



Scientific Advice Mechanism
European Commission's Group of
Chief Scientific Advisors

Scoping paper:
Towards sustainable food consumption

13th July 2022

1. ISSUE AT STAKE

Making food systems sustainable is one of the main priority areas of action for both the European Union (EU) and many countries worldwide, and a key action to achieve the United Nations (UN) 2030 Agenda on Sustainable Development Goals (SDGs), as mentioned by the UN Secretary General at the UN Food Systems Summit (September 2021)¹. The food system as a whole, including food consumption patterns, is currently not sustainable with respect to environmental, social and economic elements. Food systems are also under pressure from both climate change and non-climate stressors (e.g. population growth and shifts in income, diets largely based on animal-sourced products, geopolitical instabilities, and war)². Regarding food consumption patterns, in the EU the average intakes of energy, red meat, sugars, salt and fats continue to exceed recommendations, while consumption of whole-grain cereals, fruit, vegetables, legumes and nuts is insufficient³. Imbalances in dietary patterns, compounded by income inequality, results in various forms of malnutrition, with nearly 462 million adults worldwide being underweight, while 1.9 billion suffered overweight or obesity in 2014⁴. It is estimated that in the EU in 2017 over 950,000 deaths (one out of five) and over 16 million years of healthy life lost were attributable to unhealthy diets, mainly cardiovascular diseases and cancers^{5,6}.

The adverse impact of food systems on public health and environment could be mitigated by transitioning to a sustainable food system; one that delivers food security, food safety and nutrition for all in a way that it does not compromise the availability, affordability and accessibility of food for future generations, while ensuring a fair living to everyone who contributes to it^{7,8}. However, the complexity of the food system and of the mutual relationships between its numerous actors means that the challenges associated with this transition cannot be viewed in isolation; a systemic, multi-level approach which considers economic, social, environmental, cultural and, in particular, behavioural aspects is necessary.

The behaviour and choices of consumers play an important role in determining how to bring about a shift towards healthier, less resource intensive and more plant-based diets. According to the Scientific Opinion *Towards a Sustainable Food System*⁹, which was published by the Group of Chief Scientific Advisors (GCSA) in 2020, consumer behaviour “is constrained and

¹ <https://www.un.org/en/food-systems-summit/news/making-food-systems-work-people-planet-and-prosperity>

² IPCC (2019). *IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems*. Retrieved from: [Special Report on Climate Change and Land — IPCC site](https://www.ipcc.org/report/sr15/)

³ Willett W. et al (2019), ‘*Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems*’, in *Lancet*, Vol. 393, pp. 447–92. [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4)

⁴ WHO Fact Sheet on Malnutrition : <https://www.who.int/news-room/fact-sheets/detail/malnutrition>

⁵ The data “16 billion of years of healthy life lost” refers to the measurement of disability adjusted life years (DALYs), which is a metric used to measure the health of a population, not just one person. It is estimated from the sum of years lost to due to premature mortality (YLLs) and the years lived with a disability (YLDs), and are expressed per 100.000 population.

⁶ EU Science Hub : <https://knowledge4policy.ec.europa.eu/health-promotion-knowledge-gateway/eu-burden-non-communicable-diseases-key-risk-factors>

⁷ FAO (2018) *Sustainable Food Systems – Concept and Framework*. Retrieved from: <https://www.fao.org/policy-support/tools-and-publications/resources-details/fr/c/1160811/>

⁸ SAPEA (2020) *A sustainable food system for the European Union*. Retrieved from: <https://sapea.info/topic/food/>

⁹ European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors (2020). *Towards a sustainable food system: moving from food as a commodity to food as more of a common good*. Independent expert report. <https://data.europa.eu/doi/10.2777/37244>

formed by many actors and aspects which are together referred to as food environment". Policies and actions are required to stimulate dietary changes by creating a more favourable food environment, in which the healthy and sustainable choice is the easy one. Furthermore, consumption reduction, reuse and recycling should also be encouraged to minimize food loss and waste. Consumer demand for sustainably farmed or fished products can stimulate a greater uptake of sustainable practices throughout the food supply chain. All in all, consumer behaviour has the potential to make the food system more sustainable, contributing to mitigate the effects of climate and biodiversity changes and, at the same time, improving public health.

