



BRUFO2050

What are the barriers towards a more sustainable system ?

A systemic analysis of barriers across
the Brussels food value chain

Research report Q3

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Glossary

Adaptability: The capacity of actors within a system to influence its resilience—essentially, in a socio-ecological context, to manage and adjust the system in response to change (Walker et al., 2004b)

Barrier: A specific factor within a system that hinders the adoption of innovative practices or strategies. When barriers outweigh the drivers of change, the existing production system becomes reinforced and self-perpetuating, creating a lock-in situation (Weituschat et al., 2022).

Exploratory scenarios: “Multiple plausible futures described in words, numbers and/or images” (van Notten et al., 2003). This systems science method embraces uncertainty and complexity instead of predicting a single future, recognising the inherent unpredictability of decision-making contexts (Borjeson et al., 2005; Riera et al., 2025; van der Sluijs, 2005).

Food loss: The uneaten portion of the edible part of raw materials and food products. These products are not necessarily discarded—they can be redirected to food donation, processing, or other recovery pathways. Examples include production surpluses or unsold products donated to food aid (D’Hoker, 2017).

Food system: “The entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products originating from agriculture, forestry or fisheries, together with the broader economic, societal and natural environments in which they are embedded” (FAO, 2014).

Food supply chain: A managed process combining knowledge and skills from diverse fields—including electronics, biology, economics, psychology and logistics—to ensure food reaches consumers efficiently and safely (Bourlakis & Weightman, 2003).

Food waste: The portion of food losses that is discarded or used for non-food purposes, including secondary flows of food raw materials. Products become food waste for reasons such as expiry, poor storage, or leftovers (D’Hoker, 2017).

Lever: A factor or mechanism that can be strategically activated to influence a system, overcome an existing lock-in, and enable a transition toward a more desirable state (Courtois et al., 2024).

Lock-in: A situation in which policies, technologies, cognitive frames, infrastructures and social systems co-evolve until they become stable and self-reinforcing (Courtois et al., 2024). Lock-ins arise when feedback loops between these factors constrain actors and systems to a particular pathway, limiting transitions to superior alternatives (adapted from Truong et al., 2022).

Multi-stakeholder scenarios: Exploratory scenarios that incorporate multiple legitimate perspectives, allowing diverse actors to jointly address complex challenges such as food security and sustainability (Reilly & Willenbockel, 2010).

Resilience: The capacity of a system to absorb disturbance, reorganize, and continue functioning while retaining its essential structure, identity and feedbacks (Walker et al., 2004b).

Resilience of the food system: The ability of a food system to absorb shocks, reorganise, and adapt while maintaining its essential functions. The concept expands on sustainability

by explicitly integrating risks of rupture, shocks, and dependencies between the food system and other systems.

Transition: A process rooted in socio-technical innovation theory, describing how niche-level activities scale up into broader socio-technical regimes, leading to long-term systemic change (Geels & Schot, 2007; Kemp et al., 2007; Rotmans, 2005). Transitions involve co-evolution across societal dimensions. The multi-level perspective distinguishes niches, socio-technical regimes and landscapes (external context). Shifts in landscape or regime conditions can allow niche innovations to flourish and form new regimes.

Transformation: A fundamental change in the structure, functions and relationships within a social-ecological system (Vervoort et al., 2016). Transformations involve emergent patterns across social, institutional, cultural, technological, ecological and political dimensions. They are inherently political, often involving contested goals and redistributions of power or resources (Patterson & Paterson, 2024).

Transformability: “The capacity to create a fundamentally new system when ecological, economic or social conditions make the existing system untenable” (Walker et al., 2004a; Vervoort et al., 2016).

Sustainable development: “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987, p. 37).

Sustainable consumption: “The use of goods and services that meet basic needs and improve quality of life, while minimising the use of natural resources, toxic materials and emissions over the life cycle, so as not to compromise future generations' needs” (Ofstad et al., 1994).

Sustainable food system: A food system that delivers food security and nutrition for all without compromising the economic, social and environmental foundations needed for future generations (FAO, 2014). This implies:

- economic sustainability – profitability throughout the system;
- social sustainability – broad societal benefits and equity;
- environmental sustainability – neutral or positive impacts on natural ecosystems.

1 Introduction

BRUFO2050 is a forward-looking research project that explores the question: "Which scenarios for which supply: How can we move toward a resilient and sustainable food supply for the Brussels-Capital Region (BCR) by 2050?"

The project aims to develop exploratory scenarios describing possible future food supply systems for the Brussels Capital Region (BCR) and to identify pathways toward a more sustainable and resilient system. Funded by the Innoviris Prospective Research Program (2023), BRUFO2050 seeks to overcome current socio-technical lock-ins and foster transformative governance through participatory foresight. This approach begins by considering the city's unique context to better map the supply system, the "missing link" between consumption (in Brussels) and production (outside Brussels).

We focus explicitly on wholesale, transport, processing, and retail up to the HoReCa sector, while maintaining a holistic view of the entire food system. The project emphasizes inclusivity by engaging all actors and addresses three main objectives, translated into five research questions, as illustrated in the project's framework (Figure 1).

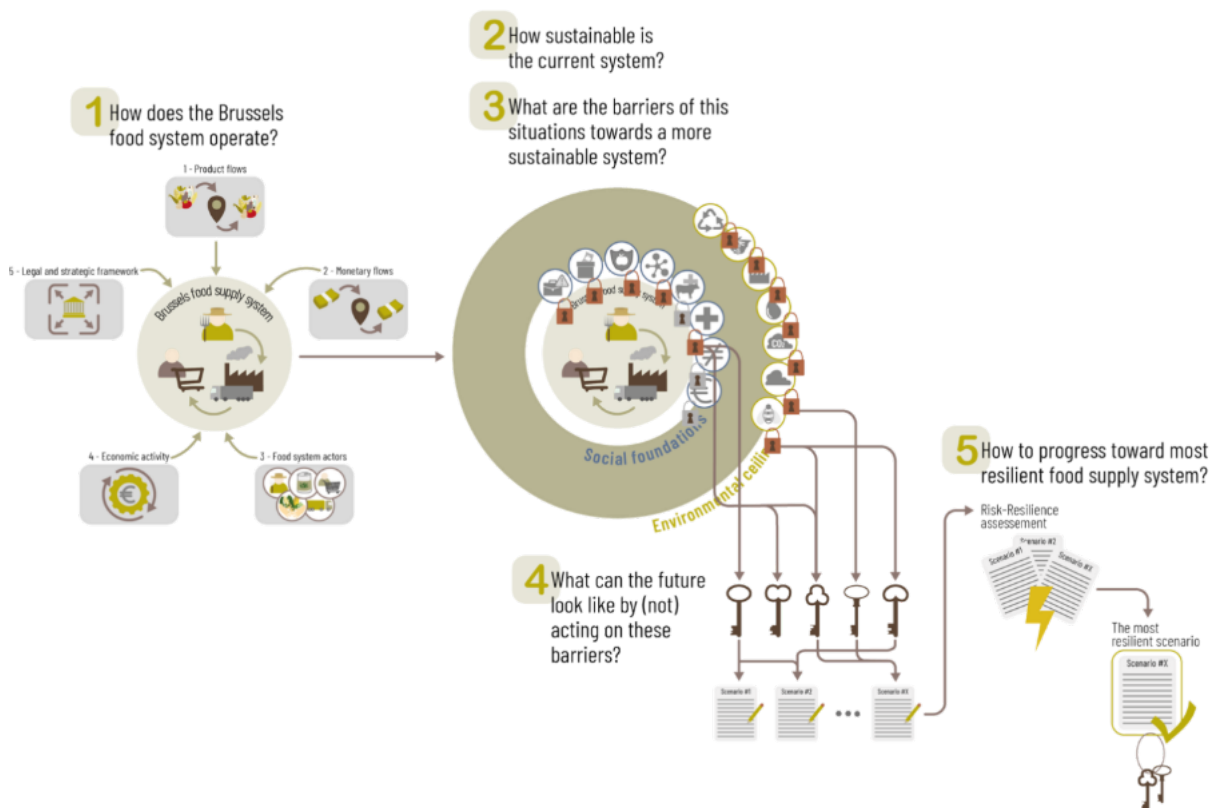


Figure 1 : Framework of the BRUFO2050 project.

Each question will be explored through dedicated reports using diverse methodologies and stakeholder engagement.

2 Barriers towards a more sustainable food system in Brussels

In the transition toward greater sustainability, cities have emerged as critical nodes where both the challenges and the opportunities of systemic change are concentrated (FAO, 2023; Moragues-Faus et al., 2024). More than half of the world's population currently lives in urban areas, with cities accounting for approximately 70 percent of global food consumption (FAO, 2023). Urban areas are responsible for a large share of global greenhouse gas emissions and contribute to broader environmental pressures including soil degradation, biodiversity loss, and water pollution (IPBES, 2019). At the same time, cities are among the most vulnerable sites of the climate crisis itself, where extreme weather events and temperature fluctuations affect infrastructure and daily life, with impacts falling disproportionately on the most socioeconomically disadvantaged groups (FAO, 2023). Moreover, urban areas' dependence on complex, globalised supply chains often generates problems of food insecurity and unequal access to food (FAO, 2023).

Brussels illustrates this tension particularly well. As described in our first BRUFO2050 report, this diverse metropolitan region, home to 1.25 million residents representing more than 180 nationalities, combines ambitious sustainability policies with deep socioeconomic inequalities. More than a quarter of its population is at risk of poverty, and 37% at risk of poverty or social exclusion (BISA, 2025; FDSS, 2026). The region is also highly dependent on global supply chains, as only 0.3% of the region's demand for staple foods (fruit, vegetables, potatoes, eggs and dairy) is produced within the region itself (Riera et al., 2020).

Building on the previous phases of the BRUFO2050 project, this report shifts the focus from *what* the Brussels food system looks like to *why* its transition remains difficult. The baseline assessment of the Brussels food system and its sustainability (Question 1 & 2) revealed persistent inequalities in food access, fragmented supply chains, and uneven sustainability performance across the value chain. These findings raise the central question of this report: **What systemic barriers hinder the transition towards a more sustainable food supply system in the Brussels-Capital Region?**

Rather than treating these barriers as isolated problems, we analyse how they reinforce one another across the Brussels food system. Together, they create a self-reinforcing lock-in that makes sustainable food difficult to scale. Identifying these systemic lock-ins provides the foundation for the next phases of BRUFO2050, which aim to develop leverage points and future pathways towards a just and sustainable urban food system. Based on 37 interviews with actors across the food value chain, three interconnected clusters of barriers emerged: Insufficient sustainable demand for sustainable food, high scaling-up costs, and insufficient sustainable supply. Figure 2 provides an overview of the report's central findings : insufficient sustainable demand, high scaling-up costs, and insufficient sustainable supply result in a self-reinforcing system lock-in. The three clusters emerge from barriers identified across the market, structural, and transformational levels of the Transformative Systems Failure framework.

