

Theme 2: Social organization and risk management in a circular bio-based society

Workshops 1-3

Number:	Title:	Page:
2W1	Risk management and trade-offs	1
2W2	How to transition towards circular animal feed	1
2W3	Visualisations of circular agriculture: your ideas about spatial quality of circular agriculture scenarios	3

2W1

Risk management and trade-offs

Niamh Power, Cork Institute of Technology, Niamh.Power@cit.ie

In this workshop we interactively reflect on the tools, guidelines and strategies presented in session 3. We will discuss strong and weak points of each method, and reflect on how their performance depends on the cultural setting. For example, how to use social cost benefit analyses in a risk-averse society; what is the effectiveness of priority ladders in a liberal economy; how to communicate in a low-trust society?

2W2

How to transition towards circular animal feed

Sanne Stroosnijder, WUR/WFBR, sanne.stroosnijder@wur.nl, Hilke Bos-Brouwers, WUR/WFBR, hilke.bos-brouwers@wur.nl, Marko Appel, WUR/WFSR, marko.appel@wur.nl, Elise Hoek, WUR/WFSR, elise.hoek@wur.nl, Gert van Duinkerken, WUR/WLR, gert.vanduinkerken@wur.nl

An important principle in the transition towards a circular bi-economy is the animal production system as mediator to return biomass into the human food system. Envisioning the 2050 horizon, all current waste flows from the food system are either prevented or upcycled into the human food system via animal feed.

This will require a transition, overcoming many barriers from a legal, technical, safety, business model and sustainability point of view. Also, the growing demands from the biobased economy and the replacement of fossil-based resources for materials and energy will continue to put pressure on the use of side streams for human food production.

A substantial portion of current side-flows from food production and processing are already being directed to animal feed. However, earlier research (e.g. REFRESH 2019) shows that approx. 7 Million tons of suitable biomass side flows from the European food system is considered off limits due to food safety considerations. This amounts to almost 10% from all food loss and waste across the EU that could find its way back into the food system if the context allowed.

The speed of transition in solving these barriers varies and leads to the identification of transition paths towards the 2050 horizon. Insects and pet feed can serve as interesting mediators, in-between steps to contribute to the building of scientific evidence for the safe, acceptable and attractive application of side-streams for animal feed.

Spanning over these barriers and transition pathways, four Public Private Partnership (PPP) projects from Wageningen Research and the Foundation Food Waste Free United aim to build both the scientific evidence as well as experience in practice to support the societal and policy case for safe and sustainable use of side streams for animal proteins.

During this workshop, several transition pathways will be illustrated by original case-work from the projects and considerations will be discussed following several angled questions:

- Is it legally allowed?
- Is it technologically possible (process technology & nutritional value as feed)
- Is it safe (food & feed perspective)
- Is it attractive for business (positive business model)
- Is it acceptable by consumers?
- Is it more sustainable than the current system?

The interactive discussion will seek to outline prerequisites for implementation, possible scenarios and conditions for chain and consumer acceptance. It will zoom in on the role of science, and how stakeholders such as industry, politics and the civil society can jointly move towards 2050

Visualisations of circular agriculture: your ideas about spatial quality of circular agriculture scenarios

Sanda Lenzholzer, WUR/ESG, sanda.lenzholzer@wur.nl, Michiel Bakx, WUR/ESG, michiel.bakx@wur.nl, Tia Hermans, WUR/WER, tia.hermans@wur.nl

Since WWII farmers have adopted intensive agricultural practices to increase crop and animal production. This type of agriculture causes a number of environmental problems, including a loss of biodiversity, degradation of soil quality, water and air pollution, and depletion of fossil fuels. Adopting new circular agriculture types may help to reduce the environmental impact of agriculture. Circular agriculture may take various forms, including extensive livestock farming, agroforestry, small scale mixed farming, precision cropping, precision dairy farming, and agroparks. The adoption of these circular agriculture types may impact the quality of the landscape. To support societal acceptance and eventual implementation, these circular agriculture types should make a positive contribution to spatial quality of the landscape. To test spatial quality experience we generated 3D visualisations that simulate the new circular agriculture landscapes. We would also like to test the 'spatial quality' with the attendants of the Circular@WUR conference. In the workshop we will present these visuals of the different circular agriculture types, and then ask participants to evaluate the 'spatial quality' of these circular agriculture types based on a framework of 17 criteria selected from the literature (in prep). Subsequently we invite the participants to discuss the strengths and weaknesses of each type of circular agriculture. The workshop aims to contribute to the design of circular agriculture types improve quality of the landscape and support eventual implementation. This corresponds with the mission of the Circular@WUR conference: to promote the transition towards a circular bio-based and climate- smart society. More specifically, our workshop links the biosphere category (types of circular agriculture) with the society category (the desired quality of these types of agriculture) of the programme.