

Impact of labour shortage: risks on UK food availability and safety

3.1 Internal food network risks (external to the FSA but internal to the food network)

Here we identify food risks arising from labour shortages that are internal to the food network, including those relating to transport and logistics. As we noted earlier, a food systems approach recognises the interconnections between various parts of the food system. Thus, for instance, declining animal welfare arising from butcher shortages can create greater demand for veterinarians, this turn may result in a reduction in production and processing. We identify risks to food availability and safety that arise directly from the meat and dairy and fruit and vegetable sectors, as well as those related to consumer preferences and perceptions, and to the FSA's regulatory functions.

Food availability risks

Meat and dairy

The backlog in the pork supply chain has resulted in the reduced availability of certain products in supermarkets and increased costs of other products (Driver, 2021; White, 2021; White, 2022), both present potential threats to food security, particularly for lower-income households. Labour shortages are compounding other pressures that meat producers are facing, with some meat producers reducing production or exiting the industry entirely. This will result in reduced domestic production and increased imports, a trend that is projected to increase in the future (Maxwell, 2022; Driver, 2022b; Shuttleworth, 2022). This has arisen because of a combination of factors including labour shortages and significantly increased costs of production (associated with geopolitics and energy prices). For example:

In January 2022, fresh and frozen beef imports were 11% above the five-year average, and export volumes were 17% below the five-year average (Shuttleworth, 2022).

In 2021, the pig breeding herd in England fell by 17,000 to 385,000 – the first time since 2014 it has been below the 400,000 mark. This was as a result of a 7% year-on-year decline in the number of sows (for example, female breeding herd) from 317,000 in 2020 to 295,000 in January 2022. The figures show that the number of 'other sows' has increased, suggesting that some producers are holding back on breeding (EFRA, 2021/22). Some producers are shrinking their herds or switching to raising others' animals under contract due to the shortages of butchers and associated difficulties with sending carcasses to abattoirs (Evans, 2021). There is evidence of carcasses being processed in the EU (Ireland) where plants are approved for local supply with the potential for an increase in product misrepresentation and document fraud risk (McSweeney and Young, 2021a). There are also reports of producers exiting the sector. The Chief Executive of the National Pig Association claims that at least 40 of approximately 2,000 UK pig farmers registered with the Red Tractor assurance scheme quit the industry in 2021, as compared to five

or six in a normal year (National Pig Association EFRA submission, 2021). Similar challenges have been reported in both the beef sector (Addy, 2022a) and the poultry sector (Addy, 2022b). The evidence suggests that these challenges are directly related to labour shortages, a position held by the British Meat Processors Association (Evans, 2021).

Also in 2021, poultry producers are reported to have cut weekly chicken output by 5-10%, the annual turkey supply dropped by 10%, and seasonal bird production by 20% (McDougal, 2021). In a globalised market, it is not necessarily the case that decreased domestic production will present a risk to food availability. Currently, most of the UK's food imports come mainly from suppliers who are very stable economically and politically (mostly, EU member states). New trade deals signed with Japan, Australia and New Zealand aim to reinforce this (Hubbard, 2020). Thus, it can be argued that, even if less food is produced in the UK and more is imported from elsewhere, the threat of compromised food availability ([footnote 1](#)) remains low. However, many experts maintain that factors such as geo-political instability and climate change make global supply chains increasingly volatile, and that it is foolhardy to let domestic industries decline significantly (Garnett et al., 2020; Hasnain et al., 2020; Lang, 2020). The ongoing conflict in Ukraine is a stark reminder of the impact conflict elsewhere can have on the UK's food supply chain.

More broadly, labour shortages in the supply chain are significantly compounding financial difficulties already faced by UK meat producers, for whom production costs – for example, energy, fertilisers, feed – have been rising more generally. For example, the backlog in pig slaughter reportedly resulted in some processors applying 50% discounts on overweight animals, severely cutting farmer profits at a time when feed, bedding and other housing costs are skyrocketing (Riley, 2022). On top of this, the changing trade environment resulting from the UK's exit from the EU is adding further strain to the industry, with challenges to producer viability coming in the form of competition from less-expensive imports and increased 'red tape' at the border, which is making exporting more difficult. Together, these challenges are making it difficult for many meat producers to remain in the industry, while others are being forced to cut back production.

