VALUMICS
Food Systems Dynamics

From intention to action

Multi-stakeholder recommendations for making sustainable food consumption a reality

Imprint

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VALUMICS
Food Systems Dynamics

Executive Summary

Goals

How can we move from attitudes and intentions to action and generate behavioural change towards more sustainable food consumption in Europe? This report helps answer this question by **making recommendations to various stakeholder groups on how to support sustainable consumption of food**. It draws from research and insights of the latest and most compelling pieces of evidence, including those of behavioural science, aimed at supporting more sustainable and healthier diets in real-life contexts. In this report, sustainable food consumption refers to food purchasing and consumption patterns that are based on plant and fruit-rich diets with fewer animal-based products, locally sourced and organically produced food, and with less food waste and/or food packaging.

Target audience

The report is particularly targeted at policy makers at all levels (local, national, EU), civil society organisations (CSOs) and food industry and distribution actors ("food industry actors"), especially retailers and restaurants, that have a stake and are engaged in European food systems.

Key outcomes

- This report puts forward **14 recommendations** to drive more sustainable food consumption in Europe, clustered into **four main recommendation types: 'choice environment', 'choice expansion', 'choice editing' and 'beyond choice'.**
- The practical implementation of the recommendations discussed in the report is conditioned on a successful **multi-stakeholder collaboration** between policy makers, food industry actors and CSOs among the most important actors.
- Without underestimating the importance of innovation and creativity, it is crucial to capitalise on **existing resources and initiatives** and find ways of **scaling them up**.
- The effectiveness of the recommendations of this report will depend on a good understanding of the actual context of focus and should build upon existing or new pieces of **behavioural insights** that explain how and why people behave as they do. Moreover, it is important to consider **consumers as active actors** as opposed to passive ones with relatively no role in designing and shaping current frameworks.
- Various recommendations and insights in this report **support the actions defined in the Farm to Fork Strategy** under the specific goal to 'promote sustainable food consumption and facilitate the shift to healthy, sustainable diets' [1].

Chapter 1

Introduction

According to the EU Farm to Fork Strategy, citizens "pay increasing attention to environmental, health, social and ethical issues and they seek value in food more than ever before" [1]. A recent European consumer survey across 11 European countries, with over 11,000 consumers, points to a similar trend: it shows that most consumers are aware of the environmental impact of food habits in general and two-thirds of consumers are open to changing their eating habits for the benefit of the environment [2].

Does this mean that we are on track to mainstream more sustainable food consumption behaviours in Europe? Not quite. It is increasingly accepted that such positive attitudes do not necessarily equal action. In fact, there is a large gap between pro-environmental and more sustainable attitudes and actual consumption of more sustainable food products [3]. Food is the number one driver of negative sustainability impacts generated by household consumption in the EU today, of which animal-based products, such as meat, dairy and eggs, account for more than 50% of most of these impacts, including toxicity to human health, climate change and land use [4]. That's why the Farm to Fork Strategy concludes that "current food consumption patterns are unsustainable from both health and environmental points of view" [1].

In this sense, the central question is: **how can we move from attitude to action and generate actual behaviour change towards more sustainable food consumption?** That's a very complex question as "food preferences, choices, and eating habits are notoriously hard to change" [3]. On the one hand, food purchasing and consumption are perceived as highly personal activities, often associated with one's culture and identity [5]. On the other hand, food consumption is largely habitual and not subject to self-reflection [6]. But there is an increasing understanding of how to shift to more sustainable patterns of food consumption based on a growing evidence base informed by behavioural science.

Accordingly, this report makes recommendations to various stakeholder groups on how to support and promote more sustainable food consumption. It draws from the research and insights of the latest and most compelling pieces of evidence, including those of behavioural science, aimed at supporting more sustainable and healthier diets in real-life contexts. To this end, the report is particularly targeted at policy makers, civil society organisations (CSOs) and food industry and distribution actors ("food industry actors"), especially retailers and restaurants.

The recommendations included in this report are "behaviourally informed", which is based on a broad understanding of the term. In this context, the report includes a combination of recommendations that range from strategies characterised by keeping all consumption options available while making it easier, normal and more appealing to take the more sustainable road [7], through to strategies that change the variety of product options available and even influence lifestyles at large beyond the specific moment of food purchasing and choice. All recommendations have in common the overall focus on improving the demand side of the sustainability challenges in current food systems by exploring needs and opportunities throughout the entire value chain.

In view of the major challenges ahead of us to mainstream more sustainable food consumption behaviours along with the urgency that the needed transition requires, the recommendations discussed in this report are to a certain extent assertive and suggest in various situations the need to make certain practices that are currently voluntary more robust and mandatory.

Content of this report

This report is part of a series of reports produced within the VALUMICS project that aim to understand consumers' food consumption behaviours for the purpose of proposing holistic and systemic strategies for promoting more sustainable ones. It discusses a menu (set) of recommendations aimed at supporting more sustainable food consumption behaviours and patterns at the consumer level.

Following this introductory overview, **Chapter 1** outlines the main barriers to sustainable food consumption in Europe that require addressing in order to foster actual behaviour change. **Chapter 2** details the methodology and the rationale applied in developing the recommendations included in this report. **Chapter 3** is the main part of the report and presents a menu of recommendations, with each recommendation being supported by evidence and discussed in light of the roles of different stakeholder groups. Finally, **Chapter 4** discusses the challenges and opportunities of implementing the recommendations in practice as part of the outlook for the future.

The overall goal of the VALUMICS project is to provide European decision makers with a comprehensive suite of approaches and tools to evaluate the impact of policies and strategies for enhancing the resilience, integrity and sustainability of food value chains in Europe. Contributing to the project goal, this report is the fourth in a series of VALUMICS outputs dedicated especially to food consumption analysis. It is preceded by a baseline report on understanding the drivers of food consumption behaviours among Europeans and the various challenges and opportunities we face; a report about promising interventions for more sustainable food consumption; and a report documenting pilot food behaviour-change interventions in a retail outlet in Europe.

A Snapshot for food industry actors

Why are you an important actor?

- Unique and strategic position between consumers and the production (supply) side, enabling you to support and promote more sustainable food consumption.
- Ability to influence which food products to produce, design food environments (i.e. spaces of food purchasing) and shape the product options offered to consumers.
- The industry's marketing and advertising intelligence is a particularly useful asset that could be tailored to disseminate and diffuse sustainable food consumption patterns.

What is in it for you?

- Being better prepared to address consumers' demand for more sustainable and healthier products following their increased awareness on the topic.
- Accordingly, you would differentiate yourself from competitors, improve and/or maintain your good reputation as a responsible actor and avoid losing market share.
- Be ahead of the game and comply with the increasingly strict regulations and sanctions, induced by EU and national policy makers, as part of the broader sustainable development agenda.

What can you do?

- Support consumer intention and reduce confusion and potential reluctance towards sustainable products by increasing the transparency about the origin and composition of products and means of production. This could be achieved through easy-to-understand and more human-centric consumer communication efforts.
  ↘ Keep an eye out for 'Less is more', 'Words matter' and 'From niche to normal'
- Make it easier for consumers to select the more sustainable and healthier products by increasing their availability and accessibility in the food purchasing environment. Consider the gradual shift towards making the sustainable choice the default one, while phasing out the unsustainable alternatives.
  ↘ Keep an eye out for 'You buy what you see', 'Go with the flow', and 'Off the list'
- Invest and innovate to introduce more sustainable and healthier products while matching these with the latest socio-demographic factors. Moreover, harness the positive impact of technology and financial support that is given by policy makers.
  ↘ Keep an eye out for 'Disrupt or be disrupted', 'S, M or L' and 'Smart food'
- Collaborate and join efforts with other actors to support other activities and jointly advance sustainable food consumption.
  ↘ Keep an eye out for 'Local is relatable'

A Snapshot for policy makers

Why are you an important actor?

- Supra positioned bodies able to promote sustainable food systems in a neutral, large scale and systemic manner.
- In position to make and pass regulation and other policies/strategic action plans that could improve the sustainability of food chains from farm to fork stages.
- In position to coordinate and implement voluntary and mandatory regulatory frameworks throughout the EU while avoiding differences within and between countries as well as other actors.
- Institutional bodies in place for safeguarding and promoting the best interest of European citizens.

What is in it for you?

- An additional up-to-date and practical overview of needs, challenges and barriers towards more sustainable food consumption behaviours.
- An additional overview of opportunities and leverage points that hold great potential for changing and making European food systems more sustainable.
- Come closer to realising and achieving EU's and other national policy sustainability objectives and targets.

What can you do?

- Account for behavioural insights when designing, implementing and monitoring policies for a more effective outcome and impact.
  ↘ Keep an eye out for 'Less is more', 'Words matter' and 'From niche to normal' and 'Time is sustainable'
- Review existing policies and action plans with the intention of reducing redundancies, unnecessary information provision and friction.
  ↘ Keep an eye out for 'Less is more'
- Implement and test unconventional policies that favour sustainable products and hold the potential to disrupt normal market operations and stretch our understanding of those.
  ↘ Keep an eye out for 'Go with the flow', 'Define thresholds' and 'Off the list'
- Further implement (financial) policies that would incentivize the innovation and production of products with better sustainability performance while disincentivising their alternatives.
  ↘ Keep an eye out for 'Disrupt or be disrupted', 'Local is relatable' and 'Show me the money'

A Snapshot for CSOs

Why are you an important actor?

- External actors that can act as gatekeepers and balancers of interest between citizens, policy-makers, businesses and other stakeholders by monitoring, auditing and evaluating food system-related activities/operations. This kind of position could be utilized to mobilize and work with all stakeholders.
- Extensive theoretical and practical knowledge on sustainability topics related to food. This kind of expertise could be utilised for developing neutral, impartial and creative solutions.
- High credibility among stakeholders and citizens. Participation in collaborative and partnership efforts gives the latter increased trust and acclaim on a societal level.
- Extensive network for sharing information, raising awareness, campaigning and advocating.

What is in it for you?

- An additional up-to-date and practical overview of needs, challenges and barriers towards more sustainable food consumption behaviours.
- Identifying leverage points and opportunities for further influencing the EU's and countries' specific sustainable development agendas.
- An overview of various multi-stakeholder and participatory solutions/interventions that could be implemented and realised in practice and/or serve as a source of inspiration for other potential approaches

What can you do?

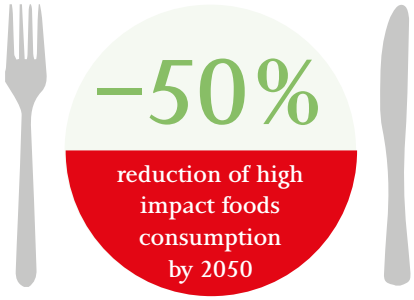
- Continue sharing the know-how and expertise on sustainable food topics and strive to expand these insights and learnings with the most up-to-date developments.
  ↘ Keep an eye out for 'Less is more', 'S, M or L', 'Smart food', 'Time is sustainable'
- As a neutral and impartial actor, be part of the conversation, bring stakeholders together and drive the co-creation of solutions.
  ↘ Keep an eye out for 'Local is relatable', 'Off the list'
- Continue working together with citizens as well as making them aware and further educate them about their role and potential for driving sustainable food consumption forward. Consider behavioural insights to make such activities more human-centric.
  ↘ Keep an eye out for 'Less is more', 'Words matter', 'From niche to normal', 'The power of education'
- Collaborate and join efforts with other actors to support other activities and jointly advance sustainable food consumption.
  ↘ Keep an eye out for 'Local is relatable'

Chapter 1

Key barriers to eating sustainably

What does eating sustianably mean?

