



**The 5th Symposium on Circular Economy and Sustainability**  
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**Dynamic interactions and the role of business models  
in the transition towards a sustainable  
plastic packaging industry in France**

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## Outline

**1. Introduction**

**2. Theoretical framework**

**3. Methodology**

**4. Results**

**5. Conclusion**



# 1.1 Introduction

## The plastics industry in transition to a circular economy model

**2019**  
Single-Use Plastics Directive

**2020**  
AGEC Act (Transposition of the SUP Directive into French Law)

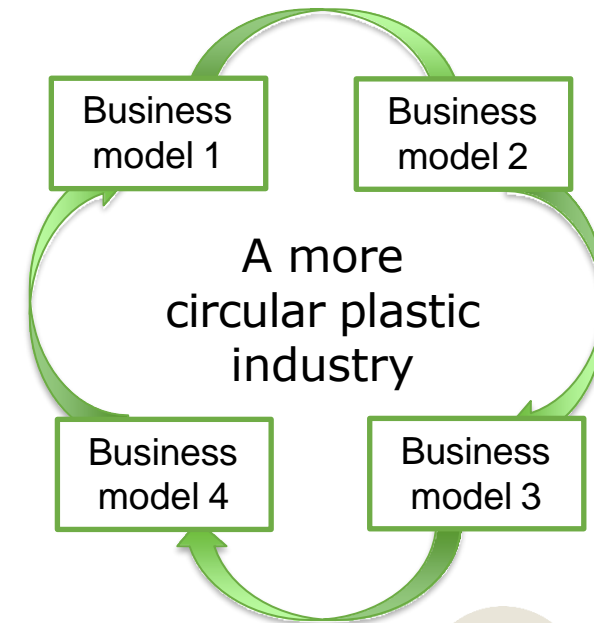
**2024**  
Packaging and Packaging Waste Regulation (PPWR)

Some examples of the circular economy targets :

**Reduction:**  
Bans of single use plastic products : cotton-bud sticks, cutlery, straws, plates etc.

**Reuse :**  
Targeting the increase in reusable packaging.

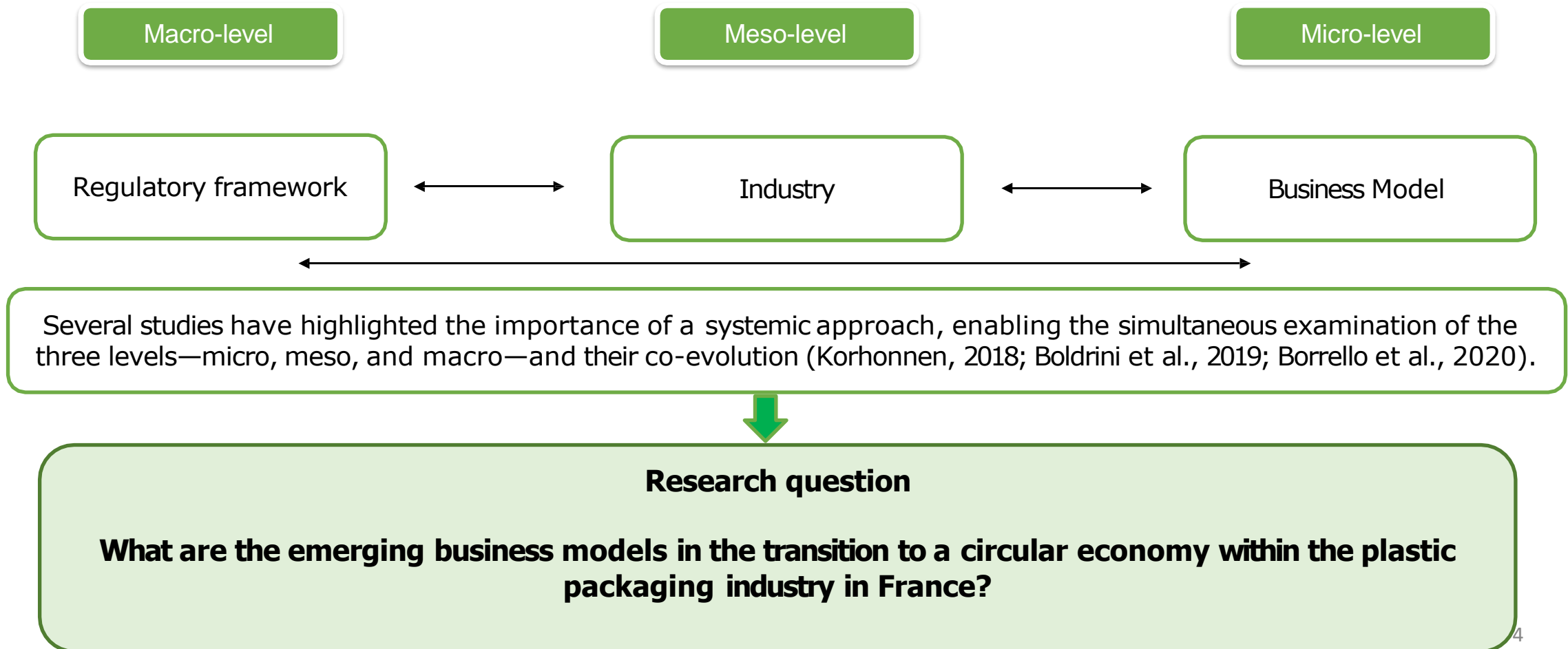
**Recycle :**  
100% of single-use plastic packaging recycled





