

The Political Economy of Food System Transformation in the European Union

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13.1 Introduction

The European Union (EU)'s food system is under pressure for reform. Agriculture production alone is responsible for 10 percent of the EU's greenhouse gas emissions (EEA 2020), while the EU's food system as a whole contributes about three times as much emissions (Crippa et al. 2021) when measured on a territorial basis. Current modes of food production in the EU are strongly linked to biodiversity loss, water and air pollution, animal welfare concerns, and the exploitation of people working in the food chain. Diet-induced increases in the number of Europeans suffering from overweight and obesity have contributed to the rapid spread of non-communicable diseases, such as diabetes type II, cardio-vascular disease and various types of cancer, amounting to approximately 16 million healthy lives lost in the EU in 2017 (GBD 2017 Disease and Injury Incidence and Prevalence Collaborators 2018). Furthermore, there are ongoing concerns and debates about the EU food system's impacts on ecosystems and livelihoods outside of the continent, especially in the Global South.

To tackle these and additional food system challenges, the European Commission in 2020 launched its ambitious Farm to Fork and Biodiversity Strategies, which are embedded within its overarching Green Deal policy that aims for climate neutrality by 2050, the decoupling of economic growth from resource use, the protection of biodiversity and zero pollution. The Farm to Fork (F2F) strategy is a first step toward an EU food policy that covers the whole food chain and includes both quantified and more generic targets for 2030 and beyond. The Biodiversity Strategy as well as the EU Climate Law and recent proposals to apply sustainability criteria to EU supply chains add further objectives, as summarized in Table 13.1.

Importantly, whereas the Green Deal strategies have put food system sustainability on top of the EU political agenda, the degree to which they will result in actual policy change and novel governance approaches remains to be seen. European Commission strategies do not carry legal weight, and to become effective,

Table 13.1 Green Deal food system objectives

Farm to Fork Strategy	<ul style="list-style-type: none"> – Reduce by 50% the use and risk of both chemical and more hazardous pesticides by 2030 – Reduce nutrient losses by at least 50% by 2030, while ensuring no deterioration on soil fertility – Reduce fertilizer use by at least 20% by 2030 – Reduce by 50% the sales of antimicrobials for farmed animals and in aquaculture by 2030 – Achieve 25% of total farmland under organic farming by 2030 – Halving per capita food waste at retail and consumer levels by 2030 – Create a healthy food environment which makes the healthy and sustainable choice the easy choice – Promote the global transition toward sustainable food systems
Biodiversity Strategy	<ul style="list-style-type: none"> – Expand the Natura 2000 network so that 30% of EU's land is protected – Place at least 10% of agricultural area under high-diversity landscape features
Climate Law	<ul style="list-style-type: none"> – Zero net emissions by 2050 – Net 55% reduction in emissions by 2030 compared to 1990
External dimensions	<ul style="list-style-type: none"> – Ensure only deforestation-free and legal products (according to the laws of the country of origin) are allowed on the EU market, currently covering soy, beef, palm oil, rubber, wood, cocoa, and coffee – Due diligence requirements for companies to ensure their supply chains are free of human rights, environmental, and forced labor abuses – Carbon Border Adjustment Mechanism for selected industrial products including fertilizer – Mirror clauses for selected agricultural practices

Source: Authors' own tabulation.

they must first be translated into legislation. Various legislative initiatives are proposed in the F2F strategy which will have to pass through the Council of the EU, constituted by the member state governments, and the European Parliament, which is directly elected by the EU's citizens. It is here that the commitment to food systems transition will really be tested.

In a recent reflection, Schebesta and Candel (2020) discuss four overarching governance challenges in the implementation process of the Farm to Fork Strategy. First, there is considerable ambiguity about what a “sustainable food system” means, with (potential) trade-offs existing between interventions aimed at different sustainability-related objectives. Second, there is a large discrepancy between the objectives set out in the strategy and the legal actions and instruments

that are proposed, partly due to the limited competences that the EU has over some relevant issues and domains. Third, there are considerable institutional disagreements between and within the EU's institutions, partly fueled by deeper differences in worldviews and policy preferences. Fourth, there is a multi-level coordination challenge, as realizing many of the Green Deal's goals is dependent on stepped-up efforts at national, local, and international levels.

In this chapter, we pick up on these governance challenges and explore them in more depth for the two sides of the food system that have been particularly central to recent debates about an EU food system transition: changing agricultural practices and fostering healthier and more sustainable diets. The central question is under what conditions the EU and its member states may be able to bring about behavioral change among thousands of food producers and millions of consumers, so as to realize the Green Deal's overarching objectives. We reflect on the policy, political and institutional challenges, and opportunities in this pursuit, drawing on recent insights and debates from across a range of relevant disciplines. The consequences for food, fertilizer, and energy markets of Russia's invasion of Ukraine in February 2022 has only increased the salience of this debate.

13.2 Food Systems Transition in the EU—State of Play

Understanding the institutional framework that could bring about behavioral change in EU food systems is the starting point for our political economy analysis. The EU is a unique actor in this volume because of its multi-level governance framework that determines the scope for action at different levels—EU-wide, national and local. The EU only has the competences conferred on it by its member states through its founding Treaties, the Treaty on European Union (TEU) which sets out the objectives and principles of the EU, and the Treaty on the Functioning of the European Union (TFEU) which provides the organizational and functional details. Of the domains that are of particular importance for the transition to a more sustainable food system, trade policy, the conclusion of certain international agreements, and the conservation of marine biological resources under the common fisheries policy are exclusive competences of the Union. Climate, environment, agriculture, food safety and public health are shared competences between the Union and national governments.

EU decision-making is unique as compared to states in that only the Commission can propose legislation (though it may do so at the request of either the Council or Parliament). The role of the President of the Commission is thus much more than the role of the head of the civil service in national jurisdictions. The Commission, in turn, is divided into a number of Directorate-Generals, each headed by a Commissioner with responsibility for an area of policy. However, all legislative proposals must be agreed by the College of Commissioners as a whole.

Another relevant feature is that the EU has very limited budget resources—amounting to about 1 percent of its gross national income—but strong regulatory powers. Of its budget resources, around one-third are allocated to agricultural policy objectives. Member states can also allocate national budget resources to agriculture within rules decided at the Union level, but agricultural policy stands out as one spending area where the Union is the dominant actor. For most other policy areas, the EU's influence comes mainly from its regulatory powers.

The complex and fragmented character of EU decision-making procedures highlights the need for vertical coordination (between Union and member states) alongside the traditional problem in all states of ensuring horizontal coordination (between different Directorate-Generals and policy domains) when addressing a policy challenge such as the transition to a more sustainable food system. How these coordination issues underpin some of the political economy dynamics and affect the pace and design of strategies intended to transform food production and consumption practices in the EU, is discussed in the remainder of this chapter.

13.2.1 The EU Food Policy Framework

In the EU, much of the debate around the transition to a more sustainable agriculture revolves around the role of the EU's Common Agricultural Policy (CAP). The obligation to pursue a joint agricultural policy is laid down in the Treaties. Although formally a shared competence with the member states, the CAP framework and budget is largely determined at the EU level. The CAP is organized in two Pillars. Pillar 1 finances direct payments to farmers as income support as well as market management expenditure. Direct payments mostly take the form of decoupled payments paid per hectare of eligible land regardless of what the farmer produces or indeed if they produce at all (provided the land is maintained in a way that it could produce food). Farmers in receipt of direct payments are required to observe a set of statutory management requirements set out in EU legislation as well as various standards of good agricultural and environmental practice (a system known as cross-compliance). Non-compliance can lead to a reduction in the payment received. Pillar 2 finances rural development activities including aids to modernize agriculture, the promotion of business activity in rural areas and agri-environment-climate schemes that compensate farmers for adopting more environmentally and climate-friendly practices that go beyond the minimum standards required under cross-compliance. Around three-quarters of CAP expenditure is allocated to Pillar 1 measures, and the remaining one-quarter to Pillar 2.