The goal:



A diet rich in plant-based foods and with fewer animal-source foods confers both improved health and environmental benefits, says the widely referenced EAT-Lancet Commission Report [8]. Concretely, in order for the global population to eat sustainably and healthily by 2050, the report states that the global consumption of fruits, vegetables, nuts and legumes should double while the consumption of foods such as red meat and sugar should fall by more than 50%. More recently, the EU Farm to Fork Strategy [1] provided various attributes of a **more sustainable food consumption** that go in a similar direction:

- "A more plant-based diet with less red and processed meat and with more fruits and vegetables";
- A diet that "reduces food loss and waste";
- A diet based on "traditional and locally-accepted varieties" and organically sourced food; and
- A diet that reduces the use of packaging, especially single use food packaging.

Despite it being increasingly clear which direction we need to move in and the associated benefits of doing so, **there are various obstacles in people's way** to realising more sustainable food consumption behaviours. Acknowledging and understanding these barriers is a first step to ensuring that we know the problem well, allowing the solutions put forward towards more sustainable food consumption to focus on and leverage the exact factors that need to be changed.

What are the barriers?

In order to be able to change food consumption behaviours, it is important to understand why such behaviours are the way they are and **what needs to change** in order for the desired behaviour – generally, to eat more sustainably, characterised by some of the specific behaviours and attributes highlighted above – to occur. To answer this question, behavioural models can be very helpful, particularly in mapping the context in which behaviours take place and diagnosing the critical barriers to and levers for change. In this sense, models help to focus on what truly needs to change and to identify suitable strategies of how to get there.

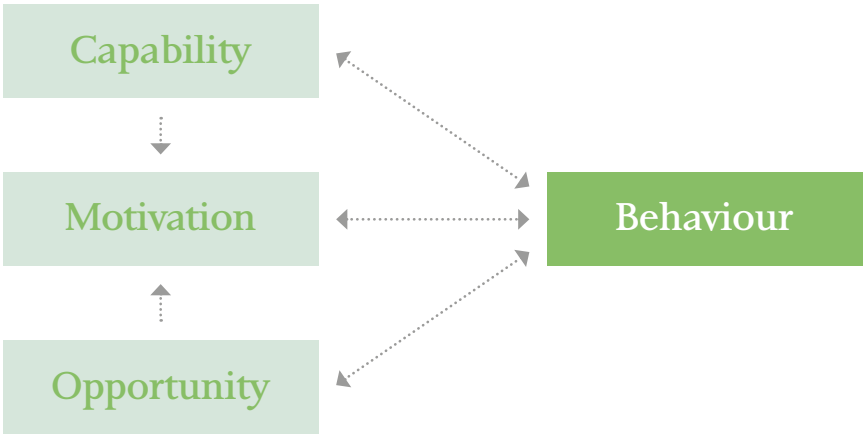
Therefore, in order to map out the key barriers between consumers and sustainable food consumption as a means to developing suitable recommendations, this report was guided and informed by the COM-B model [9] (Figure 1). COM-B was originally designed for developing policies (strategies and interventions) in the public health domain. However, its use has evolved towards application in the promotion of pro-environmental strategies in various sectors as well, including food [10].

According to the model, behaviours are shaped by three main determinants: capability, opportunity and motivation. The absence of any of these factors might put the desired behaviour at risk. When thinking of potential interventions for behaviour change, triggering or changing any of these factors (separately or in combination) might contribute to the materialisation of the desired behaviour. The three determinants are detailed below:

- **Capability** comprises an individual's **psychological** skills (including having the knowledge, information, memory, attention and cognitive abilities to perform the behaviour) and **physical** (bodily) skills necessary for performing the desired behaviour
- **Motivation** represents the conscious and unconscious processes that guide human decision making and the performance of related behaviours. Within the model, motivation stems from both human systems of thinking: **reflective** (involving self-conscious planning, evaluations and intentions); and **automatic** (processes involving emotional reactions, desires, impulses, habitual and reflex responses)
- **Opportunity** captures external factors, external to the individual, that might enable, promote or inhibit the performance of the desired behaviour. These can be either **physical**, like infrastructural/environmental conditions (what the environment allows or facilitates in terms e.g. of time, resources, locations), or **social**, like cultural norms and interpersonal relations that influence our thinking processes

Figure 1: COM-B Model

Source: Michie et al. [9]



Based on the previous research conducted within the VALUMICS project that comprised secondary and primary data collection and analysis, some of the **major barriers to sustainable food consumption among Europeans** have been identified and mapped with the support of the COM-B model. Four out of the six sub-determinants explained above were particularly relevant in identifying the following barriers:

Psychological capability

A consumer focus group exercise with approx. 160 participants in four European countries (United Kingdom, Italy, France and Germany) reinforced the assumption of a general **lack of knowledge** about **sustainability and fairness** in food consumption among European consumers. In addition, participants expressed the expectation that responsibility for promoting sustainability within the food sector should be allocated more to other stakeholders involved in food systems, such as public authorities [11].

Going in a similar direction, a recent BEUC consumer survey conducted across various European countries also explored the challenges around knowledge about the impacts of food consumption: Despite most consumers being aware of the environmental impact of food habits in general, they tend to underestimate the impact of their own food habits on the environment [2]. In other words, there is a disconnect between knowledge in general and knowledge about oneself.

Additionally, a **lack of trust in organic** products and organic certification labels was expressed, particularly by participants in the Italian and UK focus groups. There were three types of "distrust" expressed in the focus groups conducted in Italy: at the societal level ("those eating organic food are the happy few, we don't want to be like them"); at the retail level ("those selling organic food are making huge profit out of that and I don't want to give them my money"); and at the health level ("I'm not sure organic food can really bring health benefits, but I'm happy to test if it's not too expensive"). There has been a number of research projects analysing trust in food labelling [12] [13] [14] and, in general, label information is usually not straightforward and often confusing for consumers. People would generally have more trust towards a food product that is local/regional and towards some preferred brands.

↘ Recommendations based on 'choice editing', 'choice environment' and 'beyond choice" strategies explored later on this report will be particularly helpful in addressing the psychological capability barriers.

Automatic motivation

Food choices are, to a large extent, **habituative** and in many cases relatively **unreflective** [6] in the sense that they occur frequently and automatically in certain contexts [3]. As much as this might be a barrier to the effectiveness of information-based interventions, this also makes food choices prone to change by means of behaviourally-informed strategies, such as nudges [6].

↘ In this sense, the recommendations based on 'choice environment' measures explored in this report are particularly useful to addressing unsustainable habits.

Physical opportunity

Price is one of the key drivers to sustainable food consumption. In this sense, price concerns can be an important barrier to sustainable food consumption [3].

A lack of more sustainable food options to choose from (e.g. many foods continue to be sold in non-biodegradable packaging, or the lack of plant-based ready meal options sold in supermarkets [15]) as well as a **lack of time** [3] also hinder people's opportunity to purchase more sustainable foods and generally eat more sustainably. Buying local food in a market, for example, may take more time, and automatic thinking

processes, which usually connect people to unsustainable habits, tend to prevail when people feel under time pressure when shopping [3]. Working long hours is associated with time-related barriers to healthful eating [16] by e.g. limiting time dedicated to cooking fresh produce and increasing the consumption of convenience food and takeaway that are often calorie dense and have poor nutritional properties.

↘ Recommendations based on 'choice editing', 'choice expansion' and 'beyond choice' interventions presented in this report support addressing these challenges.

Social opportunity

Social norms are the behavioural expectations or rules within a society or group, for example households, which can be explicitly stated or implicitly realised in what we see others do. In short, they are perceived as the right thing to do [17]. In a world full of information and complex decisions, copying what others do is a good way to avoid effortful thinking and feel part of the group.

Specifically, with regards to diets, Nyborg, et al. [17] explain that diet variation across countries reflects social norms, as such variation cannot be fully explained by prices, incomes, and nutritional content. According to this study, "differing diets make cooking shared meals cumbersome. If people tend to prefer the foods they are used to, sticking to the most common diet is convenient (…). Hence, if a **less meat-intensive diet** became the norm, individuals might conform partly owing to social pressure or a wish to be environmentally friendly; but a primary motive may simply be to enjoy pleasant and convenient joint meals" [17].

The influence of social norms on food consumption patterns was reinforced by the participants in the VALUMICS focus groups across Germany, Italy, the UK and France. Consulted consumers reported on food consumption behaviour changes and general food habits that were largely influenced by their family or the behaviours of those they lived with [11].

↘ Recommendations informed by 'choice environment' strategies, especially with regards to messaging at the point of sale, will help tapping into the power of social opportunity and norms.

Chapter 2

Developing the recommendations

2.1 Process of developing the recommendations

The recommendations of this report are informed by previously generated VALUMICS results and a complementary literature review, and produced on the basis of a multi-stakeholder, co-creation and participatory approach. First and foremost, a comprehensive list of recommendations was produced based on previously generated insights and learnings from the VALUMICS project. As part of this first step, VALUMICS reports and outputs preceding this one were consulted and scoped. This series of reports aim at understanding food consumption behaviours for the purpose of developing holistic and systemic strategies for promoting more sustainable ones. It comprises:

1 The **'Food consumption behaviour in Europe: mapping drivers, trends and pathways towards sustainability'** report, which provides a comprehensive overview of the food sector in the context of sustainability from a demand perspective by looking at food consumption patterns, behavioural drivers, trends and barriers to change connected to it. Moreover, it provides an analysis of the results of the focus groups with consumers of four European countries (UK, France, Italy and Germany) where their perceptions and feedback on (sustainable) consumption behaviours and related drivers were explored; and

2 The **'Putting solutions on the table: a review of successful interventions to support more sustainable food consumption behaviours'** report, which analyses and showcases the latest and most compelling pieces of evidence about behaviourally-informed interventions that have supported a shift towards more sustainable and healthier diets in real-life contexts.

Besides consulting VALUMICS outputs, to ensure that the recommendations rely on the most up-to-date data and insights, a complementary literature review on recommendations and existing strategies aimed at supporting more sustainable food consumption was conducted.

As a next step, the recommendations were short-listed, consolidated and further elaborated. As part of the process, the recommendation clusters were presented to over 90 European food stakeholders and interested parties that participated in a VALUMICS webinar held on 16 July 2020 who had the opportunity to provide additional inputs to the report content through a follow-up survey.

In the follow-up survey, participants of the webinar were asked if the recommendations were suitable for reaching more sustainable food consumption behaviours, with the majority of them responding affirmatively to question. Moreover, participants were asked to suggest areas for improvement in the recommendations that would support reaching the goal. Accordingly, the suggestions centred on the need for more practical and solution-oriented recommendations that are directed to specific stakeholders. Such suggestions have been reflected in the elaboration of the recommendations. Finally, when it comes to key actors responsible and more suited to drive such change, respondents highlighted policy makers followed by food industry stakeholders, which aligned with the report's initial vision.

