integrate different knowledge systems, 3) to encourage collaboration and power-sharing, 4) to increase management flexibility, 5) to improve the evaluation of the participatory processes and their outcomes, and 6) to build social capital among various interest groups (Resilience alliance 2007). In recent development discussions, the concept of social capital has been considered important in many respects; it has, for example, been described as the glue that holds societies together (Serageldin & Grootaert 1999). The most important aspects of social capital are trust, norms and networks (Putnam 1993).

The Dispute in Muonio

The municipality of Muonio is located in northwestern Finland, and covers 2,014 km² of land. The third largest national park in Finland, Pallas-Ylläs, is partly located in the municipality. In the past decades, forestry used to provide income for many lumberjacks, but the mechanisation of forestry has decreased the number of jobs drastically. Currently, the main source of income is tourism, which has grown fast during the last decades. The municipality is scarcely populated, having approximately 2,500 inhabitants and a municipality centre.

The forest dispute between the Metsähallitus and the locals has a long history, but revived again in December 2006, when according to local coalition the Metsähallitus drove its forestry machinery to the edges of the disputed forests in order to cut them down. The disputed areas are important grazing grounds for reindeer and valuable reservoirs for game, such as moose and grouse. They are also essential for the tourism entrepreneurs' ecotourism products, which include reindeer, snowmobile, and dog-sledge safaris, and valuable places for berry picking and other recreational and subsistence activities of the inhabitants of the municipality. On the other hand, the forests are important for the Metsähallitus, as old-growth forests rich in wood are a scarce resource in economy forests. The dispute occurred as a result of these contradictory interests. Before describing the dispute in detail, some background information about tourism, forestry and forests is in order.

Tourism

Nature-related tourism has grown very fast in Muonio over the last two decades. According to a local nature conservationist, "who would have thought twenty years ago that there would be 400 dogs in Harriniva's tourism enterprise in Muonio. And how much space does ecotourism need after, say, ten years. No one really knows. We have to retain the possibilities of using the forests for tourism." According to a tourism entrepreneur, there are around

1,100 employed people in the municipality out of whom 650 receive their income from tourism. Tourism entrepreneurs fear that if the forests are cut down, tourists will not come to the area anymore. It is uncertain how logging would affect the tourism in Muonio, and many of the locals stated that using lighter forestry methods, such as continuous forestry, in the disputed area would be acceptable, but they feared that Metsähallitus would not cut the forests carefully. As a local nature conservationist put it: “If you give them your little finger, they will take the whole hand.” The reasons for this distrust are probably historical but they are also related to the poor distribution of information concerning the planned loggings in Muonio.

Forestry

Metsähallitus is a state-owned forestry enterprise and uses around 3.4 million hectares of forests for economic forestry. Its goal is to combine the economic, ecological, and social dimensions of sustainability in forest management. “Metsähallitus has the challenging responsibility of managing and using these areas in a way that benefits the Finnish society to the greatest extent possible” (Metsähallitus 2007). Local needs concerning the forests are heard in participatory planning processes (see Loikkanen et al. 1997), and, for example, in the areas adjacent to tourist destinations, special care is taken to protect the needs of tourism. Tourism is taken into account, for example, by leaving protection forests around the tourist routes and by cutting the forests at a more mature age than normally.

Historical ballast has an effect on the preferences regarding the land-use forms. The share which forestry brings to the Finnish national economy has been seen to have contributed to Finland’s economic growth, and hence, loggings are important even at the national level. In addition, at least in the 1960s, forests were automatically seen to belong to forestry (Björn 2006; Rytteri 2002). The sustainability of forestry practises is measured by the growing possibilities of harvesting, by the growing wood deposit, and by the preservation of the areas under forestry (Tahvonen 2006). However, basing sustainability on the wood production and maximization of the cubic meters harvested has been questioned from economic (Tahvonen 2006), social (Kyllönen & Raitio 2004), and ecological (Hanski 2006) standpoints. Although the success of forestry over other land-use forms is questioned at least at different localities, the images of forestry as the most important and profitable land-use form remain.