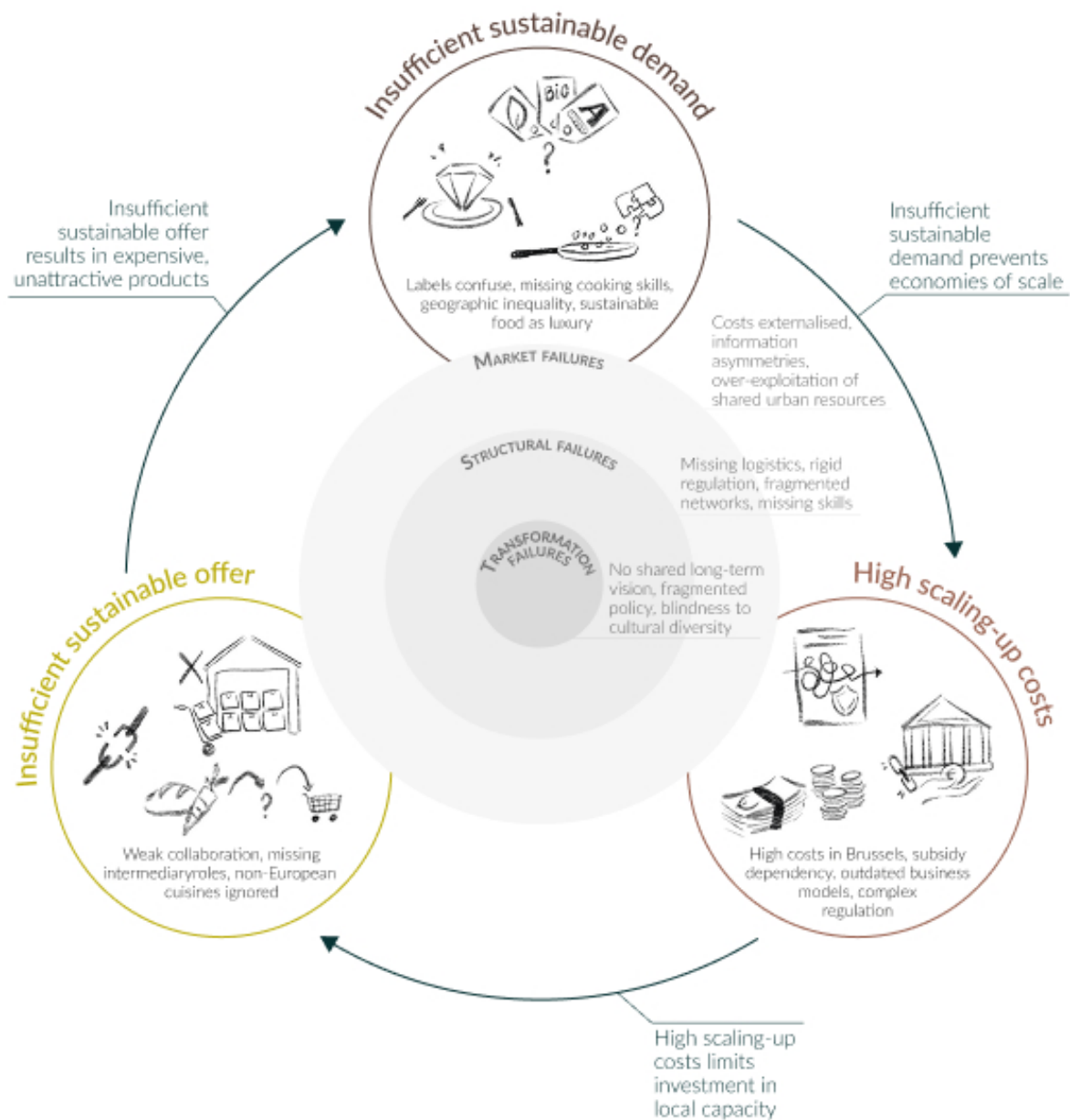


Figure 2 : The transition towards a more sustainable food system in Brussels is constrained by three interconnected clusters of barriers.

To understand why well-intentioned sustainability initiatives often struggle to become mainstream, this report draws on transition theory. Rather than viewing change as the result of individual actors alone, transition theory explains how innovations, institutions, markets, and broader societal pressures interact to either enable or constrain systemic transformation.

Central to this theoretical framework is the Multi-Level Perspective (MLP), which analyses the interplay between three analytical levels of niches, socio-technical regimes, and landscapes. Niches are protected spaces where radical innovations and alternative practices can emerge and develop. Socio-technical regimes refer to the dominant, stabilised structures, cultures, and practices that reproduce the existing system. Socio-technical landscapes are the broader societal and environmental context that interacts with both regimes and niches (Kemp et al., 2007; Rotmans, 2005; Schot & Geels, 2007). This framework helps explain how shifts at the landscape or regime level can create opportunities for niche innovations to break through, scale up, and contribute to broader systemic transformation.

Applied to Brussels, this framework maps onto the city's food system in a particular way. The landscape is shaped by large pressures such as population growth, rapid urbanisation, and climate change, that increasingly destabilise the status quo. The dominant socio-technical regime is constituted by conventional retail structures and the integrated global supply chains on which Brussels largely depends. Niches, meanwhile, are represented by the city's growing ecosystem of sustainable food initiatives like solidarity purchasing groups, urban farms, short supply chain distributors, and community food projects. Also, the Brussels Good Food¹ strategy is targeting these niches, where political actors actively support the transition through subsidies and training. As Van Vloten (2018) demonstrated in an early application of the MLP to the Brussels food system, the conditions for a transition, being perturbations in the landscape, adaptive strategies within the regime, and the emergence of viable alternatives, appear to be in place and is likely already underway following the path of transition. This would mean that niche innovations are progressively integrated into the regime, leading to step-by-step systemic changes. The central question for Brussels, then, is not whether such a transition is possible, but what structural barriers prevent these niche practices from scaling up and becoming the mainstream of the city's food system.

This is the question taken up in the remainder of this report. Section 2 details the methodological approach used to identify and categorise the systemic barriers that define the current state of the Brussels food system. Section 3 presents the findings from interviews with Brussels food system actors, followed by a discussion and conclusion in Sections 4 and 5.

¹ <https://goodfood.brussels/nl?domain=cit>

3 Methodology

3.1 General approach

The methodological approach of this study follows the Guidebook to Mapping Lock-ins (Courtois et al., 2024), which recommends explicitly defining system boundaries before analysis. Therefore, the research scope was established as follows. The study focuses on the food supply system within the Brussels-Capital Region, employing a value chain approach that moves backward from consumption through retail, horeca, logistics, wholesale, and production - referred to throughout this report as different sectors.

3.2 Data collection and analysis

Primary data were gathered through semi-structured interviews with a diverse group of professional food system actors, including practitioners, changemakers, institutional stakeholders, and researchers. A heterogeneous sampling strategy was used to ensure a wide range of perspectives within the professional landscape of the Brussels food system, with cases selected based on three criteria: their professional position within the value chain, the Brussels-specific consumption patterns they engage with, and their potential role in transition processes. A more detailed description of the sampling strategy is provided in Appendix A. While this approach aimed for a diversity of perspectives, non-response from some contacted actors may have led to the underrepresentation of certain viewpoints. To ensure transparency and voluntary participation, informed consent was obtained from all participants prior to any interview or workshop.

In total 37 interviews were carried out with a diverse group of professional food system actors, including practitioners, changemakers, institutional stakeholders, and researchers, ensuring a wide range of perspectives through the entire value chain (Figure 3).

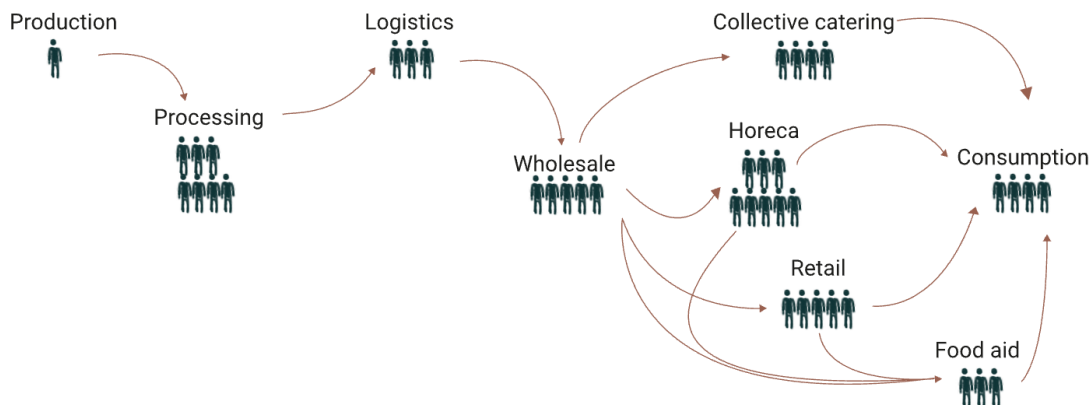


Figure 3 : Actors interviews per value chain stage (one person represents one interview).

3.3 Data analysis

The interview data were analysed through an iterative thematic analysis conducted using NVivo software. The process combined deductive coding, using pre-defined categories such as financial and technical barriers, with inductive coding that allowed new themes to emerge from the data (Braun & Clarke, 2006). Once initial themes were established, the identified barriers were framed using the Transformative Systems Failure framework developed by Weber & Rohrer (2012), which integrates insights from innovation systems theory and the

multi-level perspective to identify the types of systemic failure that form a barrier to long-term transformative change.

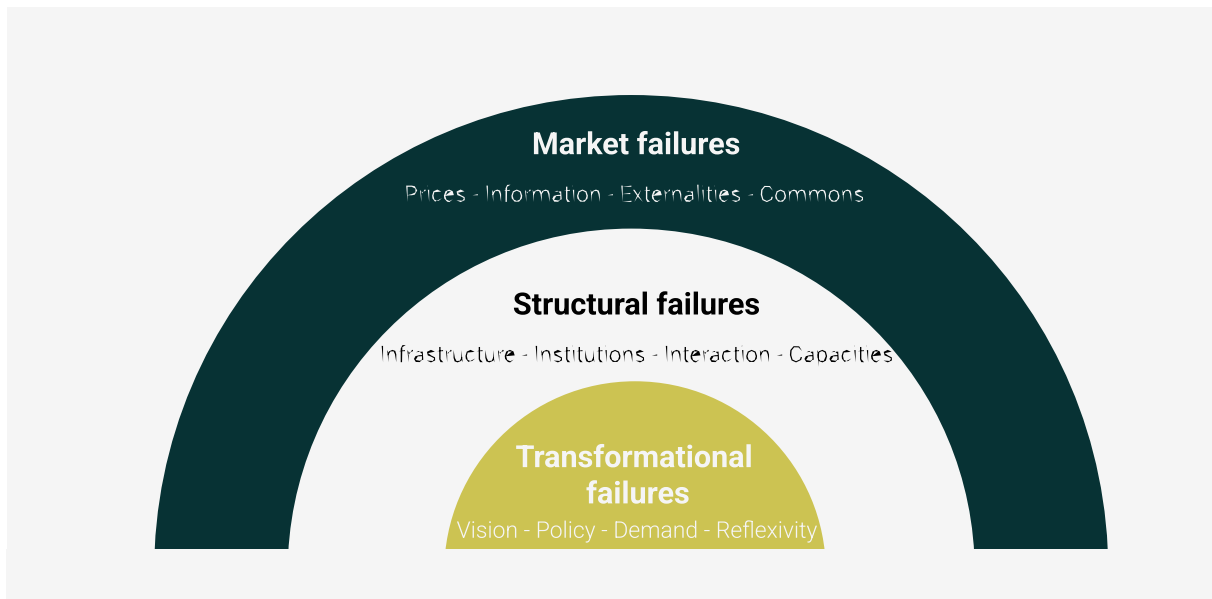


Figure 4 : *The three levels of transformative system failures.*

As illustrated in Figure 4, the Transformative Systems Failure framework distinguishes three interconnected levels of failure. Each level captures a different mechanism through at which barriers emerge. Market failures capture economic mechanisms such as externalised environmental costs and information asymmetries. Structural failures describe the infrastructural, institutional, relational, and capacity conditions that make sustainable practices difficult to organise. Transformational failures address the system’s longer-term ability to develop a shared direction, coordinate policy, incorporate diverse societal needs, and critically reflect on dominant sustainability narratives.

