

**Biocircularcities Trilogy – Ep. 1:  
Supporting local players with the  
transition to circular bioeconomy,  
and lifting the current barriers**



# BIO CIRCULAR CITIES

## SUSTRACK Project

28 June 2023

 **Bio-based Industries  
Consortium**



Horizon 2020  
European Union Funding  
for Research & Innovation



This project has received funding from the Bio-based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 101023516. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio-based Industries Consortium.

# SUSTRACK in a nutshell

- Full name of the project: Supporting the identification of policy priorities and recommendations for designing a sustainable track towards circular bio-based systems
- Start date: 01.11.2022 > End date: 31.10.2025
- Funded under: Horizon Europe | HORIZON-CL6-2022-CIRCBIO-01-03 | Coordination and Support Actions
- Abstract: The transition from linear fossil-based systems to circular and bio-based systems holds opportunities for reconciling sustainable long-term growth with environmental protection. However, a critical assessment of the environmental, social, and economic impacts of the linear economy, as well as of the improvement potential associated with circular systems, is needed to underpin the identification of policy priorities. Accordingly, SUSTRACK aims at supporting policymakers in their efforts to develop sustainable pathways to replace fossil and carbon-intensive systems with sustainable circular and biobased systems, contributing to achieving the European Green Deal's objectives.
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- *Social media: [@SUSTRACK\\_eu](#) (Twitter); [SUSTRACK](#) (LinkedIn)*

Join as a stakeholder





# SUSTRACK Consortium



# SUSTRACK Main Objectives



provide knowledge and tools for monitoring and assessing the environmental, social and economic impacts of both the linear, fossil-intensive economy and a circular, bio-based economy



identify priorities and defining actions to support policy makers in their efforts to promote the sustainable transition, in consideration of EU, local and cross-territorial value chains.

# SUSTRACK Methodology

-  **1 IDENTIFICATION OF THE STATUS QUO:** overview of limits of linear fossil-based economy; results validation and consolidation through co-creation focus group; multi-criteria assessment methodologies (AHP and ANP) to prioritize the limits and to identify the interdependencies.
-  **2 DEVELOPMENT OF AN ASSESSMENT AND MONITORING FRAMEWORK:** literature review of the assessment methods, tools, models, indicators and data.
-  **3 FRAMEWORK VALIDATION FOR THE COMPARISON OF DIFFERENT MARKET AND POLICY SCENARIOS:** case studies selection to validate the developed framework; co-creation with stakeholders; policy portfolio scenarios creation; GEM customization to run the scenario simulations; results validation to assess the complementarity of transition outcomes with other policy efforts.
-  **4 IDENTIFICATION OF POLICY PRIORITIES, ACTIONS AND RECOMMENDATIONS:** identification of policy priorities and policy actions to support transition; empowerment of local stakeholders with tools, methods and knowledge to support definition of policy priorities; policy recommendations and guidelines elaboration.
-  **5 BROAD EXPLOITATION OF THE RESULTS:** transformation of SUSTRACK activities and results into actionable knowledge and measures exploitable by all stakeholders.

# SUSTRACK Sectors of interest



- The **construction** sector (e.g., requiring a shift from concrete- to timber-based systems)
- The **textile** sector (e.g., requiring a shift from fossil- to bio-based fibres)
- The (fine) **chemical** sector (e.g., requiring a transition to renewable carbon sources and biorefineries to complement the pulp and paper sector)
- The **plastic** sector (e.g., requiring a shift from fossil- to bio-based polymers)
- The **energy** sector will feature in all of the case studies, considering the utilisation of residues and the end-of-life management of products, with an emphasis on the cascading use of biomass.