# 1.2 Introduction

## A systemic approach to CE transition





## 2.1. Theoretical framework

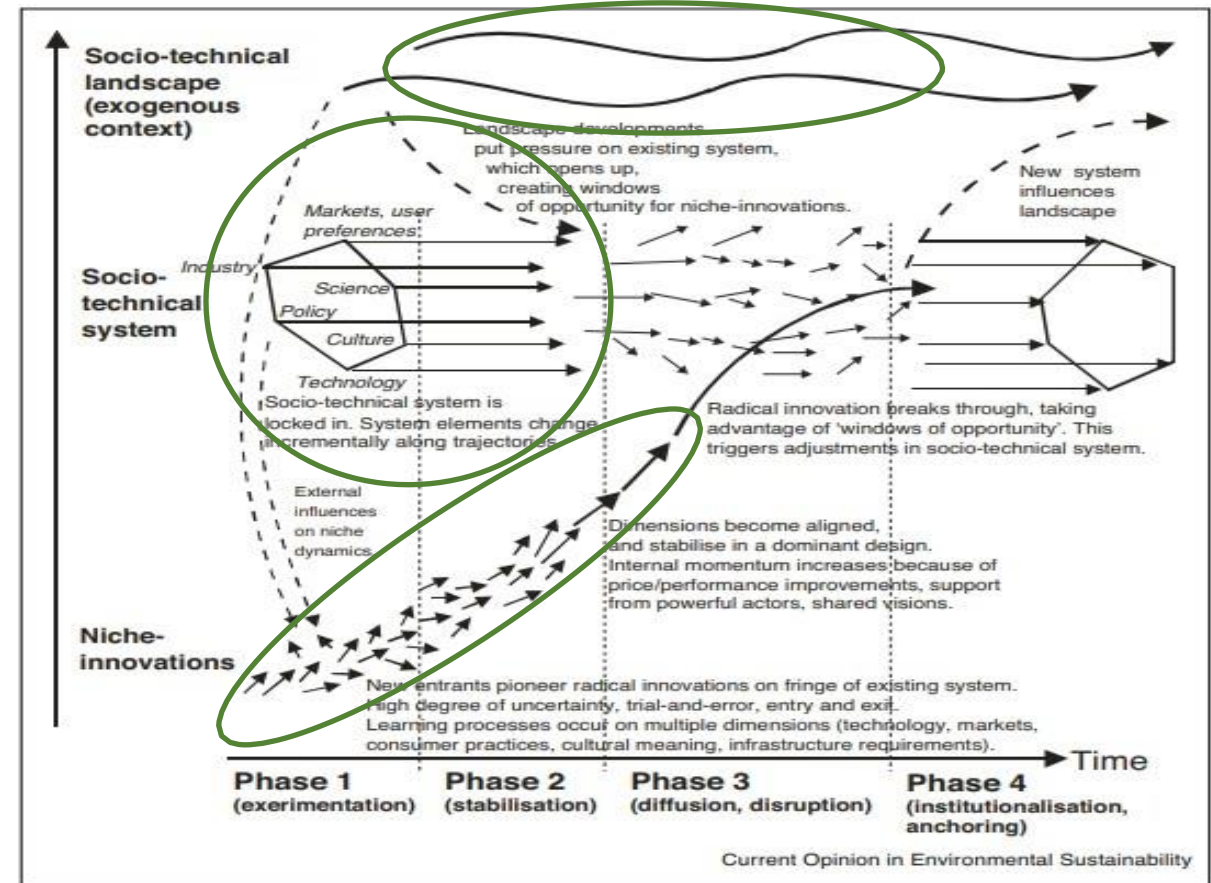
### Connect business model research with the literature on the multi-level perspective