Environmental objectives have been gradually integrated into the CAP over the past 25 years (Feindt 2010; Matthews 2013). The entry into force of the Single European Act (1987) added a title on the environment to the European treaties

and, for the first time, gave a legal basis for EU environmental policies. The growth in environmental awareness led to the introduction of a raft of environmental legislation affecting agricultural practices. Among the more important were the Nitrates Directive (1991), the Pesticides Regulation (1991), the Habitats Directive (1992), the Water Framework Directive (2000), and the National Emissions Ceiling Directive (2001). These regulations and directives sought to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices, to reduce the risks and impacts of pesticide use on human health and the environment, to ensure the conservation of particular habitats important for rare or threatened animal or plant species or important in their own right, to improve the governance of water quality and quantity issues through an integrated river basin management approach, and to limit emissions of air pollutants.

The EU has also developed an extensive body of food legislation, mostly devoted to ensuring a high level of food safety and protection for consumers. The General Food Law was adopted in 2002 in the wake of a series of food-related incidents including the outbreak of bovine spongiform encephalopathy (BSE) in cattle. This legislation developed an integrated approach to food safety “from farm to fork” covering all sectors in the food chain. EU rules also define requirements on subjects like market authorization for food additives, novel foods and genetically modified foods, chemical, and biological contaminants in food, food hygiene, tracking and tracing, withdrawal and recall, food labeling, and nutritional claims. The Green Deal initiatives extend this approach from food safety to include a broader sustainability perspective.

13.2.2 Modest Results to Date

Despite this extensive body of EU agricultural and food legislation, the EU food system is far from sustainable. Intensive agricultural practices are largely responsible for a substantial decline in biodiversity in agricultural ecosystems as reflected in a drop of farmland birds and losses of insect populations in parts of the EU. There has been only limited progress in reducing the risks of pesticide use, which is one of the causes of this decline (European Commission 2020). Soil health and fertility are rapidly degrading. Around 45 percent of the mineral soils in Europe have low or very low organic carbon content (0–2 percent) and 45 percent have a medium content (2–6 percent) and soil loss through erosion continues (EEA 2019). Where there has been some progress (for example, in reducing greenhouse gas (GHG) emissions, ammonia emissions, and nitrogen fertilizer use) much of this reduction occurred during the 1990s decade. GHG emissions and nitrogen use have flat-lined in recent years and further reductions will require additional interventions. On average across Europe, about a 40 percent reduction

in nitrogen inputs would be needed to prevent exceedance of the critical values beyond which eutrophication can be expected (EEA 2019). Sustainability does not only cover environmental issues but also has a social dimension. Seasonal agricultural workers are an important part of the EU agricultural labor force but their living and working conditions are sometimes unacceptable (Augère-Granier 2021). A recent reform of the CAP regulations in 2021 introduced an element of social conditionality for the first time by including compliance with national labor and employment law as one of the eligibility requirements for receipt of CAP direct payments.

On the consumption side, the availability of food has not been perceived as an immediate, major concern in Europe although the response to the COVID-19 pandemic revealed limitations in the Union's preparedness to deal with short-term shocks. In response, the Commission established a European Food Security Crisis Preparedness and Response Mechanism (Official Journal 2021/C 461 I/01) to improve coordination between member states, third countries whose food systems are closely integrated with the Union, and food chain stakeholders. This new mechanism was activated in March 2022 to address the food security implications of Russia's war in Ukraine. Food poverty remains a concern in many European countries, with the situation worsening as the Ukraine war has exacerbated food price inflation. There are also major challenges regarding ecological sustainability and public health arising from the dietary choices of European consumers, with up to 20 percent of all food produced in the EU ending up as food waste.

The General Food Law introduced in 2002 and complemented by subsequent legislation on hygiene of foodstuffs, food contamination, food labeling, and food additives generally has been seen as a success in ensuring a supply of safe food to consumers but less adequate to address broader sustainability issues (European Commission 2018). The general regulation established the European Food Safety Authority, tasked with assessing and informing on all risks related to the food chain. It stresses the "precautionary principle," sets out a risk assessment approach and establishes general provisions to ensure the traceability of food and feed. A Rapid Alert System for Food and Feed allows member states and the Commission to exchange information rapidly and to coordinate their responses when a health threat due to food or feed is notified.

Several EU policies and initiatives exist that aim to foster healthy diets. These include Commission initiatives such as the EU Platform on Diet, Physical Activity, and Health, regulatory measures on food information to consumers and nutrition and health claims, strategies to address nutrition and obesity, and specific instruments such as CAP measures to supply milk, fruits and vegetables to schools. Initiatives have also been taken at city government level to design more sustainable food policies, for example, under the Milan Urban Food Policy Pact (Candel 2020). But it is mainly member states that have the ability to leverage dietary change. Most EU countries publish official dietary guidelines, including

food-based guidelines, and an increasing number explicitly consider sustainability as well as health considerations in their recommendations. However, adherence to these dietary guidelines remains very low (Scheelbeek et al. 2020) and there remains a large gap between observed and recommended intakes. Fiscal measures to promote healthier and more sustainable diets (e.g., taxes on sugar, fats, or meat, or lower taxes on fruits and vegetables) have been used to only a very limited extent (mainly on sugar-sweetened beverages) (Jensen and Smed 2018).

There are some encouraging signs of changes in consumer attitudes. There is greater awareness of sustainable eating, especially among the younger generation. Per capita meat consumption has plateaued or shows a gentle decline in most EU countries, with an even faster substitution of white meat for red meat. For example, between 2005 and 2021 annual beef consumption per capita in the EU fell from 12.0 kg to 9.7 kg and annual pig meat consumption from 34.0 kg to 31.0 kg, but these decreases were offset by an increase in poultry meat consumption from 18.6 kg to 24.8 kg (European Commission 2021a). But these figures also demonstrate that this increased interest has not yet translated into the necessary level of dietary behavior change, leaving us far behind on reaching our targets on sustainable and healthy eating.

13.2.3 Farm to Fork Strategy

Against this background, the publication of the European Green Deal and its agri-food and nature protection elements in the F2F and Biodiversity Strategies represents a step change in rhetoric and ambition and has injected a new sense of urgency into the debate. It is also the first time that the production (agriculture) and consumption (food) dimensions of the food system have been considered together at EU level, thus paving the way for a more holistic and coordinated approach to its transformation. The F2F Strategy is built around three central planks: ensuring the food chain has a neutral or positive environmental impact; ensuring food security, nutrition, and public health; and preserving the affordability of food while generating fair returns for the supply chain. Among the strategy's aims are stimulating sustainable production and processing, ensuring food security, promoting sustainable consumption, reducing food waste, and combatting food fraud.

The F2F and Biodiversity Strategies include a range of ambitious targets intended to put the EU food system on a transformative path to greater sustainability. In addition to the targets for agricultural production outlined in Table 13.1, the F2F strategy also underlines the importance of consumer behavior change in food system transformation and climate change mitigation. Among the measures advocated are empowerment of consumers by better front-of-pack nutrition labeling; strengthening of educational messages in schools around sustainable eating;

promotion of food-based dietary guidelines that incorporate sustainability aspects and encouragement to use fiscal policy tools to promote healthy and sustainable diets; an active change in food environments in institutions, including minimum mandatory criteria for sustainable food procurement by schools, hospitals, and other public institutions; and setting a legally binding target to reduce food waste.

The F2F strategy was published as a Commission Communication and is not a legislative proposal. This means that it was not accompanied by an impact assessment examining a range of alternative scenarios and targets and evaluating their impacts for production and the environment that would normally be required for new legislation. While a Farm to Fork strategy on sustainable food along the whole value chain was highlighted in the political guidelines announced by Commission President Ursula von der Leyen when seeking support for her nomination in the summer of 2019 (see below), this was not further elaborated until the strategy was published in May 2020. Thus, the targets in the strategy were the outcome of a process of intra-Commission negotiation and bargaining and were not the subject of in-depth consultation with member states, stakeholders, or experts prior to their announcement. Although the main EU institutions subsequently welcomed the broad direction of travel set out in the strategy, dissatisfaction with the way the strategy was launched has led to a steady stream of demands for a full impact assessment, which was reinforced by the perceived consequences of the Russian war in Ukraine (European Parliament 2022). The Commission responded that an impact assessment would accompany each of the legislative initiatives foreseen in the strategy designed to translate its high-level goals into concrete policies in the coming years.