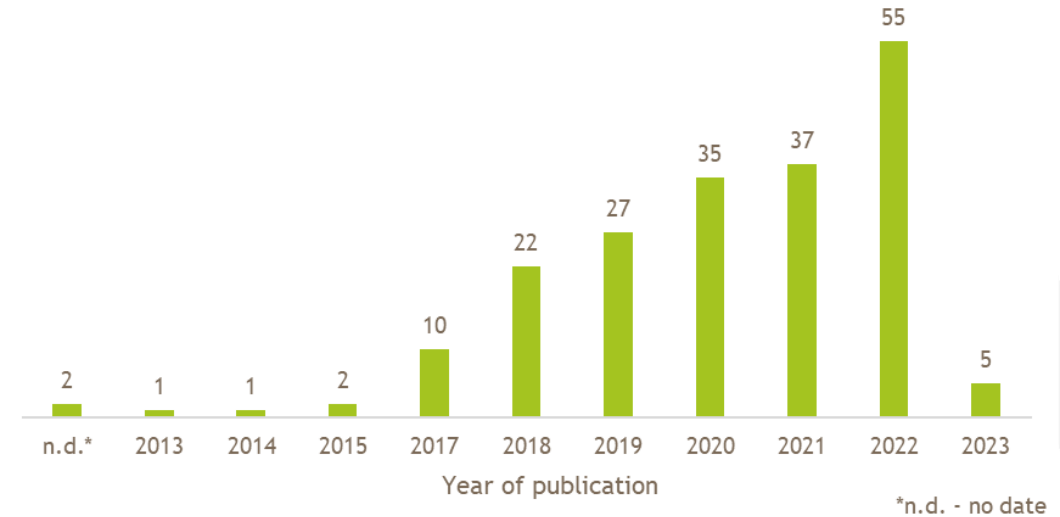
# SUSTRACK Gap Analysis

- **Research Question(s)**
- **What are the gaps in overcoming the barriers of transitioning towards a CBBE?**
  - What are the limits of a linear, fossil-based economy?
  - What are the barriers to transitioning towards CBBE?

# SUSTRACK Gap Analysis

## List of 198 grey literature records from:

- Sectoral networks
- Intergovernmental organizations
- EU projects
- NGOs

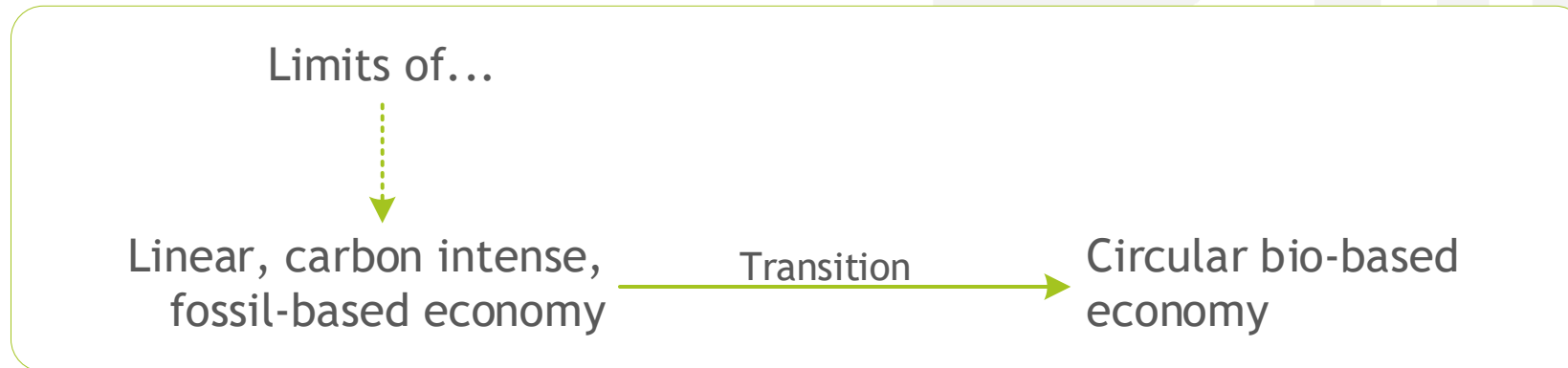




# SUSTRACK Gap Analysis

*Aspects (limits) of the current linear carbon economy  
hindering its sustainable development.*

*Environmental, Economic, Social and Cultural limits*



# SUSTRACK Gap Analysis

## **Environmental limits:**

- Growth incompatible with planetary boundaries.
- Use of non-renewable feedstock.
- Largely linear system – only small share of input materials gets recycled.