Together, these three levels make it possible to analyse barriers not as isolated obstacles, but as interconnected failures operating across the Brussels food system.

To ensure the reliability of the findings, the analysis was conducted by two researchers from different universities (KU Leuven and UC Louvain), with regular reflection sessions and alternating coding rounds to strengthen the robustness of interpretation. The findings are presented using a three-level structure codebook: broad system failure categories, barrier themes, and specific barriers. The full three-level codebook is provided in Appendix B. To illustrate these findings and to justify our analysis, short, anonymized quotes from different participants are used in this report.

In what follows, we want to emphasise that there is no single, clear definition of sustainable food, and that the actors we interviewed often used the term in different, and sometimes inconsistent ways. We deliberately preserve this confusion in the document, to stay transparent and true to the original wording used by participants.

4 Results: Systemic barriers to the Brussels food transition

Table 1 provides an overview of all failure types as applied in this study. The sections that follow address each type of failure.

Table 1 : *The Transformative Systems Failure Framework (Weber & Rohrer, 2012) applied to the Brussels food system.*

Level	Failure type	What it describes in the Brussels food system
Market failures	Information asymmetries	Actors lack reliable information about sustainable options and their returns
	Externalisation of costs	Environmental and social costs are not reflected in food prices
	Knowledge spill-over	Practical sustainability knowledge is not captured or shared, leading to a lack of collective learning
	Over-exploitation of commons	Shared urban resources, such as land, public space, and infrastructure are hard to access
Structural failures	Infrastructural	Gaps in physical logistics, processing, and knowledge infrastructure
	Institutional	Regulatory complexity, administrative burden, and cultural norms that hinder change
	Interaction	Fragmentation, mistrust, and absence of collaboration between actors
	Capacities	Missing skills, professional roles, and viable business models
Transformational failures	Directionality	Absence of a shared long-term vision and coordinated governance
	Demand articulation	Insufficient learning from and integrating the needs of Brussels' diverse population
	Policy coordination	Fragmented and contradictory policy
	Reflexivity	Inability to question dominant sustainability norms and broaden the narrative of transition

4.1 Market failures

Sustainable actors are forced to compete in a market that does not reward environmental or social value. Market failures are structural economic problems that persist regardless of the quality of regulations or institutions. In Brussels, they are most visible in the way food is priced, how sustainability information circulates, and how market incentives shape production and resource use.

4.1.1 Externalisation of costs: Sustainability is not reflected in prices

The most frequently mentioned issue is the undervaluation of food. Environmental and social costs, such as carbon emissions, biodiversity loss, or fair wages, are rarely reflected in the price. As one processing actor explained:

"how we can concretely include positive and negative externalities in company balance sheets—that's the lever... all the externalities are absolutely not counted in there."

A wholesaler expressed the same concern:

"if there's no change in those paradigms, that all the costs the agro-industry produces for health, the environment, and so on, if they aren't integrated into their products, we will never, never, never..."

This pricing logic is also visible in public procurement. Before COVID, sustainability accounted for 60–70% of public tender evaluation criteria, whereas purchasing decisions have increasingly shifted back towards price as inflation has intensified financial pressure. Together, these findings show that the market systematically rewards the lowest price rather than the highest societal value.

4.1.2 Information asymmetries: Consumers struggle to recognise sustainable value

Several interviewees argue that sustainable producers face an additional burden of constantly explaining the value of their products. Conventional markets reward uniformity in appearance, size, and standardization, while products resulting from artisanal or agroecological production often differ from these expectations.

A horeca entrepreneur described this as a continuous educational effort:

"people often comment that it's artisanal production... it's also potentially significant pedagogical work, which is not always easy to do."

The information imbalance therefore extends beyond product labelling, as consumers often lack the knowledge needed to recognize why sustainable products may look different or justify higher prices, leaving producers to bridge this gap themselves.

4.1.3 Knowledge spill-over: Practical sustainability knowledge is insufficiently shared

Interviewees also highlighted that valuable practical knowledge about sustainable business practices is rarely captured or collectively disseminated. Rather than benefiting from shared learning, many organisations develop solutions independently, meaning innovations remain fragmented and difficult to scale.

Although this issue becomes particularly visible in the interaction failures discussed later, respondents already framed it as an economic inefficiency: knowledge generated by pioneering actors produces benefits for the wider system without mechanisms to reward or systematically transfer that expertise.

4.1.4 Over-exploitation of commons: Market incentives encourage unsustainable production

Finally, market structures encourage production practices that prioritise volume and standardisation over ecological sustainability. Farmers do not necessarily choose environmentally harmful practices voluntarily. They respond to market requirements for uniform products and predictable yields.

As one wholesaler explained:

"no farmer uses pesticides for pleasure... he is in a certain system that demands a certain volume, a certain form of fruit... that all actually comes from the economic system that surrounds it."

Several respondents also connected this pressure to broader economic dynamics. Rising energy prices, wage indexation, inflation, and recent global shocks have reduced already narrow profit margins, making environmentally sustainable production financially riskier. In

Brussels, these pressures reinforced by competition with neighbouring regions, where lower operating costs and more generous financial support encourage businesses to relocate.

Overall, the interviews show that sustainability is disadvantaged not because it lacks social value, but because the market fails to reward that value. Externalised costs, imperfect information, limited knowledge diffusion, and incentives that favour intensive production together create an economic environment in which sustainable initiatives continue to compete under rules designed for the lowest price rather than the highest societal benefit.

4.2 Structural system failures

Structural system failures concern the conditions that shape what actors are able to do, regardless of their willingness to change. Unlike market failures, these barriers stem from the organisation of the food system itself: its infrastructure, institutions, relationships, and professional capacities. Across the interviews, these four dimensions were consistently described as mutually reinforcing. Fragmented infrastructure raises operational costs, high costs limit organisational capacity, limited capacity weakens collaboration, and weak collaboration prevents the collective solutions needed to overcome infrastructural barriers. Together, they create a structural lock-in that makes sustainable food practices difficult to scale.

4.2.1 Infrastructural failures: The physical and logistical cost of operating sustainably in Brussels

The Brussels-Capital Region is one of the most expensive urban environments in Belgium in which to operate a food business. High rents, labour costs, and regional taxes push food processing and production activities towards Flanders and Wallonia, where operating costs are lower and financial support is more readily available. The recent relocation of companies such as Leonidas and Pierre Marcolini illustrate this dynamic. For horeca actors, finding a workspace that is simultaneously affordable, accessible, and suitable for food production was frequently described as *“impossible.”* While some interviewees viewed these costs as an inevitable consequence of operating in a dense metropolitan region, sustainable entrepreneurs identified them as one of the principal barriers to growth. High land prices also translate into a shortage of processing infrastructure: Brussels currently lacks a sustainable processing facility capable of supplying the horeca sector with pre-cut or semi-prepared organic products.

Getting food around the city is another major challenge. Traffic, pedestrian zones, limited delivery hours, and expensive parking make urban logistics slow and costly, particularly for small actors. Cargo bikes are often suggested as a greener alternative, but cold-chain requirements, limited battery capacity, and high service costs limit their use for food. Electric vehicles remain too expensive for most small operators. As a result, many actors engaged in short supply chains rely on self-organised transport that is valued for its human dimension but is less professionalised and digitalised, making it more vulnerable to Brussels' mobility constraints.

Moreover, managing multiple producers means juggling many separate orders, invoices, and delivery schedules. As one interviewee described:

“What we had in the past was one kitchen that had a farmer for the yogurt, a farmer for this, and a farmer for that... those were little invoices and we had no visibility on that at all.”

As a policy coordinator noted, the solution likely lies in collaboration:

"If each small actor fights on their own, it won't work... they are seeing future collaboration."

Discussions about creating shared logistics hubs in Brussels to consolidate volumes and reduce costs have been ongoing, but no concrete solution has yet been put in place.

Labour costs create a further infrastructural trade-off. Sustainable and artisanal food production is inherently labour-intensive, yet the high costs of employing staff encourages businesses to outsource preparation or rely on pre-made products. As a result, the economic conditions of operating in Brussels often work against the very production methods that sustainable food seeks to promote.

Beyond physical infrastructure, interviewees also identified weaknesses in the city's knowledge infrastructure. Limited public understanding of the links between food, health, and environmental sustainability reduces the effectiveness of sustainable initiatives and makes informed food choices more difficult. As one horeca entrepreneur said:

"I think people still don't realize the impact of plant-based food on the overall sustainability because they don't realize the link of eating with the fact it takes so much landfill and water."

Misconceptions about cost are also widespread:

"For organic foods, people living in vulnerable situations immediately say, no, organic, it's not for me, I can't afford that... Sometimes it's perceived as something for rich people."

Cultural knowledge gaps add further complexity to this barrier. As such, basic questions about how different food traditions relate to sustainability concepts remain unanswered for many people, as one participant illustrated:

"There was always a big question of... okay, is vegetarian also halal? Or many people didn't know what halal was."

4.2.2 Institutional failures: Too many restrictions and too little support

Institutional failures occur when formal regulations and informal norms make sustainable innovation unnecessarily difficult. In Brussels, interviewees described both administrative complexity and cultural expectations as barriers that disproportionately affect smaller organisations with limited financial and organisational capacity.

On the formal side, food entrepreneurs face a regulatory environment that was largely not built with sustainable innovation in mind. European public procurement rules prohibit geographic origin as an award criterion, which makes it difficult in practice to favour short-chain suppliers. Some food practices like fermentation methods, or techniques rooted in non-European culinary traditions fall outside existing FAVV legal categories, leaving businesses in a legal grey zone. Belgium also lacks a recognised legal status for mission-driven companies, making it harder for businesses that put social or environmental goals at their core to formally protect that commitment. At the EU level, ongoing debates about weakening the Corporate Sustainability Reporting Directive create further uncertainty for businesses trying to plan ahead.

Sustainability certifications and labels create extra work. SMEs complying with EU deforestation due diligence requirements, or horeca entrepreneurs obtaining and maintaining

the regional “Eco-Dynamic Enterprise” ² or Good Food label, and integrating sustainable sourcing into daily operations all demand time and administrative effort that larger businesses can handle more easily than small ones. The rewards for the extra sustainable effort are often unclear. Voluntary frameworks like the Good Food label offer little concrete economic benefit:

“A restaurant with the Good Food label sees little difference in its turnover.”

Beyond formal rules, there is an informal cultural problem. Several interviewees described the emotional and psychological toll of being a sustainability pioneer in a system that provides insufficient support. Farmers and entrepreneurs reported burnout, frustration, and uncertainty about how long they can keep going without more structural support. Some described how post-COVID fatigue or ongoing financial pressure had led them, or people they knew, to give up on promising sustainable projects. This points to a soft institutional failure, where sustainability continues to be treated as a personal commitment and individual responsibility, rather than something the system as a whole is organised to support.

Overall, interviewees described sustainability as an additional administrative responsibility rather than the organising principle around which institutions are designed.

4.2.3 Interaction failures: Too fragmented and divided

Interaction failures arise when relationships between actors are too fragmented, conflictual, or weak to enable collective action. In Brussels, these failures are reflected in fragmented logistics, limited spaces for peer learning, and growing mistrust between mainstream and niche actors.

Sustainable food logistics in Brussels are fragmented. Most producers and buyers manage their own short-chain deliveries independently, which is inefficient and costly. While actors widely recognise the need to work together to compete with larger distributors, shared solutions remain underdeveloped. As one retail actor put it:

“A whole chain needs to be developed. And I don't see that happening.”