The Disputed Forests

The disputed forests are the only remaining old-growth forests outside of the Pallas-Ylläs national park in the municipality of Muonio. After the Sec-

ond World War, Finland paid war compensations to Soviet Union in timber, and a vast amount of forest was cut down in the mid-twentieth century. The forests in the southern parts of Muonio were also heavily logged. The northern parts, which are now the cause of the contradictions, were subjected to minor loggings after the war. Some of the larger trees were hacked down during the rebuilding of the villages of Ylimuonio and Kätkäsuvanto. Hence, the area is not in its “natural state”, but according to a local nature conservationist, the disputed forests “appear untouched and represent the beauty of the wilderness, at least from the European tourists’ point of view.” Because of the post-war loggings, the area has not been claimed for area conservation. In Muonio, it will take 150 years for the forests to regenerate after the timbering before they can be end-logged again. The areas are located near the northern timberline of both pine and spruce, and this makes the regeneration period uncertain.

The First Dispute

As early as in the 1980s, there were disputes over the area between Metsähallitus and locals. At that time, the locals opposed the loggings mainly because they saw the areas in northern Muonio as important for reindeer herding, hunting, berry picking, and other subsistence and recreational activities. The locals regarded the forests as important for their subsistence and recreation because they were situated far from the road, and outsiders could not find their way there. At the time, Metsähallitus did some loggings in northern Muonio, but no forestry road was built as the timber was transported on winter roads.

The Second Dispute

During the regional natural resource planning of the Metsähallitus at the end of the 1990s, the issue of northern Muonio returned to the discussions, as the Metsähallitus suggested that loggings be done in the disputed areas. The area of Vuontisjärvi, which is part of the disputed forests, was proposed to be spared from forestry to the benefit of other land-use forms, such as tourism, reindeer herding, hunting, and recreational activities of the local people (Sandström et al. 1999: 175). Other disputed areas were Vittaselkä, Pahtavaara, Mustavaara, Nirrokero, Vuossukkaselkä, and Tikkaselkä. Because of the differing opinions concerning the use of the disputed forests, the Metsähallitus started to negotiate the issue with the representatives of the municipality and tourism entrepreneurs. In the 1980s, the reasons for local resistance to the loggings were the local possibilities for subsistence activities and recreation. However, in 1999, the main issue was tourism. The municipality did not take the side of the locals against the loggings in the

1980s, but it did so in 1999. The following quote explicates the issue:

During the previous dispute [1999] the municipality had given a positive statement to Metsähallitus that the loggings could begin, but then the issue was raised on the table. Then we went to the municipality and put it in plain Finnish what was the source of income in this region, how many jobs there were in tourism and in forestry, and in other livelihoods. After that the municipality has changed its course, and has since been behind the tourism entrepreneurs and other locals. (Nature conservationist 2007.)

It was then agreed that Metsähallitus would not log the disputed areas for ten years. The livelihood structure had changed and tourism was in rapid growth. Consequently, the municipality changed its opinion to reflect the altered livelihood structure. Local actors empowered themselves and were able to turn the municipality's official opinion around to favour tourism over forestry.

The Third Dispute

The dispute in 2006 began in December when the locals found out about the plans of the Metsähallitus to log in Muonio's Mustavaara. The Metsähallitus presented logging plans concerning Mustavaara to the representatives of the municipality in December 2006. The total size of the planned loggings was 2,000–3,000 ha, which would have been logged over the next ten years. On the same occasion, the representatives of the municipality responded that the loggings would certainly cause discussions and problems. In spite of this opposition, Metsähallitus informed the representatives of the municipality and the other interest groups that the loggings would begin at the beginning of January, and according to a representative of the municipality:

It caused a popular movement unparalleled during my thirty-year career in the municipality. And the situation was binding the people of Muonio together, as you could say that almost without any invitation, the tourism entrepreneurs, the reindeer herders, and the hunters found each other. It was to the common benefit of everyone that it would be preserved as unlogged as possible. When the other citizens gathered around this formation, the most active tourism entrepreneurs organized a citizen meeting. I would say that 1/3 of the people in Muonio participated in the meeting. (Municipality 1.)

The core group of locals had an invitation printed on the front page of a regional newspaper. The space is usually reserved for a tourism entrepreneur's advertisement, but this time it was replaced by an invitation letter to

a happening that was to take place on 29 December 2006. It was estimated that around 500 people took part in the protest, out of the 2,500 inhabitants of the municipality of Muonio. The core group had made agreements with television and regional newspaper journalists that they would report the protest in Muonio.