## **Economic limits:**

- Growth linked to the increasing extraction of non-renewable raw materials.
- The limited availability of fossils will cause multiple and growing uncertainties.
- The investments in fossil-fuel-based industrial activities must be phased out.

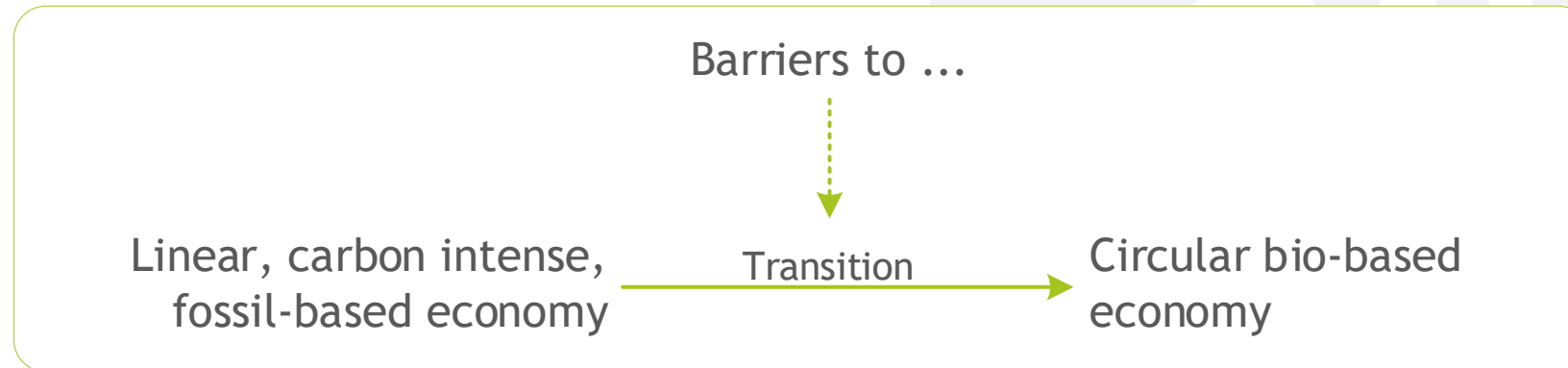
## **Social and cultural limits:**

- Lack of public awareness and acceptance.
- Risk of poor working conditions, waste trade practices and related toxicity problems.
- Current regulatory and policy frameworks favouring linear practices.

