BRISTOL SHORTS RESEARCH

FEEDING PEOPLE IN A CRISIS

The UK Food System and the COVID-19 Pandemic

MICHAEL WINTER, STEVEN GUILBERT, TIMOTHY WILKINSON, MATT LOBLEY AND CATHERINE BROOMFIELD

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ONE

Introduction

Cast your mind back to April 2020, at the height of the first wave of the pandemic, and remember those TV images of empty supermarket shelves. Some commentators even called for food rationing and a 'dig for victory' reminiscent of the Second World War. Bring to mind some of the dire media warnings that supermarkets might not cope in the weeks to follow. Or the concerns that the closure of restaurants and other food outlets would decimate our high streets. Or the fears that food processing might grind to a halt as a result of labour shortages due to high rates of COVID-19. Amidst the gloom, even panic, there were also those who saw the opportunity for a new food system to emerge with local shorter supply chains and an emphasis on justice rather than profit.

Fast forward just three months to the summer of 2020, and as lockdown eased it was clear that many of the dire warnings made in March and April had not materialized. Some commentators began to argue that the food supply chain had demonstrated a high degree of resilience. A BBC Two documentary called *Keeping Britain Fed*, broadcast in early July 2020, was a paean of praise for the supermarkets and the so-called just-in-time (JIT) system. Workers in retail stores, distribution centres and drivers of delivery vans were lauded for their dedication and hard work. The praise extended to factories that had adapted their production lines – a sausage manufacturer in Northern Ireland, a flour miller in the north of England – and again workers were praised for their efforts on behalf of the nation. Of course, good news in some businesses may well be the

mirror image of bad news elsewhere: home-made toad-in-the-hole benefitting the flour and sausage manufacturers at the expense of McDonald's burgers or KFC chicken.

Not all commentators followed the 'good news' line, however. Just a week earlier than the screening of *Keeping Britain Fed*, Ellie Simmonds of the consumers' organization Which? argued that 'the fragility of our food and drink supply chains has been laid bare thanks to the coronavirus pandemic'. Our food supply chains, she claimed, were shown by the pandemic to be 'vulnerable to even slight fluctuations in supply and demand', and she referred to 30 food and drink bodies warning that COVID-19 had exposed 'inherent weaknesses' in the UK food supply system (Simmonds, 2020). A team from the University of York argued that JIT efficiency 'paradoxically made supply chains more vulnerable to disruptions' (Garnett et al, 2020: 315). Why? Because, retailers had over many years, in the name of efficiency, reduced the number of suppliers for many products thereby increasing their dependence on particular sources for specific commodities. The fear in the early days of the pandemic was that if just one of these sources – a particular factory, for instance – went down because of COVID-19, then the effects could be rapid and dramatic. Such perspectives were published in the prestigious journal *Nature Food* so can we assume that it carries more weight than contrasting views in more journalistic outlets? Probably not. Also writing in *Nature Food*, another academic team scorned commentators who suggested that the food system was 'dysfunctional, non-resilient, or delocalised to a perilous extent' for overlooking 'the benefits of contemporary supply chains'. Rather than reveal a broken system, what the COVID-19 crisis was showing, they suggested, 'was that the food system in the UK has remarkable adaptive capacity' (Moran et al, 2020: 242).

So what do we make of two such contrasting story lines? Is it possible that both are true? As we will see in this book, there were indeed remarkably few food shortages in those critical weeks of April and May 2020, nor indeed subsequently. The

system may have creaked from time to time, but hard work by delivery drivers, warehouse staff, factory workers and, of course, logistics experts, meant there were few substantial shortages. This was all the more remarkable given the very different pattern of demand for food that arose from the sudden closing down of the hospitality sector. But some underlying fragilities and vulnerabilities did become apparent alongside the logistical triumphs of the supermarkets, particularly with regard to the poorest and most vulnerable in society. So fundamental questions, already current before the pandemic, were brought into further sharp relief by lockdown – how fair and equitable is our food system for both food producers and consumers? And to what extent is the food system contributing to the nation's health challenges around obesity and related diseases?

In April 2020, at the height of the initial concern over the impacts of COVID-19 on food supplies, we were fortunate enough to secure funding from the UK's Economic & Social Research Council (ESRC) to research these issues, focussing in particular on five commodity sectors: dairy, fish, flour, fresh fruit and vegetables, and meat.[1] We have not confined our attention in this book to these five sectors, but examples we have used tend to derive from our sectoral work, and we have not given so much attention to other foodstuffs such as eggs and sugar. One of our early tasks was to set up an Expert Panel of food sector specialists to advise us on a monthly basis as the pandemic unfolded. During the remainder of 2020 and most of 2021, we followed the twists and turns of the pandemic's impact on food, guided by our Expert Panel members, as well as analysing media coverage and the work of other academics. We also conducted our own surveys of food and farming businesses. Towards the end of our own research project, we were commissioned by the UK's Biotechnology & Biological Sciences Research Council (BBSRC) to conduct an overview of the findings of a dozen or so research projects on COVID-19 and food, and this proved an invaluable opportunity to look at the big picture of impacts across the UK (Guilbert et al, 2022).

This book derives from our own research and the overview work and sets out to answer three key questions about feeding people in a crisis.

- First, to what extent have we seen a success story for the UK food system as opposed to the exposure of fundamental flaws?
- Second, who have been the gainers and the losers during the crisis?
- And finally, have there been any lasting changes to the food system arising from the pandemic?

A food systems approach

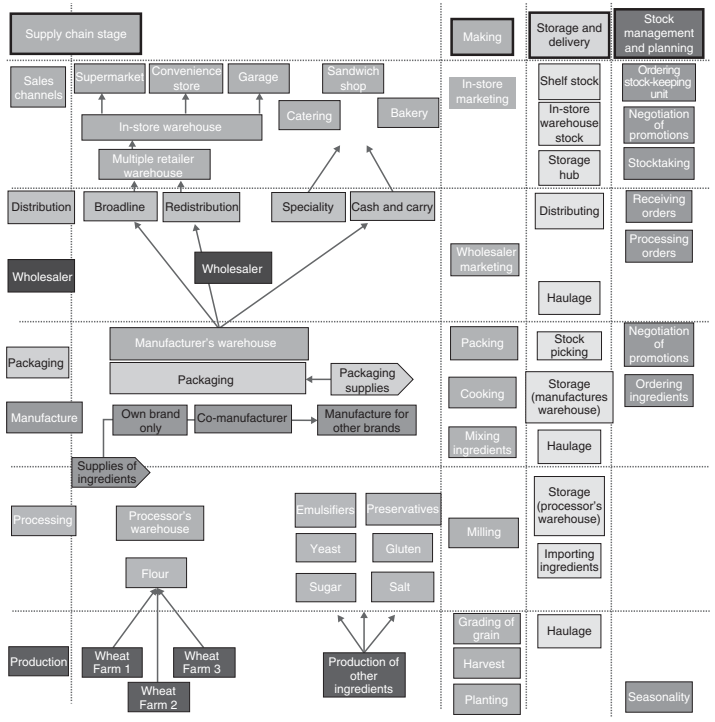
To answer any of these questions, we have to examine the food system itself, and this is no easy task. Very early in the project one of our Expert Panel members, in conversation, put it like this: 'the problem is that food system resilience is a black box, we don't fully understand why it works or know all the inter-dependencies that are critical for particular sectors'. And this was from someone steeped in working within the food system with many years of business and technical expertise to call upon. Hopefully, this book shines some light into the black box of the food system, even if much of it remains complex, and serves to increase our understanding of at least some of the food challenges and opportunities thrown up by COVID-19.

So, what do we mean by a food system? There are probably as many descriptions of food systems as there are academics deploying the term and, inevitably, differences derive from contrasting subject interests; economists emphasizing private sector markets, political scientists looking at the regulatory framework, natural scientists looking at flows of resources and so forth. Correspondingly, there are a range of metaphors used to characterize the food system, for example a *chain* implying a linearity from farm to fork or a *network* to denote a more circular series of interactions. In this book we have tried to keep things simple, and it is not our intention to add yet

another carefully crafted conceptualization to the long list of characterizations of food systems. But we do have to set out a few key principles. The first of these is that we prefer the rather more neutral term *system* to metaphors like chains or networks. The second is that in the course of our research we came to the view that there is no such thing as a *single* food system as each food product is different. At one level this is blindingly obvious; an apple might go from orchard to packing house to retailer to consumer in just three (relatively) simple steps. Admittedly, even that is more complicated than apples sold on the roadside direct from grower to consumer. Think instead of an apple pie, involving multiple products – apple, sugar, flour, butter, various additives and preservatives – arriving at a factory from various origins to be manufactured, packaged and marketed. The flour and sugar will have already undertaken factory processes of milling and refining, likewise the butter. So, at the absolute minimum, an apple pie involves the coming together of four quite distinct food commodity systems – apples, wheat, sugar and dairy. And if the eventual consumer decides to eat their apple pie with custard then a fifth major commodity comes into play, namely eggs.

Having decided that a diagrammatic representation of the entire food system was almost impossible without crass simplification, we attempted in our research to come up with a diagram of the supply system for individual products. Our attempt for the humble loaf of bread is shown in Figure 1.1. Complicated for sure, but even this is a simplification. Take the ingredients. We have assumed the main grain is wheat. It usually is, but there are other options: foodies might turn to rye or oats; and commercial millers increasingly have soya flour as part of the mix alongside wheat. So the soya supply system, which is global, of course, would need to be factored in for a full picture. The same applies to sugar and other added ingredients, most of which are not strictly necessary, as all we really need for bread are flour, yeast, water and salt. But there are reasons for making bread more complicated; some might be noble

Figure 1.1: Where does a loaf of bread come from?



concerns such as improving nutritional quality or extending shelf life to reduce waste but others may be more to do with securing sales and market share with products that appeal to consumers but are not necessarily healthy or environmentally sustainable. Which brings us to another inherent simplification in the diagrammatic approach – the supply system map for bread is all about flows of goods, physical goods moving between physical places. This physicality seems to end in the stomach of a consumer. But, of course, it neither ends there nor is food merely physical. That the stomach is not the final resting place for a food product is biologically obvious – its energy and

nutrients are taken into bodies to keep them alive and active or, if excess is consumed, to make bodies less active and less 'alive'. What is not needed is excreted so leading to another cyclical system, involving sewage and its uses and misuses, which need not detain us here. The risk of hospitalization and fatality with COVID-19 were increased for those with underlying health conditions, and many of these were diet-related being associated with obesity, including increased risk of cardiovascular disease (CVD), respiratory diseases, cancers and many other conditions, especially musculoskeletal.

Nor should food consumption be seen merely in terms of individuals. Our approach to the food system includes cultural and social elements, the social context and relationships in which eating take place, the meaning and significance we attach to food and what this confers on the meanings we attach to our own lives. Food is caught up with gender, identity, aesthetics, ethics, spirituality, social interaction and ceremony. As lockdown reduced the range of social contexts in which food could be consumed, so implications for mental health began to emerge.

One of the problems in both our research and in preparing this book is how to deal with all the other factors that have influenced the food system since the pandemic hit in early 2020. In particular, the interplay between COVID-19 and Brexit presents challenges that at times seem almost insurmountable, at least they are so if we wish to allocate causal 'blame'. But to understand *how* people were fed in a crisis, precise allocations of causality do not much matter. For example, the shortage of HGV drivers in 2021, which we discuss in more detail in Chapter Three, was clearly a consequence of challenges arising from both COVID-19 and Brexit. So in this book we concentrate on COVID-19, we refer to Brexit as and when it seems relevant and helpful to do so, but mostly our focus is on change and the response to change.

If Brexit provides one very obvious reason for why this story is not only about COVID-19, another is the way the crisis concentrated attention on competing visions of what a

new food system might look like. COVID-19 became a lens through which to examine afresh the perceived ills of the UK food system and to promote potential remedies. There is in the UK a well-established narrative that is highly critical of many aspects of the UK food system covering characteristics such as the dominance of a small number of large retailers, the high incidence of diet-related illness, our dependence on food imports, a lack of connection between food producers and consumers, and unsustainable production methods in farming. Perhaps we should say *narratives* in the plural as there are many variations in emphasis. The first substantive chapter of this book, Chapter Two, takes an overview of the UK food system before the crisis, setting out the dominance of a small number of big retailers, the nature of our food culture and the emphasis we have given as a nation to ready meals, eating out, and snacking out, alongside the demise of home cooking. We also consider our place in a global system and particularly the role and significance of international trade.

While our initial research focussed on five broad commodity sectors, few people think of food like this. Commodity brokers might, but most of us as consumers think of meals, not foodstuffs; we think of where we eat, what we eat and with whom we eat. We might also lift our heads above our own narrow concerns and reflect on the wider context of what other people eat and so be drawn to issues of food justice, or to the players in the food chain and issues around the food workforce. We might agonize over the plusses and minuses of supermarket dominance or whether or not farmers get a fair deal. As a result we have organized the remainder of the book around five themes. In Chapter Three, we put the supermarkets under the spotlight. Essentially, we ask what worked and what didn't? Were shortages, and there were some empty shelves at times, a result of so-called panic buying, supply issues further up the food chain or the retailers' own logistical issues? We answer such questions with examples, such as the flour shortage. And

we look at the decisions taken by retailers on what to stock and how the JIT system was adapted. Researchers need to be honest and here is the time to admit that we found it hard, nigh on impossible in fact, to engage the big supermarkets directly in our research. We attempted without success to secure their representation on our Expert Panel. Therefore, we are dependent in this chapter largely on media accounts and on readily available published material in the trade press or on specialist websites. However, we did have some Panel members from food processing and related businesses with direct insights into supermarkets based on personal experience which helped us enormously.[2]

We follow our discussion of supermarkets with chapters on the remaining four themes: (1) the alternatives to supermarkets, (2) the COVID-19-induced decline in restaurants, cafes, pubs and fast food outlets, (3) issues of health and justice, and (4) the consequences of the pandemic for primary producers, farmers and fishers. We conclude the book in Chapter Eight, by turning to the future. Coming to the end of the information gathering for our research in the summer of 2021, we had no idea how dramatically the food debate would shift in the spring of 2022. This, of course, was not a result of a further twist in the unfolding story of the pandemic but a consequence of the Russian invasion of Ukraine. It would have been a major task to re-shape the book to reflect these cataclysmic events, and, in any case, the story of the pandemic's impact on food deserves to be told. Moreover, there are other big issues relevant to the resilience of our food system that are not covered at length in this book, such as the climate change and biodiversity emergencies. Boundaries have to be drawn in any writing endeavour. But we cannot ignore the global changes and uncertainties posed by both climate change and the Ukrainian conflict, so in this final chapter we broaden our scope to consider the British food system in the global context and acknowledging the multiple challenges facing domestic and global food provisioning.

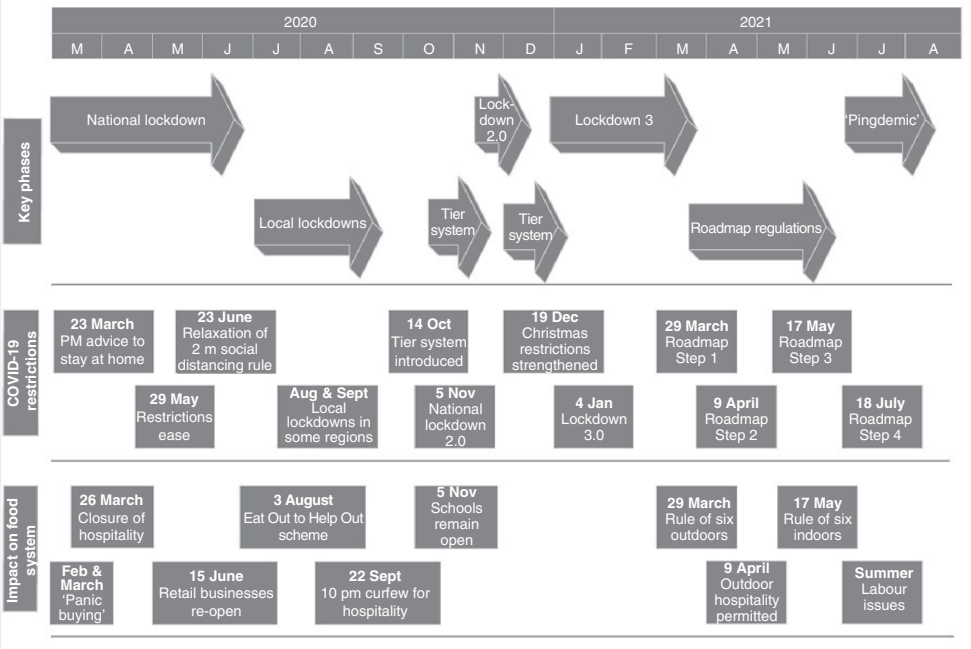
The pandemic as a series of episodes

'It's all a bit of a blur' is a not uncommon verdict on the weeks and months of the pandemic particularly the early lockdown period. For many people, though certainly not all given the importance of essential workers, the segmentation of our lives, the differences that give a structure to the everyday, were lost. No longer the daily commute, the school drop and pick-up, the weekend activities, the visits to friends and relatives. But the extreme restrictions of the first lockdown were relatively short lived. We couldn't have a pub meal in April and May 2020 but by August were positively encouraged to do so, but if we ventured out, and not everyone was comfortable doing so, to take advantage of the Eat Out to Help Out scheme, things were not as they had been. COVID-19 restrictions meant wider spacing between tables, and there was no standing at the bar with drinks before the meal. More lockdown and restrictions were to come in the winter of 2020–21 as the COVID-19 case rate increased. 'Furlough' and 'lockdown' were new words in everyday parlance from early in the pandemic; others such as 'pingdemic' appeared later and were more short-lived. It was a crisis with different *episodes*, and we have to be aware of this as we unravel the story of food through these changes over time. Figure 1.2 sets out the key episodes for England both in terms of the restrictions as they waxed and waned, and some of the key challenges. Inevitably, this is a simplification, but the key periods we have identified will help navigation through some of the ebbs and flows of the storyline later in the book.

Conclusion

Finally in this introductory chapter, a word or two about what this book is *not* about. We are not campaigners, and this book does not join the long list of books and blogs advocating particular radical changes to the food system. We are certainly not complacent about many aspects of the contemporary food

Figure 1.2: Key events in the pandemic in England



system. We accept that the British diet is far from perfect for both health and environmental sustainability; that both farm production and food manufacture leave very considerable carbon and biodiversity footprints; that farmers and growers do not have the same power in the market place as some of the big retailers; and that how we choose to organize food provision in this country has implications across the globe. We are none of us neutral in these debates, and we do move to being just a little more prescriptive in the final chapter. But our main focus in the bulk of the book is to tell a story, with as much neutrality and accuracy as we can muster, about what happened to food in the pandemic. We know, of course, that others in this field of study may well offer different narratives and give emphasis to different evidence and outcomes. Ours is not the final word nor even the definitive word – we leave that to others to judge – but it is *our* word; or at least it is our interpretation of the many words we have heard and read during a research exercise largely based on listening to, and learning from, those much closer to the everyday world of food provisioning than academics can ever be.

TWO

The UK Food System

The food system is complex, so let's start with the admission that we have simplified as much as we dare without, we hope, straying into simplification. We recommend others' work for those who want a more detailed overview of the UK food system. There are many who have written on this topic, but if we have to single out, commend and recommend one person it is Tim Lang who has maintained a steady stream of books and articles over several decades in which he dissects the food system and advocates for food justice, a nutrition and health focus to food policy, and policy and market measures that will support economically and environmentally sustainable farming. In particular, take a look at his book *Feeding Britain* (Lang, 2020). The chapter also draws on a report one of us wrote a few years ago (Winter, 2018). An understanding of the food system requires engagement with a range of key issues and concerns, such as: 'the sustainability and stability of food production; resilience; economics; power relations of who influences the governance of food production, distribution and retail and how; inequalities of access; diet and how it relates to health; waste and environmental impacts of production' (Rivington et al, 2021: 2).

Our food system involves complex flows of food materials from farm to factory to warehouse to shop and thence to consumer; but not only the material of food but also packaging materials and sometimes additives that most people would classify as chemicals rather than food ingredients. And there are flows of energy too – the fossil fuels or renewables that

power modern agricultural systems alongside food processing and transport. And all these flows are facilitated by the lubricant of money. Futures markets (Martin and Clapp, 2015) and the deployment of a range of financial mechanisms dominate food trade, and they arguably have little to do directly with the physicality of transport or processing. As long ago as 1976, it was shown that a cargo of 25,000 tons of soya beans exported from the United States to Germany passed through the books of 27 traders, not physically but on paper, before it reached its destination for processing (Pinninger, 1987). In the USA, financial speculators' share of the trade in wheat futures markets increased from 12 per cent in the mid-1990s to 61 per cent in 2011 (Worthy, 2011).

Underlying all these physical and financial flows are people, for human labour and expertise are needed at every point in the system. Some of this labour is highly visible to consumers such as people working at check-out tills of supermarkets, delivering food to our door or waiting on us at a restaurant table. Others, such as farmers or fishers, have a reasonably high, if periodic, profile in the media either in the news as they lobby for their interests or in TV documentary or magazine shows such as *Countryfile* or *This Farming Life*. But there are many actors in the food system whose role has a much lower public profile: wholesalers and processors, food scientists and technicians, hygiene specialists, financiers and insurers, buyers and traders. And then there are the more vulnerable in the food sector due to low wages and poor working condition, often associated with migrant working. The UK imports not only food but food labour as well, with 30 per cent of workers in food manufacturing being European Union (EU) migrants in 2017, a figure that rises to 51 per cent in the seafood processing sector and 63 per cent in the meat processing sector (Seafish, no date). Moreover, overlying these private sector actors is the role of the Government, which interacts with the food system at multiple points and with many different government departments involved (see Parsons,

2020). Government agricultural support policies influence the profitability and production priorities of farmers. There are regulatory responsibilities at national and local government levels around food safety and hygiene, trade deals influencing imports and exports of food commodities, and fiscal policies that influence the investment decisions of food businesses. In addition, public health and environmental policies intersect with food production and consumption with varying levels of impact. However, as many commentators have lamented, there is no easily identifiable coherent food policy in the UK. As Tim Lang so pithily puts it: 'instead of coherence and consistency, the world of food policy suffers from cacophony: multiple voices all saying, "me, me, ours, ours", from diverse strands of food governance, let alone the public' (2020: 194).

Equally telling are the words of Henry Dimbleby. In 2019 he was invited by the Government to write a national food strategy, and he did so, with much consultation and public dialogue and a growing sense of anticipation within the world of food. Even COVID-19 itself did not massively slow the rate of progress and the full review, ambitious in scope and with numerous recommendations, was published in July 2021 (Dimbleby, 2021). The Government response, expected within six months, eventually was published as the Government Food Strategy in June 2022 (Defra, 2022a). Dimbleby was not impressed:

> [it is] not a strategy at all […] merely a handful of disparate policy ideas, many of them chosen because they are unlikely to raise much of a media storm. […] The government's 'strategy' is far too scant, fragmented and cautious to meet the scale of the problem. (Dimbleby and Lewis, 2023: 17)

We will turn again to policy and strategy in our final chapter. The remainder of this chapter looks into the UK food system by asking three main questions: where does our food come

from, what do we eat, where do we buy it? Then in a final section we highlight some of the underlying issues associated with our food system that cause anxiety and concern and have prompted the concerns of the likes of Lang and Dimbleby.

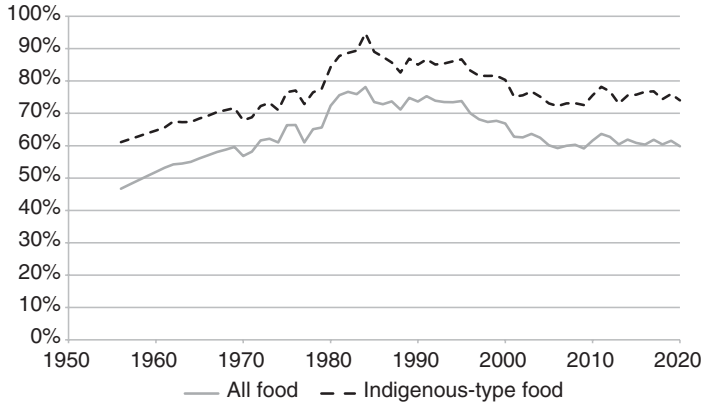
Where does our food come from?

The UK relies heavily on food imports with almost half (45 per cent) of what we consume coming from outside the UK. Much in recent history has come from the EU but, in total, we import food, feed and drink from more than 200 countries and territories (King and Wellesley, 2020). This reliance on food imports has consistently resulted in significant food trade deficits. In 2018, for example, it ran at £24 billion. The UK has long been a trading nation and was one of the first countries, in the nineteenth century, to build an economy with imported food as a cornerstone of economic and population growth. The Industrial Revolution gave rise to populous cities and conurbations not easily fed by the lands of Britain alone given the prevailing levels of technology and yields. Increasing quantities of grains were imported from North America from the mid-nineteenth century, and refrigeration allowed meat imports from the late nineteenth century. Of the great European powers in the late nineteenth century, Britain stood alone in not protecting its agriculture from overseas competition through tariffs. At the start of the nineteenth century, Britain, with a population of 16 million, was between 90 per cent and 100 per cent self-sufficient in food. By 1911, with 41 million, the figure had declined to around 40 per cent, but the nation's dependence on free trade and laissez-faire economic policies came to an abrupt end from the outset of the First World War (1914–18). With trade routes severely disrupted, domestic agricultural production assumed huge importance, but after the war domestic production again declined to not much more of a third of requirements in the 1930s. In the Second World War (1939–45), the nation again

was urged to 'dig for victory', with the state stepping in to take charge of markets for agricultural produce. In the 70-plus years that have followed, levels of self-sufficiency in UK food production have been dependent on the shifting balance between three key factors. The first of these is the aggregate level of demand for food, which is largely determined by the size of the population, although changing tastes are also important. Secondly, technological advances have dramatically increased crop yields and levels of animal production especially in the post-Second World War period in what has been described as the 'real agricultural revolution' (Brassley et al, 2021) ('real' in the sense that earlier periods of history, such as the eighteenth century, often described as an agricultural revolution, did not have anything like the pace of change in both levels of production and adoption of technology that was seen in the 1950s, 1960s and 1970s). Thirdly, the direction of government policy, broadly speaking, encouraged high levels of domestic agricultural production up until the 1990s, with support (and the level of self-sufficiency) peaking under the Common Agricultural Policy (CAP) in the early 1980s. Thereafter, policy gradually shifted to give more emphasis to agri-environmental policy. The changing values of the self-sufficiency ratio are shown in Figure 2.1.

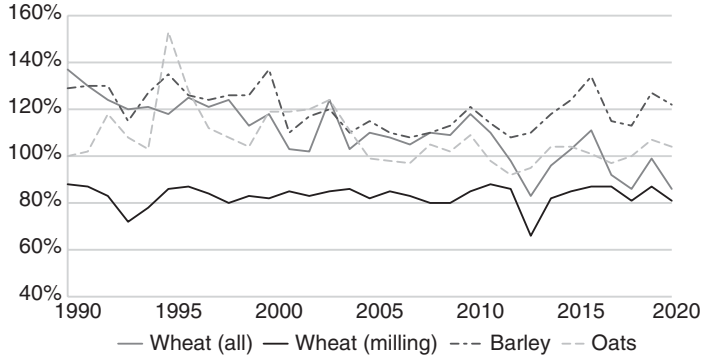
The ratio measures the *financial value* of home agricultural food production (including exports) as a share of total domestic food consumption, and it is calculated as the farm gate value of raw food production divided by the value of raw food for human consumption. In other words, it does not take into account the value added through processing and manufacture. Moreover, the picture is far more complicated than the crude percentage numbers might suggest in two other respects; first, there is considerable variation between products, and second, self-sufficiency ratios do not necessarily tell the full story of the extent of trade. As Figure 2.2 shows, variation between products is well illustrated by cereal crops, which are often lumped together as a single category. In fact, we import

Figure 2.1: UK self-sufficiency ratio in food, 1956–2020



Source: Defra (2021a: 147)

Figure 2.2: Domestic UK grain production as percentage of consumption, 1990–2020



Source: Defra (2021b: 98)

significant quantities of wheat but export some barley and a small quantity of oats; in 2020 the UK was 81 per cent self-sufficient in milling wheat, 122 per cent in barley and 104 per cent in oats (Defra, 2021a: 66–9).

According to the Observatory of Economic Complexity (OEC), in 2021, the UK was the tenth largest exporter of barley in the world, with the main destinations being the Netherlands, Portugal, Ireland, Belgium and Morocco (OEC, no date A). But it was also an importer of barley (albeit at just 13.8 per cent of the value of exports), with imports from Ireland, France, Lithuania, Denmark and the Netherlands (OEC, no date A). A similar story can be told for wheat with imports in 2020 worth $574 million but exports of $165 million. Despite being a clear net importer of wheat and being well short of being nationally self-sufficient, in 2021 the UK was the 34th largest exporter of wheat in the world with Ireland, Spain, Portugal and Burundi the four main recipients (OEC, no date C). A similar story can be told with meat, in 2020 the UK was 86 per cent self-sufficient in beef and veal but 110 per cent in mutton and lamb (Defra, 2021b: 82–86). And again, there are both imports and exports in each of these commodities, with the UK being the 20th largest exporter of bovine meat in the world despite being a net importer (OEC, no date B). Some countries, notably Ireland and the Netherlands, are simultaneously both import and export partners for the UK (Defra, 2021b and OEC, no date B).

