

CUES Research Findings Summary

Evidence on sustainable food choices, communication, interventions and consumer behaviour

D2.1 – Report on the social, economic and environmental factors that influence sustainable food choices

Summary: It maps the individual, social, economic, cultural, and contextual factors that shape sustainable food choices across Europe, combining focus groups and large-scale surveys across multiple EU countries. It's explicitly framed as evidence-base for future interventions and policy.

Relevant points:

- 1** **On the intention-behaviour gap:** a recurring finding across countries is that consumers report relatively positive attitudes toward sustainable food (mean score 3.88/5) but actual consumption frequency is markedly lower (2.43/5). This directly supports arguments that structural and economic conditions, not just consumer will, are blocking sustainable transitions.
- 2** **On price as a barrier:** across focus groups, economic constraints (price, affordability, availability) consistently emerged as barriers overriding pro-sustainability values. In the low-income population survey, food affordability was a significant predictor of sustainable consumption.
- 3** **On the role of retailers:** focus group participants saw retailers as having strong influence over consumer choices but "not always using their power to prioritize sustainability." There was also skepticism toward large food corporations, while local producers were seen as more authentic but less accessible.
- 4** **On labelling:** participants across focus groups called for clearer, more comprehensive labelling covering not just environmental but also social and economic dimensions (e.g. working conditions, fair pricing). Current schemes were seen as fragmented and not fully trustworthy.
- 5** **On the decline in willingness to buy sustainable products:** Environmental concern and trust in companies emerged as important predictors of sustainable food attitudes and consumption.
- 6** **On social norms as a lever:** Personal norms were strongly linked to both sustainable food attitudes and consumption. Social norms were positively linked to sustainable food consumption, suggesting that social expectations can be considered alongside individual awareness in policy interventions.
- 7** **On point-of-sale as a key intervention moment:** The conjoint experiment on plant-based meat found that environmentally friendly packaging, credible certification, Nutri-Score A rating, price parity with conventional meat, and brand familiarity all significantly increased purchase likelihood. Point-of-sale promotions and packaging cues ranked higher in influence than traditional media or advertising.
- 8** **On vulnerable groups specifically:** The report dedicated a section to low-income consumers and older adults, two groups often left out of sustainability discourse. Key finding: for low-income consumers, unhealthy food consumption does not depend on attitudes toward sustainability but on financial constraints.
- 9** **On policy fragmentation Across focus groups,** participants noted inconsistent national guidance, lack of labelling standards, and insufficient policy support for making sustainable options visible and affordable. This fragmented policy landscape was perceived as a barrier.
- 10** **On the gap between environmental and social/economic dimensions:** the report explicitly flags that prior research over-focused on environmental sustainability while social and economic dimensions (fair labour, local economic support, fair pricing) were neglected.

D2.2 – Report on how the communication of influential factors is related to consumers' sustainability perception, attitudes and behaviours CUES Project

Summary: A systematic review of academic research (2014–2024) examining what drives or hinders consumers' sustainable food choices, covering psychological, social, economic, and digital/environmental factors. It also reviews national dietary guidelines from five EU countries (Hungary, Spain, Belgium, the Netherlands, Greece) as grey literature.

Relevant points:

- 1** **Gap between consumers' values and actual purchasing behaviour:** Even when people express pro-environmental values, conflicting factors (such as price perception, limited availability, and enjoyment of less sustainable options) regularly prevent action.
- 2** **On price specifically,** the report finds that it is the perception of sustainable food as expensive (rather than actual cost) that acts as a psychological barrier, particularly for organic products.
- 3** **On knowledge and awareness,** food sustainability literacy is identified as a key driver of sustainable choices, but is notably low among lower socio-economic groups.
- 4** **On the digital environment,** e-commerce platforms and sustainability labelling/information tools are shown to meaningfully shape consumer choices when they are transparent, easy to navigate, and provide clear eco-information.
- 5** **Research gaps:** The report is notably candid that vulnerable consumer groups (low-income, elderly, children, lower education) are systematically underrepresented in existing research.
- 6** **On the declining willingness to buy sustainable products:** Structural barriers (price perception, limited availability, confusing information) erode intention into inaction.
- 7** **On social norms as a lever:** The report finds that social influence (the perceived social pressure to act sustainably) is a consistent, positive predictor of sustainable food behaviour.
- 8** **On the digital environment findings:** The report shows that e-commerce platforms that provide transparent sustainability information, eco-scores, and easy navigation meaningfully shift consumer behaviour.
- 9** **On geographic and cultural variation:** Dietary guidelines across countries reflect local cultural traditions (for instance, Greece and Spain place more emphasis on the Mediterranean diet), but all guidelines highlight the importance of sustainable, plant-based foods.