A more coordinated approach of connecting farmers, processors, logistics providers, and buyers through shared platforms and longer-term planning could make a real difference, but is not happening yet.

There are also too few spaces where sustainable food entrepreneurs can share experiences, pool resources, and learn from one another. Initiatives like Kaya Ecopreneur ³ and Rabad ⁴ have played this role, but their funding is typically limited and therefore their continuity is at risk. For many actors, these spaces are important, as one participant described:

“It's there that we look for our bubbles of air, oxygen. It's that we share good practices and strengthen each other.”

Without long-term support for these collaborative spaces, practical knowledge remains dispersed instead of becoming a shared resource for the wider food system.

The deeper problem is the polarisation between mainstream and niche actors. Large retailers, wholesalers, and established food companies on one side, and smaller sustainable initiatives

² <https://www.ecodyn.brussels/nl/>

³ https://www.kaya-ecopreneurs.be/nl_BE

⁴ <https://www.rabad.be/nl/>

on the other, largely operate in separate worlds with little dialogue. As one respondent observed:

"Both are working on sustainability... but if they talk about each other, they talk negatively."

Ideological differences are creating a deep divide, where some niche actors reject profit-driven logic entirely:

"Capitalism is exploiting, we cannot tolerate exploitation in a sustainable system, so we need to get rid of it."

Mainstream actors, in turn, are critical of what they see as unrealistic idealism:

"Yes, being sustainable and not profitable. Within a year you are closed, right."

These tensions hinder collaboration even where underlying sustainability ambitions are similar. This represents a strategic barrier rather than merely an ideological disagreement. Mainstream actors possess the scale, infrastructure, and market reach needed to expand sustainable food beyond niche markets, while niche initiatives often possess the innovative practices that larger actors seek to adopt. The absence of trust therefore limits the potential for systemic change.

4.2.4 Capacity failures: The skills and roles that do not yet exist

Capacity failures occur when the food system lacks the skills, professional roles, and organisational capacities required to implement sustainable practices. Rather than reflecting a lack of motivation, interviewees described these gaps as missing foundations of a functioning sustainable food economy. In Brussels, they emerge in complementary forms, from missing skills, missing professions, and missing business models. .

Missing skills

Sustainable practices require substantially more time, labour, and technical expertise than conventional production. As one participant mentioned:

"It's always the companies that are doing things right that end up paying more."

Circular practices such as valorising by-products are often economically unattractive because sorting and processing waste requires more labour than disposal. Likewise, integrating seasonal, plant-based and local products into restaurant menus demand continuous menu redesign, culinary creativity, and additional staff capacity. Technologies that could reduce these pressures, including electric delivery vehicles and digital demand forecast tools, remain financially out of reach for many SMEs.

Within professional kitchens, many chefs lack the training to prepare good-looking, nutritious plant-based meals, resulting in unattractive meals. One interviewee described seeing *"meatballs in tomato sauce with falafel"* as an example of what passes for a sustainable menu option. The culinary educators themselves often lack experience with vegetable-based cooking, making it difficult to pass on skills they have not developed themselves. As one educator shared: *"If you have to teach the chefs cooking with vegetables. And you never did much of that yourself. Then that doesn't work so well."* In collective catering establishments such as hospitals, residential care centres, and school canteens, there is often insufficient product knowledge, which makes it hard to prepare sustainable and healthy meals at larger scale.

Missing professions

A more localised food supply system also requires professional intermediaries that currently scarcely exist.. Right now, farmers typically do not have the time or capacity to manage distribution on top of production, and restaurateurs cannot manage direct relationships with multiple small producers. Many of the professional roles the transition requires do not yet exist in any formal training programme, such as experts who can integrate environmental costs into pricing structures, or cyclo-logistics professionals for sustainable last-mile delivery. As one interviewee pointed out, there is also a widespread but mistaken assumption that sustainability can be built entirely in-house. CO₂ measurement, waste management, sustainable sourcing, and marketing of innovative products all require expertise that takes years to develop and that the sector currently has no systematic way of training.

Missing business models

Beyond skills and professions, interviewees argued that parts of the horeca sector continue to rely on business models that no longer correspond to changing consumer expectations. Traditional fine dining, with formal service, elaborate menus, and labour-intensive rituals, was contrasted with growing demand for more accessible and experience-oriented gastronomy. As one participant described, the future lies in “*gastronomy without that fuss*.” Similar organisational challenges were observed in the food aid sector, where volunteers often lack the technical expertise needed to transform surplus food into nutritious, high-quality meals. These examples illustrate that the transition requires not only new products, but also new ways of organising food businesses and services.

4.3 Transformational system failures

Transformational system failures concern the long-term direction of change. Whereas market failures explain why sustainable food struggles economically and structural failures explain why actors lack the conditions to act, transformational failures address a different question: how does the system decide where it is heading? They relate to the absence of a shared vision, the inability to translate diverse societal needs into innovation, fragmented policy coordination, and the failure to critically reflect on dominant sustainability narratives. Together, these barriers prevent promising niche initiatives from becoming a coherent system-wide transition.

4.3.1 Directionality failures: No shared vision, no clear direction

Directionality failures occur when the food system lacks a shared long-term direction and when existing governance and market structures encourage short-term decisions instead of systemic transformation. In Brussels, interviewees identified four closely connected manifestations: the absence of an integrated vision, short-term funding structures, unequal power relations, and growing mistrust caused by greenwashing.

No shared long-term vision

A recurring concern across interviews was the absence of strategic planning that connects food policy with other urban policy domains. Food, mobility, housing, and economic development are largely governed in separate policy arenas, creating contradictions that become visible in everyday practice. For example, mobility measures designed to reduce car traffic simultaneously increase delivery costs for local food businesses, while housing priorities reduce the availability of affordable production and processing space. Although regional strategies such as Good Food and Good Move pursue ambitious sustainability

objectives, interviewees argued that they remain insufficiently aligned with one another and with the operational realities of food system actors.

This fragmented vision is reinforced by short-termism. Electoral cycles, periods of governmental instability, and changing political priorities interrupt funding and discourage long-term investment. Interviewees similarly observed that businesses often prioritise short-term competitiveness over long-term sustainability commitments because existing market conditions reward immediate financial performance.

The funding trap

Many interviewees described Brussels' funding landscape as a paradox: public programmes successfully stimulate experimentation but rarely support successful initiatives beyond the pilot phase. As organisations mature, subsidies often disappear precisely when investments in infrastructure, staff, and logistics become necessary. Rather than building financially resilient business models, many initiatives become dependent on successive project grants. As one processor explained:

"We knew that every two years we needed an injection via a subsidy to develop something."

This funding trap creates a structural disincentive to scaling. Brussels support innovation as a niche activity, but provides fewer mechanisms for transforming successful experiments into mainstream food system practices.

Unequal power relations

The transition is also shaped by unequal bargaining power within the value chain. Small producers often negotiate from positions of dependency, while large retailers and wholesalers retain greater influence over prices, purchasing conditions, and market access. Yet these dominant actors are simultaneously indispensable for expanding sustainable food beyond niche markets.

This creates a strategic dilemma. The actors with the greatest capacity to scale sustainability are often those viewed with the greatest distrust by niche initiatives. As discussed under interaction failures, ideological divisions therefore become barriers not only to collaboration but also to systemic transformation.

Greenwashing

Several interviewees argued that sustainability has increasingly become a marketing language rather than a guarantee of meaningful change. Claims such as *artisanal*, *local*, or carbon indicators were perceived as creating an appearance of sustainability without necessarily transforming production practices. When sustainability claims become difficult to verify, trust erodes among both consumers and professional actors, weakening the credibility of genuinely sustainable initiatives.

4.3.2 Demand articulation failures: The system is not listening to what people actually need

Demand articulation failures occur when the food system is unable to understand, anticipate, and respond to the diverse needs of its population. In Brussels, interviewees emphasised that this is not simply a question of consumer demand, but of whose food cultures, purchasing realities, and dietary needs are recognised within the sustainable food transition.

Interviewees described a persistent mismatch between the supply of organic products and the diversity of actual demand. On the one hand, some organic producers struggle with declining

consumer demand and are forced to sell certified organic products through conventional supply chains at conventional prices. As one logistics actor explained:

"If you decide as a restaurateur or merchant to do organic, people aren't really demanding it that much anymore."

On the other hand, horeca and collective catering organisations reported insufficient availability of organic meat and dairy products in the volumes they require. Rather than indicating either oversupply or shortage alone, these findings reveal a poorly coordinated relationship between production and demand.

A second mismatch concerns the urban food environment itself. Interviewees argued that supermarkets and restaurants remain dominated by affordable ultra-processed foods, while sustainable alternatives are distributed unevenly across Brussels' neighbourhoods. Access to sustainable food is therefore shaped not only by income, but also by geography and the spatial organisation of retail.

An important problem is related to the diversity of Brussels' population. The city is home to more than 180 nationalities, including large Turkish, Polish, Romanian, Hungarian, and African communities, each with specific food needs and traditions that are not well reflected in the current sustainable food offer. There is growing demand for products that combine sustainability with cultural and religious requirements, such as short-chain halal meat or ingredients commonly used in ethnic cuisines that originate from agroforestry systems. Interviewees therefore argued that the sustainable food offer often reflects a narrow interpretation of sustainability that does not adequately represent Brussels' cultural diversity.

Several actors also questioned whether the dominant narrative of local self-sufficiency is either realistic or desirable. Products such as bananas, avocados, coffee, and many spices cannot be produced within or around Brussels under any plausible scenario. Rather than opposing local food production, interviewees proposed a broader European-local perspective that combines regional production with sustainable international sourcing. This debate illustrates that demand articulation is also about defining what counts as sustainable food in a diverse metropolitan region.

4.3.3 Policy coordination failures: Policy works against sustainability

Policy coordination failures concern the alignment of action rather than the direction of vision. Whereas directionality failures describe the absence of a shared long-term goal, policy coordination failures arise when governments, ministries, and agencies pursue worthwhile objectives without coordinating their implementation. In Brussels, this shows up both in contradictions between policy domains and in the persistent gap between policy ambitions and what actually happens on the ground.

Despite formal commitments to co-creation, several interviewees described Brussels' policy processes as more top-down than participatory in practice. Representatives of cultural communities and marginalised groups felt that their contributions to the Good Food process were insufficiently reflected in final policy decisions. As one participant summarised:

"Because they did not listen to us... everyone said the same thing."

Interviewees therefore questioned not the ambition of participation itself, but the extent to which participation genuinely influenced policy outcomes.

The most frequently mentioned governance problem was silo-thinking between ministries, agencies, and regional governments. Different policy calendars, separate protein transition strategies, and conflicting regulatory standards create unnecessary complexity for organisations operating across Brussels, Flanders, and Wallonia. Political instability further reinforces these coordination problems by interrupting long-term planning and creating uncertainty for businesses investing in sustainable food systems.

4.3.4 Reflexivity failures: The sustainability story leaves people out

Reflexivity failures occur when the food system is unable to critically question its own assumptions, values, and definitions of sustainability. In Brussels, interviewees argued that dominant sustainability narratives unintentionally exclude practices, communities, and forms of knowledge that could strengthen the transition.

The dominant Good Food narrative that is centred on local, seasonal, and organic food, was repeatedly described as reflecting a culturally specific understanding of sustainability. For many communities in Brussels, this language feels unfamiliar rather than inclusive. As one participant explained, many traditional dishes from their culture are inherently plant-based, yet *“we don’t have that ethical term... it’s just food without meat.”* When local-seasonal-organic becomes the implicit definition of sustainable food, equally sustainable culinary traditions rooted in other cultures risk remaining invisible.

