Navigating the Regulatory Maze

Supporting Food Startups in Designing Compliant and Consumer-Centered Packaging

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PREFACE

My journey on this project began when I saw an opportunity to explore how legal regulations could be better designed and communicated within food packaging. Although I knew very little about the world of law, especially in the EU, I had just come off a challenging yet rewarding studio project with a legal firm. Combined with my previous experience in the food industry, it felt like a unique opportunity to bring these two worlds together. The project ultimately evolved in a direction I hadn't anticipated (in a good way!), and I am excited to share what I have been working on over the past few months.

Before jumping into the report...

Throughout this project, I had the opportunity to learn from and grow alongside many people who I would like to thank.

Firstly, I would like to express my gratitude to my supervisors, Rick and Fernando, for their guidance throughout this project. Thank you for giving me the freedom to make this project my own and to pursue a topic that genuinely interested me.

I would also like to thank Lieke for our conversations and for sharing your perspective, mentorship, and experience. Learning about legal design through your work inspired many aspects of this project.

A big thank you to everyone who participated in this project- the experts I interviewed, those who joined my workshops, and everyone else who contributed their time, ideas, and support along the way.

To my friends and loved ones at TU Delft and beyond- you kept me grounded, brought me laughs, and I'm grateful to have met so many amazing people during my time here. A theme even common in this project- community means everything. Finally, I would like to thank my parents for their support and belief in me even from thousands of miles away.

EXECUTIVE SUMMARY

Food labeling regulations are intended to protect consumers and support informed decision-making. However, unhealthy products continue to dominate supermarket shelves and misleading packaging persists, while the complexity of food labeling legislation creates significant challenges for businesses, especially food startups.

This project investigates how food startups can be better supported in navigating EU food labeling regulations while designing packaging that communicates clearly and enables informed consumer choice. The project applies Frame Innovation to understand the current regulatory landscape, identify underlying tensions, and explore the needs of stakeholders. From these insights, themes and frames emerged that reframed the problem and led to future scenarios and potential interventions.

The resulting intervention is the Food Labeling Navigator, a guidance tool that translates regulations into practical guidance through plain-language explanations, annotated packaging examples, and consumer insights. To move from concept to implementation, a three-stage roadmap is proposed. The first stage focuses on developing a publicly available resource covering mandatory labeling requirements and nutrition claims. Later stages expand the navigator through partnerships with legal experts, broader regulatory scope, and personalized guidance based on product formulations.

The Food Labeling Navigator is not intended to replace legal expertise or simplify the regulatory framework. Rather, it lowers the barrier to entry for early-stage food startups to create packaging the enables informed packaging decisions and clearer communication with consumers. As part of a broader food innovation ecosystem, the navigator contributes to a healthier, more transparent, and more accessible food system.

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INTRODUCTION

Rising levels of obesity and increased urgency around sustainability have catalyzed policy in the form of food labeling regulations (Alum et al., 2026). These regulations are intended to protect consumers by ensuring that packaging information is accurate to support informed decision-making and encourage healthier food production. Despite these efforts, existing regulatory frameworks have not fully achieved these goals. Many supermarket products continue to encourage impulse purchases and unhealthy eating habits, with approximately 80% of products sold in Dutch supermarkets falling outside the Wheel of Five healthy eating guidelines (Didde, 2025). Meanwhile, the complexity of food labeling regulations creates challenges for food startups developing innovative products that contribute to a healthier and more sustainable food system. This reveals a tension between regulatory intent and implementation.

This project investigates how emerging food startups can be better supported in navigating the food labeling regulatory landscape. Specifically, it explores opportunities to make regulatory requirements more accessible while enabling startups to design compliant packaging that helps people make healthier and more informed food choices.

Beyond Regulations

While existing literature has identified gaps in current food regulations and proposed recommendations for future policy development (de Boer, 2021), regulatory change is often slow and uncertain as seen in the pause or abandonment of initiatives such as mandatory Front-of-Pack labeling. This is not to suggest that regulation is unnecessary or that simplification is the solution. Simplifying legislation can unintentionally lead to deregulation, while "simplified" rules often still require interpretation, creating new costs for businesses. Rather than focusing on legislative reform, this project explores non-regulatory interventions that can support startups in navigating the current regulatory framework.



Context and Scope

Geographic Scope

This project focuses on EU food law, with a focus on the Netherlands, since all interviews were conducted with Dutch-based experts. However, the challenges identified are also relevant in other countries. As supporting healthier and more sustainable food choices is a global challenge, it is important to consider how insights and approaches may transfer across different countries and legal systems.

Regulatory Scope

The project focuses on regulations governing food labeling related to the food product itself (see Table 2). Regulations concerning packaging waste and recycling (Packaging and Packaging Waste Regulation), are excluded, as the project centers on supporting informed consumer decision-making about food products. Additionally, the Novel Food Regulation (EU) 2015/2283 is outside the project's scope. While novel foods play an important role in the future of healthier and more sustainable food systems, they involve a distinct regulatory pathway with unique challenges related to authorization and market approval. Nonetheless, the advice for food labeling and packaging communication is relevant for all food products.

Stakeholder Scope

Lastly, the core stakeholders are food startups who are preparing to launch their first food and beverage products.

Stakeholders

A large part of this project is understanding the relationships between stakeholders within the EU food law system. The key stakeholders are introduced in Figure 1. Based on the EU Food Law Handbook (van der Meulen et al., 2020), stakeholders in food law are categorized by "ABC": Authorities, Businesses, and Consumers. These are the primary stakeholders involved in shaping, implementing, and responding to food packaging regulations. The values, influences, and challenges of these stakeholders are detailed in *Context* while an overview of the secondary stakeholders that influence them are explained in *Field*.

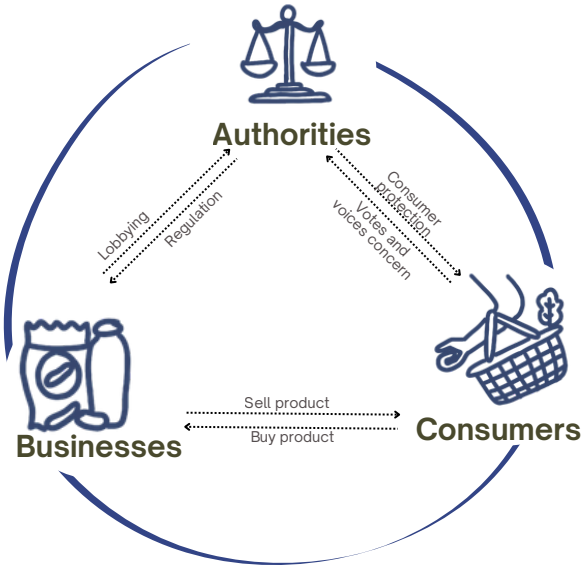


Figure 1: Stakeholders in food law

Authorities

are public bodies at the EU and national levels responsible for developing, implementing, and enforcing food regulations. This includes the European Commission and local municipalities. Their primary role is to safeguard public health, ensure fair market conditions, and protect consumers from misleading information by setting legal standards and monitoring compliance.



Businesses

include everyone involved in the production, processing, distribution, and sale of food products. The size ranges from large multinational corporations to small and medium-sized enterprises and startups. Businesses are responsible for complying with labeling regulations while also remaining competitive through branding and marketing. This group also includes retailers such as supermarkets and cafes that stock products.



Consumers

are the end users of food products. They rely on packaging and labeling to make their purchasing decision. Their behavior and understanding of information are important for determining whether regulatory goals are achieved.

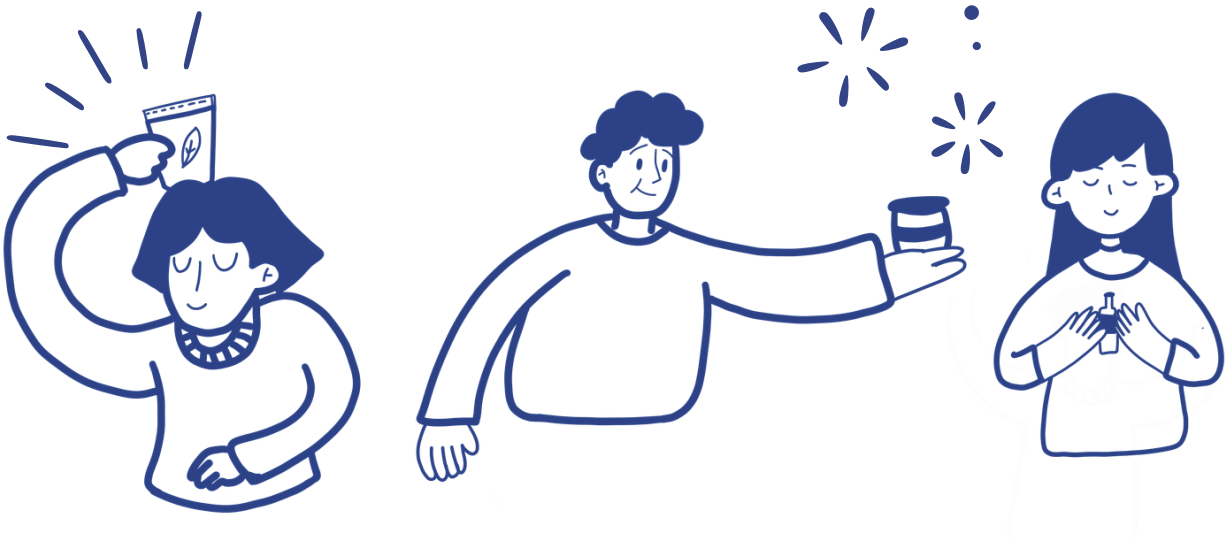


Project Aim

The initial brief for this project was to explore how rules and regulations are developed within the food packaging domain and to identify the principles needed for creating more effective and balanced regulatory frameworks from multiple perspectives. The original question was: How can packaging regulations be redesigned to support clear communication that fosters sustainable business practices and informed consumer decision-making? Given the complexity of policy implementation (Alum et al., 2026) and the limited time frame, the focus shifted towards reframing the problem from a startup perspective.

Food startups were selected because many are mission-driven to create healthy and sustainable products that contribute to a better food system but often face the greatest challenges in navigating the food labeling regulatory framework. Therefore, this project centers on how regulations impact startups and how they can be better supported.

Research Questions



How can food startups be supported to design packaging that communicates clearly and enables consumers to make informed food choices?

To answer that question, these questions were first answered:
What is the current landscape of EU food labeling law?

What challenges regarding regulatory compliance do startups face in the packaging design process?

Project Approach

This project uses the Frame Innovation method by Kees Dorst to help dissect the food regulation domain and find new approaches to navigating the regulatory system. Given that the brief was initially very open-ended, the methodology is structured to move from learning the current landscape, to understanding stakeholder perspectives, and finally to creating future-oriented opportunities. An overview of the design process is laid out in Figure 2.

Why Frame Innovation?

Frame Innovation is suited to address problems that are "open, complex, dynamic, and networked" (Dorst, 2015). This project addresses a problem that is:

Open: The problem space around food regulation is broad and difficult to bound. Even when focused on food startups, the scope is still unclear as the overall goal of supporting healthier and more informed consumer decisions extends beyond startups. The issue spans multiple levels of law in the EU, national, and municipal. All this makes it difficult to separate the core problem of helping startups navigate regulations from its wider context in consumer behavior and policy.

Complex: The problem involves multiple stakeholders with different goals and perspectives. Food packaging also serves competing functions in informing, educating, and marketing, creating tensions in how it's designed. Policy decisions cause cascading effects to businesses and consumers. Because these aspects are interconnected, breaking the problem into smaller parts risks missing key relationships.

Dynamic: The regulatory framework is uncertain and ever-changing while consumer priorities shift such as increasing focus on health and sustainability.

Networked: Actions in one domain can cause consequences in another. The food packaging system is shaped by technological, social, and regulatory developments. For example, how will AI use in packaging designs and marketing claims affect consumer understanding and potential need for future regulations?

Report Structure

This report follows the steps of Frame Innovation. Chapter 2 explores the first four steps of Frame Innovation to develop a deeper understanding of the problem situation. Chapter 3 synthesizes these findings into themes and frames, reframing the problem in new ways for future opportunities. Lastly, Chapter 4 explores future opportunities and potential directions for transformation that emerge from these new frames.

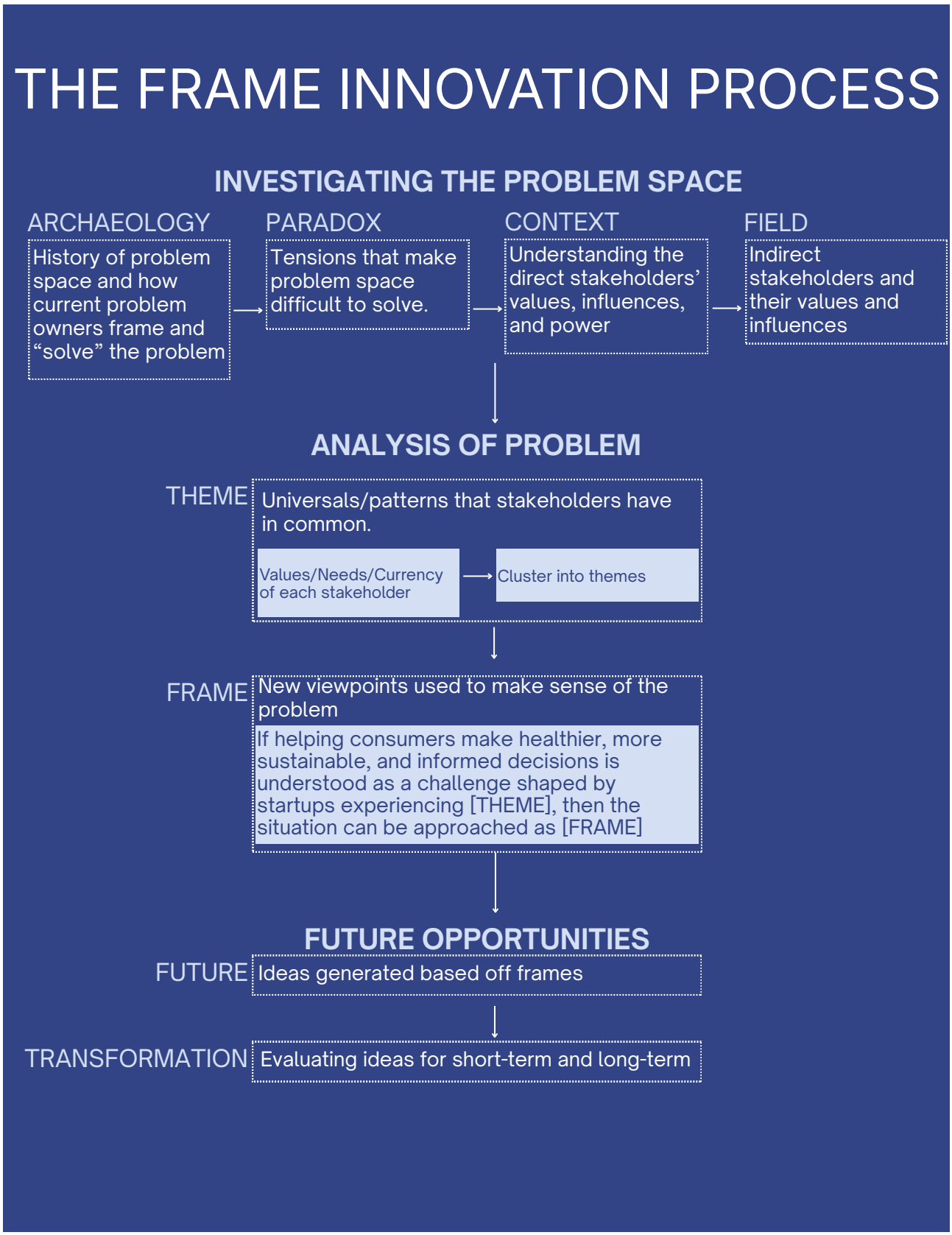


Figure 2: Frame Innovation method steps

Research Methods

Desk Research

To understand the current state of the food labeling domain, desk research was conducted using legislation and policy documents, and secondary sources such as articles and media. Literature research drew on peer-reviewed journals across multiple disciplines, including consumer behavior, food systems, legal design, and food law, to develop a multidisciplinary understanding of the problem.

Qualitative Research (Interviews)

Throughout the project, semi-structured interviews were conducted with industry stakeholders including food startups and other relevant professionals. These interviews helped identify challenges faced by food startups and gather perspectives from initiatives addressing the issue. Interview guides (Appendix A) were used to address the main topics while allowing flexibility in discussion. I also attended the Future of Food Innovation panel which brought together 6 industry experts in the EU regulatory and startup space. Insights and quotes from these interviews are integrated throughout the report where relevant.

Table 1: Expert interviews

Position	Expertise
Consultant	Legal consultant in the field of sustainability
Project Manager	Manages food incubator program to help food entrepreneurs through education, coaching, and networking
Food Startup 1	Netherlands-based food founder
Food Startup 2	Netherlands-based food founder



Future of Food Innovation panel (photo by A. Strolenberg via LinkedIn)

Frame Creation Session

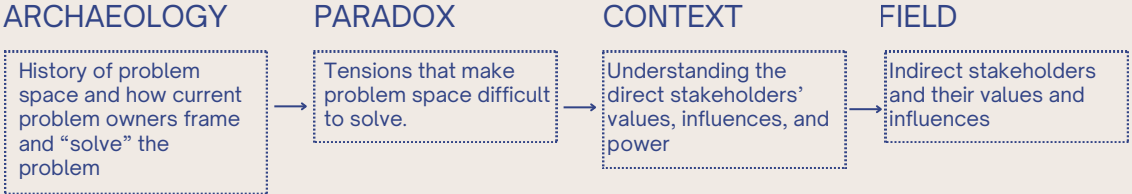
During the *Frame* phase, a frame creation workshop was conducted to generate new frames and identify opportunity areas. While the themes used during this workshop were not the final themes adopted in this project, the session produced valuable insights and several frames and ideas were explored further.



2

Investigating the Problem Space

This chapter introduces the context of the project including the problem, key stakeholders, and overall approach.





Archaeology

Investigating the history of the problem space

ARCHAEOLOGY

The first step of Frame Innovation is *Archaeology*, investigating the apparent problem. This section begins with an overview of the current food labeling regulations and explains why and how the current regulatory framework came to be. It then examines how the problem owners currently frame and address the issue. By understanding what has already been attempted, repeat solutions are avoided later down the line. Finally, the section outlines the current challenges with the regulatory framework based on the research.

The Current Regulatory Landscape of Food Labeling

The EU food law aims to protect the health and well-being of citizens while ensuring full market access and freedom of choice between products. Today's regulations have emerged in response to events that exposed gaps in consumer protection. The General Food Law was enacted following a series of food safety incidents in the 1990s, which revealed the need for a unified legislative framework (European Commission, n.d.). More recent regulatory developments such as the Farm-to-Fork strategy have been driven by public health concerns, with 51% of the EU population being overweight in 2022. Front-of-pack (FOP) labeling's primary objectives are to equip consumers with at-a-glance nutritional information to facilitate healthier choices and to incentivize food business operators to reformulate their products (European Union, n.d.-c). Table 2 shows an overview of the main regulations relevant to food labeling. Some of these are for mandatory labeling information, while

Table 2: Food labeling regulation overview

Legislation	Description	Regulates
General Food Law Regulation (178/2002)	Establishes the overarching framework that member states develop food safety legislation	-Prohibits fraudulent, deceptive, or misleading practices -Affirms that businesses bear responsibility for the safety of the products they bring to market
Food Information to Consumers (FIC) Regulation (1169/2011)	Governs how food information is communicated to consumers and establishes the general principles and requirements for food labeling	-Prohibits any presentation of description, appearance, or pictorial representation that could mislead consumers regarding the nature, composition, origin, or properties of a product -Specifies legibility standards, including minimum font size and requirements for sufficient contrast between text and background -Lists mandatory declarations including name, ingredients, allergen, net quality, storage instructions, expiration date, nutritional information, country of origin
Nutrition and Health Claims Regulation (NHCR) (1924/2006)	Governs voluntary claims made by food business operators seeking to highlight the beneficial properties of their products	-Nutrition claims, such as "low fat" or "high fibre" -Health claims, such as statements linking specific nutrients to physiological functions
Unfair Commercial Practices Directive (UCPD) (2005/29/EC)	Targets broader deceptive commercial conduct and aims to protect consumers and foster consumer confidence	-Considered unfair if it causes the "average consumer" to make a purchase they would not otherwise have made, whether through misleading action, misleading omission, or aggressive practices

others are related to the adherence of voluntary information. All legislation can be found on EUR-Lex, the official database for all EU legal documents.