#### Multi-level Perspective (MLP) for the transition to a circular economy (Geels, 2019)

- Analyzing the transition to a circular economy requires an approach that takes into account **the multi-level nature of the transition**.



The MLP conceptualizes the transition as a result of dynamic interactions among the niche (micro level), the regime (meso level), and the landscape (macro level).





## 2.2. Theoretical framework

### Business model in the MLP...as the coordination of social and physical technology (1/2)

Technology can be divided into (Nelson & Nelson, 2002) :

*For ex. Baking a cake*

- Physical technology :

*Recipe (inputs and equipment)*

- Social technology (play a crucial role by facilitating the implementation of physical technologies).

*The way work is divided and coordinated*

Business model :

- a conceptual tool of a company's organizational and financial architecture (Teece, 2010).
- It represents the coordination of the *"recipe" + "the way work is divided and coordinated"*

⇒ **Business model can be conceptualized as the coordination of social and physical "technology"**

## 2.2. Theoretical framework

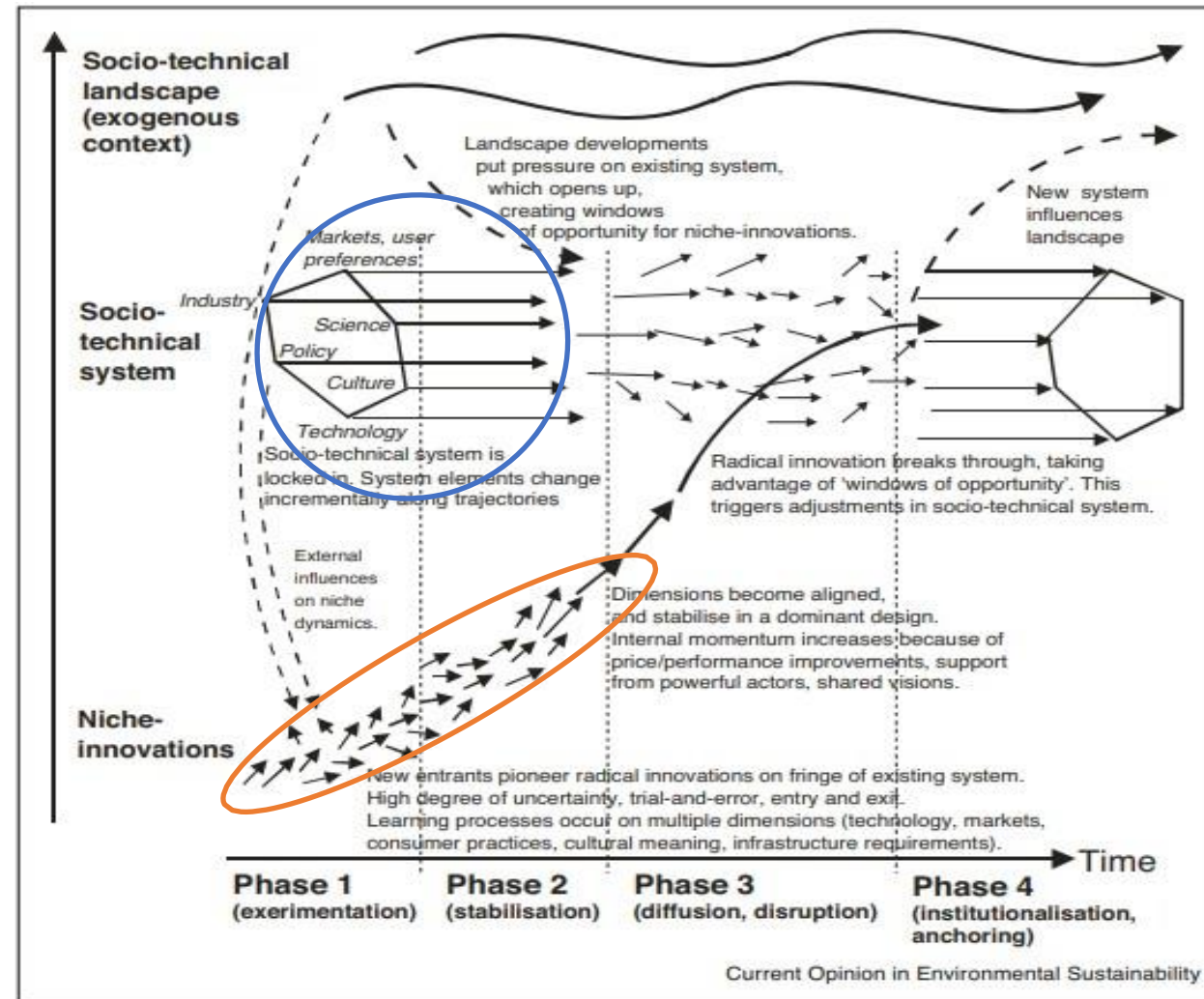
### Business model in the MLP... as the coordination of social and physical technology (2/2)