The strategy also recognizes the importance of complementing domestic actions with an external dimension designed to protect domestic producers from competition with imported products produced to lower standards (the level playing field argument), to avoid externalizing the negative environmental impacts of EU consumption and to use access to the EU market as leverage to raise global standards. The extent to which the Green Deal strategy will succeed in accelerating the move to a more sustainable food system will depend on the pace and ambition of these follow-up initiatives.

An initial test of the EU's commitment to the Green Deal objectives in the agricultural sector was seen in the negotiations to restructure the rules of the EU's agricultural policy for the period 2023–2027. The Commission put forward its proposal in July 2018 built around a new governance model for the CAP. Specific objectives for the CAP would be set at the Union level as well as a range of broadly defined interventions. Member states would then draw up strategic plans setting national targets for these objectives based on a needs assessment, and would have greater flexibility to design the interventions needed to achieve these targets. Union oversight would be ensured by requiring Commission approval for the initial plans as well as through regular monitoring of progress toward the targets.

When the Commission published its F2F targets in May 2020, the negotiations on the future CAP were still ongoing between the Council and Parliament. The Commission wanted member states to commit to national targets for the goals set out in the F2F strategy and proposed to make approval of the national CAP plans conditional on this happening. However, member states pushed back, insisting that the F2F targets had as yet no legal basis and they could not be obliged to include corresponding national targets in their plans. The Commission ultimately accepted that the inclusion of any such national targets would be on a voluntary basis. When the new CAP legislation was finally agreed in November 2021, there were mixed assessments regarding its ability to drive the required changes in agricultural practices or whether it largely represented a continuation of business-as-usual (Candel, Lakner, and Pe'er 2021; Matthews 2021). While the legislation allocates a higher share of spending to support farmers to meet environmental and climate objectives, the fear is that the measures proposed by member states will require little change to current farm practices and will be designed mainly as a support to farm incomes. A summary of the observations that the Commission sent to 19 member states following receipt of their draft plans highlighted that many member states have been asked to redraft their plans to show higher environmental ambition and to better clarify how the interventions they propose will achieve the national values they propose for F2F targets (European Commission 2022a). A full evaluation of the CAP strategic plans has been promised by the Commission toward the end of 2023.

The F2F strategy recognizes the health and environmental benefits of moving to a more plant-based diet with less red and processed meat and with more fruits and vegetables. Although environmental footprints vary greatly depending on natural conditions, inputs, management, and machinery at farm level (and to a lesser extent on processes beyond the farm gate), there is overwhelming evidence that animal-source foods are typically associated with higher carbon, land, water, and biodiversity footprints than plant-based sources of protein. However, a major weakness in the strategy is the limited discussion on how to bring about this shift, which puts primary emphasis on labeling and giving consumers better information to make informed food choices. We return to this issue later in this chapter.

The strategy appears to assume that the emergence of alternative proteins will in itself bring about the desired change in consumer behavior. The strategy emphasizes the role of research in increasing the availability and sources of alternative proteins and “novel foods” such as plant, microbial, marine, and insect-based proteins and meat substitutes. However, regulatory obstacles remain. Dairy terms or names such as milk, cheese, butter, and yogurt are protected for use in the animal-source foods sector. Plant based dairy alternatives must use alternative names such as “drink,” “beverage,” etc. (Annex VII of Regulation (EU) 1308/2013). The use of terms such as “alternative” or “replacement” on packaging if directly

referring to an animal-source food that the manufacturers aim to replace is prohibited. The introduction of more “futuristic” novel foods appears still far away: lab-grown meat is subject to major challenges in terms of cost of production and scale-up, while food safety approvals form another hurdle. Development of regulations for the widespread introduction of insect-based foods on EU markets is equally in its infancy. A first assessment of an insect product as legal novel food on EU markets was only conducted by the European Food Safety Authority in 2021 (Lähtenmäki-Uutela et al. 2021).

13.3 Political Economy Explanations for Change (or the Lack of It)

13.3.1 New Voices Reflected in Decision-Making Fora

The previous discussion has shown that significant changes have taken place at EU level in terms of agenda-setting with the legitimization of a broader role for agricultural policy to contribute to environmental sustainability (especially biodiversity, soil health, water and air quality) objectives, climate stabilization, and to public health objectives.¹ At the same time, only modest progress has been made in reversing some of the negative environmental and health impacts of agricultural production. There remains a very large gap between rhetoric and action. From a political economy perspective, both of these phenomena require explanation.

Studies of the political economy of agricultural policy reform in the EU emphasize the interplay between the incentives for farmers to demand protection, the strength of the opposition to farm protection from the rest of society, as well as the importance of political-institutional changes that influence how farmers and other interest groups interact when decisions are taken (Swinnen 2008, 2015, 2018). Political scientists have long used agricultural policy-making as the classic empirical example of a compartmentalized and “exceptionalist” policy-making process (Skogstad 1998; Daugbjerg and Feindt 2017). This refers both to the arguments that justify treating agriculture as a sector in need of exceptional treatment, and also to a policy process in which policy outcomes are decided through bargaining between powerful sectoral interest groups and policy-makers who mostly see their role as defending and promoting the interests of the sector. At the heart of this traditional policy agenda has been supporting and maintaining food production (often justified as necessary to ensure continued food security), farm incomes, and farm numbers. Daugbjerg and Feindt put forward the idea that this traditional

¹ Food safety has been a long-standing concern, as has sustainable use of pesticides, there is growing awareness of the contribution of agriculture to air pollution through emissions of ammonia and methane, while the adoption of the “One Health” approach has focused attention on the problem of antimicrobial resistance.

model may be giving way to policy post-exceptionalism resulting from the demand for more market-oriented and performance-based policies. They highlight how new institutions and actors (international trade rules, consumer activism, environmentalists, animal welfare advocates, retailers) have succeeded in introducing new norms, values, and interests into the agricultural policy debate.

The broadening of the agricultural policy agenda has been driven, in part, by the growing weight of scientific evidence that has made it increasingly difficult to ignore the pressures that agricultural production is putting on the environment. Youth activism stimulated by the iconic leadership of Greta Thunberg played a very important role in pushing the need for climate action. The international commitments that the EU has signed up to, including the UN 2030 Sustainable Development Goals, the Paris Agreement on climate change and the goals set out in the Convention on Biological Diversity, have also been important at the rhetorical level. But transforming these concerns and commitments into a new policy agenda has required the widening of EU decision-making to include new stakeholders, actors, and constituencies.

Elections to the European Parliament in May 2019 shifted the balance of forces. For the first time, the two largest political groups in the Parliament, the center-right European People's Party and the center-left Socialist and Democrats group, no longer had an absolute majority of the seats between them. Significant gains were made by two groups, the liberal Renew Europe (with close associations to President Macron's party in France) and the Greens/EFL, and for both of these groups environmental and climate issues had a higher priority. The incoming Commission President, Ursula von der Leyen, whose appointment depended on getting the approval of the Parliament, recognized the significance of these changes and made the European Green Deal the centerpiece of her political guidelines when seeking its support for her nomination (von der Leyen 2019).

In the new Commission that took office in December 2019, key responsibilities for implementing the agri-food aspects of the Green Deal were given to the Commissioners for Environment, and Health and Safety, rather than to the Commissioner for Agriculture and Rural Development. In addition, a more hierarchical Commission structure was introduced creating a new post of Commission Executive Vice-President (filled by the Dutch Commissioner Frans Timmermans). Timmermans was given overall responsibility for implementing the Green Deal and other Commissioners whose portfolios would play a major role, including agriculture, reported to him. In the inter-institutional trilogue negotiations between the Council, Parliament, and Commission where the final CAP agreement was hammered out, and where normally the Commission would be represented only by the Agriculture Commissioner, Timmermans played an active role bringing to the table the voices calling for greater environmental and climate action which would not normally be present in negotiations on agricultural policy.