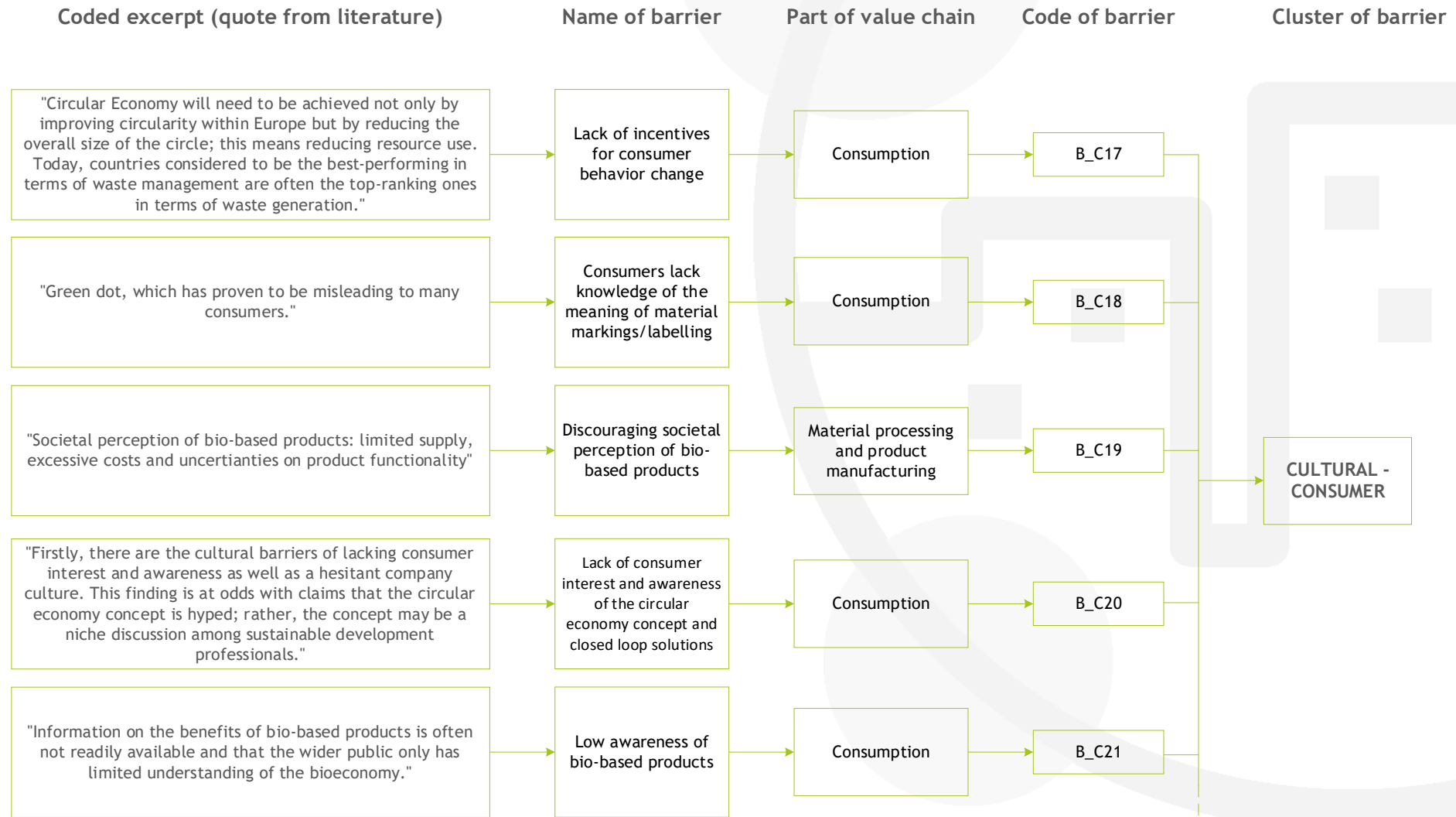
# SUSTRACK Gap Analysis

*Barrier is a problem, rule or situation that prevents somebody from doing something, or that makes something impossible.*

(Oxford Learner's Dictionaries, 2023)



# SUSTRACK Gap Analysis



# SUSTRACK Gap Analysis

## CULTURAL

Socio-cultural barriers related to consumer behaviour, perception, attitude, and awareness, consumption trends and traditions, workers' skills, qualification, education, age and gender, as well as barriers related to internal culture, processes, attitudes, actions, and governance of companies.

## ECONOMIC

Barriers related to costs incurred on a company, a company's profitability, competitiveness, access to funding and investment, as well as barriers related to a product's market share, demand, and price.

## ENVIRONMENTAL

Barriers related to environmental performance of products and processes, as well as to environmental impact assessment.

## GOVERNANCE

Barriers related to policy, regulation, policy targets, incentives, and drivers, as well as to standards, certification schemes, and standardisation and certification procedures.