In the MLP technology plays a crucial role in transitions.

=> Transition : interactions between new technology in the niche, the regime, and the landscape(Geels, 2004).

Integrate BM in the multi-level perspective.

- **Niche** => New BM
- **Regime** => Established BM



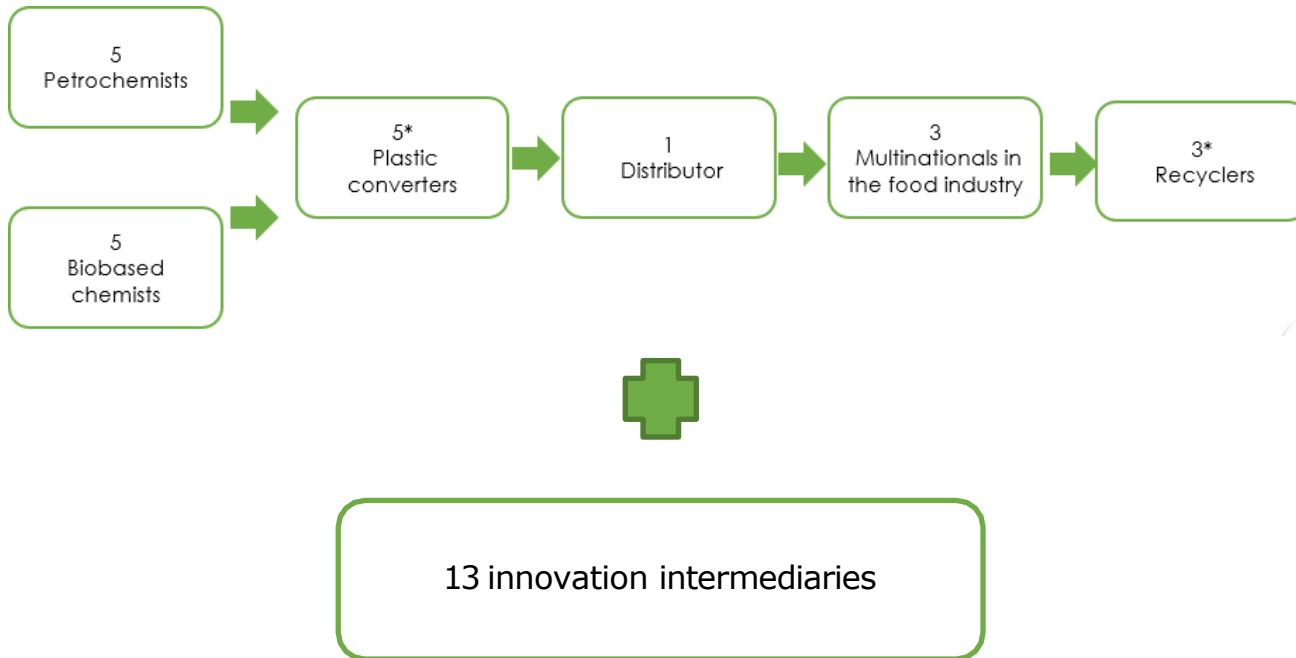


# 3. Methodology

## Qualitative research approach (Yin, 2009)

**Case study : 39 semi-directive interviews in total**

**Data coding with N'Vivo**



\*(6 interviews in total)

1st Order Concepts	2nd Order Themes	Aggregate Dimensions
Regulatory changes	Changes in the socio-technical landscape	Destabilisation of the sector's socio-technical regime
Criticisms and failures of regulation		
Raising public awareness		
The challenges of plastic packaging	Obstacles to transition and tensions within the industry	
Marketing factors holding back recycling		
Major brands under control		