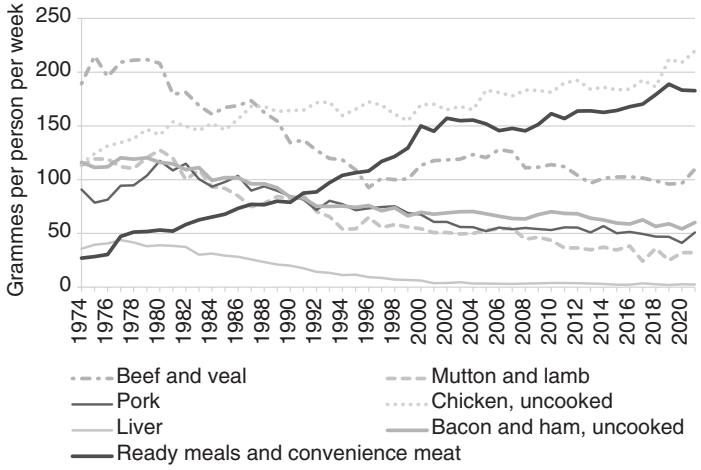
But why do we import and export in this way and, moreover, why don't we just grow more wheat but less barley and keep more beef cattle but fewer sheep? These are complex questions but important ones, if we are to understand some of the challenges posed by the pandemic and, indeed, continuing food system questions. First, it is very tempting when considering aggregated data about international trade to assume far too much national oversight and strategic thinking. True, trade is a big policy and political issue, as has been so evident in the years following Brexit, but while the terms of trade, the tariffs and quotas, and compliance with World Trade Organization (WTO) rules excite much comment and academic analysis (for examples, see Bickel, 2021 and Garcia, 2023), in reality it is not nations that trade but businesses. Markets function according to their own

logic primarily driven by the multitude of decisions by an array of businesses. Take barley – we seemingly grow more than we need so why do some barley farmers not grow wheat instead? Well, first barley isn't such a demanding crop to grow as wheat and is better suited to some of the cooler parts of the north and west of the UK. Moreover, even in the warmer south and east where wheat is well suited, barley is widely recommended as a crop to be grown in rotation with wheat, alongside other crops such as beans and oilseed rape. Rotations are critical in the battle against pests and in soil management. As a farmer, having a ready market for your product is more important than where it ends up, and maybe some farmers would be pleased to know their barley is exported to be used for human food, for use in soups in Morocco for example, rather than for animal feed in the UK.

It is equally tempting to assume that commodities such as 'wheat' or 'beef' are homogeneous, but, in fact, they are differentiated in many ways. On paper, the UK produces almost exactly the quantity of wheat used by UK flour millers each year, approximately 750,000 tonnes. But not all this wheat is of milling quality, and some is used for livestock feed instead. As UK Flour Millers explains: 'Canadian wheat is generally imported for bread-making purposes, because it has excellent characteristics and gluten strength which work well in a blend with UK wheats. French wheat is generally used in the manufacture of French style products where softer flours are required' (UK Flour Millers, no date A).

When it comes to meat, we immediately confront the issue of 'carcase balance', which lies at the heart of much of the import/export trade in meat. The British have become increasingly fastidious consumers of meat products. As Figure 2.3 shows, our consumption of offal such as liver, has declined to almost negligible proportions. British consumers tend to eat a limited range of meat cuts (for example, chops and steaks). UK demand for these popular cuts of meat is not met by domestic production alone so meat processing companies rely on imports to supplement domestic production (BMPA, no date).

Figure 2.3: The changing pattern of meat purchasing by UK households – selected products (grammes per person per week)



Source: Defra (2022b)

However, when producers process a carcase, in addition to these popular cuts of meat they also produce a range of cheaper cuts, offal and other by-products that don't have a ready market in the UK and need to be exported. These exports account for about 17 per cent of the UK meat processing industry's revenue (BMPA, no date), and a healthy export market for offal and other animal by-products, therefore, is absolutely vital for meat processors' profitability as it enables them to achieve what is known in the trade as 'carcase balance' (BMPA, no date). The carcase balance issue is important for all meat, even poultry, with chicken feet exported to Asian markets such as China, Thailand and Hong Kong (see, for example, IMTA, 2020).

But this is not simply a geographical question about what is grown or raised where. Although that is important, trade also covers issues such as manufacturing, processing and distribution. Indeed such is the complexity of the modern food system that we can be fooled by geography. For example,

the classic British dish of fish (usually cod) and chips conjures up images of fish caught in UK waters – fresh, local and sustainable, surely? Well not quite. We do catch cod in the North Sea, but most of these fish are exported, whereas most of the cod we eat, and we eat a great deal (115,000 tonnes a year), is imported (Smithers, 2019). The reason, according to the financial think tank Planet Tracker (2020), is that British waters are over-fished and therefore UK retailers seeking more sustainable and traceable fish look elsewhere so that they can satisfy consumer concerns on sustainability. The 'sustainable' cod and other white fish we buy in supermarkets are likely to be from Icelandic or North Atlantic waters, which have been more carefully managed than our own. By contrast, many fish and chip shops are probably less scrupulous with their sourcing. So, is that where North Sea cod end up? Yes, some do for sure. But it's more complicated than that because white fish caught in UK waters are often exported to China for filleting only to be reimported into the UK. Inevitably, some fish and chip shops are uncomfortable with this, and there is a move among them, as with most supermarkets, to seek Marine Stewardship Council (MSC) certification but only a minority of fish and chip shops have MSC status (Sustain, 2016).

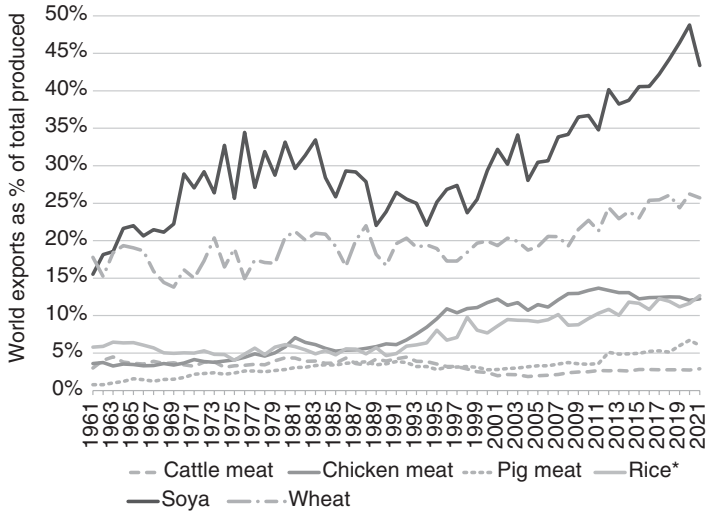
Looking more broadly at the seafood sector in the UK, we actually import most of what we eat, and export most of what we catch, and although surrounded by one of the most diverse and productive fisheries in the world, the UK is a net importer of seafood. For example, according to the Marine Management Organisation (MMO), in 2021 we imported 655,000 tonnes of seafood, with a value of £3.1 billion and exported 350,000 tonnes with a value of £1.6 billion (MMO, 2021). Consumption of seafood in the UK is dominated by imported cod, haddock, tuna, salmon and prawns. These 'big five' species account for about two-thirds of all seafood eaten. Reflecting UK consumer tastes, the top five seafood import countries in 2019 (by value) were: Iceland (£300.1 million), China (£285.6 million), Germany (£244.6 million), the

Faroe Islands (£239.5 million), and Vietnam (£233.1 million) (Seafish, 2021a).

For the most part, domestic appetite for the seafood that we catch and produce is fairly limited. The top five wild-caught landed species in the UK in 2019 were mackerel, herring, langoustine, haddock and crab (Marine Management Organisation, 2021). Most of these landings, however, were destined for export, as was the majority of salmon produced by the UK aquaculture sector (MMO, 2021). Export markets, therefore, are absolutely critical to many seafood producers and processors. Key export markets include China and the USA, but by far the single largest market is the EU, which, in 2021, accounted for 72 per cent of UK seafood export trade (Uberoi et al, 2022: 17).

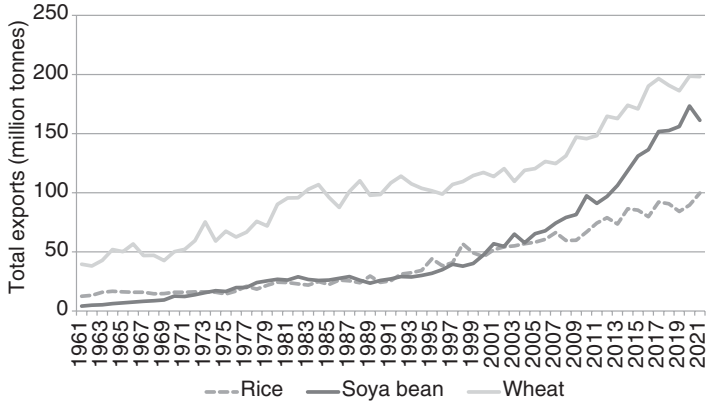
Trade is an important part of the UK's food system overall with the country being both a significant exporter as well as continuing its long tradition of being a major importer. In 2020, the destinations for UK exports were the Irish Republic (18.2 per cent), France (9.3 per cent), the USA (8.9 per cent) and the Netherlands (7.5 per cent); the most important countries of origin for the UK's food, animal feed and drink imports were the Netherlands (11 per cent), Germany (9.4 per cent), Irish Republic (9.2 per cent) and France (9.2 per cent) (Defra, 2021b). However, as shown in Figure 2.4, globally a relatively low proportion of commodities are traded, less than 5 per cent of cattle meat, for example. Nation states tend to produce significant proportions of their own food commodities. Given that commodities are both bulky and perishable, this is not entirely surprising. However, there are three important caveats to this general observation. First, there are exceptions to this, such as soya beans as in Figure 2.5, and oil palm, where the proportion traded rather than retained for domestic use has increased. Second, considering proportions alone hides a strong growth in the volume traded as shown in Figure 2.6. Third, while data on commodities like this are well known and often used, a more meaningful set of data would cover

Figure 2.4: World exports as a percentage of total world production – selected crops and livestock, 1961–2013



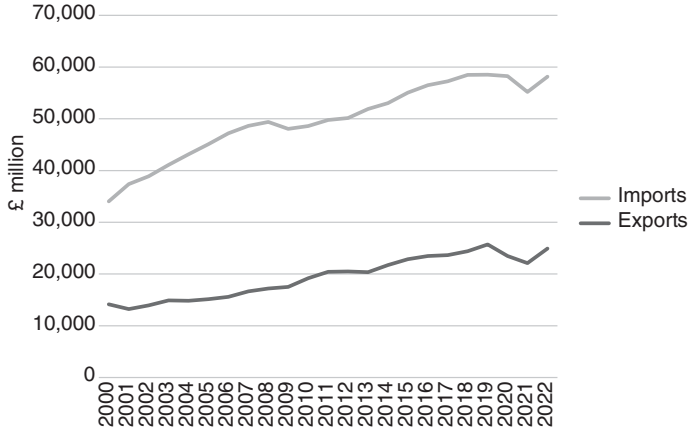
Note: * Rice export figures aggregated from six export items: rice, broken rice, milled rice, husked milled rice, paddy rice and rice fermented drinks.
Source: UN FAO (2023)

Figure 2.5: Total world exports – selected crops (thousand tonnes), 1961–2021



Source: UN FAO (2023)

Figure 2.6: UK trade in food, feed and drink, 2000–22



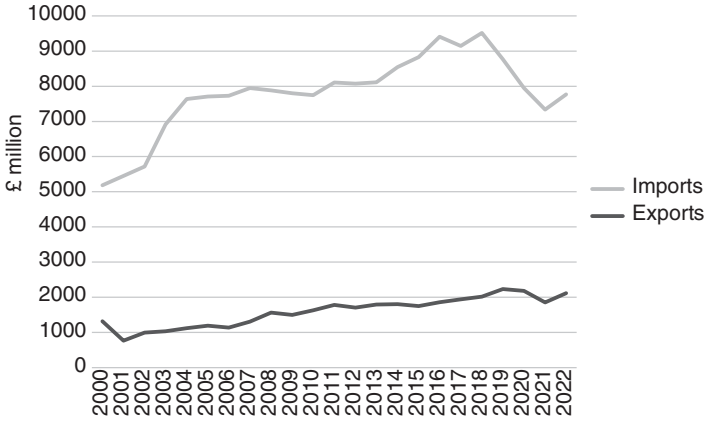
Note: At 2022 prices.
Source: Defra (2024)

food products. This, of course is very complicated to measure. Take the case of barley (globally, the fourth most widely grown cereal after maize, rice and wheat), where approximately 20 per cent of barley grown globally is exported, 53 per cent is used for animal feed and 15 per cent for processing, mostly into malt for alcoholic beverages (Newton et al, 2011). One such beverage, Scotch whisky, accounts for 18.2 per cent of UK food and drink exports (Defra, 2021a) (see Figure 2.6 for the food import/export balance in the UK and Figures 2.7 and 2.8 for other key UK trade balances).

What do we eat? The rise of processed food

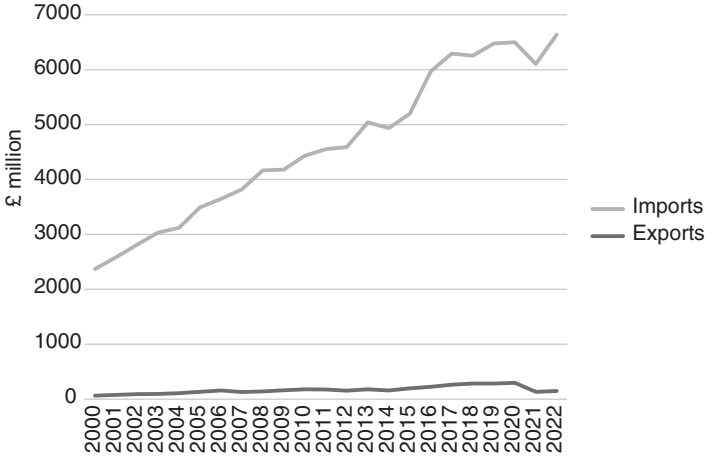
Although we tend to think of food as something that is grown on the land, only a minority of the items we consume come straight from the farm in a 'raw' form. Examples include some vegetables and fruit, but even for these many are packaged and in some cases chemicals are applied to maintain freshness or delay ripening. But the majority of our food is

Figure 2.7: UK trade in meat and meat products (blood, offal, sausages), 2000–22



Note: At 2022 prices.
Source: Defra (2024)

Figure 2.8: UK trade in fruit and vegetables, 2000–22



Source: Defra (2023c)

more thoroughly processed. Numerous food commodities, once primarily processed only through cooking and storage within a household context, are now processed long before they reach consumers' tables. Some manufacturing processes are industrialized versions of ancient practices, still using the same principles. The transformation of milk into butter, cheese, cream or yoghurt, are obvious examples, brewing and distilling of alcoholic drinks is another. Beyond that, there is the growth in production of convenience foods ranging from an early innovation – canned food – to the more recent production of meals ready to heat up or the trend towards prepared vegetables, such as bagged and washed salad, or ready to steam diced carrots, onions, sliced mushrooms and so forth. The processes required in these preparations may involve an industrialized version of traditional food preparation and cooking where conventional ingredients are taken, prepared and part-cooked. But industrialization can go much further than this, involving techniques such as product fractioning and fabricated foods. For example, use of the potato, once almost entirely used in cooking as a raw ingredients in homes and restaurants, has been revolutionized through the manufacture of potato-derived foods such as potato crisps (late nineteenth century), frozen 'ready to fry' French fries or chips (1950s), and the industrial modification of potatoes to isolate potato starch for use in processed foods and industrial products (1970s).

Even where the processing of some foods outside of the home, such as in the case of the milling of flour and baking of bread, is longstanding, the characteristics of milling and baking have changed dramatically over time, particularly with the introduction of roller mills, invented in Hungary in the 1860s, in place of millstones powered by wind, water or steam. Roller mills allowed the production of fine white 'patent' flour (Tann and Jones, 1996) alongside an extraordinary ramping up of the use of additives such as oxidizing agents, fat, emulsifiers, preservatives, soya and sugar (Temple, 2018).

In 2017 a fascinating study was published by a Brazilian research team comparing the diets of nineteen European countries, including the UK (Monteiro et al, 2018). The results revealed that the UK had the highest intake of ultra-processed foods of all 19 countries at a staggering 50.7 per cent of daily household food availability (kcal/person), in contrast to Portugal (10.2 per cent) and Italy (13.4 per cent) at the opposite end of the spectrum. Look at the contrasts discussed later between these two countries and the UK with Norway as well, occupying a middle point (Figure 2.9).

But what do these four food categories actually mean both in terms of the implications for the food supply system and for human health and well-being? This is complex and highly contested territory, but a useful rule of thumb is that ultra-processed food contains many ingredients not typically found in a domestic food cupboard. One of the most widely used categorizations of different food groups, as used, for example, in Figure 2.9, is the NOVA classification developed by Moubarac et al (2014), which has been used in 95 per cent of the studies of the consumption of highly processed foods and diet quality or health outcomes published between 2015 and 2019 (Braesco et al, 2022). These are their four food groups (for more detail, see Moubarac et al):

- Unprocessed and minimally processed foods – essentially fresh and raw foods that may have been washed, packed, frozen or in some instances, such as pulses and beans, dried. Products that have been pasteurized or fermented are also included in this category.
- Processed culinary ingredients – this covers processes such as milling or pulverizing to produce oils, fats, sugars and flours. Some additives may be used but are not essential.
- Processed food products – these are products that are produced through the addition of other food products, such as sugar or salt for purposes of both durability and taste. The group includes both factory-based canning and

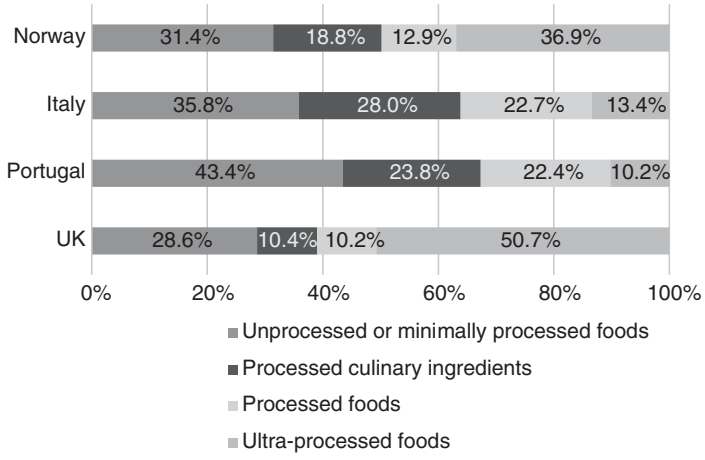
bottling operations but also processes that can be carried out in a home kitchen such as pickling. Some longstanding traditional foods, such as bacon and cheese, are part of this group.

- Ultra-processed food products – the foods in this group are derived from a wide variety of foods or food constituents used to produce preservatives, stabilizers, emulsifiers, solvents, sweeteners, colours, flavours and other additives with a wide range of industrial processing technologies involved. Many cakes, breads, pizzas and pasta now come into this category alongside chocolate, crisps and numerous snacks and drinks.

Where do we buy our food?

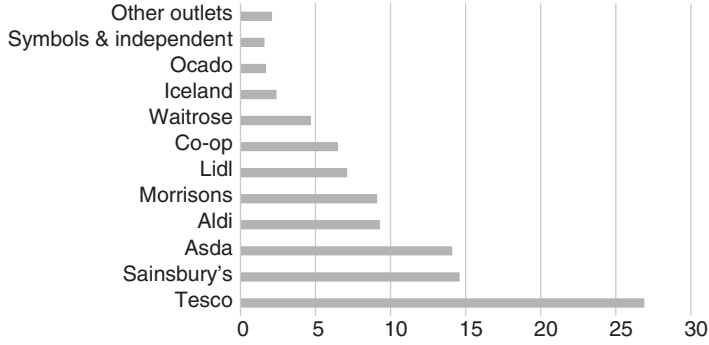
We turn now to the retail revolution, which more than matches the processing revolution in terms of scale and pace of change. In the UK, the large multiples more than doubled their share

Figure 2.9: Percentage distribution of total household food availability (kcal/person per day)



Source: Adapted from Monteiro et al (2018)

Figure 2.10: UK grocery market shares, 12 weeks ending on 4 September 2022



Source: Defra (2023b)

of total retail sales (food and non-food) from 22 per cent to 56 per cent between 1950 and 1982 (Wrigley, 1987). In 1950, independent grocers accounted for 78 per cent of UK grocery sales, but by 1984 their market share had tumbled to below 30 per cent (Wrigley, 1987), and by 2015 to less than 10 per cent (Defra, 2017). Meanwhile, the growth in market share by the multiple food retailers increased from 23 per cent in 1950 to 57 per cent in 1990 (Burt and Sparks, 1994) and to 93 per cent in 2015 (Defra, 2017). While the 'big three' (Tesco, Sainsbury's and Asda) have consistently led their competitors for over 50 years, the extent of their market share has increased markedly from 15 per cent of the market in 1970 peaking at 64 per cent in 2010 and falling back a little to 55.6 per cent in the most recently available figures (Figure 2.10). The most serious challenge 'from within' to the big three has come from Aldi and from Morrisons, which bought Safeway in 2004, Safeway having held 10.4 per cent of the market share in 2000 (Lobley et al, 2018).

However, recently there have been a spate of new trends. Globally and in the UK, supermarkets are losing market share to e-commerce, discounters, convenience stores, cash and carry,

Table 2.1: Forecast changes in UK food and grocery market share

	2019 value (£bn)	2020 value (£bn)	2022 value (£bn)	Change in value 2019–22 (%)
Hypermarkets	16.1	16.3	16.0	–0.3
Supermarkets	88.6	90.0	89.3	+0.8
Convenience	41.0	44.0	46.4	+5.4
Discount (e.g. Aldi & Lidl)	24.6	26.9	30.9	+25.4
Online	11.8	18.0	18.9	+59.2
Other retailers	9.8	9.8	9.6	–2.2

Source: IGD (2020)

and even through some return to traditional formats, as shown in Table 2.1 derived from forecasting analysis undertaken by the Institute of Grocery Distribution (IGD) in August 2020.

Wider issues, anxieties and concerns with the UK food system

What we eat is determined by social, cultural, economic and political as well as personal and behavioural drivers: 'diets reflect the material conditions of a particular society, and specific social and economic arrangements, as well as structures of political domination, regulation, and control' (Winson, 2013: 16). As citizens and as consumers we experience the prevailing food system as a source of both pleasure and, potentially, of anxiety. Warde (2016: 19) categorizes food-related anxieties as physical, social and moral, symbolic, economic, and ethico-political.

- **Physical** concern about the hazards that may be associated with modern, particularly processed or 'de-natured' foods, a concern fuelled by periodic food scares associated with contamination or adulteration;

- **Social and moral** concern that the changes in eating habits and practices are adversely affecting family life and social mores;
- **Symbolic** concern that the demise of a traditional menu and a troubling excess of choice symbolizes consumer confusion, even identity crisis;
- **Economic** concern about the power of retailers and value for money;
- **Ethico-political** concern about animal welfare, the natural environment, the implication of trade for poorer countries, etc.

To this we would add an additional concern for **provenance** through concern for localism and/or supporting the national economy (Winter, 2003). As a response to all these concerns, an enormous range of campaigning movements and political ideas related to food have emerged. There are campaigning bodies that focus on the production standards of farmers looking at both safety and environmental aspects, advocating a bewildering range of farming methods, organic, integrated, agroecological, regenerative and so forth. There are those whose emphasis is on diet, for example advocacy for vegetarianism and veganism. Some look to international aspects and focus on fair trade, others have a more local gaze and promote community supported agriculture and local markets. Thus, the negative consequences of how food is produced have encouraged some consumers to consider alternative food networks as a juxtaposition to the 'supermarketization' trend (Dixon and Banwell, 2016). For others, food anxieties are played out within conventional retail outlets, as supermarkets respond to new demands.

Probably the most compelling and challenging of all the concerns raised about the UK food system is with regard to diet and health. The biggest issue for diet-related disease is cardiovascular disease (CVD), which refers to diseases of the heart and cardiovascular system, such as coronary heart disease

and strokes. Obesity (intake of more calories than those used or 'burned'), is a key risk factor for CVD. Obesity increases insulin resistance leading to Type 2 diabetes and on to CVD. Although death rates from CVD have fallen since the early 1970s, they still account for more than 37 per cent of UK deaths (Foster and Lunn, 2007). Moreover, the number of people suffering from CVD has not declined as people live longer and treatments are improving. A diet that is high in total fat, saturates and salt, and low in dietary fibre and fruit and vegetables, increases the risk of CVD (Foster and Lunn, 2007). Dietary factors are also associated with an increased risk of several cancers, and research has shown that restricting the intake of calories can suppress the carcinogenetic process (Anderson et al, 2015).

In the UK, obesity generated an economic loss of more than $70 billion a year in 2012, or 3 per cent of gross domestic product (GDP) (Dobbs et al, 2014). The OECD (2017) projects a steady increase in obesity rates with, in England, levels expected to rise from around 25 per cent to 35 per cent by 2030. Not every wealthy country is as susceptible as this with, for example, Italy and South Korea, projected to have obesity rates of 13 per cent and 9 per cent, and France and Spain, 21 per cent in 2030. Obese people have poorer job prospects than normal-weight people, are less likely to be employed, experience greater difficulty re-entering the labour market, are less productive at work due to more sick days and fewer worked hours, and earn around 10 per cent less than non-obese people (OECD/EU, 2016). Wealthy countries such as Japan, the Netherlands, Denmark and France have lower obesity rates than the UK, and there are significant geographical differences within the UK.

Conclusion

The food system in existence when COVID-19 unleashed itself in the early weeks of 2020 might be described as robust in terms

of its well-established dependence on trade (notwithstanding the uncertainties associated with Brexit) and the logistical capabilities of the wholesale and retail sectors. But with regard to diet, health and inequality, considerable vulnerability characterized certain segments of the population. So how was the system impacted? We turn first to the supermarkets.

THREE

Keeping the Supermarket Shelves Stocked

In this chapter, we put the supermarkets under the spotlight, asking what worked and what didn't. Were shortages, and there were some empty shelves at times, a result of so-called panic buying, supply issues further up the food chain or the retailers' own logistical issues? We answer such questions with examples, such as the flour shortage. And we look at the decisions taken by retailers on what to stock and how the 'just-in-time system' (JIT) was adapted. On 2 March 2020, UK supermarkets drew up contingency plans to 'feed the nation' (Jolly and Smithers, 2020). Core to the plan was the decision to work closely with suppliers to scale back the range of groceries available and focus on maintaining supplies of staple products. City analyst Bruno Monteyne, formerly a supply chain director at Tesco, wrote in a note to investors: 'Yes, it will be chaotic (and expect pictures of empty shelves), but the industry will reduce complexity to keep the country fed' (Jolly and Smithers, 2020). He pointed to the fact that Tesco had previously practised 'multiday simulation' exercises, including mocked-up news coverage, with teams preparing responses to a flu pandemic. On 15 March the supermarkets issued a joint 'Feed the nation' statement in an attempt to reassure the public and discourage panic buying (Times Series, 2020).

Without a doubt, the most immediate and compelling of the food stories associated with the pandemic surrounds supermarkets and the images of empty shelves that emerged

early in the first lockdown, although in the event there were few, if any, long-term shortages. And where there were shorter-term supply issues the reasons were highly varied with no one single causal factor. So in the first part of this chapter, we look at some examples of food products that provided particular challenges to the retailers, finding that many of the difficulties lay further back in the food chain in manufacturing and processing. Indeed, for this reason much of this chapter is not *directly* about supermarkets but about their supply chains. Shelves are stocked if the food products arrive, and this chapter looks at the way in which that happens.

Beyond issues regarding particular products, retailers faced the overriding challenge of increasing volumes for sale as a result of the collapse of the hospitality sector, as well as dealing with a wide range of logistical challenges to the prevailing JIT system, and, later in the chapter, we look in more detail at this generic issue. But first, let's look 'up stream' at the processes that are essential to getting food on supermarket shelves. It has become commonplace to characterise all that happens between the farm and the supermarket shelves as the 'hidden middle' of the food supply chain, a black box of primary and secondary processors, packagers and manufacturers, distributors and wholesalers. The Federation of Wholesale Distributors (FWD) describes the 'hidden world of wholesale' as 'the biggest industry you've never heard of' (FWD, no date). Most of us might see big lorries on the road or even glimpse large warehouses from a car window, but we rarely see inside these places, still less understand how they work. If the pandemic began to shine a light on this critical and often underappreciated part of the food system, it did so for just a short while, and it remains the case that there are relatively few academic studies of the 'hidden middle', and those that exist tend to focus on food supply chains in developing economies (for example, Reardon et al, 2021). For this chapter, we pieced together information from industry reports, market analysis, newspaper and magazine articles,

commentaries, and blogs and we benefitted from the insights of our Expert Panel.

Look back to Figure 1.1 in the first chapter where we attempted to illustrate the complexities of the supply chain for a loaf of bread. An obvious message to infer from that diagram is that every food commodity is different. The constituent parts of a loaf of bread are not the same as for a piece of frozen fish, nor are the requirements for packaging, storage and food safety; and shelf life will vary from product to product. We start with bread and with flour more generally, not least because the so-called flour shortage was one of the headline issues in the first weeks of the pandemic.

Bread and flour

On the face of it, flour, and flour-based products, should have been very secure. If kept dry, at a relatively even temperature, with the correct light levels and free from infestation by pests, cereal grains can be stored for up to 30 years and still be suitable for human consumption. Wheat is harvested once a year and is stored to be released onto the market at need during the following 12 months or longer. Most wheat is harvested in August so there was no question in March 2020 of getting to the end of the previous season's grain stores. Moreover, over the past 40 years or so the UK milling sector's use of UK grown wheat has virtually doubled and by 2018–19, 85 per cent of the wheat used by UK flour millers was domestically produced with the rest coming mainly from Canada, Germany France and the USA (UK Flour Millers, 2023). There were no particular fears that this trade would be disrupted nor that the UK flour milling industry's processing capacity of 5 million tonnes of flour per year would be compromised. There was some alarm at relatively low stock levels of flour held by mills and customers as a result of the UK flour supply chain operating a JIT system with typically just a few days' worth of wheat/flour in the system at any given moment. While it has become

common to decry the JIT logic, it makes sense for a product like flour, which requires more exacting and costly standards for storage than the grain from which it is produced, which was not in short supply. A COVID-19 outbreak serious enough to close down one or more large mills meant the sector was potentially vulnerable to some supply-side disruption.