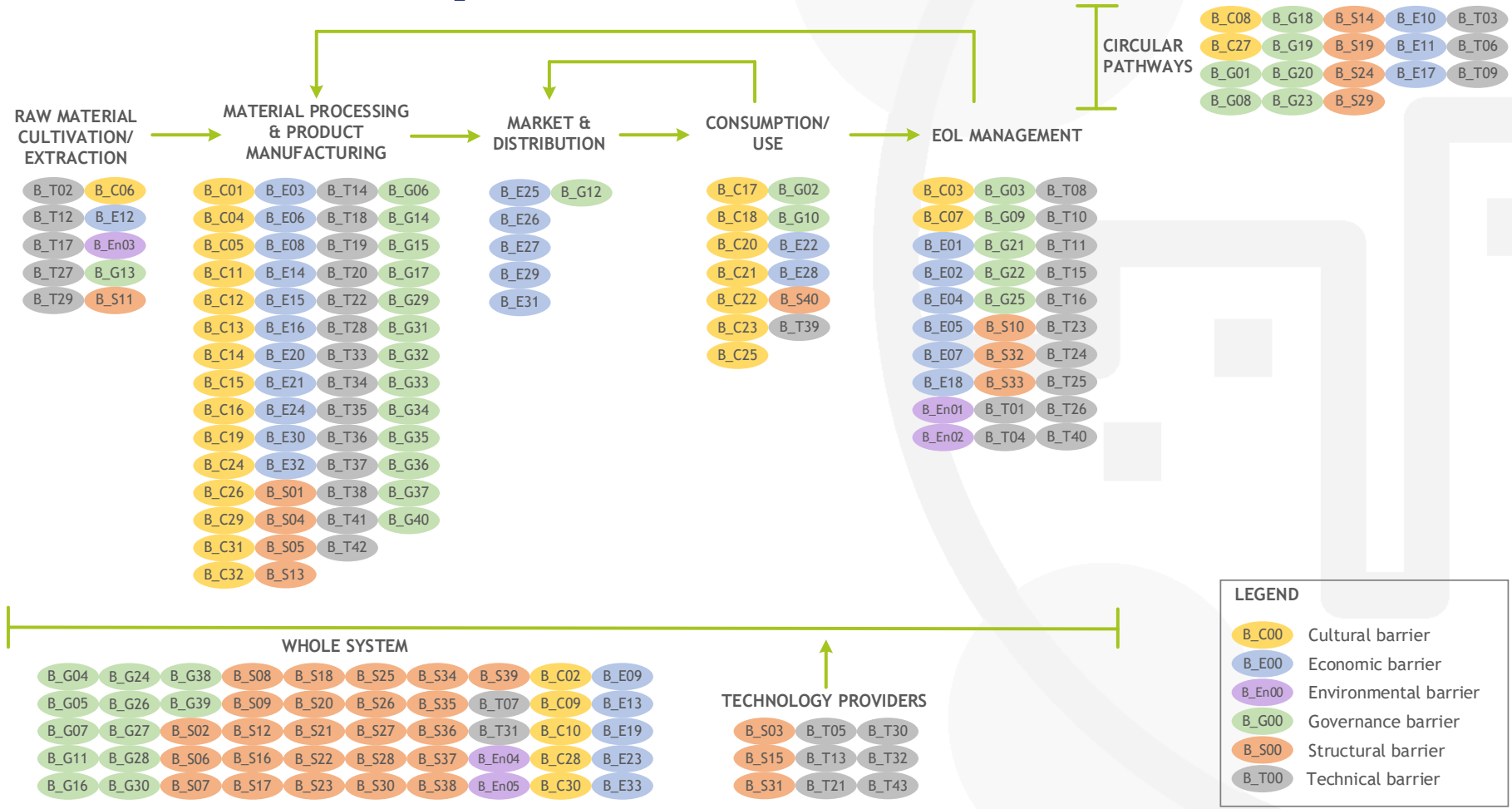
## STRUCTURAL

Systemic institutional barriers, practices and norms, as well as barriers related to overall persisting systemic issues and regimes, and complexity of systems.

## TECHNICAL

Barriers related to technology development, innovation and adoption, infrastructure capacity, quality and quantity of feedstock, composition of materials, as well as digitalisation and automation.

