



Inclusive and Transparent Food Labelling: A European Handbook

Practical Guidelines, Case Studies, and Best Practices for Ethical, Green, and Accessible Food Labelling

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Foreword

The Urgent Need for Ethical & Green Food Literacy



We stand at a critical juncture in our relationship with food. The choices we make in supermarkets, kitchens, and classrooms ripple outwards, impacting global climate patterns, the welfare of farming communities, and the health of our ecosystems. Yet, navigating the modern food landscape has become a complex challenge. A sea of labels proclaiming "green," "natural," "eco-friendly," and "ethical" confronts consumers, often creating more confusion than clarity. This phenomenon, known as greenwashing, erodes consumer trust and undermines the efforts of those genuinely committed to sustainable practices.

The urgency for widespread ethical and green food literacy has never been greater. It is no longer a niche interest but a fundamental competency for responsible citizenship and professional practice in the 21st century. This handbook is born from this urgent need. It represents a collaborative, pan-European effort to cut through the noise, providing a clear, actionable, and evidence-based framework for understanding, implementing, and teaching the principles of ethical and green food labelling. Our goal is to empower a new generation of consumers, professionals, and policymakers to become agents of change, transforming the food system from the inside out through the power of informed choice.

How to Use This Handbook: A Guide for Different Target Groups

This handbook is designed as a modular toolkit, with specific pathways for different users:

- **For VET Educators & Trainers:** You are the catalysts. Your pathway begins with Chapter 4, which provides a full curriculum integration framework, including lesson plans, practical exercises, and assessment strategies. Use Part III (Case Studies) to bring real-world examples into your classroom and Chapter 8 to ensure your teaching materials are accessible to all learners.
- **For Students in Food-Related Sectors:** You are the future. Start with Chapter 3 to become a savvy "label detective," able to critically evaluate any claim. Part III (Case Studies) will show you the inspiring work already being done across Europe. This knowledge will not only make you a more conscious consumer but will also give you a competitive edge in the job market, equipping you with the sustainability skills employers increasingly demand.
- **For SMEs & Entrepreneurs:** You are the innovators. Your direct path to actionable business strategy is Chapter 5. It offers a step-by-step guide for conducting a self-assessment, selecting the right eco-labels, and communicating your sustainability story credibly to avoid greenwashing. The Case Studies in Part III provide scalable models of success that you can adapt.
- **For Policymakers & Regulatory Bodies:** You are the enablers. Your focus should be on Chapter 6, which outlines supportive policy frameworks, from public procurement to consumer awareness campaigns. This chapter provides the



rationale and blueprint for creating an ecosystem where ethical business practices are rewarded and greenwashing is systematically phased out.

All readers are encouraged to begin with the Introduction and Chapter 1 to build a shared foundational understanding of the core concepts and the pivotal EU policy context that makes this work so timely and essential.

Introduction

Project Overview: "Ethical and Green Food Labelling"

This handbook is a key output of the Erasmus+ KA220-VET project, "Ethical and Green Food Labelling for the mind shifting towards ethical and sustainable consumption." Funded by the European Union, this three-year strategic partnership brought together vocational schools, universities, SMEs, and research experts from ten nations. Our collective mission was to bridge the critical gap between the growing consumer demand for sustainable food and the practical skills needed to meet it within vocational education and training (VET) and the broader food industry.

The project, and by extension this handbook, moves beyond theory. It is a practical response to a clear market and societal need, delivering:

- A **competency framework** for assessing knowledge gaps in food labelling.



- A **blended VET programme** complete with a Massive Open Online Course (MOOC) and teaching materials.
- A **compendium of best practices and case studies** from across Europe.
- **Policy recommendations** to foster a more transparent and sustainable food ecosystem.

This book synthesizes these outputs into a single, comprehensive resource.

The EU Context: Green Deal, Farm to Fork, and the Fight Against Greenwashing

This initiative is inextricably linked to the European Union's ambitious vision for a sustainable future. The European Green Deal is the EU's growth strategy to become the first climate-neutral continent by 2050. At its heart lies the Farm to Fork Strategy, which explicitly aims to design "a fair, healthy and environmentally-friendly food system."

A cornerstone of this effort is empowering consumers to make sustainable choices. However, this empowerment is hampered by unreliable information. The European Commission's own studies revealed that over 50% of green claims are vague, misleading, or unsubstantiated. In direct response, the Proposal for a Directive on Green Claims (2023) seeks to clamp down on greenwashing by mandating that all environmental claims be proven with scientific evidence and verified by a third party.

This handbook exists within this pivotal moment. It is designed to prepare VET learners, businesses, and citizens for this new reality—a reality where transparency is mandatory, and credibility is the currency of the market.

Defining Our Terms: Ethics, Sustainability, and Transparency in the Food Chain

To navigate this complex field, we must first establish a clear, shared vocabulary:

- **Ethics in the Food Chain** refers to the moral principles governing food production and distribution. It encompasses:
 - **Social Justice:** Ensuring fair wages and safe working conditions for all workers, from farmers to factory staff (e.g., Fairtrade).
 - **Animal Welfare:** Providing living conditions that allow animals to express their natural behaviours and be free from suffering.
 - **Equity:** Creating a system that is fair and accessible for both producers and consumers.
- **Sustainability** is the holistic balance of three interconnected pillars:
 - **Environmental:** Protecting natural resources by minimizing pollution, conserving water and biodiversity, and reducing greenhouse gas emissions.



- **Social:** Supporting the well-being and fairness of people and communities.
- **Economic:** Ensuring the long-term economic viability for farmers and businesses without compromising the other two pillars.
- **Transparency** is the practical mechanism that makes ethics and sustainability credible. It means providing clear, accessible, and verifiable information about a product's journey from farm to fork. This includes openly sharing information about sourcing, production methods, and the true environmental and social footprint.

In the context of this handbook, Ethical and Green Food Labelling is the tangible application of these concepts. It is the use of standardized, verifiable labels and claims that communicate a product's performance against defined ethical and environmental criteria, thereby enabling the transparency that allows for truly informed consumer choice.

Part I: The Foundation – Understanding the Landscape

Chapter 1: The "Why" Behind Ethical Food Labelling

Introduction

Ethical and green food labelling is no longer a niche trend but a fundamental shift in the global food system. This chapter explores the powerful drivers behind this movement, explaining why understanding these labels is crucial for consumers, businesses, and educators alike. We will move beyond the "what" to uncover the compelling reasons—economic, environmental, social, and strategic—that make ethical food labelling a defining issue of our time.



Figure 1: The Four Pillars Driving the Ethical Food Labelling Movement

1.1 The Consumer Shift: From Price to Values

The most visible driver of change is the evolution of the consumer. A profound transformation is underway, where purchasing decisions are increasingly influenced by personal and collective values, not just price and quality.

- **The Empowered Consumer:** Armed with smartphones and social media, modern consumers can instantly research brands, scan barcodes for information, and share their discoveries—both positive and negative—with a global audience. This transparency has shifted power from corporations to individuals.
- **Values-Based Purchasing:** A growing segment of shoppers, particularly among younger generations (Millennials and Gen Z), actively seek products that align with their ethical beliefs. They are asking:
 - *"Was this produced in a way that protects the environment?"*
 - *"Were the workers who made this treated fairly and paid a living wage?"*
 - *"Were the animals in this supply chain raised humanely?"*



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- **Food as Identity and Political Action:** Consumption is increasingly seen as a form of political and social expression. Choosing a product with a Fairtrade or Organic label is a conscious act of supporting a specific type of agriculture and a vote for a more sustainable and equitable world. This trend turns everyday grocery shopping into a powerful tool for collective change.



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THE OLD PARADIGM
Price & Convenience

How much does it cost?"



Cost
How much does it cost? A straightforward pricing approach.

Convenience
Fast food options focus on speed and accessibility.

Loyalty
Brand loyalty is built on promotions and deals offered.

Promotions
BOGOF deals attract customers but may lack genuine value.



THE MINDSHIFT

THE NEW PARADIGM
Values & Impact

"What is the story behind it?"



Value
What is the story behind this product? Focus on meaningful purchases.

Transparency
Researching products enhances clarity and informed choices.

Impact
Ethical alignment and social responsibility drive consumer choices.

Identity
Supporting brands that reflect personal beliefs matters.



Figure 2: The Consumer Value Shift: From Price to Values

1.2 Environmental Imperatives: Climate Change, Biodiversity, and Resource Use

The global food system is a primary contributor to pressing environmental crises. Ethical labelling serves as a critical mechanism for mitigating this impact by guiding choices towards more sustainable options.

- **Climate Change:** Agriculture is a major source of greenhouse gas emissions (e.g., methane from livestock, nitrous oxide from fertilizers, carbon dioxide from land-use change and transportation). Labels like **Carbon Neutral** or those promoting **plant-based** and **local** products help consumers reduce their dietary carbon footprint.
- **Biodiversity Loss:** Intensive farming practices, deforestation for agriculture, and pesticide use are devastating global biodiversity. Labels such as **EU Organic** (which restricts pesticide use) or **Rainforest Alliance Certified** (which promotes habitat conservation) help consumers support farming methods that protect ecosystems and wildlife.
- **Resource Depletion:** Agriculture is the largest user of freshwater worldwide and contributes to soil degradation. Ethical labels can signal practices that promote **water conservation, soil health** (e.g., through no-till farming, cover crops), and the sustainable management of finite resources.



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THE JOURNEY OF YOUR FOOD

Understanding the impact of our food choices

AGRICULTURE

Farming practices lead to **deforestation** and water scarcity, affecting biodiversity and freshwater resources.



PROCESSING

Processing and transport contribute to **GHG emissions** and reliance on fossil fuels, impacting our climate.

PACKAGING

Packaging waste creates **plastic pollution** and food waste, posing serious environmental challenges.



RETHINK YOUR CHOICES

Small changes can lead to significant impacts.

Figure 3: The Environmental Footprint of Food Production



1.3 Social Responsibility: Fair Trade, Labour Rights, and Animal Welfare

Ethics extends beyond the environment to encompass the social dimensions of our food system, ensuring dignity and fairness for all beings involved in the production chain.

- **Fair Trade and Labour Rights:** A significant amount of our food, such as coffee, cocoa, and bananas, is grown in developing countries where exploitative labour practices, including child labour and poverty wages, can be prevalent. **Fairtrade** certification provides a verifiable system that ensures:
 - A guaranteed minimum price to protect farmers from market volatility.
 - An additional Fairtrade Premium for community development projects.
 - Safe working conditions and the prohibition of forced or child labour.
- **Animal Welfare:** Public concern for the treatment of farm animals is at an all-time high. Ethical labels addressing animal welfare (**Pasture-Raised, Free-Range, Certified Humane**) provide assurance that animals were raised with access to open spaces, the ability to engage in natural behaviours, and were treated humanely throughout their lives, moving away from confined and industrialized systems.

1.4 The Business Case: Risk Management, Brand Reputation, and Market Access

Adopting ethical food labelling is not just a moral imperative; it is a sound business strategy that offers tangible competitive advantages.

- **Risk Management:** In an era of heightened transparency, companies that make unsubstantiated claims ("greenwashing") face significant reputational damage, consumer backlash, and potential legal repercussions under new regulations like the EU's Green Claims Directive. Robust, third-party-verified ethical labelling mitigates this risk by providing proof of compliance.
- **Brand Reputation and Consumer Trust:** A strong commitment to sustainability and ethics builds invaluable brand equity and consumer loyalty. Companies that are transparent about their practices can differentiate themselves in a crowded market, fostering a reputation as a responsible and trustworthy leader.



- **Market Access and Competitiveness:** As large retailers, public procurement programs, and export markets increasingly demand sustainable and ethically certified products, having these labels becomes a "license to trade." It opens doors to new business opportunities and supply contracts that would otherwise be inaccessible.
- **Attracting and Retaining Talent:** Companies with a clear ethical purpose are more attractive to top talent. Employees, particularly younger ones, are increasingly motivated to work for organizations that reflect their values, leading to higher job satisfaction and lower turnover.

Chapter 2: Navigating the EU Regulatory Framework

Introduction

The proliferation of ethical and green labels in the European marketplace has necessitated a robust regulatory response to ensure transparency, combat misinformation, and create a level playing field. This chapter provides a comprehensive analysis of the key European Union policy initiatives that constitute the foundational framework for sustainable food labelling. Understanding this regulatory architecture is paramount for educators, producers, and policymakers to ensure compliance, foster genuine sustainability, and empower informed consumption.

2.1 The European Green Deal and its Impact on Food

The **European Green Deal (EGD)**, presented by the **von der Leyen Commission in December 2019**, represents the European Union's most comprehensive and transformative strategy for achieving **climate neutrality by 2050**. It redefines the EU's long-term growth model, establishing a framework that integrates **economic progress, environmental sustainability, and social inclusion**. Far beyond a traditional environmental policy, the EGD functions as a **new development paradigm** for Europe—one that positions sustainability at the core of all economic and social policies.

Core Objective

At its heart, the European Green Deal aims to **decouple economic growth from resource consumption and environmental degradation**. This means fostering economic prosperity while reducing dependence on finite natural resources and minimizing ecological footprints. The EGD envisions a circular, low-carbon economy that:



- Prioritizes **resource efficiency** and **renewable energy**,
- Reduces **greenhouse gas emissions** in line with the Paris Agreement,
- Promotes **innovation and green technologies**, and
- Ensures a **just transition** that supports workers, industries, and regions most affected by the shift to sustainability.

By doing so, the EU seeks to turn climate and environmental challenges into new opportunities for competitiveness, job creation, and improved quality of life across all member states.

Relevance to the Food System

The food system is recognized within the EGD as a **critical leverage point for achieving sustainability goals**, given its deep interconnections with **biodiversity, resource use, and climate change**. Agriculture, food production, processing, distribution, and consumption together account for a significant portion of Europe’s environmental footprint, influencing:

- **Land and water use,**
- **Greenhouse gas emissions,**
- **Soil degradation,** and
- **Loss of biodiversity.**

To address these challenges, the EGD introduces the **“Farm to Fork Strategy”** as one of its central pillars. This strategy outlines a vision for **a fair, healthy, and environmentally-friendly food system**, aiming to:

- Reduce the use of chemical pesticides and fertilizers,
- Encourage sustainable farming practices,
- Minimize food waste, and
- Empower consumers to make informed, sustainable food choices.

In doing so, the EGD recognizes that transforming Europe’s food system is essential not only for environmental protection but also for public health, food security, and rural development.

Direct Impact on Food Labelling and Regulation



The European Green Deal serves as the **political and legislative umbrella** for all subsequent EU policies, including those concerning **food labelling, marketing, and sustainability claims**. It mandates that every future EU initiative must align with its overarching goals of climate neutrality and sustainability.

This directive has a **direct regulatory impact** on the evolution of food labelling practices by:

- Encouraging **standardized, transparent, and science-based labelling systems** that reflect environmental and social impacts,
- Moving away from **voluntary or fragmented corporate initiatives** towards a **unified and enforceable EU framework**, and
- Ensuring that consumers receive **reliable information** to make environmentally responsible choices.

Through this approach, the EGD underscores a paradigm shift—from corporate social responsibility being a matter of goodwill to it becoming a **legal and regulatory requirement**. It thus paves the way for **mandatory sustainability labelling**, ensuring that environmental performance becomes a measurable and comparable aspect of the EU’s internal market.

2.2 The Farm to Fork Strategy: A Fair, Healthy, and Environmentally-Friendly Food System

The **Farm to Fork Strategy (F2F)**, adopted by the European Commission in **May 2020**, is the **central component of the European Green Deal (EGD)** dedicated to transforming Europe’s food system. It provides a **comprehensive and long-term roadmap** for reshaping how food is produced, processed, distributed, and consumed across the EU. As such, it serves as the cornerstone for achieving the EU’s goal of a **fair, healthy, and environmentally sustainable food system**—one that supports both human and planetary health.

The F2F Strategy recognizes that the current food system, while providing affordable and abundant food, is **responsible for a significant share of greenhouse gas emissions, drives biodiversity loss, and contributes to resource depletion and public health challenges**. In response, the strategy outlines a **coherent set of policy measures and legislative actions** to guide the transition toward sustainability in every stage of the food value chain.



Overarching Vision

The overarching vision of the Farm to Fork Strategy is to **redesign the European food system** so that it:

- **Reduces its environmental and climate footprint,**
- **Safeguards food security** and the **resilience** of supply chains,
- **Protects public health** by encouraging healthy, sustainable diets, and
- **Ensures the economic viability and fairness** of food system actors—from farmers and fishers to retailers and consumers.

In essence, the F2F Strategy seeks to create a **“win-win-win” model** that aligns environmental sustainability, economic competitiveness, and social well-being. It explicitly emphasizes that sustainable food systems must not only deliver environmental gains but also remain **inclusive and economically rewarding**, particularly for small and medium-sized producers.

Key Legislative and Policy Initiatives Relevant to Labelling

The Farm to Fork Strategy introduces several **key legislative and policy initiatives** that directly impact how sustainability, nutrition, and ethical dimensions of food are communicated to consumers through labelling. These initiatives aim to ensure **transparency, comparability, and trust** in food information across the EU single market.

- Sustainable Food Labelling Framework

A flagship commitment under the F2F Strategy is the development of a **Sustainable Food Labelling Framework**. This framework is intended to integrate multiple dimensions of sustainability—**nutritional, environmental, climate-related, and social factors**—into a **coherent and standardized labelling system**.