Around two-thirds (66 per cent) of UK flour production is supplied to bakeries to make bread. The vast majority (85 per cent by volume) of bread in the UK is produced by what are termed large plant bakeries. According to the UK Federation of Bakers (FOB), supermarket in-store bakeries account for 12 per cent of bread production, while small craft or artisan bakers make up 3 per cent of the supply (FOB, no date). In the case of bread, there was concern about potential disruption to the supply of fortificants and other ingredients from overseas, such as folic acid, with Switzerland, the US and China as key exporters. In the event, there were few reports, if any, of shortages of bread for sale in supermarkets. Bread that might previously have found an outlet in the hospitality sector, such as sandwich bars, was diverted to retailers as demand increased. This presented logistical challenges with the need for changes to contracts or amended transport routes. By mid-March however, it was becoming increasingly apparent that COVID-19's impact on the flour sector was *not* going to be felt, first and foremost, on the supply-side, but on the demand-side as the usual patterns and structures of demand were disrupted. Overall demand for flour across 2020 remained fairly flat, but this consistency hid a huge reduction in demand for flour from the 'out-of-home' sector, particularly hospitality, and an unprecedented increase in demand for flour, from the 'in-home' retail sector (Lawford, 2020). The supermarkets took most of these challenges in their stride and bread remained available on the shelves, though there was a decline in in-store bakery products in favour of wrapped products.

However, flour production is about more than just bread. Like many industries, in recent years the flour milling industry

has continued to consolidate. There are now 32 companies operating 51 mills, with the four largest accounting for around 65 per cent of UK flour production (UK Flour Millers, no date B). Many of the smaller millers have developed niches ranging from pre-packed flours to those for specific uses such as for speciality breads. About one-third of the 5 million tonnes of flour produced each year is destined for markets other than bread. About 11 per cent goes to biscuit making, 7 per cent is exported, 4 per cent gets packed into 1.5 kg bags stacked on supermarket shelves and sold as household flour, 2 per cent goes to cake making, and 10 per cent goes to make up a key ingredient of a huge and diverse range of other foodstuffs, including catering size large packs of flour for both the hospitality sector and food products (UK Flour Millers, 2023). In fact, incredibly, around one-third of all grocery products on supermarket shelves contain wheat flour, with the industry producing more than 400 different types of flour to meet increasingly specific customer demands. And as with bread, the cakes, biscuits and other flour-based foodstuffs largely stayed available on the supermarket shelves.

There was one exception to this positive outcome and that was with regards to the 4 per cent of flour going into 1.5 kg bags where demand outstripped supply. So why was flour in short supply on supermarket shelves? Mainly because of the pace of the change in demand that took place and the logistical challenges this posed. Retail flour sales had already increased in advance of Lockdown 1 in March 2020 when, alongside loo rolls and pasta, it was one of the main products associated with pre-lockdown 'panic buying'. Retail flour sales were up by 46 per cent in the four weeks immediately prior to the first UK lockdown compared to the same period in 2019 (O'Connell et al, 2020). This trend accelerated once the lockdown kicked in. With restaurants and cafés closed and people confined to their homes, there was a boom in home baking, which led to an estimated five to tenfold increase in demand for flour for home cooking (ITV News, 2020). Some supermarkets started

rationing flour and online sales from artisan millers rocketed. But at the same time the demand for flour in the catering sector declined rapidly. So the overall demand for flour scarcely changed but the size of bags it was supplied in did. And this was the heart of the problem, which was not about the supply of milling wheat nor milling capacity but packaging capacity and bag size. The UK produces around 90,000 tonnes of standard flour each week, but only 12 of the 50 mills in the country are geared towards retail direct to consumers, in other words have the machinery in place to pack into small bags. Most mills supply bakeries and wholesalers with flour in tankers or in large sacks, typically 16 kg, whereas the supermarkets and shops characteristically sell flour in 1.5 kg bags. Packing flour into smaller bags, however, requires specialist equipment and takes much longer, and any change in packaging required careful attention to fire risk as flour dust has explosive qualities in certain conditions. Just locating a supply of bags, as so many more were required, could prove challenging. Emily Munsey, Director of Wessex Mill, told us that at one point she had to find 100,000 1.5 kg bags at two days' notice:

> Before the pandemic all our 1.5 kg bags came from Italy, which wasn't going to happen during the pandemic, so I sourced 100,000 from elsewhere. … We normally use 100 g specialist bags, but we couldn't get them, so I had to buy 80 g ones from two alternative companies, that we've never bought from before.

So while there was plenty of grain and flour available in the UK, millers could not pack it into small bags quick enough to satisfy the increased demand. Despite a number of COVID-19-related production challenges related to requirements to establish social distancing restrictions, such as a shortage of specialist milling PPE (personal protective equipment), and self-isolation-related labour issues, impressively, the milling industry did manage to double production from 2 million bags a week

to 4 million with many mills operating 24 hours a day, seven days a week. Some millers invested in specialist small bagging machinery, while others sought to sell direct to the consumer. The National Association of British and Irish Millers (NABIM, now known as UK Flour Millers) developed an online 'Where can I buy flour?' map (UK Flour Millers, no date C), which included a map to direct home-baking consumers to outlets (mills, local bakeries, wholesalers) where they could purchase commercial-sized bags of flour.

Despite this industry-wide effort, UK flour production was insufficient to meet retail demand. At the beginning of April 2020, Alex Waugh, NABIM Director advised that there was only capacity for 15 per cent of households to buy a bag of flour per week (Nicholas, 2020); by June the situation was hardly any better (Perkins, 2020). By mid-summer 2020, as Lockdown 1 restrictions began to ease, and the hospitality sector began to reopen, retail demand for flour fell back from its spring peak. Nevertheless, demand remained significantly higher than it had been the previous year and many mills continued to operate at increased capacity by running retail packing lines 24/7. By the autumn, with some restrictions re-imposed, and a second lockdown on the horizon, and the return of the TV programme *The Great British Bake-Off*, there were fears of a second episode of panic buying and shoppers emptying supermarket shelves of 1.5 kg bags of flour. Keen to avoid a second run on flour, NABIM issued a statement reassuring the public that mills were reporting satisfactory wheat stocks, flour stocks, packaging and labour, and urging them to buy flour only as they needed it (UK Flour Millers, 2020). The plea appeared to work.

An aside on packaging

Packaging issues were not limited to the milling industry, with the demand for food packaging material as a result of a general increase in grocery sales, a specific increase in online sales and

a requirement for additional 'protective' packaging, leading to packaging supply shortages across many sectors. Packaging is not easily repurposed from one product to another as it is often pre-printed with specific product information and ingredient lists, which means that it cannot be used for other products. And just a single ingredient substitution due to sourcing issue means that the original packaging becomes unlawful and therefore unusable. The result of this was a reduction in food product *ranges* in supermarkets during Lockdown 1, again not because of a food shortage *per se* but because processors concentrated on supplying products they were confident they could get packaging for. In addition, COVID-19 hygiene concerns helped to reverse, at least for a while, the move against plastic packaging in the pre-pandemic period. Susan Hansen, global strategist for supply chains at Rabobank, for example, was quoted in *The Grocer* suggesting that there had been a 'sea change in public attitude' where, having gone from 'hero to villain' in the past decade, plastic packaging had returned to hero status again during the coronavirus pandemic (Nott, 2020a). Descriptions of food packaging as heroic may have been overstating it a bit but research certainly suggests that consumers became more positive about plastic packaging as the pandemic unfolded. In April 2020, for example, 35 per cent of consumers stated that their attitudes had changed as a result of COVID-19, a figure that increased to 43 per cent by July. Of these consumers, 68 per cent stated that they had a more positive perception of food packaging, while 54 per cent felt packaging kept their food safe (Packaging News, 2020).

A similar figure was reported in another consumer attitudes survey by *The Grocer* magazine, which found that just under 50 per cent of respondents thought some form of food packaging was safer than no packaging, although a separate survey for *The Grocer* magazine found that sustainability concerns had actually increased since the pandemic, with 36 per cent reporting that sustainable packaging had actually become more important to them (Weinbren, 2020). This is backed up by other surveys. For

example, DS Smith, a leading supplier of sustainable packaging solutions, partnered with Ipsos MORI to survey if/how public attitudes to sustainable packaging had changed during the pandemic. In total, 9,000 adults were interviewed online, across 12 European countries, between 24 September and 19 October 2020 – sustainable packaging still mattered to consumers with a willingness to take positive action on sustainable packaging increasing from 59 per cent pre-pandemic to 64 per cent. Hygiene concerns had also increased with 48 per cent of UK respondents agreeing with the statement 'Since the COVID-19 pandemic, I prioritise hygiene over sustainability when it comes to packaging' (DS Smith/Ipsos, no date). A significant proportion of respondents (19 per cent in the UK) avoided the purchase of loose unpackaged items such as fruit and veg (DS Smith/Ipsos, no date). Specialist grocer Planet Organic and recycling charity WRAP both reported concerns that customer anxiety over the virus had stifled efforts to reduce packaging in the grocery sector (Saker-Clark, 2021). Reconciling consumer desire for sustainable packaging and hygiene, alongside the surge in home deliveries, led to massively increased demand for cardboard, which was likened by some in 2021 to 'beige gold' (Swiftpak, 2021) with demand, for a while, exceeding the capacity of paper mills.

The case of meat processing

We turn now to some other products and move away from packaging to processing with a detailed look at the meat sector where COVID-19's initial impact was complex and far reaching. Meat processing starts in abattoirs where animals are slaughtered and is likely to continue in separate meat butchery plants where primary processing takes place. From these premises, some meat goes straight to retail outlets, such as supermarkets, in the form of cuts of meat sold for home cooking such as joints, chops, mince and so on. But many meat products are processed at yet further facilities for the

manufacture of a wide range of products from sausages, pies and pasties to ready-made meals. All these processing plants faced potential reduced staffing levels as a direct result of COVID-19 absenteeism, problems compounded by the two-metre distancing requirements creating real challenges on processing lines. There were some publicized closures of plants due to COVID-19 outbreaks linked to transmission within processing plants. A BBC News article suggested that meat-processing workers were especially vulnerable to the virus because of the cold and damp working environment enabling dispersion of droplets, noisy machinery requiring people to talk more loudly or shout, and difficulties in social distancing when working on fast-moving production lines (Reuben, 2020). Socio-economic factors were also cited, for instance challenges of communicating information about social distancing and safe working practices to some of the meat-processing sector's large migrant workforce. For the trade union Unite, however, it was not migrant workers' lack of English language skills that posed a significant risk factor for coronavirus transmission but rather their treatment in meat processing factories that did not provide staff needing to self-isolate with company sick pay or any other form of financial support, clearly increasing the danger of individuals with COVID-19 going into work because they could not afford to take time off (Unite, 2020). However, the Expert Panel for our research project, with some leading meat industry experts, offered a different view suggesting that the majority of COVID-19 outbreaks were community-based, and that processing plant-based incidences, contrary to the impression given by the media, were in fact extremely low. Given that the supermarkets reported few supply problems, this rings true. Moreover, as with the flour story, many processing plants made significant capital investments to mitigate the risks posed by COVID-19 and to protect staff, the business and the larger meat supply chain.

As with flour, the most significant impact was felt through changes in the structure of the market, and in the case of meat

this was more complex than flour packaging. In terms of market outlets, meat is a highly segmented product as already indicated in Chapter Two because of the carcase imbalance issue. In the early weeks of the pandemic the demand for prime cuts like steak and hindquarter plummeted as restaurants ceased to trade, which also had a negative impact on demand for offal and other by-products, with uncertainties over exports also playing a part. In the supermarkets, there was a rapid rise in demand for simple meat products, seen by some as 'comfort' foods, such as mince and sausages. Moreover, consumers also sought to reduce the number of visits to supermarkets and bought more than usual when they did brave the queues and the risk of infection, stocking up fridges and freezers. Either that, or they sought home deliveries, which escalated rapidly during the opening weeks of the pandemic. This change in the nature of demand posed challenges across the food chain. The supermarkets had to ensure regular supplies and reorganize store space and increase delivery capacity. The fact that they did so was a logistical triumph. In some instances, reorganization involved the closure of supermarket meat counters, but this was a process that had begun prior to COVID-19 with the pandemic providing an opportunity to expedite existing plans to close in-store fresh food counters (particularly meat and fish) (AHDB, 2020a; White, 2020). Most major supermarket chains responded to the pandemic by offering home-delivered food boxes with Morrisons offering a dedicated meat box filled with enough meat for over 38 meals and costing £45 including delivery (Morrisons, no date). It contained a 5.7 kg selection of fresh meat and included a gammon joint, a beef roasting joint, a pack of chicken fillets, four Best Scotch beef burgers, 25 meatballs, 10 sausages, a pack of 12 per cent fat beef mince, a pack of pork loin steaks, two sirloin steaks and a sachet of fresh peppercorn sauce.

While the supermarkets worked hard to cater for demand, some sought to shift demand to address the carcase imbalance issue. The agricultural levy boards initiated the 'Make it Steak'

and 'Make it Pulled Pork' campaigns in April 2020 and 'Make it with Lamb' in July, encouraging people to cook for their own 'restaurant experience' at home. AHDB's research on 'Make it Steak' showed that an additional 750 tonnes of steak were sold as a direct result of the campaign with 432,000 new buyers, and every £1 invested in the campaign giving rise to £12.30 in retail sales (AHDB, no date). The fine weather of the spring of 2020 and the reasonable summer that followed encouraged a good barbeque season. So it was that meat sales in supermarkets, beyond the continuing strength of mince and sausages, began to pick up. This, coupled with the gradual re-opening of hospitality outlets in the summer of 2020 and the government's 'Eat Out to Help Out' initiative, led to meat sales rebounding strongly. For the 12-week period up to 9 August 2020, for example, retail beef sales were up 19.3 per cent by value and 16.2 per cent by volume in the same period in 2019 (Meat Management, 2020). Although the growth in beef sales eased by −6 per cent in 2021 compared to 2020, the level of retail sales at the end of 2021 were still +4 per cent higher than pre-pandemic levels (AHDB, 2022). But all this changed in 2022, with volumes down 9.0 per cent year-on-year (AHDB, 2022). Pork and lamb sales followed a similar trajectory. Pork sales were up by 13 per cent in the 24 weeks ending 9 August (AHDB, 2020c), and in the 12 weeks to 4 October, lamb retail sales by volume were up 11 per cent compared with the same period in 2019 (AHDB, 2020b). Like beef, pork sales declined in 2022, 5.5 per cent year on year (AHDB, 2023b) and lamb by 9.9 per cent (AHDB, 2023a).

Despite the early carcase balance crisis and the challenges associated with making plants safe and COVID-19 compliant, 2020 turned out to be a fairly good year for many in the meat supply chain with a rise in both retail sales and farm gate prices. Lamb finished the year, for example, with UK retail sales up 4 per cent on 2019, pig meat was up 8 per cent, and beef, an impressive 11 per cent (Smail, 2021). Of course, not all of this increase in retail sales can be accounted for by the supermarkets.

High street butchers and those farmers making direct sales to consumers also benefitted, and we have more on this in the next chapter. But the supermarkets certainly responded too.

Distribution, warehousing and wholesale

As well as contending with the challenges of processing alongside shifts in the demand patterns of consumers, the supermarkets also had to confront the challenges associated with distribution and wholesale. Again, we find ourselves putting the lens on a part of the food system far less visible than the supermarkets themselves. Depending on the product in question, retailers rely on either warehouses to store their own products or wholesalers to source products. In either case they need distribution from warehouses to retail outlets usually by lorry.

As with manufacture and packaging, the immediate onset of COVID-19 lockdowns led to demand-side shocks related to consumer behaviour and the supply-side shocks arising from labour issues. In April 2020, the Road Haulage Association (RHA) reported that 46 per cent of the UK's lorry fleet was not operating due to the crisis, and that without support from the Government, hauliers were facing collapse and insolvency (Reynolds, 2020b). The RHA originally sought primarily financial help for the sector on 16 March 2020 (Reynolds, 2020a). The Government responded on 18 March with a relaxation of working hours rules for HGV drivers, and on 17 April with respect to 'fit to drive' medical certification (GOV.UK, no date). These measures only partially addressed the issues and in late April the RHA reported that 46 per cent of the UK's lorry fleet was not operating due to the crisis, and again asked for government support suggesting that without it, hauliers were facing collapse and insolvency. These supply chain disruptions led to delivery delays, congestion in the warehousing sector and higher freight and transportation costs. This was a global issue and in the early stages of the pandemic,

disruptions from cross-border restrictions and lockdowns at ports and harbours led to an 11 per cent decline in global demand for goods shipped by ocean freight and a reduction in shipping capacity by more than 13 per cent (Fitch Ratings, 2020; Twinn et al, 2020).

By September 2020, with restrictions easing, demand for ocean freight returned and with it huge price increases due to labour costs and restrictions. At the time the British International Freight Association reported a 40 per cent increase in transpacific freight costs from previous historical highs (see also Carrière-Swallow et al, 2022). With strains on ocean freight and borders closed to road freight, demand for air cargo increased significantly, as aviation played a vital role in bringing much needed supplies to the UK from overseas. UK Civil Aviation Authority (UK CAA) data, for example, show that cargo operations increased by 42.7 per cent in 2020, with erstwhile commercial passenger airlines adapted to operate dedicated cargo flights across the globe. The UK saw 1,348,044 tonnes of freight on cargo dedicated aircraft in 2020, an increase of 56.8 per cent from the previous year (UK CAA, 2021).

Turning to warehouses and distribution centres, some supermarkets operate directly within the wholesale sector with so-called hybrid wholesalers, and therefore have their own warehouses. Chief among these are the Co-op and Morrisons, which grew their market share within the wholesale sector from 6.5 per cent in 2018 to 9.2 per cent in 2020 (Kam City, 2020). Other supermarkets rely on traditional wholesalers and the warehouse capacity of those firms. Some of these are very large businesses. In March 2021 *The Grocer* magazine listed the top 30 and showed how they had fared during the first year of the pandemic. The biggest firm is Booker with 196 depots, 13,000 staff and a 2020/21 turnover of over £6 billion. Seven other companies have turnovers of more than £1 billion, including the likes of Bidfood UK, Costco and Bestway. Hardly household names but massive players in the

food chain. What is fascinating about *The Grocer* data for the first COVID-19 year, are first the low margins in the sector and second the highly variable financial performance. Booker's margin (that is, profits as a percentage of turnover) of 4.1 per cent was bettered only by LWC Drinks with 5 per cent. The majority had margins of less than 3 per cent, so most wholesalers did not profit massively from the heightened attention to food provisioning during the pandemic. Margins for supermarkets are of a similar order, averaging around 3 per cent, a margin that fell to 1.8 per cent post-pandemic in the year 2022–23 (Competition and Markets Authority, 2023). Both these parts of the food chain are dependent on volume sales rather than large mark-ups, making them vulnerable to unexpected change. Wholesalers with businesses based on supplying retail shops and supermarkets saw increased demand while those focussing on hospitality and catering for institutions such as schools really suffered. For example, Castell Howell Foods, saw a 70 per cent revenue drop and furloughed around 55 per cent of its 700-strong workforce in the first three weeks of the pandemic because of its historic focus on the catering sector, but it pivoted its business to supplies for NHS Wales workers, schoolchildren and the vulnerable (Snowdon, 2020). Some wholesalers were also able to offset losses by finding new routes to market. JJ Foodservice, for example, launched JJ Home in July 2020, signalling the permanent addition of its direct-to-consumer (DTC) service – initially introduced as a stop-gap – to the wholesaler's portfolio. Similarly, Bidfood formalized its DTC business 'Bidfood at Home' and Brakes launched its 'Food Shop' venture selling DTC in March 2020 (Kam City, 2020).

A survey in the week commencing 30 March 2020, by Bis Henderson Space,[1] a company specializing in accessing additional warehouse space and operational services quickly and effectively (another cog in the hidden middle), found that the UK could run out of warehouse capacity within a fortnight as imported goods piled up at storage locations and the lockdown

was so dramatically changing consumer demand. According to the survey, 90 per cent of respondents reported facilities at full capacity and suggested the overall market had just 10 per cent capacity available. Another survey of logistics and warehousing operations carried out by the United Kingdom Warehousing Association (UKWA) in April 2020 showed a 'lack of available warehousing space in the face of COVID-19 restrictions', with 90 per cent of respondents confirming they were completely full, 'suggesting that the market had just 10% pallet space availability', with the high 'potential of reaching zero capacity within weeks' (UKWA, 2020). According to UKWA chief executive Peter Ward:

> remaining capacity is likely to be full by early May. With outbound flows severely reduced or stopped altogether, as stores and factories are closed, inbound flows have become a mounting problem. … Inbound supply chains continue towards destination, arriving at ports, requiring receipt, handling, onward distribution and storage. (van Marle, 2020).

This shortage of warehousing space was due to an imbalance between outbound non-essential goods slowing or stopping but continued inbound flows of imports to the UK. In response, the UKWA established a COVID-19 Emergency Space Register to help coordinate storage. And they teamed up with Bis Henderson Space to coordinate an industry response to the impending container storage crisis. UKWA/Bis Henderson were able to support cargo owners in locating inland off-dock storage facilities for fully loaded containers.

The just-in-time system: what is it and did it work in the pandemic?

We have referred to this before but let's dig in a bit deeper now. It's a phrase that was being bandied about with regard

to the food system, often pejoratively, prior to the pandemic and received greater currency during lockdown. Its origins are, however, nothing whatsoever to do with food retail. Taiichi Ohno, a Japanese industrial engineer, pioneered the approach in the automobile industry in the 1950s and 1960s. He was general manager of a Toyota plant from 1962 and in the decades that followed his principles were adopted and adapted for many production systems in many countries, in particular moving away from its origins in a single production process for cars, to a strategy for supply chains with more than one partner. Its principles seem eminently sensible. Moving commodities and products when they are needed avoids unnecessary storage costs and the associated environmental footprint. Waste can be reduced and efficiencies maximized. That at least is the theory but there are those who criticize JIT as a high-risk strategy, ill-suited to coping with shocks associated with the biosecurity and climate change risks of a globalized world (Garnett et al, 2020). That is countered by those in the business world who point out that actors in any supply system, JIT or otherwise, are bound to weigh up the balance between the efficiencies of delivering just enough food to supermarkets at just the right time and build in resilience to possible shocks where necessary. As operations management specialist, Rob van Stekelenborg, puts it:

> Sure, a JIT system that is near-bufferless is a vulnerable system. … But inventories are very much in control. I even dare to state that traditionally run supply chains are at more risk than JIT-operated ones. Because JIT-ones have more control over their inventories. Traditionally operated companies are continuously at risk due to their production control system that leads to unbalanced stocks. … JIT, or more generally Lean organizations, typically have both a highly reactive and thorough problem-solving culture. This means that Lean organizations, also by design, are able to significantly

> reduce the time that the disruption actually impacts the organisation. Their ability to recover, and the speed with which they do so, is often impressive. … They often opt for a single source strategy with carefully selected and competent suppliers for whom they are an important customer, and in which they sometimes even have a financial stake. They consider their suppliers true long-term partners, instead of the short-term, arms-length relation that often exists in more traditional supply chains. This creates a strong interdependency between customer and supplier, a strong loyalty towards the customer, and a high reactivity towards joint problems. (van Stekelenborg, 2020)

This characterization fits well with the strategies developed by supermarkets over many years to develop strong bespoke relations with suppliers, to develop and promote own brands, and to build their own distribution logistics. JIT clearly depends on good knowledge of likely consumer demand and, in normal circumstances, the supermarkets are adept at making this work. The few weeks immediately prior to the first lockdown and the first weeks of the lockdown itself were far from normal. Warnings of panic buying and images of empty shelves became a common and recurring motif but a repeat of the pre-Lockdown 1 episode never materialized. Supermarket shelves may have looked a bit sparse at times in 2020 and 2021, but, contrary to the image of the empty shelf, the supermarkets were able to use the logistics capability of the JIT system in a way that showed the UK food system to be remarkably resilient, adaptive and adept at ensuring that the supply tap remained on and shelves remained mostly fully stocked. This, however, was not without considerable expenditure of time, labour and money, depleting many suppliers' financial resources.

So, what did all this mean to the distribution of retail sales during the pandemic? The big four retailers and convenience stores significantly increased their turnover from 2019 to 2020

while premium retailers had a smaller increase, and discounters, without the same capacity for online sales and home deliveries, a reduction of 2 per cent (Jaravel and O'Connell, 2020). Using ONS data, Rivington et al (2021) demonstrate how in terms of volume, conventional food retail sales increased between 3 per cent and 10 per cent through March to November 2020 compared with February 2020, with an overall year-on-year increase of 4.3 per cent to December 2020. Convenience stores had a particularly good 2020 with a reported 39 per cent increase in sales during the pandemic, with market share increasing from 12.4 per cent to 16.3 per cent (Lee, 2020). However, it was the online food retail sector that saw, by far, the most dramatic year-on-year increase in both sales value and volume, up an incredible (though not unsurprising) 126 per cent and 79 per cent respectively, with the latter figure representing the largest increase of any online UK retail sector (Rivington et al, 2021).

Conclusion

When Yonder Consulting undertook a survey in July and August 2020 asking 100 senior stakeholders (including politicians, leading business journalists, and opinion-shaping non-governmental organizations (NGOs)), which businesses or sectors had emerged from the pandemic with their reputations most enhanced, the most frequently praised were the supermarkets (Webb, no date). And from the evidence of this chapter it is not hard to see why. Leading UK retailer Tesco managed to grow from fulfilling 660,000 orders a week to 1.5 million by the end of June 2020 (Isaac, 2021). 'A challenge like no other' is how Alan Stewart, Chief Financial Officer of Tesco, described COVID-19: 'Our business probably changed more in the couple of months following the outbreak than in the whole of the last 10 years' (ICAEW, 2020). At the peak of the crisis, Tesco recruited almost 50,000 new temporary staff to support its shop-floor workforce, in distribution centres and to work as delivery drivers (ICAEW, 2020).

FOUR

The Role of Alternative Food Networks: Plugging Gaps or Building Back Better?

Tim Lang, writing in *The Independent* in March 2020, lamented the Government's lack of attention to food security and suggested COVID-19 'exposes other difficulties and deep structural weaknesses' of a food system that appeared 'designed not only to ignore but to undermine resilience' (Lang, 2020b). It is hardly surprising then, that early attention was given to the possibilities for alternative food networks (AFNs) to expand and flourish as a result of the disruption to international food supply chains and the seismic change to peoples' lives and their food provisioning and consumption behaviour wrought by COVID-19. The local food enterprises that make up AFNs played an important role in not only providing continued access to food, particularly in the first most chaotic months of the pandemic and subsequent lockdowns, but also, and perhaps uniquely, in contributing to the social resilience of their local communities. That said, it is also true that prophecies of the conventional food system's collapse did not materialize. As we have already seen, after the initial shock the supermarkets, and the just-in-time (JIT) systems on which they depend, were able to adapt quickly and coped remarkably well. While the position of AFNs and supermarkets are generally discussed in competitive and oppositional terms, in reality, the relationship between them is more nuanced and complex.

In this chapter we tell the story of the COVID-19 pandemic from the perspective of those local food enterprises who provide an alternative to the supermarket-dominated conventional food system and associated supply chains. In this endeavour, a project led by Anna Krzywoszynska at the University of Sheffield provides particularly valuable insights into the lived experiences of a diversity of local food actors (LFAs), from those involved in community growing to local independent farm and high street retailers. Situating their experiences in a broader analysis of AFNs' changing social and economic contribution is hindered by the fact that data is not routinely collected on AFNs at a regional or national level. However, let's begin with a brief explanation of what is meant by the term alternative food network, and its essential characteristics.

What are the alternatives?

The term 'alternative food networks' (also referred to as local food networks or systems) emerged 20–30 years ago to describe an alternative approach to the 'conventional' large-scale and globalized food system approach (Michel-Villarreal et al, 2019). AFNs include an array of social and commercial enterprises such as farm shops, farm direct sales, grow you own, farmers' markets, local independent shops, box schemes, community-supported agriculture, community gardens, local food partnerships and food hubs (Krzywoszynska et al, 2022a). They are particularly associated with producer-to-consumer short food supply chains and, often 'strong ecological and societal embeddedness' (Jones et al, 2021b: 218). This quality of embeddedness or 'rootedness' adds an important social dimension to AFNs that other direct-to-consumer (DTC) short supply chains, such as producer and/or retailer online sales, may not *necessarily* possess. As we will discover, social embeddedness emerged as a significant feature of AFNs during COVID-19.

AFNs tend to be positioned in opposition to conventional food systems (Michel-Villarreal et al, 2019). In the context of food system resilience concerns arising from COVID-19, Black et al (2024) reviewed the framing of local food in publicly available publications of different food system actors finding a divergent framing of the role AFNs. Actors within AFNs saw local food as a 'system', whereas actors operating outside of AFNs framed AFNs as an 'add-on' to the conventional food system. In practice, the lines may be less clearly drawn for, as observed by Sonnino and Marsden (2006), AFNs may both compete and comply with the norms of the conventional system. Stoll et al (2021) argue that twentieth-century shocks to the food system from the First World War onwards, consistently feature a temporary relocalization of the food system in which AFNs' role is expanded, and in this respect COVID-19 proved no exception, which emerged as a finding of the Krzywoszynska-led study.

What changed for local food actors and how did they respond?