# SUSTRACK Gap Analysis



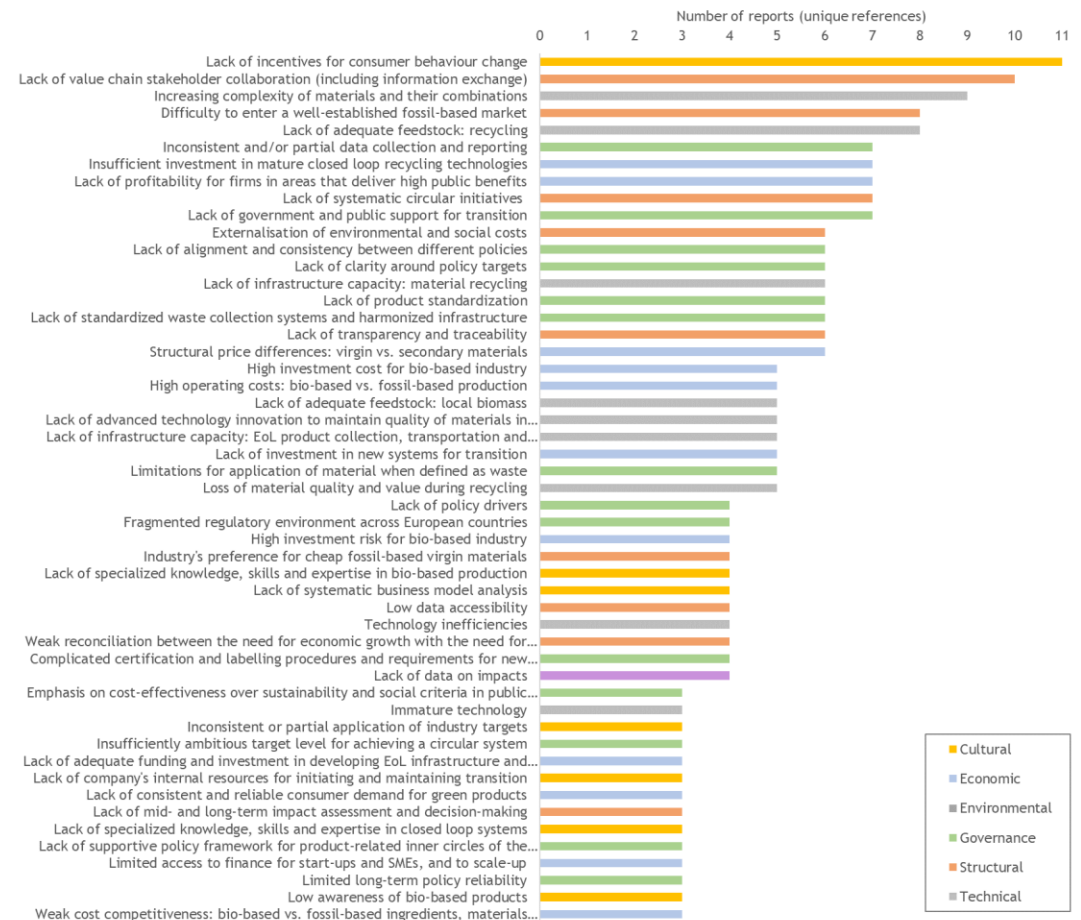
# SUSTRACK Gap Analysis

- **Top cited barriers**

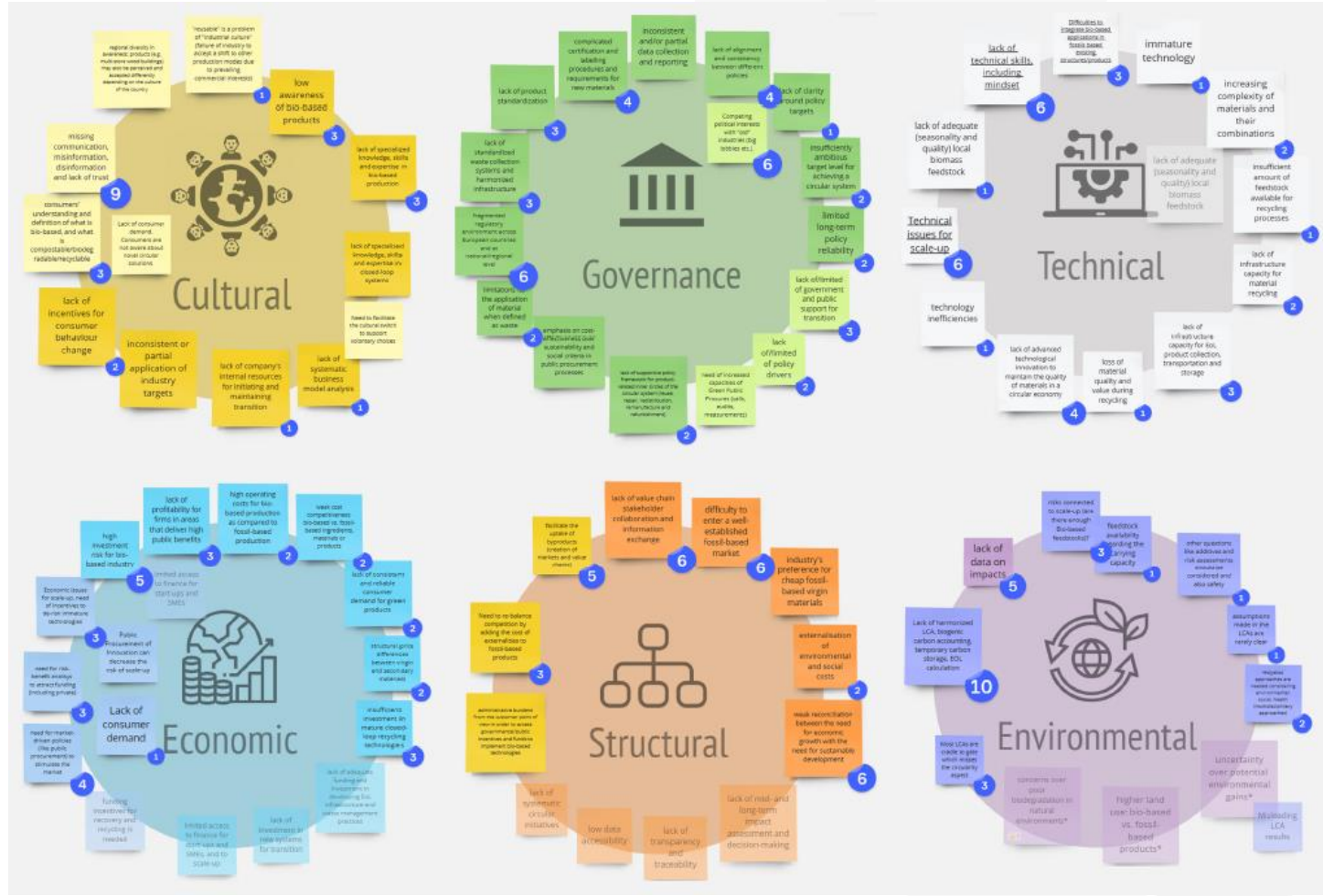
- Lack of incentives for consumer behaviour change
- Lack of value chain stakeholder collaboration
- Increasing complexity of materials and their combinations

- **Barriers common to all sectors of interest**

- Lack of value chain stakeholder collaboration (including information exchange)
- Lack of clarity around policy targets