Other Regulations

There are also a number of more specific and niche cases within other directives and regulations, such as Directive 2009/34 on the use of the e-mark, Regulation 2018/848 on organic labeling, Regulation 432/2012 on permitted health claims, and Regulation 828/2014 on informing consumers about the presence of gluten.

Absent from Regulatory Framework

Absent from the regulatory framework are regulations concerning sensory claims such as "tasty," or "creamy," as well as visual imagery, and color. There is also a lack of rules on nutrient profiles, the use of nutrition and health claims, even for products that are high in fat, sugar, and/or salt, which can lead to a halo effect (European Court of Auditors, 2024). While regulations control nutrition and health claims, these less regulated elements can still influence consumer perceptions, creating opportunities for marketing practices that shape expectations without making explicit regulated claims.



Figure 3: Examples of unregulated/undefined claims

The Future of Regulatory Framework

There is also uncertainty surrounding upcoming legislation. For example, the Green Claims Directive, which will require companies to substantiate green claims, has been under discussion for over three years, while the Sustainable EU Food System Initiative was recently abandoned (European Parliament, 2026). Initiatives in the Farm-to-Fork strategy regarding nutrient profiles and FOP labeling have been "pending" for over four years and are in constant limbo (Rossi & Šajn, 2024). Lastly, as the EU introduces Omnibus packages simplifying rules on a growing number of topics in an attempt to become more competitive (Gros et al., 2025), there is rising uncertainty over what is changing and businesses are hesitant to invest in green transitions (Guillot, 2026). As a result, a growing body of legal practitioners and consultants are specializing in helping businesses navigate current regulations while also preparing for future compliance.

Member State Regulations

Finally, while EU regulations establish a common baseline, each member state may enact additional national legislation. For example, in the Netherlands, the Warenwet (Commodities Act), and specifically the Food Information Decree, has additional food information requirements (Netherlands Enterprise Agency RVO, n.d.).

Food Policy at the Municipal Level

For policy outside the EU and Member state level, municipalities develop their own initiatives beyond legislation that can be more context-specific and co-created with citizens and local businesses. These policies aren't typically regulation-driven but more so initiatives related to educating citizens, such as awareness-raising campaigns about food packaging labels and their meaning. The city of Amsterdam collaborates with knowledge institutions, governments, farmers, and businesses to create policy through education and financial support. The municipality has financially backed Voedselcirkel Amsterdam-Noord, an initiative that rescues food surpluses and redistributes them to local organizations, reducing food waste, combating poverty and loneliness, and strengthening social connections in the city.



Who Gets a Say in the Making of Food Law?

When new legislation gets drafted, stakeholders contribute at varying levels of engagement. Figure 4 provides a high level of how each body informs one another.

At the highest level, the European Commission holds the exclusive right to initiate legislation and set the agenda. The European Parliament and the Council of the EU act as co-legislators by reviewing the Commission's proposal, proposing amendments, and negotiating a final text. The Standing Committee on Plants, Animals, Food and Feed (SCoPAFF), consisting of representatives of all Member States, delivers opinions that inform the Commission. The European Economic and Social Committee (EESC) represents employers, workers and civil society organizations through interest groups, and opinions are addressed to the 3 legislative institutions. The Court of Auditors evaluates whether food-related policy is delivering results (Van der Meulen & Wernaart, 2020).

At the scientific level, various bodies such as the European Food Safety Authority (EFSA), the Joint Research Centre (JRC), and the Scientific Advice Mechanism (SAM) perform risk analysis and provide scientific advice to EU legislators.

At the level of civil society and industry, influence is more diffused. Citizens and NGOs can, through the European Citizens' Initiative, initiate legislative action if they gather enough support. Companies and trade associations influence decision-making via lobbying groups. The influence of lobbying is highlighted in the case study about FIC. Smaller initiatives like the EU Code of Conduct on Responsible Food Business and Marketing Practices target SME involvement by promoting the exchange of good practices and facilitating partnerships.

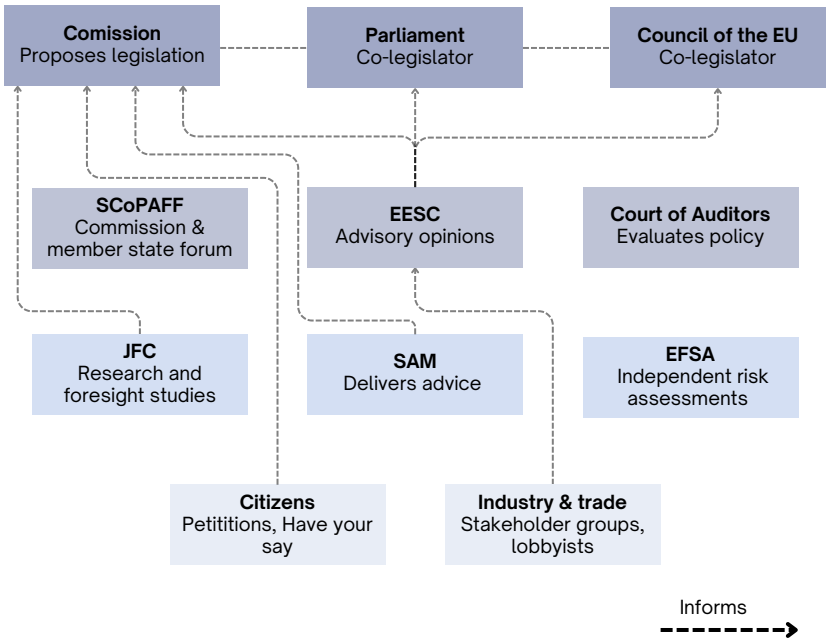


Figure 4: Stakeholders input relationship



The Influence of Lobbying- The Case of Food Information to Consumers

Lobbying has had a large impact on food labeling policy for both industry and consumer groups. In the case of the Food Information to Consumers Regulation (1169/2011), lobbying by the European Consumers' Organisation and the WHO Europe, motivated by increasing obesity rates, led the Commission to draft a consumer-friendly proposal that included mandatory nutrient labeling. When the legislation reached the Parliament, food industry lobbyists reframed mandatory traffic-light labeling as government overreach and invested over €1 billion to block it (Kurzer & Cooper, 2012). During the rapporteur stage, roughly 70% of those consulted represented the food industry, compared to 15% representing public interest groups. The food industry succeeded in blocking mandatory color-coded labels. While the food industry outnumbered consumer groups, the final regulation was strengthened in several areas, such as stricter country-of-origin rules for meat, mandatory labeling for imitation ingredients, and warnings for products with significant added water (Hoff et al., 2015). While the lobbying landscape is uneven in resources, consumer groups have still made impactful changes to regulation.

Challenges with Current Regulatory Framework

Understanding the challenges that different stakeholders experience within the current regulatory framework is important to see where friction in the current system lies. Many of these challenges were identified during desk research or interviews with stakeholders surrounding startups.

Deceptive Practices Persist

One of the main goals of food labeling regulations is to prevent misleading packaging so consumers can make informed purchasing decisions. Despite these efforts, deceptive packaging practices continue to persist in various forms, including exaggerated product imagery that suggests greater quantity or quality, depictions of ingredients that are barely present, or copycat packaging that imitates name brands. Another common tactic involves the use of unregulated terms such as “natural” or “healthy,” which often lack clear verification standards (Schifferstein et al., 2021). Similarly, greenwashing exploits the credibility of sustainable products by using nature-related language, green colors, and visuals associated with organic packaging to suggest environmental benefits (Guyader et al., 2017; Nugraha et al., 2024; Wagner, 2015).

There are various reasons why companies choose to intentionally mislead or deceive consumers:

- *Economic incentives*: Companies may market lower-quality as premium products to reduce costs (Jurica et al., 2021).
- *Limited consumer knowledge*: Consumers lack the knowledge to assess whether sustainability and health claims are accurate or meaningful (Nugraha, 2024).
- *Regulatory gaps*: Current laws and regulations concern verbal claims while being less developed in areas such as visuals and vague claims (Schifferstein et al., 2021).
- *The “average consumer”*: Legal frameworks often assume that consumers read and understand ingredient lists. However, this conflicts with actual consumer behavior (Jager, 2025), potentially providing companies with greater protection against litigation.
- *Little consumer response*: Deceptive packaging can lead to dissonance but consumers would rather switch brands or make informal complaints rather than pursue legal action (Wilkins et al., 2016). Consumers also expect public authorities or consumer organizations to enforce their rights.

Complexity in the Regulatory Framework for Businesses

Businesses have pointed out that food regulation is often perceived as complex and difficult to navigate. A study from New Zealand and Australia with food businesses, government agencies, and public health organizations highlights that requirements are spread across multiple pieces of legislation at different levels, making it challenging for businesses to find and interpret relevant legislation (mpconsulting, 2021). The structure of regulatory documents, along with limited guidance, can lead to inconsistent interpretations and uncertainty. There is also complexity in the number

of regulatory bodies, causing businesses to be unsure of where to find reliable advice or which authority represents the "source of truth." Delays in policy updates also cause ambiguity and increase the risk of non-compliance. When policy requires a labeling change, they are costly, with long lead times adding pressure particularly for SME's. While this study was done in Australia, these pain points are similar to those faced by EU businesses. Similar findings in EU-based studies (van der Meulen & Bremmers, 2007; EIT Food, 2022) show that companies find food legislation incomprehensible and require additional interpretative documents to understand legislation. Companies suggest requiring clear guidelines or checklists to support businesses in navigating regulatory requirements effectively.

Uncertainty About the Future

As discussed in the overview of the current regulatory framework, there is uncertainty surrounding upcoming legislation. While the EU is focused on reducing regulatory burden, the transition itself has created new complexity. Legal professionals are receiving requests from companies to understand the implications of the Omnibus package as well as questions surrounding legislation that may or may not be implemented. As one legal consultant interviewed explained,

> What I do on a daily basis is just creating awareness of what is actually the legal framework that applies."

Although simplification efforts are intended to reduce costs for businesses, legal and consultancy fees is overlooked.
As Rasche (2026) argues, "the biggest cost may be the most difficult to quantify: eroded regulatory predictability and declining trust in EU lawmaking." For businesses trying to make long-term decisions about product and packaging, uncertainty about future regulations can be just as burdensome as the regulations themselves.

The "Average Consumer" in Law vs Real Life

In the context of EU food law, the "average consumer" is reasonably well-informed and reasonably observant and circumspect, taking into account social, cultural and linguistic factors. There is a legal assumption that consumers read the list of ingredients when purchasing food products and this legal standard aims to guide legal judgment (de Jager & Dijkstra, 2025). However, this assumption does not fully reflect real-world behavior where decisions are often made quickly and with limited attention (Gokani, 2024). In stores, consumers interact with packaging in a selective and time-constrained manner. Packaging serves both as a branding and a communication tool where visual hierarchy influences what information is noticed (Rundh, 2016). Dominant elements such as brand name, imagery, and front-of-pack claims are processed first, while more detailed information like nutritional tables or ingredient lists is often overlooked (Silayoi & Speece, 2004). Regulated information tends to have limited impact during in-store decision-making.

Consumer perception is also shaped by cognitive biases and heuristic thinking. Marketing cues can trigger intuitive (System 1) responses that override more deliberate, health-oriented considerations (System 2). Even when information is legally accurate, the way it is presented can lead to misunderstanding. Subtle differences in wording, visual style, or implied meaning can significantly influence how a product is perceived, contributing to confusion or misinterpretation (Schifferstein et al., 2021).

Research also shows that while consumers value the information on packaging, they often struggle to interpret it. They may find it difficult to understand mandatory label information and show skepticism about whether products are accurately represented. Regulatory frameworks such as the NHCR allow flexibility in how claims are phrased, allowing marketers to translate scientific information into more accessible language (Kelly et al., 2024). However, it's unclear whether consumers can distinguish between different types of claims or use them in decision- making. Instead, personal relevance and perceived benefits tend to be stronger drivers of engagement.

There is a disconnect between the legal definition of the "average consumer" and actual consumer behavior. While regulation assumes rational decision-making, consumers rely heavily on simplified cues and heuristics.

Barriers for Startups

Food startups play an important role in creating a healthier and more sustainable food system. Many are value-driven, develop better-for-you products, and have sustainability-focused missions. They

also contribute largely to market growth and have the potential to drive industry change through new products, business models, and ways of working (FoodValley, 2023). However, startups operate with considerably less power and fewer resources than large food manufacturers. Established companies can influence policy through lobbying and often have dedicated legal, regulatory, and marketing teams. In contrast, startups rarely have the budget to hire multiple consultants, legal experts, or design agencies, making it more difficult for them to navigate complex regulations and develop compliant packaging. When wanting to express claims or show third-party certifications such as certified organic, vegan, or planet scores, those can take lots of time and budget. One startup mentioned that a large part of the process feels like "winging it" through much of the development process due to the overwhelming nature of starting up.

Examples of startups or now scale-ups that were once startups



GOODOO is a plant-based ice cream that uses cashew waste streams from Johnny Cashew and banana waste streams from The Banana Factory. Its ice cream has no added sugar or additives.



Favamole is a fava bean dip working with Dutch organic regenerative farmers to create a short supply chain without air miles. It has ~5g of protein and fiber per 100g.



Holie's launched in 2018 to be the healthier, 0% added sugar alternative to breakfast cereals. They have since scaled up in volume and product category to be the second-largest breakfast brand in the Netherlands.

How the Problem is Currently Framed

The challenge of protecting public health and maintaining consumer confidence has largely been framed as a regulatory issue: if stricter rules are implemented, businesses will produce healthier products and avoid misleading consumers. While this framing has strengthened consumer protection, it has also contributed to the regulatory challenges outlined earlier. As a result, the problem is layered. At its core, it is about public health and enabling consumers to make informed choices. However, pursuing these objectives through increasingly complex regulation has created a secondary challenge of disproportionate burden on startups seeking to bring healthier products to supermarket shelves.

Previous Attempts to Address the Problem

To improve public health and consumer wellbeing, the Commission has proposed new health-focused initiatives. At the same time, it has sought to address concerns raised by businesses regarding regulatory complexity.

Harmonized FOP Labeling Attempts

The Commission has proposed a harmonized FOP labeling system to improve consumer understanding and support healthier food choices. However, progress has been delayed by political disagreement and lobbying pressure. Reaching consensus is challenging with 27 member states, each with diverse cultures and national preferences. The Commission has also raised concerns over labeling schemes not being easy to understand or not showing nutritional information.

Reducing Regulatory Burden

More recent initiatives have focused on simplifying regulation through Omnibus packages aimed at reducing administrative burden and eliminating regulatory overlap. However, critics argue that framing simplification primarily as efficiency risks weakening consumer protections. In practice, simplified legislation can still require significant legal interpretation, requiring businesses to depend on external legal expertise (Guillot et al., 2026).

SME Test

The Commission introduced the SME Test to assess the impact of proposed legislation on SME's early in the policymaking process. In practice, the test is not consistently applied. BusinessEurope (2024) identified shortcomings in data quality, consultation timing, and impact assessments. SME considerations are often superficial and have limited influence on final policy decisions.

Other Recommendations

Researchers and policy advisors have proposed different approaches to improving the regulatory landscape. Regulations could better reflect how consumers process information by considering the influence of communication elements such as content, typography, size, imagery, and visual presentation on purchasing decisions (Schifferstein, 2021). Delhomme (2024) advocates for greater involvement of citizens and local communities in regulatory development to ensure that legislation reflects social and public values alongside economic interests. Finally, the World Economic Forum (2025) recommends moving towards adaptive, evidence-based regulatory systems. Rather than being static, regulations such as FOP labeling and nutrient thresholds could be updated in response to scientific evidence, changing consumption patterns, and product reformulation efforts.

How Is Legal Complexity Being Addressed by Others?

A review of existing online resources shows that current approaches to navigating food regulations primarily focus on legislative databases, guidance documents, and professional consultation services.

Legislative Search Help

Precon, a consultancy specializing in food safety and certification, provides a free online legislative search tool for Dutch and EU food regulations. The platform helps users identify which regulations apply to specific ingredients and food products. However, the information remains relatively high-level and lacks direct explanations of what the legislation. For example, it references Regulation 1924/2006 concerning nutrition and health claims, but does not explain the conditions under which claims such as “low fat” can legally be used. Any complex questions are better served by their consultancy services.

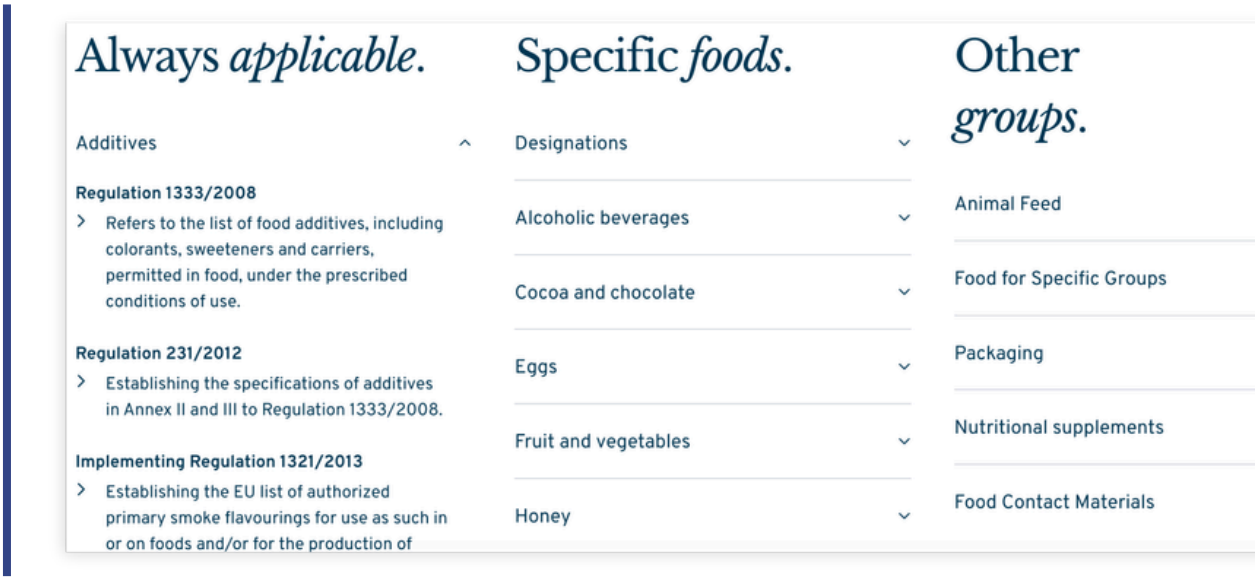


Figure 5: Precon’s legislative search help

Official EU Resources

The Directorate-General for Health and Food Safety provides resources that summarize permitted nutrition and health claims. It also maintains the Food Labeling Information System (FLIS), an interactive tool that helps businesses identify mandatory labeling requirements and relevant legal provisions based on specific product categories.