Barriers to the representation of non-farm interests such as consumer, environmental, and Global South activists in agricultural policymaking remain. In the Parliament, responsibility for developing the Parliament's position on agricultural policy matters is usually given to its agricultural committee which always has a high proportion of farmer members. On this occasion, the Parliament's environmental committee was given associated status on those parts of the legislation with environmental relevance. Although it was an indication that agricultural policy is no longer seen as the preserve of farmers, the innovation turned out to have little practical impact. In the Council, CAP negotiations are handled by the member state agricultural ministers. The business of the agricultural Council is prepared, uniquely, by a special committee of member state representatives whose sole interest is agriculture whereas other dossiers are prepared by member state representatives with oversight over several areas. Farmer organization representatives often have privileged access to Council meetings, an access not extended to other representative groups. However, when looking at the list of legislative actions attached to the F2F strategy, what is striking is that most of them fall under the responsibility of and will be initiated by the Commissioners with responsibility for the environment, health and safety, or climate action, rather than by the Agriculture Commissioner. These dossiers will then be handled by different Council formations (for example, environment or health ministers) and different Parliamentary committees. This underlines the conclusion that the EU's agricultural policy agenda is increasingly determined by a wider range of interests and policy concerns than in the past, and that farmers no longer have the sole prerogative in setting this agenda.

13.3.2 Negative Impacts on Production and Farm Incomes

Although there is no doubting the change in rhetoric and framing around agri-food policy objectives, implementation on the ground is by no means guaranteed. Significant obstacles to change need to be overcome. Farm groups perceive these new demands as conflicting with their values (to produce as much food as possible to satisfy market demand) and interests (where pursuing other objectives is perceived to threaten their income). Governments worry that higher environmental standards and climate targets will have a negative impact on agricultural output and employment both on-farm and in ancillary processing industries, which may particularly disadvantage rural areas that are often lagging behind in any event in terms of economic activity and employment opportunities. They also worry that pursuing the sustainability agenda will have adverse distributional impacts if it leads to higher food prices particularly for low-income households. Input suppliers and food industry actors fear that their business models are being undermined and

that greater regulation will lead to higher costs and reduced profits. Environmentalists worry that higher environmental standards and climate targets will simply lead to domestic production being replaced by imports, shifting pollution effects and emissions abroad to exporting countries, and exacerbating the competition for land and water that is already causing environmental stresses in these countries.

A series of modeling studies simulating the impact of implementing several Green Deal targets concur that production would fall, although they disagree on the farm income effects (Beckman et al. 2020; Barreiro-Hurle et al. 2021a; Bremmer et al. 2021; Henning et al. 2021; Wesseler 2022). In some studies, market price responses to the projected fall in production are sufficiently strong to result in an overall increase in farm income. The value of these studies as guides to outcomes has been called into question (Barreiro-Hurle et al. 2021b; European Commission 2021; Candel 2022). The ability of market models to simulate changes in production practices of the magnitude envisaged in the Green Deal with parameters calibrated on the basis of the marginal changes seen historically can be questioned. The measures simulated leave out many of the complementary initiatives foreseen in the Strategy, particularly on the demand side or in terms of trade policy. The studies can be seen as unbalanced as they fail to quantify, and in some cases even to recognize, the value of the environmental and health benefits that the Strategy is seeking to achieve. They also adopt a business-as-usual baseline against which to compare their results, without attempting to assess the strength of the negative feedback loops between ecosystem damage and future potential yields.

These weaknesses indeed suggest that these studies are not a good basis for planning the food system transition, but it is unlikely that their central insight will be overturned. Moving toward a more sustainable agriculture with lower use of external inputs, greater reliance on more extensive production systems, and deliberately taking land out of agricultural production in order to make room for nature, will reduce EU production. Also, none of the studies specifically include targets for reducing agricultural emissions that will likely require reductions in animal agriculture that go beyond those simulated in these studies or consider the competitiveness implications of the higher animal welfare standards that have been flagged by the Commission. It is not surprising that farmers worry about the potential impact on their incomes. Although some studies suggest that farmers will be able to compensate for lower production through higher prices, farmers as price-takers in the food chain remain skeptical of this outcome. Previous research has noted that agricultural policy reform is easier in periods of relative prosperity for farmers (Swinnen 2018). The price shocks resulting from the Russian war in Ukraine, notably the sharp increase in feed and fertilizer costs and fears over the adverse effect on farm income, have led to a noticeable softening in the political support for making a radical change in farming practices at this time (Farm Europe 2022). Reconciling this tension between the economic and

environmental dimensions of sustainability will be critical to the success of the food system transition.

13.3.3 Differing Understandings of Sustainability

The transition in agriculture is further complicated by differences in understanding of what is meant by sustainable agriculture. Previous analyses have shown how different actor groups problematize overarching objectives such as “food security” or “resilience” in different terms, resulting in conflicting policy preferences (Candel et al. 2014). In the case of sustainable agriculture, this has partly to do with the production technology seen as compatible with sustainability. The productivist view (shared by several of the EU’s trading partners) emphasizes that global land use constraints require the pursuit of higher yields through sustainable intensification and puts a heavy emphasis on the role of technology to reduce external inputs and to mitigate associated environmental externalities. Agroecological advocates, on the other hand, emphasize the importance of minimizing external inputs by working with natural systems and adopting more extensive production methods. They also tend to be suspicious of modern technologies, opposing techniques such as gene-editing and emphasizing instead the precautionary principle. Others argue that EU policy agendas still tend to approach food exclusively as a commodity, whereas alternative framings, such as food as a human right or as a commons, may open up new policy pathways (Jackson et al. 2021). Moreover, growing concerns about animal welfare among European citizens have spurred scholarly debates about the dominance of anthropocentrism, raising questions about the “rights” of animals or even natural ecosystems in the food system. The fact that the F2F strategy has advocated for an extensification rather than intensification approach remains a strongly contested issue.

The other contested issue in discussing sustainable agriculture in the EU concerns the future role for animal agriculture. Animal agriculture contributes 40 percent of the value of agricultural output in the EU but that grossly underestimates its significance given that two-thirds of EU cereals production is used for animal feed. The off-farm employment in terms of slaughterhouses, feed mills, and other inputs is also significant, particularly in rural areas. The scientific evidence says that this level of animal production is unsustainable, but neither the EU nor member states have endorsed this view, and there are no plans in place to help livestock farmers in this transition.² Reducing EU livestock production, say, by half in the decade to 2030 as some advocate, would be an even bigger transition than

² In early 2022, the Dutch government was considering plans to buy out livestock farms in an effort to reduce livestock numbers to comply with court orders to reduce ammonia emissions.

the phase-out of coal in Europe (in 1950, employment in coal mines in the main producers UK, Germany, France, and Netherlands numbered around 1.6 million workers while in 2016 there were 2.6 million holdings in the EU specialized in livestock production and a further 2.2 million holdings with some livestock). Farmers producing feed grains would also have to adjust to find new uses for their land. The parallel may be misleading given the very skewed distribution of livestock numbers. Almost three-quarters of all holdings with livestock in the EU have less than 5 livestock units (LSU), while just 9 percent of holdings with livestock—around 458,000 out of the 10.5 million holdings in the EU—account for 80 percent of LSU. Yet no serious consideration has been given either in policy circles or in the academic literature to what a reduction in livestock numbers would mean for land use or how to provide a “just transition” for these farmers.

13.3.4 Challenges in Changing Food Environments and Consumer Behavior

Food systems cannot transform without substantial and population-wide consumer action. The collective change of consumers with regards to dietary choices, food group substitutions and waste management are pivotal in accelerating food system transformations and reaching food system related climate change mitigation goals. Successfully facilitating behavior change proves to be challenging within all sectors, as humans naturally resist change, but the process of dietary behavior change is subject to some particular obstacles. Where other public health initiatives, for example, those relating to reduced consumption of sugar-sweetened beverages or smoking cessation, were dealing with consumer choices that could be completely eliminated without health concerns, the anticipated targets in dietary change toward sustainable diets are subtler. The aim is not necessarily the complete removal of certain food groups in people's diets, but rather a rebalancing in the overall proportions of food group contributions to daily consumption. This complicates the application of “conventional” behavior change mechanisms and interventions.

First, the rebalancing—rather than removing—food groups from people's diets makes the use of stringent legislation and/or tax regimes to encourage consumer behavior toward sustainable diets complicated. Food is a basic human right and hence diets should still be affordable for all after implementation of rigorous measures. There is a danger of diets becoming unhealthier rather than healthier if affordability steers consumers in the wrong direction, for example, away from meat or other animal-source foods, but toward refined grains, foods with high salt or sugar contents or otherwise unhealthy energy dense foods. Furthermore, changing consumption patterns in food outlets does not necessarily lead to healthier diets: knowledge on correct preparation of “new foods,” cooking skills or the creativity

to fit them into daily meals can be a real challenge for consumers and could (unintentionally) lead to adverse effects, such as reduced availability of food/meals in the household, lower enjoyment of meals, and increased food waste.