Interviewees also described sustainable food as being associated with a bourgeois-bohemian (“bobo”) identity, reinforcing the perception that organic food is intended primarily for affluent consumers. Meanwhile, neighbourhood grocers, independent retailers, and community cooks, thus actors who already serve diverse communities, remain largely absent from sustainability narratives despite their potential to make sustainable food more accessible.

Technical concepts such as agroecology, circular economy, and sustainable food systems were widely considered difficult to understand outside professional circles. As labels and sustainability terminology continue to multiply, interviewees argued that communication becomes increasingly complex rather than more meaningful. The language of sustainability therefore risks becoming a barrier to participation instead of an instrument for inclusion.

Finally, several respondents argued that dominant sustainability frameworks pay insufficient attention to labour conditions. In particular, logistics workers were described as operating under high workloads, tight delivery schedules, and narrow profit margins. These findings suggest that environmental sustainability cannot be separated from questions of decent work and social justice within the food system.

Overall, interviewees suggest that sustainability becomes less effective when it is perceived as a project designed by, and for, only a limited group of citizens.

5 Synthesis: Three clusters of interconnected barriers

The previous sections identified barriers across market, structural, and transformational system failures. While these categories explain where barriers occur, they are less useful for identifying where change should begin. The synthesis therefore reorganises the findings into three interconnected clusters that represent the dominant dynamics of the Brussels food transition, as visible in Figure 5.

Rather than constituting separate challenges, these clusters reinforce one another in a self-reinforcing system lock-in. Limited demand constrains market opportunities for sustainable businesses; insufficient supply keeps sustainable products scarce and expensive; and high operational costs prevent sustainable initiatives from reaching the scale needed to increase both supply and affordability. Breaking one barrier therefore requires simultaneous action on the others.

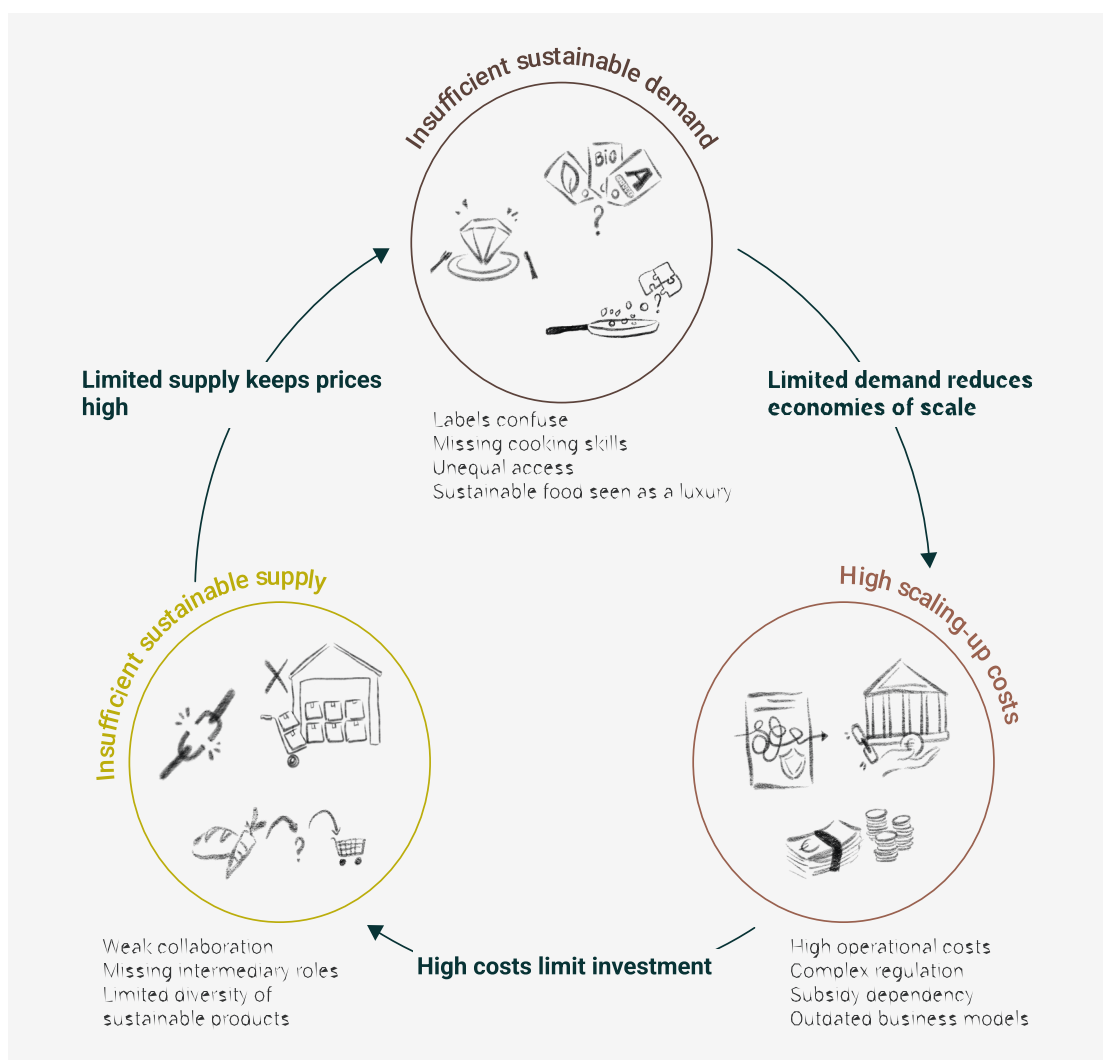


Figure 5 : The Brussels food system is trapped in a self-reinforcing system lock-in.

5.1 Cluster A: The demand for sustainable food is too limited

A healthy and sustainable diet should be accessible to everyone in Brussels, regardless of income, background, or neighbourhood. In practice, multiple barriers work against this goal. We argue that this is not a problem of individual choice or motivation, but is a systemic failure.

Vague definitions of sustainability, misleading market signals, and a proliferation of labels create confusion for consumers. Limited cooking skills, financial constraints, and unequal access to sustainable retailers reduce the ability of many households to adopt sustainable diets. Certification conflicts, such as the perceived incompatibility between halal and organic food, and paternalistic approaches within food aid further deepen socio-economic exclusion. Together, these barriers show that limited demand is not primarily a failure of individual behaviour, but of a food system that does not make sustainable food accessible, affordable, or culturally relevant for the diversity of Brussels' population.

5.2 Cluster B: The costs of doing sustainability are too high

While many Brussels-based food companies want to operate more sustainably, a diversity of interconnected barriers makes doing so expensive and difficult to scale. Unstable and niche-focused public funding pushes businesses into "survival mode", where sustainability feels like a luxury. High operational costs, outdated business models, and a lack of specialised staff leave companies unable to innovate. The absence of facilities for waste processing, circular production, and efficient last-mile logistics makes sustainable businesses difficult to scale. Complex regulations, administrative burdens, and mistrust between conventional and niche actors further reduce opportunities for collaboration and collective investment. Rather than rewarding sustainable entrepreneurship, the current system increases the costs and risks of operating sustainably, leaving many initiatives trapped in survival rather than growth.

5.3 Cluster C: The offer of sustainable products is insufficient

Despite growing interest, the availability, diversity, and geographic distribution of sustainable food remain insufficient to meet Brussels' needs. Interviewees described a fragmented supply system in which weak logistics, limited processing capacity, and inadequate demand forecasting prevent producers and buyers from coordinating efficiently. Existing infrastructures, such as Mabru, continue to primarily support conventional food flows, while urban planning prioritises housing over food infrastructure.

At the same time, the sustainable food offer does not always reflect the cultural diversity of Brussels. Products combining sustainability with halal requirements or ingredients central to African and other non-European cuisines remain difficult to source through short supply chains. The challenge is therefore not only to increase the volume of sustainable food, but also to broaden what counts as sustainable food within a multicultural city. Together, these barriers keep sustainable products niche, expensive, and unevenly available.

6 Actor perspectives on the barriers

The heatmap in Table 2 shows that barriers are not experienced equally across the Brussels food system. While some challenges are recognised across nearly all actor groups, others are concentrated within specific sectors and reflect the different positions actors occupy in the value chain. Rather than comparing sectors individually, the analysis below highlights the most important cross-sectoral patterns. An extensive version of the heatmap is available in Appendix D (Table 4).

Two broad patterns emerge. First, several barriers are system-wide, meaning they are reported by actors throughout the value chain regardless of their professional role. These include behavioural inertia (81%), limited inclusive communication (81%), regulatory complexity (76%), limited public funding (73%), dysfunctional inter-actor dynamics (68%), and the high operational costs of sustainable practices (68%). Their widespread presence suggests that these are fundamental characteristics of the Brussels food system rather than problems experienced by one sector alone.

Second, other barriers are highly position-dependent. Issues such as mobility, logistics infrastructure, power imbalances, paternalistic food aid, and cultural exclusion are concentrated among actors who interact directly with these realities in their daily work. This demonstrates that barriers are partly shaped by actors' location within the value chain and by the forms of power and responsibility attached to that position.

6.1 Market failures

Market failures are recognised across nearly the entire food supply chain. The dominant market logic, prioritising low prices over environmental and social value, was mentioned by 65% of respondents and was particularly strong among logistics (100%), processing (71%), horeca (75%), and collective catering actors (75%). By contrast, interregional competition was reported by only 14% of respondents, almost exclusively by processing and logistics organisations. This suggests that relocation pressure is a highly sector-specific barrier affecting businesses that can realistically move operations outside Brussels.

6.2 Structural failures

Structural failures display the clearest differences between actor groups. Mobility constraints and the lack of logistics hubs are concentrated among logistics, horeca, food aid, and wholesale actors, all of whom depend on frequent urban deliveries. Regulatory complexity is one of the most widely shared barriers (76%) but is especially acute for logistics (100%), horeca (88%), and processing organisations (86%), reflecting the disproportionate administrative burden placed on SMEs.

Professionalisation gaps show a similar pattern. Logistics actors unanimously reported missing professional roles and coordination functions, while horeca actors highlighted deficits in culinary skills and sustainable menu development. Together, these findings suggest that structural barriers are experienced most strongly by actors responsible for translating sustainable ambitions into day-to-day operations.

6.3 Transformational failures

Transformational failures reveal where perspectives diverge most strongly. Limited public funding was recognised by 73% of respondents and was particularly prominent among

collective catering, food aid, and processing organisations, indicating widespread concern about the long-term viability of sustainable initiatives. Power imbalances were concentrated among producers, wholesalers, collective catering, and food aid actors, whereas horeca actors mentioned them relatively rarely, suggesting that bargaining power is experienced differently depending on actors' position within the chain.

Cultural and justice-related barriers followed a contrasting pattern. The paternalistic food aid model, Western sustainability norms, and cultural alienation were mentioned almost exclusively by food aid organisations, consumption actors, and some horeca respondents. These barriers are therefore highly visible to actors working closest to vulnerable communities, yet largely absent from the perspectives of upstream sectors. This uneven visibility suggests that justice-related challenges risk being underrepresented in governance processes dominated by production, logistics, or retail actors.

Overall, the actor analysis demonstrates that systemic barriers are simultaneously shared and situated. Some obstacles, such as regulatory complexity and high operational costs, unite actors across the food system, while others become visible only from particular positions within the value chain. Therefore, understanding the Brussels food transition requires combining perspectives from actors who experience different parts of the system rather than relying on any single sector alone.

