

## Reflection

# Toward a Sustainable Food System for the European Union: Insights from the Social Sciences

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Science Advice for Policy by European Academies (SAPEA), part of the European Commission's Scientific Advice Mechanism, has published an evidence review report summarizing social science research seeking a sustainable food system for the European Union. Here, I reflect on its key findings and tease out foundational issues that the document raises for scientists and policymakers.

## Introduction

Alongside interconnected issues such as climate change, biodiversity loss, urbanization, and population growth, the unsustainable nature of our food system is one of the most significant challenges facing humanity. It negatively affects the environment by generating significant emissions and pollutants affecting air, water, and soil quality, as well as our own health. Although food is vital to life, a lack of access to it remains a reality for hundreds of millions of people globally. Even though food is plentiful across much of the European Union (EU), significant parts of the population still do not have access to safe and nutritious food, and levels of avoidable food waste are persistently high, such that around a third of all food produced globally is either lost or wasted. As a result, the food system is both wasteful and unjust.

To date, scientific advice on these unsustainable practices has been dominated by insights from natural and technological sciences and has focused primarily on improving efficiencies and productivity within the food system. However, the processes that shape our interactions with food are also social, and considering these is essential if we wish to design and enact impactful policy to support sustainability. The Science Advice for Policy by European Academies (SAPEA) evidence review report<sup>1</sup> that I examine in this Reflection was commissioned by the European Commission's Group of Chief Scientific Advisors (Advisors hereafter) in response to this situation. The report provides an evidence

base from peer-reviewed literature to enable the Advisors to develop their scientific opinion. It was written by a multidisciplinary group of leading scientists nominated by academies across Europe, as illustrated in Figure 1. The report and opinion were then fed back to the European Commissioners to be considered in the formation of policy, such as the recently published Farm to Fork Strategy,<sup>2</sup> which will be revisited later. In this Reflection, I will summarize the key findings of the report, discuss its broader implications, and identify a prospective agenda for future research.

## Key Findings: Complexity, Governance, and Circularity Food-System Complexity

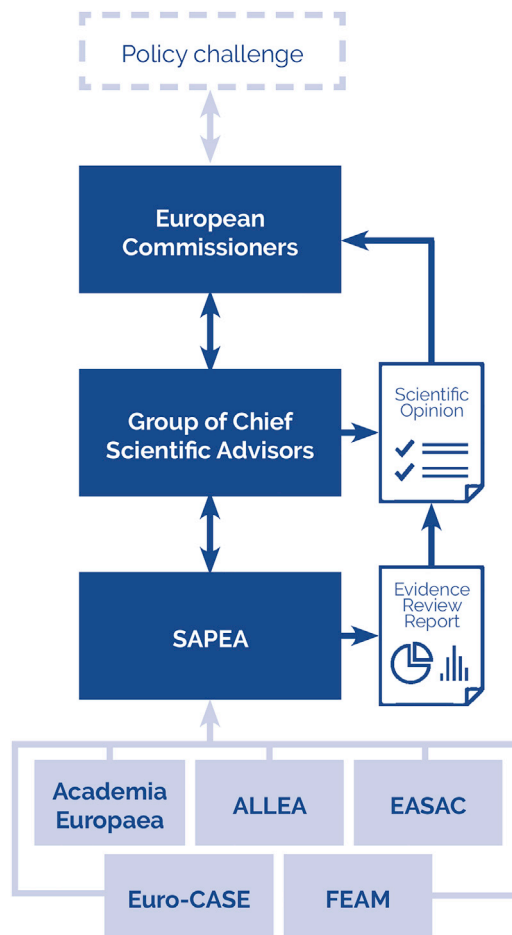
The primary objective of the SAPEA report was to confront the meta-challenge of identifying workable paths to deliver an inclusive, just, and timely transition to a sustainable food system in the EU. In delivering on this ambitious objective, we were also asked to consider a range of co-benefits that such a move would have for health, the environment, and socio-economic outcomes, including evidence from a range of contexts (e.g., urban and rural settings), actors (e.g., from citizens to farmers), and policy initiatives (e.g., from global to local). As a result, the report begins with a clear statement about the significance of food for people and the planet. It centers food “at the heart of our lives” by recognizing not only its life-support function and economic credentials as a tradeable commodity but also the unique ways that

food connects human (e.g., social, ethical, cultural, political, and economic) and non-human arenas through its complex and dynamic components. That food has enormous social, economic, and cultural significance means that how it is framed, e.g., “as a tradable commodity, human right or source of social meaning associated with identity, pleasure or anxiety,”<sup>1</sup> has significant implications for the kinds of policies that will be formulated and the relevant actors who should be involved in both shaping and enacting them.