The local nature conservationist also said that “even the schedule tells you something: they tried to utilise the old trick of doing it during the Christmas holidays, in secret.” According to locals this secretiveness unified the local opinion against the loggings. A local politician stated that “Metsähallitus tried to surprise us, but we were able to react very fast.” What, then, were the factors that made this fast reaction possible, and made the protest happen on such a tight schedule? According to a local politician, the issue was considered as being relevant, and people were very eager to take part in the protest. Also, various contacts were made to good effect. The local coalition was in touch with the media and also with politicians to increase the pressure on Metsähallitus. Local politicians part of the coalition believed that because of the media attention and the relations with other, also national level politicians, Metsähallitus took the issue more seriously, “because our wishes had not had much weight, and the protest alone would not have been enough.”

After the protest, Metsähallitus began to negotiate with the local coalition, which included a local politician, a representative of a reindeer herding cooperative, a local nature conservationist, tourism entrepreneurs, and a representative of a game association. The role of the local politician was not decisive here, although he is active in municipal politics. There were three meetings in the spring of 2007. Tourism entrepreneurs suggested that they could even pay Metsähallitus for not cutting the woods. After negotiations where an agreement concerning the loggings was sought, Metsähallitus finally made an agreement with the locals that the forests would not be felled and that compensation would be paid to Metsähallitus by the municipality and the tourism entrepreneurs. The sum paid by the municipality is nominal, but the amount of the rent paid by the tourism entrepreneurs is a corporate secret.

The parties had differing opinions concerning the solution. Metsähallitus would have liked to negotiate some kind of compromise, so that some loggings could have been made, but according to a representative of Metsähallitus this was not possible because: “the tourism entrepreneurs insisted that their original proposition regarding the payment for no loggings would come true, so in a way there was no [room for compromise].” In addition, from Metsähallitus’s point of view, the payment of the compensations is not a positive result, because the compensations cover only the losses of

Metsähallitus. According to a representative of Metsähallitus, the value of the trees when further processing is taken into the equation, is “something like fifteen times the value of the wood.” In addition, representatives of Metsähallitus said that it is difficult to estimate whether tourism gets any benefits if the forests are not logged.

A representative of the municipality stated that the rent was a good solution for Metsähallitus as the forest is still growing and ready for logging in the future if such a decision is made, and now the tourism entrepreneurs have ten years to develop their business in the area. In addition, the representative of the municipality was happy with the solution because “we did not have any flags of global NGOs [refers to Greenpeace].” Keeping the issue local was regarded as a good thing for the image of both Metsähallitus and the tourism entrepreneurs.

According to a reindeer herder, by taking the rent Metsähallitus in a way saved face: Metsähallitus could not have withdrawn without any compensation. Furthermore, the reindeer herder stated that if Metsähallitus had withdrawn without any compensation, they would have had to withdraw from many other places as well. Thus, the Muonio case would have worked as a precedent. However, the reindeer herder also noted that “taking the compensation is akin to what the mafia does: you pay a certain amount of money for not getting the common forests cut. Of course, Metsähallitus manages the state’s forests, but it is we who own them, you and me.” In addition, he emphasised that if the dispute had continued, the yellow press and Greenpeace would have been called to the location. However, “we didn’t use this card, as we got it through even without it.”

How Change Took Place in Muonio

If we consider the idea of the adaptive cycle in relation to forestry and tourism in Muonio, we notice that tourism is now in the exploitation phase. Growth is fast, tourism is invading new areas, and markets are growing (cf. Holling & Gunderson 2002). Hence, tourism is also testing its limits in regard to forestry and trying to influence land-use decisions perhaps more strongly than, say, twenty years ago. Forestry, on the other hand, is in the conservation phase, a position where well-established, rigid processes and power relations seem to lead to a certain pre-determined future, that is, that logging will take place in the economy forests. However, these rigid structures become vulnerable to surprises, and organizations tend to become internally focused losing sight of their working environment. The trigger for the ensuing release phase can be random and external (Holling & Gunderson 2002). In Muonio, the dispute and the resistance of the coalition

opposing the loggings triggered the release phase. The release phase was short but meaningful, and it can be argued that the release phase happened at the time when Metsähallitus chose to negotiate with the coalition about the loggings in northern Muonio. After this release, a reorganisation phase followed with the negotiations, and new configurations in the use of the forests became possible. The reorganisation phase ended when a solution was reached in the negotiations, and a new cycle different from the old one began (cf. Walker et al. 2006).