Fruit and vegetables

The labour shortages experienced in 2020 and 2021 had multiple impacts. Firstly, UK fruit and vegetable production was lower than in previous years (House of Commons, 2022) as farmers adapted to new levels of labour availability. Whilst imports offer short term relief to lower UK production, these foods arrive to UK consumers on longer supply chains that have more exposure to local and global factors. In terms of food availability there is more risk of narrowing food choice with fewer varieties available and missing items on the shelves. The latter arising mainly for soft fruit and salads with their short shelf life and required labour intensity. Furthermore, due to rising energy prices, vegetables and salads that are grown in controlled environments, such as tomatoes in glasshouses, are also at risk. Some UK producers have indicated that they have started moving their production abroad (G's Fresh submission to EFRA, 2021; Barbulescu, Vargas-Silva and Robertson, 2022). Over the medium term, UK production is expected to continue to shrink significantly, due to a lack of a steady seasonal labour pipeline, stagnant food prices and a lack of succession planning, thus making it more challenging to produce fruits and vegetables domestically (Barbulescu, Vargas-Silva and Robertson, 2022).

In terms of food availability, the most at-risk fruit and vegetable foods are berries, salads, and greens. These foods are labour intensive and require a large number of workers for picking, require delicate packing and have a short shelf life in supermarkets. In the future producers may specialise production to avoid losses, for example farming strawberries only and terminating the production of raspberries and blueberries. Consumer data in Table 2 confirms that shoppers are most concerned with the availability of fresh vegetables (43.83% in February 2022) and fresh fruits (41.90% in February 2022).

The Independent Review of food that produced the National Food Strategy (the Dimbleby report), stressed the need for healthier diets, and nutritious and environmentally friendly systems in the UK, echoing the FSA's strategy of promoting healthier and more sustainable diets. Research has found that fruit and vegetable rich diets mitigate food insecurity, mitigate climate change (IPCC, 2022), improve health (FAO, 2020), protect national supply chains from external shocks (FAO 2020), reduce the financial risks associated with meat production (FAIRR, 2022; WWF, 2020), and reduce the risks of future pandemics (UNEP and ILRI, 2020). If the UK's production of fruit and vegetables shrinks, rather than rises to meet demand, imports will become vital.

Consumers

Perceptions of food supply issues seem to be very fluid and strongly related to the media. Coverage of the pandemic significantly changed buying behaviours, which in turn increased pressure on actors in the food system to meet consumers' alternative shopping and changing consumption patterns. The onset of the lockdown led to panic purchasing and stockpiling behaviours, which disrupted just-in-time production and processing cycles, leading to stock-out and price inflation.

We found that consumers have concerns about the impacts of food supply chain labour shortages on food availability, even though these are not extremely high and have remained relatively stable in the period from November 2021 to February 2022. Using two cross-sections (November 2021 and February 2022) of consumer survey data commissioned by the FSA and applying postestimation methods on the results of a multivariate regression analysis, Figure 7 below shows how consumers' concerns about food availability are affected by their views on the likely impact that labour shortages may have across key elements of the food supply chain ([footnote 2](#)).

Figure 7 Estimated probabilities of consumers' concerns with food availability as concerns with labour shortages across the food supply chain change.

Figure 7 examines the relations between food availability and levels of concern about labour shortages that have an impact on production, packaging, and supermarket/retailing activities. This analysis suggests that consumers tend to be less concerned with food availability if they are less concerned with any of these other issues (for example, on production, packaging, and supermarket/retailing activities) across the food supply chain. The analysis shows relatively low occurrences of consumers being highly concerned with food availability.

In Table 2 below we show for all food items available in the pooled cross-sectional dataset we have created the self-reported consumer concerns about their availability in November 2021 and February 2022. Not surprisingly, consumers were more concerned about the availability of fresh food items in both surveys. In November 2021, out of the 25 items analysed, the first five about which consumers were more concerned about their availability were: fresh vegetables, fresh fruit, fresh milk, raw chicken, and eggs. In February 2022, the first five items that consumers were more concerned about their availability were: fresh vegetables, fresh fruit, fresh milk, eggs, and raw chicken. The same five items were identified in both surveys, albeit with a slight variation in the ranking.

Finally, it is worth mentioning that the estimated impact of labour shortages in the food supply chain on consumers' attitudes towards food safety and food availability shown in Figure 7 and Figure 8 are stable in the period between November 2021 and February 2022. However, when the two consumer surveys were carried out, our detailed analysis (not shown here) of the pooled cross-sectional dataset created for the analysis indicates that there has been a significant worsening of consumers' perceptions during this period in all relevant cost of living dimensions included in the survey. This is particularly the case around fuel supply and energy costs, and the cost of food and drinks. Increasing consumer concerns around the so-called cost-of-living crisis is likely to add to their concerns around the impact of labour shortages on food safety and availability. Already there is evidence of families and households with lower incomes buying fewer fresh vegetables due to price increases (Sandercock, 2022).