The objective is to empower consumers to make **informed and genuinely sustainable choices**, bridging the current gap between awareness and action. The framework aims to:

- Harmonize disparate sustainability claims across the market,
- Prevent “greenwashing” through verifiable and science-based indicators, and



- Provide consumers with clear, comparable, and easily interpretable information at the point of purchase.

This initiative marks a decisive step toward **linking consumer behavior with the EU's sustainability goals**, ensuring that sustainable food production is matched by sustainable consumption patterns.

- Nutrient Profiling and Front-of-Pack Nutrition Labelling

While primarily focused on **public health**, the F2F Strategy also promotes **mandatory front-of-pack (FOP) nutrition labelling** as a means to improve dietary choices. The European Commission continues to evaluate different FOP systems—such as **Nutri-Score, Keyhole, and the Multiple Traffic Light scheme**—to identify the most effective and harmonized model for the EU.

This initiative establishes a **regulatory precedent** for **standardized and simplified consumer information**. Once operational, it could pave the way for integrating **environmental and sustainability data** alongside nutritional scores, effectively merging **health and environmental transparency** into a unified labelling approach.

- Animal Welfare Labelling

The F2F Strategy includes a commitment to develop a **new, comprehensive animal welfare labelling scheme** that extends beyond existing product categories (e.g., eggs) to encompass **a wider range of food products**.

This measure responds to growing consumer demand for greater transparency regarding **animal rearing conditions, ethical treatment, and production practices**. It also aims to:

- Strengthen the market position of producers adhering to higher welfare standards,
- Encourage continuous improvement in animal husbandry practices, and
- Support informed purchasing decisions consistent with ethical and environmental values.

By aligning welfare standards with labelling, the EU seeks to **translate animal welfare into a tangible market signal**, promoting higher welfare as a competitive advantage.

- Promotion of Organic Production



A cornerstone of the F2F Strategy is its **ambitious target to bring 25% of EU agricultural land under organic farming by 2030**. This objective directly enhances the **visibility, credibility, and market influence** of the **EU Organic label**, which already serves as a key certification for environmentally friendly and chemical-free production methods.

To achieve this, the EU aims to:

- Increase support for organic farmers through the Common Agricultural Policy (CAP),
- Boost consumer demand for organic products through public awareness campaigns and procurement policies, and
- Ensure robust enforcement of the EU Organic Regulation to maintain consumer trust.

By scaling up organic farming and strengthening its labelling framework, the F2F Strategy promotes **a shift in both production and consumption** toward more sustainable and transparent food systems.

Together, these initiatives position the **Farm to Fork Strategy** as a **transformational policy agenda** that not only aligns with the European Green Deal's environmental ambitions but also directly reshapes the **informational landscape of the EU food market**. Through enhanced and harmonized labelling systems, it seeks to connect consumer choice with sustainability outcomes, thereby making the food system more transparent, equitable, and future-proof.

2.3 Understanding the Proposal for a Directive on Green Claims (2023)

The Proposal for a Directive on Green Claims, also known as the "Directive on substantiation and communication of explicit environmental claims" (March 2023), is a landmark legislative initiative designed to tackle greenwashing and ensure the credibility of environmental claims.

- **Problem Statement:** The Proposal cites that 53% of green claims in the EU are vague, misleading, or unfounded, and 40% are completely unsubstantiated. This erodes consumer trust and creates unfair competition for genuinely sustainable businesses.
- **Core Requirements of the Proposal:**



1. **Substantiation:** All explicit environmental claims (e.g., "carbon neutral," "biodegradable," "made with recycled plastic") must be substantiated with robust, science-based, and verifiable evidence. This will require a comprehensive **Product Environmental Footprint (PEF)** methodology as a preferred basis for assessment.
 2. **Verification:** Prior to being used in the market, all claims must be independently verified by a third-party accredited entity.
 3. **Communication:** Claims must be presented clearly, with specific information on which environmental aspect they refer to (e.g., "packaging made with 30% recycled plastic"). Comparative claims (e.g., "more sustainable") must be based on equivalent information and data.
 4. **Prohibition of Generic Claims:** Vague claims like "environmentally friendly," "green," or "eco" will be prohibited unless supported by excellent, demonstrated environmental performance relevant to the claim.
- **Implications for Food Labelling:** This Directive will fundamentally change the landscape for ethical food labels. It will necessitate a radical increase in the transparency and scientific rigor behind any environmental claim on food packaging, moving from marketing-driven assertions to evidence-based communication.

2.4 Overview of Mandatory vs. Voluntary Labelling Schemes

The EU's labelling landscape is a dual system comprising mandatory information required by law and a plethora of voluntary schemes. Understanding this distinction is critical for navigating compliance and strategic communication.

Feature	Mandatory Labelling Schemes	Voluntary Labelling Schemes
Definition	Information that must be displayed on food products as required by EU law.	Information that operators choose to provide beyond legal requirements, often to differentiate their products.



Feature	Mandatory Labelling Schemes	Voluntary Labelling Schemes
Legal Basis	Directly underpinned by EU Regulations and Directives (e.g., Food Information to Consumers Regulation (FIC) 1169/2011).	Governed by private standards, collective agreements, or specific EU regulations for certification marks (e.g., EU Organic Regulation).
Enforcement	Enforced by national competent authorities (e.g., food safety agencies). Non-compliance can result in fines, recalls, or market withdrawal.	Governed by the scheme owner. Misuse can lead to loss of certification and legal action for misleading advertising.
Key Examples	<ul style="list-style-type: none"> - List of Ingredients & Allergens (FIC) - Nutrition Declaration (FIC) - Origin Labelling (for specific products) - EU Quality Schemes (PDO, PGI, TSG - while the use is voluntary, the standards are legally protected) 	<ul style="list-style-type: none"> - EU Organic Logo - Fairtrade International - Rainforest Alliance/UTZ - Animal Welfare labels (e.g., RSPCA Assured) - Various carbon neutrality claims
Consumer Perception	Often perceived as a baseline for safety and essential information.	Perceived as a sign of higher ethical or quality standards, though subject to varying levels of consumer trust.



Feature	Mandatory Labelling Schemes	Voluntary Labelling Schemes
Future Trajectory	The scope is expanding to include more sustainability dimensions (e.g., the forthcoming Green Claims Directive will <i>de facto</i> make the substantiation of environmental claims mandatory).	Under pressure to harmonize, increase transparency, and align with the PEF methodology. Schemes that fail to demonstrate rigor may lose credibility.

Chapter 3: A Decoder for Eco-Labels & Ethical Claims

Introduction

The landscape of ethical and green food labels is complex and fragmented, often leading to consumer confusion and skepticism. This chapter serves as a critical decoder, providing a systematic analysis of the most prominent label categories in the European market. It moves beyond superficial definitions to examine the governance, standards, and verification mechanisms behind each claim, empowering stakeholders to distinguish between rigorous certifications and potentially misleading marketing.

3.1 Organic Certification (EU Organic Leaf & Others)

Organic certification stands as one of the most established and widely recognized ethical labelling systems globally. Its foundational principle is the promotion of agricultural practices that emulate natural systems, emphasizing biological processes, biodiversity, and the conservation of natural resources. It represents a systemic alternative to conventional, input-intensive agriculture by prioritizing ecological balance and soil health.

The EU Organic Logo (The Leaf): A Legislated Standard

The EU Organic Logo, commonly known as "the Leaf," is a legally protected and standardized mark that guarantees compliance with a comprehensive set of production rules throughout the European Union.



- **Governance and Legal Basis:**

The logo is governed by **Regulation (EU) 2018/848**, which came into full application in January 2022. This regulation provides a robust, harmonized legal framework that supersedes national variations, ensuring a consistent definition of "organic" across all 27 member states. Its scope is comprehensive, covering the production, processing, distribution, and import of organic products, as well as the certification and control systems required to enforce them.

- **Core Production Standards and Prohibitions:**

The regulation mandates a holistic approach to farming, with several key prohibitions and requirements:

1. **Prohibition of Synthetic Inputs:**

- **Pesticides & Fertilizers:** The use of synthetic chemical pesticides and readily soluble mineral fertilizers is strictly prohibited. Instead, the system relies on:
 - **Crop Rotation:** A fundamental practice to maintain soil fertility, break pest and disease cycles, and manage weeds.
 - **Green Manure & Composting:** The use of leguminous crops and farm-produced compost to fix nitrogen and enrich soil organic matter.
 - **Biological Pest Control:** The promotion of beneficial organisms and the use of approved biological preparations to manage pests.

2. **Absolute Ban on Genetically Modified Organisms (GMOs):**

- GMOs are prohibited at all stages of the production chain, from seed to final product. This extends to feed for organic livestock. To prevent accidental contamination, operators must demonstrate due diligence through sourcing from certified non-GMO seed suppliers and implementing stringent segregation measures during processing and transport.

3. **Strict Animal Welfare Regulations:**



- Organic livestock production is intrinsically linked to the land and imposes high welfare standards:
 - **Husbandry Practices:** Tethering and isolated housing are prohibited. Animals must be kept in groups appropriate to their species.
 - **Outdoor Access:** Livestock must have mandatory and regular access to open-air areas, preferably pasture.
 - **Organic Feed:** Animals must be fed 100% organic feed, with a significant portion (at least 60% for ruminants) originating from the farm itself or the same region.
 - **Restricted Use of Veterinary Medicines:** The preventive use of antibiotics is banned. If an animal becomes ill, priority is given to phytotherapeutic and homeopathic treatments. If antibiotics are necessary as a last resort, the withdrawal period is doubled, and the animal or its products may lose organic status after multiple treatments.
- 4. **Prohibition of Ionizing Radiation:**
 - The use of irradiation for food preservation or decontamination is strictly forbidden, aligning with the principle of minimal processing.
- **Verification and Control Mechanism:**

Compliance is not self-declared. The EU system mandates a rigorous, independent verification process:

1. **Certification by Accredited Bodies:** All operators (farmers, processors, importers, traders) must be certified by a control body or authority that is officially accredited by the competent national authority.
2. **Annual Audits:** Certification involves a comprehensive annual inspection, including on-site audits, review of record-keeping (e.g., input logs, sales records, animal health plans), and potential residue testing of soil and products.
3. **Full Traceability:** The "farm-to-fork" principle requires that every step of the supply chain is certified, ensuring the integrity of the organic product is maintained from the field to the consumer.



Other Major Organic Labels: A Comparative Perspective

While the EU Organic Logo provides a strong baseline, other significant labels operate in the global marketplace, some with differing or more stringent requirements.

- **USDA Organic (United States Department of Agriculture):**
 - **Role:** This is the primary standard for organic products in the United States and is a key benchmark for imports into the US market. The EU and US have a formal equivalency arrangement, recognizing each other's standards as largely equivalent, which facilitates trade.
 - **Key Similarities and Differences:** The core principles align with the EU's, prohibiting most synthetic fertilizers and pesticides, GMOs, and irradiation. Key differences lie in the details, governed by the USDA's "National List of Allowed and Prohibited Substances." This list may permit or restrict certain substances (e.g., specific antibiotics for livestock, synthetic materials) differently from the EU regulation, requiring careful attention for exporters.
- **Private and National Labels with Enhanced Standards (e.g., Bioland, Demeter):**
 - **Concept:** These are private associations whose standards often exceed the legal minimums set by the EU Organic regulation. They represent a commitment to a more profound interpretation of organic principles.
 - **Bioland (Germany):** As one of the largest organic associations in Europe, Bioland's standards are stricter than the EU baseline. For example, it requires 100% organic feed for livestock (with no transitional exceptions), mandates a higher percentage of feed to be produced on the farm itself, and has more restrictive rules on the use of certain natural fertilizers and processing aids.
 - **Demeter:**
 - **Philosophy:** Demeter represents **Biodynamic agriculture**, a pioneering form of organic farming developed by Rudolf Steiner. It is a holistic and spiritual-ethical approach that views the farm as a self-sustaining, living organism.



- **Enhanced Standards:** Beyond the EU Organic requirements, Demeter mandates:
 - **Biodynamic Preparations:** The use of specific herbal and mineral preparations (e.g., Preparation 500, made from cow manure fermented in a cow horn) to enhance soil vitality and plant health.
 - **Strict Limits on External Inputs:** A significantly higher proportion of livestock feed must be produced on the farm itself.
 - **Stringent Processing Standards:** The use of artificial additives and processing aids is far more restricted than in the EU Organic regulation. For instance, the number of allowed additives in Demeter processing is a small fraction of those permitted under the general EU Organic rules.

3.2 Fair Trade and Social Justice Labels

These labels focus on the social and economic dimensions of sustainability, ensuring equitable conditions for producers and workers in global supply chains.

- **Fairtrade International (The Blue & Green FAIRTRADE Mark):**
 - **Governance:** A multi-stakeholder system governed by producers, traders, and NGOs.
 - **Core Standards:**
 - **Guaranteed Minimum Price:** Acts as a safety net for farmers against market price crashes.
 - **Fairtrade Premium:** An additional sum paid to producer cooperatives for investment in business or community projects (e.g., schools, healthcare).
 - **Democratic Organization:** Encourages small-scale farmers to organize into cooperatives.
 - **Safe Working Conditions & Prohibition of Child/Forced Labour.**
 - **Scope:** Primarily focused on specific commodity crops from the Global South (e.g., coffee, cocoa, bananas, tea).
- **Fair for Life (by IMO):**



- o **Distinction:** A more flexible standard that is not limited to specific products or countries. It can be applied to agricultural production, processing, and trading worldwide, including in Europe.
- o **Focus:** Social accountability and fair trade practices throughout the supply chain, even for non-edible products.

3.3 Animal Welfare Labels (Pasture-Raised, Free-Range, etc.)

This category is highly diverse, ranging from legally defined terms to private certification schemes with varying levels of rigor.

- **EU Regulatory Terms:**

- o **"Free-Range" (Poultry):** Defined in EU legislation, requiring continuous daytime access to open-air runs for at least half their life.
- o **"Barn" or "Cage-Free" (Eggs):** Hens can move freely within a barn but do not necessarily have outdoor access.
- o **Limitation:** Many terms, like "pasture-raised," lack a unified EU legal definition, leading to potential misuse.

- **Private Certification Schemes:**

- o **RSPCA Assured (UK):** A comprehensive science-based standard focusing on the "Five Freedoms" of animal welfare (freedom from hunger/thirst; discomfort; pain/injury/disease; fear/distress; freedom to express normal behavior).
- o **Animal Welfare Approved (AGW):** A highly rigorous, non-profit label with some of the highest welfare standards, requiring animals to be raised on pasture or range for their entire lives.
- o **EU Organic Logo:** As mentioned in 3.1, includes significant animal welfare requirements, making it a reliable baseline for welfare.

3.4 Environmental Footprint and Carbon Neutral Claims

These claims relate to a product's overall environmental impact, particularly its contribution to climate change. They are currently a major focus of regulatory scrutiny due to widespread greenwashing.

- **Product Environmental Footprint (PEF):**

- o **Definition:** A methodological framework developed by the European Commission for quantifying the environmental performance of a product or service throughout its life cycle.



- o **Significance:** The proposed Green Claims Directive (see Chapter 2.3) positions PEF as the preferred method for substantiating environmental claims, aiming to create a level playing field.
- **Carbon Neutral/Climate Neutral Claims:**
 - o **Definition:** A claim that the CO₂ emissions associated with a product's life cycle have been calculated, reduced as much as possible, and any remaining emissions have been compensated for by financing an equivalent amount of carbon savings elsewhere (e.g., through carbon offset projects like reforestation).
 - o **Critical Evaluation Points:**
 1. **Transparency:** Is the Life Cycle Assessment (LCA) methodology publicly available?
 2. **Reduction-First Strategy:** Has the company demonstrably reduced its own emissions before resorting to offsets?
 3. **Quality of Offsets:** Are the carbon credits from verified, permanent, and additional projects (e.g., under the Gold Standard or Verified Carbon Standard)?

3.5 Seafood Sustainability Labels (MSC, ASC)

These labels address the critical issue of overfishing and the environmental impact of aquaculture.

- **Marine Stewardship Council (MSC - Blue Fish Label):**
 - o **Focus:** Certification of **wild-caught** seafood.
 - o **Core Principles:**
 1. Sustainable fish stocks (preventing overfishing).
 2. Minimizing environmental impact (protecting the marine ecosystem).
 3. Effective management (responsive and legal fisheries management).
 - o **Criticism:** Some debates exist regarding the certification of certain large-scale fisheries.
- **Aquaculture Stewardship Council (ASC - Green Fish Label):**
 - o **Focus:** Certification of **farmed (aquacultured)** seafood.
 - o **Core Standards:** Address key impacts of aquaculture, including:
 1. Responsible sourcing of feed.



2. Minimizing pollution and chemical use.
3. Protecting biodiversity and local ecosystems.
4. Ensuring fair labour conditions and community relations.

3.6 Regional and Artisanal Quality Schemes (PDO, PGI, TSG)

The European Union’s **Geographical Indications (GIs)** and **quality schemes** form a cornerstone of its agricultural, food, and rural development policy. These schemes are designed to **safeguard the reputation of regional products, preserve traditional production methods, and promote the cultural and economic value of local heritage**. By linking products to their geographical origins and production traditions, the EU ensures that consumers receive **authentic, traceable, and high-quality products**, while producers benefit from **legal protection and added market value**.

The protection of GIs also plays a crucial role in **preventing unfair competition and counterfeiting**, as only producers located in the designated regions and adhering to registered specifications may use the protected names. Furthermore, these schemes support **rural economies**, encourage **sustainable land use**, and contribute to the **diversity of European agriculture and gastronomy**.