Greenwashing to change their image	The organisation of the industry called into question and the emergence of innovations to meet the challenges of transition	
Innovation in bio-based plastics		
Chemical recycling to close the loop		
Certifications	Innovations that are not disruptive to the current organisation of the industry and improve circularity	Niche innovations in symbiosis or competition with the socio-technical regime
Reducing dependence on fossil fuels with recycled plastics		
CSR services and Reduce, Reuse and Recycle objectives		
New bio-based plastics for an increased circularity ?	System-disrupting innovation	
A niche and unstable market		
Chemical recycling an end-of-pipe solution	Radical technological innovations in symbiosis with the regime	
Conventional bio-based plastics recycled using current infrastructure		

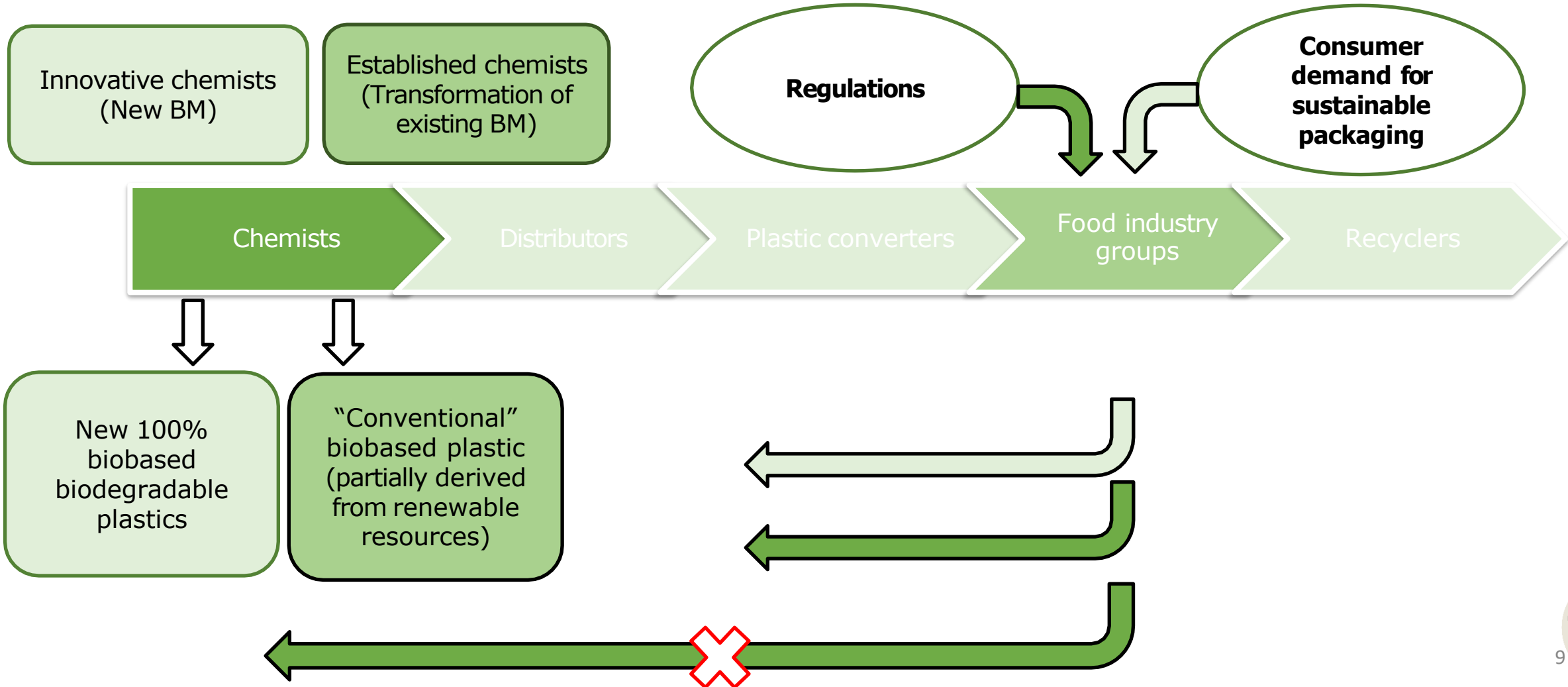
Figure 1. Data structure. Reproduced from Corley and Gioia (2004)