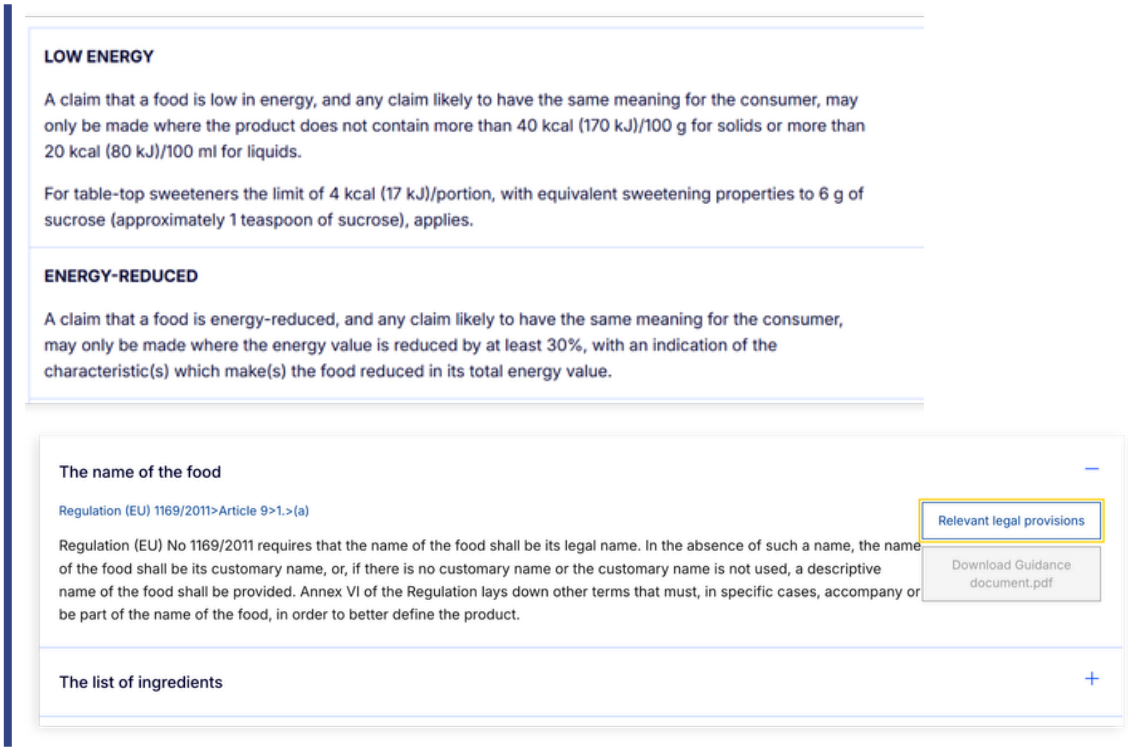


Figure 6: Nutrition claims list (top) and Food Labeling Information System (bottom)

Food Labeling Handbook

The NVWA provides an online Food Labeling Handbook outlining the legal obligations for pre-packaged food labels under both EU and Dutch regulations. The handbook includes explanations of mandatory labeling components and clarifications of legal requirements. However, the resource is over 100 pages long, text-heavy, and only available in Dutch.



Figure 7: Excerpt from NVWA's Food labelling handbook

Food Business Toolkit

The toolkit by Food Hub provides guidance for starting a food business, including sections on packaging design and legal requirements. The program manager of a food startup incubator identified the toolkit as a resource provided to participating startups. The toolkit uses a visual example to demonstrate required packaging information. The guide ultimately recommends seeking professional legal advice due to the complexity of regulatory changes, noting that legal consultation may still be less costly than redesigning non-compliant packaging after production.



Figure 8: Food Business Toolkit by Food Hub

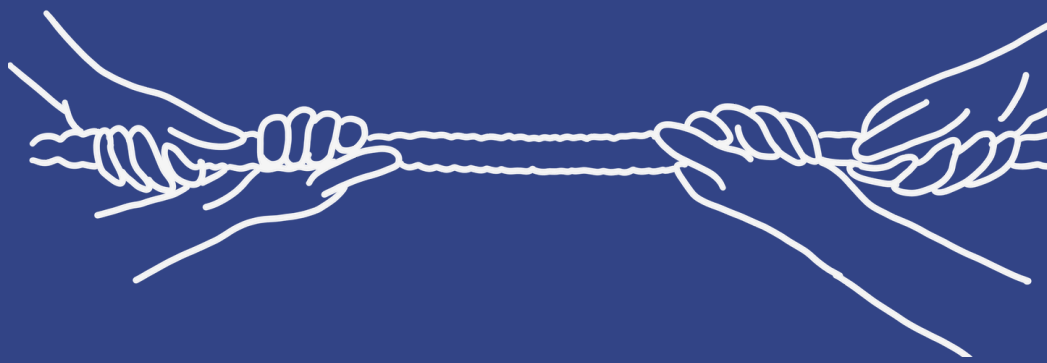
Existing resources for food labeling regulations vary in format and depth but typically fall into one of two categories: consolidating official text or explaining text. EU's official documents provide access to primary legislative text by product category. The NVWA's Food Labelling Handbook goes further in explaining the Dutch and EU requirements, but has some limitations at over 100 pages and available only in Dutch. Third-party resources like the Food Business Toolkit are broader in topics covered and also offer more visual explanations by using packaging examples to show required elements, but acknowledge their own limitations by directing founders to seek professional legal advice. An additional limitation is that many documents are static and not updated as regulations change. In terms of resources specific for new founders, the Food Business Toolkit was aimed at those new to the food industry, but the other resources were generally aimed at food business operators.

Conclusion of Archaeology

The *Archaeology* step set out to understand how the problem has been framed and previous attempts to resolve it. In summary, the EU has enacted regulations to protect consumers and support informed decision-making. These efforts have brought on some consumer protection, but they have also increased the complexity of the regulatory framework. In today's food landscape, misleading packaging still exists, unhealthy products continue to stock shelves, and navigating food labeling has become increasingly difficult, especially for food startups.

Through this research, startups became the main stakeholders to address. Although they were not the initial focus of the project, they appeared as the group most affected by the complexity of the current system while also having the most potential to create a healthier food system. This tension brings us to *Paradox*, the next step in Frame Innovation, which is to identify the contradictions within the system that any future intervention must navigate.





Paradox

Understanding the tensions

PARADOX

In *Paradox*, the underlying contradictions that make a problem difficult to resolve are uncovered. The food packaging regulatory landscape is shaped by situations where goals pull directly against one another. Identifying these tensions is important because interventions that ignore them risk producing the same challenges or creating new ones. They also help explain why previous recommendations have had limited impact.

The following paradoxes emerged through the research in *Archaeology*. Many began with the challenges uncovered in the current regulatory framework and were developed through a series of "because" statements until they reached a point of stalemate. They do not represent every paradox but highlight those most relevant to supporting food startups in navigating food labeling regulations.



“Simplification” Creates Complexity

Because the regulatory framework is too complex for businesses to navigate, the EU proposes simplification.

Because simplification changes existing rules, businesses must invest in understanding what the changes mean.

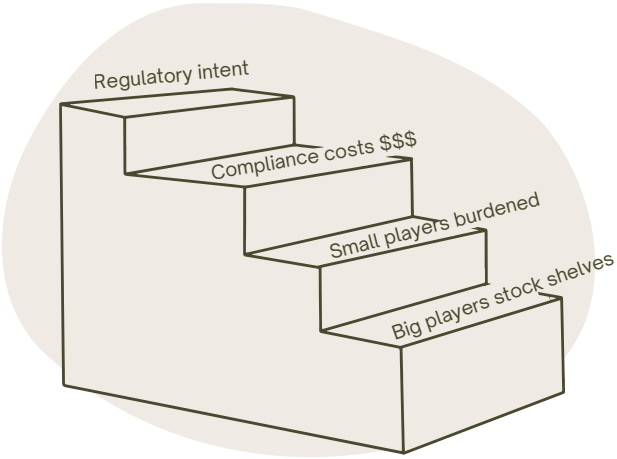


Information vs Marketing on Packaging

Because consumers need to make informed purchasing decisions, regulations require that food packaging have nutritional data, allergen declarations, ingredient lists, and other information.

Because food packaging must also function as a marketing tool, brands use the same packaging to attract attention and compete on shelf.

Because both functions use the same packaging, design decisions can undermine education.



Goal vs Reality of Regulatory Framework

Because the government wants to protect consumers from deceptive packaging and encourage healthier eating, they create regulations.

Because the government enacts regulations, businesses must interpret and comply with these regulations.

Because the rules are complex and fragmented, compliance costs money, time, and specialist expertise.

Because compliance costs money, time, and specialist expertise, small businesses are disproportionately burdened.

Because startups are disproportionately burdened, the food system becomes harder to change from within as big players that are best equipped to navigate the rules and stock the shelves.



Doing Good May Come at a Cost

Because food startups want to build healthier and more sustainable products, they want to communicate this clearly on their packaging.

Because they want to communicate this, they must navigate regulated nutrition claims, voluntary certifications, and legally ambiguous unregulated terms.

Because certifications and regulated claims require money, time, and specialist knowledge, startups may not afford to substantiate what they offer.

Because they may not afford to or know how to substantiate their claims, they either don't claim them or claim without certainty and risk non-compliance.



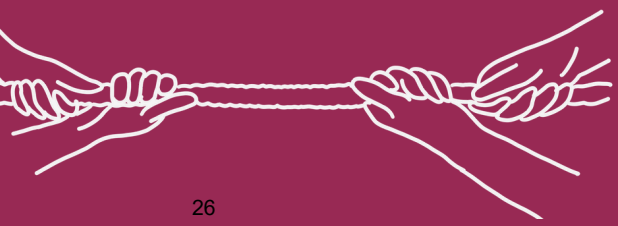
The "Average Consumer" vs the average consumer

Because the "average consumer" in the eyes of the law don't act like how consumers in supermarkets do, the regulations made for businesses do not reflect how consumers shop.

Because the regulations don't reflect how consumers shop, packaging can be legally compliant while still failing to support informed choices.

Conclusion of Paradox

These paradoxes illustrate why the challenges surrounding food labeling cannot be addressed through regulation alone. They will be revisited during *Transformation* to ensure the proposed opportunities don't reinforce but resolve or even break the tensions identified. For now, the paradoxes are set aside to examine the stakeholders involved in greater depth through *Context*. As Dorst (2015) explains, the way forward is not to choose one side of a paradox or settle for a compromise, but to reframe the problem itself, a step that will be explored later in *Frame*.





Context

Expanding on stakeholders

CONTEXT

The *Context* stage zooms in on the core stakeholders. By examining how stakeholders interact and what they value, practices and scenarios that could become part of a meaningful intervention begin to emerge.

The primary stakeholder groups are authorities, businesses, and consumers, each consisting of multiple subgroups with distinct perspectives and responsibilities. This section explores their roles, the influences that shape their decisions, and the forms of "currency" they exchange. As startups are the “main stakeholders,” understanding them especially is the foundation for identifying where meaningful intervention is possible. To develop this understanding, desk research was complemented by interviews with stakeholders from the food startup ecosystem and insights gathered during the Future of Food Innovation panel featuring experts in food regulation, startup space, and the food industry.

Authorities

EU’s Governing Institutions aka “Brussels” (Commission, Parliament)

The role of the EU governing institutions and the process behind EU food law was covered in *Archaeology*. The original objective of food law was to create a level playing field that supported a well-functioning internal market. Today, this objective has expanded to include protecting consumers' life and health, enabling informed decision-making, and preventing misleading practices. To achieve this, the EU must develop a regulatory framework that functions across diverse member states, markets, cultures, and food systems. It also seeks to foster innovation and strengthen the competitiveness of the European food sector. As one panelist at the Future of Food Innovation event noted, "*Strategic autonomy* and *competitiveness* are brought up a lot in Brussels today."

Within the broader authority landscape are scientific and research bodies, most notably EFSA, which provides scientific evidence supporting food safety legislation. EFSA also performs scientific risk assessment for novel foods and passes the opinion to the Commission to decide whether to authorize the food for sale or mandate specific labeling.

Values

Innovation, political consensus, consumer protection, citizen health, fairness, efficiency, competitiveness, strategic autonomy

Influences

Officials and civil servants, lobbyists, scientific bodies, citizens, non-EU countries, public consultation

Currency

Enact legislation, allocate budget, influence member state policy



Local Municipality

Local municipalities value the health and well-being of their citizens, the growth of local businesses, and a thriving local economy. They also seek to ensure that citizens feel heard and represented through community engagement. Within the food system, municipalities can play a role in promoting healthier eating habits, supporting local food entrepreneurs by collaborating with knowledge institutions and financing initiatives, and educating citizens about nutrition and sustainable food choices.



Values

Foster local business, local community engagement, educating citizens, collaboration with institutions

Influences

Nation and EU bodies, citizens, local businesses

Currency

Finance initiatives, educate citizens through campaigns, enact policies, provide physical spaces

Businesses

Major Food Companies

Large food manufacturers typically have established processes, dedicated teams, and in-house expertise for packaging development and regulatory compliance. While they are generally well-equipped to navigate complex regulations, they still value regulatory stability, predictability, and minimizing unnecessary administrative burden or government oversight that could increase costs or limit flexibility.

Values

Business growth, regulatory stability, influence over policy, consumer loyalty, positive reputation, building brand equity

Influences

Consumer behavior and trends, other food companies, shareholders, retailers, regulations and policies

Currency

Lobbying power, industry network, shelf space, company resources



Food Startups

Food startups may be at different stages of their journey, from developing their first packaging concepts to preparing products for distribution through retailers. They often face uncertainty around regulatory requirements and must navigate packaging design and compliance with limited resources, expertise, and time. One startup, for example, was unsure whether it could use a particular claim because of the legal definition attached to the claim and the specific ingredient used in the product. When developing packaging, two startups mentioned looking to existing products on the market for guidance. However, this can be problematic, as packaging from other brands may not be fully compliant and the company may being okay accruing the fine. As a result, startups often rely on assumptions and informal sources of knowledge when making important packaging decisions.

Product Development Process

Food startups typically develop their product and packaging through self-learning and both personal and external networks. Founders build relationships through communities such as Kitchen Republic and KiCo, which are shared kitchen spaces that facilitate informal networking. When budgets allow, they hire consultants or agencies for specialized expertise. Packaging development is often iterative and informal, with founders describing they feel like they're "winging it."

Challenges

Startups face unique challenges in packaging development. Limited budgets make legal and design expertise difficult to access, causing some founders to navigate complex regulations independently.

> you have no financial means and you try to figure out everything yourself and you become really autodidactic" -Program manager

Each new product brings unique challenges, creating uncertainty around compliance definitions or determining whether nutrition and health claims are permitted. They also find the access to information difficult.

> there's no [...] user-friendly [...] like the website, where to find information, and it's like, it gets confusing quite quick" -Food startup

Compared with larger food companies, startups also have less negotiating power with retailers and fewer professional networks. While branding and marketing are often viewed as creative and exciting, regulations are frequently perceived as technical, positioning compliance as an obstacle. Lastly, many starting founders are juggling their business with a full-time job until their company picks up.

> It's like most of like food entrepreneurs, they have a second job [...] until it really picks up" -Food startup

Values

Opportunity for growth, networking with experts, knowledge exchange, collaboration, community of entrepreneurs, sustainable and healthy food system

Influences

Consumer behavior and trends, other food companies, incubators, investors, retailers, regulations and policies

Currency

Innovation, IP, niche community and following



Consumers

Overall Trends and Habits

This section examines consumer habits and preferences using findings from the EIT Food's Consumer Observatory reports, which provide insights into consumer attitudes and behaviors across the EU (EIT Food, 2024). As a general trend, consumers increasingly want products that support healthier lifestyles without sacrificing taste. Rather than seeking diet products, many prefer foods that fit into a balanced lifestyle and allow for occasional indulgence. "Naturalness" is strongly associated with healthiness, and consumers favor products made from recognizable ingredients and those that replace refined sugar. Familiar benefits such as added protein, whole grains, vitamins, or probiotics are often viewed positively because consumers already understand their perceived health benefits.

Trust plays an important role in how consumers perceive food packaging claims. While consumers value health information, they are sceptical of products that appear "too good to be true" or make broad promises about improving health. Transparency strengthens credibility through detailed ingredient lists, explanations of health benefits, and third-party certifications or endorsements. Low-priced products making bold health claims may also be viewed with suspicion since consumers question whether the claims are genuine.

Consumers are also heavily influenced by the language and framing used on packaging. Claims such as organic, vegan, and free-from often create a "health halo," leading consumers to perceive products as healthier regardless of their nutritional quality. In contrast, messaging centred on being low-fat, low-calorie, or guilt-free can reduce product appeal or even be viewed as manipulative, especially by consumers who reject diet culture. Positive messaging that emphasizes nourishment, wellbeing, and enjoyment tends to resonate more broadly.

Younger Consumers (18-34)

Health is the primary driver of food choices for younger consumers and many express a desire to adopt healthier diets (EIT, 2026). Compared to older consumers, they are more open to changing their eating habits and are interested in products that align with values such as sustainability, transparency, and innovation. While they desire to eat healthier, a gap still exists between intention and behavior, as less healthy choices are often made.

Transparency is also important to younger consumers. They want to understand how their food is produced and put greater trust in products with clear ingredient lists, recognizable certifications, and information displayed directly on packaging rather than QR codes. Younger consumers are also more likely to purchase organic, locally sourced, or sustainably produced foods. Social media has contributed to growing interest in concepts such as "clean labels" and "clean eating." Functional foods that support mental health, cognitive performance, and stress reduction are also becoming more desired if their benefits are supported by scientific evidence. Finally, younger consumers are receptive to digital integration within food, with more than 50% of Millennials and Generation Z being comfortable with AI-personalized nutrition recommendations.

Consumers aged 35–55 generally have behaviors that fall between those of younger and older age groups and are therefore not discussed separately.

Values

Sense of control over food, desire to eat healthy, stronger connection to food, affordable food, sustainability, transparency, personalized nutrition, information

Influences

Social media, supermarket shelves, advertising, AI

Currency

Buying power, reviews, brand loyalty, word of mouth, trend setting, organic social media posts



Older Consumers (55+)

Europe's population is ageing, causing a shift in food demand. Older consumers tend to be more satisfied with their current diets than younger consumers. Because dissatisfaction is often a key driver of behavior change, older consumers are less likely to alter their eating habits. As a result, older consumers may be more receptive to communication that emphasizes maintaining health, supporting quality of life, and preventing age-related diseases. Older consumers also value healthier options, convenience, smaller package sizes, and strong value for money. Overall, they tend to favour more traditional dietary patterns and respond well to practical, evidence-based health messaging (EIT, 2025).

Values

Healthy eating, satisfaction with diet, sense of control over food, affordable options, convenience, traditions

Influences

Supermarket shelves, doctor, advertising, word-of-mouth

Currency

Buying power, reviews, brand loyalty, word of mouth



Interactions Between Stakeholders

In addition to concentrating on each stakeholder individually, it is important to understand how they interact with each other. As discussed earlier, the food labeling landscape is an "open, complex, dynamic, and networked." Figure 9 maps the general interactions between the three primary stakeholder groups. For large businesses, the diagram reflects a typical packaging development process. For food startups, most of these activities are carried out by the founders themselves, sometimes with support from external experts.

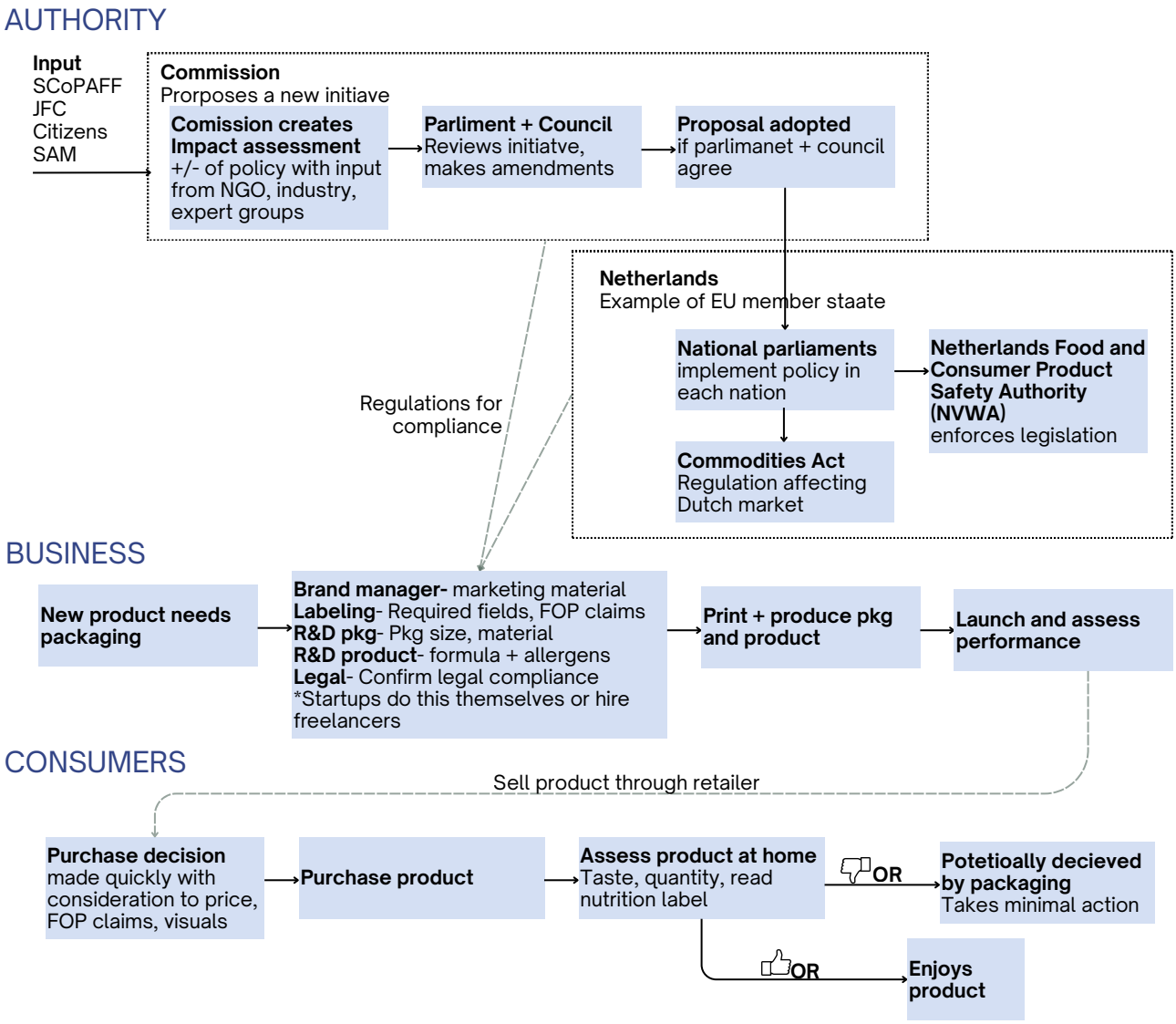


Figure 9: Each stakeholder's process interacting with packaging or labeling regulations.

