IUFRO

Innovative Approaches for Decision Support in Sustainable Forest Management and Policy Advice

By José G. Borges, Coordinator of IUFRO Unit 4.04.04; Ljusk-Ola Eriksson, Chair of the Conference Organizing Committee; and Harald Vacik, Deputy Chair of IUFRO Unit 4.03.03

The 2013 FORSYS Conference brought together the experience and the expertise worldwide for developing innovative decision support approaches to address sustainable forest management and its concerns with social, economic and environmental objectives. It reported the state-of-the art on the development and use of decision support systems and provided insights into case studies that enhance forest management planning and support forest policy analysis.

Sustainable forest ecosystem management and policy analysis

The task of sustainable forest ecosystem management planning is to facilitate decision-making processes of forest managers so that plans may optimize the supply of economic goods,

Participants at the 2013 FORSYS Conference in Umeå, Sweden, April 24-26. Photo by Mikael Ronnqvist.

such as timber, cork and bio-fuel, while sustaining the ecological base in terms of biodiversity, carbon sequestration, soil and water quality and addressing concerns regarding the well-being of people and society. This is to be accomplished under changing environmental, regulatory, and economic conditions, rendering the empiricism of the past unsuitable as a means for making decisions and developing policies about the future, but requiring advanced decision-support tools.

The synthesis for innovative management and policy decision support

The Conference FORSYS 2013 Decision Support Systems for Sustainable Forest Management took place on April 24-26, 2013 in Umeå, Sweden. It was sponsored by IUFRO Division 4, the European Science Foundation (ESF) and the Swedish University of Agricultural Sciences. Its program encompassed 48 presentations and it involved 98 participants from 32 countries (Austria, Belgium, Brazil, Cameroon, Canada, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Morocco, Nepal, Netherlands, New Zeeland, Nigeria, Norway, Poland, Portugal, Russia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States).

The Conference presented an original synthesis of multidisciplinary research efforts - developed under the COST Action FP0804 (FORSYS Forest Management Decision Support Systems DSS) – to provide an innovative worldwide quality reference for development and application of advanced computerized tools to support forest management and policy analysis. This was built from the experience and expertise reported in comprehensive country reports by 94 researchers from 26 countries in Africa, America, Asia and Europe and from the work recently conducted under FORSYS by over 120 researchers and stakeholders to address hot topics such as:

a) the architecture and implementation of decision support systems (DSS),
b) the models and methods to support decision-making in DSS,
c) the knowledge management techniques in DSS, and
d) the participatory processes to be supported by DSS.

The need to involve decision-makers in the design of DSS was discussed as critical success factor and it became evident that research tries to consider the rising demands and needs of stakeholders with advanced techniques and models. The synthesis coming up from the COST Action and the final conference will be influential to improve management from a stand to a multiple-ownership landscape scale and to enhance forest policy analysis in general.

The Community of Practice on Forest Decision Support Systems

The further research to innovate forest management and policy analysis processes will be supported by the Community of Practice on Forest Decision Support Systems (http://www.forestdss.org) which was constituted during the conference. This Community will build from the state-of-the art and the FORSYS experience, namely from a large repository of DSS projects that has been formally described in a semantic wiki:(http://fp0804.emu.ee/wiki/index.php/Category:DSS) to further provide a solid expertise in applying models, methods, techniques and frameworks for developing and applying DSSs for forest management and policy analysis.

A proposal for a session to further disseminate this work at the IUFRO 2014 World Congress (Decision Support for providing Ecosystem Services - Community of Practice of Forest Decision Support Systems) is currently being organized by IUFRO Units 4.02.07, 4.03.03 and 4.04.04.