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Citation for the published paper:

Sandström, C. & Widmark, C. (2007) Stakeholders' perceptions of consultations as tools for co-management. *Forest Policy and Economics*.

Volume: 10 Number: 1-2, pp 25-35.

<http://dx.doi.org/10.1016/j.forpol.2007.02.001>

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Stakeholders' perceptions of consultations as tools for co-management - a case study of the forestry and reindeer herding sectors in northern Sweden

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Abstract

The forestry and reindeer herding sectors utilize the same land in northern Sweden, and adversely affect each other's productivity. The common pool resource character of this situation has made it difficult to find ways to resolve conflicts that could threaten the two sectors' continued co-existence. A consultation procedure that was introduced to reduce conflicts does not appear to be effective, since conflicts between the two actors still occur. One reason for this failure might be found in the power distribution between forestry and reindeer herding. Earlier research has shown that a co-management system in which the allocation of power between the stakeholders is uneven is difficult to maintain in the long term. However, it is unclear just how uneven the power distribution is between the two actors in this case, and the consequences the disparity might have for the viability and stability of the management system. Focusing on the power relations within the consultation procedures, this paper explores the potential of the present institutional system to take the different interests of the stakeholders into account and to use the consultation procedures as tools for co-managing the forest resources in northern Sweden.

Keywords: co-management, common pool resource theory, forest resource, forest sector, land use conflict, reindeer herding sector, Sámi

1. Introduction

The indigenous people in Sweden, the Sámi, have the exclusive right to herd reindeer (*Rangifer tarandus tarandus*) on approximately 40 % of the Swedish land area in order to produce meat. However, a large proportion of the land used for reindeer herding in northern Sweden¹ is also productive forest land (some owned by public companies, while other areas are owned by non-industrial private owners and the government) that produces timber and pulpwood, and contributes significantly to the Swedish economy. Thus, foresters and reindeer herders comprise two distinct groups of people who use the same land to a large extent, but for different purposes, and this multiple use of the forest resources in the northern parts of Sweden is a source of conflict. Furthermore, reindeer herding is not only of economic importance to the Sámi, it also plays an important role in Sámi culture (Lundmark, 1998). Thus, these issues have both economic and cultural dimensions.

The common pool resource character of this situation has made it difficult to find ways to resolve conflicts that could threaten the two sectors' continued co-existence. On the one hand, modern forestry has been argued to be one of the major threats to the future of reindeer herding, and thus to Sámi culture (Danell, 2004). Forestry proponents, on the other hand, contend that the economic implications of adjusting to the needs of the reindeer herding sector by, for example, conserving areas that are suitable for final fellings, is not economically defensible (Björklund, 2000). In order to reduce conflicts between the two sectors, consultation procedures were introduced by the Swedish parliament in 1979 and about 20 years later they were extended to cover a larger geographical area through the certification system run by the Forest Stewardship Council, FSC (Swedish Forestry Act, 1979:429; Swedish Reindeer Husbandry Act, 1971:437; www.fsc-sverige.org). Since the purpose of the consultation procedures is to resolve conflicts between the sectors by establishing arrangements that allow the two industries to co-exist, the procedures have many similarities to a co-management system that involves the major stakeholders in negotiations concerning the use of a common resource. However, the consultation procedures do not seem to fulfil their purpose since conflicts between the two actors are still ongoing, partly because there are unresolved issues concerning property rights. While forest companies are the owners of the resource, reindeer herders have usufructuary rights. Although current law guarantees the members of reindeer herding communities the right to use land for reindeer herding, hunting and fishing, earlier research has shown that reindeer herders have difficulty claiming these rights. The laws and legal procedures regulating the relationships between the two sectors do not seem to give sufficient protection to the natural grazing areas needed for reindeer husbandry, thus creating an imbalance in property rights (Swedish Reindeer Husbandry Act, 1971:437; Hahn, 2000; Widmark, in press). The imbalance in property rights is manifested through an uneven power distribution between the stakeholders within the consultation procedure system, which in turn might affect the possibilities, especially for the reindeer herding sector, to influence the outcome of the consultation procedures. Hence, since access to free grazing areas is vital to the economy of the reindeer herding sector the uneven power distribution has direct economic implications for reindeer herders, notably losses of free-range grazing areas and consequent increases in the need to provide fodder for the reindeer. Similarly, the adjustment of forestry to reindeer herding also has economic implications, for example conserving areas that are ready for harvesting, although probably not to the same extent as vice versa. This has been confirmed in evaluations of the consultation system, which

¹ In this paper, northern Sweden is defined as the counties of Norrbotten, Västerbotten and Jämtland.

have found indications of widespread dissatisfaction among the reindeer herders, while the forest companies seem to be more satisfied with them (National Board of Forestry 1987; 1992; 2001).

However, the unevenness of the power distribution and the potential of the consultation system to provide opportunities to renegotiate the relationship between the two actors over time are unclear. Focusing on the power distribution within the consultation procedures, this study explores the potential of the present institutional system to take the different interests of the stakeholders into account and thus to use the consultation procedure as a tool for co-managing the forest resources in northern Sweden. Specific questions addressed include the following. What are the perceptions about the institutional system among the two stakeholders? Does the present consultation system fulfil the characteristics of a co-management arrangement, and is the present institutional framework an appropriate means for resolving conflicts between the two actors?

