”Future pathways of fiber-based packaging in the circular bio-economy”

by Prof. Dr. **Anne Toppinen** on 10 April 2018 at 12:30 p.m.

The next Science Talk, organized by the Institute of Systems Sciences, Innovation and Sustainability Research, will be given by **Prof. Dr. Anne Toppinen** (University of Helsinki) on the topic ”Future pathways of fiber-based packaging in the circular bio-economy”. Her talk will take place on Tuesday, 10 April 2018 at 12.30 pm in the **meeting room of SIS (Merangasse 18, 1st floor)**. Duration: **Approximately one hour** including discussion. The participation is free of charge and there is no need to register. SIS usually organizes three to five guest talks in each semester, covering its main research fields, i.e., systems sciences, innovation and sustainability research.

Bio-sketch

Anne Toppinen is Professor of forest economics and marketing at the Department of Forest Sciences, University of Helsinki (Finland). She is also a member at the recently established Helsinki Sustainability Science Institute (HELSUS).

Her current research topics focus on sustainability management in the global forest industry, user-driven innovations and analysing transition to bio-based economy.

Before joining University of Helsinki she worked in several research and research management positions including European Forest Institute, Finnish Forest Research Institute, Oregon State University and Academy of Finland.

For more information of Anne’s group FBBS and their projects and publications, see
https://www.helsinki.fi/en/researchgroups/forest-bioeconomy-business-and-sustainability

Abstract

Packaging in one key performance determinant for functionality and sustainability of global production and supply chains, and therefore the packaging sector is important from the development of the bio-economy viewpoint as well. Demand for renewable materials based packaging solutions is driven by growing environmental consciousness, greening supply chains, technological development, with urbanization and increased mobility acting as megatrends for the growing demand. In the study we use the fiber-based packaging sector as an example to study foreseen development pathways in the circular bio-economy era. Based upon qualitative analysis of thematic interviews among the value network actors in Finland - one of the largest European producer countries of fiber-based packaging materials - we assess (1) actor perceptions on how acceptable they see the whole concept of bio-economy, and (2) how they foresee the packaging sector to develop under the umbrella of circular bio-economy.

Regarding the concept of bio-economy, despite general acceptance of the concept as such, the opinions differ broadly from being a “Trojan horse” (new term for driving old political agendas) to a totally new way of organizing a sustainability oriented economy. Within identified two alternative bio-economy pathways from Pfeifer et al. (2017), the socio-ecological one is highlighted in our analysis slightly more frequently, embedding the circular economy view and aiming at decoupling resource use. Also the alternative, technological development pathway with more narrow focus on increased resource efficiency was seen among some actors as a likely outcome for fiber-based packaging business. However, the simultaneous development of these two paths was most often envisaged, indicating that both social and technological innovations are mutually needed to create more sustainable packaging. Finally, we identified three characteristics of sustainable packaging to be compatibility with circular production-consumption system, satisfying heterogeneous consumer needs, and supporting sustainable lifestyles by extended material use.