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# Forest owners' decision support for voluntary conservation – the present state and tensions among purposeful action models in Finland

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## Abstract

The ongoing Forest Biodiversity Programme METSO largely relies on voluntary participation of family forest owners. In the METSO programme, forest owners have the power to decide upon conservation, in contrast to traditional top-down programmes. Forest owners can get advice and information about conservation practices from a wide range of forestry and environmental professionals, who should help owners to make decisions that respond to their values and needs. The study at hand examines the present situation of how the nature values are taken into account in advisory services in Finland. It was designed based on soft systems methodology (SSM). Semi-structured interviews and observations of actual service encounters in forest were conducted in seven practical organizations. Qualitative analyses of the material helped to compile and combine conceptual models of the present state and observe tensions between actors' purposeful action models. METSO programme's voluntary-based conservation agreements and forest owners' ability to make initiative about conservation, has been accepted positively among forest owners and authorities. Nevertheless, nature values planning and conservation depends a lot on the actors' and organizations' worldviews and operational practices, which could lead to a situation where forest owners get different kind of information and guidance depending on organizations they were contacted with. Nature values conservation is not yet fully internalized and knowledge about different voluntary conservation alternatives varies among actors. There is an obvious need for trainings, guiding material and practical decision-support tools for introducing nature values conservation alternatives.

**Keywords:** biodiversity, decision support, family forest owners, forest planning, soft systems methodology

## 1 Introduction

Since 1950s, forestry in Finland has been based on the commercial forestry management with even-aged stands concentrating on wood production, aiming at successful forest industry and thus social well-being (Kotilainen & Rytteri 2011). Forest legislation and silvicultural guidelines have mainly focused on supporting sustainable timber growing activity.

In recent decades, however, the climate in forest policy has become more compliant with different forest use opportunities. This is due to international agreements of safeguarding biodiversity but also due to both citizens' and forest owners' attitudes moving towards multi-objective values. The importance of cutting incomes to forest owners' family economy is decreasing (Wiersum et al. 2005, Ní Dhubháin 2011) and interest in softer forest use has been increasing (Hallikainen et al. 2010). In these circumstances, forest owners are increasingly facing new kind of decision situations. In Finland, there is a notable segment of forest owners who are potentially interested in biodiversity-friendly actions in their forests (Hujala et al. 2010).

One accelerator for changing attitudes and practices has been The Forest Biodiversity Action Programme for Southern Finland 2008–2020 (METSO). METSO programme offers new ways to manage forest owners' different worldviews. It combines biodiversity protection and the commercial use of forests. METSO's aim is to halt the decline in forest habitats and species in southern Finland (Government Resolution... 2008). While biodiversity conservation is the main target of METSO, social acceptability is also considered to be of great importance (e.g. Horne 2006, Horne et al. 2009). The Government believes that the ecological objectives can be reached in a socially acceptable manner through voluntary-based instruments instead of traditional top-down protection programmes (Government Resolution... 2008). As METSO programme relies on voluntariness, forest owners have the power to decide upon conservation. Forest owners can voluntarily participate in the programme by making permanent or temporary conservation contracts in their forests. For making conservation contracts, forest owners are given monetary compensation, which is based on the growing stock in the protected area. Forestry Centre (later referred to as FC) and Centre for Economic Development, Transport and the Environment (later referred to as ELY-centre) and professional forest advisers (forest management associations, forest industry, forestry service enterprises) provide information to forest owners on how to assess the biodiversity of different sites. The regional forest and environmental authorities decide whether a certain site is suitable to be included in the conservation programme. The conservation agreements signed to protect these sites can be permanent or set for a specific time period of 10-20 years, according to a forest owner's preference.

In addition to the above-mentioned policy climate changes, the ongoing changes in forest organizations' set-ups and the renewal of the Finnish forest legislation challenges forestry practices towards providing forest owners with more alternatives to forest use. Another ongoing reform is the Finnish forest planning system from state-subsidized activity to market-driven services. It provides an opportunity to start pursuing a co-configuration of decision-aid services between forestry experts (service providers) and forest owners (customers) (Tikkanen et al. 2010).