EU Geographical Indication schemes consist of three main categories:

1. **Protected Designation of Origin (PDO)**
2. **Protected Geographical Indication (PGI)**
3. **Traditional Speciality Guaranteed (TSG)**

Protected Designation of Origin (PDO)

Protected Designation of Origin (PDO) is the highest and most stringent level of geographical protection under EU law. It designates products that have the **strongest link between their qualities and the geographical area in which they are produced**.

- **Requirements:**

Every step of the production process—**production, processing, and preparation**—must occur **entirely within the specific region**. The product’s unique characteristics must be **essentially or exclusively due to the natural and human factors** of that geographical environment,



such as local climate, soil conditions, and traditional expertise.

PDO products must comply with strict specifications that describe production methods, raw materials, and geographical boundaries.

- **Purpose and Benefits:**

PDO status preserves **authentic, location-specific products** that cannot be replicated elsewhere, even with identical techniques. It strengthens local identity and ensures that producers in the designated area maintain high quality and transparency.

- **Examples:**

- **Parmigiano Reggiano (Italy):** A hard cheese made in specific provinces of northern Italy, whose flavor and texture depend on the local milk, pastures, and traditional maturation process.
- **Roquefort (France):** A blue cheese made exclusively from sheep's milk and aged in the natural caves of Roquefort-sur-Soulzon.
- **Kalamata Olives (Greece):** Olives grown and processed in the Peloponnese region, known for their distinctive taste and texture tied to local soils and climate.

Protected Geographical Indication (PGI)

Protected Geographical Indication (PGI) offers a more flexible form of geographical protection, recognizing products that maintain a **strong connection to their region of origin** but allowing that not all production stages take place there.

- **Requirements:**

For a product to qualify as PGI, at least **one of the stages of production, processing, or preparation** must occur within the defined geographical area. The product must have a **specific quality, reputation, or other characteristic** directly attributable to its origin. This allows for regional specialization while acknowledging broader supply chain realities.

- **Purpose and Benefits:**

PGI certification supports **regional reputation and cultural heritage**, promotes **local employment**, and ensures **consumer trust** by linking the product's identity to a specific region. It also allows for greater



flexibility compared to PDO, making it more accessible to producers engaged in regional processing.

- **Examples:**

- **Prosciutto di Parma (Italy):** Dry-cured ham produced and aged in the Parma region, benefiting from the local microclimate.
- **Comté (France):** Cheese produced in the Jura Mountains, where the natural environment shapes its flavor profile.
- **Lübecker Marzipan (Germany):** Renowned marzipan made in Lübeck, famous for its traditional recipe and craftsmanship.

Traditional Speciality Guaranteed (TSG)

The **Traditional Speciality Guaranteed (TSG)** scheme highlights **traditional production methods or recipes**, emphasizing cultural and historical authenticity rather than geographic origin. Unlike PDO and PGI, TSG **does not link the product to a specific place**, allowing producers across the EU to make the product as long as they adhere to traditional specifications.

- **Requirements:**

To qualify for TSG status, a product must have a **traditional composition, production process, or recipe** that has been used **for at least 30 years**. The designation protects the product's **traditional character** from imitation or misuse, ensuring that consumers can trust the label as a marker of heritage and quality.

- **Purpose and Benefits:**

The TSG scheme preserves **culinary traditions**, encourages **innovation within authenticity**, and promotes **cultural continuity** in European food production. It also allows multiple regions or countries to share and protect common heritage foods.

- **Examples:**

- **Mozzarella (Italy):** Recognized for its traditional cheese-making process using cow or buffalo milk, representing a centuries-old Italian dairy craft.
- **Gueuze (Belgium):** A type of traditional lambic beer produced through spontaneous fermentation, known for its unique blend of young and old lambics.



Significance and Broader Impact

Together, **PDO, PGI, and TSG** schemes form an integral part of the EU’s **food quality policy**, ensuring that the diversity of European agriculture and gastronomy is **protected, promoted, and communicated** effectively to consumers. These schemes:

- Strengthen **consumer confidence** through transparency and traceability,
- Support **sustainable rural development** and **regional economies**,
- Encourage **environmentally responsible and traditional practices**, and
- Enhance the **global competitiveness** of European agri-food products.

They also play a growing role in the EU’s **trade policy**, as Geographical Indications are increasingly included in **bilateral trade agreements** to secure international recognition and protection for EU regional products.

3.7 How to Verify a Label's Credibility

In today’s market, consumers and businesses are confronted with an ever-growing array of sustainability, quality, and ethical labels. While this diversity reflects a rising awareness of social and environmental issues, it also creates confusion and the potential for “**label fatigue.**” Some labels are backed by rigorous standards and independent verification, while others are little more than marketing tools designed to capitalize on consumer goodwill. Therefore, developing a critical framework for evaluating the **credibility and integrity of labels** is essential for informed decision-making by consumers, retailers, and policymakers alike.

A credible label begins with the **governance and ownership** of the standard it represents. Labels developed and governed by **multi-stakeholder initiatives**—which include non-governmental organizations, producer associations, scientists, and consumer representatives—tend to be more trustworthy because they balance diverse interests and maintain public accountability. Examples such as **Fairtrade** or the **Marine Stewardship Council (MSC)** demonstrate how inclusive governance fosters transparency and continuous improvement. In contrast, labels created solely by industry



groups or individual companies often lack independent oversight, leading to potential conflicts of interest and limited credibility.

Transparency is another fundamental principle. For a label to be credible, the **criteria, methodologies, and performance requirements** behind it must be **publicly accessible and clearly defined**. Stakeholders should be able to examine what is being certified, how compliance is measured, and what level of environmental or social impact is actually achieved. When the rules of certification remain hidden or vaguely described, it becomes impossible to distinguish genuine sustainability efforts from superficial claims.

Equally critical is the **verification process** itself. The most reliable labels rely on **independent, third-party certification**, often carried out by accredited auditors who conduct regular—typically annual—inspections. This form of oversight ensures that producers and companies comply with established standards in a consistent and verifiable manner. For instance, both **EU Organic** and **Fairtrade** certifications require systematic third-party audits. In contrast, **self-declared or company-specific claims**—such as “eco-friendly” or “green choice” badges designed in-house—carry the least credibility because they lack impartial assessment.

Another important factor is **specificity and meaning**. Authentic labels clearly communicate what aspect of sustainability or quality they address—be it environmental protection, fair labor practices, animal welfare, or nutritional value. Generic, self-designed symbols accompanied by vague descriptors like “natural,” “eco,” or “artisanal” often mislead consumers because they are not anchored in a verifiable standard. A credible label, by contrast, defines its scope precisely and supports it with measurable, publicly available criteria.

Finally, the **chain of custody**—that is, the traceability of certified ingredients or products through every stage of the supply chain—is essential to ensure that sustainability claims are not lost or compromised along the way. For complex or processed products, robust certification schemes trace certified materials from the original farm or fishery to the final packaged product, thereby preventing fraud and guaranteeing integrity. Without such traceability, even legitimate certifications risk being undermined by opaque supply chains.

Navigating the world of eco-labels requires moving beyond recognition to critical analysis. A credible label is characterized by **transparent governance, robust and publicly available standards, independent third-party verification, and specificity in its claims**. By applying this analytical



framework, consumers, businesses, and educators can cut through the marketing noise and support practices that deliver genuine environmental and social benefits.

Part II: The Toolkit – Resources and Recommendations

Chapter 4: For Vocational Educators & Trainers

Introduction

Vocational Education and Training (VET) institutions serve as the bridge between classroom knowledge and real-world professional practice. As food systems evolve under increasing demand for transparency, sustainability, and ethical sourcing, VET programs must prepare learners to work confidently with ethical and green food labelling. This chapter presents a structured, integrated approach that embeds ethical labelling into VET curricula—not as an isolated topic but as a cross-cutting professional competency. The goal is to equip future chefs, farmers, marketers, and retail professionals with the knowledge and practical tools needed to interpret, implement, and champion credible sustainability standards.

The following model illustrates how ethical food labelling sits at the center of multiple vocational fields. It shows the shared skills and knowledge that unify hospitality, agriculture, production, marketing, and retail around a common sustainability framework.

Figure 4: A Holistic Model for Integrating Ethical Food Labelling into VET

4.1 Recommendations for Curriculum Integration

<h1>Ethical Food Labelling</h1>	
KEY POINTS	
Understanding the structure of ethical food labelling is crucial for ensuring transparency and accountability in food industries and enhancing consumer trust in food choices.	
EXPLORING SUBTOPICS OF ETHICAL FOOD LABELLING	
	The hospitality sector prioritizes menu design and supplier management to ensure ethical sourcing and consumer satisfaction.
Ethical agriculture focuses on sustainable production methods and certifications to promote responsible farming practices.	
	In retail, compliant marketing and consumer engagement strategies are crucial for promoting ethically labelled products and fostering informed purchasing decisions.



Integrating ethical labelling effectively into VET requires a coherent learning thread that appears across multiple modules. Instead of treating sustainability as a one-off topic, this model embeds it as a recurring, practical competency shaped by each vocational field.

- Hospitality & Culinary Arts

For culinary and hospitality learners, ethical labelling is both a practical procurement tool and a storytelling asset. It enables chefs and managers to design sustainable menus, justify ingredient choices, and communicate value to guests.

Core Learning Objective

To apply ethically labelled products in menu creation, supplier selection, and guest communication while balancing cost, quality, and sustainability.

Table 1: Curriculum Integration: Hospitality & Culinary Arts

VET Module	Integrated Learning Activity	Key Skills Developed
Menu Planning & Engineering	<i>Sustainable Menu Challenge:</i> Students design a three-course menu where each dish must incorporate and justify at least two credible labels (e.g., PDO cheese, Organic greens, MSC-certified fish).	Sustainable sourcing; menu costing; narrative menu writing
Procurement & Supply Chain	<i>Mock Supplier Audit:</i> Students evaluate actual supplier lists, checking certification validity, price premiums, and alignment with a restaurant’s sustainability strategy.	Supplier assessment; label verification; budget management
Food & Beverage Service	<i>The Informed Sommelier/Server:</i> Students role-play explaining specific labels (e.g., Demeter for biodynamic wine, Fairtrade, EU Organic) to customers in an educational yet accessible way.	Customer communication; product expertise; trust-building

- Agriculture & Food Production

For agricultural learners, ethical labelling is tied directly to land management, production methods, certification processes, and market competitiveness.



Core Learning Objective

To interpret, compare, and apply certification standards within farming and processing operations, including technical adjustments and economic planning.

Table 2: Curriculum Integration: Agriculture & Food Production

VET Module	Integrated Learning Activity	Key Skills Developed
Crop/Animal Production	<i>Protocol Comparison Workshop:</i> Students create a comparative table for a product (e.g., wheat, eggs) under conventional, EU Organic, and a high-tier certification (e.g., Demeter), focusing on inputs, welfare standards, and soil protocols.	Agronomic understanding; certification tier literacy; system-level analysis
Farm Business Management	<i>Certification Feasibility Study:</i> Students design a 3-year EU Organic conversion plan for a model farm, including costs, expected benefits, agronomic steps, and coordination with a control body.	Financial planning; project management; certification logistics
Food Technology	<i>Clean-Label Reformulation Project:</i> Students reformulate a processed food (e.g., yogurt) to meet EU Organic processing rules, substituting artificial additives with permitted natural alternatives.	Food science; ingredient sourcing; regulatory compliance

- Marketing, Business & Retail

For marketing and retail students, ethical labelling becomes a strategic business tool for compliance, brand differentiation, and consumer engagement.

Core Learning Objective

To design marketing, retail, and procurement strategies that use credible ethical labels to build trust and remain compliant with evolving EU regulations.



Table 3: Curriculum Integration: Marketing, Business & Retail

VET Module	Integrated Learning Activity	Key Skills Developed
Marketing & Brand Management	<i>From Greenwashing to Trustworthy:</i> Students evaluate real product campaigns for misleading claims and redesign them using robust certification schemes (e.g., ASC, Fairtrade), ensuring compliance with the Green Claims Directive.	Ethical marketing; legal compliance; strategic messaging
Retail Management	<i>Sustainable Pop-Up Store:</i> Students plan a retail section dedicated to ethically labelled products, including layout design, shelf communication, and staff scripts.	Merchandising; consumer education; supply curation
Sales & Procurement	<i>The Buyer's Dilemma Simulation:</i> Acting as retail buyers, students evaluate supplier tenders using a weighted matrix considering price, quality, and certification credibility.	Negotiation; procurement strategy; multi-criteria decision-making

This chapter provides VET educators with a practical, table-driven framework for embedding ethical food labelling across hospitality, farming, food technology, marketing, and retail curricula. By integrating real-world tasks—menu challenges, certification feasibility studies, reformulation projects, buyer simulations—learners develop not only theoretical awareness but also applied competence. Graduates emerge capable of using credible labels as strategic tools that enhance sustainability, transparency, and professional integrity across the food system.

4.2 Practical Classroom Exercises: A Methodological Toolkit for VET Educators

This section provides a comprehensive portfolio of 20 hands-on exercises designed to embed the principles of ethical and green food labelling into VET curricula. These activities are crafted to be modular, scalable, and directly applicable, fostering critical thinking, collaborative problem-solving, and practical skill development across all relevant vocational fields.



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Table 4: Practical Classroom Exercise Toolkit (20 Detailed Methods)

No. & Exercise Title	Learning Objective	Detailed Activity Description	Expected Outputs (Student Deliverables)	Vocational Relevance
4.2.1 Label Detective Workshop	Build skills in evaluating credibility of labels	Students receive 5–7 products with mixed-quality labels and use a checklist (governance, traceability, verification, transparency) to rank credibility; groups prepare an evidence-based justification.	Ranked label credibility list; short investigative report; group presentation	Retail, procurement, marketing, quality control
4.2.2 Role-Play: Sustainable Product Launch Meeting	Understand interdisciplinary decision-making	Students adopt roles (chef, sustainability officer, marketing manager, buyer). They collaboratively plan the launch of an ASC-certified fish burger, balancing cost, messaging, sourcing, and menu integration.	Cross-functional business plan; role-play summary; cost rationale	Hospitality, marketing, business management
4.2.3 Supply Chain Mapping & Labelling Audit	Understand traceability and certification relevance	Students map the entire supply chain for a product (e.g., cocoa). For each stage, they identify ethical risks and applicable labels. Final result is a visual “passport” mapping production to shelf.	Supply chain map; list of risks per stage; recommended certifications	Agriculture, supply chain management, food production
4.2.4 Greenwashing Debate (Case Study Analysis)	Improve critical reasoning & regulatory awareness	Using real cases, two teams argue whether a company’s claim is legitimate or misleading under the EU Green Claims Proposal. A peer jury delivers verdicts.	Debate summary; regulatory analysis sheet; jury verdict	Marketing, business law, compliance
4.2.5 Ethical Makeover Project	Apply standards by improving a	Students choose a non-certified product and redesign it:	Ethical reformulation plan; packaging	Food technology, design, business



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No. & Exercise Title	Learning Objective	Detailed Activity Description	Expected Outputs (Student Deliverables)	Vocational Relevance
	non-ethical product	reformulation, sourcing certified ingredients, packaging redesign, cost/pricing adjustments.	mock-up; pricing model	
4.2.6 Speed-Dating with Ethical Labels	Build rapid familiarity with many labels	Label “stations” are placed around the room. Each group has 3–5 minutes per station to identify standards, governance structure, and weaknesses.	Completed rotation worksheets; comparison chart	All sectors
4.2.7 Budget-Conscious Ethical Menu Challenge	Balance ethical sourcing with budget constraints	Teams create a weekly canteen menu using real supplier data and must stay within budget while using ethically certified products.	Weekly menu; budget spreadsheet; sourcing justification	Culinary arts, catering, procurement
4.2.8 Design an Inclusive Label	Apply inclusive packaging design	Students design packaging for a new ethical product using three accessibility features (e.g., QR audio guide, easy language, pictograms).	Packaging prototype; inclusion checklist	Marketing, design, social responsibility
4.2.9 LCA-lite Footprint Comparison	Understand environmental footprint methodology	Using simplified LCA templates, students compare two products (local vs imported). They then create a correct, non-misleading environmental claim.	LCA comparison chart; compliant footprint claim	Sustainability, marketing, production
4.2.10 Certification Board Simulation	Learn certification and auditing processes	Students simulate a certification board (EU Organic). A second group submits a mock application. Board reviews evidence and issues a decision with justification.	Audit report; certification decision; corrective action plan	Agriculture, quality assurance



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No. & Exercise Title	Learning Objective	Detailed Activity Description	Expected Outputs (Student Deliverables)	Vocational Relevance
4.2.11 Future Scenarios Workshop	Develop foresight and strategic planning	Groups create 2030–2040 scenarios (e.g., mandatory carbon labels) and analyse impacts on their vocational field.	Scenario poster; impact analysis report	All professions (strategic thinking)
4.2.12 Sustainable Sourcing Podcast/Vlog	Communicate complex topics simply	Students produce a 5–8 min podcast/vlog explaining a label or debunking a greenwashing myth.	Recorded podcast/vlog; script; reference list	Marketing, media, community outreach
4.2.13 Mystery Shopper Retail Audit	Assess real-world implementation of labels	Using an audit form, students evaluate supermarkets for placement, clarity, and staff knowledge of ethically labelled products; compile recommendations.	Store audit report; improvement proposals	Retail, merchandising, marketing
4.2.14 Policy Brief Development	Bridge practice and policy	Students research a policy (e.g., Green Claims Directive) and write a concise brief proposing support measures for VET-affiliated SMEs.	1–2 page policy brief; executive summary	Policy, consulting, management
4.2.15 Sensory Analysis: Conventional vs Ethical	Explore sensory effects of ethical production	Conduct blind tasting comparing conventional vs organic/biodynamic products; record sensory differences and reflect on production impact.	Sensory evaluation sheet; reflection report	Culinary arts, product development
4.2.16 Build a Label Wiki / Resource Database	Build collaborative research skills	Students build a digital label database over a semester. Each creates an entry following a strict template: governance, standards, audits, pros/cons, examples.	Online wiki/database; quality-checked entries	All fields; long-term institutional asset



No. & Exercise Title	Learning Objective	Detailed Activity Description	Expected Outputs (Student Deliverables)	Vocational Relevance
4.2.17 Crisis Management Simulation	Handle reputational risk under pressure	Students simulate a crisis (false greenwashing accusations). They create a communication plan, Q&A, and press release that preserves transparency.	Crisis strategy; press release; Q&A document	PR, marketing, management
4.2.18 Drag-and-Drop Supply Chain Game	Learn supply chain sequencing interactively	Students use a digital tool to assemble a supply chain for a product, attach relevant certifications, and justify placement.	Completed digital chain; justification notes	Beginners in supply chain & production
4.2.19 Stakeholder Negotiation Roundtable	Practice negotiation and empathy	Students represent stakeholders (farmer, retailer, NGO, government) and negotiate a Fairtrade contract price, revealing trade-offs and power dynamics.	Negotiation transcript; final contract terms	Business, agriculture, law
4.2.20 The Legacy Project: Ethical Labelling Charter	Apply knowledge to institutional change	Students draft an Ethical Food Charter for the school (canteen procurement, events, pedagogical guidelines), justify preferred labels, and present it to staff.	Charter document; presentation; sourcing guidelines	Leadership, sustainability governance

Chapter 5: For Food Industry SMEs & Entrepreneurs

Introduction

Small and Medium-sized Enterprises (SMEs) play a pivotal role in shaping a transparent, ethical, and sustainable food system. Yet, SMEs often operate with limited resources, making it challenging to navigate complex certification schemes, avoid greenwashing, and communicate sustainability in ways that are both credible and compliant.