Conclusion of Context

In this section, the values, goals, and challenges of the main stakeholder groups in the food packaging system were noted. Each group interacts with food regulations from different perspectives, with authorities seeking to protect public health and ensure fair markets, startups navigating regulatory complexity with limited resources, and consumers relying on packaging information to make purchasing decisions. This section identifies the motivations, influences, and constraints that shape stakeholder behavior.



Field

Zooming out to indrect stakeholders

FIELD

Field expands the scope beyond the core stakeholders to examine actors that are indirectly connected to the food regulation system. As Dorst (2015) describes, "we are jumping from the study of the behavior patterns of stakeholders into the realm of speculative thought, reflecting on what parties might be involved in the future and building up an image of how these parties understand their reality." This shift into speculative thinking creates opportunities to imagine new relationships through shared values.

Beyond the primary stakeholder groups of authorities, businesses, and consumers, *Field* considers organizations such as advocacy groups, support networks, food transition initiatives, and distributors. The analysis examines their values, needs, and forms of "currency" like in *Context*. These indirect stakeholders were grouped into four broad categories: **Business-Focused**, **Consumer-Focused**, **Distributors**, and **Food Transition Focused**. These stakeholders emerged through research in the *Archaeology* and *Context* stages, and others through interviews. Mapping these stakeholders and their values provides the foundation for the next stage, where shared values across both direct and indirect stakeholders are clustered to uncover themes that can inspire new frames. As Dorst puts it, "This jump into the world of speculative thought then allows us to ponder the possibilities that are sparked by the emergence of common themes."

Amongst the stakeholders in *Field*, a few were selected to highlight further because they share strong values with the core stakeholders and present promising opportunities for collaboration. This section begins to speculate on how these actors could take on expanded roles in a future food labeling ecosystem. These reflections are early explorations that will inform the theme and frame creation stages that follow.

Consumer Focused

Table 3: Consumer focused actors

Stakeholder	Role
Consumer groups	Consumer-focused organizations act as watchdogs, advocating for greater transparency, healthier food environments, fair pricing, and stronger consumer protection by influencing both policymakers and the food industry.
Media	Television shows and documentaries provide insights into the production of food and food system.
Influencers/Online platforms	Consumers are increasingly getting information on nutrition on online platforms such as Reddit as well as through fitness and health influencers.
AI chatbots	People are using AI chat bots as personal nutrition coaches and getting advice on what to eat.

Values

Health, knowledge and education, sustainability, transparency

Currency

Educate consumers on health and deceptive practices, lobby for consumer-focused policy, influence consumer eating habits

Business Focused

Table 4: Business focused actors

Stakeholder	Role
Business groups	Business industry groups, or trade associations, coordinate industry-wide activities such as lobbying and political action.
Commercial kitchen	Commercial kitchens are production facilities with some offering mentorship programs and events such as buyer introductions. The shared workspace lets founders meet other founders.
Legal/Food Consultants	Legal consultants provide companies with help on regulatory challenges such as verifying claims are compliant.
Designers	Freelance designers help brands design their packaging and branding.

Values

Business success, economic growth, strong network

Currency

Lobby or business-focused policy, support businesses with resources, expertise, network



Shared Kitchens

Shared kitchens' primary goal is providing HACCP-certified production facilities to food companies. They have evolved into startup support hubs with networking, mentorship, and business development opportunities.

Kitchen Republic offers a community membership that gives founders access to a network of 125 food entrepreneurs, industry workshops, and Meet the Buyer events even without renting kitchen space.

KiCo emphasizes collaboration by requiring members to produce high-quality and healthy products that make an "impact" and be open to collaborating with other members.

These examples show that shared kitchens function as communities.





Legal Consultants

Legal consultants provide one-off advice or act as long-term partners for food businesses throughout product development. Their support includes reviewing packaging, validating nutrition and health claims, and ensuring that sustainability messages comply with current regulations. For many startups, legal consultants provide expertise that is difficult to access internally.

Retailers/Distributors

Table 5: Retailers and distributors

Stakeholder	Role
Supermarkets	Supermarkets are where most consumers get their food. They can influence consumer purchasing decisions via shelf placement, pricing, and and private-label competition.
Cafes and restaurants	Cafés and restaurants provide an entry point for startups to introduce new products and build brand awarenes before expanding into retail. The most common products cafes buy are protein bars, chips, and sweet snacks positioned near point-of-purchase.
Health-focused	These retailers specialize in health, sustainability, and wellness.
Food banks	Food banks represent accessibility and equity in the food system. They highlight the challenge of ensuring healthier options may not be accessible to vulnerable populations.
Farmers/street market	Markets are often the first sales channel for early-stage food startups and allow founders to test products and talk directly with consumers.

Values

Consumers, taste, variety, health, business success, accesability

Power

Distribute product, shelf space, networks, consumer loyalty

Food Transition Focused

Table 6: Food transition focused actors

Stakeholder	Role
Incubators and accelerators	Incubators provide mentorship, education, industry connections, and access to investors and experts. They help founders navigate challenges related to product development, packaging, regulations, and bringing products to market.
Health/sustainability organizations	These organizations work to accelerate the transition toward healthier and more sustainable food systems by bringing together industry, researchers, governments, and consumers to promote innovation, share knowledge, and advocate for change across the food value chain.

Values

Health, sustainability, accessibility, start-up success, food transition, innovation

Power

Network and relationship with health orgs, policymakers, citizens

Conclusion of Field

There are many actors with similar interests and values that could support food startups. Consumer-focused organizations advocate for transparency, health, and sustainability, while business-focused organizations recognize the importance of supporting SMEs and startups. Distributors, especially health and sustainability-focused retailers and local food networks, also try to respond to consumer demand for healthier and more sustainable products.

There are opportunities for change that can extend beyond policymaking and could emerge through education, partnerships, distribution networks, and support systems surrounding startups. In particular, food transition focused groups like incubators seem like promoising partners in supporting food startups as they have the most aligned goals.

3

Analysis of Problem

This section maps the "universals," themes that are persistent in the problem situation as well as the frames for the problem situation. "A frame is a proposal through which, by applying a particular pattern of relationships, we can create a desired outcome." - Dorst (2015)

THEME

Universals/patterns that stakeholders have in common.

Values/Needs/Currency of each stakeholder → Cluster into themes

→

FRAME

New viewpoints used to make sense of the problem

If helping consumers make healthier, more sustainable, and informed decisions is understood as a challenge shaped by startups experiencing [THEME], then the situation can be approached as [FRAME]



Themes

Setting the “Universals”

THEME

Themes selection is an important step in the Frame Innovation process. *Themes* are the "universals" of the problem situation: the values, motivations, and experiences shared between stakeholders.

The challenge of theme creation is that themes should not be too literal or too closely aligned with existing problem space (Dorst, 2015). If they are too literal, they can generate frames in similar domains. Several iterations of theme creation were done to arrive at the 4 themes. In the first attempts, themes were generated directly from clustering key conclusions and insights gathered during research phase. These themes (such as regulatory complexity and startups as changemakers) were too literal and resulted in frames that remained too close to the original problem.

Theme Selection

To arrive at the final themes, the values, needs, and currency identified during *Field* and *Context* were written on individual sticky notes (Appendix B). These notes were then shuffled and regrouped independently of stakeholder categories. By removing stakeholder labels, patterns were found based on shared values and motivations. Because the research conducted during *Archaeology*, *Field*, and *Context* informed the identification of these values, the overall research insights were integrated into the themes.

Analysis of Themes

The themes were then analyzed through the lens of other domains. Exploring how similar themes appeared in different settings helped deepen their meaning and provided inspiration for later frame development.

When considered collectively, the four themes share a broader story about creating a healthier food system. They highlight the conditions needed for food startups to thrive, participate meaningfully in the system,and build trust with consumers.

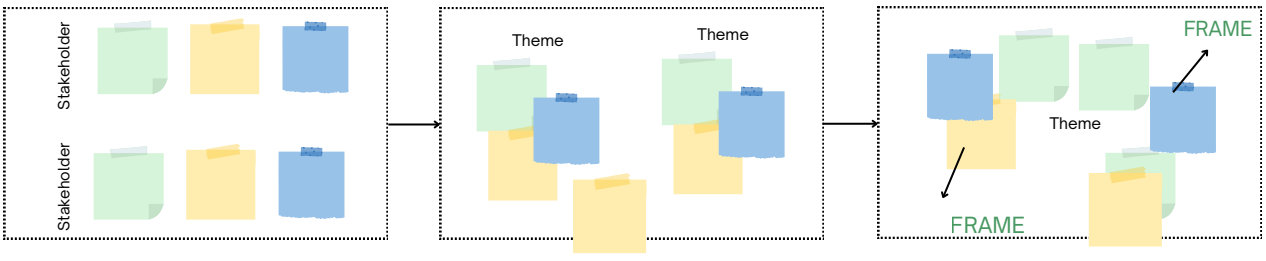


Figure 10: Theme creation process

Trust through Transparency

Values: Consumer trust, Mission alignment, Consumer loyalty, Political consensus, Transparency in what my food is, Supplier compliance, Positive reputation with consumers

In a domain where deception and cynicism is high, trust is essential to facilitate better relationships between stakeholders. Lack of trust is part of what makes the current situation so difficult as seen in the paradoxes. When consumers can't trust what's on a package, they become apathetic to packaging. When startups feel that the regulatory framework is not designed to support them, they lose trust. When regulators cannot trust that businesses will act in good faith, they integrate more regulations.

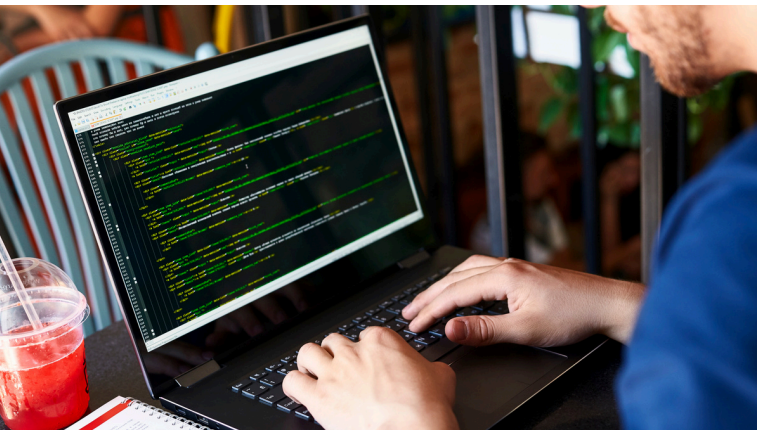
The way to earn trust is through transparency. Lack of transparency comes in lack of certainty in the future of the landscape. The EU has made efforts toward openness in its legislative processes, but for businesses and startups trying to plan ahead, the future of regulations still feels opaque. In branding, claims that blur the line between information and branding cause skepticism. Transparency is needed to build trust around each relationship.

How Trust through Transparency Currently Looks

Transparency in the food labeling system currently exists through publicly available regulations through EUR-Lex and guidance documents. In addition, brands show transparency in food through mandatory product information such as ingredient lists and nutrition labels, and third-party certification schemes that verify specific claims. Especially, some mission-driven brands are voluntarily increasing transparency by sharing more about their sourcing, production processes, and the reasoning behind their product and packaging decisions.

Trust through Transparency: Other Perspectives

How has trust been built in other domains? The following are examples of instances that reflect the theme of Trust in Transparency.



Open Source Projects

Open-source communities build trust by making their code publicly accessible. Because anyone can inspect and improve the system, transparency leads to accountability. Many projects publish documentation and design decisions that allow communities to challenge technical choices and participate in governance. This openness strengthens trust while also enabling collaboration and innovation by allowing people to build on and improve existing systems. Open-source also provides education opportunities for students and those learning to code.

Open Kitchens in Restaurants

Restaurants have open kitchens where customers can looks at how their food is prepared. Transparency in the cooking process shows cleanliness and confidence and reduces concern about food quality and safety.



Having a Seat in the System

Values: Opportunity for growth, Community of peers

The food system is largely shaped by institutional power with seats at the policy table, in supermarket shelves, and in industry groups. These seats were built for those with resources and relationships built over years. For food startups, navigating this system can be confusing having a clear way in. Having a seat at the table is partially about power in influencing policy but also about networks that open doors such as knowing who to reach out to for questions on compliance, having access to buyers, and belonging in a community of peers who share similar experiences. This theme explores how seats are historically reserved for incumbents and how we can open up spaces for people who traditionally don't have a seat in these spaces.

How Having a Seat in the System Currently Looks

As explored in *Field* and *Context*, various organizations have created spaces and support systems to foster community for food startups. Kitchen Republic functions primarily as a shared production workspace while also providing entrepreneurs with network opportunities. The startup interviewed during *Context* mentioned utilizing their personal connects but later finding network through Kitchen Republic. Similarly, Food Innovators supports entrepreneurs by providing access to funding, networks, and knowledge partners, alongside entrepreneurship programs and industry events. These organizations help startups navigate the food sector by creating opportunities for collaboration, learning, and professional support. They believe that startups are catalysts for building a more sustainable food system.

Having a Seat in the System: Other Perspectives

Women's and Marginalized Networks

Organizations supporting women in science, technology, e-sports, and chess emerged in response to exclusion from traditionally male-dominated spaces. Mentorship programs, conferences, women's leagues, and networking groups help participants gain visibility, career opportunities, and a stronger sense of belonging within their fields. By creating more accessible entry points and supportive communities, these initiatives enable participation in systems that were previously difficult to navigate.





Online Platforms Allowing Participation

Platforms such as YouTube and Etsy lowered barriers to entry by giving creators direct access to audiences without requiring approval from traditional gatekeepers such as publishers, broadcasters, or retailers. Participation became more accessible by allowing smaller creators and businesses to build a community and economic opportunities independently.

Navigating Complexity through Accessible Knowledge

Values: Education for consumers on food, Where does my food come from, Opportunity for growth

A common sentiment among businesses is that the regulatory system is difficult to navigate. Complexity exists in the legal language, knowing where to find relevant information, and understanding how the regulatory landscape may change in the future. A key reason the system feels so challenging is the inaccessibility of this knowledge. Knowledge within the food system is unevenly distributed. For food startups, regulatory knowledge exists across legislation, guidance documents, and consultancy services, but it often feels gatekept behind legal jargon, consultancy fees, and years of industry experience. Although efforts toward simplification exist, regulations still require translation into practical, actionable guidance. There is a practical difference between a legal document and what that means for a startup trying to determine whether they can legally describe their product as “low sugar.” Accessibility means making information available with awareness to language, structure, and context.

Consumers face a similar knowledge gap. Nutrition and packaging information are designed around the definition of an “average consumer” but many claims and technical terms are not understood in practice. Consumers may struggle to interpret whether products are healthy or sustainable for them. Improving accessibility is tied to the theme of trust through transparency. When information becomes understandable and meaningful, consumers are better able to make informed decisions and trust the products they purchase.

How Navigating Complexity through Accessible Knowledge Currently Looks

Navigating Complexity through Accessible Knowledge exists through publicly available guidance documents, regulatory databases, and organizations or businesses that help interpret the rules. Tools like FLIS make regulatory information more accessible while legal consultants provide expertise on complex subjects.

Navigating Complexity through Accessible Knowledge: Other Perspectives

Open Education Online

YouTube channels show that online platforms can make education of complex topics more accessible. Not only do they provide a space for creators to share content (Having a Seat in the System), they become spaces for learning. Khan Academy and Crash Course specifically increased access to education by making difficult academic subjects into free videos for non-experts. In addition to being free, content was explained in a simplified way and adapted to how people many people like to learn rather than traditional lecture-style communication.





Accessibility in Museums

Museums have adopted audio guides, simplified and multilingual wall text and tactile exhibitions to make art knowledge more accessible to broader audiences rather than only academic or elite groups. However, museums still face challenges in making knowledge approachable. Professionals may struggle to design inclusive experiences because they lack clarity on how to communicate with different audiences, what level of information to provide, or how to adapt content. As a result, some institutions avoid creating inclusive programs in fear of implementing them incorrectly. Also, many visitors still perceive museums as spaces for elites because exhibitions often assume prior knowledge.

There is also a conflict between aesthetics and accessibility in museum spaces. In some art museums, minimal labels are prioritized under the assumption that art should speak for itself. However, the limited accessible communication can create barriers for general audiences. True accessibility goes beyond meeting legal requirements and is designing experiences that consider diverse perspectives and levels of knowledge (Miralles, 2026).

Innovating for a Healthier System

Values: Innovation in food system transition, Develop healthy products, Convenience, Sustainability, Novelty

The underlying goal shared by most stakeholders is a system that is healthier, more sustainable, and more transparent than the current one. A healthier food system means products that provide nutrition, packaging that informs, businesses that are economically viable, and a planet that can sustain the way we produce and consume food.

Food startups play a critical role within this transition. They are often at the forefront of developing healthier and more sustainable products, with greater transparency, despite limited resources and financial risk. Supporting these startups is a catalyst for shifting what ends up on supermarket shelves and shapes consumer behavior.

The other 3 themes support this theme. When startups can confidently navigate regulations, participate in the industry, and build trust with consumers through transparency, they are better positioned to drive meaningful change within the food system.

How Innovating for a Healthier System Currently Looks

Innovating for a Healthier System currently takes place through a growing ecosystem of startups, government initiatives, support organizations, and incubator programs that aim to improve the food system through healthier, more sustainable, and more transparent products. Recognizing the potential of food startups, incubator and accelerator programs provide entrepreneurs with resources, mentorship, funding opportunities, and industry connections. These organizations view startups as important drivers of change within the food system and help lower some of the barriers to bringing innovative products to market.

> That's the main goal to speed up the food transition by speeding up those food startups to grow and to also to challenge the bigger ones in the ecosystem" - Food incubator program manager

Innovating for a Healthier System: Other Perspectives

Independent Book Stores

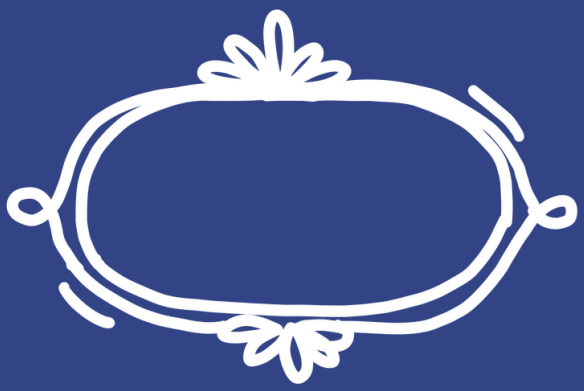
Independent bookstores have remained resilient despite competition from online retailers by positioning themselves as cultural and social spaces. Independent bookstores focus on "community, curation, and convening" (Raffaelli & Nobel, 2017). Rather than only selling bestselling titles, independent bookstores create personal relationships with customers by providing tailored recommendations and uplifting small authors. These bookstores are also community hubs by hosting lectures, book signings, game nights, and reading groups. They create spaces where people with shared interests can gather and participate. It is described as "socially connective retail," where well-being is fostered through cultural participation, social interaction, and a sense of belonging. Indie bookstores show that smaller players can thrive and foster community and encourage reading (O'Brien, 2016).



Conclusion of Themes

The themes were derived from the values and needs of stakeholders and represent the patterns that shape how startups experience and navigate food labeling regulations. Each theme was explored through other domains where similar tensions around trust, access, and knowledge have been addressed. This research deepened the understanding of themes while also beginning to show potential frame ideas. This section forms the foundation for the frames developed.