Here we introduce a theme, which will reappear in Chapter Seven when we examine UK farmers and fishers role during the pandemic, that of winners and losers depending on which markets were supplied by LFAs (Jones et al, 2021b). Broadly speaking, the immediate losers were LFAs serving schools and the hospitality sector, who saw their businesses evaporate almost overnight in Lockdown 1, as did those LFAs operating in public spaces such as farmers' markets and community gardens. The immediate winners were those geared up to serve the shift to cooking at home and eating in. A large-scale survey, including a poll of 10,000 adults, by the Food Standards Authority (FSA), found 28 per cent of respondents were buying more locally or were growing more food (Lasko-Skinner and Sweetland, 2021), a finding that also emerged from research into consumers' access to and consumption of fruit and vegetables during the

COVID-19 pandemic by Wheeler and Williams (2021), who gathered stories from nearly 100 people across the UK in the summer of 2020. They found that, in seeking out alternatives to the supermarkets, people mostly turned to local shops and veg box schemes to buy their fruit and vegetables (Wheeler and Williams, 2021). A survey of 101 veg box schemes across the UK found sales in total had increased by 111 per cent in the period from mid-February to the end of April, 2020 (Wheeler, 2020). This unprecedented increase in demand resulted in many farmers reaching capacity of supply, with 82 per cent of veg box schemes reporting they had closed to new orders and were operating a waiting list (Wheeler, 2020).

The consumer-turn to local food systems was also mirrored in farm shops and local independent high street shops, partly driven by people seeking out smaller, less-crowded shopping environments where they felt less exposed to the risk of virus transmission (Bell, 2022; Krzywoszynska et al, 2022a). Independent bakers, many of whom had to adjust to a catastrophic collapse in the wholesale catering side of their businesses, were able to adapt by pivoting their operation to satisfy the increased demand for over-the-counter sales, as evidenced by the long queues that became commonplace outside many independent bakery shops (Bell, 2022). *Farmers Weekly* reported on the surge in sales experienced by farm shops, including Farmer Copleys farm shop in West Yorkshire where sales were reportedly running 150 per cent higher than normal having settled down from an early peak of 300 per cent (Relf, 2020). A survey of 101 farm retailers conducted in early 2020 by Harper Adams University (2022) found 89 per cent had experienced an increase in sales compared to 2019 with 79 per cent having introduced some form of 'click and collect' service in response to COVID-19 and over two-thirds (69 per cent) had introduced a home-delivery service.

As the long perspective of the pandemic reveals, a repeating pattern of consumer spikes in demand for local food provisioning were followed by tailing off, as lockdowns eased

and people returned to supermarkets (Krzywoszynska et al, 2022b), a pattern that caused frustration and disappointment for some LFAs. This rollercoaster was most pronounced for Lockdown 1, and although the pattern repeated to a lesser extent for subsequent lockdowns, LFAs had to then also contend with the impact of the UK–EU (European Union) trade and cooperation agreement (UK–EU TCA), which came into effect at the beginning of 2021. Brexit-related increases in costs and bureaucracy involved in importing and exporting raw materials and goods, combined with Brexit and COVID-19 related restrictions on the movement of people, had a noticeable impact on LFAs in 2021. Impacts varied from a loss of customers as EU migrant workers returned to their home countries, to labour shortages leading to recruitment problems and/or problems in their supply chains (Krzywoszynska et al, 2022b), including the shortage of lorry drivers, which became a major problem affecting the whole of the food system (Butler, 2021).

Plugging food supply and social gaps in the conventional food system

The 'explosion in demand' for local food businesses at the start of the pandemic was largely driven by people's disappointment with gaps in supermarket provision (Krzywoszynska et al, 2022b), including perceived shortages and peoples' inability to secure a supermarket food delivery slot (Krzywoszynska et al, 2022a). LFAs performed an important role in plugging gaps and providing resilience of food supply, and were also able to plug social gaps in the conventional food supply system by giving people access to food in places that felt safer and more personal than supermarkets or conventional food providers, and by meeting the food needs of people, especially vulnerable people, missed out by the conventional food system (Krzywoszynska et al, 2022a). As Jones et al note 'importantly, the pandemic brought to light the crucial contributions of local food systems

beyond market diversification' by also providing 'social vectors to build community resilience' (2021b: 210).

In its report *Loneliness beyond COVID-19*, the Campaign to End Loneliness (CEL) emphasized the importance of local shops as 'bumping into places that provide opportunities for casual but repeated social interactions' to maintaining people's well-being and ability to access essential provisions (Jones et al, 2021a: 20). This point has also been made with regard to small independent bakeries:

> The pandemic also illustrated the importance of local businesses to the wellbeing of communities and many bakers reported scenes of people queuing outside their premises. Bakeries also delivered to customers in isolated locations and developed initiatives like 'care boxes' or 'affordable loaf schemes' aimed at supporting more vulnerable or less privileged consumers. (Bell, 2022: 10)

At one of our Expert Panel meetings in July 2020, a farmer and cheesemaker member commented on the number of dairy businesses that pre-pandemic had operated a delivery service to schools, restaurants and pubs, and were now pivoting their people and transport resources to provide home deliveries to vulnerable and isolated individuals.[1] Rebecca Wilson, owner of The Jolly Nice Farm shop in Gloucestershire, spoke to her local newspaper about how they had adapted their operations to respond to social and food supply disruptions of the pandemic:

> When lockdown hit, our cafe had to close overnight but our team have all worked incredibly hard to keep our business open. I'm proud of the way they have adapted to new roles over the past three months, making hundreds of phone calls to speak to our vulnerable customers every week and packing their orders. Many isolated customers have told us that Jolly Nice has been a real lifeline, and we've also looked out for those who've been working

> so hard in our community with our 'Free Flapjacks to Fuel NHS Workers, Farmers and Key Workers' scheme and deliveries of cakes to local hospitals. (Forte, 2020)

It is not uncommon in the UK for local food enterprises, such as farmers' markets, to be dismissed as 'middle class', which Jones et al (2021b) suggests creates an image problem for LFAs, marginalizing their role and political sway in food policy debates. There are many stories of local food businesses going above and beyond to meet the needs of those missed by the conventional food system, but it remains the case that customers of LFAs, such as veg boxes and community-supported agriculture (CSA) before and during COVID-19, tend to be from households with above average incomes (Sanderson Bellamy et al, 2021; Wheeler and Williams, 2021). Local food businesses were sometimes frustrated, 'at being locked out of the food poverty response due to the lack of the "right" connections, be that with pre-established groups, with particular political institutions, or with faith organisations' (Krzywoszynska et al, 2022b: 24). A study of responses to COVID-19 in Wales, also found a disconnect between LFAs and established institutional responses to food aid. A reluctance or inability of food banks to handle fresh food because of the facilities and processes required to meet food hygiene requirements, was another factor creating barriers to LFAs' participation in the food poverty response (Sanderson Bellamy et al, 2021).

As discussed in more detail in Chapter Six, the COVID-19 pandemic amplified pre-existing food security inequalities in the UK, with those most economically vulnerable experiencing the greatest food insecurity (Goudie and McIntyre, 2021). Much of that huge increase in demand was met, in part, by social enterprises in what might be called the conventional food aid sector, such as the Trussell Trust, which reported an 89 per cent increase in the number of food parcels given to people in April (Trussell Trust, 2020). However, social enterprise within

AFNs also played a significant role in meeting that demand. Many saw a sharp increase in the numbers of people turning to them for support, both individuals and other institutions responsible for ensuring food security for the most vulnerable (Krzywoszynska et al, 2022b). For example, the small charity Spadework, a land-based community centre in Kent, which pre-pandemic provided vulnerable people access to growing food and gardening, adapted its operation to provide over 2,000 food and vegetable boxes a month to local vulnerable people during Lockdown 1 (Spadework, 2021) and later received funding from the Government's £200 million Coronavirus Community Support Scheme (Gov.UK, 2020d) to continue the service during 2021.

The Scottish charity Food Train, which had been providing a grocery shopping service to frail and vulnerable people since 1995, described how, with support from the Scottish Government, it was able to rapidly increase and redesign its services in response to COVID-19, despite losing nearly a third of their shopping volunteers, many of whom as older people were themselves vulnerable to COVID-19. Despite the challenges, Food Train reported it was able to meet the 51 per cent increase in demand for its home-shopping service, expand its operations geographically to reach nearly 1,000 more vulnerable people, and launch a new 'check-in' phone call service to help reduce loneliness experienced by many older and vulnerable people during COVID-19 (Carruthers et al, 2020; Janiak, 2021). This pivoting and expansion of its operations was in large part achieved by the influx of over 500 new volunteers from 'all walks of life including University of Glasgow students' (Carruthers et al, 2020).

Social resilience was also a significant theme that emerged from a project researching the benefits experienced by people involved in community food growing (CFG) activities during COVID-19. The project, led by Les Levidow of the Open University, used participatory digital story-telling to elicit participants' feelings, aspirations, social connections and other

benefits from being actively involved in CFG projects (Levidow et al, 2024). A blog post by project team member Julia Jung, reflecting on insights drawn from the stories gathered in 2020,[2] describes a raft of individual and collective social benefits:

> [the] stories that participants produced … described how the pandemic stimulated efforts to overcome social isolation by sustaining or even expanding food initiatives, thus maintaining individual benefits such as health and well-being. Despite COVID restrictions, participants' stories described how they (and often with their children) got to know each other better and extended friendship networks. The stories also showcased how community food growing activities bridged social differences of ethnicity, national origin and age. (Jung, 2021)

This building and holding-together of communities arising from the social embeddedness of local food enterprises is experienced and valued not only by local food consumers but also by LFAs themselves. A survey of Italian farmers operating within local food systems found the top concern of respondents in relation to their personal and professional lives was the prospect of reduced community interaction both with other farmers and with non-farming people as a result of COVID-19 (Zollet et al, 2021). Nearly a quarter (23 per cent) of the 1,117 farmers who responded to the 2020 South West Farm survey, cited improved relations with their local communities as a benefit that emerged from COVID-19 (Wilkinson et al, 2023). Both surveys point to the value farmers place on, and derive from, social interactions and add to research into mental well-being within farming communities that recognizes regular social interaction with other farmers and with the wider community as a key contributor to farmers' sense of well-being (Davies et al, 2019; Wheeler et al, 2021). The Levidow-led project found individuals actively engaged in CFG initiatives valued

social benefits of participation beyond fulfilling their own immediate food needs:

> While fulfilling their own needs, … participants felt they were also doing socially useful activities, such as supplying food banks and learning skills for enhancing locally produced food. Earlier feelings of being powerless were overcome by a sense of shared purpose, serving a greater good, the opportunity to 'make a difference'. (Jung, 2021)

Resilience of local food enterprises

Riding the peaks and troughs in demand came at a cost for LFAs, even for those who might have been considered to have had a 'good pandemic': 'Those LFAs that saw a sudden increase in demand described their experience as being "traumatic", "overwhelming", "exhausting", "stressful", "a baptism of fire"' (Krzywoszynska et al, 2022a: 15).

As well as general uncertainty about when, or if, life would return to normal, the unprecedented scale and intensity of uncertainty around demand made it difficult and stressful for local food businesses and social enterprises to make decisions about whether to invest in scaling up their operations (Krzywoszynska et al, 2022b). The ability of LFAs to cope and adapt to the extreme change and uncertainty of COVID-19 was influenced by the extent to which LFAs possessed 'resilience characteristics' (Jones et al, 2021b: 212), of flexibility and rapidity (the ability to make swift changes to their operations to take advantage of changing circumstances). The extent to which LFA teams were tight-knit and cohesive strongly influenced their ability to pull together to act swiftly in the face of change (Jones et al, 2021b), while their embeddedness within the local business or social enterprise networks and within the wider community, enabled them to collaborate, flex their offer and operation, and pull in people to scale up

or fill gaps due to staff sickness or self-isolation (Jones et al, 2021b). In addition to these social factors of resilience, pre-existing operational diversity (the multi-functionality of an enterprise, such as café + online plus + over-the-counter sales) and redundancy (the capacity to scale up operations to respond to increased demand) (Jones et al, 2021b) – what Stoll et al refer to as 'structural factors of resilience' (2021: 7) – added to LFAs' ability to continue to cope with, and adapt to, COVID-19 disruption over the longer term. So, for example, a small local food business that did not have any resource 'slack' and that was exclusively geared to supplying the catering trade, was much less likely to be able to cope and adapt to the disruptions and stresses caused by COVID-19, particularly if it also lacked the ability to co-operate and collaborate as a team itself, with other LFAs, and the wider community.

While being a small-scale operation can help local food enterprises to be agile, it also brings other unique pressures, which COVID-19 amplified. As a member of our Expert Panel from the bakery trade said, owners of smaller businesses were under even more pressure than usual during COVID-19 because, by the very nature of their small-scale operation, much of the workload fell on their shoulders alone.[3] The physical and mental well-being of many small, independent bakery owners was negatively impacted by the consequences of overworking during COVID-19 (Bell, 2022). A significant concern and source of stress for LFAs was the ever-present risk of their businesses being shut down if they became ill with COVID-19, as illustrated by this extract from an interview with a farm shop owner in the South East of England:

> We had, one of our casual staff, her husband caught COVID … we hadn't actually thought about the pandemic, the disease itself, [that's] the only time I did, I was like 'my God, are we going to have to close', just overnight, just have to close because it's possible that she's got it. (Krzywoszynska et al, 2022b: 25–6)

A study by Nichols et al (2022) that critically assessed the resilience of the food system by analysing the lived experiences of local food producers in Iowa, America, during the early stages of the COVID-19 pandemic, found that while LFAs proved themselves agile and adaptable in the face of significant restructuring of markets and consumer behaviour, the cost of pivoting was mentally, physically and emotionally exhausting:

> Yet, we also find that such adaptation and resilience came with a cost that was largely born by producers and their families in terms of additional labor and emotional and mental distress that came from trying to 'figure out' how to continue providing to customers while also keeping their communities safe. (Nichols et al, 2022: 187)

Similarly, towards the end of 2021, many of the LFAs participating in the Krzywoszynska-led study felt their efforts had not been recognized by political and policy actors, had not led to a transformative shift of the food system and had left then exhausted: 'the multiple pressures and accumulating stress that local food actors have endured over the course of the pandemic in 2020–21 … have bought several of our participants to the point of complete physical and mental burnout' (Krzywoszynska et al, 2022b: 32).

Back at square one or forwards to a new normal?

So, from the benefit of our post-pandemic vantage point, how much of the COVID-19-induced turn to AFNs continued beyond crisis? The surges in demand for local food provision experienced by local food enterprises led many LFAs to wonder in the midst of the pandemic if this turn to local would continue beyond COVID-19. Zollet et al found Italian farmers operating within their local food systems had 'a cautious sense of optimism surrounding the fact that COVID-19 represents an opportunity to rethink food habits and models

of food production' (2021: 11). A cautiously hopeful sense of optimism was also expressed by LFAs in England, as illustrated by Rumwell Farm Shop, in Somerset:

> We have worked hard to adapt quickly to ensure our customers continue to have access to quality, fresh locally-produced food without disruption. Not only have we been able to keep our shop open, but we came up with convenient new ways to serve our local community by launching our new online shop and offering delivery and collection options. Within the shop we also provide a calm environment with easy to follow social distancing measures that allow shoppers to feel safe. … We are hopeful that shopping habits forged as a reaction to the coronavirus will last long beyond the pandemic. (Rumwell Farm Shop, 2020)

There was a general sense of optimism at a sector-level and among consumers themselves that the trend would continue. Results of a Statista survey of UK adults (2,138 respondents) found 60 per cent intended to purchase more from local shops post-pandemic (2023c). A mixed methods study of food consumption behaviours during COVID-19, which included a population-scale quantitative survey of around 10,000 UK adults, found 'a significant proportion of the population have bought food more locally or grown more food during the pandemic – and expect to continue doing so afterwards' (Lasko-Skinner and Sweetland, 2021: 8). Commenting on the findings of a survey of 101 farm retailers by Harper Adams University, the Farm Retail Association was upbeat that increased demand during COVID-19 would continue post-pandemic:

> The trust was built up through the pandemic as farm retailers could adapt quickly to introduce COVID safe measures and people felt safer shopping in smaller environments as opposed to large supermarkets. We think

> the pandemic will have changed shopping habits for many and will be here to stay. (Harper Adams University, 2022)

Of course, intention is not the same as behaviour, and it is difficult to assess how much of the former has translated into the latter. While there were many surveys and studies of consumers' food provisioning and consumption behaviour during the pandemic, there remains a scarcity of data on consumer behaviour post-pandemic to help us understand the extent to which peoples' intentions to continue engaging with AFNs has translated into sustained behaviour. By exception, Barclays reported the findings of its consumer confidence survey (2,000 respondents) carried out in February 2023 (Barclays, 2023). The first of Barclays' top three 'lockdown leave behinds' is the finding that 'price overshadows support for shopping locally' (Barclays, 2023). While nearly a quarter (23 per cent) of respondents said they now 'try to spend locally', a much large proportion had returned to buying their food from supermarkets:

> almost seven in 10 (68 per cent) shoppers say they are looking for ways to reduce the cost of their weekly shop amid the cost-of-living crunch, Brits are increasingly prioritising lower prices over their desire to shop locally. Three in 10 (30 per cent) of these shoppers are buying from larger supermarkets because prices tend to be lower than in smaller, independent shops, and nearly a quarter (23 per cent) has shifted their spending because larger stores tend to have more options when it comes to budget and value ranges. (Barclays, 2023)

Over three-quarters of the small independent bakeries who responded to Bell's survey said they believed rising costs were the biggest threat to maintaining levels of business similar to 2020–21, with 76 per cent of respondents citing cost of living pressures on customers as the main threat (Bell, 2022).

Events are everything. Had Russia not decided to launch a full-scale invasion of Ukraine in February 2022, which sparked the 'worst cost of living crisis in a generation' in the UK (Brennan, 2022), perhaps the consumer shift back to the conventional food system suggested by Barclays' market insight, would not have occurred or, at least, would have been less pronounced. It is of course, impossible to know. What is clear, is that shocks, including concurrent shocks, to the food system are becoming more common, whether caused by extreme weather events, wars or pandemics (Cottrell et al, 2019).

What role going forward?

Whether AFNs are perceived as transformative 'systems' or 'add-ons' to the conventional food system (Black et al, 2024), both require the sustained presence of flourishing and resilient businesses to contribute not only diversity of production and supply (Garnett et al, 2020), but also social resilience. Jones et al (2021b) argue that a strategic approach is needed that 'mobilises localism across multiple issues (climate change, biodiversity, wellbeing, etc.) to address system food system challenges' (219). Similarly, Stoll et al (2021) suggest that to consider alternative seafood networks (ASNs) as only adding supply resilience is to misunderstand the extent of their contribution to food system resilience:

> We also find that individual agency plays an important role, agency that is empowered by fishers' psychological resilience and commitment to the unique value sets around fisheries that ASNs embody, values such as fair access and simple supply chains. This suggests that when considering how to improve global seafood systems moving forward, it is insufficient to look at diversification in production and supply chains without looking at the system of values that motivate the actors making and participating in those changes. (Stoll et al, 2021: 10)

Drawing on insights from their study of people's experiences of participating in CFG during COVID-19, Levidow et al (2024) suggest that the 'community-building' dimension of CFG might be the best policy lens through which to achieve the integrated (rather than fragmented) policy action required for food system transformation. Jones et al (2021b) found that LFAs' lack of political (or linking) capital, together with systemic factors 'such as the UK government's privileging of large food retailers and limited consideration of local food in the policy sphere, continue to be significant barriers to the transformative capabilities of LFAs' (218). They go on to suggest that these barriers will have to be addressed by political and policy actors but will also require LFAs, as they did during the pandemic, to build 'more effective coalitions … among local food and broader sustainable food movement campaign groups' (Jones et al, 2021b: 281). The long view of LFAs during the COVID-19 pandemic highlights both their importance in contributing to a more diverse, structurally and socially resilience food system, and the need for the AFNs to have – and to take – their seat at the UK food system's governance table, if their role is to transcend that of 'gap pluggers' in times of food system shocks.

Conclusion

Our contemporary food system is far from perfect and is rightly subject to vigorous debate. Whatever one's ideological position, COVID-19, as is the way of crises, brought into sharp relief a more complex picture than the 'either-or' characterization of alternative and conventional food systems; a picture in which both local food actors and supermarkets are recognized as having a vital and complementary role in relation to the food security. What also emerges is the important – perhaps unique – social benefits of AFNs, experienced by both producers and consumers, and the critical but quiet everyday contribution of local food actors to social resilience; a lifeline for many not only

in times of crisis. This social dimension of AFNs is perhaps not sufficiently recognized and as Les Levidow suggests, offers a useful lens through which to start developing a more integrated policy approach to our food system. While politicians and others may refer to COVID-19 as a 'once in a century' event (Kelland, 2023), in reality the combination of globalization, extreme weather and volatile geo-politics, make shocks to our food system from pandemic or other crises, likely to incur with greater frequency in future (Cottrell et al, 2019) as seen by the full-scale war in Ukraine and subsequent cost of living crisis that followed fast on the heels of COVID-19. In such volatile times, the constant layering of shifts and shocks makes it very hard to understand the enduring impact of the COVID-19 pandemic on our food system and society at large.

FIVE

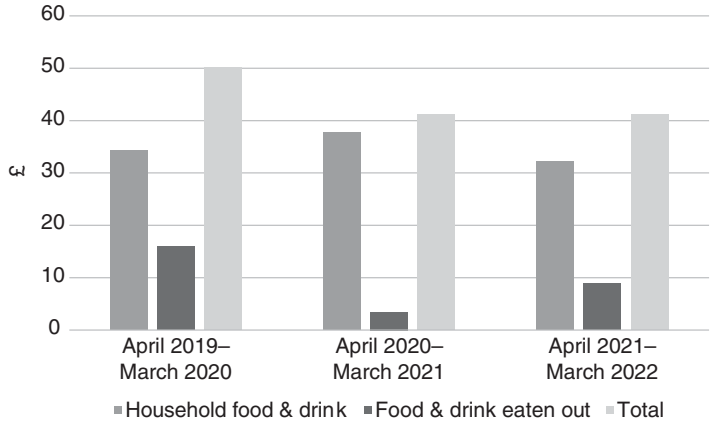
From Eating Out to Eating In

We have already seen how the food system was impacted by sudden and enforced changes in everyday lives and eating habits as a result of lockdown. Food processors, distributors and retailers all modified their ways of working as demand patterns shifted. So far, we have said little directly about either the hospitality sector or consumers and changing practices and habits around food consumption as a result of the pandemic. So, in this chapter, we first look at how businesses involved in hospitality reacted and responded to such dramatic changes. We then turn to an examination of how consumers changed their eating habits in terms of home cooking and changes in what they actually ate. There were winners and losers, and we cover rather more of that in the next chapter when we look at questions of social justice and the implications of the pandemic for the more vulnerable in society. In order to structure our discussion of food consumption, following the sociologist Alan Warde (2016, 2017), we look at *acquisition* – the manner in which food is obtained, covering shopping and what is bought, what might be termed the 'where' and 'how' of food consumption in the context of retail. How did buying habits change as a result of the pandemic and particularly lockdowns? We then look at what was eaten and its preparation and manner of consumption, what Warde calls *appropriation*. In short, what was the British pandemic diet? In fact, as we shall see, there was more than one pandemic diet, which signals a high degree of inequality in how eating at home played out. This provides a springboard to our next chapter on food justice.

Food service businesses

This sector is a single entity only in that it covers the breadth of food consumption not provided for via shops and supermarkets (although let's not forget that many supermarkets have cafés too). In contrast to the relative uniformity of what supermarkets offer, the food service sector displays enormous diversity, so this catch-all title encompasses fine dining restaurants and fish and chip shops, afternoon tea at the Ritz and drive through take-aways at McDonald's. Hotels, pubs, restaurants, cafés, bars and clubs, and fast-food outlets all faced an immediate hit. Some institutional food outlets, for instance at universities and schools, were affected deeply by lockdown, others such as prisons or hospitals less so. Lockdown orders closed all pubs, cafes and restaurants in the UK from 20 March 2020 until 4 July 2020, although some managed to continue limited operations through either a delivery or takeaway service. And even after that time, there were significant restrictions imposed on food outlets due to social distancing rules, which meant, among other things, the need for wider spacing between tables in restaurants and cafés, and therefore fewer 'covers' with knock-on implications for profitability. The dramatic impact is shown in Figure 5.1, which draws on data from the annual Living Costs and Food Survey based on records from 5,000 households in the UK. The survey shows weekly expenditure per person on eating out dropping from a pre-pandemic figure of £15.95 to just £3.45 in the pandemic year which, given that food outlets were only entirely locked down for under a third of the year is a remarkable drop. In percentage terms, the proportion of household food and drink expenditure eaten out fell from 32 per cent to 8 per cent, despite efforts such as the Eat Out to Help Out scheme in August 2020. It should be noted that takeaways and home deliveries are counted as part of household expenditure so the hit on the food service sector is perhaps a little exaggerated by the 8 per cent figure, although surprisingly perhaps, the Family Food Survey data do not show

Figure 5.1: UK expenditure on food and drink in real terms, per person per week



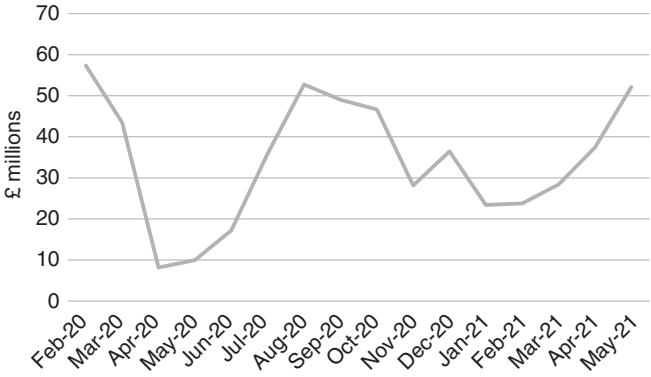
Source: Defra (2023a)

an increase in takeaway expenditure in the lockdown year, rather a slight decrease, followed by a much steeper increase in 2021/22 (Defra, 2023a).

While the headline figure from these data is clearly centred on the decline in eating out, another important observation is that expenditure on food and drink through conventional retail outlets increased only marginally from a pre-pandemic figure of £34.22 to £37.72 in the pandemic year, falling back to £32.17 the following year. In other words, while expenditure on eating out fell by 78 per cent between 2019/20 and 2020/21, the corresponding increase in expenditure on food and drink in the home was just 10 per cent.

Looking directly at the impact on businesses, data from HMRC reveal that in April 2020, approximately 1,650,000 employees in the hospitality sector (which includes both accommodation and food service businesses) were on furlough as businesses paused trading, a figure that fell to just under 590,000 employees by the end of May 2021, representing

Figure 5.2: Monthly business turnover for food and beverage businesses in the hospitality sector, UK, February 2020–May 2021



Source: ONS (2021)

25 per cent of all furloughed employees (ONS, 2021). Figure 5.2 shows the impact on monthly business turnover for food and beverage service businesses and the data mirror the household expenditure figures. Business turnover in April 2020 stood at just 14 per cent of what it had been in February.

Let's now look at a few examples at what happened in the sector, starting with pubs and restaurants. The Wetherspoons pub chain reported a loss before tax of £34 million for their financial year ending 25 July 2020, down from a £102 million profit in 2019 and its first annual loss in 36 years (J D Wetherspoon, 2020). Like-for-like sales declined by 29.5 per cent on the previous year (J D Wetherspoon, 2020), not surprising given the three-month closure. The financial implications of the pandemic were not confined only to a reduction in sales revenue. The company invested £13.1 million to implement social distancing and hygiene practices in its pubs, including the installation of screens between tables and till-surround screens at the bars (J D

Wetherspoon, 2020). The loss sustained by Wetherspoons in 2021 rose to £155 million, with bar sales declining by 42.2 per cent and food sales by 37.4 per cent (J D Wetherspoon, 2021). Turning to the restaurant trade and another of the big chains, The Restaurant Group, which owns Wagamama, Frankie & Benny's and Garfunkel's, showed a pre-tax loss of £133 million for the year ending December 2020 and another loss of £33 million in 2021 (The Restaurant Group, 2021: 1). Some – often smaller – businesses were unable to sustain the losses. For example, October 2020 saw the closure of Street Feast, which traded at four sites in London but struggled to operate under COVID-19 restrictions (McAllister, 2021). Inevitably perhaps, as time went on, adaptation by businesses was ramped up with some innovative solutions emerging. For example, some companies developed home meal kits, which allowed customers to cook or reheat restaurant food at home. Global companies such as the Mindful Chef, Gousto and Hello Fresh saw soaring subscriptions (Hancock and Hodgson, 2020), as did many local alternatives, such as Prepped, which delivered meal kits from multiple restaurants (in the Cambridge and Saffron Walden areas) *without* a subscription (Scialom, 2020). For other businesses, the more conventional route of takeaways was developed and/or expanded. For some casual dining businesses, takeaways or meal boxes came to offer more than just a lifeline and were developed into lucrative income streams. For instance, Fulham Shore Ltd, the owner of pizza chain Franco Manca, opened new takeaway and collection outlets to raise profits (Wilkinson, 2021a). Some food-to-go chains started supplying into supermarkets, such as Pret a Manger's deal to supply Tesco with baked goods (Wilkinson, 2021a).

In February 2021, Retail Economics (2021) looked at the future of the takeaway sector using Office for National Statistics (ONS) data, supplemented by the findings from a consumer panel of 2,000 UK representative households and a survey of 500 UK takeaway businesses. Their work showed that 53 per cent of consumers had ordered more takeaways during

lockdown, with 32 per cent of consumers saying they would continue to order more takeaway once lockdowns had ended. However, such consumers could not have anticipated the 2023 cost of living squeeze so that by February 2023 *The Guardian* was reporting that the UK's taste for takeaways was on the slide as eating out became more popular post-pandemic at the same time as rises in food prices: UK households ordered 12 per cent less takeaway food in January 2023 than the previous January (Butler, 2023). ONS (2021) data showed that restaurants with a takeaway/delivery service bounced back better than those without, with 2021 turnover for the sector 5.5 times higher than in same period in 2020.