2.2 Logic behind the recommendations

The term 'recommendations' is understood broadly and used in this report to describe evidence-based actions whose deployment has the ability to support promoting and reaching more sustainable food consumption behaviours in Europe. The present report builds upon the most compelling pieces of evidence about behaviourally-informed interventions in order to shape its recommendations.

Not all recommendations are expected to work equally well in all contexts, which is the reason why this report puts forward a menu of options – a nuanced overview of strategies to support more sustainable food consumption behaviours in concrete situations, highlighting their complex qualities, aspects or distinctions. Behavioural science researchers and practitioners have long recognised that there is no silver bullet when it comes to implementing strategies aimed at changing behaviours, and the same holds true in this report. Our goal is to support the good judgement of the readers, who know the situation they are working in well, to be able to decide what will work best for their concrete cases.

Based on these considerations, this section introduces the main aspects considered when developing the recommendations.

Target audience

The recommendations are suitable to target and be implemented by a variety of stakeholders such as policy makers and food industry as well as civil society organisations (CSOs) while informing and benefiting the work of other actors as well, such as academics. In most cases, each of these actors have a role to play in addressing each of the recommendations. Below is a more detailed overview of the main target audiences of the report and how they can benefit from it:

Policy makers and governments: In the context of sustainable food consumption, there is a growing expectation on public authorities, at various governance levels, to take responsibility and leadership in effectively developing and implementing preventive and rectifying strategies [7]. A Europe-wide consumer survey pointed out that only 16% of consumers feel that their government is doing enough to encourage food sustainability at production and consumption levels [2]. So far, most of the policy efforts have focused on increasing consumer awareness through communication campaigns and food labelling [18]. As much as they are beneficial, the effects of these kinds of information provision actions have not been that successful in enabling consumers to actually change their behaviours [19]. In light of this, policy makers are increasingly turning to behaviourally-informed policies to produce more desired outcomes and there is now momentum to apply such approaches on a regular basis [20]. Behavioural insights could support policy makers and public bodies in designing more human-centric strategies such as national food plans and agendas that would have the endorsement and the engagement of the public and, thus, coming closer to realising their targets [7] [21] [22].

Food industry: Producers, processors, retailers and restaurants are in a unique position to support more sustainable food consumption, in light of their ability to decide which food products to produce, design the spaces for food purchasing and shape the product options at consumers' reach [7]. The urgency for transitioning towards sustainability has engaged these actors in experimenting with new and more sustainable ways of operating in the market, as chapter 3 will show, and there is potential to take such initiatives to the next level so that they become mainstream. The production of food is a crucial step in deciding the variety and options of more sustainable foods available in the market for consumers. Retailers play a particular role in the interface between consumers and producers and are considered authentic "gatekeepers" of product value chains [23]. In this sense, they are strategically positioned to support the transition towards greater consumer engagement through more sustainable consumption patterns. In addition, the industry's marketing and advertising intelligence is a particularly useful asset that business actors have to feed into this innovation process towards more sustainable products and services.

Civil society organisations (CSOs): CSOs undoubtedly play an important role within the sustainability agenda by acting as gatekeepers and balancing the interests of citizens, policy-makers, businesses and other stakeholders. As such, behavioural insights can support CSOs in better understanding these stakeholders and their behavioural drivers as well as ensuring their participation and collaboration in the promotion of more sustainable food consumption. CSOs also have the opportunity to design and implement sustainable food consumption interventions themselves (e.g. behaviour change pilots) as well as evaluate and suggest further improvements of (existing) policies [21] [24].

Behavioural models as a basis

Behavioural models can be very helpful in mapping the context in which behaviours take place in order to help identify the critical barriers to and levers for change. In this way, models help us focus on what truly needs to change and to identify suitable strategies of how to get there. As mentioned in **chapter 1**, the development of the recommendations in this report was guided and informed by the COM-B model [9]. Based on the COM-B model, each recommendation discussed in the report addresses one or more of the three behavioural determinants highlighted by the model (capability, opportunity and motivation) and builds upon behavioural insights that help in demonstrating both the necessity and potential efficacy of the recommendation.

Recommendation clusters

The recommendations are organised into four main clusters: 'choice environment', 'choice expansion', 'choice editing' and 'beyond choice'. The process of grouping the recommendations in these four clusters resulted from collective work among the VALUMICS partners, guided by a common understanding of how the recommendations influence and shape food choices.

Through this perspective, four main ways to influence and shape food choice were identified among the recommendations: those that influence choice by creating a favourable environment for sustainable food purchase to take place, often nudging consumers in a desired direction (**choice environment**); those that influence choice by increasing the number of sustainable options available while keeping other options open (**choice expansion**); and those that influence choice by reviewing and removing choice options considered unsustainable, which happens upstream in food value chains (**choice editing**). These three main types of interventions have been outlined and explored by other researchers too, e.g. Gunn and Mont [25]. The fourth cluster of recommendations highlighted in this report includes broader, more systemic influences on choice that go beyond the specific point and time of food purchase related, for example, to financial, education and time incentives (**beyond choice**).

The recommendation clusters along with the individual recommendations that belong to them are explained in greater detail in chapter 3.

Evaluation of the recommendations

For the purpose of indicating the recommendations' practical implementation requirements and potential for driving change, each recommendation is assessed on its feasibility and impact by using a low-medium-high scale of evaluation. Reflected in the name, the **feasibility** criterion looks at the likelihood of the particular recommendation being implemented in practice given the current operational frameworks interplaying within the food industry. The **impact** criterion points to the potential impact the recommendation would have in changing consumers' behaviours towards more sustainable food consumption.

It is worth highlighting that this evaluation is not meant to be absolute or definitive. It aims to provide a general overview about the potential of the recommendations and their realisation while allowing the different stakeholders to evaluate their own feasibility and impact considerations based on their concrete contexts.

Chapter 3

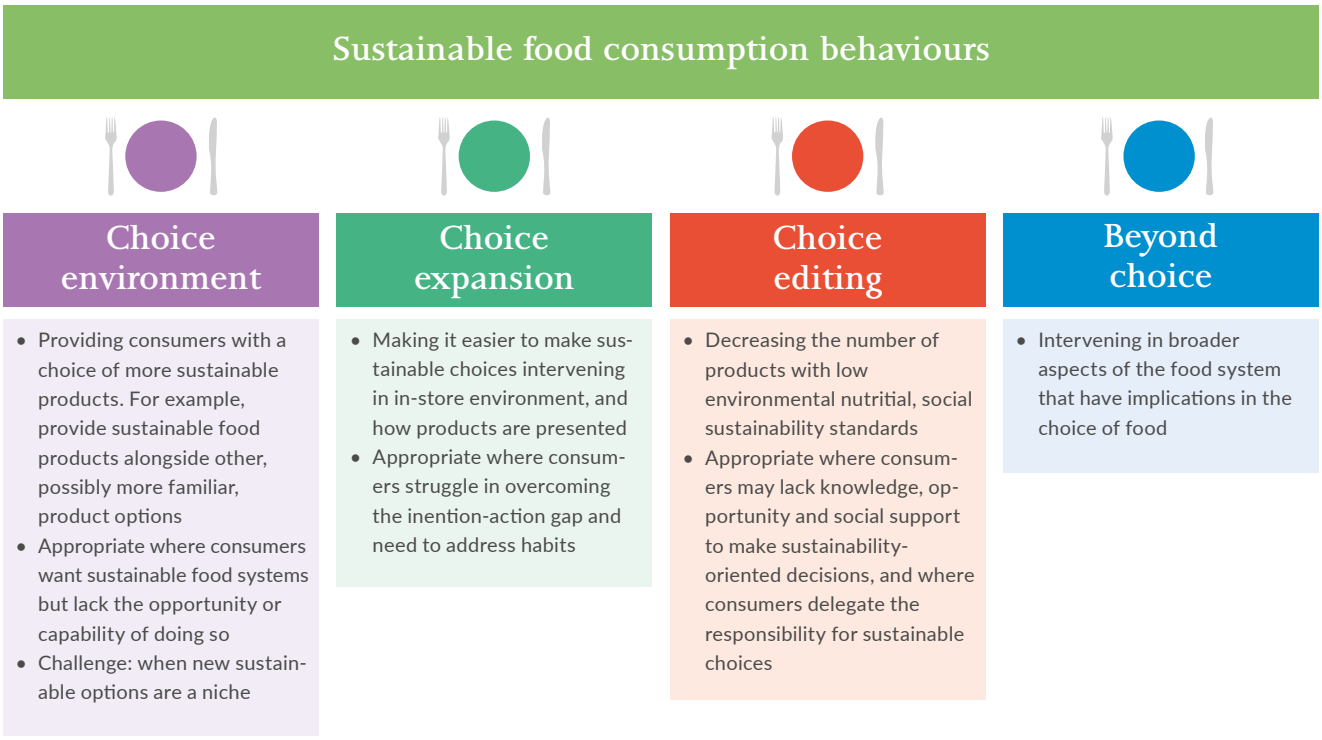
A menu of options

In this chapter, an overview and a detailed elaboration of the selected recommendations is provided. The recommendations are potential actions and ideas the targeted stakeholders could consider and build upon in their strategies according to relevance and possibility to act. This is also the idea behind the 'menu of options', which aims to provide and utilise an opportunity-leveraging approach according to the actual needs of, and context in which, stakeholders find themselves.

Importantly, for an effective promotion of sustainable food consumption, the recommendations should not be seen as separate action points. Their intended outcome is best achieved if they are considered as complementary and reinforcing one another. The recommendations target particular actors but ultimately affect all stakeholders in a food chain. Thus, for the most effective implementation input, advice and collaboration from all stakeholders is highly recommended. As highlighted previously, a peculiar characteristic of the recommendations is the fact that they build on behavioural insights. This is for the purpose of promoting the implementation of strategies that account for the human factors that directly affects the success of the recommendations. Most often, consumers are the stakeholders which need to interact with these strategies. If consumers are not accounted for or tailored to according to their needs or behavioural processes, these strategies risk being ineffective or losing momentum.

