



## Workshop 3.2: Addressing climate change in the food chain: How can science make an actual change in practice?

Convenors: **Emiel Elferink and Gijs Kuneman**

### Including CO<sub>2</sub>-emission in the formulation of animal feed: Methodology and critical issues for translating theory into practice

Celine Ginneberge, [Marijke Meul](#),  
Dirk Fremaut and Stefaan De Smet

Faculty of Bioscience and Landscape  
Architecture, University College Ghent, Belgium

Feed production has a major contribution in the total CO<sub>2</sub>-emission of intensive animal production. Hence, CO<sub>2</sub>-emission could be decreased if compound feeds were used with less CO<sub>2</sub>-emission during manufacturing, compared to currently used feeds. To achieve this, an LCA will be performed for different feed components, starting with soybean meal. We pay specific attention to the transfer of theoretical knowledge and methodology into a practical tool for feed producers. Therefore, with the help of stakeholders, some major bottlenecks need to be solved, related to the choice of boundaries, the availability of data and the development of a shared vision.

### Translating scientific knowledge on bioenergy sustainability to a wider public: The Sustainability Quick Scan

[Hans Langeveld](#), E. van de Fliert,  
and A. Roos

Biomass Research, The Netherlands

Biofuels offer perspectives for areas with limited development opportunities but may threaten food or feed production and biodiversity. We developed a tool to evaluate sustainability performance of two scenarios for cane expansion in the Brazilian Cerrado region, using (in)formal data to assess greenhouse gas (GHG) emissions, biodiversity, competition for resources, impact on food and land prices, prosperity and well-being. Results are presented in figures and translated into sustainability labels. The analysis suggests that cane expansion supported by grassland yield improvement is more sustainable than cane expansion based on displacement of maize and grassland converted to facilitate cane expansion.

### Outline of the Finnish system of certified carbon footprints of food products

[Merja Saarinen](#), Mikko Hongisto,  
Kirsi Usva, Sirpa Kurppa,  
and Ari Nissinen

MTT Agrifood Research, Finland

The structure of a Certified Carbon Footprints of Products system is outlined in this paper. It is designed around activity-based data, and every actor would be responsible for data of its own activities. Carbon footprints of products are comparable at product level and usable for example in carbon labels, other information mechanism and process development. The system needs further development prior to full-scale introduction. Regarding food it means development of a new architecture for data production and management, and e.g. development of environmental support of agriculture. Cost-effectiveness of the system requires development of internet-based tools for data sharing.

### Carbon footprint of food – An approach from national level and from a food portion

[Sirpa Kurppa](#), Yrjö Virtanen,  
[Merja Saarinen](#), Ilmo Mäenpää,  
Johanna Mäkelä,  
and Juha Grönroos

MTT Agrifood Research Finland

This research was built on LCA of food items, on an environmental assessment of the food system based on national IO-statistics, and on the consumption model of a standard lunch plate. The aim was to facilitate consumers to make responsible choices and to facilitate the food supply chain to identify key improvements. Finnish food sector accounts for 7% of domestic CO<sub>2</sub>, 43% of CH<sub>4</sub> and 50% of N<sub>2</sub>O emissions, with 14% contribution in climate change. Daily food consumption represents 15-20% of a total climate change impact; with variation of 600gr to 3,5kg of equivalent CO<sub>2</sub> per lunch plate.