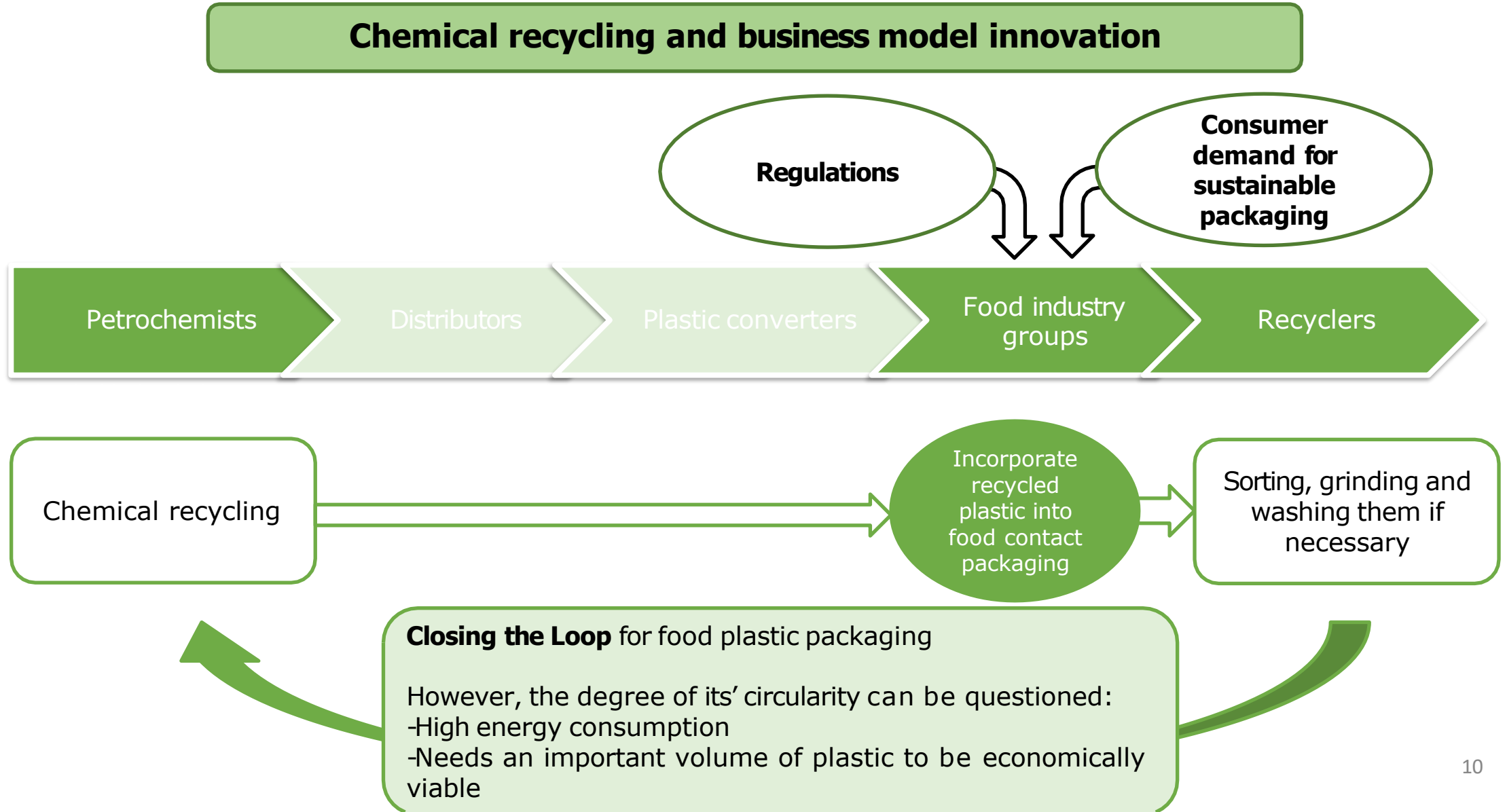
# 4.1. Results

## Bio-based plastics and business model innovation





## 4.2. Results





## 4.3. Results

**The transformation of the macro level and the destabilisation of the meso level create opportunities for the emergence of innovations and new business model**

### Innovations in