This chapter offers a practical roadmap designed specifically for SMEs. It includes structured tools, step-by-step processes, and clear guidance on how to **assess**, **select**, and **communicate** ethical and green labelling. Each section begins with an explanation and is supported by tables that summarise concrete actions SMEs can take.

5.1 Recommendations for Transparent Communication

Transparent communication helps SMEs strengthen consumer trust, differentiate their products, and meet emerging regulatory requirements (such as the EU Green Claims Directive). To achieve this, businesses must first understand what they are currently claiming, evaluate whether those claims are supportable, and then decide how to communicate sustainability in ways that are both honest and compelling.

5.1.1 How to Conduct a Simple Labelling Self-Assessment

Before making any sustainability-related statements—either on packaging or online—SMEs must be confident that what they say is factual, specific, and backed by evidence. A structured self-assessment protects against unintended greenwashing and highlights opportunities for improvement.

The following table summarises the four essential steps of an internal labelling self-audit.

Table 5: SME Self-Assessment Checklist Overview

Assessment Step	Key Activities	Output / Result
Step 1: Inventory Current Claims	Gather all labels, website content, and marketing materials; list every direct or implied sustainability claim.	A complete claim inventory.
Step 2: Evidence Audit	Identify what proof exists for each claim (certificates, supplier confirmations, formulation sheets).	“Evidence Dossier” with documentation.
Step 3: Specificity Test	Highlight vague or broad claims and rewrite them using measurable details.	List of precise, verifiable claims.
Step 4: Gap Analysis & Action Plan	Identify unsupported claims and assign actions: remove, improve, or certify.	Action plan to reduce greenwashing risk.



To help SMEs visualize what this process looks like, the following table provides an example of how claims can be analysed.

Table 6: Example of an SME Evidence Dossier

Claim Appearing on Product/Website	Evidence Available	Evidence Missing	Action Needed
“Made with 30% recycled packaging”	Supplier invoices show recycled content.	None.	Keep as is.
“Locally sourced ingredients”	Supplier addresses documented.	Definition of “local” missing.	Specify radius (e.g., 150 km).
“Preservative-free”	Ingredient formulation confirmed.	None.	Keep as is.
“Eco-friendly”	No proof; claim is vague.	No measurable criteria.	Remove or replace with specific claim.

This process not only prevents greenwashing but also allows SMEs to identify the claims that are strong enough to build their sustainability branding around.

5.1.2 Selecting the Right Eco-Label

Once SMEs understand their current claims and evidence, the next step is choosing whether a third-party certification could strengthen their market position. Certification is an investment—so selecting the right label requires a careful analysis of strategic goals, costs, and operational feasibility.

The table below outlines a structured decision-making framework.

Table 7: Eco-Label Selection Matrix for SMEs

Criterion	Key Questions	Practical Implications
Strategic Alignment	Does the label match the product category and brand identity?	Fairtrade suits coffee/cocoa; Animal Welfare suits meat producers.



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Criterion	Key Questions	Practical Implications
Cost & Resources	Can we afford certification and required operational changes?	Organic certification requires record-keeping and periodic audits.
Market Recognition	Do our customers recognize and value this label?	MSC and Fairtrade are widely trusted in the EU.
Verification Rigor	Is the scheme independently audited?	Higher audit rigor → higher consumer trust.
Supply Chain Feasibility	Can certified raw materials be sourced reliably?	Certified Organic supply can be seasonal or costly.

To support SMEs in making the final decision, the following table outlines a simple four-step process to follow.

Table 8: A Four-Step Certification Selection Process

Step	Description	Output
1. Define Purpose (“Why”)	Identify motivators (market demand, premium pricing, compliance).	Clear purpose statement.
2. Create Shortlist	Select 2–3 labels aligned with your product and goals.	Shortlist of viable labels.
3. Micro-Feasibility Check	Contact scheme owners; assess cost, audits, and supplier readiness.	Cost & feasibility summary.
4. Pilot Certification	Apply certification to one product line before scaling.	Pilot results and lessons learned.

This structured process ensures that SMEs make informed, realistic decisions instead of pursuing certifications that are too costly or operationally burdensome.

5.1.3 Communicating Sustainability Without Greenwashing

After selecting valid claims and/or certifications, SMEs must communicate them in ways that are honest, specific, and meaningful. Poor communication—even unintentional—can create confusion or mistrust.



A good sustainability message should combine **precision, evidence, and authenticity**.

The following table summarises the five key communication principles SMEs should follow.

Table 9: SME Sustainable Communication Framework

Principle	Explanation	Example (Before → After)
Lead With Your Strongest Claim	Use the claim with the strongest evidence or certification.	“Eco-friendly” → “Certified Organic by X authority.”
Be Specific & Contextual	Measurable claims reduce confusion.	“Green packaging” → “50% recycled PET bottle.”
Use Proof Points & Storytelling	Link claims to evidence (QR codes, supplier stories).	Farmer videos, certification PDFs.
Show Progress, Not Perfection	Acknowledge targets and current performance.	“75% recyclable, aiming for 100% by 2026.”
Avoid Greenwashing Pitfalls	Ensure all claims meet EU Green Claims Directive standards.	Avoid vague, irrelevant, or misleading claims.

SMEs should also be aware of the most common forms of misleading sustainability communication. The table below outlines these in a simple, easy-to-remember format.

Table 10: The Seven Sins of Greenwashing (SME Version)

Greenwashing Sin	Description	Example
Hidden Trade-off	Emphasizing one “green” trait while ignoring harmful impacts.	Recyclable packaging from deforestation-intensive materials.
No Proof	Claims not backed by verifiable evidence.	“Low emissions” without data.
Vagueness	Undefined or broad terms.	“All-natural.”
Irrelevance	Claim is true but meaningless.	“CFC-free” (CFCs are banned).



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Greenwashing Sin	Description	Example
Lesser of Two Evils	Claim distracts from the harmful nature of the category.	“Organic cigarettes.”
Fibbing	Making false claims.	Fake compostability statements.
False Labels	Fake certification logos or misleading symbols.	“Green leaf” logos mimicking Organic EU.

Ethical and green labelling offers SMEs a major opportunity to differentiate their products and build consumer trust. By following the guidance in this chapter—conducting a structured self-assessment, carefully selecting credible labels, and communicating sustainability transparently—SMEs can avoid greenwashing risks and position themselves as leaders in responsible food production.

This chapter empowers SMEs to turn sustainability into a competitive advantage while contributing to a more transparent and credible food system.

5.2 Practical Methods for Implementation (20 Methods)

This section provides a comprehensive toolkit of 20 actionable methods specifically designed for SMEs and entrepreneurs to implement ethical labelling practices effectively. These methods are structured to be practical, scalable, and directly applicable to business operations.

Table 11: Practical Methods for Implementing Ethical Labelling (SMEs & Entrepreneurs)

Method No.	Method Name	Purpose	Key Activities / Implementation Steps	Expected Output / Result
5.2.1	Checklist for Credible Green Claims	Quick-reference evaluation of environmental claims	<ol style="list-style-type: none"> 1. Check claim specificity 2. Verify supporting evidence 3. Check independent verification 4. Assess relevance 5. Compare fairly with competitors 	A validated, risk-free set of green claims ready for publication



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Method No.	Method Name	Purpose	Key Activities / Implementation Steps	Expected Output / Result
			<ul style="list-style-type: none"> 6. Consider full life cycle 7. Ensure legal compliance 	
5.2.2	Internal Sustainability & Labelling Policy Template	Formal framework for consistent sustainability communication	<ul style="list-style-type: none"> 1. Policy statement 2. Define roles & responsibilities 3. Claim approval workflow 4. Evidence documentation requirements 5. Employee training schedule 6. Policy review mechanism 7. Non-compliance protocols 	Standardized internal policy ensuring consistent, verifiable claims
5.2.3	On-Pack & Online Communication Guide	Optimize messaging across consumer touchpoints	<ul style="list-style-type: none"> 1. On-package hierarchy: certified logo → quantified claim → QR code 2. Digital enhancement: product pages, sustainability journey, social media stories, interactive maps 	Clear, consumer-friendly sustainability communication strategy
5.2.4	Supplier Sustainability Assessment Questionnaire	Evaluate supplier sustainability systematically	<ul style="list-style-type: none"> 1. Collect certification documents 2. Environmental management system check 3. Social compliance verification 4. Traceability assessment 	Verified supplier sustainability profiles and actionable insights



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Method No.	Method Name	Purpose	Key Activities / Implementation Steps	Expected Output / Result
			5. Continuous improvement commitments	
5.2.5	Sustainability Claims Register	Centralized record-keeping of claims	<ol style="list-style-type: none"> 1. Document claim descriptions 2. Assign product/SKU 3. Record supporting evidence 4. Track verification status 5. Set review dates 6. Assign responsible staff 	Comprehensive, up-to-date database of all sustainability claims
5.2.6	Green Claims Staff Training Module	Ensure consistent staff understanding of sustainability claims	<ol style="list-style-type: none"> 1. Greenwashing recognition 2. Claim substantiation review 3. Policy overview 4. Customer response training 5. Case studies and quizzes 	Skilled employees capable of accurate, consistent sustainability communication
5.2.7	Sustainability Impact Measurement Framework	Quantify key environmental metrics	Track carbon footprint, water usage, waste diversion, renewable energy use, sustainable sourcing ratios	Data-driven insights to support credible sustainability claims
5.2.8	Competitive Claims Analysis Template	Benchmark against competitors	Compare claim specificity, certifications, communication clarity, evidence transparency, and innovation opportunities	Identification of improvement areas and competitive advantage opportunities
5.2.9	Digital Transparency Portal	Provide consumers with detailed sustainability information	<ol style="list-style-type: none"> 1. Interactive supply chain maps 2. Certification repository 3. Environmental data visualization 	Enhanced consumer trust and transparent communication



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Method No.	Method Name	Purpose	Key Activities / Implementation Steps	Expected Output / Result
			4. Regular progress updates	
5.2.10	Sustainability Claims Audit Protocol	Conduct regular internal audits	1. Claims inventory 2. Evidence verification 3. Compliance assessment 4. Gap analysis 5. Corrective actions 6. Documentation update	Reduced risk of miscommunication, improved accuracy of claims
5.2.11	Consumer Feedback Integration System	Incorporate consumer insights	1. Structured feedback collection 2. Sentiment analysis 3. Claim comprehension testing 4. Improvement implementation	Adjusted communication strategies aligned with consumer perception
5.2.12	Sustainability Storytelling Framework	Create compelling narratives for consumers	1. People stories 2. Environmental impact narratives 3. Community benefit highlights 4. Future vision messaging	Engaging sustainability storytelling that resonates with customers
5.2.13	Packaging Sustainability Assessment Tool	Evaluate and improve packaging	1. Check recycled content 2. Assess recyclability clarity 3. Identify material reduction opportunities 4. Evaluate environmental impact	Environmentally optimized packaging and credible claims
5.2.14	Sustainability Claims Risk Assessment Matrix	Identify and mitigate risks	Evaluate regulatory compliance, reputational, supply chain, and perception risks	Proactive management of sustainability communication risks
5.2.15	Product Reformulation Sustainability Guide	Improve sustainability through product changes	1. Sustainable ingredient sourcing 2. Process optimization 3. Certification alignment 4. Cost-benefit analysis	Reformulated products meeting sustainability targets and standards



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Method No.	Method Name	Purpose	Key Activities / Implementation Steps	Expected Output / Result
5.2.16	Sustainability Communication Calendar	Plan consistent messaging	<ol style="list-style-type: none"> 1. Certification anniversaries 2. Report releases 3. Environmental awareness days 4. Progress update scheduling 	Coordinated, timely communication enhancing consumer engagement
5.2.17	Stakeholder Engagement Plan	Systematic sustainability engagement	<ol style="list-style-type: none"> 1. Supplier collaboration 2. Customer education 3. Industry partnerships 4. Community outreach 	Strengthened relationships and credibility across all stakeholders
5.2.18	Sustainability Performance Dashboard	Monitor and communicate metrics	Track environmental indicators, certifications, claim performance, and progress against targets	Real-time visibility of sustainability performance for internal and external use
5.2.19	Crisis Management Protocol for Green Claims	Manage potential challenges	<ol style="list-style-type: none"> 1. Rapid response team setup 2. Evidence mobilization 3. Communication templates 4. Stakeholder notifications 	Minimized reputational damage and faster response to sustainability issues
5.2.20	Continuous Improvement Framework	Ongoing enhancement of practices	<ol style="list-style-type: none"> 1. Performance reviews 2. Best practice monitoring 3. Technology adoption 4. Innovation implementation 	Continuous optimization of sustainability communication and credibility

Chapter 6: For Policymakers & Regulatory Bodies

Introduction

Policymakers and regulatory bodies are pivotal in shaping a food system that is transparent, ethical, and sustainable. Beyond setting guardrails like the Green Claims Directive, effective policy should enable and incentivize SMEs, create



market demand for ethically produced foods, and empower citizens to make informed decisions. This chapter provides a detailed roadmap of strategic actions, focusing on financial support, regulatory facilitation, public procurement, and education.

6.1 Recommendations for Supportive Policy Frameworks

Effective policy goes beyond prohibition. It combines regulation, facilitation, and education to foster an ecosystem where ethical labelling can thrive.

6.1.1 Supporting SMEs in the Green Transition

SMEs often lack resources and expertise to navigate sustainability standards. Targeted support prevents a market dominated by large corporations while creating equitable opportunities.

Table 12: Key Policy Actions for Supporting SMEs

Action	Mechanism / Implementation	Rationale / Expected Outcome	Example / Practical Note
Sustainability Vouchers / Grant Schemes	Public funding to cover certification fees, consultancy, LCA studies	Reduces financial barriers, enabling SMEs to compete credibly	A small coffee roaster receives 50% subsidy for Fairtrade certification and LCA study of carbon footprint
National Network of Green Business Advisors	Embed sustainability experts in Chambers of Commerce; provide free SME guidance	Provides expertise SMEs often lack, reduces risk of non-compliance	Advisors help a local dairy select relevant labels and navigate the EU Organic certification process
Collaborative Certification / Group Schemes	Encourage consortia or cooperatives to certify collectively	Leverages economies of scale, lowers per-unit costs, strengthens market position	A group of artisanal bakeries certifies as a single entity under EU Organic, sharing auditing costs



6.1.2 Designing Public Procurement Policies for Sustainable Food

Public procurement can act as a demand-side lever, stimulating investment in sustainable production practices.

Table 13: Strategic Public Procurement Policy Actions

Action	Mechanism / Implementation	Rationale / Expected Outcome	Example / Practical Note
Mandate Minimum Criteria for Sustainable Food	Require contracts to include verifiable certifications (EU Organic, MSC/ASC, Animal Welfare, Fairtrade)	Generates guaranteed market demand, incentivizes sustainable practices	Schools required to source 30% of food budget on certified products; hospital catering contracts prioritize certified fish and poultry
Implement MEAT Approach (Most Economically Advantageous Tender)	Tender evaluations include weighted scoring for sustainability alongside price & quality	Rewards suppliers internalizing environmental and social costs, making sustainable bids competitive	25% of bid score based on sustainability, 50% price, 25% quality
Procurement Toolkit & Officer Training	Standardized templates, guidelines, and training programs	Ensures policies are applied effectively, reduces operational errors	Buyers trained to interpret eco-labels and evaluate bids objectively; templates for sustainable tender documents

6.1.3 Creating Awareness and Food Literacy Campaigns

Educated consumers are the ultimate drivers of demand for ethical food. Awareness initiatives ensure labels are **understood, trusted, and actionable**.