Table 2 : Presence of systemic barriers across actor groups (% of interviewees within each actor group mentioning the barrier. Light green if 50% or higher. Dark green if 100%).

	Catering (n=4)	Horeca (n=8)	Food aid (n=3)	Logistics (n=3)	Processing (n=7)	Retail (n=5)	Wholesale (n=5)	Consumption (n=4)	% all actors (n=37)
MARKET FAILURES									
Dominant market logic	75%	75%	67%	100%	71%	40%	60%	25%	65%
Macro-economic pressures	25%	25%	0%	33%	71%	40%	80%	50%	51%
Interregional competition	0%	0%	0%	33%	43%	0%	20%	0%	14%
STRUCTURAL FAILURES									
Awareness & knowledge gaps	50%	88%	100%	67%	43%	80%	40%	75%	65%
Mobility constraints	25%	62%	67%	100%	29%	60%	60%	0%	46%
Lack of logistics infrastructure	0%	75%	67%	67%	14%	0%	60%	0%	35%
High operational costs	0%	38%	33%	33%	57%	0%	20%	25%	27%
Regulatory complexity	50%	88%	67%	100%	86%	40%	80%	50%	76%
Psychological burden	25%	50%	33%	33%	0%	0%	40%	0%	19%
Dysfunctional actor dynamics	50%	62%	100%	67%	71%	60%	40%	75%	68%
Lack of supply chain transparency	25%	75%	33%	33%	57%	0%	20%	25%	35%
Professionalisation gaps	25%	88%	67%	100%	71%	40%	80%	0%	62%
Skills & knowledge gaps	50%	75%	33%	33%	57%	0%	20%	25%	38%
TRANSFORMATIONAL FAILURES									
Limited public support	100%	62%	100%	67%	86%	60%	80%	25%	73%
Power asymmetries	100%	25%	100%	67%	29%	60%	80%	50%	59%
Greenwashing/misinformation	75%	38%	67%	33%	43%	60%	20%	25%	46%
Lack of shared vision	0%	25%	33%	67%	71%	40%	40%	0%	43%
Supply-demand mismatch	50%	88%	67%	67%	43%	60%	100%	0%	65%
Socio-economic exclusion	75%	62%	67%	33%	57%	80%	60%	0%	59%
Limited access to sustainable food	25%	50%	100%	0%	14%	60%	20%	25%	35%
Policy implementation gaps	50%	50%	67%	67%	71%	80%	60%	25%	62%
Institutional fragmentation	0%	38%	33%	100%	43%	20%	100%	25%	49%
Governance participation	50%	38%	67%	0%	29%	40%	60%	25%	43%
Inclusive communication gaps	75%	100%	67%	33%	71%	60%	100%	100%	81%
Behavioural inertia	100%	100%	100%	100%	57%	60%	60%	75%	81%
Western sustainability norms	25%	38%	67%	0%	14%	0%	0%	25%	19%
Cultural alienation	0%	25%	33%	0%	14%	20%	0%	50%	16%
Paternalistic food aid	25%	12%	100%	0%	0%	0%	0%	25%	11%

7 Discussion

7.1 Comparison with other European urban food system studies

This study suggests that Brussels shares many of the structural challenges reported across European urban food systems, while expressing them through a distinctive metropolitan context. Two findings appear particularly interesting. First, sustainability is closely intertwined with the city's exceptional cultural diversity: questions of halal food, ethnic cuisines, neighbourhood retailers, and multilingual communication emerge as important sustainability issues rather than peripheral social concerns. Second, tensions exist not only between conventional and sustainable actors, but also within the sustainability movement itself, where competing visions of justice, entrepreneurship, and market transformation complicate collaboration.

These findings do not replace the broader European literature, but instead, they refine it by showing how common transition barriers are shaped by the specific social and institutional realities of Brussels.

Several findings regarding limited demand (cluster A) mirror previous research. Like López Cifuentes et al. (2021), we find that many consumers express positive attitudes towards sustainable food but do not consistently translate these into purchasing behaviour. This well-known value-action gap has been described by Bedore (2010) as a structural market failure, whereby healthy and sustainable food becomes a luxury rather than a basic right. However, Brussels adds an important dimension to this discussion. Rather than primarily reflecting generational differences, as reported in Warsaw (Górska-Walczyk et al., 2026), interviewees emphasised how sustainability is often associated with an “elite” identity that can alienate lower-income households and culturally diverse communities.

The barriers related to high costs (cluster B) also resemble those identified elsewhere. Similar logistical challenges, including expensive last-mile delivery and insufficient shared infrastructure, have been reported in Warsaw (Górska-Walczyk et al., 2026). Steines et al. (2024) likewise describe regulatory requirements that disproportionately disadvantage small-scale producers, while Leimkühler et al. (2025) highlight poor coordination between actors as an important source of fragmentation. Our findings confirm these patterns but additionally show how interaction failures reinforce economic barriers. Limited collaboration increases operational costs, while those same costs reduce the time, resources, and organisational capacity needed to build new collaborations. This creates a reinforcing feedback loop between economic and relational barriers.

The governance barriers identified in Brussels also align closely with previous studies. Policy fragmentation, administrative complexity, and insufficient institutional support have been observed in several European cities (Lázaro et al., 2025; Steines et al., 2024). Likewise, the need to better connect local production and consumption has become a recurring theme across urban food system research.

Taken together, these comparisons indicate that Brussels is not exceptional because it faces different barriers, but because of the way familiar barriers intersect. Cultural diversity, socioeconomic inequality, and competing interpretations of sustainability are not separate challenges, but they shape how demand, governance, and collaboration function throughout the food system. Consequently, urban food transitions require governance that

accommodates multiple understandings of sustainability rather than promoting a single normative model.

7.2 Who reports what: value-chain-dependent patterns

Although many barriers are shared across the food system, they are not experienced equally by all actors. Barriers such as regulatory complexity, limited financial support, behavioural inertia, and weak communication are recognised by all actors throughout the value chain. These can therefore be understood as system-wide challenges for the Brussels food system.

Other barriers are much more sector-specific. For example, concerns about socio-cultural exclusion and the dominance of Western sustainability norms are raised mainly by actors working directly with vulnerable consumers. These issues are rarely mentioned by producers, processors, or wholesalers.

This uneven distribution has important implications for governance. Participatory food policies that disproportionately represent institutional or market actors risk overlooking justice-related barriers that are primarily identified by food aid organisations, neighbourhood retailers, and community actors. Conversely, governance dominated by niche initiatives may underestimate the operational constraints experienced by logistics, wholesale, and processing actors. A systemic transition therefore requires representation across the entire value chain.

7.3 Different starting points, different framings

The interviews also revealed differences that extend beyond the barriers actors identify. As a complementary analysis within the BRUFO2050 project, a separate discourse study (De Schaepmeester, under revision) identified three distinct sustainability discourses operating within the Brussels food system. Together, these analyses suggest that disagreements often concern not only which solutions are desirable, but also how sustainability itself is understood and who is considered responsible for delivering change.

The debate surrounding food waste redistribution illustrates these differences well, as examined by De Vreese (2025). Commercial initiatives such as Happy Hours Market primarily frame surplus redistribution as an efficient market solution that reduces waste while improving affordability. Food aid organisations, by contrast, argue that commercialising surplus food takes resources away from those most in need and risks treating food insecurity as a market opportunity rather than a structural injustice. This tension is less the result of disagreements about the evidence than of the difference in normative assumptions about what a sustainable food system should achieve.

Recognising these different perspectives is therefore important for urban food system governance. Rather than seeking a single shared definition of sustainability, participatory processes should explicitly acknowledge these different viewpoints and create space for dialogue between them. This is precisely the ambition of the BRUFO2050 project, which uses participatory foresight to bring together actors representing different perspectives and jointly explore future pathways for the Brussels food system.

8 Conclusion

This report set out to answer one central question: **what systemic barriers currently hinder the transition towards a more sustainable food supply system in the Brussels-Capital Region?** Drawing on 37 interviews with actors across the Brussels food value chain and analysing them through the Transformative Systems Failure framework, this report identified the market, structural, and transformational barriers that currently hinder the city's food transition.

First, the barriers do not operate in isolation. Limited demand, high operational costs, and insufficient sustainable supply reinforce one another in a self-reinforcing system lock-in. Improving only one part of the system is therefore unlikely to produce lasting change, because progress in one area is continually constrained by weaknesses in the others.

Second, although many of the barriers identified in Brussels resemble the ones reported in other European cities, our findings also highlight features that appear to be particularly pronounced in the Brussels context. Some interviewees emphasised the interaction between sustainability, cultural diversity, and socioeconomic inequality, thereby revealing tensions around who sustainable food is designed for and who risks being excluded. Interviewees also described tensions within the sustainability movement itself. Rather than sharing one common vision, actors differ in how they balance entrepreneurship, justice, affordability, and environmental ambition. Building trust between these perspectives emerged as an important condition for scaling sustainable food beyond niche initiatives.

Third, barriers are not experienced equally across the food system. While some challenges, such as regulatory complexity or limited public support, are recognised across the value chain, others are only visible to particular groups of actors. This demonstrates the importance of involving a diverse range of perspectives when analysing food systems and designing interventions, as governance processes that favour certain actors may overlook barriers experienced elsewhere in the system.

These findings also have an important governance implication. Barriers become visible from different positions within the food system: food aid organisations identify challenges that wholesalers rarely mention, while logistics and processing actors highlight constraints that remain largely invisible to community initiatives. Effective food policy therefore depends on bringing these complementary perspectives together rather than privileging one type of actor over another.

The next phases of the BRUFO2050 project will build on these findings to identify strategic leverage points for change and to support a participatory foresight process in which actors representing different perspectives can jointly explore pathways towards a more sustainable, resilient, and just food system for the Brussels-Capital Region.

The Brussels food transition is not blocked by a single missing policy, technology, or behavioural change. It is constrained by a self-reinforcing system in which limited demand, insufficient supply, and high operational costs continuously reinforce one another. Breaking this lock-in requires coordinated action across the entire food system rather than isolated projects. Interventions that simultaneously strengthen local supply chains, reduce the costs of sustainable entrepreneurship, and make sustainable food accessible and culturally relevant are most likely to move promising niche initiatives into the mainstream.

The challenge for Brussels is therefore not simply to create more sustainable food projects, but to create the conditions in which sustainable food becomes the easy, viable, and inclusive choice for producers, businesses, and citizens alike.

Appendix A: Actor mapping approach

The inclusion criteria for participants in this study are based on three complementary approaches.

First, a value-chain approach is applied to provide a structural overview of the food system. Actors are mapped across key stages from production to consumption, including processing, logistics, wholesale, retail, and horeca, allowing for the identification of roles and interdependencies within the system.

Second, participants are selected according to the type of consumption they primarily engage with. Consumption patterns are analysed through three personas: commuting professional, neighbourhood resident, and conscious parent. This approach helps capturing how different demographic profiles interact with retail and horeca landscapes in Brussels.

Third, participants are selected based on their professional role in the transition of the Brussels-based food system, with an explicit focus on diversity across four analytical logics:

- **Grounding in lived practices (Logic 1):** Individuals who work directly within the food system, contributing practical, daily experience and representing the current realities of their sector.
- **Imagining alternatives (Logic 2):** Innovators or individuals and organizations offering fresh perspectives on their profession. This includes participants who may represent historically excluded groups or who are actively introducing transformative ideas within the system.
- **Enabling action (Logic 3):** Representatives of institutions capable of influencing large-scale change, either directly or indirectly. This group includes individuals involved in policy reform, strategic advising, or providing training and education that impacts the broader food system actors.
- **Analysing systemic dynamics (Logic 4):** Researchers and professionals focusing on transition dynamics in the Brussels food system. This category includes think tanks and research groups analysing food transitions from perspectives such as agroecology, urban planning, and retail dynamics.