Second, while food choices are often regarded as autonomous consumer decisions, the reality is far from that. Food environments, from the number of food outlets in the local area to the placement of products in the supermarket, as well as access and exposure to foods at school, work, and public service environments, shape—if not predominantly determine—the purchase patterns of consumers. Hence, facilitating dietary behavior change when only targeting consumers in food outlets will likely be unsuccessful. It requires a much more coherent food system wide approach and necessitates transformational change of all aspects of the food environment with which people interact on a daily basis. This might include strategies such as banning advertisements of unhealthy foods during the day or early evening to reduce exposure to younger audiences, having “buffer zones” around educational institutions where fast food outlets are banned, and “sugar free” check-out lanes in supermarkets where customers are not tempted into impulse buying of high-sugar snacks while awaiting their turn in the check-out queue. Taxes and subsidies can be effective interventions but have mostly been used to date in a health rather than sustainability context (Latka et al. 2021). The evidence suggests that, if used alone, high rates of tax may be necessary to induce significant changes in consumer behavior (Bonnet et al. 2018) and care needs to be taken to avoid undesired substitution effects and trade-offs between nutrition and environmental sustainability (Revoredo-Giha et al. 2018).

Third, sustainable eating is a rather complex concept for the average consumer. The majority of the population use/consider front-of-package labeling in their purchase behavior and understand the meaning of various traffic light systems that are used in different European countries. However, these labels only highlight one dimension of “informed” decision-making. The sustainability angle brings in several additional, and sometimes contradictory, dimensions of informed purchasing, including carbon footprints, water use, land use, and biodiversity loss. These are complex concepts to accurately communicate to consumers. They also require some time investment from the consumer to avoid misunderstanding or feeling overwhelmed. Despite guidelines on healthy and sustainable diets rapidly accumulating in the scientific literature, and which in a limited number of countries have been translated into food-based dietary guidelines, a solid mechanism to present this in an understandable and practical way to consumers has not yet been found.

Food systems transformation will also require the active participation, and in many cases, regulation, of food companies. The pursuit of short-term profitability has misdirected manufacturing and processing toward the use of unhealthy ingredients (e.g., palm oil, trans fats, excess sugar, and excess salt). The Commission has introduced a Code of Conduct on Responsible Food Business and Marketing

Practices that actors “between the farm and fork” can voluntarily commit to. However, the literature on such public–private partnerships suggests that in practice they struggle to make much impact. The Netherlands National Institute for Public Health and the Environment (RIVM), for example, found that an agreement between the Dutch government and industry on product reformulation toward lower salt, sugar, and fat levels (2014–2020) had only a minor effect (ter Borg et al. 2021). Similar findings have been reported for the English 2011 Public Health Responsibility Deal, which was criticized for its low ambition and lack of monitoring and sanctioning (Panjwani and Caraher 2014). At the same time, it should be noted that the evidence base about public-private partnerships in the field of nutrition is relatively limited, and their effectiveness is likely to be dependent on the broader governance configurations in which they are embedded (Fanzo et al. 2021). The evidence on the effectiveness of voluntary sustainability standards is also limited and context-specific (Marx et al. 2022). Political scientists have in this respect argued that the effectiveness of public–private agreements may be conditional on the presence of a “shadow of hierarchy,” i.e. a threat of more stringent government intervention in case of non-compliance (Börzel and Risse 2017).

13.3.5 Overcoming Consumer Reluctance to Change

Fatty, salty, sugary and “ultra-processed” food products feature highly in EU diets because they are designed to appeal but also because they are cheaper. Animal-source foods are also central to many aspects of European food culture. For example, many products protected by a geographical indication in the EU that indicates a high-quality product linked to a particular territory are meats and cheeses. EU member states have therefore been reluctant to go beyond general messages to eat these products in moderation (as reflected in national dietary guidelines) to more interventionist measures based on regulations or fiscal measures. Aligned with the demand that governments “should keep out of the bedroom” that accompanied the relaxation of sexual mores in the 1970s and 1980s, we now hear demands that governments should “keep out of the kitchen.”

Throughout history, however, food interventionism has been the rule rather than the exception. As Peter Scholliers pointed out, public food consumption has been as much the result of politics as from economy, culture and individual preferences (Scholliers 2021, p. 194). In the first half of the twentieth century, for example, European consumption patterns changed considerably, with a rebalancing of food groups. Meat, dairy, and fruit replaced the previously dominant wheat products and potatoes. This was the result of a rise in living standards, but also of targeted public interventions. During the First World War, food scarcity had become an urgent societal problem that demanded economic, political, and social

measures. In the years that followed, scientists discovered the link between diet deficiencies and pathology, especially in children, and urged governments to focus on food in public health initiatives (de Mûelenaere 2021). Additionally, new processed foods (e.g., sugar, milk) necessitated more a centralized safety and quality control system. In response, states became—as Josep L. Barona aptly described—“regulating, stabilizing, disciplining and civilizing” agents in the transformation of eating habits, and set out a strategy to make populations more healthy and more resilient in the face of war (Barona 2010, p. 17).

These measures explicitly focused on food consumption, safety, and quality. An alliance of scientists, food industries and policy makers developed nutritional standards and outlined a range of actions geared toward promoting certain foods (e.g., meat, dairy, and fruit), while warning against others. This was part of an international movement that emphasized nutrition as a matter of social and political importance, as described by The League of Nations’ Health Committee advisory commission on nutrition (Barona 2010). Along with social policies, governments provided tax relief, price control, food subsidies, family allowances, free seeds, and free school meals. In addition, educational programs, advertising, cook-books, articles in women’s magazines, and dietary propaganda directly targeted children and women. These measures, part of the emergence of the social welfare state, fundamentally altered food habits of Western middle-class populations. Food choices became increasingly influenced by what was considered nutritious instead of what provided the most energy (Veit 2013).

Today, the need for more sustainable food systems receives some support from consumers/citizens but survey results show that this is still relatively soft and focused strongly on health-related aspects such as the absence of pesticides (BEUC 2020; Eurobarometer 2020). Citizens support specific interventions (e.g., using public procurement, better labeling, incentivizing more sustainable practices among farmers and food companies) but there is little appetite for raising the price of unhealthy foods. Stronger interventionist measures are controversial because of their potential effects on income distribution and health inequalities. Lower-income households are already more likely to purchase foods of poorer nutritional value, whose prices may be lower than those of more nutritious foods. Thus, limiting the supply of such foods or raising their price through a food tax risks affecting disproportionately the poorer parts of populations, who already spend a greater proportion of their incomes on food purchases as compared to the expenditure patterns of higher-income households. Governments with an eye to re-election are well aware of this. Consumer support for sustainability initiatives may be a fair-weather phenomenon. With food price inflation gathering pace in the EU in 2021 and 2022 as a result of high energy prices and the conflict in Ukraine, EU member state governments are even more reluctant to push initiatives that will lead to an increase in the price of food.

13.3.6 The Need to Reflect the External Dimension

A significant argument against change, particularly when it affects production, is that reducing production inside the EU will simply shift pollution and emissions and low standards to third countries who get to increase their exports to make up for the gap in supply. This effect is referred to as leakage. In the case of GHG emissions leakage, because EU production is on average less emissions-intensive per kg of product than production elsewhere, there is even the possibility that reducing emissions from agriculture in the EU could increase global emissions if production increases outside the EU. Another example might be where more extensive production in the EU leads to increased imports, for example, of water-intensive fruit and vegetable production from water-stressed countries (Scheelbeek et al. 2020) or of animal feed which might lead to increased deforestation in exporting countries. In a food transitions framework, shifts in diets should take place simultaneously with the shifts in production to minimize such leakages. The impact on global sustainability also depends on whether it is the EU alone that is making the transition or whether there is a generalized effort to raise standards across many countries. Finally, complementary instruments such as trade policy and development assistance can be used to minimize the extent of these leakage effects. In practice, these necessary conditions are still largely absent, so these leakage effects and negative external impacts in third countries are an important barrier to change.