Frames

New ways of looking at the problem

FRAME

Reframing the Problem

Frames provide a new way of interpreting a problem situation that can lead to valuable solutions. They are typically formed as: "If the problem situation is approached as if it is..., then..." (Dorst, 2015). For this project, if helping consumers make healthier, more sustainable, and informed decisions is understood as a challenge shaped by startups experiencing [THEME], then the situation can be approached as [FRAME], leading to [OPPORTUNITY].

Based on *Archaeology*, the problem was initially framed as a regulatory issue by improving consumer decision-making through compliant packaging. This approach emphasizes regulation and enforcement. However, it creates a paradox by adding burdens on startups that are already working toward healthier, more sustainable, and transparent products.

How Frames were Created

Initial Frame Creation

To explore new frames, a frame creation session was conducted with four design students. Participants were briefly introduced to the context of the project, the focus on startups, and the framing method through a short example exercise. They then generated frames using metaphors based on personal experiences, working with post-its. Some of these frames were explored for the final frames but many ended up too close to the initial problem and solution space (Appendix C for frames).

One key learning from the session was that the themes used during the workshop may have been too literal, leading to a re-exploration of the themes. This aspect of the process is discussed further in the Reflection section. Another insight was that frames should be accessible and understandable to a diverse group of participants. Frames based on specific personal experiences can be difficult for others who don't share those experiences. For example, one participant had never moved to a new country and therefore didn't share ideas around the frame "Moving to a new country".



Figure 11: Frame creation brainstorming

Iterative Frame Creation Process

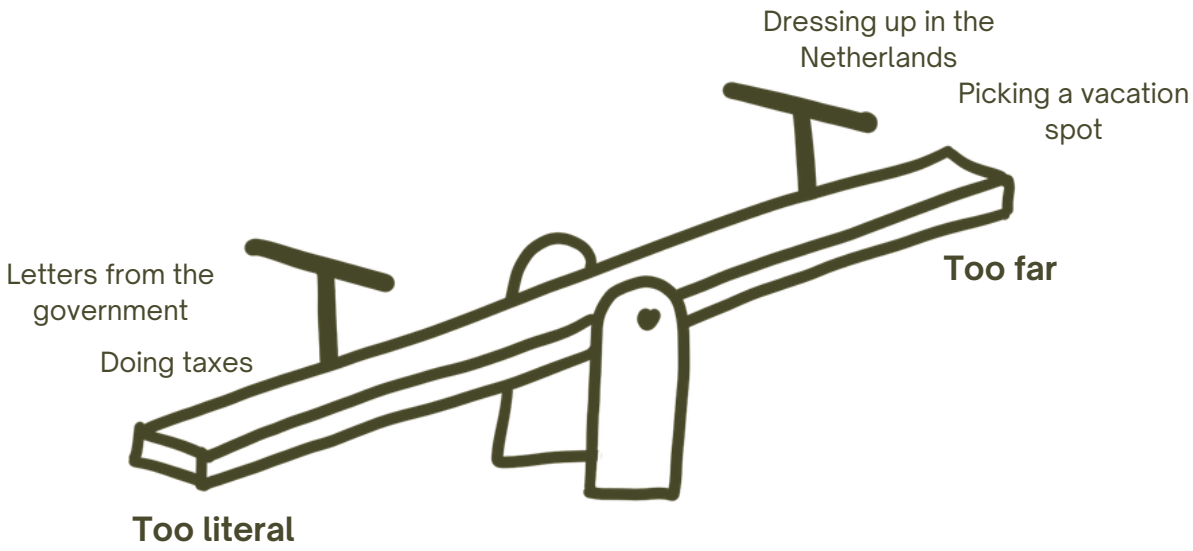
As with the themes, frame creation is an iterative process. Therefore, new themes and subsequently new frames were explored that fit the criteria mentioned in the following paragraph. With the 4 final themes, nomological networks were created in which the themes were surrounded by concepts and terms shown in earlier steps. Then, these terms were looked at laterally to emerge at new frames. *Frame* and *Theme* were a synergistic process as researching themes helped with frame creation by looking into other domains, as seen in the "Other Perspectives" section of *Theme*. Many frames were created during this process and there were some natural overlaps.

Therefore, some ideas were merged to create a combined frames. As Dorst mentioned, “if frames lead to action patterns that are close or matching, and to solution directions that overlap, they become more interesting as contributions to an overall solution. Then a dominant concept can emerge that kills many birds with one stone.”

How Frames to Explore were Selected

From the initial set of frames generated, six frames were selected to explore further. An exploration was a quick research into the frame as well as initial brainstorming on potential ideas. These frames were chosen based on their ability to generate new ideas and perspectives while remaining grounded enough to be explored through brainstorming concepts.

Selecting frames was a balancing act. Frames that were too close to the original problem were set aside because they were likely to produce familiar solutions. At the same time, frames could not be so abstract that they lost relevance to the problem situation. They were also conceptually understandable; a niche subject others knew little about would not be helpful for generating ideas.



Potential Frames

Accessibility in Museums

For museums, the barrier to accessibility comes when they are designed by experts for experts who have prior knowledge of the arts, creating a feeling that the space isn't meant for those without prior knowledge. A similar experience is felt in the food regulation space. Packaging also shares the tension between aesthetics and accessibility in the form of branding and information.





Libraries

Libraries function as third spaces where people can access knowledge, resources, and communities outside of home or work. Navigating food regulations could be supported through accessible, community-oriented spaces that help startups understand complexity, connect with others in the system, and gain the knowledge needed to innovate toward a healthier and more transparent food system.

Moving to a New Country

Moving to a new country requires navigating unfamiliar systems, language barriers, and administrative processes. People often rely on local guidance or mentors to find their way, similar to how startups seek support and networks.





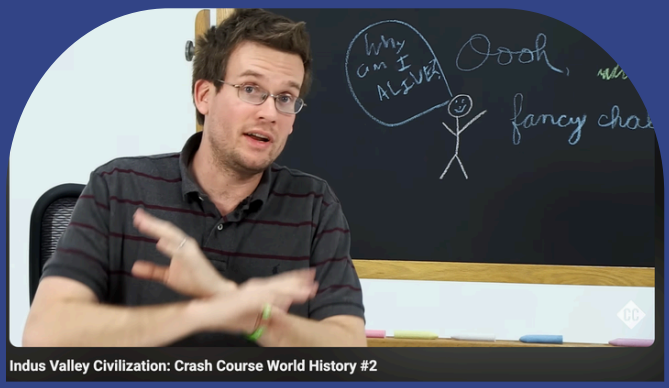
Learning to Cook

Learning to cook involves knowing what each ingredient does and why it belongs in the dish. This can be learned through cooking alongside someone and watching cooking shows or tutorials. In similar ways, businesses should understand what each component of the packaging serves. This can be learned through experts or looking at other packaging.

Open Source

Navigating legal regulations could function similarly to open-source communities, where brands are transparent about their packaging decisions, compliance processes, and lessons learned. By openly sharing knowledge and areas for improvement, companies can collaborate and help each other learn from existing practices to build a more accessible and transparent food system.





YouTube Videos

YouTube videos translate complex information into free, simplified, and engaging content for non-experts while also lowering barriers to participation. Similarly, startups navigating food regulations could benefit from tools that translate legal complexity into digestible, practical guidance, making regulatory knowledge more accessible without relying entirely on consultants or traditional gatekeepers.

How Final Frames were Selected

From the six frames developed, three were selected (Museums, Libraries, Open Source) for further exploration because they:

- Resonated personally based on knowledge/experience, making *Future* brainstorming more natural
- Had a balance between being connected to the problem situation while remaining distant enough to generate new perspectives
- Showed promising early directions for creating opportunities

These three frames are explored in greater detail in the following pages.

Library: A Place for Learning and Connecting

If helping consumers make healthier, more sustainable, and informed decisions is understood as a challenge shaped by startups lacking *Accessible Knowledge* and *Having a Seat at the Table*, then they need a place where they can **borrow knowledge and connect with a community**.

Food startups work in a fragmented, legal language-heavy regulatory space that is ever-evolving. Therefore, startups use information from unreliable sources, such as existing packaging on supermarket shelves, and often work through trial and error. This frame addresses the inaccessibility of regulatory knowledge where information is gatekept through cost, legal language, and professional expertise. It also represents a clear "source of truth." Startups often do not know where to go with specific compliance questions. They are also often gatekept from the informal networks that larger food companies have such as food scientists, legal specialists, designers, and buyers. Without these connections, startups miss knowledge and the relationships needed to grow within the system.

The frame connects to the fact that libraries are public spaces for learning, discovery, and community. Libraries make knowledge accessible and guide people to learn. In the food regulation space, this can be a space where startups can access regulatory guidance, meet peers, find mentors, and participate within the food system. Organizations such as Kitchen Republic and Food Innovators already have initiatives that combine workspace, networks, and knowledge-sharing. The frame also reinforces the idea that startups can act as catalysts for systemic food transitions when they are equipped with the tools and support needed to navigate the system.

Solution Space

Within this frame, the solution space could include "books" or resources that translate EU food regulations into plain language, searchable guidance for packaging requirements and claims, and community-based platforms that connect startups facing similar challenges.



Parallels in Accessibility in Museums

If helping consumers make healthier, more sustainable, and informed decisions is understood as a challenge shaped by startups not having *Accessible Knowledge* and *Having a Seat at the Table*, then the intervention needs **facilitate understanding** to make the system welcoming without taking away its depth and integrity as well as **balancing the tension between aesthetics and information**.

Museums were historically designed by experts for audiences with prior knowledge and newcomers felt excluded or unable to fully engage in exhibitions. In the food regulatory landscape, information is technically available through sources such as EUR-Lex, but requires legal literacy and time. A startup founder trying to understand whether they can add claims faces a similar experience to a museum visitor standing in front of an artwork without explanation.

Food packaging also has similar tensions as a museum does between aesthetics and accessibility. Museums need to balance visual presentation while providing context, while packaging must balance branding with clear communication. Museums assume a certain level of art literacy with their museum goers while regulations assume an "average consumer" who carefully reads and understands labels, yet real purchasing decisions are often made quickly through visual cues and front-of-pack impressions. However, accessibility and innovation are not truly in tension. Museums that prioritized accessibility often became more creative in how they communicated complex ideas. Similarly, designing packaging for how consumers actually behave could lead to clearer, more honest, and more engaging communication.

Solution Space

This frame inspires opportunities such as layered packaging communication, plain-language or visual explanations of claims and regulations, and startup-focused tools that combine compliance and communication into the design process.



Open Source: Transparent Process

If helping consumers make healthier, more sustainable, and informed decisions is understood as a challenge shaped by startups wanting to *Innovate for a Healthier System*, *Navigating Complexity through Accessible Knowledge*, and desiring *Trust through Transparency*, then the food packaging system could look like an open-source community where brands **share their packaging decisions** and **lessons learned**, creating shared knowledge that makes the system more accessible, trustworthy, and innovative.

In open-source, knowledge is shared through public code and improvements are contributed back to the community. People can build on what already exists and don't always need to start from scratch. In food packaging and regulatory space, legal interpretations are paid for and kept internally. Packaging decisions are not visible to anyone outside the organization while each startup learns from scratch. Two-thirds of startup regulatory burden costs go toward external consultants, meaning the same questions are being answered over and over.

Open-source communities make complex systems easier to navigate by documenting decisions, sharing examples, and making knowledge public. For startups, this can be translated into creating shared knowledge in packaging decisions. Greater transparency around packaging decisions, claims, and compliance reasoning could build trust between consumers, startups, and regulators while creating stronger accountability around misleading practices.

Solution Space

This frame inspires a knowledge platform documenting packaging cases and explanations of the claims and regulatory decisions. Open-source projects provide starter templates and frameworks that can inspire food packaging templates and frameworks.



Conclusion of Frames

Three frames emerged from the frame creation process:

- *Libraries*, which emphasize accessible knowledge and community support
- *Accessibility in Museums*, which highlights balancing clarity and engagement
- *Open Source*, which focuses on transparency, shared learning, and collective innovation

The next step is to brainstorm opportunity spaces and generate interventions that support startups in navigating regulations.



4

Future Opportunities

This section explores new opportunities and how they could evolve into meaningful interventions, outlining pathways for implementation and the potential value they create for stakeholders.

FUTURE

Ideas generated based off frames

→

TRANSFORMATION

Evaluating ideas for short-term and long-term



Future

Generating new opportunities

FUTURE

The *Future* step takes the frames to generate new possibilities. The ideas produced here are not final solutions but starting points for imagining how different interventions might work and what they could offer. A frame and the solution ideas it generates are only as good as the interest and commitment they spark in the parties who are needed to implement them." (Dorst, 2015). Ideas are evaluated for their design potential in addition to the value they create for the stakeholders needed to bring them to life. Therefore, for each idea explored in this section, its potential values for stakeholders will be noted.

Idea Generation

Ideation involved brainstorming at various stages. A few ideas were generated during the frame creation session. Additional ideation came from building on learning and researching each theme and frame, which brought about ideas from different domains. Ultimately, the goal was to create a list of ideas and converge on a few that had potential value for stakeholders. The 4 ideas looked into more deeply were chosen based on a few design criteria.

Ideas were evaluated based on the following criteria:

- *Help navigate legislation for startups*: The intervention will be primarily used by startups creating their first product or packaging to understand which legal requirements apply to their packaging in a more concise way than currently available resources
- *Promote healthy and/or informed choices*: The intervention should help produce packaging that supports informed consumer decision-making and healthier products
- *Feasible within scope*: The idea can be explored within the project timeframe, taking into consideration stakeholder engagement and prototyping
- *Break paradoxes*: The intervention does not recreate the tensions identified in *Paradox*

Each opportunity has a description of the idea space as well as examples of actionable interventions that can be explored. To make each opportunity easier to grasp, it is accompanied by a visual representation. These aren't literal mock-ups of what the final intervention would look like, rather high-level graphics that represent the core ideas.

Opportunity 1: “Books” for Packaging Regulations

From: Library: A Place for Learning and Connecting

The need for a way to clearly communicate what’s required for packaging and which regulations they come from.

Currently, startups have to hire expertise or look for fragmented, technical information sources that provide some guidance. One startup mentioned looking at existing packaging from other brands which can run the risk that these examples may be okay with fines. This opportunity can take form in tools that translate regulations into understandable and visual guidance. In addition to the legal text from the relevant regulation, these resources could explain why specific information is required and demonstrate how it appears in packaging through templates or packaging examples. Inspiration can be taken from Lees Simpel, which simplifies government letters and summarizes them in simple text.

Additionally, these resources can be dynamic, updating as legislation changes. This would help businesses stay informed about new requirements without constantly monitoring regulatory developments and reducing the risk of non-compliance and uncertainty around pending legislation such as mandatory front-of-pack labeling proposals.

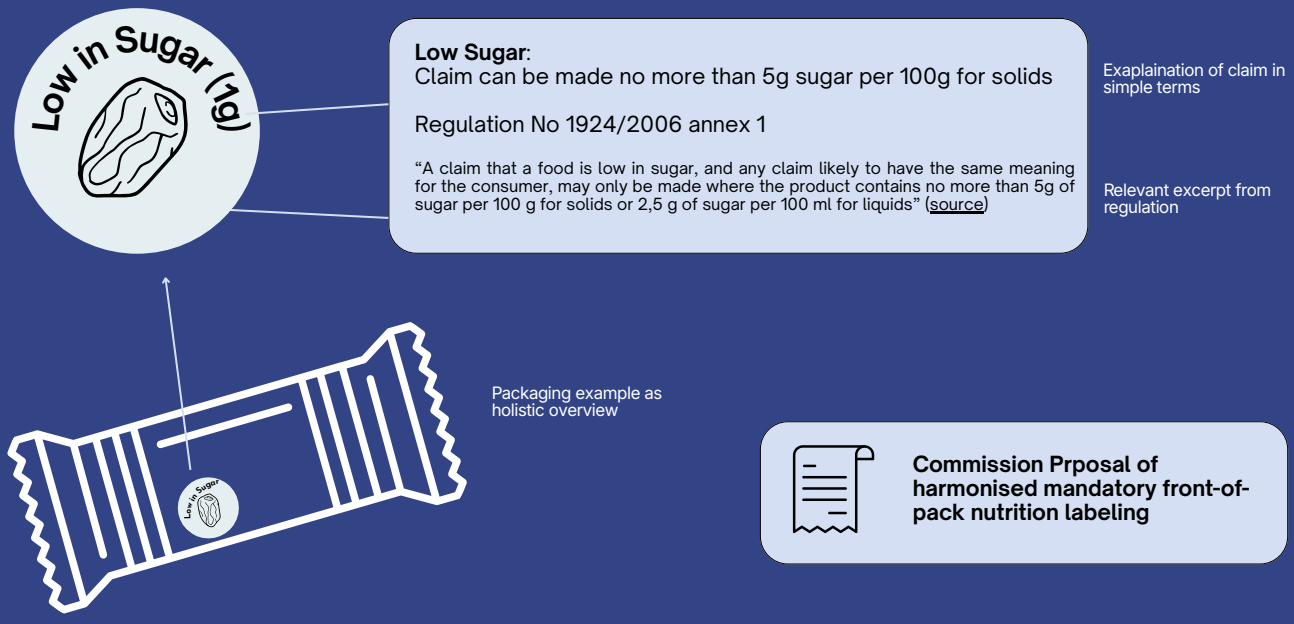


Figure 12: Visual representation of “Books” for Packaging Regulations

Potential Added Value

- For startups, makes regulations easier to understand and apply in practice and avoid potential fines from non-compliant packaging
- For consumers, leads to clearer and more understandable packaging information
- For regulators and authorities, works towards their goal of a healthier food system and informed decision making for consumers
- For food system, supports startups working toward healthier and more sustainable products

Opportunity 2: Connecting Startups with Expertise

From Library: A Place for Learning and Connecting

The need for connecting startups with legal resources

There's an opportunity to connect startups with trusted legal knowledge and professional support. While knowledge tools can help startups understand how to create their packaging, sometimes startups require legal support for more complex compliance questions. Food startups could benefit from networks that link them to legal experts, food scientists, packaging designers, and experienced entrepreneurs. This could be mentorship programs, searchable expert directories, community forums, office hours with specialists, or collaborative hubs where startups can seek guidance. Forming these partnerships are mutually beneficial for legal experts and startups.

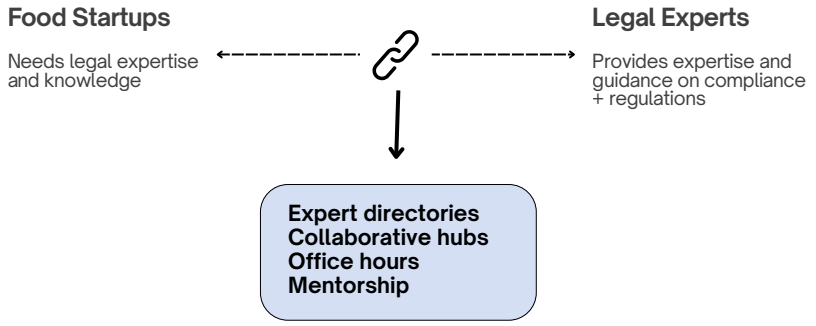


Figure 13: Visual representation of Connecting Startups with Expertise

Potential Added Value

- For startups, provides access to trusted expertise and reduces uncertainty around compliance
- For legal experts, creates opportunities to reach emerging startups
- For startup incubators, increases likelihood of startup success

Opportunity 3: Balancing Marketing and Information

From Parallels in Accessibility in Museums

The need for balancing language and visual identity

Helping startups navigate legal requirements is only part of the challenge. Even when packaging is legally compliant, it still has to communicate clearly to consumers. Currently, regulatory information and branding are often treated as competing priorities which can lead to cluttered packaging or communication that prioritizes aesthetics over clarity. A product that looks good but confuses consumers misses the purpose of packaging.

This opportunity could take shape through some potential ideas. Design guidelines can be practical frameworks showing how mandatory information, such as ingredient lists, nutrition declaration, and allergen information, can be placed and sized in ways that meet legal requirements while working with the visual logic of the packaging. An inspiration for this idea is the Contract Design Pattern Library, a library of guidelines, explanations, and examples to make use-centered contracts.

Another idea is annotated packaging examples of real packaging layouts that show how compliant information has been integrated with branding. While the guidelines are more so theoretical, packaging examples are practical. This also connects to the insight of how startups look at other packaging examples to design their packaging.