Individuals who do not actively participate in or significantly influence the Brussels food system through the above-defined roles are excluded. Additionally, we do not include participants who lack professional or practical ties to the food system, as the study focuses on gathering insights from individuals with direct or impactful involvement in food system transitions.

Table 3 provides an overview of the criteria on which interviewees were sampled.

Table 3 : Sampling framework used to identify interview participants across the Brussels food system.

Interviewees were selected through three complementary dimensions: (1) their position in the food value chain (rows), (2) the primary consumption persona they engage with (commuting professional, neighbourhood resident, conscious parent), and (3) their role in the food system transition, ranging from grounding in lived practices (logic 1), to imagining alternatives (logic 2), enabling action (logic 3), and analysing systemic dynamics (logic 4).

	Logic 1: Grounding in lived practices			Logic 2: Imagining alternatives			Logic 3: Enabling action			Logic 4: Analysing systemic dynamics
	<i>Commuting professional</i>	<i>Neighbourhood resident</i>	<i>Conscious parent</i>	<i>Commuting professional</i>	<i>Neighbourhood resident</i>	<i>Conscious parent</i>	<i>Commuting professional</i>	<i>Neighbourhood resident</i>	<i>Conscious parent</i>	
Consumption	Tourists, commuters and Eurocrats	Multicultural neighbourhoods, gentrifiers	Residential citizens, students	Eco/Food influencer, novel food trends	Food festivals and social innovative initiatives and organisations	Vegan/Organic consumers organisations, NGOs	Tourism organisations	Cultural and social organisations, NGOs, local government	Consumer representative bodies	Research on shifts in consumer patterns, citizen panels
Horeca	Fast-food chains, lunch shops, traditional Belgian eateries	Multicultural eateries, snack bars	Classic restaurants and cafes catering to local residents	Dark kitchens and app-based food delivery services	Social neighbourhood restaurants	Plant based and organic restaurants	Brussels' tourism department	Horeca federations	Horeca schools and federations	Trend and transition analysts
Retail	Tourist shops (e.g. Belgian chocolate), and express supermarkets	Ethnic stores and neighbourhood markets	Supermarkets and specialized shops like butcheries and bakeries	Online grocery platforms	Social supermarkets and cooperatives	GASAP groups and short-chain organic retailers	Tourism offices, Brussels city administration	Labour unions and retail federations	Retail federations	Trend and transition analysts

Catering	Small- and large-scale workplace and school canteens	Plant-based, organic and short-chain caterers	Federations, local governments Good Food	Trends in consumption behaviour and collective catering
Food Aid	Long-term initiatives like food banks and food aid programs	Volunteer-based food aid programs, aiming for social inclusion	Political institutions	Food aid analysts and "thinkers"
Wholesale	Established integrated and non-integrated wholesalers	Short-chain distribution, pioneers in sustainability/circular economy within wholesale markets	Federations of wholesale, Brussels administration on urban hub development	Trends analysts for wholesale
Processing	Small and large-scale conventional food processors	Start-ups testing circular, plant-based, innovative food processing methods	Federations and representative organizations, food transformation schools	Thinkers on circular food processing
Logistics	Distribution hubs supplying Brussels' retail sector, logistics actors	Smart urban logistics, innovating last-mile transport, rail and waterway-based transport	Federations of transport, Brussels mobility agencies and administration	Urban and mobility foresight thinkers
Waste	General food waste management services operated by large companies or the region	Valorisation of food surpluses (e.g., reduced-price food, energy recovery)	Waste management institutions	Circular economy specialists
Farming	Traditional farmers	Innovative urban farmers, agroecological initiatives in community projects	Farmers' organizations, support organizations, Brussels Environment	Agroecological transition thinkers

Appendix B: Barrier identification process

1. Deductive coding:

The analysis began with an initial coding round that stayed close to the data, identifying segments relevant to the research question: “What are the barriers?” These codes were interpretative yet data-led, serving as the foundation for later theme development. In subsequent rounds, codes were grouped into broader themes representing meaningful clusters of recurring problems. This iterative process involved organizing, refining, and validating themes to ensure completeness and relevance (e.g., splitting overly broad themes, merging overlapping ones).

2. Structuring and categorization

Once themes were established, they were organized under the Guidebook of lock-ins for an additional layer of structure. To enhance theoretical coherence, the Transformative systems failures framework (Weber & Rohrer, 2012) was applied, enabling a deeper understanding of systemic barriers and transition dynamics. This step revealed clusters of interrelated problems and complex lock-ins that hinder systemic change.

3. Reliability and validation

Analysis was conducted by two researchers affiliated with different universities to ensure reliability. Regular reflection sessions, alternating coding rounds, and external feedback strengthened the robustness of the findings. When a researcher had not conducted a particular interview, they reviewed transcripts alongside audio recordings to build familiarity with the data.

4. Reporting and framework integration

For reporting purposes, a clear structure was developed to manage complexity:

- Level 1: Broad lock-in categories
- Level 2: Themes
- Level 3: Barriers

Finally, barriers were classified using an adapted categorization framework (Guerrieri et al., 2025; Klein Woolthuis et al., 2005; Weber & Rohrer, 2012), providing a systematic way to understand the multifaceted challenges facing the BCR food system. The categories and their definitions are detailed in Appendix C.

5. Outputs

The results served two purposes:

Workshop input: Clusters of barriers were presented through a storytelling approach, ensuring holistic coverage of systemic failures.

Identification of actions : Based on the identified barriers, actions were identified that need to be taken to relieve them. These are outlined in report Q5.

Appendix C: Overview of identified barriers

This appendix presents the three-level taxonomy of barriers identified through the thematic analysis. The taxonomy distinguishes three parts of market failures, structural system failures, and transformational system failures. Within each part, Level 1 refers to the failure category, Level 2 presents the barrier themes, and Level 3 lists the specific barriers.

MARKET FAILURES

Market and demand articulation failures

Externalisation of costs

- Undervaluation of food due to market-driven commodification
- Conflict between profitability and sustainability
- Extreme market competition and price pressure
- Financial trade-offs for local and small-scale operations
- Pressure of market conformity causing food waste and pesticide use
- Strong push of ultra-processed foods
- Distorted price perception through subsidies
- Lack of regulation on externalities
- Systemic complexity and trade-offs in global food system

Macroeconomic and systemic pressures

- Inflation, indexation, and rising prices
- Dependence on geopolitical situation

STRUCTURAL SYSTEM FAILURES

Infrastructural failures

High structural business costs in Brussels-Capital Region

- High buying and rental costs in BCR
- High costs of human resources in BCR
- High regional taxes

Interregional competition and resource drain

- Better organised supply chains in Flanders and Wallonia
- High rent and land prices in Brussels pushing sustainable businesses out
- Interregional competition for financial support

Constraints on mobility and urban congestion

- Regulatory changes affecting mobility (e.g., LEZ constraints, Good Move)
- Persistent last-mile transport challenges

Inadequate infrastructure for sustainable practices

- Lack of food waste processing and revalorisation infrastructure
- Lack of infrastructure for pioneering processing companies
- Lack of easily accessible delivery spaces (hubs) in BCR
- Lack of clear administrative systems for local supply

Academic and scientific communication gaps

- Contradictory information and lack of consensus
- Emergence and success of new, unfamiliar sustainability concepts

Institutional failures

Complex and restrictive legal, administrative and regulatory frameworks

- Exclusive and fragmented labelling system
- Lack of innovative legal structures for mission-driven companies
- Lack of supportive policies and incentives for internalising externalities
- Restrictive regulatory standards (e.g., FAVV, organic label) and legal frameworks
- Voluntary sustainability frameworks with weak motivation (e.g., Shifting Economy)

Administrative and operational overload for sustainability integration

- High efforts and costs associated to obtain and maintain sustainability certifications (e.g., organic label)
- Increased workload and time investment for mandatory legal compliance

Psychological and cultural burden on sustainability pioneers

- Burnout and operational fatigue from regulatory complexity
- Fear of innovating as competition in logistics
- High investment to maintain socially sustainable and fair work models

Interaction failures

Lack of collaboration and coordination

- Lack of collaboration in implementing local supply strategies
- Lack of cooperation across language-regional boundaries
- Lack of spaces for peer learning and cooperation development
- Insufficient cross-sectoral collaboration for systemic change
- Lack of examples of innovative companies (e.g., participatory governance models)

Dysfunctional inter-actor dynamics

- Blame game and shifting responsibility between "too idealistic" and "too profit-driven"
- Polarisation between "niche" and "mainstream" actors, each operating in isolated networks
- Silo-formation and fragmentation within the sustainable food sector

Opaque and uncontrolled global supply chains

- Lack of transparency and accountability in global sourcing and distribution

Capabilities failures

High operational and financial costs of sustainable practices

- Additional staff and time needed for new tasks (e.g., managing local supply, food waste)
- High costs of food waste management
- High costs in scaling sustainable practices
- High costs of last-mile logistics and food distribution
- High economic risks for sustainable players
- High labour intensity of sustainable methods
- Higher costs for sustainable products compared to conventional ones

Professionalisation gaps in sustainable food systems

- Absence of recognised professions crucial for sustainable transitions
- Lack of logistics and horeca professionals in the food aid sector
- Lack of professionalisation of local supply-distribution systems
- Lack of supply chain management and demand forecasting

Technological barriers to scaling innovative and circular products

- Awaiting technological improvements in logistics
- Challenge of integrating more IT for efficiency

Outdated business models and market adaptation failures

Deficit in practical and technical sustainability skills

- Limited sustainability skills in professional horeca schools
- Lack of sustainability expertise within companies

Deficiencies in education and knowledge transfer

- Lack of operational knowledge transfer toward companies and organisations
- Lack of integration of sustainable food practices in professional schools
- Lack of appropriate cooking skills among consumers
- Difficulty translating policy regulations into practice
- Comprehension barriers of legislation due to academic jargon

TRANSFORMATIONAL SYSTEM FAILURES

Directionality failures

Lack of integrated long-term strategic vision and adaptive governance

- Lack of a shared long-term strategic vision across policy domains
- Policy silos between food, mobility, housing, and economic planning

- No clear vision for future skills and training needs to support sustainable roles
- Missing long-term strategy for logistics, supply chains, and mobility
- Need for renewed policy focus as current subsidies and regulations lose effectiveness
- Lack of a One Health approach for public canteens

Short-termism and structural tension between profit and sustainability

- Short-termism and structural tension between profit and sustainability within companies

Limited financial support from public authorities for the food transition

- Financial uncertainty for actors due to current political vacuum
- Funding and subsidy mechanisms too narrow, favouring niche actors and non-viable models
- Lack of systemic incentives (e.g., fiscal measures, employer benefits)
- Insufficient support for pragmatic, incremental sustainability strategies
- Absence of long-term structural funding
- Scarcity of non-commercial or social financing options

Power imbalance in the value chain

- Dependence on large-scale actors for system transformation
- Dominance of large-scale players, limiting fair competition for small players
- Exploitation and precarity for workers throughout the value chain
- Competition between global value chains due to historical relationships

Organized misinformation

- Exploitation of sustainability terms for profit-resilience motives
- Use of misleading claims and metrics for marketing