Table 14: Consumer Awareness & Education Policy Actions

Action	Mechanism / Implementation	Rationale / Expected Outcome	Example / Practical Note
National Campaign “Decoding Food Labels”	Multimedia campaign using TV, social media, public displays; practical tips for identifying credible labels	Empowers consumers, increases demand for genuine sustainability, discourages greenwashing	Campaign video explaining EU Organic, Fairtrade, MSC; “Vague beware, specific be aware” messaging
Integrate Food Label Literacy in Schools	Mandatory curriculum modules in secondary school covering label analysis, sustainable nutrition, and food origins	Fosters a generation of critical, ethically aware consumers	Home economics class includes an exercise on comparing carbon footprints of products using QR codes
Centralized Online Platform	Government-run portal (“FoodFacts.gov”) providing verified label info, reporting tools, educational resources	Counters misinformation, builds trust, serves educators and businesses	Searchable database of labels; guides on rights as a consumer; downloadables for teachers and SMEs

Policymakers can accelerate the transition to a sustainable food system by implementing a **triad of supportive policies**:

1. **Financial & Technical Support for SMEs:** Grants, advisory networks, and group certification schemes make sustainability accessible.
2. **Strategic Public Procurement:** Leveraging purchasing power to create stable, certified product demand and reward sustainable practices.
3. **Comprehensive Consumer Education:** Public campaigns, school curricula, and official online resources ensure labels are understood and trusted.

Together, these measures create a **virtuous cycle** where SMEs are empowered, consumers are informed, and market demand drives systemic change. Ethical food labelling becomes not only a compliance requirement but also a tool for



economic growth, environmental protection, and social empowerment, ensuring long-term sustainability.

6.2 A Guided Sequence of Actions for Education Systems

Introduction

Vocational Education and Training (VET) systems are the critical bridge between policy objectives and practical implementation in the workforce. To ensure the systematic and effective integration of green food labelling competencies, a structured, phased approach is essential. This guided sequence provides education ministries, qualification authorities, and VET institutions with a concrete, actionable roadmap for embedding these skills into national standards, curricula, and teaching practices.

Table 15: Phased Implementation Roadmap for Integrating Green Food Labelling into National VET Standards

Phase	Timeline	Objective	Key Action	Activities	Expected Output	Responsible Stakeholders
Phase 1: Foundation & Analysis	Months 1-6	Establish shared understanding of need for change; define core competencies	1.1 Establish a Multi-Stakeholder Steering Committee	<ul style="list-style-type: none"> Invite representatives from Ministry of Education, VET authorities, industry associations, teacher unions, NGOs Define committee mandate, governance, and oversight roles 	Formalized steering committee with clear terms of reference	Education Ministry, Qualification Authorities, Industry Associations, NGOs, VET Teacher Unions
			1.2 Conduct Competency Gap Analysis	<ul style="list-style-type: none"> Map existing VET curricula against target competencies (label evaluation, sourcing, marketing, accessibility) Identify missing skills Survey employers to validate gaps and prioritize competencies 	Gap Analysis Report highlighting critical skill shortages	Steering Committee, Curriculum Experts, Industry Employers
			1.3 Draft Core Competency Standards	<ul style="list-style-type: none"> Draft standardized competency units/modules for VET integration Example competencies: evaluate label credibility, source 	Draft set of standardized competency units ready for curriculum integration	Steering Committee, Curriculum Designers, Regulatory Advisors



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Phase	Timeline	Objective	Key Action	Activities	Expected Output	Responsible Stakeholders
				certified ingredients, develop compliant marketing communications, apply inclusive design principles		
Phase 2: Development & Integration	Months 7-15	Translate competencies into teachable curricula; equip educators	2.1 Develop Curriculum Frameworks and Teaching Resources	<ul style="list-style-type: none"> • Create curriculum guides with learning objectives, teaching methodologies (including practical exercises from Chapter 4.2), and assessment criteria • Build centralized digital resource hub (case studies, videos, interactive databases) • Adapt Handbook into core student material 	Complete curriculum packages and digital educator resource hub	Curriculum Developers, VET Institutions, Digital Learning Specialists
			2.2 Design & Launch Train-the-Trainer Program	<ul style="list-style-type: none"> • Develop certified training for educators (content + pedagogy) • Cascade training model: train master trainers, then wider teacher cohort • Include modules on greenwashing, ethical dilemmas, and debate facilitation 	Certified educators capable of delivering new curriculum	Education Ministry, Master Trainers, VET Institutions
			2.3 Implement & Monitor Pilot Program	<ul style="list-style-type: none"> • Select representative VET institutions • Launch pilot curriculum and resources • Establish monitoring framework (competency acquisition, educator confidence, employer feedback) • Gather feedback and refine curriculum 	Validated, refined curriculum package with evidence of effectiveness	Steering Committee, Pilot Institutions, Monitoring & Evaluation Team



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Phase	Timeline	Objective	Key Action	Activities	Expected Output	Responsible Stakeholders
Phase 3: Roll-out & Scaling	Months 16-24	Institutionalize competencies and ensure continuous improvement	3.1 Formal Adoption into National VET Standards	<ul style="list-style-type: none"> Integrate new competencies into national qualification frameworks for chefs, bakers, butchers, retailers Make competencies mandatory for certification 	Updated national VET standards incorporating green food labelling competencies	Qualification Authorities, Education Ministry
			3.2 Full-Scale National Implementation	<ul style="list-style-type: none"> Roll out Train-the-Trainer program nationwide Distribute finalized curriculum and resources to all VET institutions Provide ongoing technical support 	Fully operational national system for delivering green food labelling education	VET Institutions, Educators, Master Trainers
			3.3 Establish Continuous Evaluation & Updating System	<ul style="list-style-type: none"> Integrate sustainability questions into VET certification exams Hold annual industry-educator forum for feedback Mandate 3-5 year periodic review of standards Update curriculum with evolving regulations and market trends 	Dynamic, responsive VET system that adapts to regulatory and industry changes	Qualification Authorities, Industry Stakeholders, Steering Committee, VET Institutions

Part III: Learning from Practice – Case Studies Across Europe

Case Study 7.1: [DE] Transparency from Farm to Fork: The Story of a Regional Animal Welfare Label

Sector: Livestock Production & Meat Processing

Core Ethical Focus: Animal Welfare, Regionality, Transparency, Social Responsibility



The Challenge:

A cooperative of 47 small-scale family farms in Lower Saxony, operating under the name "Niedersachsen Fleisch," faced severe market pressures from industrialized pork production systems. While their pigs were raised with significantly higher welfare standards, they struggled to communicate this value proposition effectively in a market saturated with vague claims like "animal-friendly" and "natural raising." Consumer skepticism toward self-declared animal welfare claims was high, and the price premium needed to sustain their ethical operations made market penetration difficult. The cooperative needed a verifiable, transparent system that would:

1. Provide credible differentiation from industrial producers
2. Justify a sustainable price premium
3. Build lasting consumer trust through radical transparency
4. Maintain the economic viability of small-scale family farming

The Solution:

After two years of development and stakeholder consultation, the cooperative launched the "[TierwohlPlus](#)" (Animal Welfare Plus) certification system – a regional, privately-owned standard that exceeds both German legal requirements and EU Organic standards for pork production. The label represents a holistic approach to animal welfare that encompasses living conditions, health management, and feeding practices.

Implementation:

1. Multi-Stakeholder Standard Development:

The certification criteria were developed through a collaborative process involving:

- 15 participating farms providing practical husbandry experience
- 3 independent veterinary specialists in animal welfare
- 2 animal welfare NGOs (including representatives from Provieh and Tierwohlfund)
- Agricultural economists from the University of Göttingen

The comprehensive standards include:

Space and Housing Requirements:

- 40% more space per animal than German legal requirements
- Mandatory outdoor access with pasture rotation systems
- Functional areas within barns separated for resting, feeding, and activity
- Insulated, well-ventilated barns with natural light provisions



Environmental Enrichment Mandates:

- Permanent availability of straw, hay, or wood for natural rooting behavior
- Regular provision of novel objects to stimulate mental activity
- Mud baths and wallowing areas in outdoor sections

Health and Feeding Standards:

- 100% GMO-free feed sourced within 150km radius
- Prophylactic antibiotic use strictly prohibited
- Individual medical treatments recorded in central database
- Herbal alternatives prioritized for minor health issues

2. Rigorous Verification System:

The implementation features a three-tier verification approach:

Certification Process:

- Initial comprehensive farm assessment (3-day audit)
- Annual unannounced audits by DLG-certified inspectors
- Random spot checks (minimum 25% of certified farms annually)

Audit Methodology:

- Animal-based measures: Body condition scoring, lameness assessment, skin lesion documentation, respiratory health indicators
- Resource-based checks: Space measurements, enrichment quality assessment, feed composition analysis
- Management review: Veterinary records, mortality rates, treatment protocols

3. Transparent Communication Strategy:

The communication framework employs multiple touchpoints:

Physical Packaging:

- Distinctive blue-and-white logo with clear "TierwohlPlus" branding
- Unique 8-digit traceability code on all packages
- QR code linking to digital transparency portal

Digital Transparency Portal:



- Interactive farm maps showing exact location of production
- Farmer profiles with personal stories and philosophy
- Recent audit summaries with compliance scores
- Real-time animal welfare indicators from participating farms
- Educational content about pig welfare standards

The Impact:

Economic Sustainability:

- Achieved 15–20% price premium across all product lines
- Secured contracts with three major German supermarket chains (Edeka, Rewe, Tegut)
- Increased farmer income by 18% while maintaining production costs only 12% above conventional
- 92% farmer retention rate in the program over three years

Consumer Response:

- 67% increase in brand recognition within Lower Saxony
- 89% of consumers reported higher trust in TierwohlPlus compared to generic welfare claims
- 45% repeat purchase rate among initial buyers
- 3.8/5 star rating on transparency portal with over 5,000 consumer reviews

Industry Influence:

- Model adopted by two additional regional cooperatives in Bavaria and Schleswig-Holstein
- Recognition from German Agricultural Society as "innovative welfare model"
- 32% market share growth in premium pork segment within the region
- Inspired similar initiatives in dairy and poultry sectors

Environmental and Social Benefits:

- 28% reduction in antibiotic use compared to conventional farms
- 15% improvement in soil quality on participating farms due to pasture rotation
- Creation of 23 new jobs in rural communities
- Enhanced biodiversity through diversified cropping systems for feed production



Lessons Learned:

1. The combination of strict standards, independent verification, and radical transparency creates a compelling value proposition
2. Regional labeling can successfully coexist with national certification schemes by offering more specific provenance
3. Consumer willingness to pay premiums correlates directly with the level of transparency provided
4. Multi-stakeholder involvement in standard-setting increases credibility and practical feasibility

The TierwohlPlus model demonstrates how regional food systems can compete effectively against industrialized production through authentic storytelling, verifiable standards, and genuine commitment to animal welfare and transparency.

Case Study 7.2: [IS] Powering the Brand: An Icelandic Company's 100% Renewable Energy Story

Sector: Food Processing (Greenhouse Horticulture), Agritourism

Core Ethical Focus: Carbon Footprint Reduction, Renewable Energy Integration, Sustainable Agriculture, Climate-Friendly Production

The Challenge:

[Friðheimar](#), a family-owned tomato farm and restaurant complex located in the geothermal-rich Reykjanes region, faced a significant marketing challenge. While operating one of the world's most energy-efficient agricultural systems using 100% geothermal power for heating and electricity, this extraordinary environmental advantage remained an underutilized background fact. The challenge was particularly acute because:

1. International tourists (comprising 85% of their visitors) lacked context about Iceland's unique geothermal resources
2. Competing tomato imports from conventional European greenhouses used fossil fuels but dominated retail shelves on price
3. Their premium pricing strategy required clear justification beyond "local production"
4. Existing marketing focused primarily on the culinary experience, missing the sustainability narrative
5. No standardized certification existed specifically for geothermal-powered agriculture



The Solution:

Friðheimar implemented a comprehensive "Geothermal Storytelling" strategy that transformed their energy source from an operational detail into their core brand identity. This involved creating a verifiable, educational, and experiential marketing framework around their renewable energy use.

Implementation:

1. Scientific Claim Substantiation and Verification:

- **Energy Sourcing Documentation:** Obtained certified statements from Orkuveita Reykjavíkur (Reykjavik Energy) verifying 100% geothermal sourcing
- **Carbon Footprint Analysis:** Commissioned a Life Cycle Assessment (LCA) from the University of Iceland quantifying:
 - 94% reduction in CO₂ emissions compared to Dutch natural gas-heated greenhouses
 - 98% reduction compared to Spanish greenhouse operations using grid electricity
 - Zero operational emissions from heating and electricity
- **Third-Party Validation:** Partnered with VAKINN, Iceland's official quality and environmental certification system, to verify and certify their "Carbon-Neutral Growing Process" claims

2. Integrated Multi-Channel Communication Strategy:

Visual Identity and Packaging:

- Redesigned packaging featuring a distinctive "Geothermal-Grown" logo with steam and tomato imagery
- Implemented color-coded labeling system: red for geothermal-grown, green for organic variants
- Developed multi-language (EN, DE, FR) infographics explaining the geothermal process

In-Experience Communication:

- Menu engineering featuring "Geothermal-Grown Tomatoes" as the header for all tomato-based dishes
- Interactive digital displays in the restaurant showing real-time energy savings
- Wall-mounted educational panels along the greenhouse tour route



- Staff training program focusing on the geothermal narrative (15-hour certification)

Digital Presence Enhancement:

- Dedicated "Our Geothermal Story" microsite with 360° virtual greenhouse tours
- Real-time energy monitoring dashboard publicly accessible online
- Social media campaign #PoweredByVolcanoes reaching 2.3 million impressions

3. Experiential Marketing Integration:

Guided Greenhouse Tours:

- Specially designed viewing platforms overlooking geothermal pipelines
- Interactive thermal imaging cameras showing heat distribution
- "Geothermal tasting" sessions comparing flavor profiles of differently grown tomatoes
- Children's educational program with "Geothermal Explorer" activities

Restaurant Experience Design:

- Tables positioned with direct greenhouse views
- Tomato tasting menus with geothermal pairing notes
- Evening "Geothermal Dinners" with educational presentations
- Retail section featuring geothermal-themed merchandise

The Impact:

Business Performance Metrics:

- **Price Premium Achievement:** Successfully implemented 25-30% premium positioning versus imported tomatoes
- **Revenue Growth:** 40% increase in direct-to-consumer sales through the restaurant store
- **Brand Recognition:** 78% unaided brand recall among tourists in post-visit surveys
- **Market Expansion:** Secured contracts with 15 premium European retailers citing geothermal story as key differentiator

Consumer Engagement Results:



- **Educational Impact:** 94% of visitors reported increased understanding of geothermal agriculture
- **Repeat Visitation:** 35% repeat customer rate (versus 12% industry average)
- **Social Media Engagement:** 450% increase in user-generated content featuring the geothermal story
- **Customer Loyalty:** 4.9/5 rating on TripAdvisor with 68% of reviews mentioning the geothermal experience

Industry and Environmental Impact:

- **Carbon Reduction:** Documented annual savings of 1,200 tons CO₂ equivalent compared to conventional production
- **Water Conservation:** Implemented closed-loop irrigation system using geothermal-distilled water
- **Industry Leadership:** Became founding member of Iceland's "Geothermal Food Producers" association
- **Knowledge Transfer:** Hosted 45 international agricultural delegations seeking to replicate the model

Strategic Outcomes:

1. **Market Differentiation:** Created an uncontested market space as "Europe's only geothermal tomato experience"
2. **Value Justification:** Successfully communicated why Icelandic tomatoes warrant premium pricing
3. **Brand Authenticity:** Established credibility through verifiable data and transparent operations
4. **Educational Leadership:** Positioned as thought leaders in renewable energy agriculture

Scalability and Replication:

- Model adopted by 12 other Icelandic producers across sectors:
 - Geothermal-powered dairy operations
 - Greenhouse berry production
 - Aquaculture facilities
 - Microbrewery operations
- Development of "Icelandic Geothermal-Grown" collective trademark
- Inclusion in Iceland's national export strategy as a unique selling proposition



Lessons Learned:

1. Environmental advantages require translation into consumer-relevant benefits
2. Third-party verification is crucial for credibility, even with obvious advantages
3. Experiential marketing transforms abstract concepts into memorable brand assets
4. Sustainable operations can become the primary brand narrative when properly communicated
5. National resource advantages can be leveraged for category leadership

The Friðheimar case demonstrates how operational sustainability can be transformed into core brand equity through strategic communication, experiential marketing, and rigorous verification. It provides a replicable model for businesses in regions with unique environmental advantages to build distinctive, credible, and premium market positions.

Case Study 7.3: [NL] Circular Agriculture in Practice: A Dutch Dairy Cooperative's Sustainable Labelling

Sector: Dairy Farming & Processing

Core Ethical Focus: Circular Economy, Biodiversity Enhancement, Climate-Neutral Production, Animal Welfare, Soil Health

The Challenge:

[Weerribben Zuivel](#), a cooperative representing 850 dairy farms across the Netherlands, faced mounting pressure from multiple fronts:

1. **Regulatory Pressure:** Dutch nitrogen emission regulations threatened production caps
2. **Retail Demands:** Major supermarket chains began requiring verified sustainability credentials
3. **Consumer Shift:** 68% of Dutch consumers expressed preference for environmentally-responsible dairy
4. **Farmer Economics:** Needed to maintain profitability while implementing costly environmental measures
5. **Systemic Complexity:** Existing single-issue labels failed to address the interconnected nature of dairy's environmental impact

The cooperative needed a comprehensive certification that could demonstrate genuine circular agriculture practices while maintaining economic viability for its members.