Figure 2: The four recommendation clusters

Source: by the authors

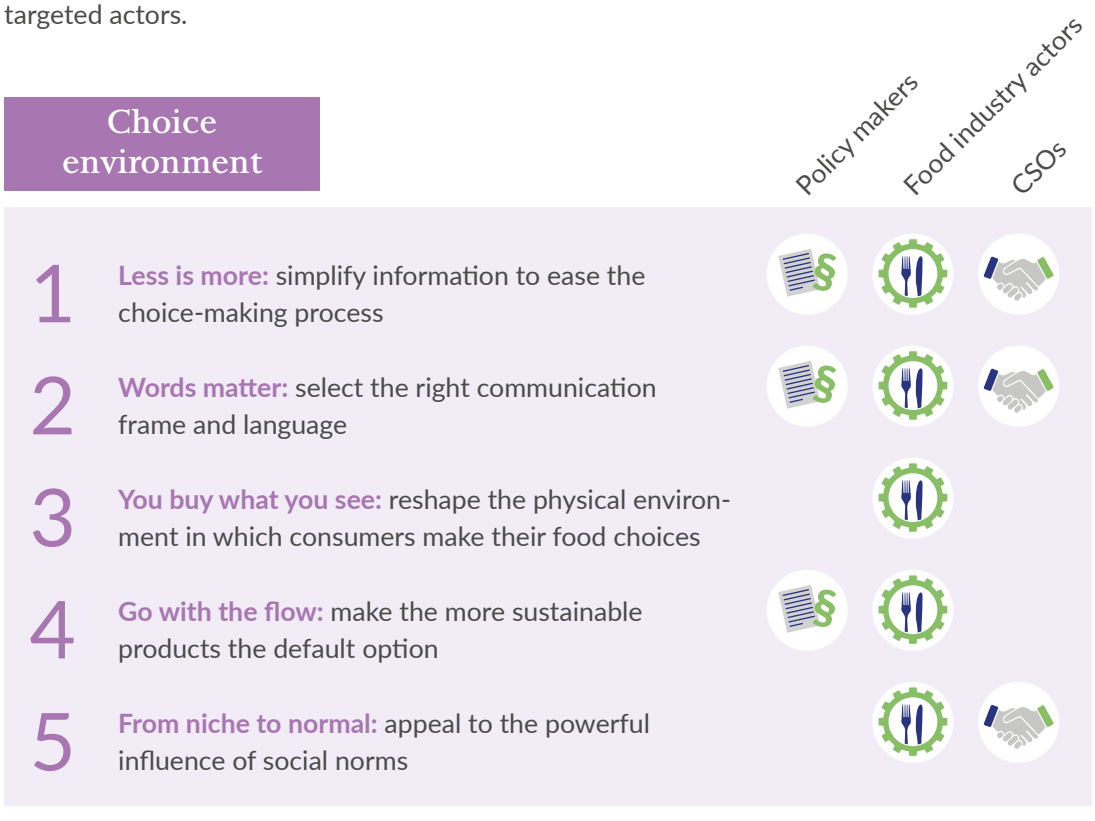


Ultimately, reaching more sustainable food consumption will require the deployment of a holistic and systemic approach that leverages a variety of policy and strategic measures and tools. The recommendations in this report promote and build upon such rationale. They put forward a comprehensive action plan with a variety of approaches (as highlighted in Chapter 2) that aim to influence multiple aspects of food consumption and the related systems in which these take place.

In view of this, the recommendations have been clustered into four major categories: 'choice environment', 'choice expansion', 'choice editing' and 'beyond choice'. Figure 2 provides an overview of these four clusters, which are further explained below.

Recommendations aiming to make it easier for consumers to adopt more sustainable food consumption patterns by applying changes in the choice-making environment/context and how products are presented are clustered in the **choice environment** group. Accordingly, these recommendations to a large degree influence and are appropriate in situations in which consumers have the tendency to accept the status quo and do not make food choices consciously and/or rely to a large extent on habits. Their implementation works best in controlled environments, e.g. shops/stores, restaurants and canteens, in which the degree of direct change to those environments and corresponding elements is relatively easy by the targeted actors.

Choice environment



Choice expansion is a cluster that gathers recommendations that aim to provide consumers with an expanded presence and assortment of more sustainable products that may also meet unmet needs. The offering and selection of new options is complementary to existing product assortments. Choice expansion recommendations are especially suitable for rectifying situations where consumers want to adopt more sustainable food consumption patterns but lack the possibility currently of doing so. This approach has limitations if the new options provided are and remain a niche market.

Choice expansion

	Recommendations	Policy makers	Food industry actors	CSOs
6	**Disrupt or be disrupted?** Invest in, innovate with and introduce better performing and more sustainable food options			
7	**Local is relatable:** increase citizen engagement in food prosumerism initiatives			
8	**S, M or L?** appeal to sufficiency by diversifying product and portion sizes			

Recommendations *Targeted actors*

The recommendations in the **choice editing** cluster aim to reduce the presence of products with a poor environmental or social record and other negative outcomes. These recommendations are most appropriate in situations where consumers want to adopt more sustainable food consumption patterns but lack the knowledge, opportunity or social support to make decisions themselves and are happy to delegate. Choice editing recommendations work well for tackling issues largely at pre-purchase phase.

Choice editing

	Recommendations	Policy makers	Food industry actors	CSOs
9	**Off the list:** remove food options considered unsustainable from the portfolio			
10	**Define thresholds:** establish a minimum percentage of sold food that needs to be healthy, sustainable and/or regionally produced			

Recommendations *Targeted actors*

Beyond choice captures recommendations that aim to intervene in and change broader aspects of the food system that have implications for the choice of food. Similarly to the previous cluster, these recommendations look at enabling sustainable food consumption at phases preceding the purchase phase, by either creating the necessary pre-conditions for such choices or increasing the capability and motivation of consumers to participate in such patterns.

Beyond choice

	Recommendations	Targeted actors
11	**The power of education:** further educate consumers on sustainable food consumption	
12	**Show me the money:** deploy financial strategies to increase the affordability of sustainable products, raise taxes on less sustainable options or reflect the true cost of products	
13	**Smart food:** harness the potential of technology for enabling more sustainable food production and consumption	
14	**Time is sustainable:** foster work-life balance to allow citizens to have more time to plan and account for their food consumption patterns	

The following subsections 3.1 to 3.4 will explore each of these recommendations in detail by elaborating on what the recommendation is about, highlighting concrete actions by targeted actors, discussing insights on why it supports behaviour change, providing the evidence base that supports the recommendation, and initiating an evaluation of the feasibility and impact of the particular recommendation.

3.1 Choice environment

1

Less is more:
simplify information to ease the choice-making process

Level

EU, national

Targeted actor

Policy makers, food industry actors, CSOs

Description

An increasing number of labels showcasing a product's quality and performance, including sustainability attributes, are being utilized for the purpose of reaching out to and informing consumers. In a jungle of information and labels, consumers have reported being overwhelmed and confused as well as unable to understand and interpret the information behind each label [12] [13] [14]. Moreover, consumers have expressed a lack of trust in these labels and what they represent [11]. Accordingly, such information overload has led to information provision labels that do not reach their intended goals [26].

In light of these developments, **this recommendation suggests** a simplification of the information that is meant to support consumers in making their sustainable food choices. Simplification could be achieved through an easy to understand and easy to remember overarching sustainability product label that ideally allows for performance comparability among products within the same category. To make it easier for consumers to understand it, the label could be communicated in a more visual format (for example, coloured scale formats or symbols), while being promoted and complemented by campaigns that provide a more detailed information on the label's criteria and standards.

Actions by targeted actors

In the process of simplification, **policy makers** (EU, followed by national ones) have, **firstly**, the **opportunity** to review existing labels and improve the use of selected ones on food by supporting their simplification and requiring their horizontal implementation across all products and their alternatives in a certain product category in order to allow for comparison (e.g. meat and plant-based burger patties). A more promising step within this approach that is expected to yield even greater results would be to develop and test sustainability performance ratings of retail stores in order to single out retail stores and chains with leading sustainability performance. This way, instead of having to choose product by product, consumers would be directed towards supermarkets with a "better" performance overall [7].

Secondly, policy makers should harmonise the food product labels currently applied in the market into one overarching sustainability label that accounts for all pillars of sustainability, i.e. social, economic and environmental. If mandatory, the label could be shown in each product to inform consumers about its sustainability performance while the presence of other labels could be phased out to avoid an overload of labels. A pan-EU label council could be established to maintain and oversee the label's performance indicators as well as provide the necessary accreditation, with national councils supporting and complementing its work. The council could comprise food stakeholders such as food industry actors bringing the practical supply chains insights and/or CSOs and supranational organisations that can provide know-how as well as ensure transparency and accountability.

Within the **food industry**, food producers have the **opportunity** to use food labels to highlight relevant messages about their product performance and contribution to sustainability for the benefit of their customers and, ultimately, final consumers. This would bring them closer to their existing and potential new consumers as well as enable them to better position their product range and their overall performance in the market with regards to more sustainable food consumption.

How does it support behaviour change?

Consumers tend to base their food choices on a small number of factors. Evidence shows that the likelihood of influencing consumer behaviour increases through simplified or salient information [6] provided in an easy, simplified and comparable manner, thus contributing to consumers' increased **capability** for making informed choices without being overwhelmed by complex information. Moreover, reducing the number of labels and introducing an overarching one, governed by a multi-stakeholder initiative led by policy makers, would increase the credibility of information and contribute to consumers' **motivation** to follow and trust the label as well as pursue more sustainable food consumption behaviours.

Evidence to support the recommendation

A review has shown that labelling stimulated significantly healthier choices in 30-60% of the studies and symbol labelling had a significantly greater impact than information-rich signs such as nutrition and calorie labels [27].

A digital intervention provided consumers with feedback visualisation about their organic vs total food purchase data and resulted in a 23% increase in organic food purchases, which was especially effective among consumers that overestimated the share of organic products they bought prior to the test [28].

Feasibility

Low to medium, as the process of harmonisation and reduction of existing product labels is complex and would require the engagement of multiple market organisations.

Impact

Medium to high due to enabling consumers to understand and compare the impact of their consumption options in an easy and not confusing manner.

2

Words matter:
select the right communication frame and language

Level

EU, national

Targeted actor

Policy makers, food industry actors, CSOs

Description

Sustainability in general is widely communicated to consumers using distal language both in terms of impact timeline (e.g. 30 or 50 years from now or next generations) and space, i.e. impact on the environment or parts of the world far away from the consumers [29]. Even though these kinds of communication strategies are important for increasing the understanding of the issue, they do not necessarily appeal to the values and tastes of mainstream consumers. They therefore contribute to distancing consumers from the issue and, accordingly, have limited impact in changing their consumption patterns [30]. Particularly with regards to food, technical terms are often used to communicate the attributes of more sustainable food options. Wording such as "vegan", "vegetarian" or "healthy" are proven to sound unattractive for those that don't consider themselves as part of this group of consumers: these words may be associated with unsatisfying or not tasty food options or even be connected to unwanted food types [31].

To bridge this gap, this **recommendation suggests** the selection of the right communication frame and language to make sure that sustainability messages come across in an appealing way. More specifically, it suggests introducing and relying on more human-centric communication to promote the need for more sustainable food consumption and integrating people's interests and values into the language used, highlighting aspects such as origin, flavour and enjoyment around food consumption [32].These strategies can bring the urgency of sustainability and its potential negative impact closer to the consumer it targets and in addition pique the curiosity of broader consumer groups for sustainable alternatives.

Actions by targeted actors

Human-centric communication strategies could be utilised by **policy makers** as an opportunity to foster language and imagery applicable to sustainable food products that are appealing to people and resonate with their interests, values and cultures. Ensuring e.g. that plant-based products can still be named burgers, steaks and sausages in the EU, instead of 'discs' or 'tubes', is a way to keep them recognisable and attractive to consumers [7].

