

Assessing risk and building resilience to facilitate the transition towards circular food systems

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Abstract

There is potential for circular food systems to improve quality of life for humans, farmed animals, and ecosystems. However, increasing circularity in the food system brings with it novel risks that should be managed to avoid negative unintended consequences. Under circularity, the interconnectivity of food subsystems is likely to increase. For example, waste streams are proposed to be used as feed or fertilizer. Creating such loops brings novel risks that may become reinforcing. Risk is interdependent across system scales and may related to animal welfare, pollution, spread of disease, or international trade. If these risks are not identified, managed, and regulated, the project of transition to circular food systems may be undermined.

We propose a new, multidisciplinary framework for managing and governing risk within circular food systems, more specifically within the EU including the context of the Green Deal. Our framework places an emphasis on building resilience of food subsystems as a pathway to managing risk. We explore how the current movement toward restructuring of interconnections within the food system to increase circularity may introduce novel and unintended risk factors, and how this connectivity can be managed to mitigate these risks. We outline how risk owners can be identified and connected to improve governance across

food system scales. Finally, we explain how resilience principles can be applied to manage changing risk associated with transition to a circular food system.

Relationship of the contribution to SDGs:

SDG 2: Zero hunger: target 2.4 and target 2.5

SDG 12: Responsible consumption and production: target 12.8 By 2030

SDG 15: Life on land: target 15.5, target 15.8, target 15.9

Relationship of the contribution to the theme of the Conference – “Sustainable Development and Courage. Culture, Art and Human Rights”:

Transition in food systems, including a potential transition to circular agriculture, is a wicked problem that requires input and insight from many different disciplines in order to oversee the possible effects of changes, and to mitigate the inevitable issues that will arise during transition. The consortium involved in our contribution is specifically selected to include academics from (veterinary) health sciences, environmental sciences, and law; we are very open to collaboration with all disciplines.