2. Co-management

Power sharing and partnership are essential components of the definition of co-management. Co-management, however, often refers to a system where the State and local actors are successfully integrated (Berkes, 1994). Since co-management also stresses the need for decentralized governance, the definition has a resemblance to the concept of governance, which takes into consideration the process of interaction between different societal and political actors, and the growing interdependence between them. The concept of governance also implies that it is not necessary for the State to be involved in the day-to-day management of a natural resource. As in the case considered here, the State may delegate the management authority to the actors themselves by providing an institutional framework through legal acts (Kooiman, 2003). However, depending on how the institutional framework for management is constructed, the power distribution within the management arrangements among the actors may vary significantly.

To measure the power distribution between involved actors in a co-management arrangement we use a framework developed from a few well established co-management spectrums. The ladder of co-management shown in Figure 1, is adopted from Fikret Berkes (1994, see also Pinkerton, 1994; Campbell, 1996; De Paoli, 1999) and initially from Sherry Arnstein (1969). Arnstein's ladder is founded on the classical Dahlian notion of power, namely that actor "*A has the power over B to the extent that he can get B to do something that B would not otherwise do*" (Dahl, 1957) and locates this source of power within a management arrangement. The bottom rungs of Arnstein's ladder, "Manipulation" and "Therapy", describing situations where the actors are completely powerless are omitted from the figure. The three first rungs included in the figure represent what Arnstein defines as degrees of tokenism "*that allows the have-nots to hear and have a voice.*" (1969:217) However under these conditions "*they lack the power that their views will be heeded by the powerful.*" (1969:217). Further up the ladder are levels of increasing power and on rung 7 all the involved actors establish a 'partnership of equals'. This implies that not all of the rungs qualify as co-management arrangements (Jentoft, 2003) (see fig. 1).

7	Partnership	Partnership as equals; joint formal, institutionalised decision-making.
6	Management Boards	Local actors are given the opportunity to participate in developing and implementing plans and input plays more than just an advisory role.
5	Co-operation	Local actors have input into management and local knowledge is solicited; community members are involved at a low level as assistants or guides, still limited by management agencies.
4	Advisory Committees	Partnership in decision-making starts; joint actions on common objectives and local actors have an advisory role only; decisions are non-binding.
3	Communication	Start of two-way information exchange; local concerns begin to enter management plans; joint management actions may take place without joint jurisdiction over the resource.
2	Dialogue	Start of face-to-face contact, local actors input is heard but not necessarily heeded (usually involved late in the decision-making process); limitation of involvement continues to be set by the government agency.
1	Informing	Local actors are informed about decisions already made, one-way communication between government and the community.

(Adapted from Arnstein, 1969; Berkes, 1994)

Fig. 1. Ladder of co-management

According to Evelyn Pinkerton there has been a tendency to apply the term co-management to mere operational rights, *i.e.*, rules that regulate the day-to-day use of the resource concerned. This is also one of the reasons why there have been such difficulties in defining the parameters of co-management. However, as Pinkerton points out, “*co-management is misnamed unless it involves at least the right to participate in making key decisions*” about how the resource should be used, by whom and to what extent (2003). In other words, all of the principal actors involved must have a degree of power in order to define a situation as a co-management arrangement. According to the definitions of Jentoft and Pinkerton, and in accordance with Arnstein, the three lowest rungs of the ladder of co-management cannot, thus, be defined as co-management arrangements. Rung four, where the weaker actor has an advisory role, might be defined as the lowest form of co-management. These categories are, of course, simplifications of the way co-management arrangements work. In practice, a co-management arrangement may include several of the rungs, and the balance of power among the actors may change over time. However, the first three rungs of the ladder should not be neglected as they could be important steps towards establishing co-management arrangements.

Arnsteins ladder has had considerably influence on conceptual thinking about power sharing as the ladder illustrates a power continuum whose opposite poles, in this case are information and partnership (Abbott, 1996). Since the ladder is based on Dahl’s minimalist definition of power in contrast to the more complex definitions made by for example Bacharach & Baratz (1970) and Lukes (1974), there is an obvious risk of excluding important aspects of power. However the more complex views of power represented by Bacharach & Baratz (1970) and Lukes (1974) will give more complex definitions of power, which in turn makes them difficult to use empirically. Since this study includes almost 50 interviews it is necessary to use a framework with clear operational definitions and the ladder of co-management provides a useful way of conceptualizing the power distribution within a co-management arrangement, but also if the power distribution change over time from one of relatively low degree of power to the equal sharing of power. Like in many of these well established frameworks we assume that there is a casual relationship between power and influence over decision-making, the more power an actor has the more influence the actor will be able to exercise.