Lastly, a consumer perception guideline can be notes on how many consumers read packaging, such as what they notice first, what they skim, and what triggers skepticism. Grounding design decisions in consumer behaviour helps design past the legal definition of the "average consumer" toward designing for how consumers actually shop.

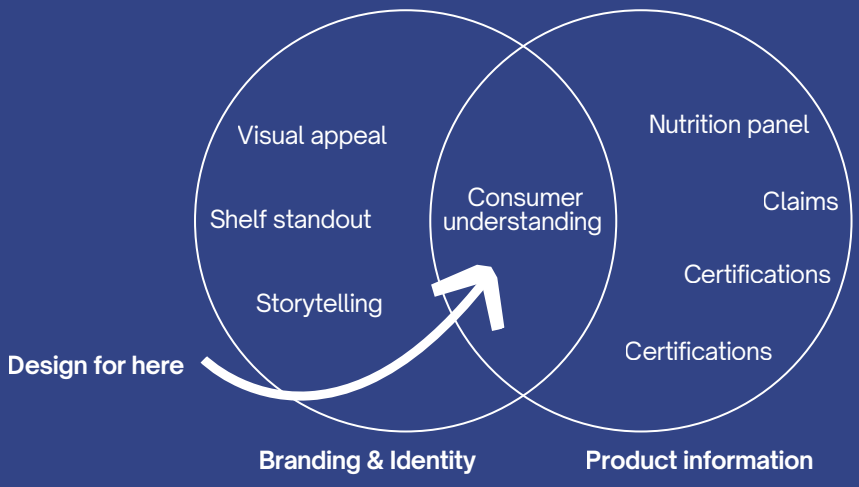


Figure 14: Visual representation of Balancing Marketing and Information

Potential Added Value

- For startups, helps create packaging that is compliant and visually appealing
- For consumers, makes packaging easier to understand and encourages healthier eating habits
- For regulators and authorities, encourages compliance through better design practices
- For retailers, supports purchase of trustworthy brands

Opportunity 4: Knowledge Sharing

From Open Source: Transparent Process

The need for startups to share their stories and knowledge with each other

This opportunity explores the creation of a shared knowledge ecosystem around packaging and compliance where startups are contributors as well as recipients of knowledge. Rather than treating regulatory expertise as gatekept knowledge, startups could contribute examples, lessons learned, and practical packaging approaches to a collective resource. Similar to open-source, startups could access packaging cases, understand the reasoning behind claims and design decisions, and learn from previous experiences without starting from scratch. By making compliance processes more visible and collaborative, the ecosystem would gradually build knowledge grounded in real-world application.

A successful innovation ecosystem needs radical openness, which consists of (Curley & Salmelin, 2016)

- Collaboration: Organizations work across traditional boundaries and learn from one another.
- Transparency: Information is openly shared, building trust and accountability.
- Sharing: Knowledge and resources can create greater collective value when made accessible.
- Empowerment: Participants are encouraged to contribute knowledge and actively shape the ecosystem.

This opportunity could take form in a community-run database of packaging examples and case studies explaining how specific claims were chosen, shared resources documenting common compliance challenges and lessons learned, open-source templates for compliant packaging layouts and information hierarchies, and communities where startups can share knowledge together.

Beyond regulatory compliance, there is an opportunity to foster open innovation across the food startup ecosystem by encouraging the exchange of knowledge and experience. Many startups face other challenges in securing retail buyers, raising financing, scaling production, building teams, and growing sustainable businesses. Through mentorship programs, founder networks, peer-learning communities, and industry partnerships, experienced entrepreneurs and experts can share lessons learned with newer startups.

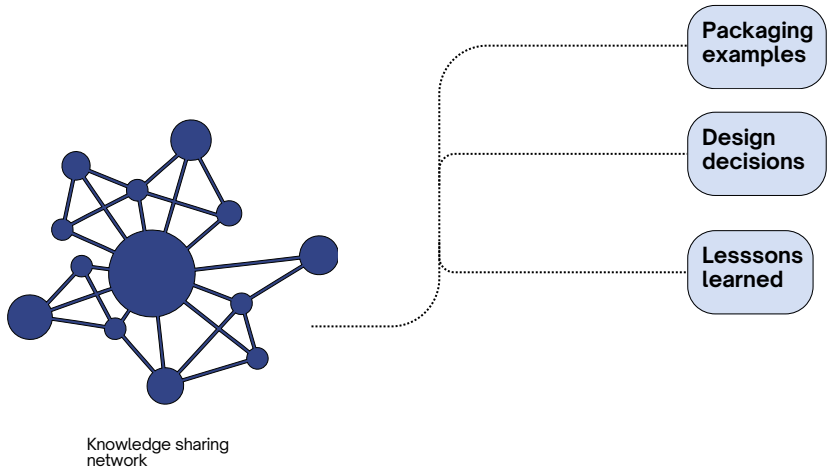


Figure 15: Visual representation of Knowledge Sharing

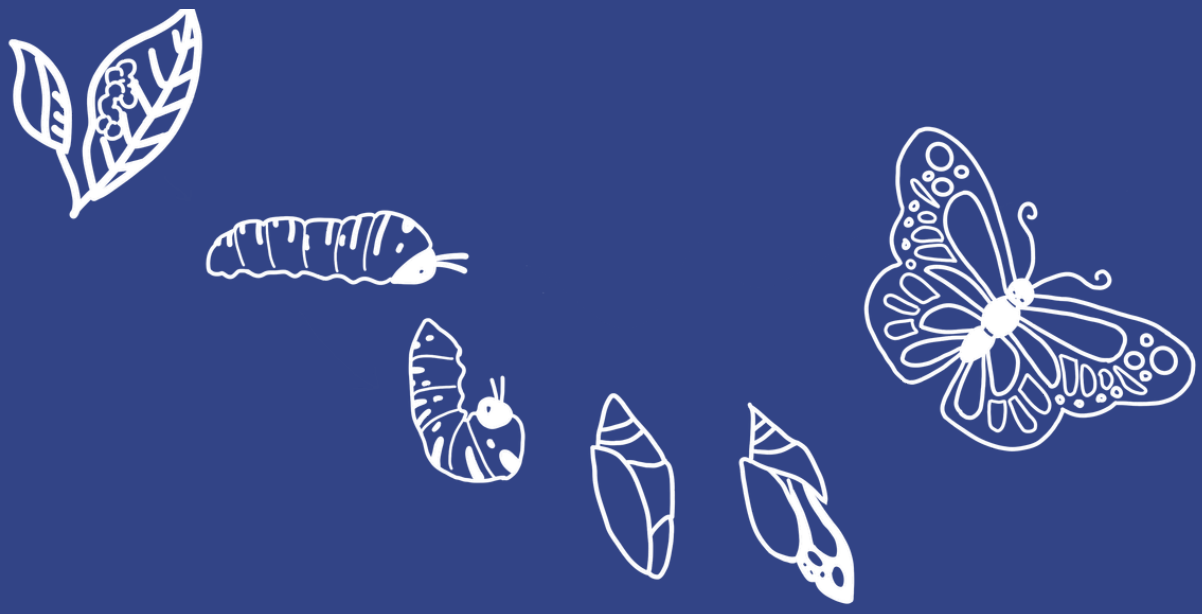
Potential Added Value

- For startups, learn from others' successes and mistakes
- For consumers, explains claims and design decisions for packaging
- For regulators and authorities, provides success stories for future policy interventions

Conclusion of Future

In *Future*, 4 opportunities emerged from the frames and looked at ways of addressing the problem from new perspectives. Rather than selecting a single solution immediately, these opportunities served as starting points for discussion and evaluation. The following *Transformation* section will look further into these ideas by assessing their feasibility, refining the most promising opportunities, and outlining recommendations for how they could be implemented to create value for stakeholders.





Transformation

Evaluating opportunities and how to implement them

TRANSFORMATION

Feedback

During *Transformation*, each *Future* opportunity is evaluated on whether they are feasible in the short term and which would need to be acted upon over time. For this project, feedback was gathered from a program manager at a startup incubator to identify the most promising direction based on what they saw as impactful. The questions asked during this interview appear in Appendix A. This feedback was translated into suggestions for how to further develop each idea. From there, the focus narrowed toward building a prototype of the idea that had the most potential for achieving the added values.

Selecting Opportunity to Prototype

Informed by feedback, Opportunity 1: "Books" for Packaging Regulations was selected as the idea to prototype with the addition of elements from Opportunity 3: Balancing Marketing and Information. Specifically, these aspects were explaining claims in a way that is applicable to consumers and incorporating visual design into the intervention itself so that learning legislation felt more engaging.

Testing and Implementation

Once the prototype was developed, it was tested with a food startup to assess whether it delivered the intended value and to learn of any desired changes. From there, implementation was detailed further by mapping the support structures that would need to be developed. This section also considers future scenarios for this opportunity, including how technology could be integrated to keep the intervention relevant as well as the community aspects from Opportunities 2 and 4.

Feasibility of Opportunities and Concept Selection

While four opportunities emerged from *Futures*, they vary in feasibility and have some overlap in elements. The ideas were discussed with the program manager of a food startup incubator and the following insights and decisions emerged. Opportunities 2 and 4 will be addressed first since Opportunities 1 and 3 were combined into an idea direction that was later turned into a prototype.

Opportunity 2: Connecting Startups with Expertise

Strengthen Existing Networks

Leveraging existing local networks such as Kitchen Republic, KiCo, and Food Innovators is the best way to connect food startups with industry experts. These organizations have established trust within the food ecosystem and provide an entry point for founders.

Rather than creating new networks, the opportunity is in expanding the accessibility and reach of existing initiatives. Many current programs are in specific cities or limited by program size which makes them have limited access. Online masterclasses, webinars, and office hours can extend the reach to a broader audience.

> We're discovering at the moment is that there's also an opportunity to offer small educational sessions online [...] for certain topics. There can be a packaging webinar online within the [redacted] program, for example." -Program manager

Conscious of Startup Resources

These solutions should also be mindful of startups' financial constraints. Support models should balance access with affordability. For example, through group sessions, mentorship programs, or subsidized consultations. The legal consultant mentioned providing reduced pricing for startups that are mission-aligned.

> Those who don't have the resources but would like to communicate [sustainability claims] but can't pay for legal advice like mine... I lower my rates for those kind of companies" - Sustainability legal consultant

Key Points and Recommendations

The overall potential of this opportunity is to leverage existing networks and scale their reach by making them more accessible through online formats, increased frequency, or other ways. In terms of added value, this provides startups with trusted expertise in an affordable and accessible way. For legal experts and other professionals, they can reach and support emerging startups. For startup incubators, it increases the chance of startup success by expanding the support they can offer beyond their current capacity.

Importantly, packaging regulation is only one of many challenges startups face. Connecting founders with trusted expertise can extend to other business needs, including securing retail buyers, building pricing models, and scaling up to co-manufacturers.

For this idea to succeed, cost and funding need to be addressed. Much of the current support infrastructure relies on municipal funding and voluntary mentorship. Experts' time is limited. Scaling reach through online formats or larger group sessions can increase impact. However, personalization of these meetings can be diluted. Therefore, these sessions should address the most frequent situations faced uniquely by startups.

Resources and Stakeholders Needed

- *Startup incubator and food networks*: host, organize, lend credibility to expand programming
- *Legal and other professional experts*: Act as mentors and experts in office hours and other programs at ideally a reduced rate for mission-aligned startups
- *Municipal or public funding*: Provide financial support
- *Food startups*: As eager participants for learning
- *In-person or digital infrastructure*: For hosting events



Opportunity 4: Knowledge Sharing

Strengthen Peer Networks

Peer connections hold special value in that founders often feel the challenges they face are unique to themselves.

> They feel like an alien because their food startup is different than other food startups - Program manager

This sense of isolation is a barrier that Knowledge Sharing attempts to break down by normalizing founders' experiences through showing them that the uncertainty they feel is shared by other startups. Beyond emotional reassurance, peers also offer practical support by openly discussing hard-won lessons from mistakes and offering candid feedback, usually for free.

> Do a peer-to-peer conversation... That's free. People are willing to help." -Program manager

This value is already seen in incubator programs where casual and structured peer interaction exists.

> That's also the value of the program, [...] they can discuss with peers. So you see a lot of sparring sessions." -Program manager

Key Points and Recommendations

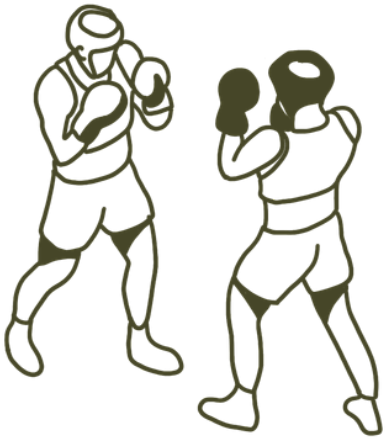
This opportunity can move forward by building on existing startup communities. In practice, this could mean increasing the frequency of networking and knowledge-sharing events or extending their reach through digital communities, mirroring the scale-up recommended in Opportunity 2. This would lower the barrier for founders who are not based near existing in-person hubs.

Because the value of this opportunity depends on founder-led exchange, its success will rely on facilitating these moments and connections. This is an important aspect, as startups are busy dealing with hundreds of other challenges and may not have the time or bandwidth to plan these sessions. Therefore, a third party (incubator, food networks) will typically be needed to plan the logistics, rally the troops, and provide either a physical or online space to connect. There is also an aspect of paying it forward. Startups that received mentorship may feel inclined to provide feedback and help to up-and-coming brands.

Resources and Stakeholders Needed

- *Third party, typically food networks or incubators*: Host and facilitate peer sessions
- *Online platform*: Digital space to share knowledge informally, which can happen through Discord, Slack, or other online servers
- *Experienced founders/alumni*: Mentor and share insights on lessons learned
- *Food startups*: Participate and be sparring partners for other emerging startups

Sparring Partner



"Sparring" Partner



Opportunity 1 & 3: “Books” for Packaging Regulations and Balancing Marketing and Information

Bridging the Gap Between the Intent and Implementation of Regulatory Framework

As mentioned in the Introduction, there is a gap between the intent of the regulatory framework, to encourage consumers to make informed, healthy decisions, and its implementation, for the reasons explored in *Archaeology*. Bridging this gap requires more than regulatory clarity, as the current tools already offer an explanation of the regulatory requirements. To address the gap, compliance and packaging design can’t be perceived as separate activities. Startups therefore need support in both understanding the regulations and translating them into packaging that tells a clear message for consumers.

For this reason, Opportunities 1 and 3 were combined into an idea direction that organizes regulatory information in three layers. The legal definition of each requirement, how consumers perceive it in practice, and design guidelines for how it should appear on-pack. The goal is to make legislation less dry and more actionable. The intervention itself is also designed with design patterns, so that working through regulatory guidance feels closer to a design resource than a legal document. Ultimately, the goal is to help startups make good packaging decisions from the beginning, so that compliance is built in from the start of the process.

> Combining legislation with the consumer perspective is really interesting for food startups, because the legislation is dry, it's not sexy. And in the end, their product needs to be sexy for the consumer." -Program manager

> If we can help them to make a correct choice in the early phase in terms of packaging, but also a sustainable choice, that's how they will scale” -Program manager

Addressing the Paradoxes

- *"Average Consumer" vs. average consumer*: By grounding regulatory information guidance in how consumers perceive packaging rather than assuming they’ll carefully read the entire packaging
- *Information vs Marketing on Packaging*: Treat compliance and communication as a combined effort
- *Goal vs Reality of Regulatory Framework*: Regulation can be a tool for better consumer communication

Key Points and Recommendations

This opportunity will be moved onto prototyping an intervention that translates EU food labeling regulations into visual guidance based on packaging examples and addresses a gap that none of the existing resources currently fill. It meets all the design criteria as it is feasible to prototype within the scope of this project, generates clear value for startups, helps promote healthier and informed purchasing, and breaks the paradoxes mentioned. Additionally, the program manager expressed the most excitement around this idea, while the other two ideas have implementation around scaling up. The resources and stakeholders needed for this intervention will be addressed further in the implementation plan.



Designing the Prototype

Features Based on Insights

The direction for the intervention was shaped by feasibility conversation and research insights, which pointed toward several specific qualities the prototype should have in order to be genuinely useful to startups.

Educate on labeling requirements
The primary goal of the intervention is to make food labeling regulations more accessible by translating complex legal requirements into practical and visual guidance.

Show regulations in context
Startups learn by looking at other products and using existing packaging from competitors as a reference. The prototype should lean into this by showing mandatory requirements through annotated packaging examples and then going into the details for each requirement.

> examples really, really help to inspire and to see how you can use it. And then they know, okay, that means that I can use it in this way or that way."- Program manager

Bridging the "average consumer" and the average consumer
The prototype should address the disconnect between regulatory compliance and consumer understanding by incorporating insights into how consumers perceive and interpret packaging claims. These insights can be taken from extensive literature on consumer behavior in food packaging.

Making it applicable
Founders appreciate guidance they can act on immediately as they value hands-on, context-specific, immediately applicable guidance. This can be achieved by expressing requirements or claims as suggestions or tips for how they should appear on packaging.

> what they always love in our program, that it gives a lot of practical tools [...] it's in person, that it's hands on, that is applicable to their situation -Program manager

Stretch goal: make it personal
There is a longer-term goal of developing an intervention that can be tailored to a startup's specific product or situation so the guidance feels uniquely relevant. As noted earlier, startups may feel "alien" because their food startup is different from other food startups.

While full personalization is beyond the scope of this prototype, it is identified as a direction for future development. This could look like a guided self-assessment, a product-type filter, or an interactive format. This will be explained further in the implementation plan.

Food Labeling Infographics

Format

The first iteration was in the form of infographic posters that communicated packaging regulations through visual design. The layouts took inspiration from food packaging itself, using visual hierarchy and communication principles to demonstrate how information can be organized on-pack and making the medium part of the message.

Limitations

After developing a few posters, the format had some limitations. Food labeling regulations are detailed and deeply interconnected, making it difficult to present a single topic within an A4 format. Each poster also developed its own type of layout, which made it harder to find and compare information across topics. A full development of the intervention covering just nutrition claims would have required at least 30 individual posters. While feasible it would be difficult to maintain and update as regulatory changes came about.



These challenges led to a pivot toward an interactive handbook with a standardized structure that allows information to be organized consistently. This became the second iteration, the Food Labeling Navigator.

Learnings

That said, the infographic format will not be abandoned. This can serve a complementary role alongside the Navigator as as a quick-reference or visual inspiration next to the more detailed interactive resource.

Insights

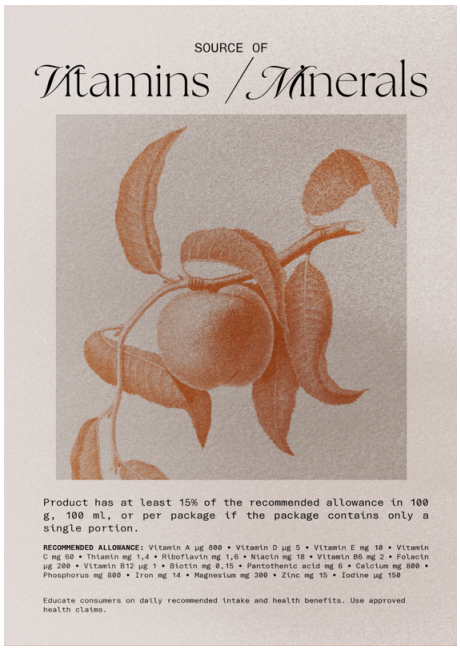
To understand where the A4 infographic posters could fit within the packaging design process, they were evaluated alongside the interactive handbook during the startup validation session. The founder indicated that when searching for regulatory information, clarity should take priority over visual aesthetics.

