Participatory multi-criteria assessment as 'opening up' vs. 'closing down' of policy discourses: A case of old-growth forest conflict in Finnish Upper Lapland

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ABSTRACT

Multi-criteria decision analysis (MCDA), also termed as multi-criteria assessment (MCA), is a powerful policy appraisal tool but as Stirling (2006) has suggested, it can be used both for opening up and closing down policy discourses. Our analysis of MCA in addressing a conflict between state forestry and indigenous Sámi reindeer herding in Upper Lapland, Finland, illustrates MCA's potential in promoting open discussion about policy alternatives and their consequences, and also its limitations in highly controversial policy processes.

The key features of the MCA process that served to open up policy discourse were the plural and conditional conclusions, which illustrated the diversity of viewpoints bearing on the Upper Lapland resource management conflict. The main risk of MCA to close down policy processes is to hide the scoring process and let the participants to focus only on the weighing stage. In the article, we present a novel approach to "interrogate uncertainties" and open up the information base. The Upper Lapland case study also illustrates the limits of MCA in the face of fundamental questions of ethical principle. MCA was helpful in addressing the problem situation that was formulated in terms of two competing livelihoods, forestry and reindeer herding, but unhelpful when the problem situation was formulated in terms of indigenous Sámi people struggle for land rights.

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Introduction

Multi-criteria decision analysis (MCDA) is a general term for formal approaches developed to tackle systematically complex decision-making situations with multiple objectives and incommensurate criteria (Belton and Stewart, 2002). It is rooted in support for single decision-makers but especially in environmental management, the emphasis has recently shifted toward multi-stakeholder processes, which aim at group decision-making, or at illustrating the consequences of alternative solutions in the context of planning and policy-making (Mustajoki et al., 2004; Mendoza and Martins, 2006; Kangas et al., 2008; Marttunen and Hämäläinen, 2008). In the latter case, authors have often used the term Multi-Criteria Assessment (MCA), or Multi-Criteria Evaluation (MCE), to emphasize the evaluative aspect of the approach (Stirling, 2006; Stagel, 2006).

MCA is regarded to have features that make it a particularly appropriate tool for analyzing natural resource management problems. First, it allows comparison of ecological goals with socio-cultural and economic ones in a shared framework (Prato and Herath, 2007). Second, it can deal with incomplete information characteristic for most environmental planning situations by allowing use of a mixed set of both quantitative and qualitative information (Mendoza and Martins, 2006). Third, it is suited for participatory planning processes because it can facilitate discussion about the intrinsically subjective elements in policy analysis, including the nature and scope of the decision problem, the selection and definition of options, and the characterizing and prioritizing of evaluative criteria (Munda, 2008; Stirling, 2006; Mendoza and Martins, 2006).

However, as Stirling (2005, 2006) has observed, MCA has the capacity both to open up and close down environmental policy discourses. Used in the latter mode, the aim is to cut through the messy and conflict-prone diversity of views and deliver a unitary and prescriptive advice. Used in the former mode, the aim is to reveal to wider policy discourses the framing assumptions (such as the characterization of alternatives, criteria and weightings) and to deliver plural and conditional advise on the preferability of alternative courses of actions (Stirling, 2006, p. 101).

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Drawing on Stirling's distinction between 'opening-up' vs. 'closing-down' modes of MCA, we will analyze the experiences from participatory MCA that was employed to a conflict between forestry and reindeer herding in Upper Lapland, Finland. The case study and the results of the analysis are described in details by Mustajoki et al. (2011), focusing on the special characteristics of the case from a methodological perspective. In this paper, we will focus on the elements of the process that helped to open up the policy discourse about forest policy in Upper Lapland as well as the features of MCA that served to close it down. We are particularly interested in the performance of MCA in the face of a frame conflict, i.e. conflict where the opponents disagree not only on facts and potential solutions but the very nature of the problem (Hajer, 1995; van Eeten, 1999). A special focus in the paper is also in a novel approach that we developed in the context of this case to open up the information base and to allow the participants to bring up alternative interpretations of impacts.

Background of the conflict in Upper Lapland

The controversy between different forms of forest usage in Upper Lapland has been going on for decades. Due to extensive loggings in state-owned forests in the 1950s and 1960s, and the slow growth of semi-arctic forests, the remaining economically viable logging potential in Upper Lapland is in over 140-year-old forest. The conflict stems from the fact that these old forests are also important winter pastures for reindeer herders. Reindeer depend on tree-hanging lichens, abundant in old-growth forests, during the crucial winter month when ground lichen is covered by thick snow and ice. In opposing loggings in old growth forests, reindeer herders have received support from environmental non-governmental organizations, most visibly Greenpeace, which are concerned with the ecological values of the forests. The forest sector, in turn, has been backed by local municipalities and forestry workers arguing that logging restrictions would mean a serious blow to the local economy already suffering from 15% unemployment rate.