Prevalence of an unsustainable food environment

- Dominance of conventional, unsustainable food options shaping consumer habits

Demand articulation failures

Mismatch between offer and demand

- Growing demand for culturally diverse food vs. insufficient local offer
- Insufficient “sustainable food” offer vs. insufficient demand
- Sustainable market slowdown

Insufficient access to sustainable shops and products

- Lack of healthy, sustainable options in horeca
- Poor product quality in conventional supermarkets and wholesale
- Socio-economic disparities in access
- Lack of healthy food in food aid networks

Exclusion from healthy, sustainable food due to high costs

- High costs of sustainable food options
- High percentage of persons in food precarity
- Price sensitivity and cost prioritisation

Policy coordination failures

Flaws in governance and participation processes

- Tokenistic approach and lack of meaningful co-creation
- Top-down policy making disconnected from practical-economic realities
- Lack of public-private governance models
- Lack of inclusivity in decision-making
- Governance incoherence and lack of policy transparency

Shortcomings in policy content and strategy implementation

- Discourse-action gap and symbolic implementation
- Failed coordination of missing logistics hubs
- Financial uncertainty for actors due to current political vacuum
- Importance of industrial activity often underestimated by public authorities
- Lack of political mandate to restrict unsustainable practices
- Limited entrepreneurial spirit and slow institutional processes of public agencies
- Policy overreach beyond institutional mandate (e.g., Good Food)
- Political trade-offs and contradictions between policy priorities (e.g., food aid versus food waste management, housing versus productive land use)
- Slow decision-making processes
- Lack of governance and coordination in local supply chains

Multi-level governance and regulatory fragmentation

- Institutional fragmentation and “silo-thinking”
- Fragmented regulatory translation across regions
- Policy shortcomings in Flanders and lack of inclusion of Flemish actors

Reflexivity failures

Rigid sustainability standards and exclusionary standards

- Lack of acceptance that there is no single vision of sustainability
- Overly demanding and restrictive Good Food label

Imposition of Western sustainability norms

- Lack of valorisation of non-European cuisines as sustainable options
- Western-centric language and framing adapted to Western markets

Cultural alienation from sustainable food

- Exclusion or non-recognition of culturally rooted sustainable practices
- Lack of halal-certified meat products
- Lack of interests and exploration of non-Western cuisine
- Lack of spaces to connect people and cultures
- Attachment to established, traditional dietary habits
- Aversion to organic, plant-based food
- Varying cultural significance of food items (e.g., meat consumption)
- Inability to scale up due to religious restrictions
- Mismatch between cultural practices and sustainability goals
- No canteen culture in Belgian schools as in other countries

Socioeconomic alienation from sustainable food

- Dominant sustainability approach alienates people with lower incomes
- Lack of focus on working-class food actors and communities
- Sustainable food initiatives primarily targeting already engaged and privileged consumers

Lack of inclusive communication

- Alienating terminology and concepts (e.g. vegan, organic, agroecology) that exclude rather than invite
- Ambiguity and inconsistency in the use of terms such as "sustainable," "local," and "organic"
- Poorly accessible regional websites and information portals
- Lack of clear and reliable communication about food sourcing and sustainability data
- Widespread questioning of the added value of labelling and certification systems

Behavioural inertia and resistance to change

- Aversion to unfamiliar business environments
- Dependence on fast and flexible delivery systems
- Generational division in values and openness to change
- NIMBY mentality
- Pleasure above sustainability
- Strong inertia of regime system
- Unexplained resistance to change
- Value-based resistance and unwillingness to pay more

Socio-economic alienation of sustainable food

- Current sustainability approach alienates less privileged people
- Lack of working class focus
- Sustainable food primarily targets already conscious consumers

Power dynamics in the citizen-state relationship

- Individualisation of responsibilities, shifting burden to citizens
- Institutional power dynamics and lack of transparency in decision-making
- Lack of citizen empowerment and distrust in government
- Paternalistic food aid model as a mechanism of disempowerment

Erosion of trust and negative perceptions of sustainability

- Deconstruction of the "local is better" effect
- Scepticism towards organic labelling
- Vegan and veggie perceived as hypes

General awareness and knowledge gaps

- Disconnection from cultural and traditional food knowledge
- Erosion of emotional and experiential knowledge, and relational trust
- Lack of sustainability-oriented education system
- Pervasive misconceptions hindering sustainable adoption
- Limited political and self-organization knowledge

Lack of inclusive communication and accessible information

- Alienating terminology and concepts (e.g. vegan, organic)
- Ambiguity in terms like "sustainable", "local", and "organic"
- Poorly accessible regional websites and portals
- Lack of clear communication regarding food sources and sustainability data
- Questioning the added value of labelling

Appendix D: Heatmap of barrier perception across food system actors

Table 4 : Systemic barriers in the Brussels food system: presence across actor types (% of actors per sector mentioning barrier).

Failure type	Barrier	Collective catering (n=4)	Horeca (n=8)	Food aid (n=3)	Logistics (n=3)	Processing (n=7)	Production* (n=1)	Retail (n=5)	Wholesale (n=5)	Consumption (n=4)	% all actors (n=37)
Market failures	Neoliberal market logic as a structural barrier (n=24)	75%	75%	67%	100%	71%	100%	40%	60%	25%	65%
	Macro-economic and systemic externalities (n=19)	25%	25%	0%	33%	71%	100%	40%	80%	50%	51%
	Interregional competition & resource drain (n=5)	0%	0%	0%	33%	43%	0%	0%	20%	0%	14%
	Pressure of market conformity causing food waste and pesticide use (n=4)	25%	25%	33%	33%	0%	0%	0%	20%	0%	11%
	Competition between global value chains due to historical relationships (n=1)	0%	0%	0%	0%	0%	0%	0%	0%	25%	3%
Infrastructural failures	General awareness and knowledge gaps (n=24)	50%	88%	100%	67%	43%	100%	80%	40%	75%	65%
	Constraints on mobility and congestion in Brussels Region (n=17)	25%	62%	67%	100%	29%	0%	60%	60%	0%	46%
	Lack of easily-accessible delivery spaces (hubs) in the city (n=13)	0%	75%	67%	67%	14%	0%	0%	60%	0%	35%
	Inadequate infrastructure for sustainable practices (e.g., reusable packaging, distribution hubs) (n=10)	0%	50%	33%	33%	43%	0%	0%	40%	25%	27%
	High structural business costs in Brussels Region (n=10)	0%	38%	33%	33%	57%	100%	0%	20%	25%	27%

	Lack of clear administration system for local supply (n=7)	0%	62%	33%	67%	0%	100%	0%	0%	0%	19%
	Academic & scientific communication gaps (n=4)	25%	0%	0%	0%	29%	0%	20%	0%	0%	11%
Institutional failures	Complex and restrictive legal, administrative and regulatory frameworks (n=28)	50%	88%	67%	100%	86%	100%	40%	80%	50%	76%
	Psychological and social lock-ins for sustainability pioneers (n=7)	25%	50%	33%	33%	0%	0%	0%	40%	0%	19%
Interaction failures	Dysfunctional inter-actor dynamics (n=25)	50%	62%	100%	67%	71%	100%	60%	40%	75%	68%
	Opaque & uncontrolled global food supply chains (n=13)	25%	75%	33%	33%	57%	0%	0%	20%	25%	35%
	Lack of (funding for) spaces for peer learning and cooperation development (n=11)	0%	38%	33%	67%	29%	100%	40%	20%	0%	30%
	Lack of collaboration in implementing local supply-logistics strategies (n=4)	0%	0%	0%	33%	0%	0%	20%	40%	0%	11%
Capacities failures	High operational and financial costs for sustainable practices (n=25)	75%	88%	33%	100%	57%	100%	40%	80%	25%	68%
	Professionalization gaps in sustainable food systems (n=23)	25%	88%	67%	100%	71%	100%	40%	80%	0%	62%
	Deficiencies in professional education and knowledge transfer (n=20)	50%	62%	100%	33%	86%	100%	40%	20%	50%	54%
	Deficit in practical & technical sustainability skills (n=14)	50%	75%	33%	33%	57%	0%	0%	20%	25%	38%

	Technological barriers to scaling innovative and circular products (n=5)	0%	12%	0%	67%	14%	0%	0%	40%	0%	14%
	Outdated business models and market adaptation failures (n=4)	0%	25%	33%	0%	14%	0%	0%	20%	0%	11%
Directionality failures	Limited financial support from public authorities for the food transition (n=27)	100%	62%	100%	67%	86%	100%	60%	80%	25%	73%
	Power imbalance in the value chain (n=22)	100%	25%	100%	67%	29%	100%	60%	80%	50%	59%
	Organized misinformation (n=17)	75%	38%	67%	33%	43%	100%	60%	20%	25%	46%
	Lack of integrated long-term strategic vision & adaptive governance (n=16)	0%	25%	33%	67%	71%	100%	40%	40%	0%	43%
	Short-termism and structural tension between profit and sustainability within companies (n=8)	0%	25%	33%	0%	43%	0%	40%	0%	0%	22%
	Prevalence of an unsustainable food environment (n=6)	25%	12%	67%	0%	0%	0%	40%	0%	0%	16%
Demand articulation failures	Mismatch between offer and demand (n=24)	50%	88%	67%	67%	43%	100%	60%	100%	0%	65%
	Exclusion from healthy, sustainable food due to high costs (n=22)	75%	62%	67%	33%	57%	100%	80%	60%	0%	59%
	Insufficient access to sustainable shops and products (n=13)	25%	50%	100%	0%	14%	0%	60%	20%	25%	35%

Policy coordination failures	Shortcomings in policy content and strategy (implementation inefficiencies) (n=23)	50%	50%	67%	67%	71%	100%	80%	60%	25%	62%
	Institutional fragmentation and related inefficiencies (n=18)	0%	38%	33%	100%	43%	100%	20%	100%	25%	49%
	Lack of governance and coordination in local supply chains (n=16)	0%	50%	33%	100%	43%	100%	40%	60%	0%	43%
	Flaws in governance and participation processes (n=16)	50%	38%	67%	0%	29%	100%	40%	60%	25%	43%
	Political volatility - Economy vs. sustainability (n=10)	25%	12%	33%	0%	43%	0%	20%	20%	25%	27%
	Multi-level governance & regulatory fragmentation (n=3)	25%	0%	0%	0%	0%	0%	0%	40%	0%	8%
Reflexivity failures	Lack of inclusive communication and clear, easy-accessible information (n=30)	75%	100%	67%	33%	71%	100%	60%	100%	100%	81%
	Behavioural inertia & resistance to change (n=30)	100%	100%	100%	100%	57%	100%	60%	60%	75%	81%
	Socio-economic alienation of sustainable food (n=18)	50%	75%	100%	67%	29%	100%	60%	40%	0%	49%
	Erosion of trust and negative perceptions of sustainability (n=16)	50%	50%	67%	0%	29%	100%	80%	60%	0%	43%
	Power dynamics in the citizen-state relationship (n=16)	50%	38%	100%	0%	71%	0%	60%	20%	25%	43%
	Imposition of Western sustainability norms on diverse cultures (n=7)	25%	38%	67%	0%	14%	0%	0%	0%	25%	19%
	Rigid sustainability ideals & exclusionary standards (n=6)	25%	25%	0%	33%	29%	0%	0%	20%	0%	16%

Cultural alienation of sustainable food (n=6)	0%	25%	33%	0%	14%	0%	20%	0%	50%	16%
Paternalistic food aid model as a mechanism of disempowerment (n=4)	25%	12%	100%	0%	0%	0%	0%	0%	25%	11%

*Production is represented by a single interview. Therefore, percentages for this sector should be read as indicative only.