D4.1 – Five Backcasting Scenarios for Place-Based Interventions with Citizens CUES Project | Erasmus University Rotterdam, August 2025

What it is: This deliverable describes the co-design process and outcomes of four (out of five planned) community-based interventions aimed at promoting sustainable food choices among vulnerable populations. It is part of Work Package 4, focused on co-designed solutions for cultural change. Each intervention was developed using a participatory backcasting methodology — starting from a desired future vision and working backwards to identify concrete steps to get there.

The four interventions described are:

1

OpenDot – Physical intervention (Italy): An educational toolkit for primary school children aged 8–11, with particular attention to migrant-background children. Using storytelling, gamification and sensory exploration, it aims to build food sustainability knowledge and skills, working through the school and community ecosystem in Valdilana, Piedmont.

2

OpenDot – Digital intervention (Europe): A digital tool for adults 65+, addressing their low trust in digital information about food sustainability. Still being developed via a European-wide hackathon in Italy, Hungary and the Netherlands (autumn 2025); this section is incomplete pending hackathon outcomes.

3

Banco Alimentar / FBPA (Portugal): An intervention targeting low-income families, delivered indirectly through social workers. Rather than approaching families directly, FBPA trains social workers and provides them with practical tools — recipes, farm visits, cooking workshops — to integrate sustainable food guidance into their existing support relationships.

4

Tudatos Vásárlók Egyesülete / TVE (Hungary): An upgrade of the existing "Conscious Consumer" mobile app, redesigned for adults 55+. It will include AI-powered label scanning, sustainability information, seasonal food guidance, nudging techniques, and simplified UX design tailored to older users.

Research paper: Consumer perceptions and behaviors around date labeling, packaging, and dairy food waste: A qualitative photo-elicitation study

Summary: A qualitative study with 33 Belgian adults using photo-elicitation interviews to explore how consumers interact with dairy packaging — specifically date labels and package size — and how these influence food waste. Findings reveal a complex relationship between packaging cues and food waste behavior, with practical implications for EU policy reform and retail packaging design.

Relevant point:

Date labels drive unnecessary waste at retail level. Consumers systematically select products with the longest remaining shelf life in-store, leaving products with closer dates behind. This shifts the burden of food waste directly onto retailers, who must discard unsold near-expiry stock.

Consumers misuse date labels despite understanding them. Most participants could explain the difference between 'best before' and 'use by' when prompted, but admitted they rarely read the accompanying text in practice, they just look at the date.

'Look, Smell, Taste' labels were very well received. Consumers responded positively to these labels, which validate sensory evaluation and reduce over-reliance on printed dates. Participants felt these labels gave them permission to trust their own judgment, and believed they would also influence other consumers.

Package size creates a pricing trap for consumers. Larger packages offer lower unit prices, making them financially attractive even when consumers anticipate they will not finish them. Most participants preferred smaller packages to avoid waste but acknowledged that price often wins.

Multi-portion packaging is seen as helpful but environmentally conflicting. Individually sealed portions within a larger pack extend freshness and reduce food waste, but consumers associate them with excess plastic, which they perceive as environmentally worse than food waste. This is a misconception — for high-impact products like dairy, food waste is actually more environmentally damaging than packaging waste.

Resealable packaging is undervalued at point of purchase. While consumers acknowledge resealable features reduce waste once at home, they do not factor this into their purchasing decisions. Poor execution (adhesive strips that don't work, expensive closures) further undermines uptake.

Consumers want more variety in package sizes. Particularly single-person households expressed frustration at being forced into large formats. Offering a wider range of sizes is seen as a positive, consumer-friendly move, though some noted it could increase retail-level waste if smaller formats sell less well.