The report recognizes that advancing toward a sustainable food system will require actors from different spheres of governance (e.g., public, private, and civil society) and tiers of administrative operation (e.g., global, regional, national, and local scales) to address interrelated challenges in a coordinated and collaborative manner. It is not surprising, therefore, that the SAPEA report uncovered a range of theoretical perspectives, conceptual frames, and units of analyses that have been used for understanding the dynamics of the food system. This creates challenges in terms of comparing and combining findings, consolidating learning, and synthesizing promising actions. However, the complex configuration of social science research reflects the diversity of the food system (Figure 2) and also the diffuse nature of its governance.

## Governmental Actors and Policies

Although the availability of food was not perceived to be an immediate concern within the EU (at least prior to the coronavirus disease 2019 [COVID-19] pandemic



**Figure 1. Structure of the SAPEA Evidence Review Report**

This figure outlines the relationship between scientists and scientific bodies such as the European Federation of Academies of Sciences and Humanities (ALLEA), the European Academies Science Advisory Council (EASAC), the Federation of European Academies of Medicine (FEAM), and the pan-European Academy of Humanities, Letters, Law, and Sciences (Academia Europaea). This figure was produced by SAPEA, and further information about SAPEA can be found at <https://www.sapea.info>.

of 2020), access to safe and nutritious food remains problematic for parts of the population in many European countries. In addition, the highly globalized food chains that supply the EU—which currently imports around half of the food purchased in the region—also raise geopolitical issues around food security and system resilience to external shocks. However, explicit food policies within the EU are fragmented and lack policy coherence and an overarching framework. It is hard to navigate, access, and influence the policy soup that results, particularly for smaller, less well-resourced organizations and actors.

The SAPEA report concludes that global organizations such as the Food and Agriculture Organization, the World Health Organization, and the World Bank

contribute significantly to providing policy direction to increasing numbers of hybrid food-governance arrangements, such as accreditation and food labeling. However, holistic food policies are rare at the national level within EU member states and are often symbolic. Some examples of sub-national food policy have attracted wide attention, such as the Milan Urban Food Policy Pact, but its relatively recent formulation means that further monitoring and evaluation are required to establish its long-term impacts. Overall, localized policies are seen as providing experimental opportunities for new approaches, particularly when they involve a range of change agents across the local food system.

It is a truism to say that effective policy measures will be central in any move toward a sustainable food system, but a

comprehensive review of existing policies to identify where they help or hinder progress toward a just and sustainable food system is desperately needed. This will not be a straightforward task given the lack of comparable data and system complexity. For example, at a global level, agriculture, fisheries, and food are subject to a large number of binding agreements designed to maintain global trade; however, trade liberalization's compatibility with sustainability goals remains disputed. Nonetheless, all policies that support and perpetuate the current system need to be addressed. No policy should get a free ride.

Experimentation with alternative policies and approaches is needed, but policymakers are often circumspect about doing this because of the high possibility of “failure” in experiments. Even where radical system change has been called for, the changes made are often required to meet “feasibility” or “workability” checks that inevitably favor the status quo, severely curtailing ambitions for radically reshaping policy architectures toward sustainability.