All the factors described above mean a requirement for new practices and action models to serve forest owners in their voluntary biodiversity conservation decisions. To be able to make conservation contracts that respond to forest owners' objectives, forest and environmental

professionals in different organizations should help owners and give information and advice about the benefits of conservation, and details of different conservation and contract alternatives. For example, forest planners can apply various data and communication forms to make owners' decision making easier.

Forest-biodiversity-related service is however an evolving domain having various actors with multiple motivations and different worldviews. This is concretized by different attitudes towards nature values conservation and also by diverse practices to do things. This complexity of conserving nature values creates a need to develop interorganizational action models and service components that streamline the service experience of forest owners. Such development is impossible within a single organization; rather, an initial analysis of the overall situation should be conducted to frame, inform and inspire further development.

Objectives of the study are:

1. Examine the present situation of how the nature values are taken into account in advisory services in Finland.
2. Describe and illustrate tensions in forest biodiversity conservation among purposeful action models in Finland.
3. Lay the grounds for visioning and taking action in the development work of biodiversity conservation services, which are offered for private forest owners.

## **2 Methodology and data collection**

### **2.1 Methodology**

Soft systems methodology (SSM) is an approach for tackling problematical situations of all kinds. It can be applied for real-world systems that have characteristics of "soft", i.e. such open systems, which operate in continuous interaction with the operating environment or systems, whose definition is inaccurate. SSM is an action-oriented process of inquiry into problematical situations and it forms a flexible and versatile framework for human activity systems and practical problem solving. (Checkland 1999)

The baseline of SSM is the tension between the present situation and the future vision and the interplay between actors' perceptions and models of purposeful activity. The SSM process takes the form of a learning cycle, which goes from identifying and assessing a problematical situation (1) to taking action to improve it (see Fig. 1). SSM recognizes that people have different worldviews and that there are always people who are trying to act purposefully. To take action, some purposeful activity models should be made and judged to be relevant to the situation; each model is an intellectual device, being built based on a particular pure worldview, which each individual will bring to the study (2). These models are used to question the real situation. This brings structure to a discussion about the situation, the aim of the discussion being to find changes, which are both arguably desirable and also culturally feasible in this particular situation (3). Taking action as a result of the study (4) will of course change the starting situation into a new situation, so that in principle the cycle could begin again. SSM is not a sequence of steps but an iterative process of moving back and forth while assessing the system and its components. (Macadam et al. 1990, Checkland & Poulter 2010, Cundill et al. 2012).

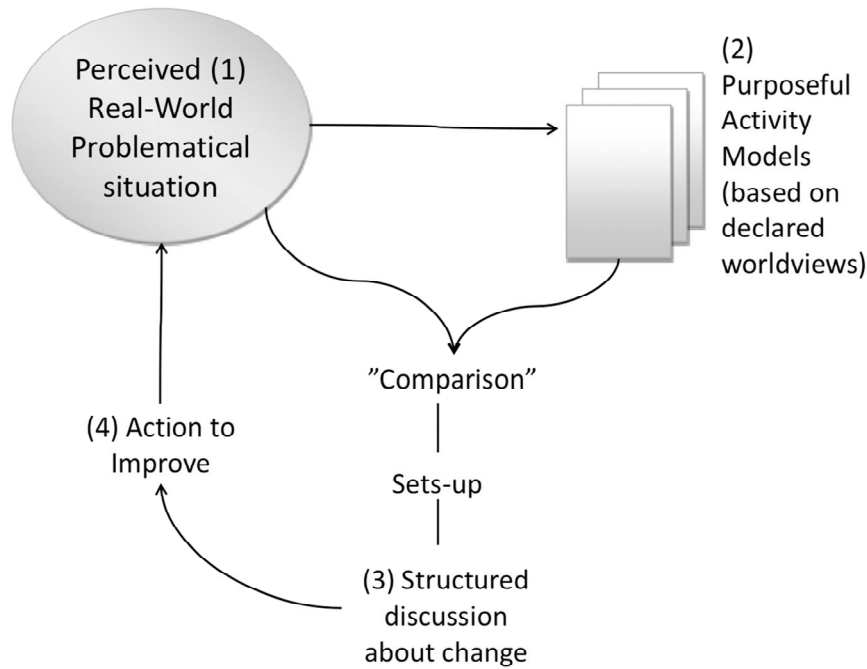


Figure 1. SSM's learning cycle (Checkland & Poulter 2010).