Table 2. What food are you most concerned about being unavailable? (Column percentages)

Product	November 2021	February 2022
Fresh milk	36.39	40.42
Cheese	20.18	21.40
Yoghurts	10.86	13.37
Eggs	25.54	30.31
Raw chicken	30.28	27.49
Raw beef	15.9	10.85
Raw lamb	9.63	6.09
Raw pork	7.65	5.94
Sausages	11.77	9.51
Bacon	9.94	8.32
Tinned goods	18.81	15.60
Carbonated soft drinks	11.77	8.47
Non-carbonated soft drinks	5.05	4.61
Carbonated alcoholic drinks	8.26	5.20
Non-carbonated alcoholic drinks	3.36	3.57
Fresh fish	14.53	13.52
Frozen fish	9.48	6.24
Ready meals	10.40	7.88
Fresh fruit	39.60	41.90
Fresh vegetables	45.26	43.83

Product	November 2021	February 2022
Yeast	4.59	2.67
A 'free-from' product	7.65	9.06
Baby food	6.27	5.20
Baby formula milk	5.20	5.79
Honey	5.20	6.24

Source: Pool cross-sectional FSA Consumer Survey November 2021 to February 2022.

Food Safety risks

Meat (including pigs and poultry) and dairy

The meat processing sector – inclusive of pig, poultry, beef and sheep meats – is a labour-intensive industry that requires manual dexterity; not all of its processes can be replaced by automation. The labour shortage pressures highlighted earlier have several implications for food safety, which, here, we take to include issues pertaining to both human health and animal welfare.

Labour shortages in the meat processing industry (specifically, shortages of abattoir workers and veterinarians), have reduced slaughter rates, which in the short term, has resulted in periods of less meat entering the food supply chain. A reduction in the number of animals taken from farms to slaughter presents animal welfare challenges on farms as well as reducing food production. Specifically, within the pig sector, shortages of butchers resulted in a backlog that rose to approximately 200,000 animals in 2021, leading to the culling of thousands of healthy pigs (Defra 2020). With overcrowding there is an associated risk that ill or maimed animals will not be identified; other welfare issues include farmer wellbeing, with a longer-term risk of farmers exiting the industry and placing more pressure at BCPs due to increased imports.

While declining domestic production is not inherently a food safety risk, there are potential risks worth highlighting here. Firstly, an increase in meat imports may have implications for the way the FSA operates. For example, it will likely be necessary to devote greater resources to border checks. Furthermore, most imported meat is processed and packed in retail form after it enters the UK. Brexit-related import changes are creating some challenges and delays at border control points, and according to the BMPA, such delays have the potential to make it increasingly difficult to maintain shelf-life at the level required by retailers (BMPA EFRA submission, 2021). With potential delays at border control points, meat will be in transit for longer, bringing with it food safety risks.

Some organisations, including the NFU and Sustain are also raising concerns about the fact that meat produced in non-EU countries in particular may be subject to less stringent welfare standards than are currently in place in the UK. There is evidence of large scale abattoirs and processing plants in Ireland servicing its export-driven meat industry, with much of this meat ending up in the UK (McSweeney and Young, 2021b). Given that meat produced abroad is outside of the FSA's inspection remit until the point it enters the UK, we argue that this brings an increased risk of food hygiene breaches and food crime incidents (food traceability and control).

Although there is currently limited data to support this assertion, and moreover, it is true that third-country producers are required to rear meat (and other food) to standards set in the UK should it wish to import to this country. The fact that the FSA does not have direct control over this element of the food chain therefore raises challenges with how it retains oversight.

Fruit and vegetables

Regarding food safety, labour shortages have meant that the available workers have worked longer hours, with inexperienced workers inspecting fresh produce. Furthermore, the shortage of HGV drivers in 2021 had a significant impact on both food availability and food safety as fresh produce needed to be moved quickly and was being deposited for longer on farms that lacked appropriate storage facilities.

In the medium and long term, digitising food inspection and introducing more technology to inspect fruit and vegetables could significantly reduce the risks associated with food safety.

Consumers

We created a pooled cross-sectional dataset from two recent consumers surveys commissioned by the FSA. We used this to investigate consumers' concerns about food safety, according to their level of concern about the impacts of labour shortages across key elements of the food supply chain. The key results from a multivariate regression analysis are presented in Figure 8 using postestimation methods ([footnote 3](#)).