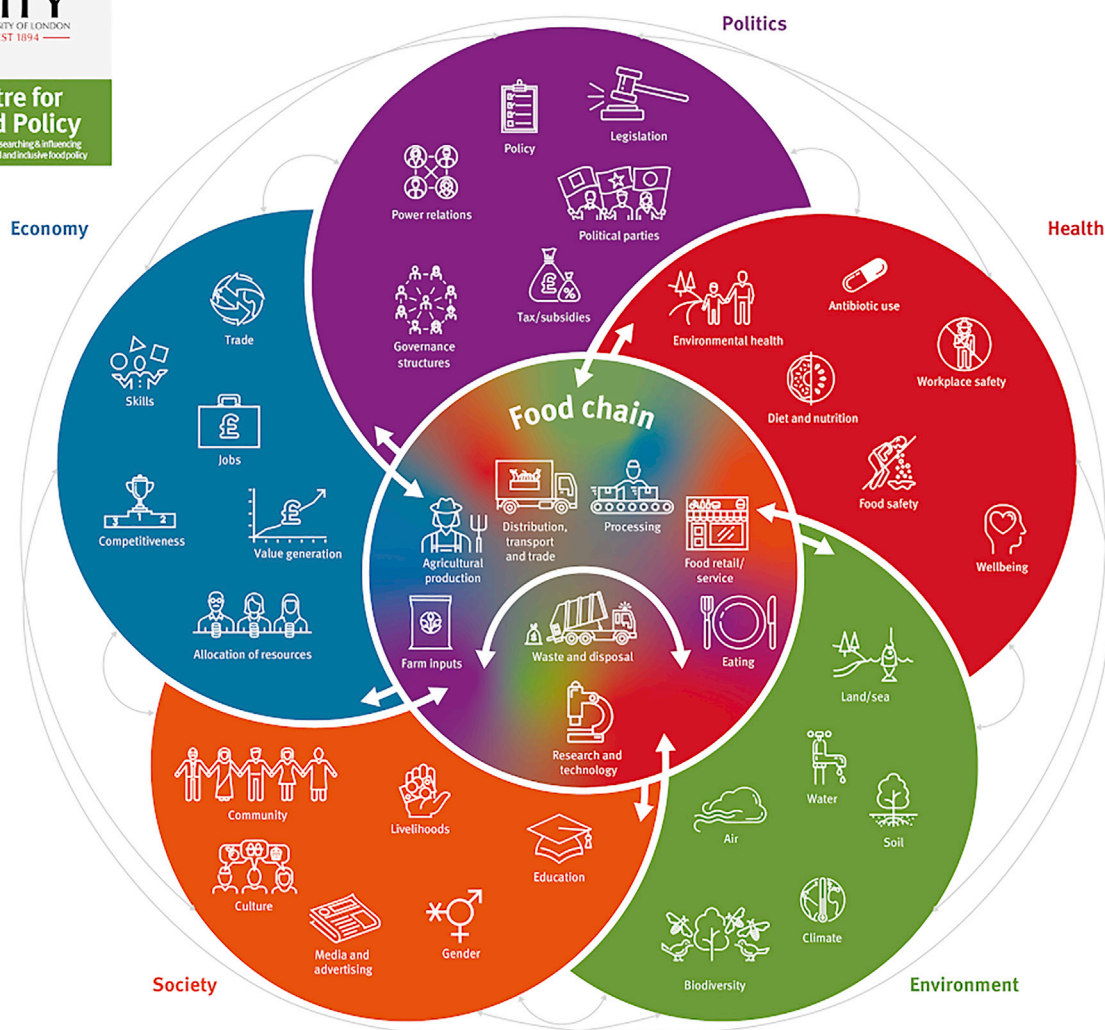
### Non-governmental Agents of Change

The SAPEA report recognizes that the diversity of influential actors outside government means there is capacity for them to be both drivers and inhibitors of change toward food-system sustainability depending on the particular context and issue being examined. Notable non-governmental actors examined in the report include food producers and post-production food enterprises; retail chains and networks; out-of-home and food-service providers (e.g., restaurants, cafes, and canteens); educators, influencers, and other information providers; individuals who are variously characterized as citizens, consumers, and sometimes citizen-consumers (because purchasing decisions are rarely based solely on matters of instrumental consumption); non-governmental organizations, civil society, and grassroots actors; and scientists and researchers.

The report found that the pace and direction of change are affected by power differences among system actors and that there are varying levels of influence among the many different interests, which operate across diverse domains and sectors. It also found that there are likely to be



# The food system



[www.city.ac.uk](http://www.city.ac.uk)

Parsons K, Hawkes C, Wells R. Brief 2, What is the food system? A food policy perspective. London: Centre for Food Policy; 2019.