Most of the reindeer herders are indigenous Sámi people, which adds an ethno-political aspect to the conflict (Heikkinen et al., 2007). The Reindeer Herding Cooperatives have focused mostly on Sámi user rights to the winter pastures whereas the Sámi parliament, the representative self-government body of the Sámi, and the Sámi Council, the co-operational body for the Sámi NGOs in Arctic areas, have also emphasized the Sámi land rights. The Finnish Constitution (17.3§) and the Act on Forest and Park Services (1378/2004) basically recognize the indigenous status of the Sámi; the debated question is whether the current forestry practices violate the Sámi reindeer herding rights.

The Forest and Park Service, which manages state-owned forests covering nearly 90% of the Upper Lapland land area, has made several futile attempts to settle the controversy though participatory natural resource management planning (Raitio, 2008). At the time of carrying out the study, from May 2008 till December 2008, the conflict was still unresolved. The Forest and Park Service was operating under the most recent Natural Resource Plan (NRP), which entailed a logging target of 115 000 m³/year, while Greenpeace and some Reindeer Herding Cooperatives demanded logging restrictions, which would allow for loggings around 80 000 m³/year. Therefore, the MCA process analyzed in this study needs to be understood in a context where no resolution to the conflict was yet in sight.

However, by the end of 2010, the Forest and Park Service announced that it had finally reached an agreement with Reindeer Herding Cooperatives. Key winter pastures were set aside from loggings for 20 years. Furthermore, the agreement included restrictions in forest management practices and forest road construction in some areas designated to forestry. The key parties announced their satisfaction with the agreement and the fact that the long-lasting dispute had finally been settled (Metsähallitus, 2010). We will discuss the relevance of the MCA process to the resolution of the dispute in the next section.

The MCA process in Upper Lapland

The MCA was carried out in close cooperation with the Finnish Forest Research Institute (FFRI) and the authors of this paper working at the Finnish Environment Institute (FEI). The latter were in charge of the MCA process while the FFRI was mainly responsible for the impact evaluations, based on their four-year research project 'Sustainable Multiple Use of Forests in Northern Lapland' (SMUF). The SMUF project was commissioned in 2004 by the Ministry of Agriculture and Forestry, which maintained that further information about the relationships of different livelihoods in Upper Lapland is required for settling the controversy. The aim of the MCA process in the context of the SMUF project was to synthesize the information on the relationships between different land uses in Upper Lapland and to incorporate stakeholder perspectives into the analysis, and hence to provide a multi-objective appraisal of the conflict situation for any further use. However, the analysis was not connected to any specific decision-making situation, and hence we have used the term MCA instead of MCDA.

An important step in MCA is structuring the problem in a way that provides a shared framework for participants to evaluate the relative merits of alternative courses of action. In Multi-Attribute Value Theory (MAVT) (Keeney and Raiffa, 1976), which was used in this case, the problem is constructed into a form of a value tree (Fig. 1). The leftmost element of the tree is the overall goal, which is divided into different criteria and further sub-criteria, and the alternatives are evaluated with respect to each criterion. These evaluations are transformed into commensurate performance scores with value functions, and an overall performance score for each alternative is attained by multiplying the criteria-wise performance scores by corresponding criteria weights, and then summing them up (Keeney and Raiffa, 1976; Hajkowicz, 2007) The use of MAVT in this case is described in more details by Mustajoki et al. (2011).

The MCA process started in spring 2008 with project group meetings to outline the general framework for the analysis. The MCA process and the tentative problem structure were presented to and discussed in the SMUF project's Steering Group in May 2008. The Steering Group consisted of key stakeholder organizations including Reindeer Herding Cooperatives, Sámi Parliament, Forest and Park Service, forestry workers, local municipalities, Regional Environmental Centre, and a local environmental non-governmental organization. (For the details of the process, see Mustajoki et al., 2011.)

A two-day workshop with an interdisciplinary research team consisting of FFRI's experts in forestry, ecology, tourism, and reindeer herding, and FEI's experts on MCA was organized in August 2008. The workshop was open also to the Steering Group members but only a few attended. In this workshop, the team formulated a first version of the value tree, i.e. the problem-definition and the alternatives and their evaluation criteria to be included in the MCA. These were discussed and refined in a meeting with the research team in September and presented to the Steering Group in the end of September.

The steering group approved the value tree with some modifications (Fig. 1). On the steering group's request, the alternatives