Reorganisation of Metsähallitus in northern Muonio does not mean that a release took place on the scale of the entire Finland. The reorganisation phase is a time of uncertainty, change and surprise (e.g. Gunderson et al. 1995), and hence it might generate fear in the actors involved. However, in either case, loggings or no loggings, a reorganisation of one of the parties was inevitable. Metsähallitus had to reorganise as the loggings did not take place, and the tourism would have had to reorganise if the loggings had happened, because the old-growth forests under dispute are the basis for many of the products of ecotourism. Thus ecological and social changes were linked (Adger 2000), even in such a way that preserving the same ecological environment required a reorganisation and change in the social world. Metsähallitus reorganised and gave up the loggings in northern Muonio, and the dispute was resolved by renting the forests to the municipality and the tourism entrepreneurs. One reason for taking the rent was that Metsähallitus probably feared reorganisation in other locations as well.

The local coalition resisting loggings included tourism entrepreneurs, reindeer herders, representatives of a game association, a local nature conservation NGO, the municipality, and even a representative of the media. The multi-stakeholder nature of this coalition was a powerful precondition for the change that took place in Muonio. Synergies between social, economic, cultural and ecological dimensions of sustainability are often required to produce change (Newman 2004). The involvement of the tourism industry guaranteed that the economical aspect was taken care of, the reindeer herding and hunting represented the cultural aspect in the coalition, and the nature conservationist represented the ecological dimension. Social sustainability, that is, the possibilities of participation and fair distribution of benefits (Rannikko 1999), comes from the fact that the coalition provided enhanced possibilities of participation compared to the regional natural resource planning of Metsähallitus.

Multiple actors stated that the solution that emerged would not have been possible without the municipality's intervention. At the end of the 1990s, the municipality changed its opinion in relation to loggings in northern Muonio. The ability to change one's direction, transformability, was

also due to alterations in the livelihood structures of the municipality. The forest industry employed fewer workers than before because of the mechanisation of the harvesting, and tourism was in rapid growth. The coalition helped the municipality to take these changes into account. The municipal authorities had noticed the changes and were able to transform their views accordingly. The past dominance of forestry did not block the way for new estimations concerning forest use in northern Muonio.

The transformability of Metsähallitus was not as high as that of the municipality. Metsähallitus is an institution established for managing the state's economy forests in a way which combines various dimensions of sustainability, but the starting point is often criticised as sustainability only from the perspective of wood production (cf. Tahvonen 2006). On the other hand, Metsähallitus has well-established processes for harvesting and selling the timber, and, according to a representative of Metsähallitus, contributing to the well-being of the forest industry is one of its missions. In addition, according to the representative of Metsähallitus, it has been calculated that when processed further, the value of the timber increases fifteen-fold. The latest trend in Metsähallitus has been to estimate the monetary value of fulfilling its social responsibilities. According to these calculations, the annual loss caused to the forestry sector is approximately € 38 million, while the amount which Metsähallitus annually discharges to the state is around € 65 million (Schildt 2007). The calculation is used as an argument for the view that Metsähallitus is taking care of its social responsibilities properly. These kinds of estimations make the goal of sustainability of wood production more resilient to change, and decrease the transformability to acknowledge societal responsibilities more than currently.

Adaptive Co-Management and the Muonio Case

Place-specific Management System and Management Flexibility

It is emphasised in the literature that the governance of natural resources should take place on multiple levels and by polycentric institutions (Folke et al. 2005). This means that locally flexible management systems are needed to ensure place-specific management solutions (see Cash et al. 2006). A place-specific solution emerged in Muonio after the dispute and the negotiations. The conflict was needed to trigger innovative solutions. Thus, the question is how to resolve the conflicts and the disputes (cf. Kyllönen et al. 2006). In this case, the dispute speeded up the deliberation and hence forced the parties to make a decision. As a consequence, a solution that did not satisfy any of the stakeholders was arrived at, namely the rent. The conflict led the situation to a hasty conclusion and a solution was reached which was

rather a “time out” than a lasting solution to the contradictions between forestry and tourism in Muonio. However, it must be noted that learning and experimentation are important factors in adaptive management (e.g. Walters 1997; see Daniels & Walker 2001). This solution can also be viewed as an experiment from which the various parties can learn as they see the effects of the new style of management.

Building Social Capital

During the dispute, social capital was high and even strengthened among the tourism entrepreneurs and the other local actors. For example, arranging the protest in Muonio required intense collaboration between various local actors, and one of the interviewees stated that “social contacts were strengthened, and I sent hundreds of e-mails during the dispute.” This draws attention to the fact that political action increases social capital at least between parties who are on the same side. On the other hand, the relationships between Metsähallitus and the local coalition were not based on mutual trust. The mutual blaming of the other side was a clear sign of distrust. However, the parties also stated that “we can still talk to one another and will not hit each other upon meeting.” Thus, even though there may not be trust between the actors from Metsähallitus and the local coalition, there is still some social capital left on which new management practises can be built.