The power distribution between the forest and reindeer herding sectors, and consequently the two actors' possibilities to influence the outcome of decision-making, are here evaluated using the ladder of co-management. Since the forestry sector is the owner of the resource and is considered to be the stronger party in this relationship, it is the power of the reindeer herding sector in relation to the forest sector that will be analyzed in this study. As mentioned initially, changing power relations may have direct economic consequences for each of the two sectors. We assume that the possibility for the weaker sector to affect its situation increases as each rung in the co-management ladder is ascended (Mattsson, 1981). However, this does not necessarily mean that there is a linear correlation between increased power and economic costs or benefits. Minor adjustments by forest companies to reindeer herding may be of great importance to reindeer herding companies. Nevertheless, there have been very few studies, especially empirical studies, concerning the economic implications of the present situation or of cases where the two sectors adjust to each other's needs (for exceptions see Mattsson, 1981, Bostedt, *et. al.*, 2003). One reason for this is that the actors themselves lack tools to evaluate the economic consequences of different actions and thus to evaluate – in economic terms – the consequences that changing power relations would have for each of the sectors. However, both actors agree that such changes would have consequences, and that the economic implications for each sector need further research. Due to the difficulties involved in quantifying proposed measures this study focuses on relevant political rather than economic considerations, although we believe that the two are interrelated.

2.1. Conditions for successful co-management

The distribution of power between the partners in a co-management arrangement is not the only factor affecting a co-management system. According to Elinor Ostrom (2005), actors are more likely to establish a robust or a viable and stable co-manage regime if the institutional arrangements are characterized by the eight design principles presented in figure 2. It is thus not only necessary to explore the power relations between the actors in a co-management arrangement there are other factors that also has to be considered.

1. Clear boundaries	The boundaries of resources and user groups with right to withdraw resource units from the common pool resource are clearly defined.
2. Correspondence between benefits and costs	Allocation rules are related to local conditions.
3. Collective choice	Most individuals affected by the operational rules can participate in modifying the operational rules.
4. Monitoring	Accountability mechanisms for monitors are devised.
5. Graduated sanctions	Graduated sanctions are applied to appropriators that deviate from the regime.
6. Conflict resolution mechanisms	Low cost, local conflict resolution mechanism is used to resolve conflicts among appropriators.
7. Rights to organize	Users have the right to organize and to make autonomous decisions.
8. Multi-level governance	Authority is allocated to allow for adaptive governance at multiple levels from local to global level.

(Adapted from Ostrom, 2005)

Fig. 2. Design principles for viable and stable co-management regimes

The operation of the principles is, according to Ostrom, “bolstered” by the sixth principle – the need for low-cost conflict resolution mechanisms – which implies that it is important to establish an arena where conflicts among the resource users can be resolved and the power over the common resources might be shared. The arena in this case is the consultation procedures where negotiations are supposed to take place. In addition, principles 3 (collective choice), 7 (rights to organize), and 8 (multi-level governance) all have implications for the scope for the involved actors to make decisions and to resolve conflicts autonomously. However, design principles 7 and 8 are, to some extent, set by the legal framework of the consultations. The analysis of the consultation procedures here will consequently focus primarily on collective choice and conflict resolution mechanisms (design principles 3 and 6), while the other principles will only be briefly considered in the analysis.

3. Forestry, reindeer husbandry and consultation procedures in northern Sweden

In northern Sweden, forests cover approximately 9.4 million hectares, constituting about 48% of the total land area, and the forest sector is an important part of the Swedish economy. About 40% of the forest harvested in Sweden, in total, is logged in the northern region (Skogsstatistisk årsbok, 2000). Large corporations, non-industrial private forest owners and the government own ca. 49.8%, 37.9% and 5.9% of the forested land, respectively, collectively amounting to ca. 61 000 owners (Skogsstatistisk årsbok, 2004; Widmark, in press). The same area is also used as grazing land for about 230 000 reindeers, distributed between ca. 4,700 owners. The reindeer owners are organised in 51 Reindeer Herding Communities, RHCs, which are both geographic entities delimiting their respective grazing areas, and economic organisations representing their members’ interests (Statistics Sweden, 1999). The Regional County Administrative Boards in the reindeer herding area restrict the total number of reindeers allowed in each RHC depending on the lichen resources available (Prop 95/96:226).

The reindeer follow a natural migration cycle, grazing in the mountain regions, or forests close to them, during the summer, and in the forest region (closer to the Baltic Sea) during the winter period. The reindeer husbandry is dependent on old forests for the provision of fodder since reindeer mostly graze ground lichens (*Cladina* spp.) and, to a lesser degree, arboreal lichens (*Alectoria* spp. and *Bryoria* spp.), which are generally much more abundant in old forests than in young forests (Statistics Sweden, 1999; Bostedt *et. al.*, 2003). Since the reindeer move over large areas the land needed for reindeer husbandry is extensive, and since they do not convert fodder into meat sufficiently efficient to make providing alternative sources of food for them over prolonged periods viable, the reindeer sector is highly dependent on free-grazing areas (www.lst.ac.se; Frågor och svar om rennäringen, 2000). In the northern parts of Sweden, reindeer herders have legal rights to graze reindeer on lands owned by the state, forest companies and private non-industrial owners (except for specific parts in the southern area) (Swedish Reindeer Husbandry Act, 1971:437, Statistics Sweden, 1999). In practice, this means that about 75% of the forest area in northern Sweden is used for grazing reindeer (Bostedt, 2005). Ostrom’s first design principle – that the boundaries of the resource and the user groups with rights to withdraw resource units from the CPR must be clearly defined – is thus fulfilled.