Research paper: When Tradition meets Tomorrow: Personal Cultural Orientations, Normative Influence and Attitudes toward Sustainable Food Consumption

Summary: A large-scale representative survey of 2,296 adults across Portugal, Italy, Greece, Bulgaria and Hungary examining how personal cultural orientations (specifically Tradition (respect for heritage and customary practices) and Prudence (future-minded planning and self-restraint) — shape attitudes toward sustainable food consumption through a sequential pathway of social and personal norms. Both orientations were found to positively influence attitudes indirectly, by first strengthening perceived social norms and then activating personal moral obligation.

Relevant points:

Cultural identity can be a driver of sustainable consumption, not just a barrier. A common assumption is that tradition holds back sustainability transitions. This study shows the opposite can be true: where culinary heritage already encodes sustainable practices (such as plant-forward meals, seasonality, frugality and locality in Mediterranean diets) consumers high in Tradition are more likely to perceive sustainable eating as socially expected and personally obligatory.

The mechanism is through norms, not direct persuasion. Tradition and Prudence do not push consumers directly toward sustainable choices, they work by shaping what people perceive their community does and approves of, which then becomes internalized as a personal moral obligation. This means that norm-based communication strategies (showing what people like them are already doing) are more effective than rational environmental arguments or generic sustainability claims.

Social norms are the single most powerful lever identified in the study. The pathway from social norms to personal norms was large and consistent across all five countries, explaining between 32% and 61% of variance in personal norms. This cross-national stability is a strong signal that norm-based retail interventions (visible in-store cues, social proof messaging, community endorsements) are likely to generalize well across European markets.

Prudence adds a direct channel in some countries. In Bulgaria and Hungary, Prudence showed not just indirect but also direct positive effects on sustainable food attitudes, suggesting that future-oriented, self-regulation appeals (e.g. waste-tracking, pre-commitment tools, defaults) can complement norm-based strategies in these markets specifically.

The findings challenge country-level culture proxies commonly used in marketing. Most retail and policy strategies treat culture as a national average. This study shows that cultural values vary significantly within countries, and that person-level orientations are more predictive of behavior.

Practical retail implications are clearly spelled out. The authors recommend a "common core, tailored edge" approach: a shared framework of visible, locally legitimate norm cues, with message framing adapted to local heritage.

The decline in sustainable purchasing willingness EuroCommerce identified may partly reflect norm fatigue or misaligned messaging. If sustainability communication has been generic, top-down or moralistic, it may have failed to activate the cultural and normative levers this study identifies.

Research paper: Not on my plate: a cross-cultural qualitative study on anti-vegan sense-making and resistance

Summary: A qualitative focus group study conducted with self-identified anti-vegans in Greece and the Netherlands, exploring how they rationalize opposition to veganism and plant-based diets, and how cultural and informational influences shape their attitudes. Drawing on psychological reactance theory, cognitive dissonance theory and focus theory of normative conduct, the study identifies five thematic clusters: rationalizing resistance, emotional and psychological reactions, cultural influences and identity anchoring, informational and media influences, and social norms and social resistance.

Relevant points :

Push back on sustainability: Participants in both countries described feeling alienated, judged and increasingly stigmatized by the growing normative pressure around sustainable and plant-based diets. When sustainability messaging becomes too moralistic or prescriptive, it triggers psychological reactance — consumers not only disengage but actively push back.

Overtly moral or prescriptive messaging is counterproductive. Participants described vegan labels and certifications as manipulative, prescriptive and autonomy-threatening.

Label skepticism and greenwashing concerns are a major barrier. Participants frequently dismissed sustainability labels as commercially motivated rather than genuinely informative. One Dutch participant noted the irony of a vegan product using non-biodegradable plastic while displaying a green leaf logo. This kind of perceived inconsistency destroys trust.

Framing matters enormously — "healthy" and "sustainable" outperform "vegan" and "plant-based". Participants were far more receptive to plant-based content when it was not ideologically framed. A Greek participant described following an Instagram creator whose recipes happened to use accessible, non-vegan-coded ingredients — effectively consuming plant-based content without the identity threat. Research cited in the paper confirms that labeling products as "healthy" or "sustainable" rather than "vegan" significantly increases consumer uptake.