## 2.2 Present state

The SSM process begins with defining the present situation and identifying actors' different worldviews and perceptions. Therefore, to study the present situation of nature values conservation and planning in forest and environmental organizations, seven semi-structured in-depth interviews were conducted. In this kind of interviews, the interviewee rather freely talks about different themes and the interviewer makes supplementary questions or reverts to a previous theme (Wengraf 2001).

The interviewee selection method was subjective; more precisely, stratified purposeful sampling (Wengraf 2001), aiming to gather all subgroups of interest among METSO professionals. The organizations were thus selected in order to capture a variety of organizations' procedures and policies in nature values planning. The interviewees from these organizations were selected among forest and environmental professionals who accomplish nature values planning in practice. The interviews were conducted personally as group interviews, only one of them was made via phone. In-group interviews 2–6 persons attended.

In addition to the interviews, five observations of practical nature values planning encounters were made. Observation provides information on whether the people act as they say (see Patton 2002). Observation also produces spontaneous information, in this case, from a real nature values planning situation and the interplay between forest or environmental professional and the forest owner at hand.

## 2.3 Analyses

Interviews were planned and analyzed by using SSM's CATWOE process, which means decomposing the system into elements and building up a core definition that reflects the operation of the system as such. CATWOE helps to identify the individual subsystems, systemic processes and factors that in one way or another affect the overall operation of the system. In

practice analyses were carried out as a table in Excel-format, where interviews were divided into CATWOE elements. These elements and an example of an analyzed interview are shown in Table 1. Based on this division we built up models of the present state of nature values conservation and planning practices in Finland. Narrative models of purposeful action were identified by comparing the different CATWOE synopses and reflecting them with the challenges presented in introduction. After that, tensions inside the overall system were observed and highlighted.

**Table 1.** Elements of CATWOE and an example from CATWOE-analyses.

<b>CATWOE element</b>	<b>Example of an analyzed interview</b>
<b>C = Customer/ client</b> (people who are affected by the process)	Forest owner
<b>A = Actors</b> (people who do the activities)	<ul style="list-style-type: none"> <li>- Forest owner</li> <li>- Forest advisor</li> <li>- Forest planner</li> <li>- Timber buyer</li> </ul>
<b>T = Transformation process</b> (the transformation process itself, which may change the system resource to future product)	<ul style="list-style-type: none"> <li>- No real nature value products (like nature oriented forest plan)</li> <li>- Nature values considered as normal work</li> <li>- No nature management projects</li> <li>- In practice work for nature values is making METSO contracts</li> <li>- Usually special habitats are identified during field visit and reported to forest owners</li> <li>- When forest owner is interested, contracts are taken forward</li> </ul>
<b>W = Worldview</b>	<p>Environmental compensation is a way to earn money from the habitat, which will be left aside anyway</p> <p>Both forest owners and forest advisors attitudes toward permanent conservation contracts are negative on the other hand attitudes toward temporary contracts are positive</p>
<b>O = Owners</b> (people, who could stop or change the process)	<ul style="list-style-type: none"> <li>Forest owner</li> <li>Forest planner and advisor</li> <li>Regional forest centers</li> <li>Ely-centers</li> </ul>
<b>E = Environmental constraints</b> (Various constraints from the environment outside itself which are taken as given (such as body of law, or a finite budget)	<ul style="list-style-type: none"> <li>- Laws</li> <li>- Certification</li> <li>- Official instructions</li> <li>- Official directions</li> </ul>