competition or symbiosis with the socio-technical regime?

#### **Chemical recycling symbiotic nature with the regime**

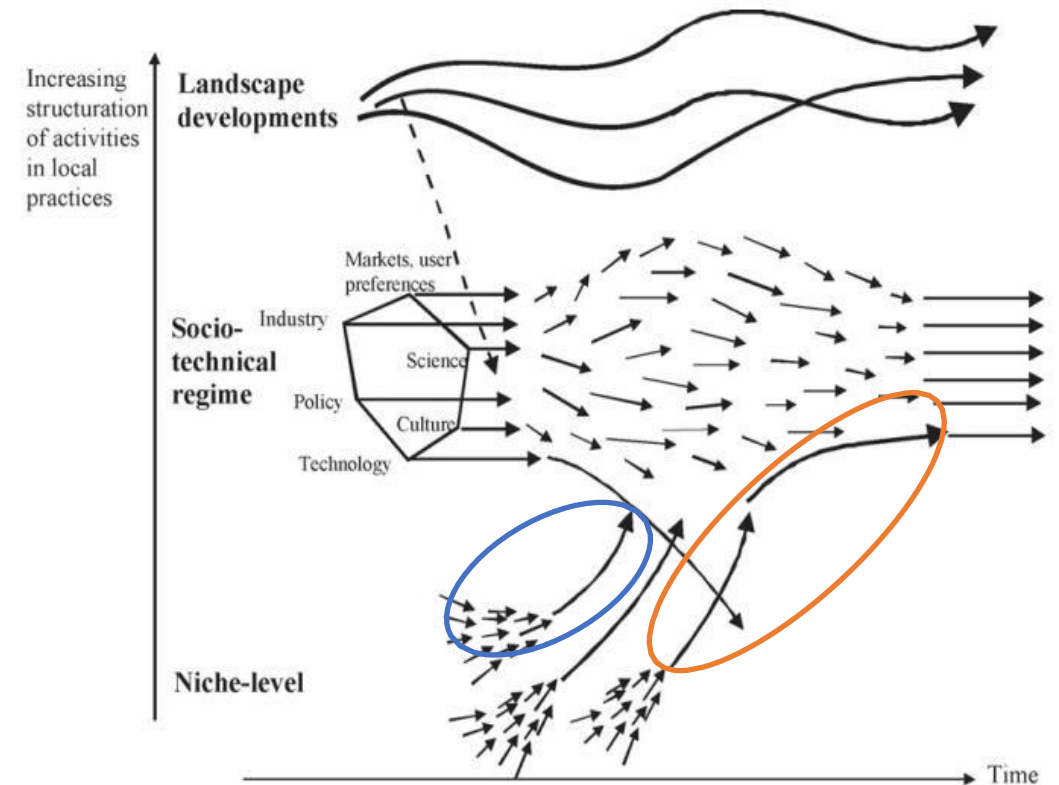
- Maintains the status quo of supply chain organization
- Receives support from influential actors
- Closes the loop without affecting the standards and practices of the regime