Some smaller, independent business found new routes to market via coffee vans or by serving hospitals and key workers. For some, these changes of business model worked well; others wanted to return to pre-COVID-19 practices as soon as possible (Wilkinson, 2021a). In all cases, adaptability and flexibility proved the key to weathering the COVID-19 storm. Take a small cake shop and café, The Kitchen Croxley, in Rickmansworth. The owner, Linda Anderson, writes a regular blog that gives a fascinating insight into the numerous logistical and practical adaptations that the business had to make including pivoting to takeaway, expanding the takeaway offer and developing systems to manage social distancing across different lockdowns (Anderson, 2021). But on top of that, what comes through is the lived experience of making those changes, the energy it takes to run a small food business including the mental effort of checking government and industry guidance, the physical exertion of reorganizing furniture and cleaning, and the emotional labour of trying to provide a familiar service to customers when so much has changed with the rising prices of supplies, new staff and new menu items. So when hospitality businesses did re-open it was not a return to 'normal' but something new and untested.

Looking at COVID-19's immediate impact on the UK tourism and hospitality sectors up to 28 June 2020, Aston

University Business School revealed a high degree of business inactivity, covering both business closures and dormancy (Cao et al, 2020). They found 15.4 per cent (81,338 firms) were inactive, with about 40 per cent of these dormant, presumably with staff on furlough. Many had gone out of business – 6.4 per cent of all firms in the tourism and hospitality sectors, in fact, with a loss of 978,410 jobs (Cao et al, 2020: 3). Without The Coronavirus Business Interruption Loan Scheme (CBILS), the Bounce Back Loan (BBL) and, in particular, the Job Retention Scheme (furlough), things would have been a great deal worse in the sector.

Acquisition of food during the pandemic

We turn now to the *acquisition* question – how and where was food acquired through shopping and other means, in other words looking at the impact of the pandemic through a consumer lens. Whereas some aspects of the food system, including the food services sector, are not rich in data, this cannot be said for trends in consumption where data abound and where commercial market research results rub shoulders with the findings of non-governmental organizations (NGOs), policy bodies and independent academics. Fortunately, the findings have much in common and various important themes emerge. But the findings are not identical and this reflects the different methods used to gather data. While we don't slavishly explain the methodological details for each set of figures we use in this section, we do so in some instances as it helps to explain the role of market research as an aspect of the food system.

The contraction of the food service sector was, to a considerable extent, the retailer's gain as the turn to home cooking and/or scratch cooking gathered pace, born of both need and pleasure, as people looked for ways to become more self-sufficient, deal with stress, fill new 'spare-time' and connect with others on social media. This led, for example, to an increase of 15.6 per cent in sales of butter, margarine

and spreads, all potential ingredients in home cooking or used on home-cooked products such as bread; with block butter adding 36 per cent to its sales value and 34 per cent to volume in late March/early April (Sandercock, 2020b). Increases in retail sales (see Figure 5.1), however, only partially off-set the losses in the food service sector and overall demand for dairy products was down by an estimated 2 million litres per day compared to pre-lockdown (Riley, 2020).

WRAP, a climate action NGO, conducted a survey of shopping habits very early in the pandemic, between 6 and 9 April 2020, covering 4,197 UK adults responsible for household shopping (WRAP, 2020a). They reported less frequent shopping trips and a growing desire to make food last with more than a third of participants reporting certain food-saving behaviours more often than before the lockdown, such as checking what is in their cupboard (47 per cent), their fridge (45 per cent) and their freezer (30 per cent) before shopping, as well as making a shopping list before heading to the shops (34 per cent). As well as shopping less frequently, other changes occurred in people's shopping habits. The introduction of strict social distancing rules at stores alongside working from home induced some people to shift to online shopping to such an extent that obtaining a delivery slot was not always easy. *The Sun* newspaper reported in March 2020 that shoppers were waiting an hour on the Morrisons website just to book a delivery slot (Winchester, 2020).

Researchers from the Institute of Fiscal Studies (IFS) showed a big swing to online purchases, comparing the first eight months of 2020 with the corresponding period. Their data are based on detailed records of transactions. Kantar is an international market research business firm and its household-level scanner data cover purchases, in this instance for a sample of around 30,000 households in Great Britain. Over a period of months, households scan all barcodes and these data receipts are sent to Kantar, who record quantity, expenditure, price, promotions and barcode and store characteristics. The Kantar data analysed

by the IFS covered an incredible 25 million transactions and 107,000 distinct barcodes. The data show an increase in online purchases of 2.2 per cent over the same period in 2019 during the first month of lockdown. This increase continued until the beginning of August by which time the share of grocery spending done online was almost 70 per cent higher than in 2019. In-store purchases in large supermarkets showed a fall in share, but as much of the growth in online sales was accounted for by large supermarkets their decline in share needs to be looked at in that context. Moreover, a loss of share is not the same as a decline in sales, which, of course, were increasing because of the radical decline of the hospitality sector. Drawing on ONS data, Rivington et al (2021) report that, in terms of volume, conventional food retail sales increased between 3 per cent and 10 per cent through March to November 2020 compared with February 2020, with an overall year-on-year increase of 4.3 per cent to December 2020 (Lee, 2020). Among conventional food retail, convenience stores had a particularly good 2020 with a reported 39 per cent increase in sales during the pandemic, with market share increasing from 12.4 per cent to 16.3 per cent. However, it was the online food retail sector that saw, by far, the most dramatic year-on-year increase in both sales value and volume, up an incredible (though not unsurprising) 126 per cent and 79 per cent respectively, with the latter figure representing the largest increase of any online UK retail sector.

Research by Opinium Research and YouGov for Barclaycard in early 2021 based on a sample of 2,000 respondents and 574 senior members of staff working in UK SMEs, found that almost 60 per cent of British consumers expected to continue buying some of their groceries online even after the end of all COVID-19 restrictions (web source no longer available). Of those using click and collect more often during the pandemic, 90 per cent planned to continue. In May 2021, the highly informative trade magazine *Speciality Food* produced a piece highlighting likely characteristics of the post-pandemic

consumer (Speciality Food, 2021). It should be noted that this is a magazine, as its title indicates, aimed at food producers at the high-end of the food market. The inequalities in both the impact of COVID-19 and in changes in food consumption are highlighted further in the next chapter. But for *Speciality Food* at this particular time, confidence was seen to be growing particularly among consumers whose lives had been changed by the pandemic but not their incomes. First, they highlighted a degree of optimism. Research in 2021 by Kantar (2021) involving interviews with a representative sample of 1,115 adults in Great Britain, showed the highly uneven impact of the pandemic on income with some really suffering with knock-on consequences for food purchases but 62 per cent reporting that their personal income had not been impacted at all by lockdown. *Speciality Food* cited evidence of *growing* consumer confidence, only just over a year into the pandemic, drawing on the Institute of Grocery Distribution's measure of shopper confidence, which grew to its *highest* level in five years in April 2021. In fact, this was the highest level of confidence since prior to the Brexit referendum, indicating yet again the complex inter-meshing of COVID-19 and Brexit in our story. The period from 2016 to 2019 was turbulent because of the uncertainty of the eventual Brexit deal. But by April 2020 the UK had not only formally left the EU (31 January 2020) but also completed the transition period (31 December 2020), leaving the EU single market and customs union. While many would argue that this was hardly likely to herald an economic boost, it did at least give some stability, at least for a time. *Speciality Food* optimistically opined that 'more shoppers may be willing to stick with the food and drink upgrades they made during lockdown in the "new normal"' (2021). Of course, these opinions were expressed prior to the subsequent cost of living crisis of 2022–23 flowing from the Ukraine war and the ill-fated Truss premiership, which changed things dramatically with Statista (2023a) reporting that inflation had led 51 per cent

of UK shoppers to buy more own brand/value products and 74 per cent less premium/luxury foods.

Part of *Speciality Foods*' optimism was based around the continuation of working from home. A survey of 2,000 UK companies by the Chartered Institute of Personnel and Development, a professional body for HR specialists, uncovered strong evidence for this in some sectors of the economy (CIPD, 2021). A sample survey of 2,133 senior decision-makers in UK organizations, conducted by YouGov between 14 December 2020 and 4 January 2021, yielded the following key results:

- 63 per cent of employers plan to introduce or expand the use of hybrid working.
- 45 per cent plan to introduce or expand the use of total, five-days-a-week home working.
- 48 per cent plan to introduce or expand the use of flexitime (formal or informal; employer-led or employee-led).

Speciality Food concluded from these data that food retailers could expect to see demand for restaurant-quality food at home remaining with click and collect, home deliveries and online sales all part of the story. Statista (2023b), for example, report that 11 per cent of UK consumers purchase via meal kits. But again the impact of inflation has dented such confidence with online food retail sales dropping back from COVID-19 peak but remaining higher than pre-COVID-19 (Revoredo-Giha, 2023; see also Centre for Cities, 2023).

Speciality Food also concluded that the pre-existing trend towards greener consumption had not been adversely affected by the pandemic, referring to the 2021 Global Buying Green Report (Trivium Packaging, 2021) based on a survey of more than 15,000 consumers from Europe, North America and South America covering sustainable packaging:

- 67 per cent environmentally aware (same as for the previous pre-pandemic year).

- Fewer than a third of consumers had de-prioritized sustainable packaging due to COVID-19.
- 83 per cent of younger consumers are willing to pay more for sustainable packaging.
- 67 per cent of consumers find recyclability of packaging important; however, the perceptions do not always match recycling facts.
- 54 per cent of consumers say the sustainability of packaging is a factor in their product selection process.

Finally in this section, there is another aspect of the where and how question that deserves a mention, namely a turn to home food production for those for whom this was a possibility. Nearly 90 per cent of local authorities reported an increased demand for allotments as a result of the pandemic (Priestley, 2022). Mead et al (2021) report that those engaged in home food growing during the early weeks of the pandemic reported less food insecurity and higher levels of well-being than those not engaged in home food growing, and their data indicate the likelihood of a modest pandemic-induced growth in home-growing.

Appropriation of food during the pandemic

We turn now to what food people ate as the pandemic unfolded. Researchers at the IFS used household scanner data to look at consumer spending dynamics in the run-up to the first national lockdown at the end of March 2020 (O'Connell et al, 2020). Their analysis revealed large spikes in spending on storable products in the four weeks preceding lockdown. Spending on staples such as canned goods, pasta, rice and grains rose sharply at the end of February, peaking in mid-March at over 80 per cent of the January–February daily average. In the four weeks up to 23 March 2020, soup sales, for example, were up 75 per cent compared to the same period in 2019, rice and noodles up 54 per cent,

and dried pasta 49 per cent. Spending on discretionary calories, such as alcohol, desserts, confectionery and soft drinks, as well as on perishable foods like fruit, vegetables, meat and dairy products, also increased but not to the same extent. Interestingly, and contrary perhaps to press reports of the 'selfish and greedy' individual hoarder, their analysis shows that the spike in spending in the run-up to lockdown on staples and household supplies was driven not by a small number of extreme purchasers. Instead, many more households than usual were choosing to buy these products in the run-up to lockdown, with only small increases in the average quantities bought per transaction.

The IFS also explored differences in purchase dynamics across socio-economic groups. It found a sharp increase in the quantities purchased of all storable categories, underlining the fact that panic-buying and hoarding were widespread. However, they also found that the average increase was substantially bigger for higher SES (socioeconomic status) households, with those in the top group (AB households) increasing purchases by 55 per cent across the affected categories, compared with 30 per cent for the bottom group (E households), a pattern that persisted into the lockdown period.

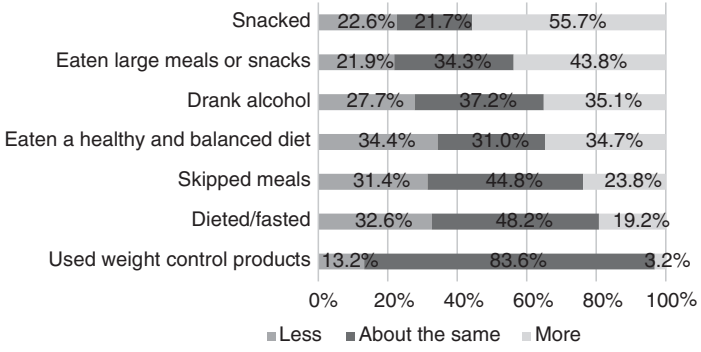
A major cross-Europe study of 12 nations, including the UK (Millard et al, 2022), revealed significant changes in food consumption between March and July 2020 with a reduction in fresh food and an increase in the consumption of both processed and comfort food. However, although the study covered 7,368 consumers across the study area, just 314 were from the UK so the data need to be treated with some caution. Fortunately some studies with larger samples were undertaken in the UK but before we turn to these, the European results do highlight one issue that is not picked up in any of the UK studies, namely a degree of geographical variation with the decline in consumption of fresh food being more pronounced in large cities than in smaller towns and rural areas, although in those places, perhaps with greater local supplies, there was still

a reduction among households that suffered a loss of income as a result of lockdowns.

Turning to the UK-specific studies, a project focussing on weight-related lifestyle behaviours conducted an online survey of 2002 UK adults in April and May of 2020 (Robinson et al, 2021). A large number of participants reported negative changes in eating and physical activity behaviour, and problems with motivation and control around food, compared to before lockdown, trends that were particularly pronounced among those with a higher body mass index. In terms of the type of foods people ate during the pandemic, there was evidence of an increased appetite for *both* healthier and less healthy food. For example, although 56 per cent of the sample reported snacking more frequently, 23 per cent reported less snacking. Some of the results are shown in Figure 5.3. The survey was based on the respondent's own perceptions of what is healthy and what is a snack, and therefore precise dietary changes are not entirely easy to deduce.

Analysis by Deloitte (2020) suggests that the onset of the pandemic saw many consumers increasingly care about their own health, with a general move to healthier product categories

Figure 5.3: Self-reported changes to weight management behaviours during COVID-19



Source: Based on Robinson et al (2021)

such as yoghurts and vitamins, and increased desire for local food provenance and fresh food due to concerns over health and welfare in the supermarket environment. Other survey results allow us to build on these findings. For example, the IFS (O'Connell et al, 2020) deployed a number of sources (including Kantar 'at-home' and 'out of home' datasets, and the Living Costs and Food Survey), which provide information about food and non-alcoholic drinks purchases from stores, takeaways and restaurants in the early months of the pandemic. Their overriding finding is that the pandemic led to a significant increase in total dietary calories consumed. By May 2020, total calories were 15 per cent above normal levels, and they remained, on average, 10 per cent higher than usual for the remainder of 2020. There was a large increase in calories from takeaways, which peaked at more than double usual levels in the UK's second national lockdown in November 2020. Calories purchased from supermarkets and grocery stores were also more than 10 per cent above normal levels throughout the pandemic. Together, these more than offset the reductions in calories from eating out that resulted from the closure of the hospitality sector for a significant part of 2020. Interestingly, although calories from ready-to-eat sources, such as snacks increased, there was a larger increase of cooking ingredients. The pandemic therefore led to a shift in the balance of calories towards raw ingredients and food that required home preparation. In a survey conducted by WRAP (2020b), respondents reported they were increasingly making meals from random ingredients (37 per cent), opting to cook creatively with new recipes (33 per cent), and saving food leftovers to use the next day (30 per cent). Consequently, there was a 34 per cent reduction in the amount of potatoes, milk, bread and chicken thrown away. Commenting on the lockdown's effect on their households' food habits, anonymous participants reflected:

> Because the children aren't at school now, the food's getting eaten quicker, so I'm having to plan for three

> square meals a day as opposed to two, because when they're at school they are provided with food.
>
> I'm finding it a lot easier to use things by their 'use by' date by making meals, prepped, homemade, and then freezing them in portion sizes ready for us to eat in the week.

Consistent with other studies, the IFS (O'Connell et al, 2020) also found significant variations: while the vast majority (90 per cent) of households increased their total caloric intake, their analysis showed a significant socioeconomic gradient in the effect of the pandemic on calories purchased and consumed. Among working age households, those from higher SES groups exhibited considerably larger increases in calories than households in lower groups, while retired households showed the smallest increase in calories. Accounting for this difference, O'Connell et al suggest households in higher SES groups were more likely to switch to working from home and less likely to have suffered an income and employment shock (2020). The higher SES groups in the IFS study had both the financial and time resources to buy fresh, raw ingredients and to cook from scratch, and in so doing reduce their consumption of more processed ready-to-eat foods, all positive dietary behaviours, and yet they were found to have increased their caloric intake by as much as 25 per cent. In contrast, retired households were particularly susceptible to COVID-19 and were much more likely to have been advised by government to shield (that is, avoid social contact). The IFS research also shows that living in London and being a relatively young working-age household were associated with significantly larger calorie increases.

This mixed picture of both positive and negative food-related experiences and outcomes, was also picked up by Snuggs and McGregor (2021) who reported the results of an online survey of 240 UK adult participants who were asked to consider their goals and motivations around food and mealtimes at two time

points: before Lockdown 1 and summer 2020. While some participants appear to have thrived during lockdown, with healthier lifestyles and decision-making, others gained weight, lacked varied diets and struggled with food expense. The study found that young adults were the most likely to have changed food priorities over the course of the lockdown period, with those between 18 and 28 years of age placing less importance on convenience and familiarity, and more importance on health, price, weight control and natural content. It also found that parents and carers of children gave more importance to family involvement in meal preparation and less emphasis on ease of preparation. Furthermore, the study identified those living far away from amenities or in self-isolation as potentially vulnerable in future lockdowns and in need of higher levels of support.

Evidence of a baking boom was apparent in website searches and social media posts. Google searches for terms like 'flour', 'baking', 'sourdough' and 'focaccia', for example, saw significant spikes during the April–July 2020 period (White, 2020). The BBC Food website saw record traffic during the first month of lockdown with a 540 per cent increase in visits to its banana bread recipe, and an 875 per cent increase in visits to its basic bread recipe (BBC, 2020). Although some people looked to new cookery techniques and recipes in a return to scratch cookery, a report from the Co-Op also found that so-called 'comfort foods' increased in sales during the lockdown (Speciality Food, 2020). This is a trend reported during April/May 2020, and the numbers are quite astounding. Packet trifle sales increased in volume by 738 per cent, tinned pineapples were up 353 per cent, custard powder up 336 per cent. *Speciality Foods* suggested that nostalgia and childhood memories may have been behind this rise in sales, although the long shelf life of these foods must also have played a part. Continuing the theme, an article in *The Economist* (2020) suggests diets have 'regressed' to patterns seen in the 1980s. Perhaps childhood memories, nostalgia and even regression were a factor, but there may also have been a feeling for some, especially those

juggling working from home with home schooling of children, of having less time than usual during the lockdown despite being at home; so quick, almost-ready-made food had a strong appeal. This might have also been a factor in the huge rise in the volume of sales of products like tinned mandarins, jelly, canned ham, pickled onions and corned beef. In this context, with consumers shopping less frequently and needing to cook more at home but under time pressures, meal kits provided a semi-prepared solution. They can be cooked, or at least reheated, at home. Companies like Hello Fresh saw an increase in customers for meal kits and there were new initiatives such as 'Lockdown DIY kits' from London-based burger restaurant chain Patty & Bun, whose home-delivered burger kits won a *Time Out* magazine 'Time In' award (Time Out, 2020). *The Financial Times* (Hancock and Hodgson, 2020) cited enormous growth in the early weeks of the pandemic for recipe box providers such as Mindful Chef and Gousto.

Beyond increasing sales of comfort foods, research by Mintel (2020) also indicated shifting consumer trends during April and early May. Based on a sample of 2,000 British internet users (aged 16+) the research found that a vegan diet was proving more attractive to 12 per cent of respondents, with 25 per cent of 21–30-year-olds saying that the COVID-19 pandemic had made a vegan diet more appealing. Mintel also found that 23 per cent of respondents said that 'five a day' is a higher priority now than before the pandemic, and 55 per cent of respondents said they planned more scratch cooking in the future.

IFS researchers used comprehensive real-time data on grocery purchases and prices to show how grocery inflation and promotional activity evolved up until the beginning of August 2020 (Jaravel and O'Connell, 2020). Their analysis shows that the onset of Lockdown 1 on 23 March 2020 coincided with a large, 2.5 per cent spike in grocery prices. By the first week of August however, following five months of gradual deflation, the price level for groceries was just 0.5 per cent higher than it was at the beginning of the year. This inflation,

and subsequent deflation, was primarily driven by changes in promotional activity and was experienced across all product types. In the first two weeks of lockdown, for example, the share of transactions involving price promotions fell to 16.5 per cent, about 4 per cent lower than the 20.5 per cent seen in the preceding weeks of the year. By the first week of August, the share of transactions entailing price promotions had returned to pre-pandemic levels. Accompanying this initial reduction in price promotions was a reduction in product variety. In the first week of lockdown, for example, there was a decline of 8 per cent in the number of unique products purchased – a figure that persisted throughout Lockdown 1 – indicating a reduction in the variety of products available to households. This fall in product variety led to an increase in the cost of living, as some consumers were unable to purchase their favoured product (Jaravel and O'Connell, 2020).

As with panic buying and hoarding behaviour, it is interesting to see how the experience of grocery inflation varied across socioeconomic groups as different types of households purchased different products. Using income levels as a proxy for SES, Jaravel and O'Connell (2020) found that while the inflationary spike at the beginning of lockdown was experienced by households across different income levels, it was larger for better-off households than less well-off ones, although this gap subsequently shrank as the overall rate of grocery inflation fell over Lockdown 1. This pattern of a large spike in inflation at the beginning of lockdown followed by gradual deflation also occurred across different types of retail outlet, from large to small store formats and online shopping. It was, however, as Jaravel and O'Connell note, considerably more pronounced for the set of full-line supermarkets than for discounter supermarkets or convenience stores with the big four retailers (Asda, Morrisons, Sainsbury's and Tesco) and the premium retailers (for example, Marks and Spencer, Ocado and Waitrose) driving much of the aggregate patterns in promotional activity and inflation.

Conclusion

This chapter has demonstrated the variegated and complex impact of the pandemic on diet and eating practices. This is scarcely surprising given the uneven impacts of the pandemic across society as a whole. For some, with reduced income and increased time pressures due to home-schooling of children, convenience and comfort became important drivers of food choice. For others, home working might mean more free time and fewer expenses associated with commuting and therefore the opportunity for more home cooking and/or more attention to healthy eating. In many ways these differences reflected existing inequalities in society, which leads us to the next chapter where some of these inequalities are explored in more detail.

SIX

Food Justice: The Poverty and Health Dimension

Introduction

This chapter examines how the food challenges brought about by the pandemic impacted on the most vulnerable (both medically and financially), and the nature of the responses to these challenges from government, the private sector, charities, non-governmental organizations (NGOs), and even celebrities, such as the footballer Marcus Rashford. We concluded Chapter Two by contrasting the relative robustness of the logistical capabilities of the wholesale and retail sectors with the vulnerability that characterizes some groups in society, regarding diet, health and inequality. The pandemic struck at a time of growing individual and household food insecurity. Drawing on Trussell Trust data, Rivington et al (2021: 2) found that 'around 8–10% of households in the UK were estimated to have been moderately or severely food insecure in recent years, whilst 1–2% had used food banks in 2018/19 ... (and) around 11% of children under 16 lived in food insecure households'. The IFS (Cribb et al, 2022) showed that prior to the pandemic, the incomes of poorer families with children were falling behind average incomes, with relative child poverty at its highest level since 2007. However, absolute or material deprivation had fallen due to a reduction in the relative prices of essential goods such as energy, food, and clothing the same time. This was to change rapidly for the worse during the pandemic first through loss of income and

later through inflation as the pandemic effect morphed into the Ukraine war effect.

The chapter comprises three main sections. First, we consider the range of different factors that drove growing levels of food insecurity during the pandemic. Second, we look at some of the available data exposing the nature and extent of food insecurity and, where possible, consider the wider implications of the trends uncovered. And, third, we look at how the Government and others responded to the challenges.

The drivers of food insecurity in the pandemic

We showed in Chapter Three how successfully supermarkets maintained food supplies during the pandemic, with early shortages dealt with through clever logistical work. Consequently, food prices remained stable with supply chain infrastructure remaining largely operational. And we saw in Chapter Four how alternative retail outlets responded with creativity and imagination in some instances to the new challenges, as did parts of the hospitality sector as shown in Chapter Five. Notwithstanding all these success stories, there were countervailing drivers of food insecurity affecting particular sections of the population, either through a deepening of existing trends or as a direct impact of lockdown restrictions. Restrictions combined with revised supermarket opening times, and social distancing requirements resulted, for those who could adapt, in new food shopping behaviours characterized by larger, less frequent shops and a move to online grocery shopping. But not everyone had the capacity or the resources to adapt and change to these new ways of shopping. Those who were designated highly vulnerable to COVID-19 because of age or underlying health reasons became, almost overnight, housebound so access to food immediately presented a direct problem. Those who were already housebound and dependent on neighbours or family members to buy and deliver their food or were reliant on commercial delivery services,

might also face problems. Finding a delivery slot became highly challenging in the early weeks of lockdown and in some instances traditional informal routes of supply, through friends and family, were also compromised.

Turning to those sections of the population not classified as high risk in terms of the disease itself, other factors came into play. For those families with school-age children forced to stay at home, there was an immediate loss of breakfast club provision and free school lunches. Some workers were put on furlough at 80 per cent of usual income which, for those on low wages, represented a considerable reduction. In some instances this loss of income was compounded by higher costs of heating associated with home schooling and home working. Particularly vulnerable were those who were already experiencing a degree of food insecurity, for example, people on low incomes, income support, zero-hour contracts or without reliable wages. Thus, for many individuals, COVID-19 related additional income issues added to and exacerbated a range of other challenges and vulnerabilities including existing debt, health and mental health issues, and care responsibilities. While furlough and income support (£20 increase in Universal Credit, mortgage/debt holidays and so on) helped, large gaps remained in people's ability to access safety nets. In some instances this may have resulted in low-income people taking on more debt to survive the current situation, reducing their ability to break the poverty trap (Connors et al, 2020). Those with existing vulnerabilities, whether associated with low income, mobility issues or health-related self-isolation requirements, were particularly impacted (Rivington et al, 2021). There was a geographical element too with a high impact on those living on low incomes in isolated coastal and rural areas who either relied on public transport and/or perhaps did not have access to a reliable internet connection. Nor were spatial access issues confined to rural areas as lockdown restrictions exacerbated the problems of food deserts in some urban areas identified

in a number of studies prior to the pandemic (Shaw, 2006; Corfe, 2018).

On top of these issues of access and affordability, as we have seen, diets changed and there is evidence of increasing consumption of less healthy processed foods, which, alongside reduced physical activity, had a negative effect on health. For example, Mattioli et al (2020) cited an increased risk of cardiovascular disease as a result of the changes.

The nature and extent of food insecurity

A number of studies were undertaken that add detail to the general points made above. For example, Thompson et al (2022) undertook a qualitative study in 2020/21 to understand how COVID-19 was affecting local food systems, household food practices and efforts to mitigate dietary health inequalities in the East of England. They interviewed 38 residents living in the region and 27 professionals and volunteers providing local support around dietary health. The residents were selected to cover households with infants and/or school-aged children; families eligible for free school meals (FSMs); low-income households or those on state benefits; those aged 70 years+; households with people who were self-isolating or shielding due to a health condition; and households with key workers. Some of the key outcomes of the interviews with residents were summarized as follows:

> Eating at home all or most of the time meant increased labour in terms of food provisioning, especially food shopping, for most households. The notable exception to this was some of the older people who lived alone. For them, staying indoors and social isolation reduced their interest in, and the quantity and quality of, the food they ate. Those on very low incomes, especially those reliant on welfare benefits, found it difficult to manage their food budget because they were unable to 'shop around' for the

> best prices at multiple stores. The in-store environment also became increasingly difficult for those with caring responsibilities and/or with health and mobility issues. Overcrowding, queueing, and hostility from other shoppers all made food shopping more difficult and strenuous. Three distinct behavioural responses to these challenges emerged from the analysis: (1) changing supermarket shopping routines; (2) moving to online shopping; and (3) increased reliance on smaller local stores. (Thompson et al, 2022: 3)

David Vincent (2023) in his excellent overview of the pandemic in Britain uses qualitative data derived from the COVID Realities project (see Garthwaite et al, 2022 and Patrick et al, 2022). Some of the quotes used speak eloquently of the challenges faced by some of those grappling with food buying during the pandemic:

> My food shop has gone up, previously I was likely to spend probably on average of £100/wk. This week's bill was £150 although that did include some £8 shorts for my son. All of a sudden, he has shot up. I'm not sure if that is down to the continual munching he does. There seems to be a lot less offers in the shops now. Morrisons tended to do the 2 for £3 on fruit and these don't seem to be so easy to come by. Tesco's don't seem to have the same sort of offers as before, such as the offers of the week on veg and fruit. I do tend not to go to the same shops so much as I used to due to the offer situation and have recently shopped more in Asda of late. (COVID Realities participant June 2020: Vincent, 2023: 136)

> COVID reality is that shopping online at one of the bigger supermarkets is not economical at all. You have to spend over £40, which is the minimum basket charge – even at Iceland it's £35 but at least you get free delivery,

> and then they charge you a fee for pick, pack and deliver of at least £3, depending on the time of day you chose. Even if you are able to click and collect it still costs £1.50 for pick, pack and deliver. (COVID Realities disabled participant June 2020: Vincent, 2023: 136–7)

On 11 April 2020, the Food Foundation reported the results of a commissioned YouGov survey, which found that more than 3 million people had reported going hungry in the first three weeks of the UK's COVID-19 lockdown. A few days later, a report from King's College London, commissioned by the Food Foundation and based on the same YouGov survey data, was published (Loopstra, 2020). This sought to explore the factors that were driving hunger in the population and establish the extent to which the COVID-19 lockdown was either exacerbating pre-existing food insecurity or creating new economic vulnerabilities, or maybe both. The report estimated that the number of food insecure adults in Britain had quadrupled under the COVID-19 lockdown. Not unsurprisingly, it found that vulnerability to food insecurity had worsened for the already economically vulnerable, with those at particular risk including adults who were unemployed, adults with disabilities, adults with children, and Black and Ethnic Minority groups. The crisis also created new economic vulnerability for people who experienced income losses and self-isolation. Adults reporting income losses of greater than 25 per cent were, Loopstra found, at significantly heightened risk of food insecurity, including adults with background socio-economic risk of food insecurity as well as those typically found not at risk. Those not previously at risk included those whose incomes were reduced during lockdown as a result of being laid off work. On 20 March 2020, after discussions with employers' representatives and trades unions, the Government announced the Coronavirus Job Retention Scheme, soon to be known as furlough. The Government agreed to reimburse employers for 80 per cent of wages in a scheme that lasted under

various guises until September 2021, with a reduced rate of 70 per cent for July 2021 (see Clark, 2021). In effect, workers could stay at home but still retain their employment status, with their employer expected to make up the remaining 20 per cent. However, this was an expectation and not a requirement so some employees suffered a significant income reduction when they went on furlough. Women and those on low incomes were the least likely to have their wages topped up beyond the 80 per cent (Adams-Prassl et al, 2020). Moreover, there was a ceiling of £2,500 per month for each individual employee so workers earning more than that also saw a reduction in income. And some employees while receiving 80 per cent of their basic pay saw a significant income reduction as a result of lost overtime. In addition to economic vulnerability, self-isolation and a lack of food in shops also created new dimensions of food insecurity in the UK, with many unable to acquire the food they needed because they could not go out and/or because food supplies were not, at that time, available (Loopstra, 2020).