### 3 Results

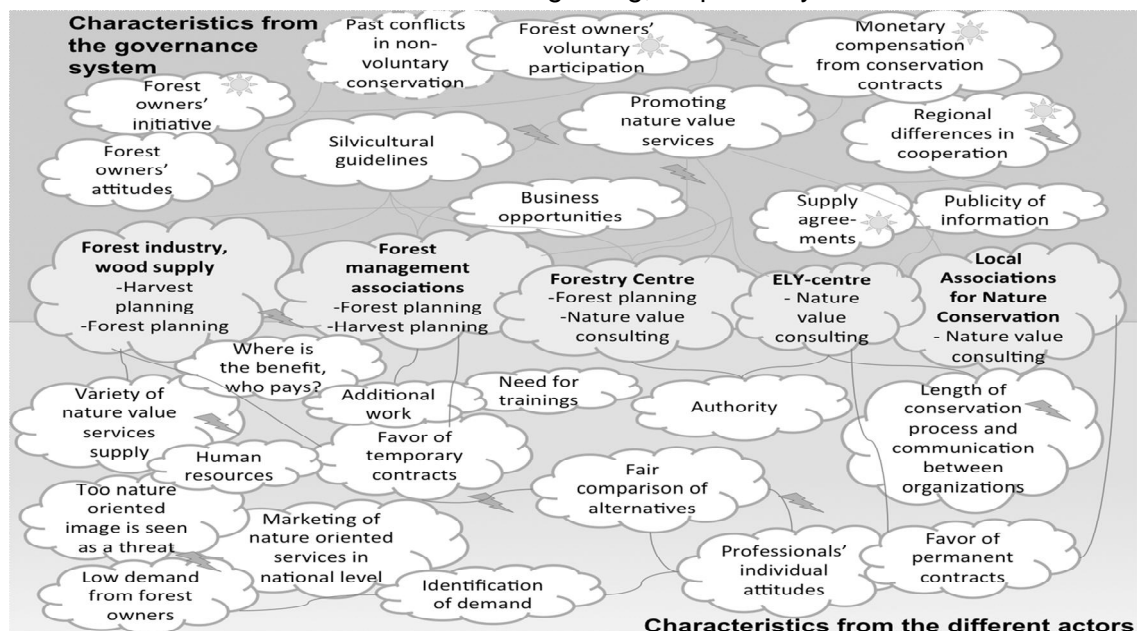
#### 3.1 Present state

In general, the METSO programme’s model of voluntary operation has started well. Actors’ experiences about forest owners’ initiatives, monetary compensation of conservation as well as the supply of agreements have been positive. As the CATWOE analyses revealed, the temporary or permanent conservation contracts have had the greatest role in nature values conservation. Usually nature values were recognized and taken into account in organizations’ normal practices and the actual nature value services were only seldom used. Often legislation and certification, for example, set the limits how nature values were taken into account and the operation as a target-oriented nature values planning were found only randomly and especially in environmental organizations.

In addition to conservation contracts, nature management was an important part on safeguarding nature values. Nature management projects were carried out in the FC as well as in ELY-centres. Projects had included, among other things, water protection activities, spring, small water habitat and watershed rehabilitation, improving herb-rich forests and safeguarding carnivore birds.

Based on the analyses it can be stated that different actors’ worldviews affected their behavior. How thoroughly rationales for conservation and different alternatives were presented to the forest owner, depended a lot on forest and environmental professionals’ knowledge but also on their attitudes toward nature values conservation. Expertise in planning nature values conservation differed between organizations and personnel. Some professionals had great expertise in nature values, for example, skills of identifying different species but others had only basic knowledge about nature values conservation. How conservation contracts were taken forward, depended on forest owners’ own interests and worldviews.

**Fig. 2.** Soft-systemic illustration of the themes emerged in the interviews; actors in the middle, general themes on top and actor-specific themes at the bottom. Positive and tensious features marked with suns and lightning, respectively.





Usually these organizations did not have any special tools for planning nature values conservation and the instructions how the nature values should be taken care of varied a lot and they were only seldom implemented. Information about nature values were experienced to be adequately available even though the level of information varied a lot between organizations.