**Figure 2. Mapping the Food System**

This figure from Parsons et al.<sup>3</sup> represents the complexity of the food system. It indicates the overlapping political, economic, health, societal, and environmental spheres that shape and are shaped by the food system.

winners and losers when change is enacted toward sustainability through the food system, although “win-wins” are an exception. A just transition is needed not only in the arena of climate change but also in relation to food if we are to move toward food-system sustainability in a fair manner (e.g., see ActionAid<sup>4</sup>). This means enhancing food democracy—the democratic processes

around and beyond food—to ensure equal and effective opportunities to design, operate, and participate in a sustainable food system.<sup>5</sup>

Promising practices identified in the report include experimental initiatives where sustainable food innovations can be trialed and evaluated in what might be called “living laboratories.”<sup>6</sup> These offer a means of identifying specific leverage

points within a complex system, allowing adjustments to be made and conflicts to be addressed. While recognizing the specificity of food territories and the need for tailored responses to particular food challenges, the report identifies examples that should be examined for context-sensitive replication across the food system, from information and communication technology (ICT)-mediated food-redistribution

initiatives (such as Ireland's FoodCloud, whose aim is to reduce food waste) to the Sustainable Food Places network in the UK. The benefit of examining particular cases is that they allow decision makers to see how interventions meet their goals and, from this, to think about the kinds of institutional arrangements and resources needed for promoting similarly successful transitions in their own jurisdictions.

Agents of food-system change are diverse and include both human actors and non-human influences, such as ecological and climatic conditions as well as technology. As a result, there is no "silver bullet" intervention or actor that will achieve a sustainable food transition, and governments at all levels must play an important leadership and enforcement role to support sustainable innovation and monitor the sustainability status of the food system over time. Citizens have power in their roles as consumers of course, but even at an aggregate level the report found that consumer power is bounded. Certainly, we cannot resolve power asymmetries across the food system by focusing on consumer choice or individual responsibility alone. We must pay attention to wider practices and the impacts of all change agents.

### **Circular and Regenerative Food-System Sustainability**

The global demand for food will increase in the future, and therefore radical transformation is needed to make the food system sustainable. The SAPEA report favors a move from current approaches that have a linear orientation toward a more circular approach. However, this should not be imagined as a depoliticized, technocratic system of revalorizing unpreventable waste. Wider matters of democracy, ethics, care, and well-being need to be incorporated into the food system's circular redesign. Integrating actors across all parts of the food system requires strong leadership. This goal demands a better-coordinated, polycentric, and adaptive governance framework. Fundamentally, changing from a linear mass-consumption model to a more circular economy will mean changing existing norms, habits, and routines, and this will need to happen collectively and across all actors in the food system, including in agribusiness and the wider food industry. Radical change does not mean tweaking the margins of the cur-

rent system; it means recontextualizing how we think about food in the first place.

### **Discussion: Impact Pathways and Research Agendas**

Key ideas that were pulled from the SAPEA report into the Advisors' scientific opinion<sup>7</sup> included the need to develop a stepwise, learning-focused policy transformation on global, EU, national, regional, and local levels to ensure an integrated sustainability-transitions approach for the food system. A systems-based approach that recognizes synergies and trade-offs and moves beyond linear approaches to develop a more circular, inclusive, and regenerative food system is needed.<sup>8</sup> This will require an iterative and responsive, as well as more adaptive, policy mix with binding measures as a main driver giving clear signals of intent for food-system actors. The Advisors' scientific opinion also emphasizes the report's call for greater attention to power and information asymmetries within the food system. Specifically, the Advisors support an increasing policy focus on food manufacturers and retailers, additional help for citizens to make healthy and sustainable food choices, and interventions aimed at improving the position of vulnerable actors across the food system. In particular, they support the report's view that treating food only as a commodity is reductive and also argue for broader thinking about the implications of seeing food as a common good.