13.3.7 Changing Market Conditions and the War in Ukraine

Previous work on the political economy of food and agricultural policy reform has emphasized the role of changes in commodity prices in influencing the trajectory of reform. For example, Swinnen (2015) explores the impact of the 2008–2009 price spike on the outcome of the negotiations for a new CAP for the 2014–2020 programming period. We also observe how the dramatic changes in agricultural output and input prices in the course of 2022 which have followed the Russian invasion of Ukraine in February 2022, also reflected in food price inflation, have altered the discourse around the food system transition in the EU. The situation on world markets in 2008–2009 and 2022–2023 cannot be directly compared, but the spike in commodity prices in both instances led to greater prominence for discourses that emphasized the need to ensure and safeguard food security and not to risk or undermine food production. As the availability of food supplies for EU consumers has not been directly at risk following the Ukraine war, the food security argument has been framed in terms of the need to maintain EU production in order to make up for the shortfall in Black Sea supplies on world markets and thus to dampen the impact of food price increases particularly for importing low-income developing countries.

Specifically, the Commission permitted member states to derogate from the conditions for eligibility for the greening payment by allowing farmers to cultivate fallow land declared to meet the conditions for crop diversification or ecological focus areas in 2022. This derogation from the rules on crop rotation and maintenance of non-productive features on arable land was temporarily extended also to 2023 to encourage the production of cereals “to help increase food security worldwide.”

Despite these temporary deviations, the Commission has underlined that “The current crisis lays bare the dependency of the EU food system on imported inputs, such as fossil fuels, fertilizer, feed and raw materials, confirming the necessity of a fundamental reorientation of EU agriculture and EU food systems toward sustainability, in line with the Green Deal and the reformed CAP...” (European Commission 2022c). However, we have already noted the softening of political support for pursuing the agricultural leg of the Farm to Fork strategy as a result of the changed market outlook. This particularly reflects the very significant food price inflation (on average, food prices increased by 18 percent in the EU in the year to November 2022) which, in conjunction with much higher energy prices, has put severe pressure on the spending power particularly of low-income households. Governments have been reluctant to contemplate measures that might put further upward pressure on food prices. This hesitation is reflected in attempts to slow down the passage of legislative proposals designed to implement specific targets in the F2F strategy. For example, the Commission proposed a revised Sustainable Use of Pesticides Regulation in June 2022 that would set national targets for the reduction in pesticide use (European Commission 2022b) accompanied by an impact assessment. Both member states in the Council and the AGRI Committee of the European Parliament have called for an additional impact assessment taking into account the impact of the war in Ukraine on global food security, which would delay further consideration of this proposal. We see clearly that the outlook for commodity prices, and the implications for both farm income and food price inflation, can act as a brake on pursuing the food system transition. At the same time, the food system vulnerabilities revealed by the Ukraine war also help to make the case why the transition to a more circular, less input-intensive farming system is even more urgent as a way to improve food system resilience in addition to limiting its negative impacts on climate, biodiversity and the natural environment.

13.4 Opportunities to Catalyze the Transition

The European Commission put forward its Green Deal proposal in December 2019 and its Farm to Fork strategy in May 2020. Both the agricultural Council of Ministers and the European Parliament have expressed support for the general

direction of travel. However, this chapter emphasizes the dissonance between the dramatic change represented by the rhetorical commitment to a healthier and more sustainable food system in the Green Deal, and the significant obstacles that emerge when specific steps toward that objective are proposed and which mean that only modest progress has been made to date. This is of course not unique to the agri-food policy area. Given the urgent need for food system transformation, accelerating progress requires an understanding of the political economy obstacles to change and how they can be addressed.

As noted above, the biggest obstacle to change is the tension between the economic and environmental dimensions of sustainability, reflected both in the concerns of the farming community over the potential negative impact on their income, and the concerns of consumers and governments around higher food prices. The fact that agricultural output may drop as the sustainability requirements demanded of agriculture are increased reflects the standard response developed in the theory of negative externalities in economics. In the longer term, the changed incentives for innovation will help to foster disruptive innovation, including the scaling up and cost reductions of novel, possibly more sustainable, modes of production (agroecological practices, microbial fermentation, *in vitro* meat, etc.). However, requiring producers to internalize the costs that until now they have been able to pass on to society at large—the polluter pays principle, which incidentally is enshrined in the EU Treaties—will in the short-term lead to a reduction in production. EU farmers already receive a lot of public support, but many farmers still have relatively low household incomes. On equity grounds, EU governments may feel it is unfair to push the polluter pays principle. Are there other sources of revenue to ease the transition? How should such payments be designed to facilitate transition and not just maintain the status quo?

Several mechanisms suggest themselves. One potential route is to repurpose existing EU agricultural subsidies, shifting payments to farmers from simple income support to providing positive incentives for change. As noted, the 2021 CAP reform represents a modest step in that direction, but the size of that step can only be assessed when the national CAP strategic plans are fully evaluated. It is not costless for farmers, as tying payments to taking active steps to develop more sustainable farm businesses will reduce their value as income support. However, the Green Deal can create new income streams for farmers, e.g., through the production of industrial raw materials for the bio-economy, biomass or biogas for energy, or through payments for ecosystem services including carbon farming.

Improving resource efficiency (e.g., nitrogen use efficiency) and promoting a circular economy (thus valorizing waste streams) can also be a win-win situation both for farmers and the environment. Some EU member states that have imposed a carbon tax (e.g., Ireland) are using some of the proceeds of that tax to provide additional incentives to farmers to take climate action. To the extent that farmers have access to technical and management options that allow them to reduce

the adverse environmental impacts of their activities while maintaining production, the easier it is to manage the tension between economic and environmental sustainability. This implies that investment in research and innovation to enlarge the toolbox of environmentally friendly practices available to farmers should be urgently ramped up. Innovation is needed in nature-based solutions, data-driven farming, as well as more high-tech solutions based on molecular genetics, vertical farming, and alternative proteins.

From a consumer perspective, there are underexplored opportunities to integrate knowledge on mechanisms and pathways of successful dietary change in the past, which could be used to strengthen current and future behavior change interventions. While average European diets are far from any definition of a “sustainable and healthy diet,” at an individual or household level there are numerous examples of pathways where people have successfully shifted their dietary choices from conventional or average diets (typically unhealthy and unsustainable) to healthy and sustainable diets. Such positive dietary change patterns seem to have intensified over the COVID-19 pandemic (and associated severe social disruption), though unfortunately alongside several patterns of dietary change patterns associated with worsening diets. Studying pre- and peri-pandemic dietary change patterns and unraveling what determinants facilitated the shifts toward, and also the long-term adherence to, sustainable and healthy diets would likely yield pivotal insights from a consumer perspective that may prove crucial in future dietary change strategies. Supermarket panel or loyalty card data could, for example, be a helpful resource in such analysis.

Funding for the green transition cannot only come from the public sector. Consumers must also be prepared to pay a higher price for more sustainable production. This highlights two of the other political economy obstacles to change: the difficulty of recouping the higher costs of more sustainable production in a trading economy where firms and consumers continue to have access to lower-cost imports; and the reluctance of governments to contemplate higher food prices, not least because of the difficulties they create for low-income households. With food bills rising due to the knock-on effects of the war in Ukraine, governments are even more reluctant to contemplate measures that would add fuel to the flames.

Given the unique nature of multi-level governance in the EU identified at the outset of this chapter, there is also a need to ensure coherence between the different levels of governance, particularly between the EU and member states given their very different competences. As regards agricultural policy, the CAP agreed for the 2023–2027 programming period introduces a new governance model with a very different allocation of responsibilities between the EU and member states. Under the new performance-based delivery model, member states are responsible for setting targets for several economic, social, and environmental objectives in their national strategic plans, choosing the interventions to meet these targets

and allocating EU and national funding appropriately. An indicator-based performance monitoring framework allows the European Commission to follow how EU funding is being used. But early evaluations of the draft strategic plans of member states indicate that it is difficult to assess the real level of environmental ambition and the extent to which the plans will accelerate the transition to more sustainable agricultural systems. The need for improved vertical coordination is even clearer on the food policy side, where the EU's competences in the area of sustainability are more limited and largely confined to some (limited) budgetary resources, setting standards, and regulating food labels while member states are responsible for interventions around public procurement, food environments, fiscal policy, and dietary guidelines and there is also a significant role for local actors (e.g., urban food councils). The Sustainable Food Systems Framework Law which the Commission will propose toward the end of 2023 (European Commission 2021c) will be crucial in enabling greater coordination across levels of government to achieve the Green Deal objectives.