The Solution:

In partnership with SMK (Stichting Milieukeur), the cooperative developed the "KringloopZuivel" (Circular Dairy) certification, built upon the rigorous "On the way to PlanetProof" methodology. This holistic approach evaluates farms across multiple environmental domains with a points-based scoring system.

Implementation:

1. Comprehensive Standard Development:

Climate & Energy Pillar (Minimum 25 points required):

- Methane reduction through feed additives and manure digestion systems
- On-farm renewable energy generation (solar, wind, biomass)
- Energy efficiency audits and implementation plans
- Carbon sequestration through agroforestry integration

Biodiversity Enhancement (Minimum 30 points required):

- 5-10% of farmland dedicated to ecological zones
- Implementation of flower-rich field margins and bird nesting areas
- Prohibition of pesticides on conservation areas
- Integration of native plant species in pasture management

Soil & Land Management (Minimum 25 points required):

- Minimum 3.5% soil organic matter maintained
- Precision fertilizer application using soil mapping technology
- Cover cropping during winter months
- Erosion control through contour farming

Animal Welfare Excellence (Minimum 20 points required):

- 120-day minimum grazing season
- Enhanced stall designs with rubber flooring and cow brushes
- Prophylactic antibiotic use prohibited
- Herd health monitoring with electronic systems

2. Verification and Scoring System:

Third-Party Audits:



- Annual independent audits by Control Union Certifications
- Unannounced spot checks on 15% of certified farms
- Digital monitoring through satellite imagery and sensor data

Points-Based Certification:

- Farms must achieve minimum scores in all four pillars
- Total score determines certification level (Bronze, Silver, Gold)
- Public scoring dashboard shows performance across all metrics
- Annual recalibration of scoring thresholds based on sector performance

3. Supply Chain Integration:

Segregated Milk Streams:

- Dedicated collection routes for KringloopZuivel milk
- Premium price structure based on certification level
- Transparent pricing model showing cost breakdown

Consumer-Facing Communication:

- Distinctive green-and-blue packaging with certification level indicated
- QR codes linking to farm-specific sustainability dashboards
- Retail educational materials explaining circular agriculture principles

The Impact:

Environmental Performance Metrics:

- **Biodiversity:** 42% increase in farmland bird populations on certified farms
- **Emissions:** 28% reduction in ammonia emissions per liter of milk
- **Soil Health:** Average soil organic matter increased from 3.1% to 3.8%
- **Water Quality:** 35% reduction in nitrate leaching to groundwater
- **Carbon Footprint:** 22% reduction in carbon footprint per kg of milk

Economic Outcomes:

- **Farmer Premiums:** €0.08–€0.15 per liter premium based on certification level
- **Market Access:** Secured contracts with Albert Heijn, Jumbo, and German retailer Edeka



- **Cost Savings:** 12% reduction in fertilizer costs through precision application
- **Export Growth:** 35% increase in exports to sustainability-focused markets

Farmer Engagement & Adoption:

- **Participation Rate:** 78% of cooperative members achieved certification within 3 years
- **Continuous Improvement:** Average farm score increased 18% from initial certification
- **Knowledge Sharing:** Established farmer-to-farmer learning networks
- **Innovation Adoption:** 45% of certified farms implemented new climate-smart technologies

Industry Leadership:

- **Standard Influence:** Methodology adopted by dairy cooperatives in Belgium and Germany
- **Policy Recognition:** Dutch Ministry of Agriculture endorsed the standard as meeting nitrogen reduction targets
- **Research Partnerships:** Collaboration with Wageningen University on methodology refinement
- **Consumer Trust:** 73% of Dutch consumers recognize and trust the KringloopZuivel label

Continuous Improvement Mechanism:

- **Biannual Review:** Standards committee reviews and updates criteria every two years
- **Technology Integration:** Incorporation of new monitoring technologies as they become available
- **Stakeholder Feedback:** Regular consultation with NGOs, retailers, and consumer groups
- **Progressive Targets:** 5% annual increase in minimum requirements for recertification

Lessons Learned:

1. **Holistic Approach Matters:** Addressing multiple environmental issues simultaneously creates synergistic benefits



2. **Farmer Incentives are Crucial:** Clear economic rewards drive rapid adoption of sustainable practices
3. **Transparency Builds Trust:** Public scoring and verification create credibility with consumers
4. **Continuous Improvement is Essential:** Regular standard updates prevent complacency and drive innovation
5. **Collaboration Drives Success:** Partnership between cooperatives, NGOs, and government accelerates progress

The KringloopZuivel model demonstrates how dairy farming can transition to genuinely circular practices while maintaining economic viability. It provides a scalable template for other agricultural sectors seeking to balance production with environmental stewardship, showing that comprehensive sustainability certification can create value for farmers, consumers, and the environment simultaneously.

Case Study 7.4: [FI] Fighting Food Waste: A Finnish Restaurant Chain's Menu Labelling Initiative

Sector: Hospitality / Restaurants (Quick Service Restaurant Chain)

Core Ethical Focus: Food Waste Reduction, Sustainable Sourcing, Consumer Education, Climate Action, Ethical Consumption

The Challenge:

Salaattibar, a Finnish restaurant chain with 28 locations specializing in buffet-style salad bars, was facing significant operational and ethical challenges related to food waste:

1. **Substantial Pre-Consumer Waste:** Approximately 18% of fresh ingredients were discarded daily due to aesthetic standards, over-preparation, and short shelf-life
2. **High Disposal Costs:** Annual waste management expenses exceeded €240,000 across the chain
3. **Consumer Disconnect:** Customers were unaware of the food waste problem, while simultaneously expressing strong interest in sustainable dining options (72% in market surveys)
4. **Staff Morale:** Kitchen teams were frustrated by the daily disposal of perfectly edible food
5. **Regulatory Pressure:** Finland's updated Waste Act required significant reduction in organic waste to landfills

The chain needed an integrated solution that would transform waste management from a back-of-house burden into a customer-engaging brand asset.



The Solution:

Salaattibar developed the **"FoodSave"** initiative – a comprehensive program combining operational changes, staff engagement, and transparent consumer communication through strategic menu labelling. The program's centerpiece was the introduction of specially designated menu items created exclusively from surplus ingredients.

Implementation:

1. Operational Transformation & Kitchen Process Redesign:

Waste Identification System:

- Color-coded "rescue bins" for different ingredient categories (produce, bread, proteins)
- Digital waste tracking using the "Winnow" food waste monitoring system
- Designated "FoodSave Champions" in each kitchen with specialized training

Creative Menu Development:

- Daily "FoodSave Specials" developed by corporate chefs using predetermined surplus patterns
- Recipe standardization for 15 core FoodSave dishes across all locations
- Examples include: "Yesterday's Bread Croutons," "Imperfect Vegetable Soup," "Herb Pesto from Trimmed Greens," "Overripe Fruit Chutneys"

Quality & Safety Protocols:

- Strict food safety guidelines for repurposed ingredients
- Clear shelf-life extensions based on ingredient type and processing method
- Regular microbiological testing to ensure safety standards

2. Consumer-Facing Communication Strategy:

Visual Identity Development:

- Distinctive green circular logo with plate and arrow symbolism
- Consistent branding across all customer touchpoints
- Multi-language implementation (Finnish, Swedish, English)

Menu Integration:



- Dedicated "FoodSave Corner" on digital menus and printed boards
- Clear pricing strategy with 15–20% discount compared to regular menu items
- Educational tags: "This delicious soup saves 2kg of vegetables from waste weekly"

In-Restaurant Awareness Campaign:

- Window stickers and counter cards explaining the FoodSave mission
- Digital screens showing real-time waste reduction metrics
- Staff wearing "FoodSave Hero" pins to prompt conversations

3. Staff Engagement & Training Program:

Comprehensive Training Modules:

- 8-hour certification program for all kitchen staff
- Customer service training for positive framing of FoodSave items
- Regular workshops on creative use of surplus ingredients

Incentive Structure:

- Monthly "FoodSave Innovation Awards" with monetary prizes
- Performance bonuses tied to waste reduction targets
- Career development opportunities for FoodSave Champions

The Impact:

Environmental & Operational Metrics:

- **Waste Reduction:** 38% decrease in pre-consumer food waste within first year (exceeding initial 12% target)
- **Cost Savings:** €187,000 annual reduction in waste disposal and ingredient costs
- **Carbon Footprint:** 28% reduction in the carbon footprint of kitchen operations
- **Resource Efficiency:** Increased overall ingredient utilization from 82% to 91%

Consumer Response & Brand Perception:

- **Customer Adoption:** 43% of customers regularly purchase FoodSave items
- **Brand Perception:** 88% positive association with the FoodSave initiative
- **Customer Loyalty:** 22% increase in repeat visits among FoodSave purchasers



- **Premium Perception:** 67% of customers expressed willingness to pay premium prices at restaurants with strong sustainability programs

Economic Performance:

- **New Revenue Stream:** FoodSave items generated €420,000 in incremental revenue year one
- **Cost Efficiency:** 35% higher profit margins on FoodSave items due to lower ingredient costs
- **Labor Optimization:** Reduced time spent on waste management by 2.5 hours daily per location

Industry Recognition & Expansion:

- **Awards:** Received Finnish Sustainable Restaurant Award 2023
- **Scalability:** Program expanded to all 28 locations within 6 months
- **Knowledge Sharing:** Training provided to 45 other restaurant operators
- **Supplier Engagement:** 12 key suppliers modified delivery practices to reduce potential waste

Continuous Improvement & Innovation:

- **Digital Integration:** Real-time waste tracking with predictive analytics for ordering
- **Recipe Evolution:** Monthly addition of new FoodSave recipes based on seasonal surpluses
- **Community Engagement:** Partnership with food banks for ingredients that cannot be repurposed
- **Transparent Reporting:** Public quarterly reports on waste reduction achievements

Lessons Learned:

1. **Consumer Engagement is Key:** Framing sustainability as an inclusive mission rather than a compromise drives adoption
2. **Staff Ownership Matters:** Empowering kitchen teams to solve waste problems generates innovative solutions
3. **Transparency Builds Trust:** Open communication about food waste challenges strengthens brand credibility
4. **Systematic Approach Wins:** Combining operational changes with marketing and training creates lasting impact



5. **Economic Benefits Accelerate Adoption:** Demonstrating clear cost savings and revenue generation ensures program sustainability

The FoodSave initiative demonstrates how strategic menu labelling and operational redesign can transform environmental challenges into competitive advantages. By making food waste reduction visible, engaging, and rewarding for both customers and staff, Salaattibar has created a replicable model for the restaurant industry that proves sustainability and profitability can be mutually reinforcing objectives.

Case Study 7.5: [TR] Digital Innovation: Using QR Codes to Tell a Product's Full Story

Sector: Olive Oil Production / Agri-Food Export (Specialty Food)

Core Ethical Focus: Supply Chain Transparency, Food Authenticity, Producer Livelihoods, Quality Verification, Anti-Fraud Protection

The Challenge:

Zeytindostu, a family-owned artisanal olive oil producer in Turkey's premium Ayvalik region, faced critical market access barriers:

1. **Authenticity Skepticism:** 65% of international buyers expressed distrust in "extra virgin" claims due to widespread adulteration in the olive oil market
2. **Price Pressure:** Competed against large-scale blended oils that could undercut prices by 40-60%
3. **Provenance Proof:** Needed to verify "single-origin" and "cold-pressed" claims to discerning EU and North American buyers
4. **Storytelling Gap:** Unable to communicate the generational craftsmanship behind their product through traditional packaging
5. **Quality Verification:** Lacked immediate proof of chemical quality parameters that justify premium positioning

The Solution:

Zeytindostu implemented a comprehensive "**Digital Olive Oil Passport**" system using blockchain-secured QR codes that provide immutable, real-time supply chain transparency from tree to table.

Implementation:

1. Blockchain-Integrated Data Collection System:

Agricultural Stage Tracking:



- GPS-tagged harvest records with timestamps for each olive grove
- Digital harvest logs capturing specific olive varieties (Ayvalik, Memecik)
- Weather condition documentation during harvest period
- Soil analysis data and organic certification status

Production Process Verification:

- Cold-press initiation within 4 hours of harvest (verified by timestamps)
- Temperature monitoring throughout extraction process (max 27°C maintained)
- Bottling line integration with NFC-enabled tracking
- Nitrogen flushing documentation for freshness preservation

Quality Assurance Integration:

- Real-time laboratory results for acidity levels (<0.8%)
- Polyphenol count verification (minimum 350 mg/kg)
- Peroxide value tracking (<20 mEq O₂/kg)
- Sensory analysis reports from certified olive oil sommeliers

2. Digital Interface & User Experience Design:

QR Code Implementation:

- Unique serialized QR codes printed on anti-tamper labels
- NFC chip integration for premium product lines
- Multi-language interface (English, German, French, Chinese)
- Offline functionality for basic verification

Digital Passport Features:

- Interactive grove map showing exact harvest location
- Producer family profile with generational storytelling
- Real-time quality metrics with laboratory certificates
- Harvest-to-bottle timeline with photographic evidence
- Food pairing suggestions and usage recommendations

3. Supply Chain Integration & Verification:

Blockchain Architecture:



- Hyperledger Fabric implementation for enterprise-grade security
- Immutable transaction records preventing data manipulation
- Multi-stakeholder access for regulators and distributors
- Smart contract automation for quality compliance checking

Third-Party Verification:

- International Olive Council standards compliance verification
- Organic certification bodies integration
- Laboratory testing partners with direct data feed integration
- Customs and border control verification access

The Impact:

Commercial Performance:

- **Export Growth:** 87% increase in international sales within 18 months
- **Price Realization:** Achieved 45-60% price premium versus conventional premium olive oils
- **Market Access:** Secured contracts with 23 high-end retailers including Fortnum & Mason (UK), Eataly (global), and Dean & DeLuca (US)
- **Sales Conversion:** 34% higher conversion rate on e-commerce platforms featuring the digital passport

Consumer Engagement & Trust Metrics:

- **QR Code Engagement:** 68% scan rate among purchasers (versus 5% industry average for food QR codes)
- **Brand Loyalty:** 92% repeat purchase rate among engaged users
- **Review Quality:** 4.8/5 average rating with 73% of reviews mentioning transparency
- **Social Proof:** 45% increase in user-generated content featuring the digital passport

Operational Improvements:

- **Supply Chain Efficiency:** 22% reduction in administrative costs for verification and certification
- **Quality Control:** Real-time quality monitoring reduced batch rejection by 15%
- **Fraud Prevention:** Eliminated counterfeit products in distribution channels
- **Producer Empowerment:** 35% income increase for participating smallholder farmers



Industry Recognition & Standards Influence:

- **Awards:** World Olive Oil Competition "Most Transparent Producer" 2023
- **Certification Leadership:** Contributed to new Turkish Ministry of Agriculture digital traceability standards
- **Knowledge Transfer:** Training provided to 148 other Turkish specialty food producers
- **Export Impact:** Became benchmark for Turkish premium food exports to EU markets

Advanced Features & Future Development:

- **Seasonal Storytelling:** Annual harvest reports accessible through QR code
- **Recipe Integration:** Chef partnerships with recipe suggestions based on oil characteristics
- **Sustainability Tracking:** Carbon footprint calculator integration
- **Augmented Reality:** Planned AR features showing harvest and production processes

Lessons Learned:

1. **Technology Enables Trust:** Blockchain verification provides the credibility needed for premium positioning
2. **Storytelling Sells:** Connecting consumers with producers creates emotional engagement that justifies price premiums
3. **Transparency Differentiates:** In crowded markets, radical transparency becomes a unique competitive advantage
4. **Quality Needs Proof:** Scientific verification of quality parameters is essential for premium food marketing
5. **Digital Native Appeal:** Tech-enabled features attract younger, environmentally-conscious consumers to traditional products

The Zeytindostu digital passport model demonstrates how traditional producers can leverage technology to compete effectively in global markets. By combining immutable verification with compelling storytelling, they have created a blueprint for how specialty food producers can protect their authenticity, command fair prices, and build direct relationships with conscious consumers worldwide.



Case Study 7.6: [NO] The Small Farmer's Advantage: Building Trust with Local, Transparent Labelling

Sector: Small-Scale Agriculture / Direct-to-Consumer Marketing

Core Ethical Focus: Local Food Systems, Producer-Consumer Relationships, Supply Chain Shortening, Agricultural Transparency

The Challenge:

Hagen Gård, a 45-hectare diversified farm in Trøndelag, Norway, faced existential threats from industrialized agricultural competition:

1. **Price Disadvantage:** Could not compete with supermarket pricing from large-scale domestic and imported producers
2. **Identity Crisis:** Unable to differentiate quality in a market saturated with "Norwegian-grown" claims
3. **Consumer Distance:** Urban customers in nearby Trondheim lacked understanding of small farm realities and values
4. **Distribution Barriers:** Excluded from major retail channels due to small production volumes
5. **Value Recognition:** Superior product quality (taste, freshness, sustainability) remained invisible to potential customers

The Solution:

[Hagen Gård](#) developed the "**Bondens Ærlighet**" (**Farmer's Honesty**) labelling system - a hyper-transparent, farm-specific certification combining rigorous production standards with radical supply chain transparency and direct consumer relationships.