It is also positive to see elements of the SAPEA report and the Advisors' scientific opinion reflected in the European Commission's Farm to Fork Strategy, which was published in June 2020 and is seen as key to achieving the goals of the EU's Green Deal.<sup>9</sup> However, although the strategy is commendable in some aspects, such as the positive messages around shorter food chains and the promotion of circular economies, critics argue<sup>10</sup> that it does not go far enough and will perpetuate the inequalities and unsustainable practices in the current food system. In particular, the Farm to Fork Strategy is seen as presenting a falsely depoliticized food system by ignoring power asymmetries and the pivotal role that citizens (and not just as consumers) should play in shaping it in democratic societies.

The social sciences are well equipped to approach complex issues such as

food systems, contributing to our understanding of how to enact transitional change. However, currently the evidence on intervention effectiveness is sparse, and more research is needed. Better ways to combine findings from research emanating from many disciplines and conducted in different places are needed for maintaining the specificity of place-based research as well as seeking learning that could be applicable elsewhere. In part, this can be done through the framing of research calls to ensure that knowledge builds rather than fragments. As noted in the SAPEA report, identifying "what works" in terms of precise policy instruments is not just a technical exercise and will require further research on the public understanding of science and consumer acceptance of new technologies. It is important to go beyond technical innovation to also consider the drivers, function, and potential impact of social innovation. This requires research to be conducted in collaboration with diverse stakeholders, from citizens and grassroots organizations to farmers and retailers.

Resources are needed for continued explorations of the current food system as well as for developing future-focused studies. Scenario analysis, for example, offers a means of imagining future food systems in all their dynamic and uncertain complexity, providing a navigational compass to guide food planning. It is also important to consider how to create better dialogue and understanding between disciplines within the social sciences and between social science and other disciplines, as well as between researchers and policymakers. This has long been a refrain of sustainability scholars who recognize the need to get beyond silo thinking to address complex adaptive systems such as food, particularly with respect to the natural and social sciences,<sup>11</sup> and is exemplified materially in the formation of the International Science Council (see <https://council.science/> for more details). For such endeavors to be productive, they will require broader and less hierarchical approaches to evidence. This necessitates specific research that examines how different forms of knowledge and understandings gained through research on sustainability transitions are formed and how they come together or exist in tension.



There are similarly fundamental challenges in terms of connecting social science research findings with policymakers seeking to develop concrete policy interventions. This is frequently manifest in demands on scientists to identify feasible plans for reorienting the food system onto a more sustainable pathway. On the one hand, there are many dimensions to feasibility. Things might be technically, socially, and environmentally feasible, but in reality, matters of political, administrative, or economic feasibility often dominate. On the other hand, these are key parameters of the “system” that it has been agreed needs to change. As COVID-19 has illustrated, what is feasible—essentially what can be expected of citizens, businesses, and even governments—in terms of changing behaviors and practices should not be underestimated. This has particular salience with respect to the SAPEA report’s and the Advisors’ scientific opinion’s call to move from seeing food solely as a commodity to seeing food as a more of a common good.

## Conclusion

The SAPEA report went to press before the outbreak of COVID-19 in Europe. However, the report did consider the fragilities of the global food system, particularly with regard to the impact of unpredictable events on future food scenarios and the need to develop greater food-system resilience. Further research will be needed before the long-term effects of the virus can be adequately assessed, but the research so far has revealed with greater clarity the unsustainable pinch points across the food system, from persistent levels of food poverty to a dependence on extensive, just-in-time and heavily carbon-intensive supply chains. Although COVID-19 has been a disastrous disruption globally, the relative

pause in system dynamics in response to it also provides food-system change agents with an opportunity to co-produce new sustainable imaginaries for the food system. From a science perspective, COVID-19 has shown that the public can absorb quite challenging information about statistics, experimentation, degrees of confidence, and margins of error. Hopefully, this will provide policymakers with greater confidence that the public is willing and able to understand the challenges of policy experimentation under conditions of uncertainty in complex but unsustainable adaptive systems such as food. As Bruno Latour has recently stated, “Injustice is not just about the redistribution of the fruits of progress, but about the very manner in which the planet is *made fruitful*. ... It means ... putting a question mark over each of its supposed indispensable connections, and then testing in more and more detail what is desirable and what has ceased to be so.”<sup>12</sup>

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## DECLARATIONS OF INTEREST

As an unpaid member of the SAPEA working group, I collaboratively authored the report considered in this Reflection. The opinions expressed in this Reflection are my own.

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