Currently European citizens are living in an environment that does not encourage healthy diets in line with European dietary recommendations. To the contrary, socio-economic trends are leading to unhealthy and unsustainable food consumption with calorie-dense, nutrient-poor and ultra-processed food, sweetened beverages and increased global demand for fish, meat and other livestock products, contributing to overconsumption, obesity and other health determinants closely related to an increased risk of non-communicable diseases¹⁰. Livestock production is associated with greenhouse gas emissions, animal welfare issues, impact on land use, air and water pollution, as well as development and spread of zoonoses and multi-resistant bacteria¹¹. EUROSTAT data indicate that a third of the EU population does not eat any fruits and vegetables daily.¹² Overall, if European diets were in line with dietary recommendations (for example by reducing meat consumption and adjusting the food portion size), the environmental footprint of food systems would be significantly reduced, even if national dietary recommendations do not necessarily take sustainability into account.^{13,14}

While many citizens may be willing to change the way they eat, and switch to healthy and more sustainable options¹⁵, their behaviour as consumers is formed and determined by multiple actors and aspects. As an example, the 2020 Eurobarometer showed that taste (45%), food safety (42%) and cost (40%)¹⁶ are the main factors perceived to be influencing Europeans' food purchases¹⁷. Determinants of food choices are context-specific, and include aspects such as affordability, availability, cultural acceptability, convenience, preference, habit, social norms, culture, religion, specific health concerns, retail product display, consumer awareness and influences from marketing practices and strategies.

¹⁰ Laestadius and Wolfson (2019), *Chapter 5 – Unsustainable demands on the food system, from Connecting Health and Nutrition with Environmentally Sustainable Diets*, Environmental Nutrition, pp 75-100. <https://doi.org/10.1016/B978-0-12-811660-9.00005-9>

¹¹ European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors (2020). *Towards a sustainable food system: moving from food as a commodity to food as more of a common good*. Independent expert report. <https://data.europa.eu/doi/10.2777/37244>

¹² EUROSTAT (2019). *Daily consumption of fruit and vegetables in the EU*. Retrieved from: <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20220104-1>

¹³ Bechthold et al. (2018) Perspective: Food-Based Dietary Guidelines in Europe – Scientific Concepts, Current Status and Perspectives. <https://doi.org/10.1093/advances/nmy033>

¹⁴ Willett W. et al (2019), '*Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems*', in *Lancet*, Vol. 393, pp. 447–92. [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4)

¹⁵ The European Consumer Organization – BEUC (2020). *One bite at a time: consumers and the transition to sustainable food*. <https://www.beuc.eu/publications/one-bite-time-consumers-and-transition-sustainable-food>

¹⁶ The total add up of percentages presented exceeds 100% because the Eurobarometer question had multiple-choice answers.

¹⁷ European Commission Eurobarometer (2020). *Making our food fit for the future – new trends and challenges*. Retrieved from: <https://europa.eu/eurobarometer/surveys/detail/2241>

Although actions and policies to improve the availability and affordability of sustainable and healthy products can be put in place, they cannot be successful if consumers do not choose to buy these products. In order to design effective evidence-based policies and actions, it is necessary to better understand the barriers and effective enablers of change in consumers' uptake of healthy and sustainable diets.

2. EU POLICY BACKGROUND

The various elements of the food systems (e.g. components, actors and activities) fall under a wide range of EU policy areas and instruments. These include the Common Agricultural Policy (CAP) and Common Fisheries Policy (CFP), but also other policies related to environment, health, food safety and security, research and innovation, education, single market and competition, trade and development¹⁸.

Following calls for a more integrated and holistic EU food policy landscape and a better coordination of existing policies, the European Commission's reflection paper *Towards a Sustainable Europe by 2030*¹⁹ calls for "a comprehensive approach entailing a genuine change in the way we produce, transform, consume and distribute food by accelerating the transition to a sustainable food system based on circular economy principles and making innovative, healthy, environment and animal welfare-friendly, safe and nutritious food production one of our key European trademarks".

The Farm to Fork Strategy²⁰ launched in 2020 aims to enable the transition towards a sustainable EU food system that safeguards food security and ensures access to healthy diets sourced from a healthy planet. It aims to make our society more resilient to threats such as food insecurity, while reducing the environmental and climate footprint of the EU food system, protecting citizens' health and ensuring the livelihoods of economic operators. The importance of global food security in particular has again come to the forefront as a consequence of Russia's unprovoked and unjustified aggression against Ukraine. Consequently, the Commission has issued the Communication *Safeguarding food security and reinforcing the resilience of food systems*.²¹ In addition, the European Food Security Crisis preparedness and response Mechanism (EFSCM) has started its work to analyse and map the risks and vulnerabilities of the EU food supply chain.²²

¹⁸ Other relevant EU Policies and strategies include: EU General Food Law and related risk-based food safety regulatory frameworks, EU Green Deal, Farm to Fork strategy, Biodiversity strategy, Strategy for sustainable Chemicals, EU consumer policy, EU environment policy, EU global food security, Energy Performance Buildings Directive (EPBD), EC Chemicals Sustainability Strategy (CSS), European Exposure Strategy 2030, Food 2030, EU School scheme.

