



Deliverable 1.3

## **Interdisciplinary conceptual and analytical framework**

September 2022

WP1: Conceptual and analytical framework

<b>Project acronym</b>	CIRCLE
<b>Project full title</b>	Promoting collaboration for sustainable and circular use of bioresources across agriculture, forestry, and aquaculture
<b>Funding source</b>	Research and education, Baltic Research Programme, European Economic Area grant (Project no. EEZ/BPP/VIAA/2021/9)
<b>Available funding</b>	EUR 984 223,60
<b>Duration</b>	October 1, 2021 – April 30, 2024
<b>Coordinating organisation</b>	Baltic Studies Centre (Latvia)
<b>Partners</b>	Institute of Agricultural Resources and Economics (Latvia), Vilnius University (Lithuania), Estonian University of Life Sciences (Estonia), Institute for Rural and Regional Research (RURALIS) (Norway)
<b>Project coordinator</b>	Talis Tisenkopfs
<b>Project website</b>	<a href="https://circle-eea.eu">https://circle-eea.eu</a>
<b>Deliverable title</b>	Interdisciplinary conceptual and analytical framework
<b>Deliverable number</b>	1.3
<b>Work package</b>	WP1
<b>Authors</b>	Emils Kilis (BSC), Mikelis Grivins (BSC), Aiste Bartkiene (VU), Alberts Auziņš (AREI), Anda Ādamsone-Fiskoviča (BSC), Diana Mincyte (VU), Ieva Leimane (AREI), Jostein Brobakk (RURALIS), Kadi Kenk (EMU), Kristiina Kerge (EMU), Kristina Hiir (EMU), Mait Kriipsalu (EMU), Pia Piroščka Otte (RURALIS), Rando Värnik (EMU), Renata Bikauskaite (VU), and Sandra Šūmane (BSC)



Vilnius University



## EXECUTIVE SUMMARY

The CIRCLE team has collaboratively developed an interdisciplinary conceptual and analytical framework (CAF) for the analysis of intra-sectoral and cross-sectoral circular use of bio-resources in agriculture, forestry and aquaculture in the Baltic-Nordic region. The team took a processual approach to the development of the CAF, and the CAF will be periodically revised in response to empirical findings. The initial step in the preparation of the CAF was the identification of common theoretical resources that partners could draw upon. Subsequently, to ensure that different disciplinary perspectives are considered, several seminars were organised to articulate a common vision for the needs that the CAF should serve and the form that it should take. It was decided that the initial version of the CAF would be modular and focus on key concepts and analytical terms that had been repeatedly discussed at project meetings. Despite the decision in favour of modularity, there are several thematic strands which organise the narrative of the CAF, such as the sustainable use of bioresources, circular production and consumption of goods, and an interest in the best way to govern sustainable transitions.

CIRCLE tackles circularity in the bioeconomy from a cross-sectoral perspective. The team draws on the principle that the circular economy is in its nature regenerative and contends that circularity in agriculture, forestry and aquaculture (AFA) is based on a more sustainable and efficient use of bioresources. The specificity of the AFA sectors lies in the fact that these sectors both use and create regenerative bioresources. This provides unique possibilities for the businesses operating in these sectors for tackling their own adverse impacts and creates new opportunities for cutting costs, building resilience and the creation of new business models through novel methods of waste and by-product valorisation within and across sectors. Building on this, CIRCLE proceeds on the assumption that the circular economy needs different parties to interact, exchange and collaborate. This allows companies to determine their needs and identify opportunities in terms of inputs provided by companies from other sectors, while also developing value chains between different sectors, so that the resources in question can remain in production loops, without ever becoming waste.

From the perspective of CIRCLE, the multifaceted nature of sustainability encourages scholars to broaden the scope of analytical considerations in relation to the circular economy. Specifically, social sustainability offers a useful conceptual basis for developing a more comprehensive understanding of the circular economy and fill in gaps in current scholarly work, which tends to focus on the technical and institutional dimensions of the circular economy. The approach taken in CIRCLE entails the inclusion of different perspectives in analyses of what constitutes a successful business model. More broadly, considering the social dimensions of sustainability will be helpful for identifying and addressing potential issues with the implementation of circular solutions at the local, regional, and national levels. These insights will enable the team to develop a more comprehensive set of recommendations for supportive governance and collaborative arrangements in intra- and cross-sectoral circularity.