Food industry actors could deploy this recommendation by changing the naming and marketing strategies of sustainable products to boost its sustainable food portfolio, e.g. by reframing the meat-free language of menus, packaging and advertisement. As emphasised above, exploring language that connects people to the food's origin, to enjoyment and to free time has greater potential to appeal to consumers than green and health-related claims, which may be perceived as negative and appeal to a limited group of consumers.

CSOs could integrate such human-centric principles in their communication and citizen engagement campaigns that look at integrating sustainability in the lives of mainstream consumers.

How does it support behaviour change?	An important premise of behavioural insights is that communication matters and the ways of communicating a message or problem will have an impact on the final out-come or materialised behaviour [33]. Diversifying the language in communication strategies and utilizing more human-centric ones in the promotion of sustainable food consumption contributes to bringing the issue closer to conventional consumers and their varied interests, hence influencing their **motivation** for considering sustainability principles in their consumption patterns.
Evidence to support the recommendation	The World Resource Institute (WRI) tested the impact of different language on meat-eaters' tendency to order a vegetarian dish, and found out that experiential and indulgent language ('mild and sweet' or 'comforting'), as well as terms highlighting food origin ('field grown', 'garden') led to an increase in sales by up to 70%, while terms such as 'meat-free' was consistently unpopular [31]. In a Stanford study, flavour-focused labels such as "Slow-roasted caramelized zucchini bites" were chosen by diners 41% more often over identically prepared vegetables with "healthy-restrictive" labels and 25% more often than those with "basic" labels [34].
Feasibility	**High** due to requiring small changes in current public relation and citizen engagement strategies.
Impact	**Medium** due to making sustainability more relatable to conventional consumers and ensuring the participation of a higher share of the population.

3 You buy what you see: reshape the physical environment in which consumers make their food choices

Level	Local, but scalable
Targeted actor	Food industry actors and policy makers
Description	The design of the physical space and arrangement of food options where food consumption takes place matters, be it in supermarkets, stores, restaurants or canteens, including a restaurant's menu design. Food environment and related designs have a major influence in shaping and guiding consumers towards certain patterns of consumption. To illustrate, a big improvement was made by placing the vegetable and fruit aisles at the entrance of a supermarket store to guide/nudge consumers towards healthier consumption patterns. In this context, similar strategies of **reshaping the physical food environments** that aim to profile and feature sustainable products better in order to increase the consumption of sustainable products also hold great potential.
Actions by targeted actors	**Food retailers** have the **opportunity** to redesign their stores to give more visibility to sustainable and healthier products as well as make them more accessible and reachable for the consumers (for example, placing the sustainable products at eye level). At the same time, the visibility and accessibility of unsustainable and unhealthy products could be reduced (for example, by situating meat products at the end of the store). This way, retailers are able to foster public acceptance and curiosity for such products and ultimately support the industry in transitioning to a more sustainable product portfolio. **Food restaurants**, as another highly frequented food environment, could utilize such strategies by favoring and increasing the visibility and prominence of sustainable dishes. This could be done by reshaping the design and structure of restaurant menus, decreasing or increasing the size of a dish (that is unsustainable or sustainable respectively) and, if restaurants offer a buffet, by giving precedence to sustainable and healthier dishes. Among **policy makers**, very controlled environments such as canteens in public schools, universities and public administration buildings, restaurants in trains, or catering in public events are fruitful spaces to foster greater availability and visibility of more sustainable food options or, equally, to reduce the visibility and size of less sustainable options. This could be promoted for example through sustainable procurement policies. In all the cases above, it is important to integrate instead of segregate more sustainable foods. A strategy that is currently highly deployed strategy is the separation of sustainable products, e.g. organic or vegan products, in a specific supermarket aisle or restaurant menu section, which tends to put off consumers that do not consider themselves organic or vegan consumers. In order to reach out to new consumer groups, integration strategies are crucial to fostering the environmental attractiveness of more sustainable foods.

How does it support behaviour change?	Evidence has shown that the greater the availability and prominence of more sustainable and healthier options of food, the greater the potential of their uptake by consumers [7]. This is due to consumers' association of quantity and availability with other consumers' preferences (popularity of a product). In other instances, research has found a positive correlation between the location of a product on the menu and their purchase. For example, products placed at the top of the menu seem to be more popular than those in the middle [35]. Availability, prominence and menu visibility of more sustainable options increase the physical **opportunity** among consumers' purchase more sustainable food. The size of portions and plates also have an important role to play [6], both to motivate increased consumption of more sustainable food, e.g. with salads as main dish instead of small side dishes, and to address behaviours that are not so sustainable, e.g. by decreasing portion size of meat dishes or reducing the size of plates to avoid food waste.
Evidence to support the recommendation	Changing the design of a buffet from placing full-sized brownies at the front and whole apples at the back to sliced apples in front and half-sized brownies at the back led to an 84% increase in apple consumption and a 30% decrease in brownie consumption on average [36]. Similarly, evidence shows the potential of replacing candy and sugary snacks with healthier options at the cashier [37]. Putting vegetarian sandwich fillings adjacent to the meat options roughly doubled sales compared to having them in a separate 'vegetarian' section of the shop [7]. Changing the order of soft drink choices in the digital menu of over 500 McDonald's stores in the UK proved to affect ordering behaviour: by shifting Coke Zero from third to first in the list, while moving Coca-Cola from first to last, sales of the former increased by 30% while sales of the latter fell by 7% over the course of a 12-week experiment [38].
Feasibility	**Medium** due to requiring practical changes of current food consumption spaces.
Impact	**Medium** due to the existence of competing products and marketing strategies, especially in less controlled environments such as regular retail stores.

4 Go with the flow: make the more sustainable products the default option

Level	EU, national
Targeted actor	Policy makers, food industry actors
Description	Increasing the share of sustainable food consumption has proven to be a challenge. As this and other reports have established, even though consumers are aware by now of the negative implications of consuming unsustainable products, they have been relatively slow in removing them from their consumption patterns [39]. In this way, tapping into the power of default options could be a great ally. A default option is the option that consumers will receive if they make no extra effort in changing it, e.g. the standard meal served in first class train areas or the buffet offered at large events. In these circumstances, usually those that would like to eat vegetarian or vegan dishes would need to order an alternative meal. The **opportunity** here, however, is to turn these options into the default option. Making the **sustainable and healthier food products and services the default option** thus has great potential to increase the share of purchased sustainable food products and consequently contribute to sustainable lifestyles.
Actions by targeted actors	**EU policy makers** could do this by initiating or revising existing EU regulations and including specific requirements for businesses to give precedence to sustainable food products as the default choices. Such policies could then be ratified and integrated in national regulatory frameworks. This mandatory approach would level the playing field of all food industry actors (to implement the recommendation) and ensure the uptake of defaults without fearing for their market competitiveness. Consequently, consumers will be reached in various settings. This requirement could be introduced in degrees and increasing by each consecutive year while having a certain year as the target when unsustainable products will ultimately be phased out. Specifically, for public authorities, **public procurement**, e.g. for public canteens and event catering, represent a particularly interesting **opportunity** for policy makers to introduce more sustainable options as the food default choice. Accordingly, **sustainable default choices** could be introduced in those **environments where consumers actively make and shape their food consumption choices**. Examples include **food retail stores and discounters** that could aim to make sustainable food products ones with the biggest presence and visibility in the stores (see also recommendation 3 'You buy what you see' above), and **food service provision settings** such as restaurants, canteens, food markets and trains, where more sustainable dishes and ingredients could become the first and main option offered to consumers. **This recommendation will also affect the production chain**. Food production actors at the beginning of the chain will also need to change their production/farming practices and switch to more sustainable production ones, to ensure not only compliance with the law but also their continued market cooperation with other downstream chain actors. Even though default choices have been considered and promoted in EC commissioned studies [40], they have not yet been the subject of policy, especially in the food system.

How does it support behaviour change?	If a choice is marked as default by the choice setter, at most occasions people will accept it and not make an effort to change it [33]. This is the result of individuals' conformity with the 'status quo' and lifestyle or living inertia as well as the lack of attention persisting among the majority of people when performing their daily activities [33] [41]. Besides the tendency to stick with the status quo, consumers' acceptance of default choices is also explained by their perception of defaults as the optimal among choices due to it being chosen by the choice creator [33] [41]. In this sense, tapping into the power of default choices leverages people's automatic **motivation** and offers consumers the chance of forming new consumption habits on the basis of more sustainable and healthier premises. Firstly, it changes the institutional context in which consumers operate and consume and, secondly, by making sustainable food products the default for a prolonged period of time, complemented by additional communication on the reasons of such defaults, it contributes to forming new cultural paradigms around the idea of sustainable food consumption, thus affecting social **opportunity**.
Evidence to support the recommendation	Offering a vegetarian option as the default increased the probability that undergraduate students in the US would choose a meat-free meal [42]. In a pizzeria, the percentage of doggy bags requested increased by 44% during the second two weeks (85%) compared with the first two weeks of an experiment (41%) as a result of changing the related default rule [43].
Feasibility	**Low** due to challenging established socio-economic and political frameworks (including conventional consumption and production practices) as well as current understanding of consumer autonomy.
Impact	**High** due to increased promotion of sustainable products and correlated benefits.

5 From niche to normal: appeal to the powerful influence of social norms

Level

EU, national, local

Targeted actor

CSOs, food industry actors

Description

Social norms are the behavioural expectations or rules within a society or group [44], which can be explicitly stated or implicitly realised in what we see others do. In short, they are perceived as the right thing to do [17]. In a world full of information and complex decisions, copying what others do is a good way to avoid effortful thinking and feel like part of the group.

Accordingly, **ensuring sustainable and healthier food consumption** is prevalent and accepted among a larger share of society could be supported by various types of **communication campaigns and marketing strategies in which sustainable food consumption behaviours are presented as the socially desirable, right and normal behaviour among the majority**. This can be achieved by communicating and providing real-life impactful examples of other people's sustainable food consumption patterns in a descriptive manner ("Most people do X"); or by communicating sustainable and healthy food consumption as a socially expected behaviour among an increasingly larger share of the population, in a dynamic way ("More and more people do X").

Illustrating behaviours of specific citizen/consumer groups by gender, age or other demographic factors could yield better outcomes and more effective results. Such messaging could be diffused through the utilisation of various media channels such as television, radio and, nowadays more prominently, social media and other more disruptive online communication channels (e.g. podcasts). Besides this, places that are visited by consumers on a regular basis, such as supermarkets, hotels, malls and public transport stations are physical settings for implementing such campaigns in a targeted manner, e.g. to engage people around a specific food product or service.

Actions by targeted actors

CSOs are well suited to drive such communication campaigns, especially because of their detailed know-how on sustainable development within the food sector, complemented by their wide network and outreach as well as close direct ties with citizens from various socio-economic and cultural backgrounds. Moreover, CSOs not only understand the current social norms and trends, they also have the **opportunity** to engage citizens as promoters and disseminators of the idea themselves (i.e. peer to peer, word of mouth).

Already highly experienced with reaching out and disseminating a product to a larger population, **food industry actors** (i.e. large companies, supermarkets and restaurants) are another very well-suited group to implement these communication strategies. This can be done by designing marketing and public relations strategies that integrate and appeal to socially performed sustainable food consumption behaviours in general or for specifically certain products or services.