Cultural anchoring shapes resistance very differently across markets. Greek participants rooted their resistance in collective rituals, religious practices and intergenerational family traditions — veganism was experienced as an attack on cultural identity. Dutch participants were more pragmatic, resisting on grounds of autonomy, price and marketing authenticity.

Anti-vegans increasingly feel stigmatized, which hardens resistance. Both groups described a growing sense that meat-eaters are being morally marginalized as veganism gains cultural traction. This perceived stigma reinforces in-group identity and makes persuasion harder.

Cognitive dissonance is managed through rationalization, not behavior change. Participants acknowledged environmental concerns but consistently found ways to reframe veganism as itself problematic — citing deforestation from soy production, plastic packaging waste, or the alleged unnaturalness of processed plant-based products. These are motivated reasoning strategies that protect existing habits. Messaging that offers low-friction, incremental pathways (flexitarian steps, reduced portion sizes, meat alternatives framed as additions rather than replacements) is more likely to bypass these defenses than direct confrontation.

Media fatigue and algorithmic avoidance are real. Participants described actively filtering out sustainability content they found morally threatening — skipping documentaries, adjusting social media algorithms, ignoring in-store campaigns. This means that even well-funded communication campaigns may simply not reach resistant consumers if the framing triggers avoidance. Meeting consumers where they are, through trusted and non-ideological channels, is essential.

Research paper: Byte into sustainability: a scoping review of digital food environment attributes that shape consumers' sustainability perceptions, attitudes, intentions, and behaviours" International Journal of Behavioral Nutrition and Physical Activity

Summary: A scoping review of 57 studies (2014–2024) mapping how features of the digital food environment — e-commerce platforms, social media, apps, documentaries, blockchain — influence consumers' sustainable food choices. It identified 86 distinct digital attributes across five media types. E-commerce dominated (57.9% of studies), followed by social media (31.6%). Most research comes from high- and middle-income countries and focuses on adult, educated, female populations.

Relevant points:

Informative messaging on e-commerce platforms (e.g., eco-scores, carbon footprint labels) consistently improved sustainable purchase attitudes and intentions across multiple quantitative studies.

Platform design features (media richness, usability, convenience, visualisation tools) also drove sustainable food outcomes, suggesting that how retailers structure their digital interfaces matters.

Social media marketing, especially when transparent and informative, built consumer trust in sustainable products, an angle that retail associations could leverage.

Influencer endorsement and electronic word-of-mouth showed positive effects, though results were mixed for reviews and ratings, showing that they can raise awareness about sustainable food but not necessarily change behaviors

Blockchain-based traceability systems increased consumer trust and purchase intention for sustainable products.

Large research gaps remain: low-income countries, children, teenagers, older adults, and platforms beyond e-commerce and social media (e.g., food guide apps, documentaries) are underexplored.

Research paper : Thought for food: A systematic review of how psychological state factors affect sustainable food outcomes" Sustainable Production and Consumption

Summary: A systematic review of 290 articles examining how psychological state variables — attitudes, subjective norms, perceived behavioural control, food literacy, trust, price perception, availability, values, emotions — influence sustainable food attitudes, intentions and behaviours. Organic food dominated the sample (68% of studies). The Theory of Planned Behaviour was the most used framework. Strong evidence was found for specific product attitudes, food sustainability knowledge, and prosocial/individualistic values as drivers; price perception, trust deficits, and limited availability as key barriers.

Relevant points:

Attitudes toward specific products (e.g., plant-based meat, organic food) are far stronger predictors of sustainable behaviour than general environmental attitudes, targeted product-level messaging is more effective than broad green campaigns.

Food sustainability knowledge is a robust driver, yet many consumers, especially those from lower socioeconomic backgrounds, have limited knowledge.

Price perception, not actual price, is the key barrier: consumers who see organic/sustainable products as "worth it" rather than just "expensive" are more likely to buy.

Trust in the label/certification was very often significant in increasing organic food consumption/attitudes

Emotions (anticipated pride, guilt) and self-identity are highly promising but under-researched levers for intervention design.