Not surprisingly, there were large increases in food bank use in early lockdown (IFAN various dates), showing that the pandemic had led to a food insecurity crisis in the UK in the spring of 2020. The crisis covered all four pillars of household food security as outlined by the Food and Agriculture Organisation (2013), namely food availability, economic and physical access to food, food utilization and stability over time. But there was a particularly acute food accessibility problem, with many individuals and households struggling with economic and/or physical access to sufficient, nutritious food. In response, charities, governments and food businesses mobilized to meet rising demand and develop interventions to respond to the new circumstances of people having to stay at home. The result was a 'complex and dynamic system of responses to help people access food, which looked different in different parts of the country and for different households and individuals' (Lambie-Mumford et al, 2020a: 7).

Another study by Isaacs et al (2021) was based on a qualitative longitudinal study of families' changing food practices in the context of COVID-19, with fieldwork taking place between October and December 2020 at three case study sites (Bradford; Folkestone and Hythe; and the London borough of Brent). Families from across the socioeconomic spectrum were recruited to take part in remote, in-depth interviews and a set of creative activities, and were asked to reflect on family food practices, engagement with the food environment, and broader experiences of managing through COVID-19. The research sought to understand how participating families' experiences of, and feelings towards, food changed during the pandemic, how their food practices changed, and what aspects of COVID-19 and the response to it were important in shaping these changes. Their key findings are summarized below:

- Families benefitted when they had access to a diversity of food sources in addition to supermarkets. As supermarkets became a key site of transmission and supply disruption, people visited them less frequently. Only those who could afford it and who were living in areas where these outlets were available, were able to pivot to safer, more reliable ways of acquiring food such as veg boxes, online deliveries, smaller local shops (seen as safer due to their size), farmers markets and growing veg themselves.
- It was extremely difficult for families experiencing financial insecurity to prioritize nutritious foods. When making decisions about food in a context of financial insecurity, ultra-processed and HFSS (high in fat, salt and sugar) foods are often cheaper per calorie, convenient to prepare and enjoyed by children as well as being readily available from many outlets. These foods therefore fulfilled an important need for parents struggling to make ends meet.
- In addition to financial security, a range of specific vulnerabilities made accessing healthy food more challenging, particularly for those living with underlying health

conditions and/or anxiety and with families with children with particular dietary needs, due to allergies or autism, and those with limited storage space or unable to utilize social networks to support them with food procurement.

- When given the opportunity and time, families enjoyed spending time preparing and eating healthy food. With more time at home and less pressure on schedules (such as from long commutes) those who were furloughed and newly working from home had more time to recommit to healthy food practices that may have always been theoretical priorities but could now be actualized. This included healthier food preparation, more cooking from scratch, purchasing more 'natural' and 'organic' foods, expanding their recipe repertoires and involving children in food preparation.
- However, when struggling to cope with the demands of daily life, the nutritional content of food was often sacrificed in favour of convenient foods. The burden of unending food preparation became increasingly significant for many. From-scratch cooking and attempts to promote healthy eating fell by the wayside in favour of getting something on the table that would be eaten by children. For parents, this experience highlighted the value of school food in providing a substantial (and ideally balanced) meal, significantly reducing the amount of work that needs to go into both preparing children's food and making sure they eat it.

Thus the pandemic was experienced by survey participants in a diversity of ways and these experiences were shaped by personal characteristics and circumstances, many of which intersected. These characteristics included participants' pre-existing mental health, their anxiety around transmission and their comfort being out in local areas, as well as those relating to specific dietary requirements, financial vulnerability and gender dynamics. With respect to the last of these characteristics, for example, 'exhaustion and a sense of relentlessness were most

keenly felt by single parents and those with unequal child and house care burdens, some of whom had to juggle childcare, work and food procurement' (Isaacs et al, 2021: 16). While the pandemic exposed sources of vulnerability, it also revealed factors that contributed to resilience and keeping people afloat, including good mental health, an ability to shop without anxiety and to access alternative food sources in addition to supermarkets, good opportunities for familial, neighbour, community and school support, consistent pay and/or timely furlough, and a more equal division of family-life labour.

Responding to the challenge: policy and activism

From what we have seen so far there was clearly a hierarchy of needs in the early days of lockdown. Most urgent of all were the needs of those unable to get out or even to arrange home deliveries, those who were clinically extremely vulnerable and therefore known to the NHS. A free weekly food box was provided by the Government containing:

> a menu of provisions little changed since the Second World War: potatoes, apples, UHT milk, tins of chopped pork or corned beef, Heinz tomato soup and baked beans, tea and Maxwell House instant coffee, sliced white bread. The only concession to seventy-five years of dietary evolution was the inclusion of two jars of Bolognese sauce and a packet of pasta. (Vincent, 2023: 137)

Next in the hierarchy of need were the growing number of vulnerable and impoverished people struggling as lockdown bit. In order to help local food aid charities respond to these needs Defra set up the Food Charities Grant Fund, which was closed on 13 July 2020 'due to a high volume of applications' (Vincent, 2023: 137). A very close eye was kept on the national/local responses and their success or otherwise by a team led by Hannah Lambie-Mumford at Sheffield University,

looking in great detail at responses across the UK (Lambie-Mumford et al, 2020a, 2020b, 2021). The team mapped responses, drawing on an analysis of national policies and programmes implemented during the early months of the crisis. The mapping involved systematically searching and analysing publicly available information on responses to food insecurity during the national lockdown across March–July 2020. Their analysis revealed a complex and multi-layered landscape of responses. Responses to the challenges of COVID-19 came from all sectors (government, private, voluntary) and at all levels (local, national, the UK). The Government made new funds available, the food industry targeted groups at risk of food insecurity, and the voluntary food aid sector played a hugely significant role in responding to economic vulnerability to food insecurity throughout the crisis. Table 6.1 summarizes some of key interventions provided by three sectors (government, the third sector and the food industry) for three targeted 'at-risk' groups (shielding, moderately clinically vulnerable, low income).

Further complicating an already complex picture, the team also identified how responses varied across the UK's four constituent countries, with local governments, schools and local charities often delivering local responses. Focussing on three major interventions: emergency payments schemes, FSM replacements and the food parcels (grocery boxes) for people who were shielding, their analysis highlighted some key differences as well as some similarities. Table 6.2, for example, summarizes variations in the provision of grocery box schemes for people who were extremely clinically vulnerable.

What comes over strongly from the Lambie-Mumford research is the wide variety of responses and their ad hoc nature. This results from the variety of funding sources covering both national and local government schemes ad national and local charities. This is even more apparent when it comes to delivery with six main categories of key actors in the provision of food aid: as shown in Table 6.3.

Table 6.1: Types of responses to address threats to household food security for at-risk groups

Shielding population	Moderately clinically vulnerable	Low income
• Government food grocery box scheme • Priority delivery slots • Government financial support • Third sector provision (Salvation Army and Red Cross home delivery parcels, food bank support)	• Priority delivery slots • Government financial support • Retailers shopping hours for moderately vulnerable, increased supermarket delivery capacity • Third sector provision (Salvation Army parcels and Red Cross hardship grants, food bank support, initiatives supported by FareShare)	• Government financial support • Free school meal replacement schemes • Charitable emergency assistance (food banks, meal projects)

Source: Lambie-Mumford, H., Loopstra, R. and Gordon, K (2020) *Mapping responses to risk of rising food insecurity during the COVID-19 crisis across the UK, Food vulnerability during COVID-19, Phase 1 Report March–July 2020.* https://doi.org/10.15131/shef.data.23515212. Reproduced with permission.

Having *mapped* national responses, Lambie-Mumford et al (2020b) then looked at how interventions worked in practice. Drawing on a range of secondary and primary data sources, they explored the implementation and impact of four of the national interventions: School Food Alternatives, Emergency Finance Provision, Emergency Food Systems and the grocery box scheme.

Starting with the rollout and effects of alternative school food provision during school closures in the UK national lockdown from March to July 2020, Lambie-Mumford et al (2020b) reported that, while a range of alternative approaches to FSMs were provided (for example, direct payments via

Table 6.2: Grocery box schemes for people who were extremely clinically vulnerable, 2020

England • Scheme ran 29 March to 31 July • 2.2 million people on shielding list • People had to fill out an online form to register for the service or call a hotline • Weekly box for single individual provided by Brakes and Bidfood wholesalers	***Northern Ireland*** • Announced 6 April and ran until 31 July • Up to 95,000 on shielding list but also covered people in need of food and not shielding • People register for food box through the COVID-19 Community Helpline • Delivered by local authorities
Scotland • Scheme ran 3 April to 31 July • 179,728 people on shielding list • Boxes ordered through the Scottish Government SMS Shielding Service • Weekly box for single individual provided by Brakes and Bidfood wholesalers	***Wales*** • Scheme ran 3 April to 16 August • 130,000 people on shielding list • Boxes ordered by contacting the local authorities • Weekly box for single individual provided by Brakes and Bidfood wholesalers

Note: Extremely clinically vulnerable people are those who were shielding.
Source: Lambie-Mumford, H., Loopstra, R. and Gordon, K (2020) *Mapping responses to risk of rising food insecurity during the COVID-19 crisis across the UK, Food vulnerability during COVID-19, Phase 1 Report March–July 2020.* https://doi.org/10.15131/shef.data.23515212. Reproduced with permission.

BACS or other cash transfers, food parcels and food vouchers), the evidence suggested a very varied picture in terms of implementation. Early in the scheme, for example, there were significant problems with access to the food voucher system rolled out in England. Across the UK, concerns were raised over the suitability of eligibility criteria and the ultimate reach of the replacement schemes. Moreover, there was also an important debate around the benefits of cash or food provision as alternatives for this with different practices adopted across the UK. In Scotland and Wales there was a shift from direct food provision to the provision of cash, whereas in England a national voucher system became a commonly

Table 6.3: Key actors and their roles in a response to the pandemic

Key actors	Role
Local councils	Helplines, financial advice or assistance, direct food provision, support for third sector food response.
Local food poverty alliances or food partnerships	Co-ordinated food responses, facilitated collaborative working, channelled resources, collated and shared information on available support.
Third sector projects previously providing food	Established local helplines, promoted support and identified households who would benefit from support. Adapted previous food responses in response to need and guidelines. Common provision included food parcels or hot meals for collection or delivery. Also provided smaller food packs to minimize shopping trips for people who were staying at home.
Third sector projects newly providing food	Common provision included food parcels or hot meals for collection or delivery. Also provided support with shopping (collecting shopping and prescriptions for people shielding or self-isolating).
Informal groups	Support with shopping, informal, 'neighbourhood food banks', 'pop up food banks'.
Local businesses	Supporting the food response through donations, resources, in kind.

Source: Lambie-Mumford, H., Gordon, K., Loopstra, R. and Shaw, S. (2020) *Comparing local responses to household food insecurity during COVID-19 across the UK (March–August 2020)*. https://doi.org/10.15131/shef.data.23515212. Reproduced with permission.

used option (Lambie-Mumford et al, 2021). The footballer Marcus Rashford was one of the most prominent critics of the quality of provision, leading fundraising efforts to support children in poverty with food and taking on the Government over the quality of some free school parcels. Evidence provided to the EFRA Select Committee by the Food Foundation from polling in August 2020, 'showed that 29% (equivalent to

2.2 million children) of children aged 8–17 were registered for Free School Meals at that time, with 42% of these children's parents (900,000) reporting that they were newly registered to the scheme since the start of the pandemic' (Food Foundation, 2021). In the six months to August 2020, the Foundation found that 2.3 million children lived in households experiencing moderate or severe food insecurity, covering 14 per cent of households, an increase from 11.5 per cent pre-COVID-19.

In terms of the effects of national emergency finance schemes during the UK-wide lockdown over March to July 2020, Lambie-Mumford et al (2020b) reported that additional funding, changes to eligibility criteria and easier access mechanisms were widely welcomed by stakeholders who felt that schemes played a key role in supporting people in need. However, they also reported that there were still significant concerns regarding the reach of the schemes, the lack of scheme promotion, and potential problems that those who were newly eligible might have in knowing where and how to access the support available. Significantly, they also found that there was a notable evidence gap on the impact of such schemes, with no assessment of how effective they might be in preventing household food insecurity despite providing funding for people to access food being one of the key objectives if the schemes.

When it came to emergency food provision Lambie-Mumford et al (2020b) highlighted significant increases in the provision of food parcels over the course of Lockdown 1 and that significant government and corporate funding was directed towards food aid charities. The ways in which these networks adapted were extensive and highly responsive. The scale of funding and bulk food donations they were able to move through their networks in the space of a few months was unprecedented. When Lockdown 1 was announced in March 2020, the UK government designated food banks as essential services and permitted them to continue their operations. However, Lambie-Mumford et al (2020b) highlighted how COVID-19 threatened several of the well-established

vulnerabilities in food charity systems: food donation supply chains, reliance on volunteer labour and challenges of meeting dramatic increases in need. As Thompson et al (2020) reported for the East of England:

> Local authorities and community groups in the region have had to mobilise and respond to issues at a rapid pace. While the Government food parcel scheme focused on feeding those in the shielding category, local authorities worked on supplementing the scheme, where required, by helping to feed and support other vulnerable groups in the community. Food banks have seen a rapid increase in need for their services and have also had to change their operating practices. Some have had to close or change venue and operating hours to accommodate changes to their volunteer base. … While the innovative, effective and generous ways in which this has been approached in communities is not in doubt, there are gaps in the system and lessons to be learnt should this level of response and co-ordination be called for again. (Thompson et al, 2020: 20)

The grocery box scheme, which was available to people who were shielding during Lockdown 1, was a policy designed to protect the food security of those in the clinically extremely vulnerable group who could not access food by other means, and who were advised to not go out for any reason. Lambie-Mumford et al (2020b) drew attention to the unprecedented nature of the scale, speed and complexity of the need for direct food provision targeted at supporting those on the shielding list. The scheme was not without its strengths, especially in some instances of close working between national and local government, but their analysis revealed some limitations. The contents of the grocery boxes delivered were generally not adequate. They did not provide sufficient fresh food of good quality, and the boxes were generally not appropriate

for meeting the nutritional, cultural or dietary needs of their recipients. Stakeholders also expressed significant confusion around who was eligible for the scheme, especially in the early weeks.

To what extent the Government made a concerted attempt to coordinate all this activity or to monitor the success or otherwise of the various schemes is still open to some question. At the time of writing, the UK COVID-19 Inquiry chaired by Baroness Hallett has not announced any inquiry modules directly related to food supply. Certainly, early on the Government convened its already existing Food Chain Emergency Liaison Group and established a Food Resilience Industry Forum (FRIF), which met daily in the first couple of months of the lockdown. There was a separate Scottish Government's Food Sector Resilience Group. The FRIF with up to 150 members drawn from across the food supply chain was chaired by Chris Tyas, who had had a 40-year career in the food industry primarily with Nestlé. Interestingly, in an interview in *The Grocer*, Tyas reports that 'he was approached by two supermarket CEOs with a daunting proposal: to chair the Food Resilience Industry Forum, in a new role as Defra's director of food supply. It had one mission only, which was to keep the wheels turning and the nation fed' (Quinn, 2020). For the approach to come from the supermarkets rather than directly from Government symbolizes the extent to which the Government relied on the supermarkets in the crisis, although the initial approach to the supermarkets had come from Defra.

In addition to the main issue of food provisioning through emergency food boxes and so forth, the Government, influenced by the FRIF, introduced a number of measures designed to ease various issues in the food system. With absenteeism in food production plants growing, it was imperative that there should be no barriers to those still able to work. The FRIF successfully pressed for key worker status for those in the food industry. Similarly, extended delivery and drivers' hours were introduced by relaxing regulations on delivery times and driver

regulations to allow a higher frequency of deliveries to and from stores. Of particular importance was the relaxation in March 2020 to UK competition law allowing grocery retailers and their suppliers (directly or indirectly) to collaborate effectively to prepare for and, if required, respond to potential disruption. This allowed more open discussion between businesses on areas such as stock levels, item limits and store hours (Defra, 2023c). In April 2020, a further temporary relaxation to UK competition law was made specifically for the dairy sector. Other interventions (see Defra, 2023c) included relaxation of the plastic bag fee to facilitate minimum contact between deliveries and more time-efficient deliveries, and labelling easements to allow for minor deviations on labels.

However, by focussing on the one hand on supply chain actors, and particularly the retailers and their logistics capacity, and on the other hand, financial support for emergency provision, there was perhaps a lack of attention to operational detail for providing for the most vulnerable. Moreover, the unpredictability of the course of events in the pandemic and the competing imperatives across different policy sectors and actors could lead to abrupt changes of direction with serious consequences for those on the front-line of responding to the crisis. For example, in January 2021 rules on lockdown restrictions were suddenly changed with the Government maintaining 'a back to school come what may' policy until, that is, they suddenly dropped it. James Bielby, the Chief Executive of the Federation of Wholesale Distributors (FWD) explains:

> Before Christmas, the government were adamant schools would stay open on the basis they were low risk. Schools placed orders for food from their wholesale partners in preparation before going off on two weeks' holiday. Stock was ordered in accordingly by wholesalers ready for shipment in January. … Then the new lockdown was announced by Boris Johnson, taking effect at midnight on 5 January. Schools closed, hospitality largely shut

> down. Remember, we had a Brexit stockpile, Christmas stock which was impossible to sell and now orders placed for and by education. – all of that stock suddenly redundant. How much? £12 million of excess stock, all of it created by misinformation and planning failure by the government. Schools sent back orders placed before Christmas. The Treasury announced a support package, but of course there was nothing for wholesale. (Bielby, 2021)

These are hard hitting words, but they were far from the end of the wholesalers' complaints. In addition to the surplus stock issue, there was the issue of FSM packs, which were keeping wholesalers afloat in the absence of any government support. Criticism of the quality of some of these packs led to another media feeding frenzy:

> the government did another U-turn today (14 January 2021) and changed the Department for Education guidance on free school meals and reintroduced the voucher scheme. Government by headline. No strategy or consistency. Just following the news, not leading it. … There's a lot more excess stock in wholesale now, after schools cancelled the food parcels in their droves. Supply orders have been made by wholesalers for the next few weeks to supply FSM. … And where can the vouchers be redeemed? Supermarkets! That's the biggest irony of all. The government has today handed wholesale trade directly to the supermarkets – just to chase a headline. (Bielby, 2021)

The fact that some wholesalers came up with innovative solutions to the challenges they faced is not surprising. It is equally unsurprising that some were unable to do so, given the heterogeneity of the sector. The fact that wholesalers were not initially included in Lockdown 2's hospitality support measures

suggests that the Government did not grasp the diversity of the sector either, nor its importance in a system that, despite initial fears, largely maintained food supplies during the pandemic. It is hard to avoid a sense that a rather crude politics is at play here. Most food wholesalers are not household names in the way that major retailers and hospitality brands are and their pleas do not easily find ready media coverage (Winter, 2021).

Intense lobbying and many media appearances by the FWD took place through January and February 2021 with requests for government to provide bespoke financial support for the sector. After targeted support was not granted in the government's budget on 3 March (unlike other businesses in the food system whose financial support was extended), the wholesale sector was finally thrown a lifeline in late March with the announcement of the government's new £1.5 billion business rates relief fund. With the new package targeted at businesses outside retail, hospitality and leisure sectors who had been affected by COVID-19 and with 'food wholesalers' specifically referenced, the news was greatly welcomed by the FWD and appeared to, albeit very belatedly, acknowledge the 'hidden middle' and the ways the pandemic had reverberated down the supply chain (Wilkinson, 2021b).

Conclusion

COVID-19, or rather the lockdowns associated with it, served to shine a spotlight on long-established inequalities in the UK. While few can doubt the feverish energy at both Government level and among the various local authorities and charities seeking to address the escalation of food insecurity during these months, the decisions taken were not always consistent nor were actions always tailored to those with the greatest need. In September 2021, the then prime minister, Boris Johnson, received a letter from 100 signatories representing charities and various other organizations concerned with poverty in the UK. Alongside familiar names such as the Joseph Rowntree

Foundation, the Trussell Trust and the Child Poverty Action Group were the Lloyds Bank Foundation and the centre right think tank Bright Blue. Their purpose was to plead with the prime minister and by extension Chancellor Rishi Sunak not to go ahead with a £20 a week reduction in Universal Credit and Working Tax Credit. To do so, they argued, would be to impose the biggest overnight cut in social security since the Second World War. But, instead, the £20 increase in Universal Credit was swept away and support was raised only for claimants in paid work, 'justified by politicians with tired arguments about the need to prioritize support for "working families" and … harmful and inaccurate stereotypes of deserving and undeserving populations, ignoring the unpaid work involved in parenting and caring, and the needs of people with health conditions and disabilities' (Patrick et al, 2022: 207–8). Let us give the last word in this chapter to Helen, one of the COVID Realities informants, in response to the Budget of October 2022, although we will need to return to the issue of food insecurity in our final chapter:

> The Autumn Budget brought some relief as we saw the taper rate reduced by only 8p. The rate before you start losing your income increased by £40 a month but this doesn't go far enough as we see a rise in living costs from all suppliers, in our food and services. However, there's still so many not thought of at all. Those on the benefit cap and legacy benefits still struggling through. Universal Credit is creating a circle of debt, it is creating a level of fear and insecurity that is making people ill. I have had to cancel hospital appointments earlier this year as I couldn't afford to isolate for 3 days with no income never mind travel 180 miles for a 5 min appointment, especially when I'm already having to make choices on heating my home or food on the table. My health has been impacted and I have had to have counselling to help me manage my pain. (Patrick et al, 2022: 206)

SEVEN

What Happened to Farmers and Fishers?

Considerable uncertainty faced UK farmers and fishers well before COVID-19.[1] The Brexit vote had left farmers facing the biggest upheaval in Government policy since 1940 when the wartime food crisis ushered in an era of state support for farming that continued during post-war austerity and was carried over into the European Union's much-maligned Common Agricultural Policy (CAP). After 80 years of direct exchequer support for farmers to produce food, notwithstanding the many policy twists and turns along the way, farmers now faced the prospect of producing for the market and receiving payments only for so-called public goods. Fishers faced similar uncertainty as the UK and EU haggled over the allocation of fishing quotas and the implications of new trade arrangements.

In 2020, farmers had limited detailed understanding of the likely impact of these policy changes and many were probably not that well equipped to undertake the necessary business planning, lacking the necessary business or policy literacy. In addition to the uncertain policy environment, yields and outputs across different sectors were disappointing in 2020 and often considerably lower than average. The National Farmers' Union (NFU) annual crop survey, for example, indicated winter wheat and barley yields were down 18 per cent, and spring barley and oilseed rape down 6 per cent and 15 per cent respectively. Comparing February 2021 with February

2020, beef and veal production was also down (1.6 per cent), as was mutton and lamb production (9.3 per cent), although pig meat production was up 9.5 per cent. While the quantity of fish landed in 2020 by UK vessels was only 2 per cent less than in 2019, the cumulative value of the catch was down a more substantial 21 per cent (Rivington et al, 2021). Overall, then, 2020 was not a great year in terms of the UK's primary production of food from farming and fisheries. While these results may have been disappointing, they were not entirely attributable to COVID-19. Uncertainty about the impacts of post-Brexit UK agricultural and trade policies, the variable weather, as well as the arrival of the COVID-19 pandemic, had a cumulative impact, the effect of which is not necessarily easy to disentangle nor attribute to any one particular factor.

In the main, the UK's primary producers and processors proved themselves to be resilient and adaptive, and able, for the most part, to maintain supply and meet demand throughout the pandemic and this seems to have been the case across Europe as a whole (Meuwissen et al, 2021). This is not to suggest, however, that COVID-19 had no impact. As we found in Chapter Four's exploration of the experience of the local food actors providing consumers an alternative to the supermarkets, COVID-19 created winners and losers. Many producers did face huge operational and financial difficulties. Zoom in a little, and a more complex picture comes into focus. One that shows that primary producers and processors in different food production sectors (and sub-sectors) were impacted in different ways and to different extents. There was also considerable variation in the degree to which those involved in primary production and/or processing were able to respond and adapt to the challenges of COVID-19. Here we look at their responses to the pandemic and the challenges they faced. These include, in particular, issues around seasonal labour, but there were also other supply chain issues across the system, which reverberated back up to primary producers. Inevitably, different commodity sectors faced different challenges. For some farmers, the onset

of the pandemic had very limited immediate business impact although, of course, they were not immune from the general impacts affecting the population as a whole. An arable farmer with winter-sown cereals already in the ground and a dry March well suited to spring cultivations, and with a permanent employed labour force, was in a markedly more stable position than a dairy farmer or a fisher or a horticulturalist. As we will see, not only were there question marks over the markets for perishable crops – milk, fish and vegetables all falling into this category – but other issues to do with trade, labour and changing consumer behaviour that also were more likely to affect these commodities. So in this chapter we take a close look at the COVID-19 impacts and responses to them in four main commodity sectors: dairy, horticulture, fish and meat. But first we start by stepping back to take in the general situation facing farming in 2020.

Farming: an overview

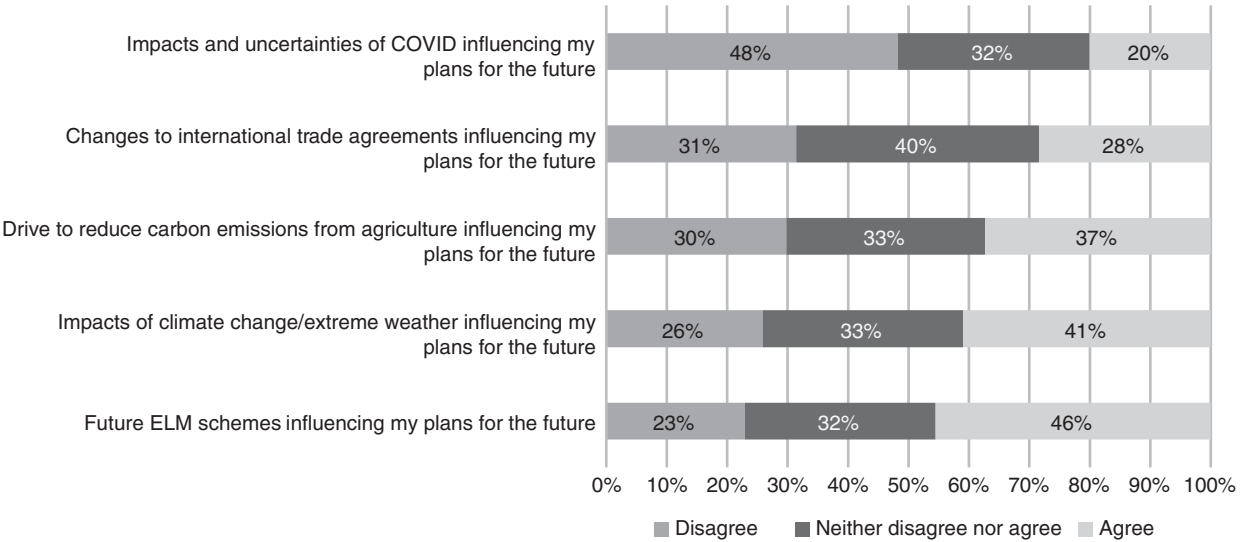
Between October 2020 and early December 2020, we undertook a postal survey of farmers in the South West of England (SWE) (Wilkinson et al, 2023), which resulted in 1,117 responses (28 per cent response rate). The respondents reported a wide range of problems and benefits arising from COVID-19, with only a small minority (12 per cent) reporting neither problems nor benefits, suggesting that the pandemic was impacting most farmers in the winter of 2020. The survey is a snapshot in time, however, and these farmers may have experienced further COVID-19-related impacts in 2021. Over a third (38 per cent) of farms said they had no on-farm problems. Of those who reported problems, 21 per cent said they had lost non-farming income such as from tourism rental, 15 per cent noted reductions in the price of farm products, and 12 per cent reported a reduction in the price of milk. There were some (11 per cent) for whom the pandemic meant they had less time available due to caring responsibilities (such as

childcare or caring for relatives). In addition to these challenges, a large range of other problems were reported, including public trespass, stress, lower staff productivity and availability, shielding and production being capped.