How does it support behaviour change?

There are numerous studies out there analysing the effect of social norms on people's behaviours. Generally, people are strongly influenced by what others do [33] [45] [46]. The reasons for this phenomenon can be multiple and they ultimately go back to our existential need for social connection and belonging [47].

When it comes to diets, Nyborg, et al. [17] explain that diet variation across countries seem to be shaped by social norms because it cannot be fully explained by prices, incomes or nutritional content. According to them, "differing diets make cooking shared meals cumbersome. If people tend to prefer the foods they are used to, sticking to the most common diet is convenient (...). Hence, if a less meat-intensive diet became the norm, individuals might conform partly owing to social pressure or a wish to be environmentally friendly; but a primary motive may simply be to enjoy pleasant and convenient joint meals" [17].

In this sense, this recommendation supports triggering people's **capability** by providing them more information on what sustainable food consumption behaviour looks like and appeals to their **motivation** to be a successful member of society. Moreover, it works towards reconstructing broader social concepts and cultural contexts. It therefore creates new social expectations and contexts in the long term that directly target elements of social **opportunity**.

Evidence to support the recommendation

A recent study done in a US university canteen showed that people exposed to dynamic normative messaging ("over the last 5 years, 30% of Americans have started to make an effort to limit their meat consumption") were more likely to order a meatless lunch (34%) than the participants exposed to descriptive norm messaging ("30% of Americans make an effort to limit their meat consumption") (17%), showing that dynamic norms motivated change despite prevailing static norms and doubled meatless orders [48].

Placing a sign on the table of various hotel restaurants in Norway saying "Welcome back! Again! And again!" fostered the feeling that it was fine and acceptable to visit the menu table several times, thereby helping reduce food waste by 20.5% [6].

Feasibility

Medium as, on the one hand, communication/marketing strategies are widely used tools for reaching citizens/consumers. On the other hand, changing prevailing narratives requires substantial efforts.

Impact

High due to the wide awareness about and uptake of sustainable food practices among the broader population.

3.2 Choice expansion

6

Disrupt or be disrupted?:
Invest on, innovate with and introduce better performing and more sustainable food options

Level

EU, national

Targeted actor

Policy makers and food industry actors

Description

Over the years, the food industry has experienced an intensification of the interconnectedness of global food systems, giving rise to changes in production as well as consumption patterns. Complemented by technological advancements and increased investments for food-related research and developments, this has led to an increased range of high-quality, affordable and innovative products available for consumers throughout the whole year. However, these food choices do not always perform the best in environmental and health assessments [49].

Accordingly, this recommendation suggests the **development and implementation of further research for innovating and introducing more sustainable food options**. Examples of such options are new plant-based proteins, insect-based products and laboratory-grown or 3D-printed meat. At the same time, such innovation processes have incentivised producers to develop and implement agriculture methods that are more regenerative and that bring down carbon and increase soil fertility.

Actions by targeted actors

Policy makers could incentivise and encourage such innovation by actors who operate in the food market through a set of financial actions. This could include fiscal incentives such as loans, subsidies and tax reduction as well as research and innovation funds (similar to H2020) for industry actors, including start-ups, CSOs and research institutions, that could innovate and produce sustainable products.

Food industry actors, particularly start-ups, have made ample efforts to make this innovation transition possible and have an **opportunity** here to take these initial steps to the next level. Nearly $20 billion was invested in start-up activity in food and agricultural technology in 2019, which is more than double the figure for 2016 and close to a tenfold increase over 2013 [50].

How does it support behaviour change?

This recommendation supports the promotion of more sustainable food consumption by increasing and diversifying the availability of sustainable food choices. Accordingly, by modifying the context in which consumers operate, it directly triggers physical and social **opportunity**.

Evidence to support the recommendation

Several products have recently entered the market that reformulate conventional meat products to contain more vegetables, such as the 'blended burger' (70% beef, 30% mushroom), with ample **opportunity** to reduce GHG emissions and incentivising similar innovations far more widely in the market [7]. In 2019, New York University Stern's Center for Sustainable Business completed extensive research into US consumers' actual purchasing of consumer packaged goods (CPG). It found that 50% of CPG growth from

2013 to 2018 came from sustainability-marketed products [51]. In Europe, 85% of 550 retailers across France, Germany, Italy, Netherlands and Spain reported increased sales of sustainable products over the past five years, with food products registering the highest growth among sustainable product sales [52].

Feasibility

High, as financial incentives for research and development are part of an existing and widespread policy.

Impact

Medium due to introducing more sustainable and healthier food options in the market, enabling the opportunity of slowly phasing out unsustainable options.

7

Local is relatable:
increase citizen engagement in food prosumerism initiatives

Level

EU, national, local

Targeted actor

Policy makers, food industry actors, CSOs

Description

Shortening the food supply chains and relying on localised sources and production of food has been regarded as one of the most promising approaches to ensuring a higher degree of sustainability in the food sector [53]. Moreover, this contributes to an increased resilience of the food sector from unexpected events such as Covid-19 pandemic. Building upon this idea an increasing amount of local, small-scale and bottom-up sustainable food initiatives in which citizens are acting as producers and consumers (food prosumerism) of their own food have been observed recently [54].

Nonetheless, despite their promising potential, such approaches are so far mostly limited to the niche environmental consumer segment [54]. Scaling up these initiatives and opening new markets to them is limited by their small production volumes (that do not meet the demand from larger customers), limited expansion ability due to higher production costs, and limited resources for marketing, communication and other activities [55]. This makes it challenging to cooperate with other food actors such as (local) policy makers and/or businesses [56]. Moreover, there is a high diversity of local food initiatives and different rules and standards are applied for their effective operations across the EU [55].

Actions by targeted actors

Accordingly, for the purpose of harnessing the potential of such approaches, this recommendation suggests **an increased share of financial investments** (i.e. funds, grants similar to H2020 etc.) whether at the EU or national level **to be dedicated towards:** a) **understanding the emergence, implementation and further acceleration (scaling up) of such initiatives and related citizen engagement; and** b) **increasing these initiatives' collaboration with food industry actors** (e.g. supermarkets buying their produce and selling it on their stores).

This recommendation is well suited to be taken up by **policy makers** on both the national and EU levels. EU institutions could initiate and drive such financial investments on the EU level as part of established work programmes, e.g. H2020 or the EU Green Deal (and future equivalents). The knowledge and insights produced from these grants could then be implemented and taken up on national and local levels. National and local public authorities along with **CSOs** could also directly engage with citizens and established initiatives and provide the support these initiatives would need to continue their work as well as to scale up their operations.

How does it support behaviour change?

Engaging citizens in such initiatives would directly increase their knowledge and awareness of food production and consumption issues as well as improve their appreciation of food and the importance of not wasting it (**capability**). Most prominently, this recommendation would increase the direct availability and accessibility to locally produced food products with less negative environmental impact and more economic feasibility (**opportunity**). Moreover, it will contribute to changing citizens' perception and norms from their role as passive consumers towards more active and influential active actors (**motivation**).

Evidence to support the recommendation	Research suggests that increased knowledge on organic and local food production reinforces existing values, which – via changed attitudes – support environmentally sustainable purchasing behaviour (e.g. buying local food) [3]. While the debate around the environmental pros and cons of local food production vs food miles suggests that further scientific research is still required [57], researchers argue that local food systems are multifaceted and more complex than "simply" the question of food miles and, as a whole, are more sustainable than global food systems, both ecologically and socially [58] [59].
Feasibility	**Low to medium** due to the complexity and variety of local realities and initiatives in Europe.
Impact	**Medium** due to changing consumers' role within the food sector from passive to active, which could potentially contribute to a higher appreciation of food from their side.

8 S, M or L?: appeal to sufficiency by diversifying product and portion sizes

Level

EU, national, local

Targeted actor

Food industry actors, CSOs

Description

Throughout the years, an evolution of the household composition in EU countries has been observed, with a decrease of the average number of persons per household and, most importantly, with an increase of single person households by 18.1% between 2010 and 2019, from approximately 63 to 77 million [60]. However, it has been estimated that single-person households are expected to comprise 40% or more of all households in several OECD countries by 2030 [61]. Despite such developments, product and portion sizes offered to consumers have increased, usually targeting multi-member households, contributing to a high rate of food waste and locking in unsustainable patterns [62].

Accordingly, this recommendation suggests the **diversification of product and portion sizes to match the growing diversity of household composition across the EU**. Products and portions could be offered in small, medium and large sizes, which could appeal to each consumer group and its specific needs while maintaining and/or even reducing the amount of food that goes to waste. By clearly presenting the different product and portion sizes, consumers will be allowed to choose according to what best fits their situation.

Actions by targeted actors

Food retailers are in an ideal position to leverage such an opportunity and implement this recommendation. The diversification of product and portion sizes could be presented as a service they provide to their consumers, while meeting the growing responsibility expected of them to accommodate sustainability principles in their operations. **Food restaurants and catering providers** could also implement the recommendation by diversifying or even reducing the portion of the dishes offered to consumers while allowing them to go for seconds if they want.

CSOs could support the implementation of the recommendation by providing their know-how and expertise not only on consumers, but also on the most optimal approaches to designing the implementation (both product composition and communication).

How does it support behaviour change?

Diversifying product and portion sizes supports sustainable food consumption behaviours by changing the context in which consumers operate, offering a solution to a 'vendor lock-in' and enabling them to choose products according to their needs (**opportunity**). In connection to the latter, this recommendation will make it easier and more convenient for sustainability-driven consumers to follow their values while appealing to consumers' other values or drivers such as price or economic savings (**motivation**). Moreover, complementing such changes with communication on their benefits contributes to increasing consumers' **capabilities** and understanding of the issues.

Evidence to support the recommendation	Reducing plate size by 20% in the restaurants that belong to the Ecobeneficios network in Brazil led to a reduction of food waste by 50% [63]. This case is related to the changes in the physical environment of food choice discussed in recommendation 3. It sheds light on the question of sufficiency and the need to review product size and portion offers in order to make them more flexible and fitting to the actual needs of consumers. Research conducted on package-free supermarkets where consumers bring their own food containers and decide how much food they want to buy suggests that these stores may induce more resource-efficient behaviour in suppliers and consumers due to the reduction not only of packaging but also of food waste [64].
Feasibility	**High** due to requiring some further shifts from current operations.
Impact	**Low to medium** due to producing and offering services on the basis of the current EU household composition reality while relying on sufficiency principles.

3.3 Choice editing

9

Off the list:
remove food options considered unsustainable from the portfolio

Level

EU, national

Targeted actor

Food industry actors, policy makers, CSOs

Description

A large share of the efforts to influence food consumption behaviours and patterns have centred on providing information and increasing knowledge. However, as beneficial as they are, the effects of these actions have not been very successful in persuading consumers to change their behaviours [65]. In addition, few consumers are motivated to directly engage with food production systems and often express the expectation that such aspects should be taken care of by other stakeholders involved in food systems, such as public authorities or food industry actors [11]. Therefore, this recommendation suggests further **experimentation with the removal of products with poor performance with regards to sustainability from product portfolios and markets**, e.g. highly processed red meat products or highly sugary products.

