Scientific report for STSM within the COST Action FP0804 FORSYS

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STSM Topic: Decision support systems in participatory forest planning – assessing success and unused potential

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1. Purpose of the visit

The main purpose of this STSM was to expand an abstract written for the DSFM workshop in Lisbon to produce a scientific paper on the topic of (i) how the current use of DSS in forest planning can be characterized, (ii) how well this use meets the criteria that have been formulated for participatory planning, (iii) how the use of DSS may be improved so it better contributes to participatory planning, and (iv) what future research should focus on to provide better information so that we will be able to enhance the integration of analytical and deliberative approaches in forest planning.

Thus, the STSM aimed at contributing to FORSYS WG 4 (Participatory processes), especially sub-task 4.3. "*Enhancing the use of DSS tools in participatory planning process*" described in the Memorandum of Understanding for FORSYS.

2. Description of the work carried out during the visit

During the visit to WSL, the following activities were carried out in collaboration between Eva-Maria Nordström and Susanne Menzel:

1. The results of a screening of the FORSYS wiki for DSS/decision support tools that have been used in participatory forest planning were analyzed.
2. A new outline for Results, Discussion, and Conclusions sections was produced to include results from the wiki screening and additional literature search.
3. The results of the work were presented on March 28 in a seminar at the Research Unit Economics and Social Science at WSL.
4. The manuscript was then revised to include feedback and comments from the seminar. In addition, the Introduction and Methods sections of the original abstract was revised and expanded to

3. Description of the main results obtained

The main results and conclusions to be presented in the paper produced during the STSM are:

1. A review of the participatory planning literature resulted in a list of success criteria for participation (Table 1).

Table 1. Evaluation criteria for participatory processes

Rationale for participation	Evaluation criteria	Relevance for DSS
Normative	Fairness	High?
	Relationships and social capital building	low
	Structured group interaction	Low
	Facilitation of constructive individual/group behaviour	Low
Substantive	Representation	Moderate
	Opportunity to influence outcome	Low/high (depending on definition)
	Quality and selection of information	High
	Cost effectiveness	high
	Accessibility of process	Low
	Adequate resources	Moderate
	Opportunity to influence process design	Low
	Challenging status quo and fostering creative thinking	Low
Instrumental	Structured decision-making process	Moderate
	Clear mandate and goals	Low
	Transparency	High
	Acceptance of outcome	High
	Accountability	Moderate to high
	Independence and neutrality of process	Moderate to high
	Legitimacy	High
	Search for common values	Moderate

2. However, as success is a multi-dimensional concept that not only implies trade-offs, but also incommensurability between dimensions, participation cannot be optimized or maximized in any sense, the task of evaluating participation is rarely straightforward. Rather, it depends on the context and expectations of participants, and underlying motivations for undertaking participation could be used for understanding how criteria relate to each other. Thus, the three rationales for participation described by Fiorino (1989) and Blackstock et al. (2007) (Table 2) were used for sorting the compiled success criteria (Table 1). Further, the paper discusses the concept of "success" and possibilities for evaluating success.

Table 2. Different rationales for public participation

Rationale	Explanation
Normative	Encouraging social and individual learning enriches both society and individual citizens
Substantive	Encouraging multiple perspectives improves understanding of the issues, and therefore the selection of appropriate solutions
Instrumental	Encouraging collaborative relationships assists with implementation and with defusing conflict

3. We assessed to which degree the use of DSS may influence the success criteria, positively or negatively, for a participatory process in general (Table 1).
4. However, since the information on use of DSS in participatory processes was scarce on the FORSYS wiki and in the literature, it proved to be difficult to assess existing DSS directly against these criteria. For that reason, instead of using information on how the DSSs worked in actual participatory processes, different features or components of a DSS was used as an indirect way to assess the effect of a DSS in a participatory process, as some of these features have considerable potential to influence success criteria. We identified the following features as addressing these criteria:
   - group decision support features
   - possibilities to include other values than timber production
   - flexibility of system to include non-traditional forest data and management options, e.g., possibility to include uneven aged forestry
   - multi-criteria decision analysis features

   These features are not standard components and not very common in existing forest DSSs, and we suggest that these features should be included in DSS used in participatory planning, as they show potential to positively influence criteria that reflect successful participation.

5. A DSS cannot be expected to comprise and provide tools for the whole planning process, e.g. a DSS can contribute little to the fulfillment of criteria related to the normative rationale, but should be complemented with deliberative/participative techniques. A critical issue for a planner is then to assess the DSS in question to make clear how the DSS can be used in a planning situation and what other tools are needed as a complement to cover the important aspects.

4. Projected publications to result from the STSM

This STSM will result in a scientific paper by Susanne Menzel, Eva-Maria Nordström, Matthias Buchecker, Alexandra Marques, Heli Saarikoski and Annika Kangas with the preliminary title "Decision support systems in forest management and requirements from a participatory planning perspective – a conceptual contribution". The paper will be submitted to a peer-reviewed journal as soon as all co-authors have had the possibility to comment on the manuscript.