Since the two sectors use the same forest land, albeit for different purposes, they adversely affect each other. However, forestry is affecting the reindeer sector to a greater extent than

vice versa (Mattsson, 1981), although the severity of its impact depends on the effects of the silvicultural measures applied on the important lichen resources. Both the felling and soil scarification methods used may destroy the lichens for as long as 30 to 40 years (e.g. Gustavsson, 1989; Bostedt *et. al.*, 2003), and due to intensified forestry during the last 50 years, the proportion of lichen-rich land has decreased greatly (SOU 2001:101; Widmark, in press). Together with the decrease in lichen-rich land, which is considered to be the major threat to the reindeer sector (Danell 2004), the grazing land is also being fragmented by forest road construction and final fellings, forcing the herds to seek food over increasingly large areas and making it more difficult to gather them to move to other grazing areas (interviews, 2004).

To help resolve conflicts arising from the common pool resource situation in northern Sweden, the government decided in 1979 to introduce consultation procedures (see Box 1) (Swedish Forestry Act, 1979:429) between the forest companies (in this case public companies) and the reindeer sector on forest land where Sámi land-use rights are particularly strong. The Swedish Forest policy, which is based on the principle of “freedom-under-responsibility”, is more oriented towards goals than details, so the consultation procedures are generally formulated in terms of general objectives, while the details are left to the two involved actors to resolve jointly (Kjellin, 2001).

Box 1

Forestry Act – sections concerning consultations

Section 20

Before felling takes place in an area where reindeer husbandry is permitted throughout the entire year (year-round grazing areas) in accordance with the Reindeer Husbandry Act, the Sami village concerned shall be given the opportunity to participate in joint consultations, as stipulated in regulations issued by the Government, or public authority designated by the Government.

Section 21

When applying for felling permission pursuant to section 16 above, the forest owner shall describe planned measures to satisfy reindeer husbandry interests.

In year-round grazing areas, felling is not permitted, if it:

- (i) causes such a significant loss of reindeer grazing land that the possibility to maintain the permitted number of reindeer is limited; or
- (ii) precludes the customary grouping and migration of reindeer herds.

When felling permission is granted, the Regional Forestry Board shall decide what consideration shall be taken to reindeer husbandry interests as regards, inter alia, the size and location of the felling site, and permissible felling method.

These conditions may only apply to what is clearly required with regard to the rights applicable to reindeer husbandry.

Section 31

Forest management measures, which concern the form and size of felling areas, the establishment of new stands, the retention of tree groups, and the routing of forest roads, are to take account of essential reindeer husbandry requirements. When planning and implementing forest management measures, it is desirable that the Sami village concerned be given annual access to both a sufficiently large and cohesive grazing area, and an ample amount of vegetation in those areas used for reindeer corralling, migration and resting.

(source: Swedish Forestry Act 1979:429, translation on www.svo.se)

However, the intended function of the clauses concerned was to strengthen the role of reindeer husbandry in relation to the forest sector (Prop. 1990/91:3). Some of the important forest lands used during the winter grazing periods were not covered by the Swedish Forestry Act, but as forest companies started to join the FSC, they decided in concert with the RHCs

voluntarily to apply the Swedish Forestry Act across the whole reindeer grazing area (www.fsc-sverige.org). The same rules are thus applied throughout the entire area, and since this study explores the potential (and possible shortcomings) of the present institutional system it also covers all of the areas covered by the FSC-agreement.

In some areas the free-grazing rights are disputed, but this is mainly with regards to land owned by private owners rather than public companies. The private landowners are not yet included in the system of consultation procedures, although a governmental investigation has proposed that they should be included in the future (SOU 2001:101).

Before each harvesting, the forest company has to consult the reindeer herders' affected by final fellings or fellings in preparation for constructing a forest road. In the consultations the forest companies outline the areas that will be affected and their proposed actions within a timeframe from the immediate future to activities with three- to five-year planning horizons. Forest companies are advised to hold consultations at least once a year (SKSFS, 1993:2). Discussions and, if possible, negotiations are then held, in which the reindeer herders have opportunities to propose other measures. Minutes should be taken during the meetings regarding the areas that have been discussed, agreements reached and issues that have not been resolved. Together with the application for harvest permission, the forest company should enclose the minutes as well as a duly completed standard form detailing considerations made with respect to reindeer husbandry (SKSFS, 1993:2; Hamilton, 2004). If the forest company fails to file the proper documentation regarding consultations, or cannot show that representatives of the reindeer sector have been invited to consultations, permission for harvest can be denied (Prop. 1990/91:3).

4. Method

A case study approach (Merriam, 1994) is used here to investigate the power distribution between forestry and reindeer husbandry within the consultation procedure system and its implications for the viability of the system used to resolve conflicts between the two sectors.