Actions by targeted actors

Food industry actors could implement this recommendation in degrees. Initially, they could start testing this opportunity with a few product categories by slowly substituting conventional products with more sustainable ones until reaching a complete phase out after some time. This action could be complemented with communication campaigns that elaborate on the need and the agenda to which the action contributes. As a next step, similar strategies could be deployed for other product categories, building upon customer acceptance and engagement.

Nonetheless, to have the highest impact, **policy makers** would have a role to play by considering making this recommendation mandatory through specific regulation for phasing out unsustainable products. To ensure consumers of various socio-economic groups will not be left in a worst-case situation, this recommendation is best implemented in conjunction with recommendation 12 'Show me the money'.

The actions of **CSOs** and the media are critical in raising the sustainability awareness in society in a way that fosters transparency in this process and supports retailers and policy makers in removing unsustainable choices from their shops [25].

How does it support behaviour change?

Choice editing supports sustainable behaviour change by directly influencing the food environment in which consumers operate and introducing new operating norms (**opportunity**). By removing the unsustainable options, consumers will be able to choose from a portfolio containing only sustainable products, thereby changing their consumption patterns to more sustainable ones by default.

Evidence to support the recommendation	Intervening in supply chains upstream is considered to be a more reliable and effective strategy for reducing the environmental and social impacts of food chains than only downstream action targeting consumers [66]. Choice editing practices among UK and Swedish retailers to foster the demand for better-sourced fish demonstrated that there is a business case for retailers to edit choice voluntarily, which is partly indicative of a response to shifting values and demands in the public sphere [25]. In the last couple of years, German supermarkets, as a response to an EU initiative of reducing plastic bags to 40 per capita by 2025, have successfully slowly stopped offering plastic bags to their consumers or disincentivised them through the application of an extra fee [67] [68].
Feasibility	**Low** due to disrupting decades-long market operations. Moreover, its voluntary character could contribute to food industry actors approaching the recommendation cautiously due to fear of losing market competitiveness.
Impact	**High** due to removing unsustainable products from the market, thereby directly offsetting negative impacts.

10

Define thresholds:
establish a minimum percentage of sold food that needs to be healthy, sustainable and/or regionally produced

Level

EU, national

Targeted actor

Policy makers

Description

Currently, the food market is comprised of a variety of products that perform differently on health and sustainability criteria. To offset some of the negative impacts and protect its consumers, especially in the context of health, the EU has already taken up a large number of policy initiatives. These initiatives centre on overseeing and regulating the type of products (and related composition) that may be offered and sold to European consumers. Nonetheless, looking at the continuous negative sustainability impacts of the food sector and the increasing number of non-communicable diseases as a result of poor nutrition and unsustainable diets [29], more interventions are needed to rectify the related challenges in the years to come. Accordingly, this recommendation suggests the implementation of regulatory initiatives that **mandate the production and sale of less harmful products** by defining a **threshold of a minimum percentage** of products and product ingredients that need to be **healthy and sustainable**, including regionally/locally produced.

Actions by targeted actors

Policy makers at the EU level would be at the forefront of implementing this recommendation by, firstly, understanding the current market operations as well as enabling policy frameworks and, secondly, passing regulation that define and make mandatory the minimum percentage of food and food ingredients that need to be sustainable, locally/regionally sourced and healthy and offered to consumers. Member States would then follow by tailoring this regulation to their local context and integrating it into their national regulatory frameworks. This percentage could be subject to gradual increase to ensure its successful implementation.

How does it support behaviour change?

This recommendation supports behaviour change by decreasing and eventually replacing unsustainable and unhealthy food products in food environments. In this a scenario, consumers will gradually be faced with a lack of unsustainable and unhealthy products as opposed to nowadays where they are in abundance. In the longer term, it will enable the creation of new food paradigms in which sustainable and healthy diets are the new cultural and social norm. Accordingly, this recommendation targets the **opportunity** behavioural determinants.

Evidence to support the recommendation

As part of its plastic waste strategy, contributing towards the EU's transition towards a circular economy and reaching the Sustainable Development Goals, the EU will ban the use of single-use plastic by 2021 as well as implement consumption reduction targets for other products, e.g. food containers or beverage cups [69].

Feasibility

Medium due to such policy changes being subject of lengthy and complex processes that require a multi-stakeholder and comprehensive understanding of the challenge.

Impact

High due to reducing the presence of unsustainable products and offsetting relative negative impacts and contributing to the creation of new food consumption paradigms.

3.4 Beyond choice

11

The power of educate:
further educated consumers on sustainable food consumption

Level

Local, national, EU

Targeted actor

CSOs, policy makers

Description

Focus groups with citizens from five European countries on the topic of sustainable food consumption conducted within the Valumics project found persisting confusion among citizens on different aspects of sustainable consumption and accompanying terminology like “organic” or “fair trade”. This was complemented by citizens’ distrust of products promoted with labels with these terms. Moreover, participating citizens indicated doubts about their own role and responsibility in reaching more sustainable development in general and sustainable food consumption in particular, assigning such responsibility to other actors in the chain e.g. policy makers or businesses [11].

Accordingly, despite many efforts, it seems that **further educational and awareness-raising efforts on the particularities of food sustainability and consumers’ role in this agenda is necessary**. This recommendation suggests the adoption and implementation of campaigns, guidelines and capacity-building efforts (e.g. at the workplace, in schools or in neighbourhood associations) in which myths/confusions related to sustainable food consumption are debunked (e.g. the meaning of organic and fair trade) and the role of consumers (and the impact of their consumption) compared to other actors is visualised and clarified. For a stronger outcome, these initiatives could be designed and implemented on the basis of behavioural insights principles (see also recommendation 2 ‘Words matter’).

Actions by targeted actors

CSOs are in the most suitable position to drive such campaigns due to their extensive experience and knowledge on the topic of sustainable food consumption, including organic and fair trade aspects of production.

Policy makers are also another implementing actor well positioned to initiate and adopt official guidelines that not only provide further clarification on related concepts but also provide the necessary accreditation by a non-partial overarching actor.

How does it support behaviour change?

This recommendation ensures behaviour change by simply increasing citizens’ understanding of the particularities of sustainable food consumption. Accordingly, it targets and triggers citizens’ cognitive capacities in the context of sustainable food consumption, thereby influencing **capability** as a behavioural determinant.

Evidence to support the recommendation

Research suggests that providing environmental knowledge strengthens environmental values, particularly among those who highly value the environment, which in turn can support more sustainable food consumption [3]. Additionally, promoting general knowledge about environmentally sustainable food consumption can complement information provided at the point of sale. Vermeir, et al. [3] discuss that informing people about the minimal risks involved in environmentally sustainable food consumption can reassure them and trigger sustainable behaviour, e.g. with regards to perceived physical and social risks of eating vegan.

Feasibility

High due to such campaigns and guidelines already being widely implemented.

Impact

Low due to previous research showing that the impact of informational and educational campaigns is low in terms of behaviour change. However, they can still increase awareness and help foster supporting values.

12

Show me the money:
deploy financial strategies to increase the affordability of sustainable products, raise taxes on less sustainable options or reflect the true cost of products

Level

EU, national

Targeted actor

Policy makers, food industry actors

Description

Even though sustainable products are assumed to be on the radar of citizens and consumers, they are still largely avoided due to their high prices and related unaffordability. Price is listed as one of biggest inhibiting factors towards more sustainable food consumption [70] [71]. Therefore, this recommendation suggests the **deployment of financial strategies/packages that aim to increase the affordability of sustainable food products** and hence increase the share of sustainable food products consumed. The related measures could be deployed on various levels to ensure a comprehensive consideration of the issue. In an overarching manner, the package could start with an examination, calculation and comparison of the true price of conventional products and their sustainable alternatives. Based on this analysis, financial incentives in the form of subsidies, tax reductions and/or tailored loans could be oriented towards food producers and retailers for the purpose of covering or supporting the additional costs of producing sustainable products. Moreover, retailers could be incentivized to rely more on local and short value chains for the purpose of reducing the costs of food production (see recommendation 7 'Local is relatable'). In turn, retailers could then set more affordable pricing schemes for consumers. Another way of addressing the issue is to make sure that products that perform poorly with regards to sustainability are subject to sustainability tax charges, e.g. for meat [72], or that their true cost, with all externalities internalized, is integrated in their price.

Actions by targeted actors

Such initiatives and financial packages could be initiated and diffused by **policy makers** on the EU level (e.g. within the CAP) as well as on national and local levels. In addition, to ensure that consumer segments from all socio-economic groups are in a position to purchase sustainable products, the pricing scheme for more sustainable products could also be diversified, similarly to conventional products (i.e. low-medium-high). **Retailers** have already started experimenting with displaying the true cost of products [73], which shows potential for the food industry to be part of this process.

How does it support behaviour change?

This recommendation ensures sustainable food consumption by increasing the affordability of sustainable food products for consumers through diversification of the financial and pricing schemes currently applied in the food industry (**opportunity**). This, in conjunction with the sustainable food product vouchers, influences and increases consumers' **motivation** to consumer better-performing products not only for their own well-being but that of the surrounding environment (**motivation**).

Evidence to support the recommendation

A meta-analysis of economic incentive-based interventions by Afshin et al. [74] considering the effects of taxes and subsidies found that a 10% decrease in price increased consumption of healthy foods (e.g. fruits and vegetables) by 12%, while a 10% increase in price decreased consumption of fast food and sugary soft drinks by 6%.

Feasibility

Medium as financial incentives for more sustainable products might be a more attractive intervention while taxes and fees on products that perform poorly sustainability-wise may be highly contested.

Impact

High as it contributes to removing one of the most persisting inhibiting factors towards sustainable food consumption, namely price and affordability.

13

Smart food:
harness the potential of technology for enabling more sustainable food production and consumption

Level

Local, national, EU

Targeted actor

Food industry actors, CSOs, policy makers

Description

Over the last years, there has been an exponential diffusion and consideration of technological and digital solutions in all industry sectors and lifestyle areas, including food. Technology's potential to securing more sustainable progress lies to a large extent in its contribution to making our production and consumption processes more resource efficient as well as to the collection, exchange, analysis and interpretation of information and data for the provision of products and services that enable more sustainable behaviours [75].

In light of this, this recommendation suggests **harnessing the potential of technology for enabling more sustainable food production and in turn influencing and promoting more sustainable food consumption behaviours.** Digital intelligence such as big data or data mining could be utilized to study and analyse consumer purchasing and consumption patterns of different product categories and, based on this analysis, produce or offer a specific amount of a particular product or service category. Finding the exact rate of product to produce will require some rounds of trial and error. To offset potential retribution for a lack of sufficient supply of certain products, communication/PR strategies could be deployed to ensure transparent communication to the consumers.

Actions by targeted actors

The recommendation targets **food industry actors**, most prominently large European retailers due to their unique bridging position between production and consumption stages of the value chain as well their influence in driving and shaping the European food market. Such efforts could be part of these actors' research and development initiatives and support their expected involvement (voluntary and increasingly mandatory) in achieving the sustainable development agenda.