¹⁹ European Commission, Reflection Paper (2019) *Towards a Sustainable Europe by 2030*. Retrieved from: https://ec.europa.eu/info/publications/reflection-paper-towards-sustainable-europe-2030_en

²⁰ European Commission (2020) *A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system*. Retrieved from https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en

²¹ European Commission (2022). *Safeguarding food security and reinforcing the resilience of food systems*. https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/key_policies/documents/safeguarding-food-security-reinforcing-resilience-food-systems.pdf

²² European Commission (2021). *Contingency plan for ensuring food supply and food security in times of crisis*. [EUR-Lex - 52021DC0689 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/eur-lex-content/doc/text/html/eur-lex-52021dc0689-en)

The Farm to Fork Strategy proposes ambitious measures to ensure that the healthy option is the easy and affordable one for EU citizens, including improved labelling of food products to better meet consumers' information needs on healthy, sustainable foods, and supporting public procurement to encourage the acquisition of healthy and sustainable food products. Furthermore, its Action Plan envisages a legislative framework to provide the basis of a food system policy targeting sustainability. The European Commission's Joint Research Centre carried out a participatory process with an inclusive and broad international group of experts to explore and reflect on possible "building blocks" of such a legislative framework²³. This process supported the work on the Inception Impact Assessment for this legislative framework.

The Farm to Fork Strategy builds on the achievements of Food 2030, which is the EU R&I policy framework to transform food systems. The EU R&I funding programmes (Horizon 2020 and Horizon Europe) support several projects contributing in general to the priorities of the strategy, but also in particular, to achieve a shift towards healthy and sustainable dietary behaviour^{24,25}.

As a core part of the European Green Deal, the Farm to Fork strategy is also underpinned by EU's commitments towards the UN SDGs. In September 2021, the UN Food Systems Summit deliberated on the actions needed to transform the global food system to achieve the SDGs by 2030. In the preparation of this Summit, the creation of "Healthy Food Environments" was identified as a key "game changing solution"²⁶. As a follow-up to the Summit, a Coalition for Action on "Healthy Diets from Sustainable Food Systems for Children and All" has been launched on 13 May 2022, with the vision to "a world where all people eat healthy diets from sustainable food systems"²⁷. Its work plan comprises a special project on Food-Based Dietary Guidelines (FBDGs), with the objective to 'ensure integrating a food systems approach and sustainability considerations' in the guidelines^{28,29}. Furthermore, in an effort to advise on options for strengthening the international science-policy interfaces, the Commission established a High Level Expert Group in February 2021. Their mid-term report³⁰ concludes that the current landscape needs to be improved, suggesting the adaption and enhancement of existing initiatives related to food systems, and explores the potential of novel initiatives, mechanisms or platforms to enhance networking, data access and multi-sectorial discussion. Their final recommendations to inform the sustainable food systems transformation will be delivered in June 2022.

²³ European Commission, Joint Research Centre, Bock, A., Bontoux, L., Rudkin, J., Concepts for a sustainable EU food system : reflections from a participatory process, 2022, <https://data.europa.eu/doi/10.2760/381319>

²⁴ European Commission, Directorate-General for Research and Innovation, Research & innovation key driver of the farm to fork strategy, Publications Office, 2020, <https://data.europa.eu/doi/10.2777/345237>

²⁵ [Horizon Europe Framework Programme Funding Call: Transition to healthy and sustainable dietary behaviour](https://foodsystems.community/game-changing-propositions-solution-clusters/healthy-food-environment/)

²⁶ <https://foodsystems.community/game-changing-propositions-solution-clusters/healthy-food-environment/>

²⁷ [Launch event of the Coalition of Action on Healthy Diets from Sustainable Food Systems for Children and All - UN Nutrition](https://foodsystems.community/game-changing-propositions-solution-clusters/healthy-food-environment/)