Another area where greater coherence is required is the need to complement domestic actions to improve sustainability with a strengthened external dimension including trade policy measures. The EU has proposed a carbon border adjustment mechanism to apply to six industrial commodities (including fertilizer, but not food) to avoid carbon leakage due to the potential loss of competitiveness in those sectors. In the case of agri-food, it is considering the use of "mirror clauses" that would require imported products to meet the same sustainability standards as required of EU producers. These latter proposals are still at a very early stage of consideration and much remains to be decided on the possible coverage of these mirror arrangements and how they might operate in practice.

The mantra when it comes to food pricing is that the most sustainable food must ultimately become the most affordable. There may be some possibilities to subsidize the consumption of more healthy and sustainable foods, e.g., by reducing the value-added tax (VAT) rate on fruits and vegetables to zero, but most of the heavy lifting will be done by making less healthy foods and those with heavy environmental footprints more expensive. Complementary targeted income support policies will be needed to offset the regressive impacts on poorer households who both spend a higher share of their household income on food, and also consume a higher share of unhealthy foods within that basket. Modeling studies suggest that the tax rates required to achieve the consumption shifts necessary to replicate desired dietary intakes, if used alone, can be very high (Latka et al. 2021). Complementary efforts to change consumer preferences through information campaigns and labeling, the use of public procurement, and mandatory regulation of food manufacturing to reduce the use of undesirable ingredients and to control marketing strategies, will also be required. Research and development into alternative proteins to enhance their attractiveness and reduce their cost must also be continued.

The debate in the EU on policy responses to the consequences of the war in Ukraine for food, energy, and fertilizer prices has highlighted the tension between these several objectives but also the fragility of the political consensus supporting the green transition in agriculture as laid out in the F2F strategy. Despite no evidence that food security at the EU level is threatened (it is of course a different matter for low-income households where high food prices will exacerbate existing situations of food insecurity), the EPP, the largest political group in the European Parliament, called on the Commission President to “refrain from tabling any new proposal that could undermine our ability to feed ourselves” and for the postponement of key legislative initiatives foreseen in the F2F strategy.³ The European Parliament adopted a resolution in which it supported the temporary planting of fallow land intended to safeguard biodiversity with protein crops, while also stating that the F2F target to allocate 10 percent of agricultural land to non-productive features to maintain biodiversity cannot be implemented in current market circumstances (European Parliament 2022).

Political leadership is required to avoid the unraveling of the plans for food system transformation in the EU. While the Commission has provided this leadership in formulating the Green Deal package, national governments more exposed to the vagaries of electoral fortune are often more hesitant. We commented earlier on the lack of a common understanding of what a sustainable food system means and how it can be interpreted very differently in the light of different value systems. We argue that the politicization of future food system directions along these different value systems is inherent, or even a precondition, to a transition process. Whereas EU food policymaking has for a long time been low in salience and left to a closed policy community, the recent emergence of new players and views marks its rise to the top of EU political agendas. Channeling these different views through democratic fora is likely to increase the quality and legitimacy of the Green Deal’s food system ambitions. It could be valuable to make greater use of deliberate institutions such as food policy councils or citizens’ assemblies for this purpose. At the same time, it will be a central challenge to avoid the spread of disinformation causing “dialogues of the deaf” and an erosion of basic rules of the game, such as respecting scientific evidence and legal commitments.

References

- Augère-Granier. 2021. *Migrant Seasonal Workers in the European Agricultural Sector*. Brussels: European Parliamentary Research Service.
- Barona, J. 2010. *The Problem of Nutrition: Experimental Science, Public Health, and Economy in Europe, 1914-1945*. New York: P.I.E. Peter Lang.

³ <https://www.eppgroup.eu/newsroom/news/increase-european-food-production-now>.

- Barreiro-Hurle, J., M. Bogonos, M. Himics, J. Hristov, I. Pérez Domínguez, A. Sahoo, G. Salputra, F. Weiss, E. Baldoni, and C. Elleby. 2021a. *Modelling Environmental and Climate Ambition in the Agricultural Sector with the CAPRI Model*. Luxembourg: Publications Office of the European Union.
- Barreiro-Hurle, J., M. Bogonos, M. Himics, J. Hristov, I. Pérez-Domínguez, A. Sahoo, G. Salputra, F. Weiss, E. Baldoni, and C. Elleby. 2021b. "Modelling Transitions to Sustainable Food Systems: Are We Missing the Point?" *EuroChoices* 20 (3): 12–20. <https://doi.org/10.1111/1746-692X.12339>
- Beckman, J., M. Ivanic, J. Jelliffe, F. Baquedano, and S. Scott. 2020. *Economic and Food Security Impacts of Agricultural Input Reduction under the European Union Green Deal's Farm to Fork and Biodiversity Strategies*. Economic Brief Number 30. Washington, DC: United States Department of Agriculture Economic Research Service.
- BEUC. 2020. *One Bite at a Time: Consumers and the Transition to Sustainable Food Food: Analysis of a Survey of European Consumers on Attitudes towards Sustainable Food*. Brussels: BEUC The European Consumer Organisation.
- Bonnet, C., Z. Bouamra-Mechemache, and T. Corre. 2018. "An Environmental Tax towards More Sustainable Food: Empirical Evidence of the Consumption of Animal Products in France." *Ecological Economics* 147 (May): 48–61.
- ter Borg, S., M. Beukers, H. Brants, I. Milders, and E. Wilson-van den Hooven. 2021. *Het Geschatte Effect van Het Akkoord Verbetering Productsamenstelling Op de Dagelijkse Zout- En Suikerinname in Nederland*. Eindrapportage 2014–2020. Utrecht, the Netherlands: Rijksinstituut voor Volksgezondheid en Milieu (RIVM). <https://doi.org/10.21945/RIVM-2020-0173>
- Börzel, Tanja A., and Thomas Risse. 2017. "Public–Private Partnerships: Effective and Legitimate Tools of Transnational Governance?" In *Complex Sovereignty*, 195–216. Toronto: University of Toronto Press. <https://doi.org/10.3138/9781442684201-011>
- Bremmer, J., A. Gonzalez-Martinez, R. Jongeneel, H. Huiting, R. Stokkers, and M. Ruijs. 2021. *Impact Assessment of EC 2030 Green Deal Targets for Sustainable Crop Production*. Report 2021–150. Wageningen, the Netherlands: Wageningen Economic Research.
- Candel, J. 2020. "What's on the Menu? A Global Assessment of MUFPP Signatory Cities' Food Strategies." *Agroecology and Sustainable Food Systems* 44 (7): 919–946. <https://doi.org/10.1080/21683565.2019.1648357>
- Candel, J. 2022. "Current Impact Studies Are Unfit for Food System Transitions." *Paper under Review*.
- Candel, J., G. Breeman, S. Stiller, and C. Termeer. 2014. "Disentangling the Consensus Frame of Food Security: The Case of the EU Common Agricultural Policy Reform Debate." *Food Policy* 44: 47–58. <https://doi.org/10.1016/j.foodpol.2013.10.005>
- Candel, J., Sebastian Lakner, and G. Pe'er. 2021. "Europe's Reformed Agricultural Policy Disappoints." *Nature* 595 (7869): 650–650. <https://doi.org/10.1038/d41586-021-02047-y>
- Crippa, M., E. Solazzo, D. Guizzardi, F. Monforti-Ferrario, F.N. Tubiello, and A. Leip. 2021. "Food Systems Are Responsible for a Third of Global Anthropogenic GHG Emissions." *Nature Food* 2: 198–209. <https://doi.org/10.1038/s43016-021-00225-9>
- Daugbjerg, C., and P.H. Feindt. 2017. "Post-Exceptionalism in Public Policy: Transforming Food and Agricultural Policy." *Journal of European Public Policy* 24 (11): 1565–1584. <https://doi.org/10.1080/13501763.2017.1334081>