CSOs could implement this recommendation by initiating and undertaking projects that provide technological and digital solutions that can contribute to examining and analysing consumers' consumption patterns and producing related knowledge.

Policy makers are another contributing actor by providing and/or increasing the very necessary financial means for undertaking and implementing such initiatives either in the form of subsidies or financial support for businesses or by providing funds for research and innovation projects to CSOs and related actors.

How does it support behaviour change?

This recommendation ensures sustainable behaviour change by directly influencing and changing the operational context of consumers' purchasing behaviours (i.e. supply and demand of a certain product category). Moreover, it goes beyond mere behaviour change on the consumer level by looking to change or influence food production patterns and ensuring a sufficient supply of certain product categories, thus contributing to a sustainable and efficient use of resources within the food industry (**opportunity**).

Evidence to support the recommendation	Research shows that ICT solutions, including digitalisation, can contribute to the agro-food sustainability transition by increasing resource productivity, reducing inefficiencies, decreasing management costs, and improving food chain coordination but drawbacks should also be taken into consideration [76]. Specifically, when it comes to the impact of technology on product development, "meat free" meats are being developed to become more appetizing to consumers and seen as a viable substitute for animal-derived meat but they are not without health and environmental concerns [77].
Feasibility	**Low** due to requiring substantial changes in production patterns and also presenting high risks for supermarkets' market competitiveness.
Impact	**Medium** to high due to efficient utilisation of resources based on sufficiency principles.

14

Time is sustainable:
foster work-life balance to allow citizens to have more time to plan and reflect on their food consumption patterns

Level

EU, national

Targeted actor

Policy makers, CSOs

Description

An increasingly busy lifestyle has led to citizens dedicating more time to work and less time to their food consumption patterns while relying more on eating outside their homes or ready meals. In other instances, fast-paced lifestyles have contributed to citizens establishing and adopting particular habitual grocery shopping patterns that they do not actively reflect on, including on the impact these patterns might have on the surrounding environment and society as well as their health and well-being [78].

Therefore, this recommendation suggests the **initiation and uptake of a legislative package that will ensure the right of working citizens to choose a more balanced work-life approach and flexible working hours**. This could be complemented by the employees' right and freedom to choose or combine the option to work from home or the office. In this scenario, the default number of working hours per week could be reduced, e.g. to 32 hours, with the possibility for employees to choose if they would like to work more or less as well as spread these hours (upon consensual agreement with the employer) flexibly throughout the week day. This approach would ensure flexible working arrangements or frameworks. Moreover, it would allow citizens to dedicate more time to planning and engaging in other aspects of life, such as food consumption, with positive spill over effects on citizens' general mental and physical well-being.

Actions by targeted actors

The recommendation is most suitable to be initiated and driven by **policy makers** on the EU level with Member States expected to ratify and integrate the legislation into their national frameworks. **CSOs** and other associations (e.g. employers, trade unions) could support the development of the legislation by providing their feedback and concerns.

How does it support behaviour change?

Ensuring proper work-life balance contributes to allowing and enabling citizens to have more time to plan their meals and better engage with food consumption, leading to greater **opportunity**. Accordingly, it frees up citizens' time and increases their interest and capacity to understand what constitutes sustainable food consumption and how this can be better integrated in their daily lives (**capability**). In addition, increases their **motivation** to engage in food consumption activities (e.g. cooking, diversifying shopping purchases and habits). This recommendation changes the contextual operational environments of our day-to-day living, thus enabling the **opportunity** of engaging in different (food consumption) patterns.

Evidence to support the recommendation	Time pressure is considered a barrier to environmentally sustainable food consumption, even for consumers who report having strong environmental concerns [3]. Under time pressure, consumers were found to be less prone to choose organic/eco brands, as thinking processes that are more automatic end up prevailing in these circumstances [79]. Studies show that reducing and enabling more a flexible working arrangement such as working 32 hours per week increases employees' well-being as well as **motivation** and ambition to successfully contribute to the working environment [80].
Feasibility	**Medium** due to requiring changes in the operational framework of the labour market. Nonetheless, as experienced by the Covid-19 pandemic (especially in light of working from home and relying on digital tools), such scenarios are possible and it is a matter of creating the suitable settings, which can change quickly.
Impact	**Medium** due to enabling citizens to dedicate more time to their own and their immediate family's well-being (in cases where the employee has a caregiver role), as a lack of is often stated as an inhibiting factor for more sustainable food consumption patterns.

Chapter 4

Realising the recommendations: future outlook

Food consumption is a relatively complex group of behaviours. The complexity emerges from the interplay between individual, social and contextual factors that influence and shape food consumption choices and patterns. The **transdisciplinary character of food consumption behaviours requires a similarly transdisciplinary approach when looking at influencing behaviours towards more sustainable ones**. The **recommendations** put forward in this report acknowledge this attribute of food consumption and, accordingly, **are built to ensure a systems-based approach to changing it**. They call for various top-down and bottom-up interventions that would enable the transition towards more sustainable food consumption behaviours while accounting for consumer behavioural insights in order to increase the interventions' effectiveness and fostering their practical implementation.

In light of this, in this section we elaborate on some further key learnings and insights to consider and account for when implementing these recommendations in practice as well as generally when developing further policy and strategic actions to enable the transition to more sustainable food consumption behaviours.

Analysis and understanding of the food environment and broader food system.

Realising these recommendations effectively requires a detailed analysis of the food system aspect of focus, related environment and established operational structures. The context of each recommendation creates the need to understand a single aspect of the food system - for example, existing product labels (recommendation 1 'Less is more'), applicable regulatory frameworks (several recommendations), or business models (recommendation 8 'S, M or L' & 13 'Smart food') – while jointly these recommendations provide a more holistic overview of the food system and potential interventions - however, this overview is not exhaustive and should be further expanded based on the concrete case and context in which the recommendations will be applied.

Multi-stakeholder and participatory processes.

The recommendations reflect the transdisciplinary character of the environment in which food consumption behaviours are influenced and shaped, not only in terms of behavioural determinants but also of the actors who are interacting. Accordingly, the implementation of these recommendations is conditional on successful collaboration between policy makers, food industry actors and CSOs as the most important actors. Policy makers and CSOs, as actors who are less conditioned by market framework and competitiveness, could take a more pro-active role in initiating such collaborations and bringing stakeholders to the discussion. Such collaborations should be based on principles of co-creation, open and constructive dialogue, transparency in information and knowledge sharing as well as continuous learning and improvement.

Rely and capitalise on the variety of tools and methods available.

There is a need for a more diversified approach in terms of the tools and methods one needs to utilise in order to achieve a transition towards more sustainable food behaviours. The recommendations in this report already point to some of these tools - such as regulation (e.g. recommendation 10 'Define thresholds' or 14 'Time is sustainable'), communication and marketing campaigns (e.g. recommendation 11 'The power of education' or 5 'From niche to normal'), financial measures (e.g. recommendation 12 'Show me the money') and education. Other tools are available out there and it is a matter of identifying and leveraging the right tools according to the specific intervention being considered.

Scaling up current initiatives.

An important consideration of the recommendations is their basis on current knowledge, evidence and current market operations. Accordingly, without underestimating the importance of innovation and creativity, it is also recommendable to capitalise on existing resources and initiatives and find ways of scaling them up.

Consider consumers' reality and treat them as active partners.

Already a specific focus in particular recommendations (e.g. Choice environment cluster) and generally highlighted throughout this report, it is important to reinforce the need to account for the reality of consumers' thinking and behavioural patterns. When implementing these recommendations or designing new ones, their effectiveness will depend on building upon existing or new pieces of behavioural insights that explain how people behave and why they behave this way. Moreover, it is important to consider consumers as active actors as opposed to passive ones with relatively no role in designing and shaping current frameworks.

Change in degrees.

As urgent as the need for sustainable food consumption is, abrupt changes and strategies may potentially not survive the test of time or feasibility in current realities of the market. Interventions that are too ambitious, even though promising, could potentially lose their momentum and uptake simply by the fact that the market might not be ready for them. Accordingly, in each recommendation we briefly indicated its implementation potential and highlighted what could be potential practical inhibitors. The latter could easily be taken as leverage opportunities of change. Actors targeted by this report could start by considering and implementing those recommendations that have been marked as highly feasible, while gradually building their way up to and preparing the conditions for undertaking those marked as medium and low. This approach would ensure that the change is steady and sustainable.

How do the recommendations support the Farm to Fork strategy?

Looking further at their broader practical implementation, contribution and impact on current frameworks, the recommendations as a whole contribute to supporting the EU in achieving its targets and goals as defined in its Farm to Fork strategy. More prominently, they support the strategy's specific goal to 'promote sustainable food consumption and facilitate the shift to healthy, sustainable diets' [1]. Looking at the more specific future action plans that are a part of the Farm to Form strategy, the insights and recommendations of this report could be considered during the development and implementation of the following plans:

- 'proposal for a legislative framework for sustainable food system' ▸ *all recommendations*;
- 'initiative to improve the corporate governance framework, including requirement for the food industry to integrate sustainability into corporate strategies' ▸ *all recommendations, especially those targeted at food industry actors;*
- 'launch initiatives to stimulate the reformulation of processed food, including the setting of maximum levels for certain nutrients' ▸ *recommendation 10 'Define thresholds'*;
- 'set nutrient profiles to restrict promotion of food high in salt, sugars and/or fat' ▸ *recommendation 10 'Define thresholds'*;
- 'proposal for a harmonised mandatory front of pack nutrition labelling to enable consumers to make health conscious food choices' ▸ *recommendations 1 'Less is more' & 2 'Words matter'*;
- 'proposal to require origin indication for certain products' ▸ *recommendation 1 'Less is more' & 7 'Local is relatable'*;
- 'determine the best modalities for setting minimum mandatory criteria for sustainable food procurement to promote healthy and sustainable diets, including organic products, in schools and public institutions' ▸ *recommendation 4 'Go with the flow'; 7 'Local is relatable' & 10 'Define thresholds'*;
- 'proposal for a sustainable food labelling framework to empower consumers to make sustainable food choices' ▸ *recommendation 1 'Less is more' & 2 'Words matter'*;
- 'review of the EU promotion programme for agricultural and food products with a view to enhancing its contribution to sustainable production and consumption ▸ *recommendation 6 'Disrupt or disrupted?; 7 'Local is relatable', 12 ;Show me the money' & 13 'Smart food'*;
- 'review of the EU school scheme legal framework with a view to refocus the scheme on healthy and sustainable food ▸ *recommendation 4 'Go with the flow' & 11 'The power of education'.*

Finally, to ensure the recommendations are contributing to their intended goals, it is necessary for the implementing actors to continuously **monitor and evaluate their actions' effectiveness and impact**. The majority of the recommendations intend to shift sustainable food consumption by targeting operational circumstances linked directly to consumers or affecting them indirectly (i.e. end of the food value chain). However, it is important as well to measure and understand the impact of these recommendations throughout the entire chain, especially in guiding or influencing the production stages of the value chain. Based on such knowledge, one could improve the design and implementation of the proposed recommendations as well as develop new interventions more specifically targeting other stages of the food value chain, thus ensuring continuous and systemic improvement.

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