²⁸ Coalition for Action on Healthy Diets from Sustainable Food Systems for Children and All – Work Plan: [HDSFS Workplan - May 2022 - clean.docx \(unnutrition.org\)](https://foodsystems.community/game-changing-propositions-solution-clusters/healthy-food-environment/)

²⁹ Leite et al. (2021) *Healthy low nitrogen footprint diets*. Global Food Security. doi: [10.1016/j.gfs.2019.100342](https://doi.org/10.1016/j.gfs.2019.100342)

³⁰ European Commission, Directorate-General for Research and Innovation, Everyone at the table : co-creating knowledge for food systems transformation, Webb, P.(editor), Sonnino, R.(editor), Publications Office, 2021, <https://data.europa.eu/doi/10.2760/21968>

On 3rd February 2021, the Commission adopted the Europe's Beating Cancer Plan³¹, with the objective to support and complement Member States' efforts to address the entire disease pathway including prevention, treatment and post-treatment. This covers improving health promotion through access to healthy diets (with more fruit and vegetables and less red and processed meat) and reducing harmful alcohol consumption, in line with the UN SDGs.

3. REQUEST TO THE GROUP OF CHIEF SCIENTIFIC ADVISORS

Given the complexity of the food environment, information provision, fact-based education, and awareness campaigns are necessary, but on their own insufficient to achieve the required shift towards healthy and sustainable consumer choices. Additionally, information from public and educational sources competes, and often conflicts with, messages from advertisement and other marketing strategies that are supported by large budgets³². SAPEA's Evidence Review Report³³ offers further explanations for the limited impact of information-based campaigns, remarking that “most everyday behaviours (including food-related choices and behaviour) involve little conscious reasoning, but are carried out by impulse or in a semi-automatic way. Cognitive psychology explains this with reference to our limited cognitive capacity for deliberate decision-making, which is generally reserved for important and difficult decisions. In other cases, we just repeat what we usually do (through habit) or act on cues, feelings or impulses”. However, the report also states that “most nudging interventions are quite subtle, so it is unsurprising that they do not always work as intended”.

For this reason, it is important to ensure a combination of “regulatory, financial, behavioural, information, communication, and education measures”³⁴ to reshape the food environment. In this context, “information-based initiatives should be a part of the policy mix despite the fact that on their own they would be insufficient to change behaviour. The same conclusion applies to education and communication initiatives (e.g. awareness campaigns) [...]. Behavioural tools are indeed shown by evidence to influence healthier choices. These include ‘nudging’ consumers towards sustainable choices through a ‘choice architecture’ – e.g. by making a sustainable product the easiest default option. [...] Ultimately, well-designed instrument mixes may be the most effective, but the evidence is unclear about the precise balance and the interactions between instruments.”

In summary, while consumer behaviour was discussed in the 2020 Scientific Opinion, ways to create a food environment that would foster safe, secure, healthy and sustainable consumption habits need further research and analysis. In particular, achieving the goals of the Farm to Fork Strategy requires clear advice on how to bring about a shift towards healthy and

³¹ European Commission (2021). Europe's Beating Cancer Plan. https://ec.europa.eu/info/strategy/priorities-2019-2024/promoting-our-european-way-life/european-health-union/cancer-plan-europe_en#documents

³² European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors (2020). *Towards a sustainable food system: moving from food as a commodity to food as more of a common good*. Independent expert report. <https://data.europa.eu/doi/10.2777/37244>

³³ SAPEA (2020) *A sustainable food system for the European Union*. Retrieved from: <https://sapea.info/topic/food/>

³⁴ European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors (2020). *Towards a sustainable food system: moving from food as a commodity to food as more of a common good*. Independent expert report. <https://data.europa.eu/doi/10.2777/37244>

sustainable consumers' dietary choices taking into account the competences of EU Institutions and Member States.

Consequently, the request to the Group of Chief Scientific Advisors is:

What tools could be used at EU level, in addition to those mentioned in the 2020 Farm to Fork Strategy, to overcome the barriers preventing consumers to adopt sustainable and healthy diets, fostering the necessary change towards sustainability in the food environment? The Group's advice should be based on an analysis that identifies the elements refraining consumers from making healthy and sustainable choices.

This scoping question should be analysed by reviewing scientific evidence, including from social sciences, and taking a systemic approach which considers the complex architecture of the food environment.

The scientific advice requested here should be delivered by Q2 2023. It will contribute to the implementation and inform the future review of the Farm to Fork Strategy, and support Europe's Beating Cancer Plan.