Semi-structured telephone interviews were conducted with representatives of 32 of the 33 RHCs covering the mountain area, and 14 representatives of forest companies. The mountain RHCs were chosen because they cover the whole reindeer herding area (*i.e.*, their reindeer migrate from the un-forested mountains to the lowland forests in the winter, and return to the mountains in the summer), while the forest RHCs are based in the forests throughout the year, and are mainly located in the northern parts of the reindeer herding area. However, the forest RHCs are included in the same institutional framework and the results of this study can also be applied to their situation. The RHCs were in most cases represented by their respective presidents, who in turn represent a number of reindeer herding companies that are members of their RHCs. For convenience, when referring to views expressed by these representatives and representatives of the forest companies, we often ascribe them to 'the RHCs' and 'the forest companies', respectively, in the following text. In total, the 32 interviewees represent about 750 reindeer herding companies (www.sjv.se). The 14 representatives of the forest companies were selected on the basis of geography and forest ownership, in order to cover the same areas as the interviewed RHC representatives. The interviews were conducted between November 2003 and May 2004. The semi-structured character of the interviews made it possible to analyze the material quantitatively since some questions were designed in advance and posed to all respondents. However the semi-structured interviews were conducted within

an open framework, allowing two-way communication and the flexibility to explore relevant issues in more depth and detail than would have been possible with a closed framework (Merriam, 1994). The consultation procedures have been evaluated three times in the last 20 years; in 1987, 1992, and 1998 (National Board of Forestry, 1987; 1992; 2001). The interview questions were thus related to the results of the evaluations of the consultation procedures in order to obtain indications of the system's evolution over time. Participatory observations were also made, when deemed appropriate, in order to gain further understanding of the consultation procedure.

5. Results

5.1. Changes in the significance of consultations over time

The results of the three evaluations and the interviews are not entirely consistent. However, when asked about the significance of consultations in the evaluations, roughly half (47-56 %) of the RHCs claimed that they have little or no significance, while the other ca. 50% considered them to have some or considerable significance (Table 1). Since relatively few of them considered the consultations to have much significance it seems reasonable to conclude that members of the RHCs have retained the view that the consultation procedures are not very useful for them.

Table 1. The significance of consultations over time

	RHC opinion 1985	RHC opinion 1990	RHC opinion 1998
	%	%	%
No significance	28.6	40.0	14.3
Little significance	19.0	16.0	38.1
Moderate significance	42.9	16.0	23.8
Considerable significance	9.5	24.0	23.8
Great significance	-	8.0	-
Number questionnaires	21	25	21

Comment: RHC=reindeer herding community, FC=forest company. The answer 'great significance' was not included in the surveys 1985 and 1998. (National Board of Forestry, 1987; 1992; 2001; interviews 2004.

Although the RHCs generally regard the consultations rather pessimistically, the interviews indicate that their significance has increased over time. A majority of the RHCs (56%) think that the importance of consultations has increased over time, probably due to increased knowledge of reindeer herding among forest companies, and changes in both environmental policy and attitudes to the reindeer herding sector. However, a third of the interviewees (34%) believe that the significance of consultations has not changed over time and representatives of three RHCs even state that the situation has become worse over time.

Although most of the respondents state that consultations have improved over time, most of them still consider the consultations to be a forum for information, in which reindeer herders have very few opportunities to influence forestry and forest actions. One RHC representative stated, *"it is wrong to call them consultations. It is no consultation if both stakeholders do not participate on equal terms. They present a completed plan that we use in our discussions. We can sometimes make changes, but then we have to offer something else. We can call them information meetings"* (interview, 28). According to another RHC, the outcome depends on

which forest company, or even which representative from the forest company, is involved in the consultations. Another reason that consultations are considered to have rather low significance is that the RHCs become involved quite late in the forest planning process. Many respondents specifically refer to this problem. *“It would be desirable to be able to influence forest actions at an earlier stage and have longer planning periods, like five to seven years. In some cases we have also managed to do that”* (interview, 21).

The attitudes of the forest companies towards consultation procedures are almost the opposite of the RHCs'. According to the cited evaluations, almost every forest company claims that consultations have a 'considerable or 'great' impact on the planning of forestry activities. One forest company states that *“[One] condition for reindeer husbandry is that we, as two land-use industries, have to co-exist. The only way to do that is to conduct consultations where we can establish a common view of the situation.”* (interview 40). Most of the interviewed forest companies claim that they try to find solutions that are acceptable to both sectors and that the consultations, in that sense, have a major impact. Differences in the responses can be explained by the availability of the lichen resources and the attitudes toward reindeer husbandry. Many forest companies also indicate that it is becoming more difficult to consider the needs of reindeer husbandry since the amounts of forest mature enough to harvest (and thus lichen resources) are becoming increasingly limited. This situation was confirmed by many of the RHCs.

Thus, the stated opinions about the consultations indicate that the two actors have contrasting views about their significance; the reindeer herding sector perceives the consultations to play at best a limited role in the planning process, while the forest sector consider them to have a considerable or even great impact.

5.2. Power distribution and consultations

Previous evaluations of the consultation procedures have indicated that the power between the forest and reindeer herding sectors is unevenly distributed. However, they did not elucidate degree of this disparity, and the extent to which it affects the possibilities of the actors to influence the outcome of the decision-making. To measure the power distribution, in this study we used the ladder of co-management, by asking the respondents to define what power the RHCs have during consultations by pointing out the specific rung that best describes it (Fig. 1).