#### **Conventional bio-based plastics symbiotic nature with the regime**

- Maintain the status quo of supply chain organization
- Articulated with user preferences, regulation and infrastructure
- **However, price is an important obstacle to it's diffusion**

#### **New bio-based biodegradable plastics in competition with the regime**

- **Do not maintain** the status quo
- **Do not (yet) receive support** from the influential actors (eco-organisms, regulation is not clear about them)

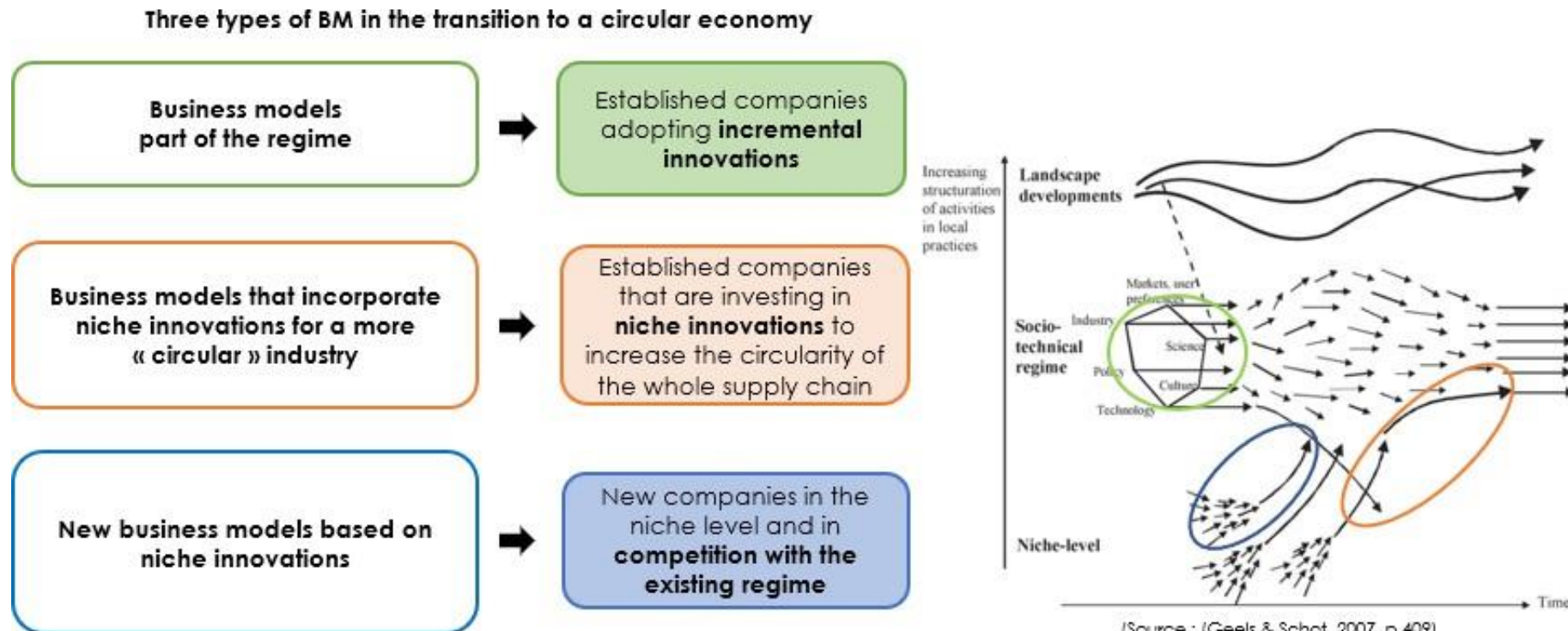




## 5. Conclusion

The macro-level changes have disrupted the established linear organization of the plastic packaging industry.

- At the micro level, this has created opportunities for the **emergence of new business model** (new bio-based plastics).
- At the meso level, **established companies** are opting for incremental innovations or niche innovations that **are in symbiose with the current organization** of the plastic packaging industry .





# Thank you for listening !

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