Poster: Addressing forest policy and planning by combining participatory workshops and forest management decision support tools

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Keywords
Ecosystem services, collaborative planning, group decision making, multiple criteria decision methods, Pareto frontier

Abstract
This STSM contributed to the ORCHESTRA objectives by outlining and evaluating a general approach for analysis of alternative forest policies by combining participatory workshops with advanced forest decision support tools. This approach was applied in workshops and the approach and results were evaluated by the participants.

Introduction
Sustainable forest management concerns multiple values and perspectives and involvement of stakeholders in policy and planning processes. Analysis of trade-offs among conflicting goals, e.g., timber production vs. biodiversity conservation, is also needed. However, these problems are usually complex and in recent years, a number of advanced forest management decision support tools have been developed in order to address such problems (Borges et al. 2014b). Rightly used, decision support tools can help forest owners, policy makers and stakeholders to understand what ecosystem services the forest can produce under different circumstances and what the trade-offs are between these ecosystem services. This knowledge can promote constructive discussions between stakeholders and support policy and decision making. However, there is a tension between using "hard" modeling approaches and "soft" participatory approaches (Menzel et al. 2012).

Objectives
The overall objective of the study was to develop an approach for landscape-level management planning using a combination of participatory workshops and decision support tool to provide the trade-off information needed to address typical multiple objective and multiple stakeholder planning problems. The specific objective of the STSM was to assist in the design and evaluation of the workshops.

Methods and material
A general outline for the participatory workshops was developed though discussions with the research team and test workshops. Specifically, the FGM/IDM technique (Borges et al. 2014a) was to be used to visualize the Pareto frontier, i.e., the set of efficient forest management alternatives and consequently trade-offs between ecosystem services. This approach was applied in workshop in the areas of Chamusca and Sousa in Portugal within the INTEGRAL project during the autumn 2014. The workshops were then evaluated by the participants using a questionnaire.

Results

The results of the questionnaires highlighted the potential of the approach to overcome obstacles of landscape-level forest management planning (Figure 1). Overall, the participants were positive, especially towards the negotiated solution (questions 8-11) but also towards the tool used in the workshop to get to that solution (questions 1-7). In the workshop in Chamusca, time for using the tool (questions 6 and 7), seems to have been the most critical point. In the Sousa workshop, the participants were more critical about the tool and the limited time for using it, and yet they were as positive about the solution as the participants in Chamusca.

Conclusions and discussion

In summary, this study demonstrates that the combination of participatory workshops and the Pareto frontier visualization method was successful in addressing landscape-level management planning. It provides an informed negotiation setting, where stakeholders and decision makers may sort out their differences to set targets for the provision of ecosystem services and to develop an acceptable landscape-level plan.

References

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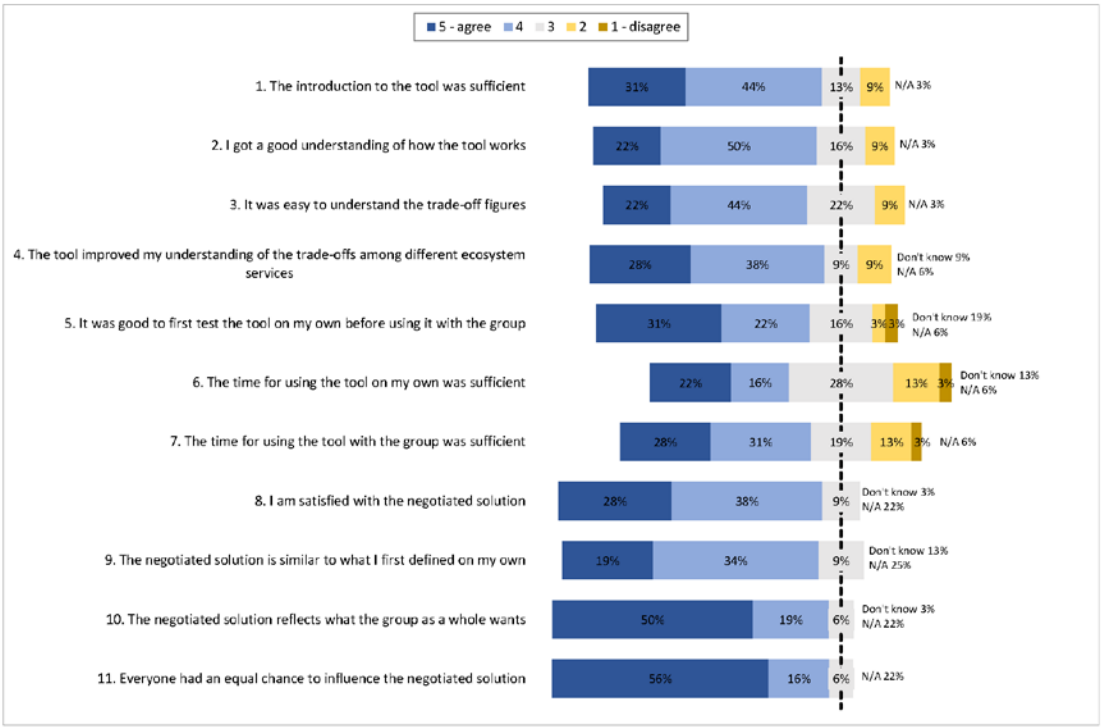

Figure 1. Results of the questionnaires from the two workshops (n=46). The vertical, dashed line shows the midpoint of a five-point Likert scale; the share of respondents that agree with the statements is displayed to the left of the midpoint line (in blue shades) and the share of respondents that disagree to the right (in yellow shades). Neutral responses (value 3 on the Likert scale) are displayed in grey with equal shares on either side of the midpoint line.