It is often said that social capital and networks help in self-organisation and are an important part of adaptive management (e. g. Olsson et al. 2004). However, it has also been noted that it is important to recognise the winners and the losers of cross-scale interactions (Adger et al. 2005). Thus, not all connections are beneficial. In Muonio, both kinds of networks existed: those which were utilised effectively and those which were too dangerous to be utilised because of the possible burdens which might have resulted from utilising these interactions. The local coalition that opposed the loggings was in touch with members of the Finnish parliament, had connections with the media and was internally tightly bound together. These networks helped in forming an influential popular movement. Conversely, there were also relationships that were not utilised, because the members of the coalition feared that utilising those relationships might result in deteriorated interaction with Metsähallitus. These “hot” relationships included Greenpeace and foreign media houses. The members of the coalition stated that “we wanted to keep the issue in our own hands, and involving Greenpeace would have resulted in counter-reactions from the Metsähallitus.” The case of Muonio highlights the importance of networks when generating efficient collective actions, but at the same time it should be noted that some

of the relationships might not be beneficial in the long run. Utilising “hot” relationships also shapes the relationships between other actors, and has a kind of billiard ball effect that can no longer be controlled by the initial actors who created the connections (cf. Latour 2005), and therefore unwanted influences might emerge. Thus, networks must be utilised with deliberation.

The role of key actors is often important in generating and managing change (Olsson et al. 2004). In relation to the social capital that an individual holds, a distinction is made between positional resources and more personally owned resources. Being part of a hierarchical structure enables the actor to utilise the linkages and the authority inherited with the position (Lin 2001: 42–43). Some of the interviewed actors stated that the presence of Metsähallitus’s forestry director in Muonio on 29 December was relevant for the beginning of the negotiations and for fostering dialogue between the parties. The locals took this to signify the fact that Metsähallitus took the Muonio issue seriously, and it also enhanced local people’s trust in Metsähallitus.

Combining Different Knowledges

It is often stressed that different knowledge systems should be combined in decision-making (Folke et al. 2002; Berkes & Folke (eds.) 1998). One way of doing this is to use multi-stakeholder bodies. However, these bodies can turn into “talkshops” or they can be used by, for example, the government to defuse conflicts without any real power sharing to management parties (Berkes 2002). In addition, these bodies might turn out to be inefficient because of mismatch of scale (cf. Cash et al. 2006). For example, sometimes participatory processes are held where issues are dealt with regionally even if the problems at hand are local.

Before the dispute, there were two kinds of multi-stakeholder bodies related to the use of the forests in northern Muonio. Firstly, there was the regional natural resource planning (*luonnonvarasuunnitelma*) of Metsähallitus, and secondly, two meetings, one with the representatives of the municipality and the other with reindeer herders and the game association. The problem in regional natural resource planning was that the areas of northern Muonio were not discussed in detail while making the plan. Hence, the problem was that the negotiations were conducted on a regional scale, while the dispute came to concern a certain locality. Normally this type of general planning might be enough, but in areas where there are known to be diverse and contradictory interests, information concerning the details of the planned actions should also be distributed. Secondly, in the meeting between Metsähallitus and the municipality where Metsähallitus presented

the logging maps for northern Muonio, the representative of Metsähallitus had misunderstood the situation, believing that the municipality would give permission to log in the area. A representative of the municipality had stated that “the maps are better than they were the last time” but this did not imply an acceptance of logging. Thirdly, there was some confusion regarding who should attend the meeting which was intended for the reindeer herders and the game association, but not for the other members of the local coalition, that is, for the tourism entrepreneurs and the nature conservation NGO. In addition, the members of the coalition emphasised that the dialogue should have begun earlier in order to solve the contradictions without a dispute. Varying views regarding the distribution of information resulted in the fact that the representatives of Metsähallitus were surprised as the conflict arose even though they thought that the issue had been discussed. On the other hand, the locals were surprised that Metsähallitus was going to cut the important forests without discussing the issue with them. In conclusion, there were varying views regarding how the information was distributed. This highlights the fact that in order to combine different knowledge systems effectively, there is a need for more careful information distribution, for matching the scale in participatory processes and for enhanced transparency.

