A participatory approach to design a forest management planning regional decision support toolbox

(submitted)

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Abstract

Forest management planning in a region typically involves multiple stakeholders. Decisions processes are idiosyncratic, driven by individual goals and supported by segmented forest-based information. Nevertheless, stakeholders’ decisions do impact each other leading to complex interaction networks where communication, cooperation and negotiation play a key role. This research addresses the need to develop decision tools to support these roles. Emphasis is on the integration of participatory planning tools and techniques in the architecture of a regional decision support system. Specifically, this research proposes an Enterprise Architecture methodological approach to design a forest management regional decision support toolbox.

This toolbox addresses distinct stakeholders’ interests and decision processes. Furthermore, it supports communication, cooperation, negotiation and information sharing, facilitating the regional interactions network. Results of its application to Chamusca County in Central Portugal are presented. This regional interaction network involves decision processes and information by several stakeholder including forestland companies and private forestland owners - acting individually or grouped into associations and federations -, national and regional governmental agencies, forest services providers, non-governmental environmental agencies and research centers. Results suggest that the proposed approach may provide an a forest management regional decision support toolbox that may effectively address stakeholders’ perspectives and goals and support the regional interaction network.

Key-words: forest management, multiple stakeholders, decision support systems, enterprise architecture