- de Mûelenaere, Nel. 2021. "Still Poor, Still Little, Still Hungry? The Diet and Health of Belgian Children after World War I." In Justin Nordstrom (ed.), *The Provisions of War: Expanding the Boundaries of Food and Conflict, 1840-1990*. University of Arkansas Press, 207-217.
- EEA (European Economic Area). 2019. *The European Environment—State and Outlook 2020*. Luxembourg: Publications Office of the European Union on behalf of the European Environment Agency.
- EEA. 2020. "Annual European Union Greenhouse Gas Inventory 1990-2018 and Inventory Report 2020." Copenhagen: European Environment Agency.
- Eurobarometer. 2020. *Making Our Food Fit for the Future—Citizens' Expectations*. Special Report 505. Brussels: European Commission.
- European Commission. 2018. *The REFIT Evaluation of the General Food Law (Regulation (EC) No 178/2002*. SWD(2018) 38. Brussels.
- European Commission. 2020. *Revision of the Sustainable Use of Pesticides Directive: Combined Evaluation Roadmap/Inception Impact Assessment*. Brussels: European Commission.
- European Commission. 2021a. *EU Agricultural Outlook for Markets and Income 2021–2031*. Brussels: European Commission Directorate-General for Agriculture and Rural Development.
- European Commission. 2021b. *Sustainable Food System Framework Initiative—Inception Impact Assessment*. Brussels: European Commission.
- European Commission. 2022a. *CAP Strategic Plans and Commission Observations: Summary Overview for 19 Member States*. Brussels: European Commission.
- European Commission. 2022b. *Proposal for a Regulation of the European Parliament and of the Council on the Sustainable Use of Plant Protection Products and Amending Regulation (EU) 2021/2115*. COM(2022) 305. Brussels: European Commission.
- European Commission. 2022c. *Safeguarding Food Security and Reinforcing the Resilience of Food Systems*. COM(2022) 133. Brussels: European Commission.
- European Parliament. 2022. *Resolution of 24 March 2022 on the Need for an Urgent EU Action Plan to Ensure Food Security inside and Outside the EU in Light of the Russian Invasion of Ukraine (2022/2593(RSP))*. Brussels: European Parliament.
- Farm Europe. 2022. "The Farm to Fork: In Need of a New Political Consensus." *Farm-Europe Blog*, April 11, 2022. <https://www.farm-europe.eu/news/the-farm-to-fork-in-need-of-a-new-political-consensus/>
- Fanzo, J., Y. Ribhi Shawar, T. Shyam, S. Das, and J. Shiffman. 2021. "Challenges to Establish Effective Public-Private Partnerships to Address Malnutrition in All Its Forms." *International Journal of Health Policy and Management* 10 (Special Issue on Political Economy of Food Systems): 934–945. <https://doi.org/10.34172/ijhpm.2020.262>
- Feindt, P.H. 2010. "Policy-Learning and Environmental Policy Integration in the Common Agricultural Policy, 1973–2003." *Public Administration* 88 (2): 296–314.
- GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. 2018. "Global, Regional, and National Incidence, Prevalence, and Years Lived with Disability for 354 Diseases and Injuries for 195 Countries and Territories, 1990–2017: A Systematic Analysis for the Global Burden of Disease Study 2017." *The Lancet* 392 (10159): 1789–1858. [https://doi.org/10.1016/S0140-6736\(18\)32279-7](https://doi.org/10.1016/S0140-6736(18)32279-7)
- Henning, C., P. Witzke, L. Panknin, and M. Grunenberg. 2021. *Economic and Environmental Impacts of the Green Deal on the Agricultural Economy: A Simulation Study of the Impact of the F2F-Strategy on Production, Trade, Welfare and the Environment*

- Based on the CAPRI-Model - English Summary.* Kiel and Bonn, Germany: Institut für Agrarökonomie und Eurocare.
- Jackson, P., M.G. Rivera Ferre, J. Candel, A. Davies, C. Derani, H. de Vries, V. Dragović-Uzelac, et al. 2021. "Food as a Commodity, Human Right or Common Good." *Nature Food* 2 (3): 132–134. <https://doi.org/10.1038/s43016-021-00245-5>
- Jensen, J. D., and S. Smed. 2018. "State-of-the-Art for Food Taxes to Promote Public Health." *Proceedings of the Nutrition Society* 77 (2): 100–105. <https://doi.org/10.1017/S0029665117004050>
- Lähteenmäki-Uutela, A., M. Rahikainen, A. Lonkila, and B. Yang. 2021. "Alternative Proteins and EU Food Law." *Food Control* 130: 108336. <https://doi.org/10.1016/j.foodcont.2021.108336>
- Latka, C., M. Kuiper, S. Frank, T. Heckeley, P. Havlik, H-P. Witzke, A. Leip, et al. 2021. "Paying the Price for Environmentally Sustainable and Healthy EU Diets." *Global Food Security* 28: 100437. <https://doi.org/10.1016/j.gfs.2020.100437>
- von der Leyen, U. 2019. "Opening Statement in the European Parliament Plenary Session by Ursula von Der Leyen, Candidate for President of the European Commission." European Parliament, July 16. https://ec.europa.eu/commission/presscorner/detail/pt/speech_19_4230
- Marx, A., C. Depoorter, and R. Vanhaecht. 2022. "Voluntary Sustainability Standards: State of the Art and Future Research." *Standards* 2 (1): 14–31. <https://doi.org/10.3390/standards2010002>
- Matthews, A. 2013. "Greening Agricultural Payments in the EU's Common Agricultural Policy." *Bio-Based and Applied Economics* 2 (1): 1–27.
- Matthews, A. 2021. "Can the New CAP Help EU Agriculture to Meet the Targets in the European Green Deal?" *Journal of the European Court of Auditors* 2: 13–19.
- Panjwani, Clare, and Martin Caraher. 2014. "The Public Health Responsibility Deal: Brokering a Deal for Public Health, but on Whose Terms?" *Health Policy (Amsterdam, Netherlands)* 114 (2–3): 163–173. <https://doi.org/10.1016/j.healthpol.2013.11.002>
- Revoredo-Giha, C., N. Chalmers, and F. Akaichi. 2018. "Simulating the Impact of Carbon Taxes on Greenhouse Gas Emission and Nutrition in the UK." *Sustainability* 10 (1): 134. <https://doi.org/10.3390/su10010134>
- Schebesta, Hanna, and Jeroen J. L. Candel. 2020. "Game-Changing Potential of the EU's Farm to Fork Strategy." *Nature Food* 1 (10): 586–588. <https://doi.org/10.1038/s43016-020-00166-9>
- Scheelbeek, Pauline, Rosemary Green, Keren Papier, Anika Knuppel, Carmelia Alae-Carew, Angela Balkwill, Timothy J. Key, Valerie Beral, and Alan D. Dangour. 2020. "Health Impacts and Environmental Footprints of Diets that Meet the Eatwell Guide Recommendations: Analyses of Multiple UK Studies." *BMJ Open* 10 (8): e037554.
- Scholliers P. 2021 *Brood. Een Geschiedenis van Bakkers en Hun Brood*. Antwerp, Belgium: Uitgeverij Vrijdag.
- Skogstad, Grace. 1998. "Ideas, Paradigms and Institutions: Agricultural Exceptionalism in the European Union and the United States." *Governance* 11 (4): 463–490. <https://doi.org/10.1111/0952-1895.00082>
- Swinnen, J., ed. 2008. *The Perfect Storm: The Political Economy of the Fischler Reforms of the Common Agricultural Policy*. Brussels: Centre for European Policy Studies.
- Swinnen, J., ed. 2015. *The Political Economy of the 2014-2020 Common Agricultural Policy: An Imperfect Storm*. London: Rowman & Littlefield International, Ltd.

- Swinnen, J., 2018. "Policy Reform in History: Europe, the USA, and China." In *The Political Economy of Agricultural and Food Policies*, Chapter 7. New York: Palgrave Macmillan.
- Veit H. 2013. *Modern Food, Moral Food: Self-Control, Science, and the Rise of Modern American Eating in the Early Twentieth Century*. Durham: The University of North Carolina Press.
- Wesseler, Justus. 2022. "The EU's Farm-to-Fork Strategy: An Assessment from the Perspective of Agricultural Economics." *Applied Economic Perspectives and Policy* 44 (4): 1826–1843. <https://doi.org/10.1002/aepp.13239>