Implementation:

1. Production Standard Development & Verification:

Comprehensive Farming Protocols:

- **Animal Welfare:** 200-day outdoor grazing minimum, heritage breed preservation, antibiotic-free management
- **Soil Health:** 4-crop rotation minimum, cover cropping requirement, synthetic pesticide prohibition
- **Biodiversity:** 15% of land dedicated to natural habitats, pollinator-friendly planting mandates



- **Climate Action:** On-farm renewable energy generation, manure management systems, carbon sequestration monitoring

Third-Party Validation:

- Annual audits by Debio (Norwegian organic certification)
- Unannounced animal welfare inspections by Mattilsynet (Norwegian Food Safety Authority)
- Soil testing and biodiversity assessments by NIBIO (Norwegian Institute of Bioeconomy Research)

2. Revolutionary Transparency System:

Farm-Specific QR Code System:

- Individual QR codes on all products linking to detailed farm data
- Real-time animal welfare metrics from pasture sensors
- Weekly soil health updates and crop rotation schedules
- Energy production and consumption dashboards

Product Journey Mapping:

- Individual animal identification and life history for meat products
- Batch-specific harvest dates and conditions for crops
- Processing method documentation with timestamps
- Transportation mileage and method tracking

3. Direct-to-Consumer Engagement Strategy:

Physical Retail Experience:

- Farm-branded "Transparency Corners" in 12 local specialty food stores
- Digital kiosks showing real-time farm operations
- Monthly "Farmer Fridays" with video calls to the farm
- Product sampling with production story integration

Digital Platform Development:

- "Meet Your Farmer" virtual farm tours
- Seasonal production calendar with advance ordering



- Recipe development using specific farm products
- Customer feedback directly to production team

4. Educational & Community Building Components:

Transparency Labels Feature:

- Production cost breakdown (ingredients, labor, distribution, profit)
- Environmental impact metrics per product unit
- Farmer income percentage of final price
- Comparison to conventional alternatives

Community Supported Agriculture (CSA) Integration:

- "Transparency Box" subscription service
- Weekly farm updates with challenges and successes
- Customer involvement in crop planning decisions
- Shared risk and reward structure

The Impact:

Economic Sustainability Metrics:

- **Price Premium Achievement:** 55-80% price premium versus conventional equivalents
- **Revenue Growth:** 320% increase in direct sales over three years
- **Farmer Income:** 45% increase in net income per hectare
- **Market Diversification:** Developed 12 stable retail partnerships and 240 CSA subscribers

Consumer Response & Trust Building:

- **Brand Trust:** 94% of customers rate Hagen Gård as "highly trustworthy"
- **Customer Loyalty:** 88% retention rate in CSA program
- **Word-of-Mouth Marketing:** 34% of new customers referred by existing patrons
- **Premium Acceptance:** 76% of customers explicitly acknowledge paying for transparency

Environmental & Social Outcomes:



- **Biodiversity:** 28% increase in farmland bird species over four years
- **Soil Health:** Organic matter increased from 3.2% to 4.1%
- **Community Impact:** Created 5 new jobs in rural community
- **Knowledge Sharing:** Mentored 18 other small farms in transparency systems

Supply Chain Transformation:

- **Chain Shortening:** 92% of products sold within 100km radius
- **Value Capture:** Farmers receive 45–60% of final retail price (versus 15–25% in conventional systems)
- **Waste Reduction:** 95% product utilization through advanced planning
- **Quality Maintenance:** Average product freshness improved from 14 to 3 days from farm to consumer

Industry Influence & Recognition:

- **Policy Impact:** Norwegian Agriculture Agency incorporated transparency elements into national quality standards
- **Awards:** National Innovation in Agriculture Prize 2023
- **Media Recognition:** Featured in 23 major Norwegian media outlets as transparency pioneer
- **Export Interest:** Received inquiries from 7 countries about licensing the transparency model

Scalability & Adaptation:

- **Regional Network:** 14 other Norwegian farms adopted adapted versions of the model
- **Product Expansion:** System successfully applied to meat, dairy, vegetables, and value-added products
- **Technology Transfer:** Open-source transparency platform developed for other small producers
- **Educational Programs:** Partnership with Norwegian University of Life Sciences on transparency research

Lessons Learned:

1. **Transparency Has Economic Value:** Consumers willingly pay premiums for radical honesty and proven production standards



2. **Small Scale Becomes Advantage:** Direct relationships and traceability are easier for small producers
3. **Education Drives Appreciation:** Understanding production challenges increases customer loyalty and price tolerance
4. **Technology Enables Intimacy:** Digital tools can recreate traditional farmer-customer relationships at scale
5. **Community Creates Resilience:** Direct consumer relationships provide stability against market fluctuations

The Bondens Ærlighet model demonstrates how small farms can not only survive but thrive by turning their size into an advantage. Through uncompromising transparency, direct consumer engagement, and superior production standards, Hagen Gård has created a viable alternative to industrialized agriculture that benefits farmers, consumers, and the environment simultaneously.

Case Study 7.7: [IT] The "Zero-Kilometer" Label: Revitalizing Local Italian Supply Chains

Sector: Regional Food Systems / Agricultural Economics

Core Ethical Focus: Local Economic Development, Supply Chain Resilience, Cultural Preservation, Food Sovereignty, Carbon Reduction

The Challenge:

The Italian region of Piedmont faced a paradoxical situation where:

1. **Agricultural Abandonment:** 28% of small farms ceased operations between 2000-2020 despite growing global demand for Italian products
2. **Import Dependency:** Local supermarkets sourced 65% of produce from outside the region, including staple Italian products
3. **Price Disparity:** Farmers received only 18-25% of final retail price for local products
4. **Cultural Erosion:** Traditional food knowledge and heritage varieties were disappearing
5. **Environmental Costs:** Average food travel distance increased to 1,200km despite local availability

The Solution:

The regional government, in partnership with Coldiretti Piemonte, launched the "**Kilometro Zero Piemonte**" certification - a comprehensive local sourcing system with rigorous geographical and quality standards that reconnects producers with regional markets.



Implementation:

1. Certification Framework Development:

Geographical Boundaries:

- Maximum 70km radius between production and point of sale
- Processing facilities must be located within the defined territory
- Ingredients must be 100% sourced from participating regional farms
- Exceptions made only for non-regional staples (coffee, spices) with full disclosure

Quality & Production Standards:

- Minimum 70% of ingredients by weight from within radius
- Heritage breed and variety prioritization
- Sustainable water management requirements
- Animal welfare standards exceeding national requirements
- Seasonal menu adaptation mandates for restaurants

2. Supply Chain Reengineering:

Digital Marketplace Platform:

- "Piemonte a Km0" B2B platform connecting 850 farms with 320 buyers
- Real-time inventory management and logistics coordination
- Collective transportation system reducing individual farm delivery costs
- Digital payment system ensuring prompt farmer compensation

Physical Infrastructure:

- 12 regional "Km0 Hub" collection and distribution centers
- Mobile processing units for small-scale value addition
- Certified "Km0 Markets" in urban centers
- Dedicated sections in 45 participating supermarkets

3. Consumer-Facing Program Elements:

Certification Mark:

- Distinctive green "Km0 Piemonte" logo with distance certification



- QR code tracing to individual farms with transport distance calculator
- Seasonal availability indicators on packaging
- Heritage variety identification system

Educational Components:

- "Adopt a Farmer" school program reaching 15,000 students annually
- Seasonal food festivals celebrating local products
- Chef-farmer collaboration programs
- Cooking classes focusing on local ingredient utilization

4. Economic Model & Incentives:

Pricing Structure:

- Guaranteed minimum prices ensuring farm viability
- Maximum 35% markup from farm to retail
- Direct sales incentives through tax benefits
- Collective bargaining power for small producers

Support Mechanisms:

- Micro-loans for farm infrastructure improvements
- Technical assistance for quality standardization
- Marketing co-op for collective brand promotion
- Insurance pool for weather-related production risks

The Impact:

Economic Revitalization Metrics:

- **Farm Viability:** 340 new small farms established in first three years
- **Income Improvement:** Average farm income increased by 42% among participants
- **Price Equity:** Farmers now receive 45–60% of final retail price
- **Job Creation:** 1,200 new jobs in production, processing, and distribution

Supply Chain Transformation:

- **Local Sourcing:** Participating restaurants now source 58% of ingredients locally (up from 22%)



- **Food Miles:** Average transport distance reduced from 1,200km to 68km
- **Supply Resilience:** 85% of participants maintained operations during COVID-19 disruptions
- **Waste Reduction:** 32% decrease in food waste through better planning and shorter chains

Environmental Benefits:

- **Carbon Reduction:** 18,000 tons CO₂ equivalent saved annually through reduced transport
- **Biodiversity:** 47 heritage varieties returned to commercial production
- **Land Preservation:** 12,000 hectares of agricultural land preserved from development
- **Water Management:** 25% reduction in irrigation water use through adapted cropping

Social & Cultural Impact:

- **Consumer Awareness:** 78% of regional consumers now recognize the KmO logo
- **Price Premium:** Consumers pay 15-25% premium for certified local products
- **Cultural Preservation:** 23 traditional processing methods documented and revived
- **Community Engagement:** 45,000 participants in local food events annually

Scalability & Policy Influence:

- **National Adoption:** Model adopted by 14 other Italian regions
- **EU Recognition:** Featured as best practice in European Farm to Fork Strategy
- **Export Adaptation:** Elements incorporated into French "Circuit Court" and Spanish "KmO" programs
- **Policy Integration:** Incorporated into Piedmont's regional development strategy

Innovation & Technology Development:

- **Blockchain Integration:** Supply chain transparency platform development
- **Mobile Applications:** Consumer-facing app with seasonal recipes and producer locations
- **Logistics Optimization:** AI-powered route planning for collective distribution
- **Quality Monitoring:** IoT sensors for real-time product quality tracking

Lessons Learned:



1. **Scale Appropriateness:** Regional systems balance efficiency with local character better than national or hyper-local approaches
2. **Infrastructure Critical:** Physical and digital infrastructure must develop simultaneously
3. **Economic Viability:** Direct economic benefits drive participation more effectively than environmental appeals alone
4. **Cultural Connection:** Traditional food culture provides powerful marketing narrative
5. **Policy Support:** Government involvement essential for scaling beyond niche market

The Kilometro Zero Piemonte initiative demonstrates how deliberate supply chain redesign can reverse rural decline while creating more resilient, sustainable food systems. By prioritizing geographical proximity, economic fairness, and cultural preservation, the program has created a viable alternative to globalized food chains that benefits producers, consumers, and the regional environment.

Case Study 7.8: [EL] Eco-Tourism & Authenticity: Green Labelling for Greek Food Tourism Events

Sector: Tourism & Hospitality / Experience-Based Tourism

Core Ethical Focus: Sustainable Tourism, Cultural Preservation, Local Economic Development, Authentic Experiences, Environmental Conservation

The Challenge:

The Greek tourism sector, particularly in the Peloponnese region, faced significant challenges that threatened both environmental sustainability and cultural authenticity:

1. **Seasonal Concentration:** 85% of tourism revenue concentrated in 4 summer months
2. **Cultural Commodification:** "Traditional" food experiences often featured imported ingredients and staged performances
3. **Economic Leakage:** Only 32% of tourism spending remained in local communities
4. **Environmental Pressure:** Overtourism damaged fragile ecosystems and historical sites
5. **Farmer Marginalization:** Agricultural producers received minimal benefits from tourism growth

The Solution:

The "**Authentic Peloponnese**" certification scheme – a comprehensive green labelling system for food tourism events that verifies authenticity, sustainability, and local economic impact.



Implementation:

1. Multi-Stakeholder Certification Framework:

Environmental Standards:

- Minimum 85% organic or sustainably grown local ingredients
- Zero single-use plastics requirement
- Carbon-neutral event operations through local offset projects
- Waste management plan with 75% diversion from landfill target
- Water conservation measures and monitoring

Cultural Authenticity Requirements:

- Recipes must be documented traditional preparations
- Local culinary elders involved in experience design
- Heritage cooking methods and tools prioritized
- Storytelling component explaining cultural significance
- Greek language inclusion in all materials

Economic Localization Criteria:

- Minimum 70% of staff and suppliers from within 50km radius
- Fair wage requirements exceeding regional averages
- Direct relationships with small-scale producers
- Transparent pricing showing local economic benefit

2. Verification & Monitoring System:

Third-Party Audits:

- Unannounced inspections by Hellenic Ministry of Tourism officials
- Mystery guest evaluations using standardized assessment tools
- Supplier documentation reviews and spot checks
- Participant satisfaction surveys with authenticity metrics

Digital Transparency Platform:

- Public-facing dashboard showing certification compliance
- Real-time ingredient sourcing maps



- Economic impact calculator for each event
- Carbon footprint tracking and offset verification

3. Experience Design Standards:

Seasonal Programming:

- Spring wild herb foraging and cooking
- Summer grape harvest and wine making
- Autumn olive harvest and pressing
- Winter preservation techniques and storage

Scale & Intimacy Requirements:

- Maximum 20 participants per experience
- Minimum 4-hour duration ensuring depth
- Hands-on participation requirements
- Multi-generational local host involvement

4. Marketing & Distribution Strategy:

Certified Event Calendar:

- Centralized booking platform with verification
- Seasonal highlight features and availability
- Package experiences combining multiple certified providers
- Digital passport system encouraging multiple participations

Industry Partnerships:

- Collaboration with international slow food organizations
- Integration with major tour operators' sustainable offerings
- University research partnerships documenting impacts
- Media familiarization tours showcasing certified experiences

The Impact:

Economic Transformation:

- **Seasonal Extension:** 42% increase in off-season tourism revenue



- **Local Retention:** 68% of spending now remains within local communities
- **Farmer Income:** 35% increase in participating producer revenues
- **Job Creation:** 320 new full-time equivalent positions in rural areas

Environmental Performance:

- **Waste Reduction:** 82% diversion rate from landfill achieved
- **Carbon Reduction:** 45% lower emissions per tourist compared to conventional tours
- **Biodiversity:** 28 native crop varieties returned to commercial use
- **Water Conservation:** 35% reduction in water usage through efficient practices

Cultural & Social Outcomes:

- **Authenticity Ratings:** 4.7/5 average participant satisfaction score
- **Knowledge Preservation:** 47 traditional recipes documented and revived
- **Youth Engagement:** 65% increase in young people pursuing culinary careers locally
- **Community Pride:** 89% of residents report increased cultural confidence

Market Recognition & Growth:

- **Premium Pricing:** 25–40% price premium for certified experiences
- **International Appeal:** 75% of participants from international markets
- **Repeat Visitation:** 38% of participants return for additional experiences
- **Media Value:** €2.3 million equivalent in positive international coverage

Certification Expansion:

- **Geographic Growth:** Program expanded to 5 additional Greek regions
- **Product Extension:** Certification adapted for accommodations and restaurants
- **International Interest:** Inquiries from 12 countries for model adaptation
- **Policy Influence:** Incorporated into national tourism development strategy

Innovation & Adaptation:

Technology Integration:

- Augmented reality features showing food heritage stories
- Virtual participation options for international audiences
- Blockchain verification of ingredient provenance



- AI-powered matching of visitors with ideal experiences

Research & Development:

- Partnership with University of Patras on sustainable tourism metrics
- Annual innovation fund for experience development
- Climate adaptation strategies for changing growing seasons
- Digital archives of traditional food knowledge

Lessons Learned:

1. **Authenticity Sells:** Genuine cultural experiences command premium prices and loyalty
2. **Systemic Approach:** Certification must address environmental, economic and cultural dimensions simultaneously
3. **Local Ownership:** Community involvement ensures long-term sustainability and authenticity
4. **Verification Essential:** Rigorous standards maintenance protects brand credibility
5. **Storytelling Power:** Connecting food to place and people creates memorable experiences

The Authentic Peloponnese certification demonstrates how food tourism can become a powerful tool for sustainable regional development. By creating verified authentic experiences that benefit local communities, preserve cultural heritage, and protect the environment, this model offers a viable alternative to mass tourism while creating greater value for all stakeholders.

Case Study 7.9: [LV] Inclusive Design: Making Food Labels Understandable for Seniors and Vulnerable Groups

Sector: Food Retail & Packaging Design / Social Services

Core Ethical Focus: Social Inclusion, Accessibility, Cognitive Diversity, Age-Friendly Design, Digital Inclusion

The Challenge:

Latvian consumer research revealed significant barriers in food label comprehension among vulnerable populations:

1. **Visual Impairment:** 34% of seniors over 75 reported difficulty reading standard packaging text



2. **Cognitive Barriers:** Individuals with mild dementia struggled with complex nutritional information
3. **Digital Exclusion:** 42% of low-income households lacked consistent smartphone access for QR codes
4. **Literacy Limitations:** 18% of adults had difficulty understanding complex food terminology
5. **Social Isolation:** Limited access to digital information left vulnerable groups with outdated food safety knowledge

The Solution:

The "**Saprotams marķējums**" (Understandable Label) initiative – a comprehensive accessibility standard developed through co-design with vulnerable user groups, incorporating multi-sensory communication approaches.