### 3.2 Observed tension and challenges

Based on the CATWOE analyses the tensions and developing needs and their connections are gathered to the Fig. 2. Clouds in the middle of the picture present the different organizations and their operations on the field of nature values conservation. Characteristics coming from the governance system are gathered in the top of the picture, while characteristics from the different actors are in the bottom of the picture. Suns represent the characters experienced positively and lightnings experienced tensions.

The CATWOE analyses revealed a need for a fair comparison of nature values conservation alternatives. This need was taken up especially in environmental organizations. It was noted that often forest owners got different kind of information and guidance depending on the organizations they were contacted with. This could lead to a situation where certain conservation alternatives are emphasized more than others.

Cooperation between organizations varied a lot. Both organizations' and individuals' attitudes toward nature values conservation were still complicated. In general, however, nature values were considered positively and attitudes had changed over the past decade to more positive. Also, forest owners were assumed to consider nature values and conservation mainly positive. Lack of resources, including financial, personnel and time resources, had been a challenge in many organizations. In some organizations, especially in forest industry companies and Forest Management Association, nature conservation planning was considered as an additional work apart from organizations' normal practices.

## 4 Discussion

Safeguarding forest biodiversity by means of private forest land owners' voluntary actions has taken its first steps in Finland. The interorganizational activity model to support forest owners' biodiversity-related decision making is being adjusted basing on traditional forestry organizations. The soft systems methodology framework enabled analyzing institutional actors' roles and perceptions in the currently evolving circumstances. In the present analysis, we acquired a rich picture of the overall situation with its strengths and inherent tensions.

The fact that voluntary conservation agreements are constantly being made can be seen as a positive sign of actors' learning to apply the METSO approach. While different participating institutions have their own service models to take care of forest owners' conservation-related and other motives, the results underline the well-functioning co-operation between organizations in biodiversity conservation matters. This feature of the current situation offers a promising base for further enhancing the actors' roles and responsibilities as well as general information logistics of METSO means.

However, the observations that attention paid to biodiversity aspects varies and information delivered to forest owners may be biased to one or another direction indicate a clear challenge. It is natural that timber buying companies cannot act similarly compared to nature conservation agencies, but to avoid misunderstandings the factual information about METSO alternatives should be congruent regardless of the information source. To appreciate forest owners'

voluntary action and the power to decide, the owners should be given simple guidelines of what the alternatives, their grounds and expected effects are. A reasoned recommendation is to continue efforts aiming at improving professional actors' knowledge levels of METSO means. More trainings, field guides and thematic workshops are needed.

The interconnectedness of public and private interests as well as policy and commercial motivations makes biodiversity conservation a contradictory action. This was reflected in the interviews so that in general voluntary conservation still appeared as an exception, not an equal alternative for forest use. Biodiversity conservation could be turned from constraint to goal, which would then be pursued along with wood production, and other goals that the forest owner might have. Considering developing natural values as a goal in private forest ownership would allow establishing new practices in which the nature values of forests are continuously assessed and monitored within ordinary forest advisory. In this action, the expertise of nature-specified NGOs should be acknowledged and utilized. Currently however, there are no market payers to biodiversity, and natural values trade is missing from the action palette. It is insufficient to only have taxpayers paying compensation for monetary losses of conservation: roles of public and market services in biodiversity conservation need clarification and new market players are needed e.g. to plan and conduct nature management projects.

One goal of this study was to lay grounds for visioning and taking action in biodiversity conservation services which are offered for private forest owners. This goal was quite well achieved; several tensions between different models of purposeful actions and needs for decision support tools were recognized. However, the results of the interviews might still mainly correspond to the present situation of the METSO programme and the forestry organizations; not very many alternative futures could be recognized in the interview results. However, the changes in the operational environment of forestry call for changes in the biodiversity protection services offered for the forest owners. For example, the public funding paid to forestry organizations is already more clearly separated from the services offered for the forest owners. In general, the state funding for forestry organizations may decrease, and the funding for voluntary biodiversity protection may be more directly paid to the forest owners. In one future vision, the forest owner could use a part of the biodiversity protection subsidy for buying advisory services. This, in turn, might actually change the models of purposeful actions in the organizations who offer biodiversity protection services.

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