Research is heavily skewed toward organic food; plant-based, fair trade, and local food categories remain underexplored.

Only 4 experimental studies objectively measured behaviour (vs. self-report), highlighting a general weakness in the evidence base that policymakers should be aware of.

Research paper: What are influencers feed-ing us?: A photo-voice approach on emerging adults' social media food environment. Appetite

Summary: This study used a photovoice methodology to investigate what types of health-promoting food content young adults (aged 18-24) encounter in their personal social media feeds and how they assess the credibility of this information. The findings indicate that although such content can motivate healthier eating behaviors, a substantial proportion of it conflicts with official dietary guidelines. Young adults often struggle to identify misleading information because they tend to rely on visual cues and superficial indicators of expertise rather than formal qualifications.

The main findings were as follows:

Conflict with dietary guidelines: Approximately 30% of the analyzed posts contradicted official dietary guidelines, most notably by promoting excessively large portions of red and processed meat. The misinformation identified was therefore generally subtle, as it often involved exaggerations or deviations from dietary recommendations rather than overtly false claims.

Sources without formal credentials: The vast majority of health-promoting content (85.9%) was produced by influencers without a formal background in nutrition, such as fitness, health, or lifestyle creators. Proportionally, they were also responsible for posting more false nutrition information than influencers with actual expertise in nutrition (e.g., dietitians).

Misleading recipes: Most inaccurate information (78.3%) appeared in recipes, which young adults often perceived as harmless and purely inspirational. As a result, they tended to evaluate such content less critically.

Appearance as evidence of expertise: Participants frequently viewed an influencer's fit and attractive physique as a stronger indicator of expertise than formal qualifications or academic credentials. It serves as a visual proof of expertise.

Scientific language: The use of complex nutrition concepts or scientific-sounding terminology substantially increased perceived credibility, even when the information was inaccurate or participants did not fully understand the explanation.

Illusion of truth: Due to the repeated exposure to health-trends in their personalized feeds, young adults came to perceive certain foods as healthy simply because they encountered them so frequently. In the case of red meat, this could have serious consequences.

Social proof: A large follower count functioned as an implicit signal of credibility ("social proof"), making users more likely to assume that the shared information was accurate. However, this was not evident for all participants.

Research paper: Conceptualizing Sustainable Food Consumption: An analysis of 84 definitions

Summary: Analysis of 84 definitions of sustainable food consumption and related concepts, identifying common themes, gaps and five definitional archetypes, and proposing a new integrative definition to support clearer policy design, coordination and measurement across sectors..

Relevant points:

SFC lacks a shared definition. Definitions differ considerably across research, policy and institutional contexts, complicating measurement and policy alignment.

Environmental and health dimensions dominate. Environmental sustainability appears in 93% of definitions and health and nutrition in 73%, while culture, biodiversity and food security receive less attention.

Definitions often lack implementation detail. Behavioral pathways, governance and multi-stakeholder responsibility are relatively underrepresented.

Five definitional archetypes were identified: Eco-Nutritional Core, Holistic SDG-Aligned, Policy/Institutional Framing, Behavioral Minimalism and Normative/Aspirational. The Holistic SDG-Aligned archetype was the most common.

Different definitions can suit different policy purposes. For instance, some are better suited to dietary guidelines, others to behavioral interventions or broader cross-government strategies.

The study proposes a new integrative definition of SFC:

"Sustainable food consumption (SFC) refers to the practices, behaviors, institutional arrangements, and policy frameworks related to the selection, acquisition, use, and disposal of food that jointly contribute to environmental integrity, public health, economic viability, social equity, and enduring food system and community resilience. It encompasses both individual and collective actions, supported through behavioral incentives, that reduce environmental degradation, promote fair and viable livelihoods across the food value chain, ensure culturally appropriate and nutritious diets, minimize food waste, facilitate sustainable dietary shifts, safeguard biodiversity and protect animal welfare. Sustainable food consumption is inherently multi-level and systemic, requiring the coordinated engagement of consumers, producers, institutions, and governments, and is oriented toward the well-being of both present and future generations".