Collaboration and Power Sharing

Collaboration and power sharing are vital aspects of adaptive co-management (Resilience alliance 2007). Both parties, Metsähallitus and the locals, claimed that the motives of the other side were based on the need to display their power. The representatives of Metsähallitus claimed that the locals considered the disputed area as their own and hence were opposed to the loggings on the state lands. The collaboration was disturbed by the distrust and the possible power plays on both sides. Power sharing was not taking place deliberately, but instead both parties tried to boost their own views and hold on to, and even increase, their power over the other party. In addition, neither of the parties was satisfied with the fact that Metsähallitus rented the forests to tourism entrepreneurs. However, both parties stressed that the current option, to leave the forests outside of forestry for ten years, would not have been achieved without the money. The rent can be seen as a leap towards privatisation of the state forests (cf. McCarthy 2006), which neither the locals nor the head of Metsähallitus, considered appropriate. If the rent-model expands to other areas as well, problems related to social justice might occur because all people and interest groups cannot afford to pay the rent. In addition, it is not socially just that the citizens have to pay to have an influence on decisions regarding the state lands. Secondly, various

parties wondered why the tourism entrepreneurs should pay Metsähallitus to not cut the woods, as the wood deposit is preserved and even growing during the ten years.

Conclusion

In this article I examined the forest dispute in Muonio that took place between Metsähallitus and a local coalition which included tourism entrepreneurs, reindeer herders, a representative of a game association, a representative of the municipality, and a representative of the local conservation group NGO, as well as some other locals. The dispute was analysed using the heuristics by Gunderson & Holling (eds., 2002). It was concluded that the conflict worked as a trigger for change, reorganisation, and policy innovation. Renting the forests to the tourism entrepreneurs and to the municipality was a solution which pleased local coalition more than Metsähallitus. The involvement of multiple actors in the local coalition, and especially the role of the municipality and the media, empowered the coalition to reach the solution they were seeking for. The time was ripe for a policy innovation which favoured tourism, as tourism is still, in terms of the adaptive cycle, in the invasive *exploitation* phase, and forestry, on the other hand, was in the *conservation* phase, which was followed by rapid *release* and *reorganization*. Here I have conceptualised forestry and tourism as separate systems, but if one thinks about one single system, the socio-economic system related to forest use in Muonio, one can say that forestry has been in an established dominating role, with the whole system in a conservation phase. Disputes, especially the two later ones, have begun because a local coalition, and also many other locals, see that a more promising future for local livelihoods and well being might unfold with a transition from the dominance of forestry to a more tourism oriented land-use profile. This resulted in the loop through the adaptive cycle leading to policy innovation in a land-use system.

Disputes worked as a trigger for policy innovations. Conflicts generate pressures for change; however, the resulting change seems to happen at certain individual localities, as in Muonio. Thus, transformability is in this case not a holistic phenomenon affecting the whole institution of Metsähallitus, but rather something that happens gradually in various locations, depending on multiple issues. Therefore, specific locations and issues must be defined, such as “forestry in northern Muonio,” when utilising such concepts as adaptive cycle and transformability.

As a second objective, I compared the adaptive co-management approach to the Muonio case to understand how the change was managed and how it should be governed. A series of suggestions can be made which would enhance adaptability and sustainability in resource management.

Firstly, place-specific solutions should be possible, as in Muonio. This means that, for example, the overall objectives of the management institutions should not hinder flexibility and adaptability to local variation. Secondly, self-organisation of the resource users should be enhanced, for example, by building networks and by fostering trust between the various stakeholders. Thirdly, different knowledge systems should be compared in decision-making. Matching the scale of the issues considered in participatory processes and the real world problems at hand is essential for making participation possible. On the other hand, knowledge distribution concerning planned change should be open and transparent. Fourthly, collaboration and power sharing should be fostered, for example, by mutual gestures in contrast to power-plays and polarised and exaggerated claims.

The Muonio case showed that the growth of international tourism changes livelihood structures at the local level. At the same time, it affects the land-use preferences of the local people. When livelihood structures and land-use preferences alter, the policies and practises regarding land use should be able to change accordingly. Adaptability is needed to govern the change in a sustainable manner. Adaptability can be enhanced, for example: by combining various knowledges in decision-making by using efficient feedback mechanisms, by learning to cope with change and uncertainty, and by creating opportunities for self-organisation (see Folke et al. 2002). In conclusion, the growth of tourism, changes in the eco-social environments, and various uncertainties create a situation where further research and development concerning adaptability is needed.

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