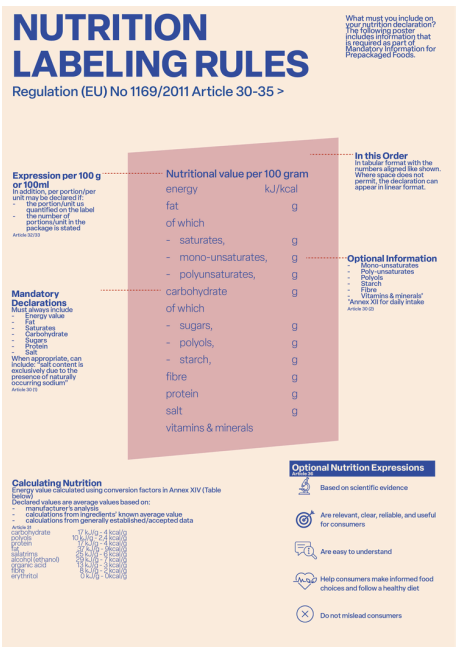
> “I feel like if we're looking for information, it's better if it's very black or white [...] just to make it easier for entrepreneurs.” -Food startup

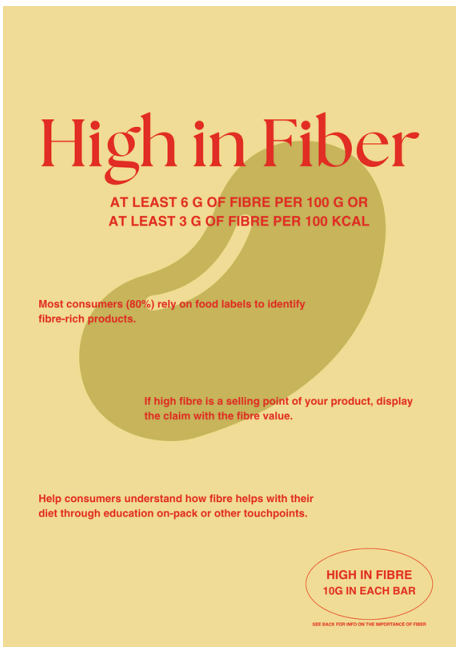
They suggested that more expressive visuals would be better suited for communication channels such as social media or a website.

> If you're doing social media about it, or like a website, then it can still be fun and incredible.” - Food startup

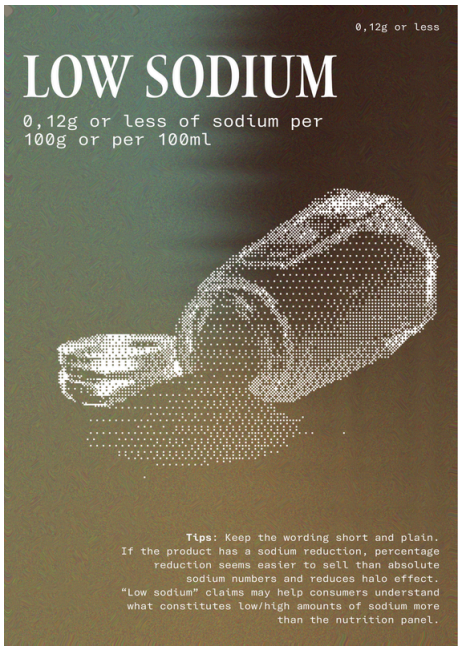
These insights confirmed the assumption that the infographic format, while visually engaging, is less effective as a primary navigation tool for regulatory guidance. As a result, future iterations will prioritize a more structured handbook as the main intervention. The infographic posters can instead serve a complementary role, similar to coffee-table or art books, inspiring discussion and contributing to the broader narrative and "world-building" around consumer-focused food packaging.











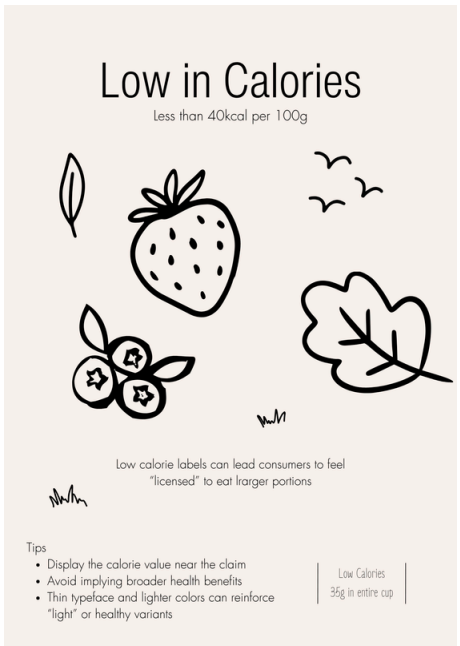


Figure 16: First iteration of labeling infographics

Food Labeling Navigator



Format

The second iteration evolved into an interactive handbook that translates food packaging regulations into visual guidance. The concept took inspiration from other legal design projects, which applies design thinking to the legal domain. Rather than viewing law through the perspective of legal experts, legal design focuses on how regulations are experienced by the people who must use them. It designs legal information, systems, and services to be more understandable and user-centered. The guide starts with the required information and supplementary claims that can be used to tell a complete story on packaging.

An interactive handbook was selected over a static document because one of the recurring challenges found with other resources was the changing regulatory landscape. Static resources become outdated or contain broken links. A digital and interactive format allows for updates to new guidance and future legislation.

Sources Used

The handbook was developed using legislative, government, and academic sources, including:

- Law from EUR-Lex (Regulation (EU) No 1169/2011 and Regulation (EC) No 1924/2006)
- The Food Labeling Information System (FLIS)
- Resources from the EU's Knowledge4Policy
- Documents from regulatory authorities.
- Academic literature on consumer perception, food claims, and labeling
- Inspiration from other legal design projects including Contract Design Pattern Library and the Legal Design Lab

The Food Labeling Navigator applies several legal design patterns to make regulations easier for food startups to understand and use (Rossi et al., 2019).

Table 7: Structure of Food Labeling Navigator

Legal design pattern	Application	Addresses
Plain language	Regulations are translated into accessible language while preserving legal meaning. Technical terminology is explained using language intended for founders.	Languge complexity, Lack of audience tailoring, Lack of familiarity, Vagueness of terms
Example Text	Packaging examples and example claims are used to show how regulations apply on-pack.	Language complexity
Structured Layout	Information follows a consistent structure: regulation, plain-language explanation, consumer perception, recommendations, examples.	Wall of text, Difficult comparability
Multi-Layered Information	Information is presented in layers starting with the key takeaway and going into further detail.	Wall of text, Excessive length, Lack of audience tailoring

Information Translated

Regulation (EU) No 1169/2011

List of mandatory particulars

1. In accordance with Articles 10 to 35 and subject to the exceptions contained in this Chapter, indication of the following particulars shall be mandatory:

(a) the name of the food;

(b) the list of ingredients;

(c) any ingredient or processing aid listed in Annex II or derived from a substance or product listed in Annex II causing allergies or intolerances used in the manufacture or preparation of a food and still present in the finished product, even if in an altered form;

(d) the quantity of certain ingredients or categories of ingredients;

(e) the net quantity of the food;

(f) the date of minimum durability or the 'use by' date;

(g) any special storage conditions and/or conditions of use;

(h) the name or business name and address of the food business operator referred to in Article 8(1);

(i) the country of origin or place of provenance where provided for in Article 26;

(j) instructions for use where it would be difficult to make appropriate use of the food in the absence of such instructions;

(k) with respect to beverages containing more than 1,2 % by volume of alcohol, the actual alcoholic strength by volume;

(l) a nutrition declaration.

EUR-Lex official text

Wall of text

Vagueness of terms

Turned into

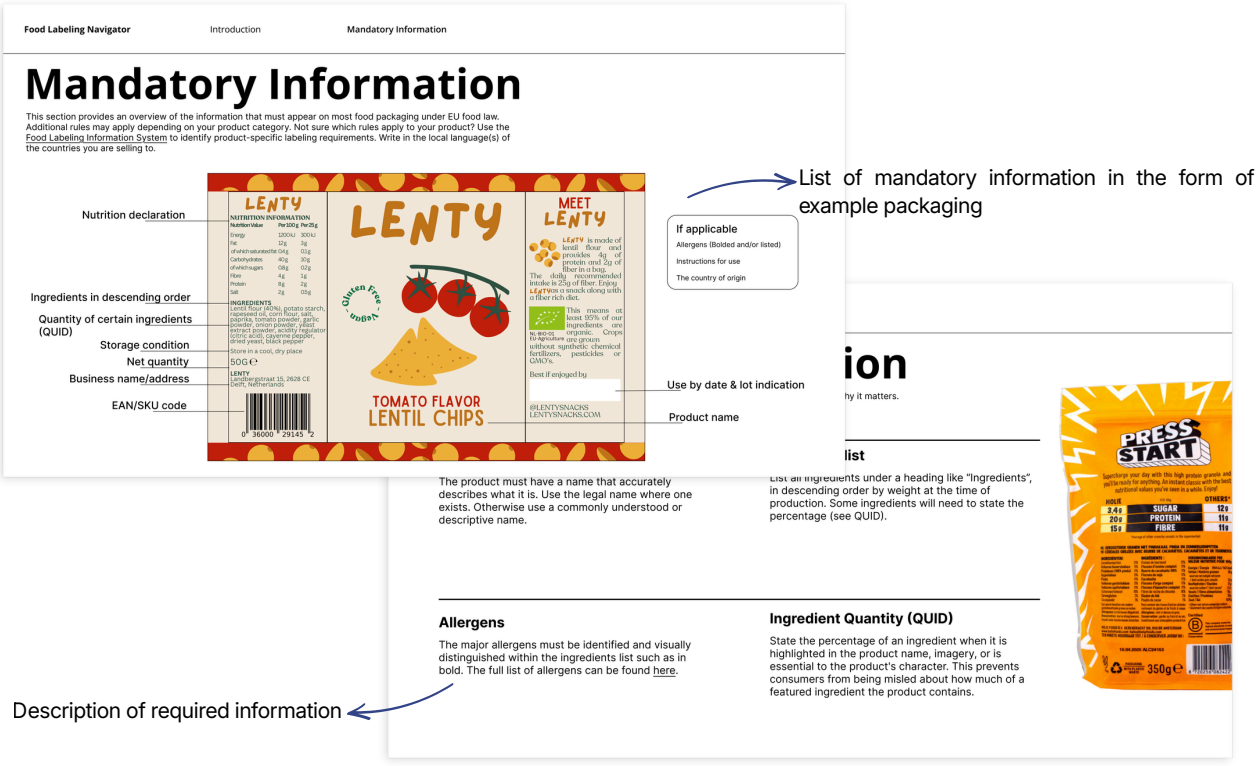


Figure 17: Example of regulation text and text translated to Food Labeling Navigator

Regulation (EU) No 1924/2006 Fibre Claims

SOURCE OF FIBRE

A claim that a food is a source of fibre, and any claim likely to have the same meaning for the consumer, may only be made where the product contains at least 3 g of fibre per 100 g or at least 1,5 g of fibre per 100 kcal.

HIGH FIBRE

A claim that a food is high in fibre, and any claim likely to have the same meaning for the consumer, may only be made where the product contains at least 6 g of fibre per 100 g or at least 3 g of fibre per 100 kcal.

Consumers vary in their attitudes and expectations about dietary fibre: analysis of answers to a pan-European online survey

Véronique Azaïs-Braesco[1], Anne Lionnet[2], Matthieu Maillot[3] and Marjukka Kolehmainen[4]

[1]VAB-Nutrition, France; [2]Arista Cereal Technologies- Limagrain Ingredients, France; [3]MS-Nutrition, France and [4]Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Finland

How consumers percieve fibre claims based on literature

Turned into

Multi-layered information

Food Labeling Navigator | Introduction | Mandatory Information | Nutrition Claims | Health Claims

Energy | Fibre | Sugar | Protein | Fat | Vitamin/Mineral | Sodium/Salt | Others

Fibre Claims

"Source of Fibre"

When Can I Make this Claim?

The product contains at least 3 g of fibre per 100 g or at least 1.5 g of fibre per 100 kcal.

Consumer Perception

Consumers overestimate their fibre intake [x] and "Source of Fibre" can make it difficult to judge how much fibre a product actually has

Recommendation

Display the fibre value near the claim

Educate consumers on recommended daily intake and what ingredient the fibre comes from

Source of Fibre (3 g) from inulin

"High-Fibre"

When Can I Make this Claim?

The product contains at least 6 g of fibre per 100 g or at least 3 g of fibre per 100 kcal.

Consumer Perception

Most consumers (80%) rely on food labels to identify fibre-rich products [x]

Recommendation

Display the fibre value near the claim

Help consumers understand how fibre helps with their nutrition

High in Fibre 10g in each bar



the gut stuff

the gut stuff boasts 10g of fiber in each can and educates consumers on gut health such as information on the importance of fibre as well as fibre-rich recipes beyond its products.

Example of product in market using fire claims

Example claim

How do consumers percieve fibre claims?

Figure 18: Example of regulation text and text translated for nutrion claims

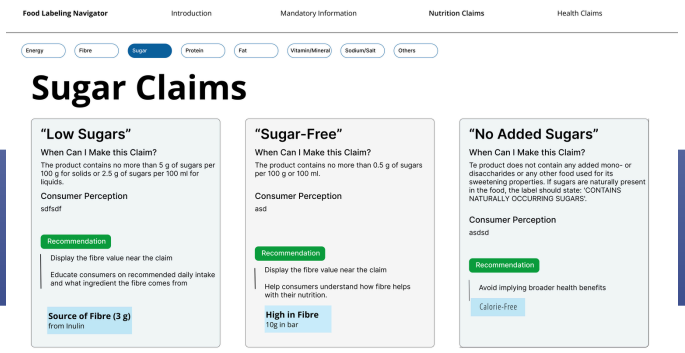
Journey Map

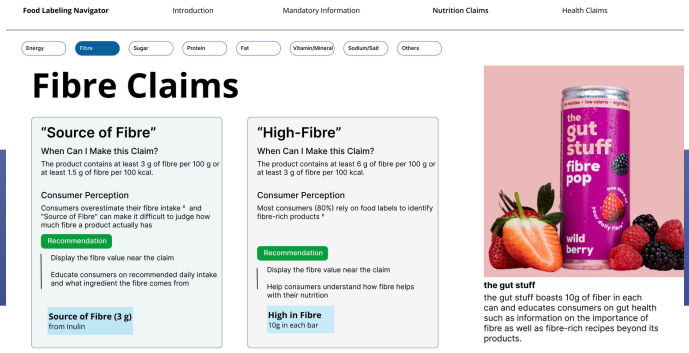




Home page
Description of purpose of Food Labeling Navigator

Who/What
Explaination of the intended audience and scope of regulations covered

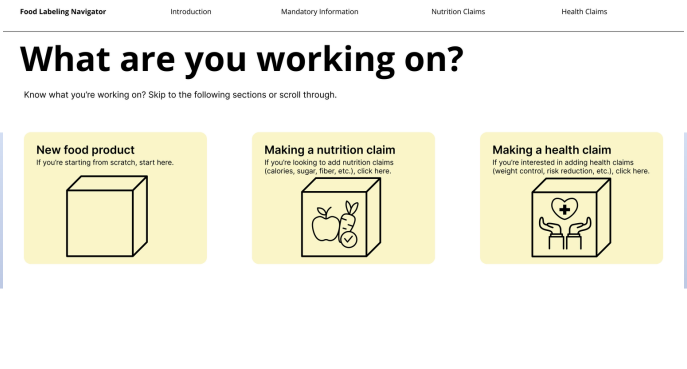




the gut stuff
the gut stuff boasts 10g of fiber in each can and educates consumers on gut health such as information on the importance of fibre as well as fibre-rich recipes beyond its products.

Nutrition claim example

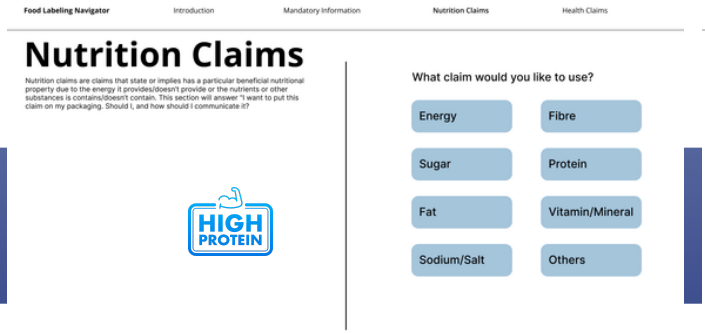
Nutrition claim example
Each claim is given a definition of when it can be used, how consumers may percieve the claim, and an example of how it looks like on packaging

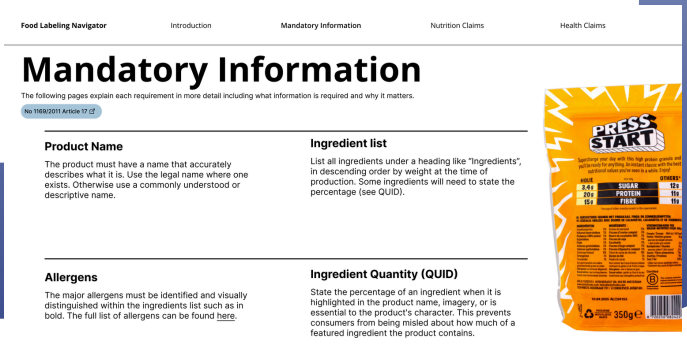




What are you working on?
Start from the beginning (mandatory information) or add a new claim

Mandatory information
An overview of the required information for packaging with a packaging example

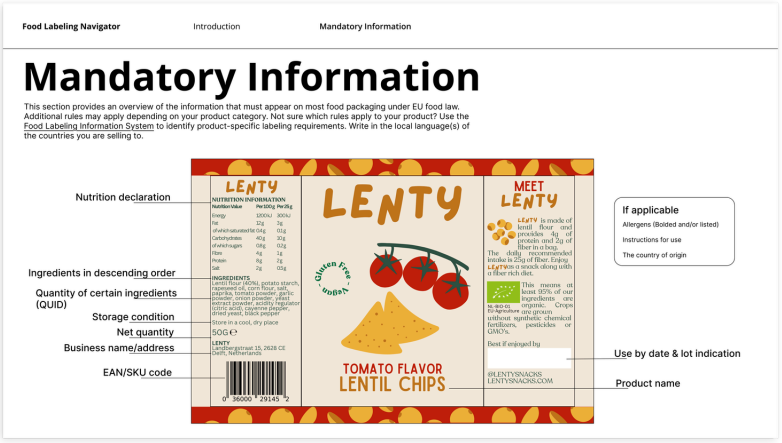




Navigate to specific nutrition claim
Skip to a specific nutrition claim depending on product ingredient

Explaination of required information
Detail of mandatory information

Key Features

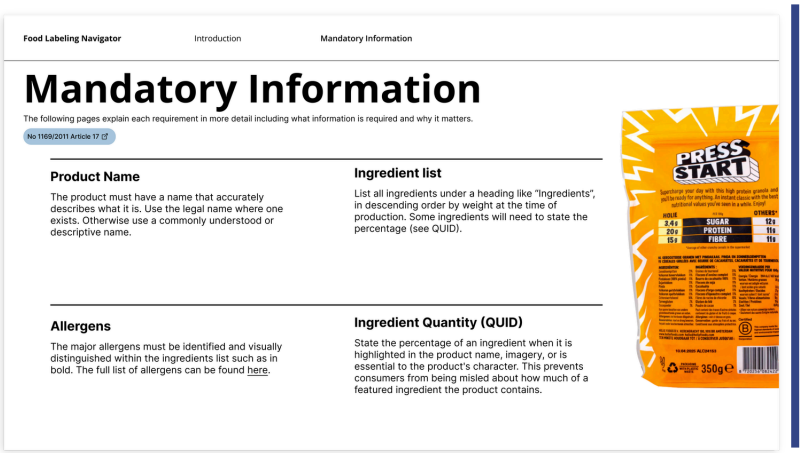


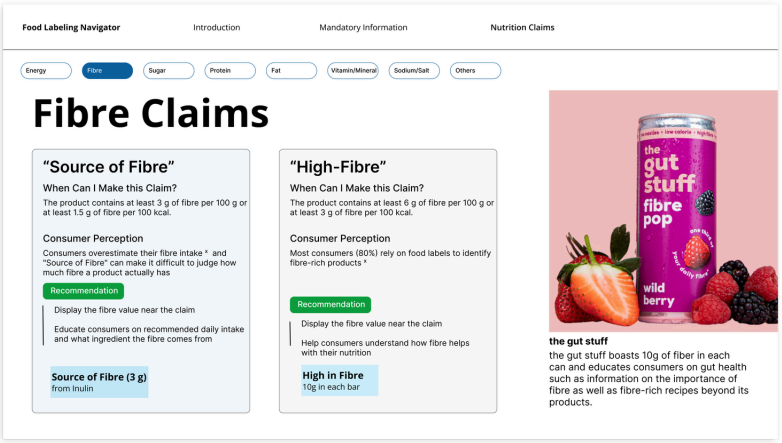
Packaging Example

Startups sometimes use existing food packaging as a reference point when developing their own labels. The handbook therefore includes compliant packaging examples with annotations to show the regulations applied in practice.

Source-Driven

Each point/guidance is linked back to its regulatory source to allow users to trace guidance to the relevant article or regulation.



