ISiS-Science Talk

**"Advantages and limits of a simulation model for the analysis
of sustainable forest management and forest-product markets: The case
of FOHOW"**

by Ao.Univ.-Prof. Dr. Peter Schwarzbauer, University of Natural Resources and Life
Sciences, Vienna (BOKU), 2 May 2017, 12:30 p.m.

The next Science Talk, organized by the Institute of Systems Sciences, Innovation and Sustainability Research, will be given by **Ao.Univ.-Prof. Dr. Peter Schwarzbauer** (University of Natural Resources and Life Sciences, "Boku") on the topic "Advantages and limits of a simulation model for the analysis of sustainable forest management and forest-product markets: The case of FOHOW". His talk will take place on Tuesday, 2 May 2017 at 12.30 pm in the **meeting room of ISIS (Merangasse 18, 1st floor).**
Duration: **Approximately one hour** including discussion.
The institute usually organizes three guest talks in each semester, covering its main research fields, i.e., systems sciences, innovation and sustainability research. There is no need to register for the "ISIS Science Talk" and the participation is free of charge.

Bio-sketch

Peter Schwarzbauer is an expert in forest sector modelling. He is key-researcher in the WOOD K PLUS team "Market Analysis and Innovation Research" (WOOD K PLUS_MAIF) and also Associate Professor for Forest Sector Markets and Marketing at the University of Natural Resources and Life Sciences, Vienna (BOKU). He has over 30 years of experience with projects related to wood markets. His main research interests include forest-sector modelling as well as market analyses of innovative forest products. In terms of forest-sector-modelling, the main methodological approach is simulation modelling (System Dynamics), to a large extend based on econometrically estimated parameters (e.g. supply and demand elasticities). He is member of the UNECE/FAO team of specialists on forest sector outlook as well as member in the scientific advisory council for the World Wide Fund for Nature (WWF).

Abstract

Computer models used for the analysis of markets are usually based on the ideal of a perfectly competitive market. In order to achieve market equilibrium and to represent the simultaneous interaction of supply, demand and prices, an optimization algorithm to maximize the total of producer- and consumer rents is used in most cases. In simulation models the use of simultaneous equations (supply, demand, price) is technically not feasible. The simulation model of the Austrian forest-based sector (FOHOW), however, uses a mechanism to avoid simultaneous equations but still allows a convergence to market equilibrium.
FOHOW is not a model designed for making forecasts, but for answering "what-if" questions. Like for all models results are sensitive to exogenous assumptions. Therefore, communication of results to stakeholders and policy makers, who appreciate simple answers, is sometimes tricky. The case of setting aside forest areas for conservation rather than for wood production and the impact on the forest-based value chain will show how sensitive the model is reacting to different exogenous assumptions and how different the results can be.
The recent publications are – among others - co-authored by Martin Braun (University of Natural Resources and Life Sciences, Vienna (BOKU)), who transferred FOHOW to a modern software (Stella) and expanded the model by adding a module for carbon stocks and flows calculation.