Although the significance of the consultations has apparently increased over time, a fifth of the RHCs do not think that they have any real power during consultations (Table 2.). According to these RHCs, consultations only have the character of information meetings *i.e.*, rung 1. About half of the respondents consider their power to be limited to some sort of dialogue or communication in which they exchange information with the forest companies, but have extremely limited power. None of the RHCs feel that they have even the lowest form of power *i.e.*, advisory power (rung 4) in the consultation procedures.

The forest companies also consider the RHCs to have limited scope to affect the outcome of the consultation procedures. According to the median value the forest companies ascribe to the consultations, they seem to think that the power of the RHCs corresponds to rung 3 where information between the actors is exchanged and the needs of reindeer husbandry is reflected in forest planning. Thus, the two stakeholders have similar perceptions about the power distribution between the two sectors.

Table 2. Experienced and future possible/desired power in consultations

		RHCs' present influence, in %, according to		RHCs' possible influence, in %, according to	
		RHC	FC	RHC	FC
8	Self management	-	-	3	-
7	Partnership	-	-	9	-
6	Management board	-	-	3	7
5	Co-operation	-	7	25	36
4,5		-	7	3	-
4	Advisory committees	-	-	38	21
3,5		3	21	3	-
3	Communication	19	50	-	-
2,5		31	14	-	-
2	Dialogue	22	-	6	-
1,5		6	-	-	-
1	Information	19	-	-	-
	No influence			-	29
	Do not know			9	7
	Number interviews	32	14	32	14
	Median	2,5	3	4	4

Comment: RHC=reindeer herding community, FC=forest company. Many respondents had difficulties to point out a specific rung but placed their power between two rungs

In spite of their limited power under the present form of consultations, the RHCs have a fairly optimistic view regarding the potential to increase their power in the future (Table 2). The majority of the respondents believe that it would be both possible and desirable to reach rung 4, *i.e.*, to at least acquire an advisory role and thereby take part in forestry planning. However, many of the respondents would like to increase their power in the management process still further and play more active roles in forest planning and in deciding the way the forests are managed. Some of the respondents define their attitude as being more 'realistic', choosing a low rung to describe their potential relationship with the forest companies, while others are more 'optimistic', choosing a higher rung. A few of the respondents also expressed political objectives, that equal partnership should be promoted or that the land that the Swedish government is accused of having stolen from the Sámi should be returned (interview 22).

There were substantial variations in the forestry sector's responses regarding future situations. Almost a third, 29%, of the forest companies do not consider it possible or even desirable to increase the power of the RHCs in the management of the resources. The argument used by the forest companies that want the power of the RHCs to decline, or at least not increase, is that they (the forest companies) are the owners of the resource, and as owners they should have the exclusive right to decide how it is used. Thus, these representatives of the forest companies do not recognise the usufructuary rights of the reindeer herding sector. Another argument that was raised in the interviews was that the public forest companies have little economic incentive (or duty) to make radical changes in forest management to serve the reindeer herding sector's needs, since their principal responsibility is to safeguard their shareholders' interests. According to the RHCs these arguments are also commonly raised during consultations (interviews, 2004). However, about 20% of the companies state that the RHCs should have an advisory role, and 36% that there should be co-operation, *i.e.*, that the reindeer sector should have an input in forest management plans. One respondent even advocated the establishment of joint management boards, whereby the two actors could

cooperatively manage the forest resource. Although most of the respondents agree that the power relations between the two actors are uneven, many also agree that there is potential to renegotiate the relationship between them, and thus increase the influence of the RHCs in the forest planning process.

5.3. Possible improvements in the future

In the previous evaluations of the consultation procedures, the respondents were asked to propose measures that would improve the consultations (National Board of Forestry, 1987; 1992; 2001). However, due to low respondent rates, it is impossible to draw any conclusions from the evaluations concerning this issue. For the purpose of this study, the few answers obtained were compiled into a list of criteria that might be used to improve the consultations. In the interviews, the respondents were then asked to consider and rank the three most important criteria listed (Fig. 3).

<i>Criterion</i>	
Knowledge	The two stakeholders have mutual and equivalent knowledge of each others' industries, understanding of long and short term economic consequences are included.
Level	Both stakeholders have the mandate to negotiate and make decisions on behalf of their respective industry.
Material	Overall, maps as well as detailed maps and plans are needed for both industries as well as the help of modern techniques (e.g. GIS) and field visits.
National Board of Forestry's role	A negotiator takes part in the consultations, i.e., the National Board of Forestry.
Object	The stakeholders agree on the object and aspects discussed in consultations; e.g. final fellings, soil scarification methods, fertilisation, forest roads etc.
Objective	The two stakeholders have the same objective on how the forest resource should be managed.
Result	The result of the consultations should be acceptable to both stakeholders as well as possible to live by.
Trust	To build trust between the stakeholders, a personal relationship has to be built up and meetings have to be conducted with continuity.

Fig. 3. Criteria for improved consultations

Both sectors agreed on the two most important criteria that might improve the consultations: knowledge and trust (Fig. 4). Regarding knowledge, one forest company stated that: *“knowledge creates solid foundations for co-operation. [...] We wish we had better knowledge of reindeer husbandry and there is probably a lack of knowledge about forestry among reindeer herders as well – both biologically and economically”* (interview, 4). One RHC expressed similar ideas, saying, *“[if] we understand each others' industries, we can find common solutions”* (interview, 30).