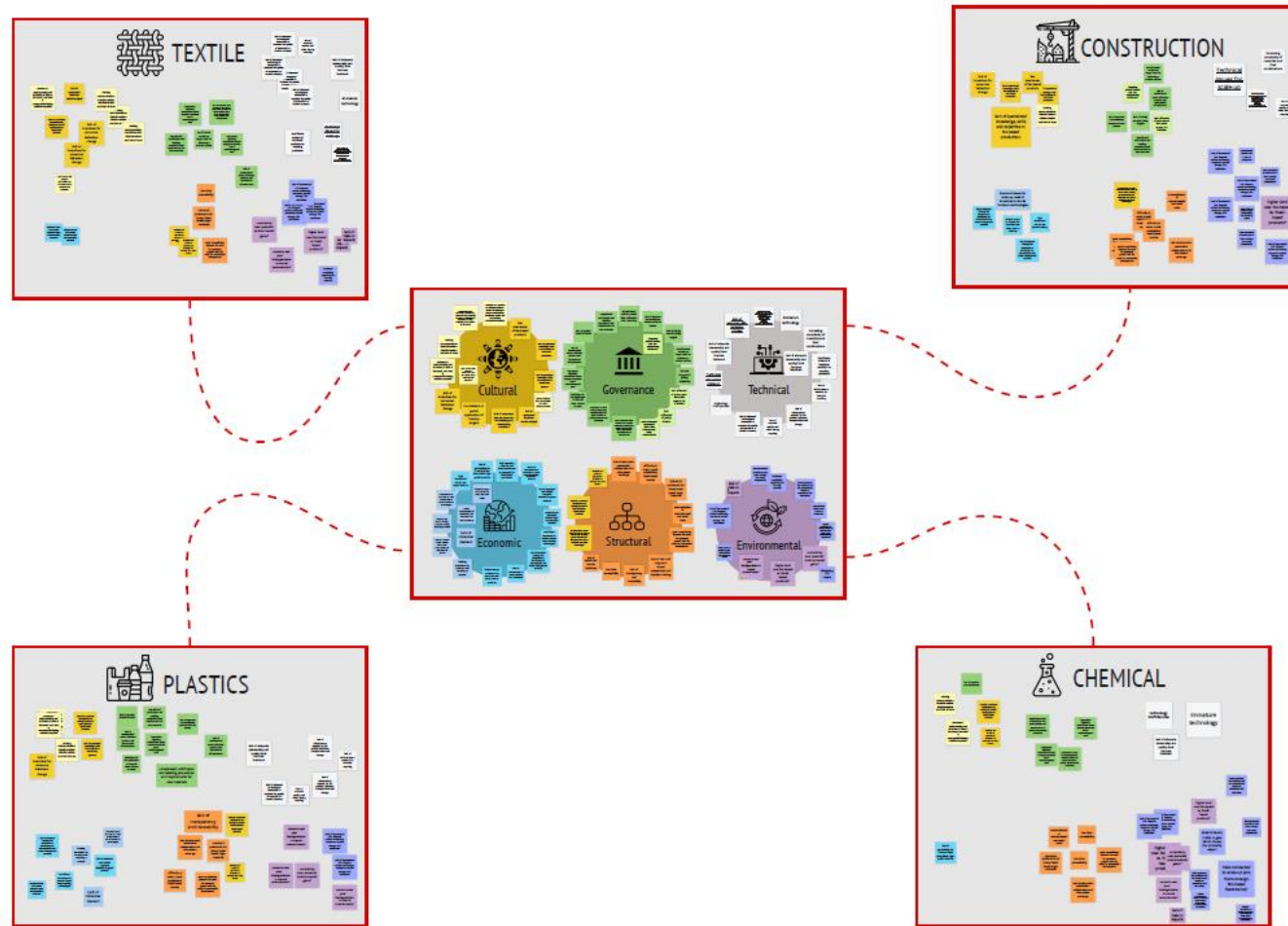


# SUSTRACK Focus Group





# SUSTRACK Focus Group



# SUSTRACK Focus Group

- Total 67 barriers
- Top rated barriers
  - Lack of harmonized methods for environmental, climate and sustainability impact assessment of CBBE
  - Missing communication, misinformation, disinformation and lack of trust
  - Immature technology (including technical issues for scale-up)
- Barriers common to all sectors of interest
  - Lack of harmonized methods for environmental, climate and sustainability impact assessment of CBBE
  - Missing communication, misinformation, disinformation and lack of trust
  - Weak reconciliation between the need for economic growth with the need for sustainable development
  - Externalisation of environmental and social costs



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# BIO CIRCULAR CITIES

Exploring the circular  
bioeconomy potential  
in cities

Join as a stakeholder



**Thank you**  
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