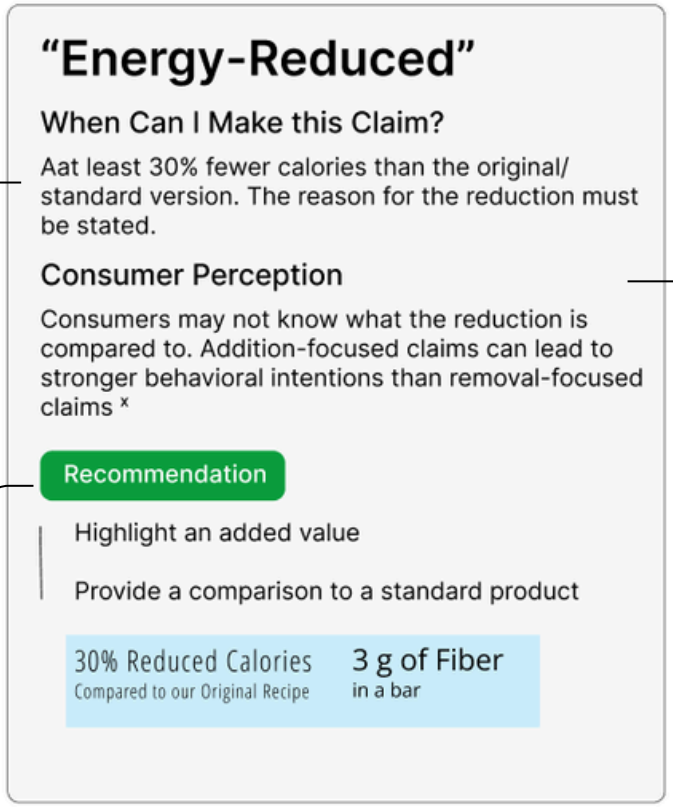


Claims with Clarity

Each claim is given a definition of when it can be used, how consumers may percieve the claim, and an example of how it looks like on packaging.

Zoom in on the Explanation of Claim

Claim Definition
According to the law, when can I make this claim?



Consumer Perception
According to literature, how would consumers percieve this claim?

Recommendation
How should this claim appear on packaging?

Evaluation of Food Labeling Navigator

After a baseline development of the Food Labeling Navigator prototype, it was tested with a food startup founder to evaluate whether it delivered its intended value and to identify opportunities for improvement. The startup was a Netherlands-based founder whose product uses many claims on-pack, which made them particularly relevant for the evaluation. The online session consisted of an introduction to the startup's product and current packaging development process, followed by a moderated think-aloud evaluation of the prototype and a short debrief.

Goals

The goal was to answer 4 questions:

- Does the Food Labeling Navigator improve understanding of EU food labeling regulations?
- Where and how would the Navigator fit into a startup's packaging design process?
- Do the accompanying A4 infographic posters provide value as either a complementary or standalone resource?
- What usability issues, missing content, or improvements should be addressed in future iterations?

Analysis

The session was analyzed qualitatively by pulling quotes and observations around three evaluation themes:

- Comprehension: Could the participant understand labeling requirements and when they could use a claim? Did the inclusion of consumer perception insights improve understanding beyond the legal requirements?
- Fit: At what stage of the packaging design process would the Navigator be used?
- Desirability: Would the Navigator have been helpful during their development process? How were the A4 infographic posters perceived?

The findings from this session informed the implementation plan by identifying which aspects of the prototype should be retained, refined, or explored in the future.

Findings

Does the Food Labeling Navigator improve understanding of EU food labeling regulations?

The startup mentioned that the current information finding is fragmented and inaccessible.

> It's not user-friendly [...]]like the website where to find information, and it gets confusing quite quick." -Food startup

By consolidating mandatory requirements, the Navigator addresses this fragmentation of many sources that each have overlapping information with verifying levels of legal language.

The startup also mentioned uncertainty about whether particular wording like "crafted for relaxation" was allowed or linked to a regulated claim. The line between unregulated language and regulated claims is confusing for many startups and the Navigator can help clarify the definitions of claims.

Within its current scope, the Navigator does improve understanding of when and how specific claims can be used. However, the most confusing claims for this specific startup include health and botanical claims which fall outside the current scope which limits their use of the Navigator. The scope of regulations will be part of future implementation.

Where and how would the Navigator fit into a startup's packaging design process?

The startup's packaging process involved hiring a food scientist, an external designer, and a regulatory compliance expert, with the regulatory compliance expert costing over €1,000. The Navigator could be used at the earliest stage of packaging development when a startup needs foundational knowledge to make packaging decisions, speak with collaborators, and know which questions to ask experts.

It can reduce the risk of making uninformed decisions early that become costly to correct later.

> I got the advice that you should just like go for it and [..] if the claim isn't great or if at one point you're big enough to be like checked, well then you can make the adjustments. But until then,[...] it's just a sketchy bit.- Food startup

The annotated example packaging was a good reference for understanding packaging requirements.

> "I actually looked at competitors because I wanted a fresh look into, okay, what should I do?" -Food startup

What usability issues, missing content, or improvements should be addressed in future iterations?

Expand regulatory scope

The most significant content gap for was supplement and botanical claims. The Navigator's structure is suited to allow for expansion of scope in the future.

Turning regulated claim language to branding material

If there was a way to translate technical wording of a regulated claim into language that works for a brand story. The startup described wanting a tool that could take the permitted claims for their specific ingredients and generate compliant, brand-appropriate messaging.

> If you can have recommendations for that — like with AI, you could say, okay, these are the claims I can do with my ingredients, and this is my product — generate a description of the product with it" -Food startup

Takeaways

These findings inform the next step to develop an implementation roadmap that defines the first version of the Food Labeling Navigator and how it can evolve through personalization and expanded scope. It will also consider the operational requirements for long-term implementation. This includes determining who would develop and maintain the platform, how regulatory updates would be managed, and how the other 2 opportunities such as connecting startups with expertise and facilitating knowledge sharing could be integrated into the broader ecosystem.

Implementation Roadmap

The following roadmap outlines how the Food Labeling Navigator could be developed and scaled over time through key actions I will take at each stage. It identifies the stakeholders, trends, and enabling conditions needed to support implementation and long-term adoption. Each horizon is explored in greater detail in the following pages.

Navigator- What elements and key features will the Navigator tool have and how will the book supplement the tool? How will the project be funded?

Regulation- Which regulations will be covered by the Navigator?

Value- What is the potential value added for stakeholders?

Stakeholders- Which stakeholders are required to implement?

Trends- What industry trends back up the desire for the added features?

Success criteria- What tangible goals are needed to be met in order to show success and proceed to the next stage?

	Month	Navigate Regulations	3
Navigator	**Features**	Website and PDF with mandatory labeling info + nutrition claims 3 layer structure: definition, consumer perception, recommendation Annoated packaging examples Linked to original sources
	Book	Cover nutrition claims
	Funding	Self funded, Grant potential
Regulation		General Food Law (178/2002) Food Information to Consumers (1169/2011) Nutrion and Health Claims (1924/2006) • Nutrition claims on food products
Value		**Startups**: Free starting point for regulatory clarification **Incubators**: Refer resource to startups **Food system**: Better-informed packaging, Potential for growth of mission-aligned brands
Stakeholder		Startups Food startup incuators Legal experts Consumer researcher
Trends		Growing regulatory complexity Rise of solo founders Desire for clear information on packaging from consumers
Success Criteria		Accurate, usable, desirable Partnership or distribution agreement 3-5 startups use tool to help create their packaging

Dynamic and collaboration	6	Personalization	12+
Update content as regulations change Expert referals to vetted legal consulants Startup input with packaging examples from other food founders Expanded regulatory scope Periodically update with regulatory changes Grant potential		Enter ingredients to get guidance on compliant, brand-specific claims Update content as regulations change Periodically update with regulatory changes Institutional partnerships	
Novel Foods Nutrion and Health Claims (1924/2006) • Health claims		Update as regulations change (Mandatory FOP, naming of non-meat products)	
Startups: Resources are current and connect with experts when extra support is needed **Incubators**: Leverage expert networks **Food system**: Clearer health claims		**Startups**: Personalized advice **Incubators**: Personalized startup support **Food system**: Packaging designed with compliance and consumer comprehension	
Startups Food startup incuators Legal experts Consumer researcher		Startups Food startup incuators Legal experts Consumer researcher Technology partner	
Wesites that track regulatory status makes mainting a living resource feasible		Startups using AI chat bots for advice on claim language	
Resource stays relevant and connected Content updated in timely manner of regulatory update		Personalization adds value Half of users use product input features	

Navigate Regulations (3 months)

Goal of Navigator

The first stage focuses on creating an accessible starting point for food startups navigating labeling regulations or creating their first packaging. The initial intervention takes the form of a website or interactive PDF, like seen in the prototype, covering legislation most relevant to food packaging: the General Food Law (178/2002), Food Information to Consumers (1169/2011), and Nutrition and Health Claims (1924/2006). Each topic follows the three-layer format along with annotated packaging examples and links to the original legislative sources for users who want to explore the full legal text.

Values for Stakeholders

The primary value is providing a free starting point for regulatory clarification to support startups in creating more compliant and consumer-focused packaging while reducing reliance on fragmented or costly sources of information.

Supporting Documents

Supporting the Navigator is the book, serving as a printable, shareable resource that brings about inspiration for designing packaging.

Operational Considerations

The project will initially be self-funded, with the designer acting as the product owner. The primary platform will be a website containing the most up-to-date regulatory information, along with a downloadable PDF handbook marked with its latest revision date. Initial distribution will be via personal contacts, food startups, and the industry experts engaged throughout this project. To establish credibility and ensure accuracy, the content will be reviewed by a legal or regulatory expert before being released.

Success Criteria

At this stage, the criteria for success are mainly about completion and validation to confirm things work before scaling. The following should be goals for a successful stage:

- Receive feedback from 3-5 startups who used the Navigator
    - They should generally confirm they can identify which nutrition claims they can/can’t use
- Partnership or distribution agreement with a startup program or food incubator

Dynamic and Collaborative (3-6 months)

Goal of Navigator

The second stage addresses a core limitation of current regulatory resources in which they go out of date. In this stage, the Navigator becomes a living tool that updates as regulations change and expands its scope to more regulations. It also begins connecting founders to the wider support ecosystem they need when the Navigator is not enough.

Development Focus

The development focus is making the Navigator up-to-date and expanding its regulatory scope. The regulatory scope is extended to Novel Foods and a more comprehensive guide of health claims under Regulation 1924/2006. Since these foods and claims can be more confusing than nutrition claims, they will take longer to add to the tool. Websites that track EU regulatory status, such as EU Law Tracker, make maintaining the tool more feasible.

This stage also adds startup-contributed content such as packaging examples showing how claims, mandatory information, and branding have been integrated into their packaging. This incorporates the open knowledge sharing described in Opportunity 4, where the community becomes a source of practical knowledge.

Lastly, the tool links to a directory of legal and industry experts when a question a startup has falls beyond the scope of the Navigator. The Navigator builds a baseline understanding through the Navigator and startups can make more efficient and informed use of expert support. One legal consultant interviewed already offers reduced rates to mission-driven startups, demonstrating how these networks can build on relationships that already exist within the food startup ecosystem.

Values for Stakeholders

For startups, the Navigator is an up-to-date resource and also connects them to expert support when they need it. For legal experts and consultants, they can consult early-stage founders who need their services but may not know how to find them. For startup incubators, it provides stronger support in regulatory guidance.

Operational Considerations

This stage requires involvement from a broader set of stakeholders. Food startup founders are the primary users and now also contributors. Startup incubators and accelerators are distribution partners. Legal experts are partners and content contributors. Additionally, a process to find and vet experts and a mechanism for founders to submit packaging examples is required. Grant funding from public health or food innovation programs should be pursued at this stage.

Success Criteria

At this stage, the goal should be about increased engagement and maintaining the knowledge base.

- Content is updated regularly with regulatory change
- Founders use the Navigator as part of their packaging design process

Personalization (12+ months)

Goal of Navigator

The third stage is the most significant evolution, introducing personalized recommendations based on founders' products and ingredients. This direction was validated through the interview with the program manager, who mentioned that founders feel their products and challenges are unique. Additionally, a startup mentioned using AI tools to generate claims and packaging language but wasn't sure about the reliability of these outputs. By integrating personalization, the Navigator can provide personalized guidance that addresses this gap.

Development Focus

In the personalization stage, founders can enter information about their product type, ingredients, and intended claims. The Navigator then provides guidance on which claims are legally permitted, the regulatory requirements that must be met, and recommendations for communicating these claims to consumers. A Retrieval-Augmented Generation (RAG)-assisted feature can potentially create packaging copy that turns regulatory claims into messaging. The regulatory scope should evolve as legislation develops, including mandatory FOP labeling, nutrition profiles, or regulations concerning the naming of plant-based meats.

Values for Stakeholders

For startups, the Navigator responds to their specific situation. For the food system, packaging designed with compliance and consumer comprehension is ultimately what the regulatory framework was intended to produce.

Operational Considerations

Food startup founders remain the primary users, while startup incubators serve as key partners for reaching them. As the regulatory scope expands, legal experts become more important for validating and maintaining the accuracy of the knowledge base.

Implementing personalization also introduces operational challenges. Because users will enter product information, the tool must securely collect and process data to maintain user trust. This requires decisions made on data infrastructure, processing methods, and how the information will be shown to users. Compliance with Regulation 2016/679 (GDPR) will be crucial.

Another consideration is the development of the RAG system which requires building and maintaining a regulatory knowledge base that connects ingredients to claims as well as a taxonomy database. For example, magnesium links to "Reduction of tiredness and fatigue." The quality of this knowledge base will determine the accuracy of the personalized recommendations. Currently existing similar tools include LIST (Legal Issues Taxonomy), which matches a person's real-life situation (“getting kicked out”) to a standard legal code or the Help Guide Writer currently being prototyped by JusticeBench.

Success Criteria

At this stage, the goal should be about whether startups use the personalization aspect.

- About half of users coming to the Navigator also use the product input features



Conclusion and Reflection

The final chapter concludes the project's contributions and reflects on its limitations, along with recommendations for future work. It closes with a reflection on the personal learnings.

CONCLUSION

This project began by exploring the disconnect between the intent of food labeling regulations and what happens in practice. Although regulations are designed to protect consumers and support informed decision-making, unhealthy products continue to dominate supermarket shelves while the complexity of the regulatory framework creates a knowledge gap for businesses. Using the Frame Innovation method, this challenge was examined from multiple perspectives. This complexity disproportionately affects food startups which often lack the resources and expertise available to larger companies. This led to a reframing of the original problem into the following research question: How can food startups be supported to design packaging that communicates clearly and enables informed consumer choice?

Through the identification of themes across the domain and the creation of frames that helped see the problem in a new way, the Food Labeling Navigator, emerged from the frame Library: A Place for Learning and Connecting, inspired by principles of Accessibility in Museums. The navigator transforms regulations into plain-language guidance, annotated packaging examples, and consumer perception insights. In doing so, it brings together the themes of Trust through Transparency and Navigating Complexity through Accessible Knowledge.

The Food Labeling Navigator is not intended to replace legal expertise or simplify the regulatory framework. Rather, it provides startups with a starting point for making informed packaging decisions. The implementation roadmap outlines how the concept can evolve and the work needed to get there. While the navigator is only one part of a much larger food system, it has the potential to lower barriers to compliance and improve communication between food businesses and consumers.

LIMITATIONS/ RECOMMENDATION

Limitations of Research

Sample Size

The findings are based on 4 stakeholder interviews and 2 prototype validation sessions, all conducted within the Netherlands. These provided qualitative insights but are not statistically representative of food startups across Europe. Additionally, the startups interviewed had already launched their first packaging and were in the process of redesigning it. They were able to reflect on the challenges they faced, but the prototype is primarily intended for starting entrepreneurs creating their first packaging. Reaching this audience is inherently difficult since they are not visible until they begin actively searching for resources.
Recommendation: The next step is to validate the tool with founders at the very beginning of their packaging journey by partnering with shared kitchen spaces, incubators, and startup programs, while improving the discoverability of the resource through broader online distribution.

The Role of the Consumer

An important topic to consider is the role of the consumer. In this project, consumers were not directly involved in the research or validation. Although the intervention ultimately aims to support healthier and more informed consumer choices, it focuses primarily on helping food startups navigate food labeling regulations. As discussed in *Context*, consumers often express a desire to eat healthier but face barriers such as price, convenience, and the wider food environment. Many startup products also rely on higher-quality or organic ingredients, which can make them less accessible to price-sensitive consumers. Furthermore, unhealthy retail environments continue to influence purchasing decisions (Djojosoeparto et al., 2026).
Recommendation: As emphasized throughout the Frame Innovation process, the challenge is networked and cannot be solved by a single intervention. Future work should therefore engage a broader range of stakeholders to position the Food Labeling Navigator as one contribution within a wider systems-level transformation.

Limitations of Design Process

Frame Creation Process

The frame creation session was conducted with four design students. While they brought diverse design perspectives, Dorst (2015) recommends involving participants with different forms of expertise, including domain specialists and stakeholders from the problem area. In this workshop, I acted as the content expert by providing the necessary context and research.
Recommendation: Future sessions would benefit from including food startups, legal experts, and actors from the food innovation ecosystem, whose experiences could generate different frames and uncover additional opportunities.

REFLECTION

Reflection on Project

Relevance to Field

This thesis offers a direction for supporting early-stage startups, helping them in one aspect of the many challenges they face. It also argues for the support of startups as one way to bring change to the food system. This is an idea that is starting to emerge more with food accelerators, incubators, many of which are intended for the stage of scale up and for founders who already have proved themselves in some way. This project in particular targets the early stage founders who are taking the first leap and are in need of initial support. as many of the current resources offered are for founders with valid MVP's or are scaling up.

This project demonstrates the relevance of design by applying design to addressing systemic challenges. The use of Frame Innovation aligns with the growing role of design as a complementary approach to transition studies to accelerate societal transitions (Goss et al., 2025). While the method has been applied to challenges in food systems such as the protein transition (Peeters et al., 2024), this project extends its application to food labeling regulations. Instead of proposing regulatory changes, the project shows how design can bridge policy and practice by making the regulatory system more accessible while supporting broader transitions toward healthier and more sustainable food systems.

Reflection on Learning

Frame Innovation

One of my personal goals was to use design methods intentionally. Coming from a non-design background, most design concepts coming into this master's were new to me. With every methodology, I was interested in why they were used. Frame Innovation resonated with me because it was a structured way to uncover an open, complex problem. As someone who is naturally process-driven, I found reassurance in the way Dorst outlined each step, which helped guide my research and integrate insights from one stage to the next. At the same time, I learned that a design method should not be a rigid framework. Dorst even says that the process "looks deceptively linear" and that the nine-step model should not become "a straitjacket to the practitioner." Although the report is presented as linear steps, the process itself was iterative and sometimes messy. I revisited *Archaeology* many times and created 3 sets of themes. I learned how to make this framework my own process. In particular, it helped me look at the problem from different angles rather than jumping to find solutions.

One aspect of Frame Innovation that I found challenging was developing the themes. Looking at the examples in Dorst's book, it was difficult to judge whether the themes I created were sufficiently broad, meaningful, or representative of the problem situation. I also realized that the themes needed to be intuitive enough for workshop participants to understand and build upon. Dorst notes that developing strong themes is something designers gain an intuition for over time. While I don't have those years of knowledge, I iterated on the themes several times and explored how similar concepts were understood in other domains.

Translating Complex Concepts

One skill I wanted to bring was translating complex technical information into something more accessible. Throughout my career, I acted as a bridge between the research and design team and the rest of the cross-functional team. This project allowed me to do that in a different domain. I translated legal regulations into plain language and visual explanations. I also hope this report itself makes the regulatory landscape easier to understand for readers who are unfamiliar with EU food law.

Exploring New Domains

I started with some knowledge of the food and beverage industry, but food startups, EU food law, and legal design were new to me. I was inspired by how founders are driven by purpose and build their companies alongside their full-time jobs. Exploring EU food regulation gave me an appreciation of its strengths and its limitations. I better understand the importance of consumer protection while also recognizing the challenges created by complex legislation and the approval process. Lastly, legal design and making information more human-centered influenced the prototype and the way I approached this project. I think every industry can improve their systems with the principles of legal design.

Overall, I am proud of what I have accomplished throughout this project. Doing a thesis was a new experience for me and challenged me to grow as a designer and researcher. I hope to carry these learnings into my future career. This project has also left me inspired by the passion and resilience of food entrepreneurs, and there is now a part of me that is inspired to start a food company.

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