A quarter (25 per cent) said they saw no benefits for their farm arising from the pandemic but a further 24 per cent did report the benefit of higher prices for farm products. Interestingly, several of the other most noted benefits were about relationships; 23 per cent reported improved relations with the local community, 9 per cent reported more positive interactions with other farmers and 9 per cent reported closer relationships with buyers. New markets (7 per cent) and demand for direct sales (1 per cent) were mentioned as benefits, but not as frequently as we might have expected. We asked respondents how much they agreed or disagreed that various factors were influencing their plans for the future. The survey took place in the midst of continuing policy deliberation and uncertainties about the support schemes that would replace the CAP and almost of half of respondents (46 per cent) agreed that uncertainties about this, particularly the plans for Environmental Land Management (ELM) schemes, were influencing future planning (see Figure 7.1). Just one fifth (20 per cent) agreed that the impacts and uncertainties over COVID-19 were influencing future plans compared to two fifths (41 per cent) citing the impacts of climate change or extreme weather. This indicates that in winter 2020, COVID-19 was seen as relatively unimportant compared with other factors.

The results of the survey should be seen in the context of autumn 2020, when there was hope that COVID-19 restrictions might be lifted in early 2021. Some of the consequences of Brexit-related supply chain and labour issues in 2021 were yet to come. While farmers reported how difficult it was to be a farmer in 2020, our results situated COVID-19 and Brexit impacts in the context of wider climate, environment, social and policy-related challenges. The climate

Figure 7.1: What is impacting farmers' plans for the future?



Note: n=1023, 1027, 1028, 1025, 1037.

emergency was influencing plans for the future. Uncertainty about Defra's ELMs programme was leading SWE farmers to consider a wider variety of options for replacing income when the Basic Payment Scheme (BPS) was withdrawn. Although the COVID-19 crisis was a key global issue in 2020, and rightly so, it is notable that farmers highlighted other critical challenges they were facing.

COVID-19-driven acute labour shortages

A critical shortage of labour became the single biggest issue and challenge facing the UK food system in 2020, with crises erupting across the food system due to lack of workers to perform crucial production and processing tasks. For example, *The Grocer* reported more than a million litres of milk being poured away in April alone on account of the ongoing lorry driver shortage (White, 2020c). By the autumn of 2021, the National Pig Association (NPA) warned the industry was within weeks of having to carry out a mass cull of upward of 100,000 pigs, destined for the food chain, because of a lack of workforce to farm, slaughter and transport them (Sweeney, 2021). The labour crisis across the food system cannot, of course, be solely attributed to COVID-19, as noted in the House of Commons EFRA Select Committee report on the findings of its inquiry into labour shortages in the food and farming sector (EFRA, 2022): 'The evidence we have received leaves us in no doubt that labour shortages, *caused by Brexit and accentuated by the pandemic*, have badly affected businesses across the food and farming sector' (EFRA, 2022: 10, emphasis added).

The Government came in for criticism for not being responsive to the food and farming sector's repeated calls for expansion of the seasonal workers' scheme and for its warnings that the post-Brexit immigration policy, with its stated intention 'to shift the focus of our economy away from the reliance on cheap labour from Europe' (GOV.UK, 2020),

was ill-suited to the needs of businesses across the food supply chain (EFRA, 2022). The process of turning its Brexit promise to 'take back control of our borders' (GOV.UK, 2020) into policy was, to some extent, colliding with the unforeseen arrival of the COVID-19 pandemic. Not only was policy impacting UK food producers and processors, media reporting also suggested producers, particularly in the horticulture sector, were concerned 'you are not welcome here' Brexit messaging would deter EU workers returning for seasonal harvesting (Broomfield et al, 2022: 431–2). Nevertheless, for much of 2020, food labour shortage were more clearly driven by COVID-19.

The pandemic impacted the UK food system's labour supply in several ways. Most obviously, of course, border closures and travel restrictions massively limited the number of seasonal migrant workers able to enter the UK and join its agricultural workforce (Rivington et al, 2021). It is also important to recognize that COVID-19's impact on production was not just limited to the 'often-discussed demands of fruit and vegetable growers' (Rivington et al, 2021: 31) but included issues across all primary food production sectors (Rivington et al, 2021), and primary processors who were significantly impacted by social-distancing and self-isolation requirements. Having recognized this, it is reasonable to say that the UK horticultural sector, with its huge reliance on seasonal migrant labour, was hit particularly hard by COVID-19, especially during Lockdown 1. It is with the horticultural sector that we now begin taking a closer look at COVID-19 impacts and responses from the perspectives of primary producers and processors in the horticultural, fisheries, dairy and red meat sectors.

Horticulture

Defra's statistics for 2019 provide a fairly typical overview of UK production as a percentage of the country's supply over

the past 30 years, with UK growers producing just 16 per cent of total domestic supply of fruit and a little over half (54 per cent) of vegetables (Defra, 2020). Over the same 30-year period, the sector has become increasingly reliant on seasonal migrant workers. Estimates vary at between 60,000 and 80,000 seasonal workers required to pick and pack UK-grown fruit, vegetables and salads (ONS, 2018; Pelham, 2020). Of those, more than 90 per cent are migrant workers, the vast majority of whom, prior to Brexit, came from Eastern European countries (GFEI, 2021: slide 8).

Despite the development of robotics for husbandry and harvesting of some produce, the soft fruits sector remains a particularly labour-intensive operation, estimated at 40–70 per cent of growers' cost of production (Pelham, 2020). To illustrate this point, Pelham contrasts the cost of labour for mechanized production of wheat at £80–150 per hectare with the labour-intensive process of field strawberry production, which is typically £40,000–70,000 per hectare. The combination of labour-intensive production and a high reliance on migrant seasonal labour placed fruit and vegetable growers in a particularly vulnerable position at the onset of the pandemic. Take, for example, apple production in the UK, which in common with many other European countries, experienced significant labour shortages due to Europe-wide COVID-19-induced movement restrictions (Tougeron and Hance, 2021). In the UK, this drove a median increase of 10.5 per cent in labour costs for apple producers, due to increased recruitment costs, the costs of training of inexperienced workers, and higher accommodation and operation expenses (Pelham, 2020). But as Pelham notes, the impact of COVID-19 on the sector has to be considered in the wider economic and policy context leading up to the pandemic, chief among which being the inflationary effect on costs of the UK National Living Wage (NLW), which increased by 34 per cent between 2016 and 2020 (Pelham, 2020). Without doubt, UK and EU COVID-19 travel and

movement restrictions resulted in a fraction of the usual EU migrant workforce being willing or able to travel to the UK to help with harvesting. The impact was keenly felt by soft fruit growers. There were various responses to this COVID-19-driven migrant labour shortage from different quarters, some more drastic than others, and some more successful than others.

The Rivington report picked out a few:

> farms and recruiters chartered flights; recruitment of local UK workers under the 'land army' and 'Feed Our Nation' campaigns was implemented by UK growers; furloughed employees were also asked to pick fruits to save harvest. Other responses to the labour shortage caused by the pandemic [came] from associations in the agricultural producers and growers' sector. To mention some, the farmer's network created the Farm Labour Emergency Support Scheme (FLESS), with the aim to help farmers in Cumbria and Yorkshire to locate and secure workers for keyworker tasks. The Association of Labour Providers developed a tool called 'Spare Worker Available Portal' (SWAP) to support workers displaced by the coronavirus to transfer them to where work was available. (Rivington et al, 2021: 33–3)

As had become government mantra with respect to Brexit-related migrant labour issues, in April 2020 government launched its 'Pick for Britain' campaign to hire more UK workers as a solution to the COVID-19 induced shortages of migrant labour (Case, 2020). According to analysis of UK press coverage the campaign deployed a: 'heroic nationalistic rhetoric … with echoes of "Dig for Victory" and the Women's Land Army, the two major national campaigns launched during the Second World War in order to keep the nation fed' (Scott and O'Reilly, 2022: 8).

This study and a similar one by Broomfield et al (2022), examining pre and post COVID-19 framing in UK mainstream and farming press, provide some interesting insights into the fluid and contextual nature of political, industry and wider social attitudes towards migrant workers. Broomfield et al (2022) found a dominant economic framing of seasonal migrant workers in UK's mainstream print media (80 per cent of coverage) and farming press (90 per cent of coverage) between 2015 and 2019, a period dominated by the Brexit referendum and subsequent negotiation of exit arrangements. Seasonal migrant workers were almost exclusively discussed as 'factors of production' rather than a social framing of workers 'having/lacking rights and entitlements' (Broomfield et al, 2022: 431). But the COVID-19 induced a shift to a heroic worker rhetoric identified by Scott and O'Reilly (2022) elevating the status of fruit and vegetable workers to that of 'valued workers of the nation' (Broomfield et al, 2022: 433). This framing, first directed at UK workers, was then applied to EU migrant workers when the hoped-for mobilization of UK workers did not materialize (Sandercock, 2021). The majority of reporting from the beginning of 2020, focussed on farmers' discretionary preference for highly skilled, hard-working and dependable migrant workers from the EU (Broomfield et al, 2022).

Barbulescu (2020), found farmers' preference for migrant labour was one of four reasons that made attempts to recruit UK workers unviable. The other three reasons identified were, first, the 'inconvenient' location of farms, often poorly connected to transport links and far away from urban centres, making seasonal harvesting work an unattractive option compared to other year-round work of similar pay, such as supermarket jobs. Second, the fact that a substantial proportion of unemployed and furloughed UK workers did not have the skills required, including physical fitness, and aligned to this, the third reason being that few workers in the UK have any experience of agriculture and therefore needed training to be able to do the job (Barbulescu 2020).

From the seasonal migrant worker perspective too, agriculture, remains, in the main: 'an attractive sector because of the perceived lower admission requirements (as confirmed by the Points Based Immigration System), because it offers accommodation (per cost), and because it enables them to both work abroad and spend a significant part of the year with their families' (GFEI, 2021: slide 11).

But while it may be a relatively good option for many migrant workers, that's not the same, of course, as saying their experiences of working in the UK agricultural sector are always positive. Press reporting is dominated by political and industry voices, whereas migrant workers or worker representatives such as trade unions are largely absent (Broomfield et al, 2022; Scott and O'Reilly, 2022). In this context, interviews carried by Barbulescu and colleagues, with migrant workers during the 2020 harvesting season, provide a valuable opportunity to hear directly from seasonal migrant workers themselves. For example, picking and packing tasks are no less arduous for migrants workers albeit they may be more physically and psychologically adapted and capable because of their repeated engagement with the work: 'Migrants still speak of the work as "hard" physical work in all weathers, some mention back pain, the long hours […] and the emotional cost of leaving families behind' (GFEI, 2021: slide 11).

> And as Barbulescu and colleagues found, there is there is often financial and emotional burdens to bear too. Many migrants need to repay loans they took out to come to the UK, and many experience a sense of isolation and lack of support. While 60,000–70,000 represents a large town's worth of seasonal migrant workers, they are geographically dispersed, which means there is usually 'little support in the community and third sector' for them. (GFEI, 2021: slide 12)

As Robertson (2021) notes, it remains to be seen if the impact of COVID-19 on the UK horticulture sector will lead to

structural change to reduce the vulnerability of producers' to labour shortages, or whether the elevation of seasonal fruit and vegetable workers as essential and valued will lead to material improvements in entitlement, pay and conditions for workers – migrant or otherwise – commensurate with the status according to them during the pandemic as essential and valued workers.

Fisheries

The 'fisheries' sector itself is a catchall term encompassing three sub-sectors, (1) wild-caught fisheries, (2) aquaculture (that is, managed breeding and rearing of fish, crustaceans, molluscs) and (3) fish processing (Uberoi et al, 2022). This deep dive into UK fisheries begins with a look at the first two sub-sectors, before proceeding to examine the impacts of the third sector, seafood processing. As set out in Chapter Two, in the UK we import most of the seafood we eat and export most of what we catch and produce. The dependence on trade meant that UK fishers and processors were already facing multiple changes and uncertainties arising from Brexit when the COVID-19 pandemic hit. While the anticipated 'triple whammy' Brexit effect (Symes and Phillipson 2019: 8) of increasing import duties for raw materials, export duties for finished product and labour shortages (effecting processing in particular), did not have a real effect until the era of UK policy and UK–EU trading arrangements came into force on 1 January 2021, the impacts of COVID-19 created immediate shock waves for fishers and processors. A project, led by Sofia C. Franco of the Scottish Association for Marine Science (SAMS), and which was included in our synthesis report on COVID-19 food system impacts (Guilbert et al, 2022), adds detail to our understanding of the varying ways and extents to which the different sub-sectors of UK fisheries were affected by the COVID-19 pandemic. The extent to which fishers and aquaculture businesses were impacted was largely dependent on the type of market for the species of

fish or shellfish, farmed or caught. While COVID-19 border closures and Lockdown 1 caused an almost immediate collapse of export markets and domestic food service markets, UK domestic retail markets saw a surge in growth for some fish and shellfish in 2020. At the peak of its growth in March, the weekly volume of seafood retail sales grew by 56 per cent. The ambient and frozen sectors benefitted the most from panic buying as shoppers stocked up on cupboard staples and filled their freezers. Overall, the year ended with retail sales up 11 per cent by value and volume compared to 2019 (Harvey and Witteveen, 2021a).

According to Franco, one of the hardest hit sub-sectors was aquaculture because of its overall dependency on export markets and the UK food service sector, albeit to different extents depending on the species farmed. Domestic appetite for shellfish (caught or farmed) is fairly limited and focussed on the hospitality sector, and while UK farmed salmon is a common sight on UK supermarket shelves, it is also one of the UK's largest food and drink exports, with fresh and smoked salmon worth £871 million in 2019 (Statista, 2024). This dependency on the UK food service sector and, particularly, on a number of key EU, North American and East Asian export markets put many UK shellfish and finfish producers under an enormous strain during the early stages of the pandemic as these critical domestic and export markets either closed entirely or collapsed. The dire situation was also aggravated, as Franco notes, by various 'other logistical and economic difficulties' such as the fact the farmed salmon is usually exported on passenger planes, a large number of which were grounded because of movement restrictions and border closures.

With 80 per cent of its catch destined for EU markets (Symes and Phillipson, 2019) and much of the rest destined for the UK hospitality sector, the shellfish sector was similarly affected by COVID-19 border closures and then Lockdown 1 at the end of March. And as Franco notes, over-supply and a lack of cold storage led to a steep drop in prices for fresh shellfish, leading

many to face 'extreme operational hardship' and in some case the collapse of businesses.

Faring a little better than shellfish were the UK's fisheries comprising the two sub-sectors of demersal fisheries (caught white fish such as cod and haddock) and pelagic fisheries (caught oily fish such as mackerel and herring). The demersal fleet, as Franco explains, supplies seafood to both domestic (for example, cod and haddock) and export (for example, angler fish and megrim) markets. In so doing it was able to somewhat minimize and mitigate the impacts of COVID-19 'by balancing relative effort towards different target markets and actively avoiding over-supply'. The demersal fleet responses included, for example, reducing or temporarily halting fisheries, with some business also shifting to local direct-to-consumer sales. Impacted least of all, were the pelagic fisheries, which Franco explains are often destined for the frozen, smoked and canned market segments. Having a longer shelf-life, they were relatively insulated against the immediate disruption of markets caused by COVID-19. Unlike collateral impacts to the salmon export market caused by the grounding of passenger flights, the pelagic sector was also helped by the fact its products were typically transported via container shipping, which continued servicing key markets such as East Asia.

In response to these impacts, the Government and fisheries industry sought to intervene with support. In addition to the raft of general support measures, such as employee furlough schemes, in the spring of 2020, the Government launched two sector-specific schemes administered by the Marine Management Organisation (MMO). First, the £10 million Fisheries Response Fund, comprising £9 million in grants and £1 million in support to help businesses pivot to serving new markets (GOV.UK, 2020c), and later, the £1 million Domestic Seafood Supply Scheme to support businesses re-orientating to supply domestic markets (GOV.UK, 2020b). In May, the industry body, Seafish, launched a consumer marketing campaign 'Sea for Yourself' to encourage UK consumers to

eat more UK-caught fish and shellfish (Seafish, 2020). At an individual business and port level, initiatives quickly sprung up at various places around the country offering online ordering and home delivery, one such example being the Plymouth-based initiative 'Call4Fish.com' an online directory of local fishers and traders to help consumers buy fish direct for home delivery. In common with some of their wild-caught counterparts, some shellfish farming businesses were able to shift successfully to direct-to-consumer sales during market closures with some developing fish box schemes, diversifying product lines or increasing their online presence and marketing. Performance across different businesses and segments, however, varied significantly. Many aquaculture businesses experienced very high losses in the first half of 2020, and while some were able to partially manage and mitigate the impact by pivoting to retail and/or to direct-to-consumer (DTC) sales, many were not. Meeting the challenges of COVID-19 during 2020 had not been without cost. Although the roll-out of the vaccine in February and March of 2021 brought hope for a return to normality, a year of dealing with the COVID-19 pandemic had 'worn down the resilience and financial reserves' of many businesses (Harvey and Witteveen, 2021b: 4), particularly for smaller and medium sized enterprises. As Franco remarks, for many micro, small and medium-sized enterprises, the impact of COVID-19 was an entirely negative experience.

The near-collapse of export markets and dramatic changes to food service and retail domestic markets, created winners and losers in the seafood-processing sector too, as reflected by a survey of around 500 UK seafood processors conducted by Seafish during July and August 2020. It reported 'One third of respondents expected no change in their business profits in 2020 compared to 2019. 15% expected an increase in business profits and 43% expected a decrease in business profits' (Seafish, 2021b: 13). With 72 per cent of processors who responded to the Seafish survey reporting reduced activities or temporary closures to their business, it is clear that, overall, COVID-19

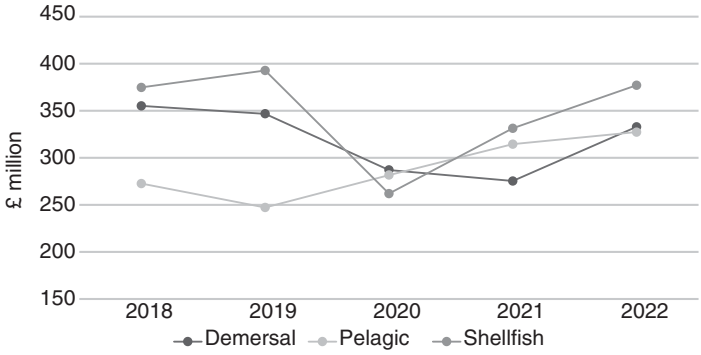
had affected the majority of processing businesses to some extent. And while 2020 was not a great year for the sector generally, for seafood processors, 2021 was even worse with post-Brexit UK–EU trading arrangements taking effect on 1 January 2021. This added a range of Brexit-impacts including increased red tape, new paperwork and IT systems, increased checks and bottlenecks in supply chains, to a range of pre-existing COVID-19-related restrictions and disruption to air, land and sea transport systems (Harvey and Witteveen, 2021b). In addition, shortage of labour in processing plants was becoming a real problem following the launch of the NHS Test and Trace app, which the *Financial Times* reported was causing a 'pingdemic' in the number of people being told to self-isolate, and which was causing significant disruption to businesses in the food and logistics sectors (Bradshaw et al, 2021). A survey of supply chain actors across the UK fisheries sector by the All Parliamentary Party Group on Fisheries (APPGF) in the winter of 2021 found the majority of the 24 respondents (comprising sector-based individuals and representative organizations) reported a range of Brexit-related impacts most of which were 'unexpected and unwelcome', which disproportionately affected small-scale operations (APPGF, 2022). Scale of operation also seems to have been a factor in determining how seafood processors responded and adapted to the challenges posed by COVID-19. According to the Seafish survey, 57 per cent of respondents from the largest processors (supporting 100+ full time equivalent jobs) reported that they did not have to reduce activity or close operations, compared with only 24 per cent of respondents from the smallest processing businesses (1–10 FTE jobs) (Seafish, 2021b). In terms of expectations for profits for 2020, the Seafish survey found the smallest processors generally less optimistic than large-scale processors, although those smaller processors who had been able to pivot or scale up online retail or home-delivery operations were more likely to be optimistic (Seafish, 2021b). Least positive were the medium-scale seafood processors (11–50 FTE jobs)

who were, perhaps, caught between lacking the resources of the large-scale processors or the adaptive agility of the small-scale processors.

Despite the immediate impact of COVID-19 in 2020 on export and food service markets, followed by the combination of COVID-19 and Brexit-related impacts in 2021, a broad sector-level view, shown in Figure 7.2, suggests the UK fisheries sector has been able to weather the storm to emerge largely in-tact, in part due to an increase in the value of catch with demersal landings up 18 per cent by value on the year and shellfish up 15 per cent (MMO, 2023).

Certainly, in relation to the impacts of COVID-19, particularly in 2020, support interventions by the Government, industry and third sector responses were critical to the continuation of businesses and livelihoods. Collaboration between supply chain actors and with the Government was also key to this. Drawing on the early results of a survey of seafood sector stakeholders, Franco reported that 'fisheries businesses noted their dependence on their supply chain and the importance of communicating and working together with processors', while 'fish farming businesses reported consulting

Figure 7.2: Value of landings by UK vessels between 2018 and 2022 by species group



Source: MMO (2023)

more frequently with regulators and government on various animal welfare matters (e.g. stocking biomass, medication)' (see Guilbert et al, 2022: 23). However, surviving is not the same as thriving. Total export levels of UK-caught fish and shellfish in 2022 were down 27 per cent by volume and down 15 per cent by value compared to the last pre-COVID-19 year of 2019 (MMO, 2023). But the last word on impacts probably belongs to Brexit. According to the MMO, 'since 2020 the biggest impact on [UK] sea fisheries was the effect of the UK's departure from the EU' (2023: 13). In 2022 the percentage of UK seafood exports going to the EU was down in volume from 82 per cent in 2020 to 74 per cent in 2022, and down in value from 75 per cent in 2020 to 70 per cent in 2022 (Seafish, no date).

Dairy sector

Dairying is one of the most important sectors in UK agriculture with milk accounting for 16.4 per cent of total agricultural output in 2020, and a value of £4.4 billion (Defra, 2021a). Primary production and processing have undergone significant consolidation over the past few decades. There are now around two-thirds fewer dairy herds in the UK than in 1985, and those that remain are bigger and more efficient, with productivity increasing by an average of 12.3 per cent between 2009 and 2019 (Uberoi, 2021: 6). Similarly, in dairy processing, the majority of production comes from a few, large processors. In 2018, nine companies processed 70 per cent of the annual liquid milk intake, and 17 companies produced around 93 per cent of UK cheese production (Defra, 2019). There are small processors, with 40 per cent of milk processing enterprises in the UK processing less than 5,000 litres of milk annually, but this amounts to 0.4 per cent of the UK annual milk intake. Similarly for butter production, enterprises producing less than 100 tonnes per year make up 57 per cent of the enterprises but only 0.3 per cent of total butter production (Defra, 2019).

Liquid milk is the primary product produced, nearly all of which goes to the domestic market. With UK-produced liquid milk accounting for 99.2 per cent of total UK supply, the country is, practically speaking, self-sufficient (Defra, 2021a: 9). The balance of trade is different for processed dairy products with domestic production accounting for 58 per cent of all cheese consumed. Even in the case of quintessentially British Cheddar cheese, over 40 per cent is imported, much of it from Ireland.

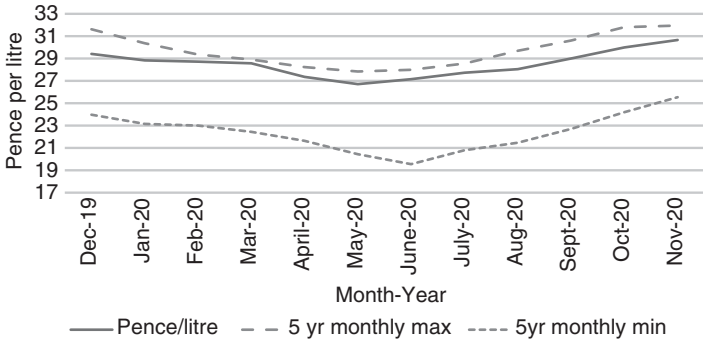
As with other food sectors, the dairy sector's farmers and processors were immediately impacted by the shocks and chaos caused by the onset of the COVID-19 Lockdown. Impacts came, in the main, from the rapid change in consumer behaviour in the UK domestic market rather than from export markets. As always, the picture becomes more complex the closer you look; at a sub-sector or individual business level, the type and extent of challenges varied, as did the responses to them dependent on the varying reservoirs of resources at the disposal of each enterprise, and also on the different markets they were geared up to supply. For example, smaller-scale artisanal cheesemakers, like Lynher Dairies in Cornwall, had geared the business to serving hospitality and export markets. As Catherine Mead, owner of Lynher, reflected in conversation with us, 'we felt like a tsunami was coming … by the fourth week of March things were hopeless … we actually had, I think, 60% of our business affected'.

As with the fisheries sector, what emerged was a story of winners and losers. Those producer and processing businesses geared up to supply the domestic hospitality and food service sectors or export markets, saw demand for their products collapse virtually overnight (White, 2020a), while those supplying into the retail supply chain, struggled to keep up with 15.6 per cent surge in demand (Sandercock, 2020b; White, 2020a). As with so many parts of the UK's food supply system, shortage of labour, this time in logistics, quickly became an issue impacting all dairy producers whatever their routes to

market. As members of the Expert Panel noted, the on-going shortage of lorry drivers added to the general 'chaos and uncertainty' dairy producers were facing in the early months of the COVID-19 pandemic resulting in some milk going uncollected. This created an immediate and unique problem for the dairy sector. With cows needing to be milked at least twice a day every day, and with limited storage capacity and associated spoilage issues, farmers who were unable to either sell their milk or have it collected had very few options. Some, with no alternative, were forced to discard milk. It is estimated that more than a million litres of milk were poured down the drain in April 2020, costing famers more than £7 million (White, 2020c). This practice was not only wasteful and upsetting for the farmer, but, as one of our Expert Panel members pointed out, 'there was a reputational impact, especially when there were spaces on supermarket shelves'.[2]

Despite efforts to reduce supply, the closure of the hospitality sector inevitably led to a significant oversupply of milk and a reduction in farm-gate prices. Often with little alternative, many producers were forced to sell their milk at significantly reduced prices. As Figure 7.3 shows, the price of milk began to

Figure 7.3: United Kingdom farm-gate milk price (pence per litre), December 2019–November 2020



Source: Defra (2020)

fall fairly sharply in March, dropping below 27 pence per litre by the end of May 2020, although by the end of November, 2020, the price had recovered and was, in fact, 2.2 per cent higher than in November 2019 (Defra, 2020).

Coming under severe pressure, milk processors moved to protect themselves by imposing changes to their payment terms. For example, Pensworth Dairy outlined plans in late-March 2020 to pay farmers just 25 per cent of the milk price and withhold 75 per cent (Binns, 2020b). Similarly, processor Medina Dairy, citing 'unprecedented commercial and financial pressures' as a direct consequence of COVID-19, outlined its plans to delay payments from mid-April and drop the price it paid its producers by 2 pence per litre from 1 May (Binns, 2020a).

In mid-April 2020, dairy sector representatives met with government officials and raised the prospect of up to 80,000 dairy cows being culled out of a national herd of 2 million unless action was taken to support badly affected dairy farmers (Parker, 2020). Although this 'doomsday scenario' did not materialize, the precarious position facing many dairy farmers was reflected in the increased volumes of cows going through meat processing factories, up 4.4 per cent on the year for the six weeks ending 18 April 2020. This suggests, as *Farmers Weekly* reported, more dairy farms were bringing forward decisions to take cows out of their milking herds and sell them into the meat supply chain (Priestley, 2020).

So how did the dairy producers respond to the chaos wrought by COVID-19? Those dairy farmers who had already diversified into DTC selling, were less exposed to the downturn in farm-gate milk prices. For example, Shropshire farmer James Chatham, restructured the family dairy business in 2018, selling some milk into the supply chain and the rest direct to the consumer from vending machines on the farm. When the pandemic hit, the farm's DTC business increased by 30–40 per cent, helping to offset the drop in the milk price (Pugh, 2020). Oliver Hemsley, of Hollis Mead Organic Dairy

near Beaminster in Dorset, who set up his dairy enterprise as a DTC business in 1998 offering consumers the farm's milk from five vending machines, was able to expand his operation with the addition of other vending machines at other local businesses in the area, such as Combe Estate farm shop in East Devon (Combe Estate, no date).

For some businesses selling into the retail or hospitality supply chain pre-pandemic, 2020 saw a significant pivot to DTC with online sales and doorstep delivery widely deployed strategies (Nott, 2020b). In terms of online retail sales, a representative from the dairy industry, and member of the Expert Panel, remarked that he had seen massive increases in business during the early part of the pandemic, with one customer's sales up 500 per cent. This resulted in many individual businesses having to significantly upscale their ability to process increased amount of product to meet demand. There was significant collaboration within the supply chain. For example, at the start of the pandemic, Müller Dairies signed up 85,000 producers to its 'Milk & More' home-delivery service which proved to be 'a godsend' for its supplier dairy farms (Nott, 2020b).

Not all dairy producers were impacted by COVID-19, but most were, at least to some extent, particularly at the onset. But the agility, resilience and collaboration shown by dairy producers and processors ensured that for most, COVID-19 was a short crisis not a catastrophe. That is not to say COVID-19 did not exact a cost, both financial and emotional. At the end of April 2020, the AHDB reported that more than 5,200 of the estimated 9,200 dairy farmers in Great Britain (57 per cent) had experienced a milk price reduction over the previous six weeks. Moreover, nearly 500 had had milk collections cancelled and 500 had had payments deferred, while 2,200 had been asked to reduce milk output and 700 had had the volume they get paid a full price on reduced. In total, the AHDB estimated that the financial hit to dairy farmers during April 2020 was £9.4m (AHDB, 2020d).