According to both actors, the importance of personal relationship and creating trust is the second most important criterion. Knowledge and trust as well as material and results are criteria that the cooperating actors feel they have possibilities to improve, indicating that the present institutional system at least has some potential to better take into account the different interests of the forest and reindeer sectors.

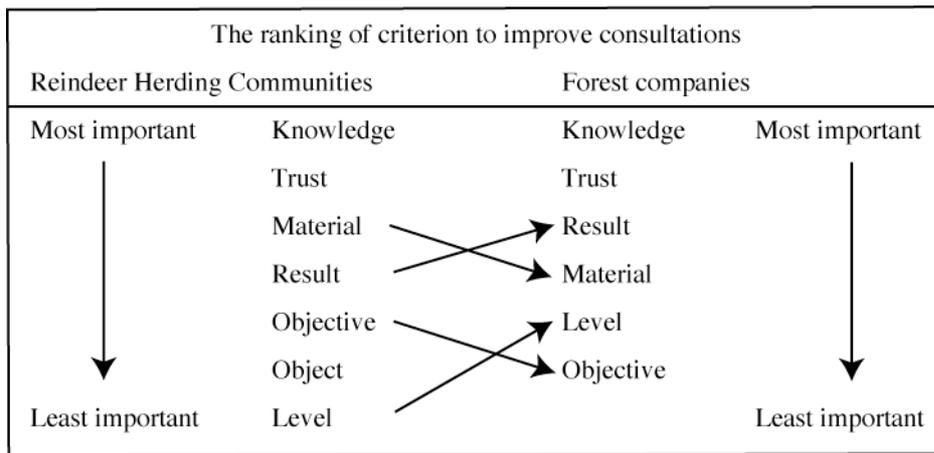


Fig. 4. Ranking of the importance of criteria to improve consultations

The RHCs ranked ‘material’ and ‘results’ as the third and fourth most important criteria, respectively, while forestry ranked them in the opposite order. A probable reason for this difference is that it is the forest sector that provides the materials (i.e., maps, plans) on which the consultations are based. Although some of the RHCs, with the help of the National Board of Forestry, are now creating similar plans, most importantly the Land Use Plan for Reindeer Husbandry, and maps such as those used by forestry, most RHCs still lack written material that can be used to show the overall impact of silviculture (and other) measures on grazing areas. The aim of the Land Use Plan for Reindeer Husbandry is to gain a complete picture of the whole land area at the disposal of each RHC. The plan has only recently begun to be applied, so there are still no results regarding its effectiveness. However, there are high expectations regarding the usefulness of the plan during consultations with the forest sector (Sandström, *et. al.*, 2003).

Thus, there is no lack of ideas about how the consultations could be improved; it is the incentives to undertake action that seem to be missing.

6. Discussion

The purpose of the consultation procedures is to provide means to resolve conflicts that could threaten the two sectors’ continued co-existence. In accordance with the overarching principle guiding Swedish forest policy – “freedom-under-responsibility”, the responsibility for managing the forest resources is delegated to the forest and reindeer herding sectors under the supervision of the National Forestry Board and the FSC. The procedures thus have many similarities to a co-management system, since they not only provide an arena for the major stakeholders to negotiate issues concerning, in this case, a common forest resource, but also influence the distribution of power between the two sectors.

The results show that representatives of both RHCs and forest companies think that the significance of the consultation process has increased over time. Representatives of both sectors point to changing attitudes, extended knowledge of the other sector, and increased environmental considerations as important factors behind the change. The FSC process is also generally considered to be important, although there are considerable variations in the respondents’ views about its true significance.

Although the significance of consultations appears to have increased over time and the consultation procedure was introduced in the early 1980s, with the intention to foster co-existence, most of the RHCs regard them only as a form of information meetings (rung 1 of the co-management ladder) or at best a dialogue (rung 2) between the two sectors in which the reindeer herding sector still has very little influence over the outcome of decision-making. Interestingly, the forest companies have a similar perception to the RHCs about the power distribution. The forest companies define the consultation procedures as a form of communication (rung 3) through which the reindeer herding concerns are expressed and considered in the forest management plans. Although both sectors thus agree that the significance of consultations has increased over time they also agree that this change has had little impact on the power relations between the two sectors. Therefore, after more than 20 years of consultations the reindeer herding sector still has very limited influence on the outcome of the consultations. These findings indicate that neither of the actors' perceptions of the present consultation system are consistent with a co-management arrangement as defined in the literature.