CIRCLE posits that the nature of circularity requires us to rethink traditional business models – how companies create, capture, and deliver value. The specificity of circular business models derives from a value creation logic designed to improve resource efficiency through extending the useful life of products and parts (e.g. through long-life design, repair and remanufacturing) and the incorporation of closed resource loops. Consequently, circular enterprises consider business models that help them move away from an overreliance on virgin resources and look for strategies that allow them to increase the value of resources already circulating in the loop. Furthermore, circularity opens new horizontal

and vertical connections across the supply chain. This specificity means that the analytical tools employed to capture the performance of these initiatives need to be appropriately calibrated. What is more, an investigation into the circularity of resource loops requires a focus on the sector, or the resource chain in general. CIRCLE contends that the business model canvas can be a useful tool to describe and analyse an enterprise. However, performance assessment needs to incorporate a structured overview illustrating the circular nature of the logic behind the enterprises' practices and the increased sustainability linked to the closure of the resource loops. It also has to illustrate the contextual arrangements and extant power relations that are conducive to the closure of resource loops.

CIRCLE proceeds on the assumption that deeper insight into the consumer perspective on circularity is of great practical relevance. An appreciation of the consumer perspective can aid businesses and pave the way for consumer engagement initiatives that will be crucial for a successful transition to a circular economy. However, it is important to note that the consumer perspective on circularity is multiple and contextually varied, reflecting different levels of understanding and trajectories of historical development. Furthermore, the choice to purchase a sustainably produced product should be approached as a heterogeneous mesh of countervailing considerations and trade-offs that pit environmental awareness, social and economic solidarity, ethical concerns and practical considerations against one another. However, consumption practices are also habitual and frequently integrated in routine behaviours, rather than the result of a dynamic and conscious decision-making process, and there is a need to connect these habitual behaviours (incl. in the use and post-use stages) with the production processes and recycling efforts of businesses. Finally, the consumer perspective must be considered in the value creation process, as it may pose a particular challenge to businesses employing bioresources.

CIRCLE draws on the conceptual resources provided by the ethics of care and ecological solidarity to approach the circular economy from an ethical perspective and assess the impact of the circular use of bioresources in terms of social and environmental sustainability. The ethics of care underscores the importance of responsibility, interdependencies, and care work that are part of the circular economy. By highlighting the complexity of moral motivations, the ethics of care will shape the analysis of consumer perspectives and attitudes towards circular business models and collaborative arrangements. Furthermore, by introducing a new conceptual vocabulary in the institutional context, the ethics of care will be useful for the development of policy and practice recommendations for supporting business models and collaborative governance in the context of intra- and cross-sectoral circular resource use. Ecological solidarity also brings several conceptual contributions to CIRCLE. Firstly, it provides analytical tools focused on cooperation and reciprocity to examine governance of intra- and cross-sectoral circularity at micro, meso, and macro levels. Secondly, it helps to map and address challenges stemming from the efforts to develop collaborative and ethical linkages within and across economic sectors. Finally, it provides guiding principles and ethical considerations for the design of intra- and cross-sectoral circular economies.

CIRCLE approaches governance as a multi-actor process that involves multiple state and non-state entities. Contemporary societies involve a multitude of state and non-state actors from different sectors in various collaborative formats to organise social, economic and political life. CIRCLE proceeds on the assumption that governance refers to processes and decisions resulting from the collective effort of multiple state and non-state actors. It also encompasses the structures and processes for decision-making, accountability, control, and behaviour that have been legally formalised or established in practice. In particular, CIRCLE will focus on collaborative multi-actor governance

arrangements (within and across sectors), institutional strategies and policies that facilitate the use of bioresources in a sustainable and efficient manner and contribute to the transition from a linear to a circular economy. The subfields of environmental and sustainability governance, by focusing on both systemic and environmental transformation, add an extra dimension in the study of circularity. Furthermore, the study of the actual shifts in the economy towards increased circularity also require an analysis of the policy frameworks and policy measures aimed at encouraging and facilitating the transition to circularity.

CIRCLE adopts the sustainability transitions framework to address the question of how changes can be initiated and governed towards the desired societal goal of the circular bioeconomy. While the circular use of bioresources is not a recent development, the circular bioeconomy needs to be developed and consolidated as a purposefully driven system. This will allow the various actors involved to make use of novel technological developments and organisational or collaborative arrangements that open up new opportunities for a circular use of bioresources and facilitate a transition away from linear economies. CIRCLE proceeds on the assumption that such fundamental transformations happen through an interplay of a variety of factors at different levels and in different domains (technology, market, policy, society) that reinforce each other to produce a fundamental change. This approach draws on several theoretical frameworks that share the idea of transitions as systemic, multi-level, multi-actor, multi-dimensional, long-term and directed (initiated and supported with a purpose), and will allow CIRCLE to capture and analyse the development of the circular bioeconomy as a systemic, dynamic, multi-actor phenomenon.