Red meat sector

The meat sector is not one singular entity but is made up of many different sub-sectors and associated supply chains and markets. Here, we focus on the producers and processors of red meat, being beef, lamb and pork. Overall, the UK is a net importer of red meat. Taking 2018 as a typical pre-COVID-19 year, the UK imported 1,606,700 tonnes and exported 500,100 tonnes of red meat, although as Table 7.1 details, there are differences in production as a percentage of consumption across beef, lamb and pork. Additionally, our preference in the UK for certain cuts of meat, such as steaks and chops, means just over a quarter of domestic supply is satisfied by imports (BMPA, no date) while the cheaper cuts of meat and offal which are not demanded by the British consumer are exported. The balancing effect of import and export trade in meat is essential to an industry that depends on selling every part of the carcase in order to realize a profit. It is, according to the

Table 7.1: UK production, consumption, imports and exports of beef, lamb and pork in 2018

	By volume (thousand tonnes) for 2018 calendar year		
	Beef (and veal)	**Lamb (and mutton)**	**Pork**
Production	992.5	288.6	927
Consumption	1,228.2	293.2	1,722
Exported	147.1	87.3	266
Percentage of production exported	15.9%	30.2%	28.7%
Imported	452.8	91.9	1.062
Percentage of consumption imported	36.9%	31.3%	61.6%

Source: AHDB (2019a; 2019b and 2019c)

Scottish Association of Meat Wholesalers 'the holy grail for all processors, large and small, as it enables a positive margin to be realised and keeps the business viable' (SAMW, no date).

Much of the UK's red meat import and export trade is with the EU. In the case of beef, 73 per cent of beef and veal imports are from the Republic of Ireland (AHDB, 2019a). Some 64 per cent of the UK's supply of pork and 90 per cent of bacon is imported from EU countries (AHDB, 2019c). The majority (79 per cent) of imported sheep meat comes from New Zealand and Australia with a further 10 per cent from Republic of Ireland (AHDB, 2019b). In terms of export markets, so crucial to achieving carcase balance and profitability, the EU is by far the biggest single market for UK beef and veal (89 per cent), beef offal (57 per cent) (AHDB, 2019a), lamb and mutton (95 per cent) and sheep offal (69 per cent) (AHDB, 2019b). Similarly for UK-produced pork, EU countries account for 69 per cent of exports, and China 19 per cent (AHDB, 2019c). Given the importance of EU markets to its profitability, it is not surprising that the red meat sector was braced for challenges arising from Brexit-related changes to UK–EU trade and immigration policies (BMPA, 2018).

The initial shock waves of COVID-19 in the spring of 2020, created a relatively short period of chaos across the red meat sector (Payne-Gifford et al, 2022), due in large part to the rapid restructuring of market demand and the closure of the key export markets of the EU for beef and lamb, and China for pork. With demand from hospitality for more expensive cuts of meat turned off overnight, meat processors reported their cold storage full to capacity (Allen, 2020). Meanwhile, as shoppers turned to eating in, retail demand for red meat soared, particularly for beef mince, which saw an uplift in sales of 45 per cent, leaving retailers 'scrambling to adapt' (AHDB, 2020e). The buoyancy of the retail market somewhat mitigated the collapse of hospitality and export markets, although meat processors were left with a Hobson's choice of either freezing fresh meat until a hoped-for re-opening of hospitality, or dicing

or mincing more meat to sell as cheaper cuts (AHDB, 2020e). As noted by members of the expert panel, through their own initiative and agility, many wholesale butchery businesses – who unlike the big retailers, received no government support outside of the furlough scheme – managed to stay in business, but order sizes were smaller, margins tighter and revenues only a fraction of what they were pre-COVID-19.

In May 2020, the AHDB launched an online 'kit' to help farmers pivot to selling beef and lamb direct to the consumer (AHDB, 2020f). Those farmers already geared to selling their red meat DTC, experienced unprecedented demand. For example, the Stephen's family farm in Inverurie, Scotland, who had invested several years before in vending machines on-farm to sell their produce including beef and lamb, reported a 'stratospheric' five-fold increase in demand (Harvey, 2020). Beef and sheep farmer, Denise Walton, said she had been 'knocked sideways by [online] demand' for the farm's beef and lamb, and noted that servicing this increased demand was putting everyone in her supply chain under intense pressure, particularly the courier and abattoir services she relied upon (Soil Association Scotland, no date). As with so many fault lines within the food system, COVID-19 highlighted and amplified the fragility of a highly consolidated abattoir industry (APGAW, 2020). Unlike industrial-scale abattoirs, which are typically vertically integrated into retailers' supply chains, the majority of small and medium-sized abattoirs offer a so-called 'private kill' service of slaughter, butchery and packing, crucial for farmers selling meat DTC. By the start of 2020, the number of small and medium-sized abattoirs had fallen from 463 in 2001 to fewer than 90 across the UK (APGAW, 2020: 10). The increasing demand by an increasing number of farmers for private kill put the creaking small abattoir network under strain. Matters were only made worse by particular difficulties small abattoirs experienced complying with social distancing rules and concerns about farmers dropping off and picking up (packaged meat) compromising biosecurity. In

addition, many small abattoirs owners, who are also retail or catering butchers, decided to diverted resources to this side of their business in preference to private kill (SFT, 2020). More generally, shortage of labour was a major issue across the whole meat processing sector which, like horticulture and fisheries, is heavily dependent on EU migrant labour (Rivington et al, 2021). During the summer of 2020, meat processors were the subject of extensive media coverage about the high incidence of COVID-19 outbreaks in processing plants. For example, *The Telegraph* ran a story entitled 'Revealed: Why meat processing plants are the ideal incubator of the coronavirus' (Gulland, 2020). The trade union Unite claimed the outbreaks were linked to exploitation of migrant workers, citing overcrowded (employer-provided) accommodation and workers being unable to take time off when unwell due to lack of sick pay (Unite, 2020). The British Meat Processors Association (BMPA) acknowledged challenges with social distancing regimes, but also blamed 'lack of clarity from Public Health England' with respect to PPE requirements and ongoing issues with the government's key workers testing regime (BMPA, 2020). Our Expert Panel members were keen to refute the media narrative that COVID-19 outbreaks were particularly prevalent in meat processing plants, pointing out that most outbreaks were community-based and suggesting that the media were exaggerating the problem.

Despite all the challenges of 2020, beef and sheep farmers and their associated supply chains emerged from Lockdown 1 intact, in part because of elasticity of their production system. Unlike pork and poultry, where animals are reared to slaughter weights within very tight specifications and time windows, beef cattle and sheep are often grown on more slowly, 'stored' over winter to smooth out the farm's flow of animals that are ready for slaughter. This flexibility was one factor that helped beef and sheep farmers to manage bumpy supply chain capacity and to avoid surplus production crises experienced by dairy and pig farmers (Payne-Gifford et al, 2022).

Overall, thanks to an impressive adaptive capacity at every stage of the red meat supply chain, particularly in the 'hidden middle' of meat processors and wholesalers, the dramatic change in markets and consumer behaviour did not, as one expert panel member put it, knock the red meat sector out of shape. The significant adaptions made during Lockdown 1 left the sector in better shape to deal with Lockdown 2 in November 2020 (AHDB, 2020b), a finding echoed by a European study of the resilience of farming systems to COVID-19 (Meuwissen et al, 2021). After the early spring carcase balance issues, meat retail sales and farm-gate prices staged a remarkably strong recovery. Boosted in part by the AHDB's successful consumer marketing campaigns for beef, lamb and pork (see Chapter Five), 2020 turned out to be a good year for the meat sector, or at least the meat retail sector. According to the AHDB, total retail volume sales of meat, fish and poultry grew by 8 per cent in the 52 weeks to 27 December 2020, with beef sales growing by 11 per cent, pork 8 per cent and lamb 4 per cent (Smail, 2021). The year had one more crisis to visit upon the food sector, which hit the red meat sector particularly hard. The emergence just before Christmas of the new 'Alpha' strain of the COVID-19 virus in the UK, led the French Government to close its border with the UK. With huge quantities of fresh beef, pork and lamb both imported and exported through France, the UK meat sector was among the most impacted by the closure of the port of Dover and Eurotunnel (Sandercock, 2020a). The short but impactful 'Dover closure crisis' caused considerable disruption to fresh meat just-in-time supply chains. Some exporters/hauliers were able to reroute via Rotterdam, others turned around, but many got caught-up in the chaos and queues, and saw the value of their fresh, short shelf life, products wiped out or significantly reduced. After three days, and the build-up of an estimated 5,000 lorries, the border reopened. This, however, did little to immediately solve the problem or ease congestion as lorry drivers were required to provide a negative PCR (Polymerase

Chain Reaction) or antigen test sensitive to the new variant in advance of their crossing. Frustrated at a lack of information and a sense of urgency from the government, it was the commercial sector that, according to a number of Expert Panel members, put many of the necessary systems and processes in place to get drivers tested and lorries moving again, and in so doing, played a key role in resolving the crisis and averting a potential catastrophe. As one member of the panel put it:

> The systems and processes the government had in place were so slow to react, that if it wasn't for the fresh produce sector, the lorries would still be in Kent! … It was commercial resolve and need that resulted in it being sorted rather than government intervention.

But as with fisheries, post-Brexit trading arrangements that came into force at the start of the year, combined with on-going COVID-19 impacts to create a multitude of complex challenges for the red meat sector. In the first half of the year, a sudden third lockdown and the closure of schools and the hospitality sector, again caused significant problems for those, like wholesale catering butchers, who supplied these markets. At the same time, the value of red meat exports for the first half of 2021 dropped by £673 million 'due to the impact of Brexit and COVID-19' (AHDB, 2022b). In June, Nick Allen the CEO of the BMPA was reported as saying 'the sector was "heading towards a brick wall" as a result of labour shortages' as a result of post-Brexit immigration rules (Strauss and Foster, 2021). The situation became so critical that the Association of Independent Meat Suppliers (AIMS), which represents butchers, abattoirs and processors, called for the Ministry of Justice to work with the sector to provide prison inmates to plug the gap (BBC, 2021). In March 2021 the BMPA estimated Brexit would add at least £90 million to the meat industry's cost of trading with the EU, with red tape increasing export times and reducing product shelf life (BMPA, 2021: 1). While

exports of beef, lamb and pork did suffer a significant drop in the first half of 2021, the out-turn for 2021 was better than predicted with beef and lamb exports up 73.6 per cent and 32.5 per cent by value year-on-year respectively (AHDB, 2022b). Pork exports had increased by volume but dropped 3.6 per cent by value, although, perhaps counterintuitively, exports to non-EU countries were down by volume and value, while volume and value of exports to EU countries were up (AHDB, 2022b).

Conclusion

It is worth restating that surviving COVID-19, which as this chapter has shown was the case for the agricultural and fisheries sectors, is not the same as those sectors thriving. The European study of the resilience of different food production sectors by Meuwissen et al (2021), offers a key insight; that while producers across all sectors demonstrated a remarkable ability and capacity to organize and implement coping strategies to ensure their survival in a time of crisis, coping strategies are not transformative strategies. Addressing key weaknesses at different points and different levels of food production supply chains – such as the fragility of a heavily consolidated abattoir sector, or the omnipresent chronic shortage of labour – will require government to get involved with industry to create an enabling policy environment in which to make the necessary transformative changes.

EIGHT

Where Next for the British Food System?

Prior to the pandemic, there had been a number of occasions when food security (re)-entered public and policy discourse in the UK but almost inevitably in the context of global food security concerns. Food price increases in 2008, linked to the global financial crisis, and again to a lesser extent in 2011–13, prompted rioting in various places across the globe, as well as actions by some national governments to limit exports of food. In the UK, while food price increases were felt, particularly by the less well-off, there was no sense that food provisioning in the UK might be disrupted. Moreover, the disruption to global trade patterns as a result of the events of 2008 was, on the whole, short-lived. These events did, however, contribute to an emerging de-globalization narrative that has gathered pace since the pandemic and the war in Ukraine (Evenett, 2022). The UK has not been immune to this narrative, and with the added twist of Brexit, food security had already become a more prominent public concern than hitherto when the pandemic struck. And so in March 2020, the UK faced a potential threat of disruption to food provisioning unparalleled since the Second World War and without the lead-in time to adjust diet (rationing) and expand domestic food production capacity (dig for victory) that characterized that earlier threat. Not surprisingly, there were calls for rationing from some at the outset of the pandemic and a booming interest in domestic garden food production. However, as we have seen in this book

the answers for most lay elsewhere, primarily in mobilizing the logistical capacity of the modern food system, spearheaded by the large retailers. There was no massive food crisis as a result of the pandemic in the UK. However, there are three important caveats to that bold statement.

First, it could have been so very different. COVID-19 produced a demand-side shock, as patterns of consumption shifted due to lockdown. There was no major supply-side shock. If the pandemic had had a deeper impact on international trade in food there might have been more issues with supply and even long-lasting shortages of particular commodities. Acute labour shortages and/or fuel shortages during the first lockdown might have seriously compromised the 'just-in-time' model. If the spread of the virus and its impact had been more severe affecting more people, there would have been greater internal disruption for processors, wholesalers, distributors and retailers who might have found themselves less capable of retaining and expanding their capacity to cope with changing patterns of demand. If a vaccine against COVID-19 had not been available by the winter of 2020–21, there might have been a deeper impact on food availability in the second year of the pandemic. In short, had the pandemic turned into a supply-side shock, things might have played out very differently. Long-term structural shortages of particular commodities or products might have led to the need for rationing and/or price controls in order to prevent serious negative implications particularly for those unable to access food easily due to poverty or physical/medical accessibility issues. There might have been civil unrest and a greater need for direct government intervention. But that was not the case, and in the context of changes in the pattern of demand, the Government's reliance on the logistics power of retailers made perfect sense.

The second caveat is that while there was no general food crisis there were, as we saw in Chapter Six, groups of the population who did not fare well, for whom the word 'crisis' might seem appropriate. Moreover, for many in this position

there has been a seamless extension of crisis into the post-pandemic world as the cost of living crisis has increased the number of people needing access to food banks. July 2023 saw the highest food prices in real terms since 1977 with nearly a half of British people responding to price inflation by seeking to spend less on food and 17 per cent skipping meals or eating less (Francis-Devine et al, 2023). In 2022/23, the Trussell Trust supplied nearly 3 million three-day emergency food parcels, the highest recorded ever and an increase of 37 per cent on the previous year (Francis-Devine et al, 2023), itself a year in which the effects of the pandemic were still keenly felt.

Third, irrespective of the logistical successes of the contemporary retail system, the UK food system faced huge problems prior to the pandemic and these were not significantly addressed by any of the actions taken during the pandemic. We are a long, long way from a secure food system 'in which sustainable diets are the norm and the entire food system is reoriented to be low-impact, resilient and sustainable' (Lang, 2020: xxvi). The impact of poor diet and the burden of ill health remains a major challenge for UK society. The re-casting of farming as a result of Brexit has led to fractious debate and the real danger that environmentally damaging farming practices will continue in some instances while in others food security is compromised as farmers scale back or withdraw from productive agriculture. We do not have in the UK or any of its member nations a food and farming strategy for the delivery of safe, environmentally friendly, nutritious and affordable food, a strategy clearly facilitating farmers to respond with confidence to the concerns and opportunities presented by the changing expectations of civil and consumer society.

Can things get better and if so how? That is what we set out to discuss in this final chapter, and we want to try to end on a positive note. But first we are bound to point out that things could get worse and in developing a positive message we have to be realistic and accept that the best we can aim for is to grow resilience in the face of potential disruptions

to food provision either nationally or across the globe. Future disruption might come from more pandemics, the likelihood of which may be increased by climate change with a recent meta-analysis showing that climate change could aggravate more than 50 per cent of known human pathogens (Mora et al, 2022) as well as increasing the possibility of zoonotic spillover from other species (Rodó et al, 2021). The direct impacts of climate change on food production range from shifts in climatic zones affecting land capability (Jones, 2018) to extreme weather events impacting yields and productivity (Hasegawa et al, 2021), and even to rising temperatures threatening farmers' physical ability to work (Nelson et al, 2024). And then there are the direct disruptions, in terms of grain and fertilizer markets caused by the Russia–Ukraine war (Zhang et al, 2023). Moreover, there are potential threats from agroterrorism including the sabotage of open field crops and water lines, contamination of food in restaurants, or the destruction of food in warehouses or shops (Clark, 2008). Not confined to traditional politically motivated terrorist sources, there may also in the future be economic opportunists who understand the potential impact of a disease outbreak on markets and their ability to exploit markets for personal profit; disillusioned individuals or employees; and militant animal rights or environmental activists, opposed to using animals for food. The internationalization of food supply chains and the concentration of manufacture and distribution serve to increase these threats.

We cannot delve into details about how we might respond to these challenges in this chapter. We have to respond more generically by setting out some of the principles and practical possibilities for building resilience. Nor have we the space to enter into the minutiae of academic debate on food resilience (but for a recent instructive overview see Zurek et al, 2022). We take our lead from Tendall et al (2015: 19) who define food system resilience as the 'capacity over time of a food system and its units at multiple levels, to provide sufficient, appropriate and

accessible food to all, in the face of various and even unforeseen disturbances'. As they explain, this is a definition that:

> emphasizes that resilience occurs at the multiple levels of the food system, from individuals to national food systems to global webs of value chains, thus signalling that resilience will imply more participatory food systems, and explicitly adopting a whole systems perspective. … Importantly, this normative definition of resilience thus excludes the danger of enhancing the resilience of systems that produce undesirable outcomes, such as food and nutrition insecurity or environmental degradation. Other social and environmental outcomes of a food system must implicitly also be favourable, as these contribute in turn to the system's resilience. Hence, we ensure that resilience is complementary to sustainability. (Tendall et al, 2015: 19)

In other words, resilience in terms of economic outcomes must go hand in hand with social justice, health outcomes and environmental sustainability. This is a hugely important point. We cannot afford to be sanguine about the relative success of food provisioning during the pandemic simply just because the overwhelming majority of people were fed. That may not happen in other crises because there are fundamental frailties in the system and because we have to temper the obvious successes of the food system in the pandemic with the realization that the more vulnerable in society, whether or not because of health conditions, suffered the most.

One of the questions we asked at the outset of the book was whether there have there been any lasting changes to the food system arising from the pandemic. In terms of any substantive systemic change, we would answer that quite simply in the negative. Yes there have been some modest changes. Home working is now a more important feature of the UK economy than before and that continues to affect the balance between out of home and at home eating though, of course, it is hard

to disentangle the effects of the pandemic from the subsequent cost of living crisis. Consumers *may* have retained some new food habits. For example Rivington et al (2021) suggest that certain food management behaviours such as checking date labels and guidance, using or freezing left-overs, or checking fridges for stock, would endure post lockdown. But as discussed in Chapter Four, with the exception of the shift to online food shopping, there is no real evidence to suggest a significant residual change in consumers' food provisioning or consumption habits. Looking more broadly, no doubt the big players in the food system learnt logistical lessons that will stand them in good stead in the future. We would like to believe also that the 'hidden middle', the processors, wholesalers and distributors, are somewhat less hidden than before the pandemic and that a future crisis would find the Government more inclined to take on board their expertise and perspectives and not be quite so reliant on the retailers to take the lead. But none of this adds up to long-lasting systemic change, and on most indicators the system is remarkably unchanged. The dominance of the big retailers remains, so too the UK's dependence on international trade. The diet-related health burden remains stubbornly problematic. Above all, food commentators remain unpersuaded that the Government has a grip on food security and food justice. We used this quote about the Government's food strategy earlier in the book, but it is worth repeating:

> [it is] not a strategy at all … merely a handful of disparate policy ideas, many of them chosen because they are unlikely to raise much of a media storm. … The government's 'strategy' is far too scant, fragmented and cautious to meet the scale of the problem. (Dimbleby and Lewis, 2023: 17)

Here we highlight just some of the issues that need to be addressed if a bold strategy for food is to be developed and implemented.

One of the consequences of the food system crisis discourse that characterized the early months of the pandemic was the rapid escalation of attention to a perceived need for radical change to farming. This was driven only in a small part by the pandemic itself for there were much deeper drivers related to both the climate and biodiversity crises, not to mention the debate engendered by Brexit. It is a feature of our times that the incrementalism that characterizes most changes in human knowledge and actions, is often submerged below a new terminology, key phrases or ideas, implying something radically new and developmental, a paradigmatic shift even. Sometimes these terminological shifts occur with startling speed, arguably sacrificing conceptual clarity and methodological rigour along the way. For much of the period since the 1970s there were three paradigms for UK broadacre agricultural systems: conventional, integrated and organic, with the latter two emerging as reactions to perceived negative environmental consequences of conventional post-war farming's dependence on pesticides and artificial fertilizers. Integrated farming systems (IFS), championed by LEAF (Linking Environment and Farming), are based on reducing but not necessarily eliminating external inputs (Morris and Winter, 1999). The emphasis is on smart farming, only using sprays and fertilizers when absolutely necessary, and often deploying more mixed and rotational methods rather than the mono-cropping that characterized much of 1960s and 1970s especially in the arable east and south. LEAF and, in particular its dynamic chief executive the late Caroline Drummond, was vital both to defining IFS and to its spread.

Organic farming is as much a social movement as a type of farming system, but in terms of farming it seeks to avoid chemical fertilizers and pesticides placing great emphasis on mixed farming and rotational cropping based on an 'underpinning recognition of the biological, ecological conception of nature and the importance of the relationships and interactions between organisms – plant and animals, both

above ground and within the soil' (Stockdale and Watson, 2008: 1). Following a decline around the end of the last decade, the UK organic market has seen sustained growth over an 11-year period (Organic Research Centre, 2023). Despite some switching to conventional products during the cost-of-living crisis, there is confidence that the easing of inflation will see further growth in the market. Organic farmers will have been impacted by rising costs but less so than so-called conventional farmers as they do not use manufactured fertilizers. The area of registered organic and (and that in conversion) is growing, and this is a trend that is likely to continue as farmers seek new ways to survive and put their business on a sustainable footing in the vastly different operating environment that has emerged as a consequence of Brexit.

Recent years have also seen a rapid increase in attention given to new methods that are described as agro-ecological or regenerative and are less clearly defined than integrated and organic. There are some inspiring stories of individual farms where regenerative techniques have transformed businesses. This transformation is usually seen in terms of a reduction in inputs and their associated costs, both economic and environmental. But so rapid has been the explosion of thinking and innovation in this area, that inevitably questions remain. A key one is what does this all mean for levels of food production and, therefore, food security? If reducing inputs is driven only by the desire to cut higher costs, and certainly some farmers have been driven by this especially in the context of the inflationary pressures induced by the war in Ukraine, then food output will undoubtedly fall. Under organic farming systems, lower yields are, on the whole, accepted and farmers expect to compensate for this by receiving premiums in the market place based on certification schemes. But many of those on the regenerative journey are not certified as organic and are not necessarily keen to follow that path. It is, of course, logically possible to increase returns other than through organic premiums. For example, direct sales of produce through farm

shops, box schemes and the like, if done well, can provide higher unit prices. But there are a number of regenerative techniques that may help to maintain yields.

What we need in this area is less by way of campaigning and advocacy and more calm science to unpack and unpick the various claims, to test and trial new techniques, to work with farmers to develop resilient systems that produce sufficient and nutritious food to high environmental standards. There has been much progress on this in recent years, both in terms of research and changing farming practices. The era of cheap fertilizer and pesticides is long gone, and therefore there is now greater synergy between what nature needs and farmers' desires to reduce inputs. There has been huge progress in understanding the positives for both nature and agriculture of cover crops and winter stubbles, of uncropped margins, of minimum tillage, use of legumes. But there is a long way to go:

> many of the categories and dichotomies that frame public, and to some degree the scientific debates about agriculture, have little if any analytical purchase. These include e.g. alternative/conventional; family/industrial; regenerative/degenerative; and sustainable/unsustainable. Regardless of their currency in public discourse, these categories are far too broad and undefinable to have any place in guiding agronomic research (although the politics behind their use and abuse in discourse remains of considerable interest). (Giller et al, 2021: 22)

The work to unpack regenerative agriculture is urgent because of the wider land use debate into which farming fits. In the last few years there has been intense policy and academic activity around how best to reconcile competing demands on land, with important reports from the Royal Society (2023) and the House of Lords (2023). From this has emerged a general consensus, to which the Government has made a commitment, that there should be a national land use framework for England.

There is already one for Scotland. In terms of farming and nature, the House of Lords Committee opines that the framework should be based on three over-riding principles: (1) the protection of Grades 1 and 2 land for agriculture wherever possible; (2) the protection of land of clear value for nature, landscape, recreation; and (3) delivering more land for nature recovery, access to nature and woodland creation. It goes further in advocating that the framework should be overseen by a new Land Commission reaching across all the relevant government departments. Whether we are managing for nature or for food, it needs to be done well. And in the case of food production, if we are deploying less land overall to farming because of other land use demands, then farming on the land that remains needs to be more productive through what has been termed sustainable intensification (Dicks et al, 2018).

Another question we asked at the outset of this book is who have been the gainers and losers during the pandemic? On the supply side, the supermarkets have come out stronger than pre-COVID-19. In contrast, local food producers and retailers, many of whom had played an important role in maintaining social resilience during the pandemic, felt their efforts had exacted considerable personal costs for little residual gain post-pandemic. On the demand side, the impact of the pandemic on peoples' food security was even more starkly delineated along socio-economic lines. When it comes to the issue of social justice in our food system, there is a need for honesty about the drivers of poverty:

> Poverty is fundamentally about a lack of material resources, and it can only be properly addressed by cash (and it should be cash) transfers. The explosion of food banks across the UK … has occurred as a direct result of austerity. … When the problem of poverty is broken up and presented as 'food poverty' – a question of someone having inadequate food for themselves and their family – then the solution becomes to provide food,

> today largely in the form of charitable provision through food banks. These organisations provide predefined parcels of sometimes nutritionally inadequate and often culturally inappropriate food, itself obtained through the recycling of waste food or corporate-led supermarket initiatives. But these supposed solutions enable the state to step back, and deny people agency and choice. They all too often strip individuals of their dignity, requiring invasive referrals and questioning before people can receive the food-based support being offered. (Patrick et al, 2022: 196)

Food is famously one of the basic needs identified in Maslow's hierarchy of needs. So should we have a right to food and a safe and sustainable diet? Given the impacts of poor diet, the environmental impact of certain farming practices and the impact on children's learning of going to school hungry, to name just three reasons, we would argue yes. Given that the first job of the Government is the protection and safety of its people there are powerful arguments for enshrining a right to food. While we can debate whether we need a new Ministry of Food, or indeed a Land Commission, we certainly need a coherent and comprehensive food strategy and the political will to implement it. Such a strategy needs to incentivize and facilitate major investment and innovation in horticulture, which would have the twin benefits of addressing the trade deficit in fruit and vegetables and the need for more fruit and vegetables in most people's diets. But any strategy needs to go much further. For example, there is a need for more radical attention to the choices consumers make with regard to what they eat and the healthiness of their diets. Just as we have seen a trend towards more carbon-friendly businesses recent years, we need an equivalent shift to more health-friendly products in the food sector. In other words, proposals contained in the Dimbleby report need to be enacted in policy.

Simply focusing on the supply side such as attempts to make food production more sustainable, linked with making the UK less dependent on food imports, while important, is not sufficient to bring about transformative change. Transformative change requires supply and demand to be addressed, and this means that consumption trends need to change as well. All this is easier said than done. The long-standing, much criticized, fragmentation of food policy, in particular the disconnect between public health, agriculture and food production and distribution, remains at the heart of the problem. There is little evidence that any substantial lessons have been learned from the pandemic in this regard. Governance reform is necessary at a national level alongside more innovative partnership working at a more local level where some local food provisioning and procurement initiatives offer signs of hope for the future. Local food partnerships have been shown to have the agility to respond to national crisis and to deliver on local and national food priorities (Jones et al, 2022). Finding ways to scale up these initiatives and to work with the big retailers in creative and innovative ways remains a significant challenge.

But the first question we posed for ourselves at the outset of this book was to what extent have we seen a success story for the UK food system as opposed to the exposure of fundamental flaws? What we can perhaps conclude is that the ability to react and respond to crisis while important and often restorative of our faith in the human spirit, is not a particularly useful measure of the health of our food system. Nor can we be sure that the adaptive capacity and resilience of actors within the food system will be replenished in time for future, and increasingly frequent, food system shocks. So while the simple answer to the question is that the COVID-19 pandemic was by and large a success story for the UK food system, one does not have to dig very deep to see the fundamental flaws and fractures in the system were always present and still keenly felt by those who have always been most exposed to its flaws and inequities.

What the COVID-19 pandemic has proved beyond doubt is that our food system, or more particularly the people within it, are remarkably adaptive and that significant change at pace to a healthier, more resilient and just food system is not some ideological fantasy but an eminently realistic objective.

Notes

one Introduction

1 For the key findings for each of the five sectors see the research briefings on our project website at https://blogs.exeter.ac.uk/foodsystemimpactscv19/resourcesresults/

2 To see who was on the Expert Panel see: https://blogs.exeter.ac.uk/foodsystemimpactscv19/expert-panel/

three Keeping the Supermarket Shelves Stocked

1 Bis Henderson Space have subsequently changed ownership and weblinks to information in this section no longer work.

four The Role of Alternative Food Networks: Plugging Gaps or Building Back Better?

1 For notes of Expert Panel Meetings: https://sites.exeter.ac.uk/foodsystemsimpactscv19/resourcesresults/

2 A suite of seven community growing films were produced on completion of the first phase of the project. https://vimeo.com/showcase/6851866

3 Taken from notes of Expert Panel Meeting 5. https://sites.exeter.ac.uk/foodsystemsimpactscv19/wp-content/uploads/sites/351/2021/05/Expert-Panel-Meeting-5-19.11.20-Redacted-Notes.pdf

seven What Happened to Farmers and Fishers?

1 We use the term fisher rather than fisherman for obvious reasons of gender neutrality, noting also that the term fisher pre-dates fisherman and derives from the Old English *fiscere*, Old Frisian *fisker*, Old Saxon *fiskari*, Old High German *fiscâri* and Old Norse *fiskari* (Branch and Kleiber 2015).

2 For notes on the Expert Panel discussion of COVID-19 impacts on the dairy sector, see https://sites.exeter.ac.uk/foodsystemsimpactscv19/wp-content/uploads/sites/351/2021/05/Expert-Panel-Meeting-2-27.07.20-Redacted-Notes.pdf

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