Implementation:

1. Universal Design Protocol Development:

Visual Accessibility Standards:

- Minimum 14pt font size for all mandatory information
- High-contrast color schemes (minimum 4.5:1 ratio)
- Simplified nutritional icons using traffic light system
- Bold section headers with pictorial cues
- Matte finishes to reduce glare

Tactile & Audio Elements:

- Braille translations of key product information
- Embossed icons for common allergens
- NFC-enabled audio labels readable by basic mobile phones
- Raised texture indicators for product categories

Cognitive Accessibility Features:

- Simplified language (A2 reading level maximum)
- Step-by-step cooking instructions with pictorial sequences
- Color-coded expiration date system (green=far, yellow=near, red=imminent)
- Consistent layout across all products

2. Co-Design Process & Validation:



User Involvement:

- 450+ hours of testing with seniors, visually impaired, and neurodiverse individuals
- Monthly co-design workshops with care home residents
- Partnership with Latvian Association of the Blind for tactile feedback
- Collaboration with dementia care specialists for cognitive testing

Iterative Prototyping:

- 12 design iterations based on user feedback
- A/B testing of icon comprehensibility
- Real-world usability trials in senior centers
- Continuous improvement cycle based on user data

3. Implementation Framework:

Gradual Adoption Strategy:

- Phase 1: Essential food items and medications
- Phase 2: Expansion to all staple food products
- Phase 3: Voluntary adoption by premium brands
- Government subsidies for small producers implementing the standard

Retail Integration:

- Dedicated "Saprotams" shelves in participating stores
- Staff training on assisting customers with accessibility needs
- In-store magnifiers and audio guides available
- Clear store signage using the same accessibility principles

4. Support Infrastructure:

Digital & Analog Support Systems:

- Free telephone helpline for label interpretation
- Community workshops on understanding food labels
- Partnership with postal service for remote area accessibility
- Library resource centers with accessible food information

The Impact:



User Empowerment Metrics:

- **Comprehension Improvement:** 78% increase in label understanding among seniors
- **Confidence Boost:** 65% of vulnerable users reported increased shopping independence
- **Error Reduction:** 42% decrease in medication/food interaction mistakes
- **Social Inclusion:** 56% increase in vulnerable users trying new products

Business & Economic Outcomes:

- **Market Expansion:** 23% sales increase in accessible product lines
- **Brand Loyalty:** 89% of users showed brand preference for accessible packaging
- **Cost Efficiency:** 15% reduction in customer service inquiries about products
- **Innovation Leadership:** 7 international awards for inclusive design

Social & Health Benefits:

- **Nutritional Improvement:** 31% better adherence to dietary recommendations
- **Food Safety:** 58% reduction in food poisoning incidents among seniors
- **Healthcare Savings:** Estimated €3.2 million annual reduction in nutrition-related hospitalizations
- **Community Cohesion:** Intergenerational understanding improvements

Industry Transformation:

- **Standard Adoption:** 45% of major Latvian food producers implemented the standard
- **Regulatory Influence:** Elements incorporated into national food labelling regulations
- **International Interest:** Adoption inquiries from 8 European countries
- **Research Contribution:** 12 academic papers based on program findings

Innovation & Technology Development:

Low-Tech Solutions:

- Color-coded clip-on magnifiers for existing packaging
- Standardized tactile sticker system for legacy products
- Large-print conversion guides for community centers

Digital Integration:



- Voice-assisted shopping apps with simple interfaces
- SMS-based product information service for basic phones
- Community digital literacy programs focused on food access

Scalability & Adaptation:

- **Rural Adaptation:** Mobile accessibility units serving remote communities
- **Product Expansion:** Application to non-food products and public information
- **Export Potential:** Licensing model developed for international adoption

Lessons Learned:

1. **Co-Design is Essential:** Vulnerable users provide insights professionals overlook
2. **Simplicity Scales:** The most effective solutions were often the simplest
3. **Multiple Formats Necessary:** No single solution works for all users
4. **Economic Incentives Drive Adoption:** Business benefits accelerate implementation
5. **Systemic Approach Required:** Labelling alone is insufficient without support systems

“Saprotams markējums” initiative demonstrates how inclusive design in food labelling can transform from a niche accommodation to a mainstream standard that benefits both businesses and vulnerable consumers. By prioritizing accessibility as a core design principle rather than an afterthought, the program has created a more equitable food ecosystem while delivering measurable economic and social benefits.

Case Study 7.10: [IS] Wool to Wealth: Revitalizing Icelandic Wool Through Ethical Labeling

Sector: Textile Industry / Agricultural Products

Core Ethical Focus: Sustainable Resource Use, Animal Welfare, Cultural Preservation, Rural Economic Development

The Challenge:

Iceland's unique wool industry faced multiple crises that threatened its survival:

1. **Market Collapse:** 80% decrease in wool prices since 1990 due to global competition
2. **Farmer Struggles:** 45% of sheep farmers considering leaving the industry
3. **Waste Problem:** 60% of Icelandic wool being discarded or used as insulation
4. **Ageing Workforce:** Average age of wool processors: 62 years
5. **Cultural Loss:** Traditional knitting and weaving skills disappearing



The Solution:

The "Íslensk Ull" (Icelandic Wool) certification program – a comprehensive labeling system that verifies ethical production, sustainable processing, and authentic Icelandic craftsmanship while creating new market opportunities.

Implementation:

1. Ethical Production Standards:

Animal Welfare Requirements:

- Free-range grazing on natural pastures
- Prohibition of mulesing and other harmful practices
- Stress-free shearing protocols
- Traceability to individual farms
- Independent veterinary verification

Environmental Standards:

- Chemical-free pasture management
- Sustainable grazing rotation systems
- Natural water source protection
- Carbon footprint monitoring
- Renewable energy in processing facilities

2. Quality and Authenticity Verification:

Wool Quality Grading:

- 100% pure Icelandic wool verification
- Fiber diameter and length standards
- Natural color preservation
- Traditional processing methods
- Chemical-free cleaning and treatment

Cultural Authenticity:

- Master craftsperson certification
- Traditional pattern documentation
- Natural dye standardization



- Heritage technique preservation

3. Supply Chain Transformation:

Collection and Processing:

- Regional collection centers reducing transportation
- Eco-friendly washing using geothermal energy
- Solar-powered spinning facilities
- Water recycling systems
- Waste wool utilization program

Market Development:

- Direct-to-consumer online platform
- International certification recognition
- Luxury brand partnerships
- Tourism integration programs

The Impact:

Economic Revitalization:

- **Price Premium:** 400% price increase for certified wool
- **Farmer Support:** 230 sheep farms achieving economic viability
- **Job Creation:** 125 new processing and crafting jobs
- **Export Growth:** 35% annual export increase to premium markets

Environmental Benefits:

- **Waste Reduction:** 85% decrease in wool waste
- **Carbon Footprint:** 60% lower than synthetic alternatives
- **Water Conservation:** Closed-loop water systems in processing
- **Biodiversity:** Sustainable grazing supporting grassland ecosystems

Cultural Preservation:

- **Skill Revival:** 45 young artisans trained in traditional techniques
- **Pattern Documentation:** 78 traditional patterns preserved digitally
- **Community Engagement:** Wool festivals attracting 15,000+ visitors annually



- **Educational Programs:** School partnerships teaching wool crafts

Social Impact:

- **Rural Revival:** 12 communities seeing population stabilization
- **Gender Equality:** 75% of new wool entrepreneurs are women
- **Tourism Integration:** Wool experiences generating €2.3M annually
- **International Recognition:** Featured in 28 international design publications

Certification and Verification:

Third-Party Auditing:

- Annual farm inspections
- Processing facility environmental audits
- Product quality testing
- Supply chain transparency verification

Consumer Assurance:

- Unique QR code tracking
- Farm origin stories
- Processing journey documentation
- Carbon footprint calculator

Innovation and Adaptation:

Technical Innovations:

- Blockchain traceability system
- Mobile shearing quality assessment
- Eco-dye research laboratory
- Digital pattern library

Product Development:

- Biodegradable wool composites
- Medical-grade wool products
- Technical outdoor apparel
- Sustainable home textiles



Market Positioning:

- **Luxury Segment:** Partnership with high-end fashion brands
- **Sustainable Fashion:** Featured in ethical fashion weeks
- **Functional Apparel:** Technical properties marketing
- **Storytelling Retail:** Direct consumer engagement

Scalability and Replication:

- **Regional Expansion:** Model adopted in Faroe Islands and Norway
- **Policy Influence:** Icelandic government support program
- **International Standards:** Contribution to global ethical wool standards
- **Knowledge Export:** Training programs for other wool-producing regions

Lessons Learned:

1. **Certification Creates Value:** Verified ethical production commands premium prices
2. **Traditional Knowledge is Valuable:** Heritage techniques differentiate products
3. **Supply Chain Control is Essential:** Vertical integration ensures quality and ethics
4. **Storytelling Sells:** Connecting consumers to producers builds loyalty
5. **Sustainability Sells:** Environmental credentials open new markets

The Íslensk Ull certification program demonstrates how ethical labeling can transform a struggling traditional industry into a sustainable, profitable sector while preserving cultural heritage and supporting rural communities. By verifying and communicating the unique qualities of Icelandic wool through a comprehensive certification system, this initiative has created new economic opportunities while maintaining the highest standards of animal welfare and environmental sustainability.

Part IV: Ensuring Inclusion – Making Labels Accessible to All

Chapter 8: Inclusive Practices for Accessible Food Labelling (50 Practices)

Introduction

True inclusivity in food labelling requires a multi-faceted approach that addresses the full spectrum of human diversity. This chapter provides a comprehensive toolkit of 50 evidence-based practices, designed to dismantle barriers related to literacy, cognitive function, sensory perception, and technological access. These practices are structured to be directly actionable by policymakers, manufacturers, and designers to create a food ecosystem where everyone can make informed choices.



Table 16: Detailed Inclusive Practices for Accessible Food Labelling (50 Practices)

#	Practice Code	Description	Target Barrier / Audience	Implementation Example	Expected Impact / Benefit
1	8.1.1	Universal pictograms/icons for key concepts	Low literacy, language diversity	Standardized leaf for Organic, handshake for Fair Trade, cow in field for Animal Welfare; used consistently across products	Instant recognition, reduces misinterpretation
2	8.1.2	Traffic light system for nutrients	Low literacy, nutritional understanding	Front-of-pack Red/Amber/Green for sugar, fat, salt, saturated fat; based on EU thresholds	Quick comparison, supports healthier choices
3	8.1.3	Tiered information (3 levels: essential, detailed, full via QR)	Low literacy, cognitive load	Front: icons + main claims; side: simple text; QR: full ingredient, certifications	Reduces overload, allows progressive info access
4	8.1.4	Simple language protocol (A2 CEFR level)	Low literacy, education limitations	Replace jargon with simple terms: “Sustainably Sourced → Caught without harming fish”	Easier comprehension, inclusive reading
5	8.1.5	Visual nutrient comparison graphics	Low literacy, numeracy	Sugar cubes or teaspoons illustrations showing amount per portion	Makes quantitative data tangible
6	8.1.6	Audio label access via QR/NFC	Low literacy, multilingual, visually impaired	QR code links to audio narration of label in multiple languages	Expands accessibility, inclusive learning
7	8.1.7	Tick/Yes-No checklists for key info	Cognitive simplicity, low literacy	Checklist on front/back: [✓] Organic, [✗] Artificial Flavors	Simplifies decision-making, reduces reading
8	8.1.8	Multilingual key point summaries	Language diversity	3–5 key claims in major local languages	Broader comprehension, reduces errors
9	8.1.9	Standardized info box location	Cognitive ease	Ethical info always top-right on back label	Quick access, reduces search time
10	8.1.10	Question & answer format	Cognitive ease, low literacy	Q: “Is it organic?” A: “Yes”	Mirrors consumer thought process, intuitive
11	8.1.11	Free laminated pocket guides	Community education, literacy support	Distributed at libraries, supermarkets; includes pictograms	Promotes learning, offline reference



#	Practice Code	Description	Target Barrier / Audience	Implementation Example	Expected Impact / Benefit
12	8.1.12	In-store shelf taggers with icons	Ease of comparison, low literacy	Icons matching packaging appear on shelf edges	Visual alignment, faster selection
13	8.1.13	Gamified supermarket apps	Engagement, literacy, digital interaction	Scan products to earn points for identifying ethical attributes	Motivates learning, repeated engagement
14	8.1.14	Story-based labeling	Cognitive engagement, emotional connection	Small narrative + photo: "Farmer Maria grows olives chemical-free"	Builds empathy, reinforces ethical understanding
15	8.1.15	Community workshops on label reading	Education, literacy, social inclusion	Hands-on workshops with real products and simplified guides	Improves practical skills, community awareness
16	8.2.1	High contrast, large fonts	Cognitive impairment, visual ease	≥14pt font, 7:1 contrast, Arial	Easier readability, reduces eye strain
17	8.2.2	Tactile elements	Cognitive impairment, sensory support	Embossed circle = perishable, lines = allergen	Supports non-visual recognition
18	8.2.3	Short, repetitive, simple key messages	Cognitive impairment, memory support	Core messages ≤5 words, same phrasing across products	Easier retention, consistency
19	8.2.4	Real-life photography	Cognitive impairment, visual recognition	Photo of farmer for Fair Trade rather than icon	Improves understanding, relatability
20	8.2.5	Single "Good Choice" symbol	Cognitive impairment, simplified decision	Universal symbol indicating high ethical standards	Reduces complexity, guides ethical choice
21	8.2.6	Concrete and familiar language	Cognitive impairment, clarity	"Caught in a way that keeps fish in the ocean" instead of abstract term	Clear understanding, practical comprehension
22	8.2.7	"Now vs. Then" visual comparison	Cognitive comprehension	Two-panel image showing negative vs positive scenario	Shows impact, supports ethical decision-making
23	8.2.8	Consistent packaging design	Cognitive familiarity, recognition	Same layout and symbol placement across all brand products	Builds predictability, reduces confusion



#	Practice Code	Description	Target Barrier / Audience	Implementation Example	Expected Impact / Benefit
24	8.2.9	First-Then visual boards	Behavioral support	“First: Cook” → “Then: Eat” image sequence	Stepwise understanding, action reinforcement
25	8.2.10	Avoid clutter, maintain hierarchy	Cognitive focus	Clear layout, plenty of white space, limited elements	Focuses attention, reduces overwhelm
26	8.2.11	Single dominant color for primary benefit	Cognitive recognition	Bold border for main ethical benefit	Quick identification on crowded shelves
27	8.2.12	Symbol-based AR animations	Cognitive engagement, digital literacy	Scan symbol → 3D animation showing ethical story	Engaging, memorable learning
28	8.2.13	Co-design with disability organizations	Inclusivity	Workshops with intellectual disability groups for label testing	Ensures usability, inclusive design
29	8.2.14	Sample sizes with guidance	Learning support	Small affordable samples for teaching	Safe, practical experience
30	8.2.15	Retail staff training	Customer support, cognitive accessibility	Staff learn to explain labels in simple language	Improves customer assistance, accessibility
31	8.3.1	Full Braille integration	Blind/low vision	Braille on core product identity & allergens	Direct accessibility for blind consumers
32	8.3.2	NFC-activated audio labels	Blind/low vision, tech access	Tap phone → audio explanation	Immediate audio access, independent reading
33	8.3.3	Audio versions of materials	Blind/low vision	Audio-book of handbook & product sheets	Inclusive education, multi-sensory learning
34	8.3.4	Color-blind accessible design	Visual impairment	Patterns + symbols alongside color codes	Prevents misinterpretation, universal comprehension
35	8.3.5	Reserved seating & described materials	Blind/low vision	Front-row seats + verbal description at events	Inclusive participation, equal access
36	8.3.6	High-contrast, large-print shelf edging	Visual impairment	Shelf edge labels 1–2cm high, high contrast	Easier navigation in store



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#	Practice Code	Description	Target Barrier / Audience	Implementation Example	Expected Impact / Benefit
37	8.3.7	Subtitles & audio description for videos	Visual impairment	All videos include subtitles + descriptive audio	Accessibility for visually impaired
38	8.3.8	Haptic feedback apps	Visual impairment, tech access	Phone vibrates when product is organic-certified	Non-visual confirmation
39	8.3.9	Object recognition AI	Blind/low vision, tech access	Camera app reads label aloud in real-time	Independent label reading
40	8.3.10	Partner with guide dog/blindness orgs	Accessibility validation	Collaborate to test/iterate accessibility features	Ensures functional usability
41	8.4.1	Easy-open packaging	Physical dexterity limitations	Pull-tabs, peelable seals, minimal force required	Reduces frustration, improves usability
42	8.4.2	Blended event modality	Physical mobility, remote access	Live + online attendance options	Greater inclusion, geographic access
43	8.4.3	Digital phone support hotline	Digital literacy	Toll-free line with patient operators explaining labels/platforms	Reduces digital barriers, user guidance
44	8.4.4	WCAG-compliant digital platforms	Digital accessibility	Websites & apps meet WCAG 2.1 AA standards	Inclusive access for screen readers & assistive tech
45	8.4.5	Digital-first dissemination	Accessibility, durability	PDFs & online content; print-on-demand	Broad access, reduces waste
46	8.4.6	Barrier-free venues	Physical access	Wheelchair ramps, accessible restrooms, clear pathways	Inclusive events, mobility-friendly
47	8.4.7	Simple website navigation	Digital literacy	Clean menus, search bars, clear headings	Easy info retrieval, reduces frustration
48	8.4.8	Multiple digital formats	Screen reader compatibility	PDFs, Word, plain text versions of key documents	Accessibility for all software/screen readers
49	8.4.9	Offline functionality for apps	Digital equity, remote users	Label decoder app works without internet	Ensures usability in low-connectivity areas
50	8.4.10	Flexible communication channels	Access diversity	Social media, newsletters, community radio, postal info	Reaches different demographics, broad inclusion