Turning to the design principles for a viable and stable co-management system, as further tools to decide if the consultations qualify as a viable co-management system, only a few of the eight principles apply in this case. We have already concluded that principles 1, 7 and 8 are met by the present institutional framework. However, it would be difficult to support a claim that Ostrom's design principle 2, which states that there should be a proportional equivalence between benefits and cost, is fulfilled. Due to the uneven power distribution, the ability of the RHCs to influence the outcome of the negotiations is very limited. Therefore, it can also be concluded that the consultation procedure does not offer the required low cost conflict resolution mechanism (design principle 6) or that the two actors have opportunities to modify the rules to any meaningful extent (design principle 3). Criticisms were also raised during interviews regarding the monitoring (design principle 4) and sanction system (design principle 5). According to the RHCs, the lack of supervision of forest sector actions by responsible State agencies or the FSC, as well as the lack of an adequate sanction system, undermines efforts to reach compromises between the two actors. Thus, several of the design principles applicable to viable institutional arrangements are not fulfilled, or at least their applicability is disputed, so even their underlying principles indicate that the consultation procedures should not be regarded as a viable or stable system that safeguards co-existence between the two industries. There are therefore many factors that might explain why the reindeer herding sector has difficulties to influence the outcome of the consultations, leaving them in a subordinate position. Many of these factors originate from the uneven power distribution, which in turn is rooted in the property rights situation of the forest and the reindeer herding sector. However, the present situation should also be understood in the light of economic realities. The forest sector is one of Sweden's most important export industries, so any changes that could adversely affect the profits of the forest sector have consequences not only for the shareholders of the forest companies, but also for the Swedish economy. Thus, there seems to be little incentive to initiate any changes that would adversely affect the productivity of the sector. Under these circumstances it is relevant to ask whether it is possible to improve the present system and, if so, how?

In spite of the pessimistic results of this study many of the respondents still believe that the present system has some potential to take the conflicting interests of both stakeholders into account and thus to use the consultation procedure as a tool for co-managing the forest resource in northern Sweden. A majority of the respondents, for example, think that an extended planning process, in which the reindeer sector is included in the initial phase, could

create better foundations for co-management and also lead to more efficient use of grazing areas (see also Nordh, 2000). The inclusion of the reindeer herding sector in an earlier stage of the forest planning process would give the sector the opportunity to play an advisory role in the planning process, and the relationship between the two sectors would consequently become closer to the kind of relationship defined in the literature as co-management. Both sectors also share the same opinion about the need for more and better education and knowledge concerning lichen resources and the effect of forestry on them. Both sectors also identify trust as an important factor for maintaining a viable co-management system. Trust among representatives from the two industries is, however, probably more difficult to create than an adequate knowledge base. In situations where there is a lack of trust, some respondents wish that it would be possible to appoint a mediator in order to resolve conflicts between the actors, for example the National Board of Forestry. Another problem that could be relatively easily addressed is the currently limited access to material and information. The lack of information makes it difficult to take into consideration the needs of the reindeer herding sector, and according to some of the respondents from the forest sector, the RHCs would probably also be able to use the land more efficiently if they had access to better material. The development of the Land Use Plan for Reindeer Herding and the advanced computer techniques used by the forest sector today could help to improve this situation.

However, when asked about the objectives of the consultations neither of the two groups considers joint objectives to be an important criterion for improving consultations. In CPR theory, objectives are an important criterion. Joint objectives do not mean merely having a joint practical goal, but also having joint objectives regarding how to manage the resource and to co-manage the resource effectively. This problem was reflected in the analysis of the power distribution among the actors, since the RHCs wanted to gain more power over forestry decisions, while some of the representatives from the forest sector had the opposite desire. The differing views about the objects and joint objectives may thus also partly explain why the consultation procedure is still limited to dialogue or communication and does not extend to co-operation and partnership.

7. Concluding remarks

Although the forestry and reindeer herding sectors both have formal rights to use the forest resource, albeit for different purposes, this study clearly confirms that the present institutional system does not sufficiently protect the rights of the reindeer herding sector. In addition, the consultation procedures and the corresponding elements of the FSC-standards do not meet the institutional design principles that characterize viable and stable co-management arrangements. As such they cannot be defined as appropriate means to resolve conflicts between the two actors.

As we assumed initially, the property rights situation, manifested in the uneven power distribution within the consultation procedures, is an important factor that can at least partly explain the shortcomings of the present institutional framework. This was not taken into account by the government when designing the institutional framework within current forest policy, but since the lichen resource is becoming scarcer and the conflict over forest resources is consequently intensifying, it seems necessary to adjust the present management system in order to take into account the needs of both the reindeer and forestry sectors if the two industries are to continue to co-exist in the future.

Many of the respondents also perceive that improvements can be made within the present institutional system. Some of these improvements have been proposed by the actors themselves in this study. Implicit in these proposals are the need to develop tools to better value different undertakings and adjustments to each other's needs in economic terms. However, since the issues involved in this case have both economic and cultural dimensions, assessments of the implications of planned actions should consider not only economic factors but also their possible cultural consequences. A combination of targeted changes to the FSC criteria and enabling legislation, including clauses clarifying Sámi land use rights, is probably needed to create a viable and stable system to co-manage forest resources in northern Sweden.

Acknowledgements

The authors are grateful for comments by Carina Keskitalo, Anna Zachrisson (Umeå University), Göran Bostedt, Peichen Gong and Cecilia Håkansson (Swedish University of Agricultural Sciences). The authors thank three anonymous reviewers for valuable comments, which helped to improve the paper immensely. This study is part of the Mountain Mistra Research Programme, financed by the Swedish Foundation for Strategic Environmental Research (MISTRA).

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