Figure 8 shows that there is a clear relationship between consumers' concerns about labour shortages affecting production, processing, packaging, and supermarket / retailing and their levels of concern with food safety. Specifically, as their levels of concern with all these elements of the food supply chain reduce, so does their concern with regards to food safety. For all the dimensions of the food supply chain analysed, estimated consumers' concerns with food safety are mainly fairly concerned or not very concerned. Yet with regards to processing, packaging and supermarket/retailing there is a high level of consumer concern about the impact of labour shortages on food safety in these elements of the food supply chain.

Figure 8. Estimated probabilities of consumers' concerns with food safety as concerns with labour shortages across the food supply chain change.

Regulation and governance

Some controls are delivered by local government on behalf of the FSA. In this way regulatory areas are outsourced to local government, although food businesses are still legally responsible for providing safe food. Interviewees in our study noted that vast amounts of resources, capabilities and data relevant for the FSA mandate in abattoirs are controlled by different agencies. For instance, meat inspections are still characterised by multiple inspections including mandatory FSA inspections; retailers' inspections and certifications; audits by designated local authorities; and voluntary certifications. Such duplication of efforts is resource intensive and costly for all agencies involved. Although it can provide redundant inspection capacity in times of shortages, there needs to be deliberate contingency planning in place for inter-agency expertise and resource sharing to manage staffing shortfalls and improve resource efficiencies.

Austerity has resulted in local government funding reductions and a reduction in monitoring and enforcement visits by environmental health teams (Smethhurst, 2021; UNISON, 2019). Much of this is reactive rather than proactive, suggesting a risk in identifying issues early on. Some of the findings from Unison's research (which was based on over 750 responses from environmental health officers) include:

- 39% of respondents have no time to regularly inspect food business operators.
- 26% of respondents have seen more food businesses like takeaways, failing their inspections.

Transport, retail and hospitality

The shortage of HGV/LGV drivers impacts on the food chain, the most notable pinch point being moving stock to and from distribution hubs and onto retail shelves, which has had a knock-on impact on shelf-life. This has led to less choice in the supermarkets for consumers. Shortages also meant that food businesses were not always able to get the goods that they needed (ONS 2021). It has led to an increase in wages, but also in supply chain costs and ultimately food prices (British Retail Consortium (BRC) EFRA submission). Consequently, the retail supply chain is more volatile.

In hospitality, many restaurants and food providers have had to reduce the number of hours when they are open due to staff shortages ([footnote 4](#)). Labour shortages arose due to various factors including students not being in the right place at the right time due to them exiting cities and there being hiatuses in training (catering colleges were closed). Vacancies are nearly 50% higher than pre-COVID. Revenues are suppressed by about 15% to 20% in the hospitality sector simply because of labour shortages in the sector, including in the supply chain. Approximately 20% of products in deliveries are not being fulfilled. Since Christmas, predicted cost-price inflation is coming through the supply chain.

3.2 Internal risks to the FSA

A risk is internal to the FSA if it directly affects FSA internal processes (oversight and inspection activities) or controls (rules, systems, and procedures). We identified key risk areas that affect the FSA's ability to carry out its remit. These are largely focused on FSA staff who are working in the red meat sector and relate to the following three categories:

- recruitment
- staff retention and development
- knowledge management

Recruitment risks

We focused on those related to recruitment of Meat Hygiene Inspectors (MHIs) and Official Veterinarians (OVs). MHIs are recruited using the civil service recruitment approach as well as using a Service Delivery Partner. The civil service approach does not necessarily screen candidates for the full range of skills that are needed for the role. Clearer communication is needed in relation to duties, responsibilities and time/resource requirements, work environment characteristics, workplace culture and employee value propositions and progression pathways.

OVs for all Official Controls in abattoirs are recruited using a Service Delivery Partner that recruits nearly exclusively from overseas (at around 95%) [\(footnote 5\)](#). The dependence on a single recruitment vendor creates internal challenges as those recruited through that vendor are employed within the private sector, while those recruited directly into the FSA are civil servants. Interviewees noted that there are untapped opportunities for mutual long-term planning around recruitment, training needs assessment and retention strategies to improve the synergy and operational efficiency of the FSA and contracted MHIs and OVs.

Staff retention

High levels of attrition within MHIs were perceived by FSA staff to be reduced with the introduction of diversity in roles and by balancing labour intensive and technical tasks. There are excellent opportunities for moving on from the FSA into the wider civil service, but this means that many move out of the MHI role into a more desk-based position. Such a pathway can be due to a deliberate strategy of using the FSA as a 'stepping stone' into the civil service or it can be due to a lack of understanding of the role from the outset.

Knowledge management

There is a significant level of tacit knowledge among staff working in abattoirs. Given the ageing workforce among MHIs, it is not clear how that knowledge will be transferred to newer recruits. Although retirement is currently the key contributor to knowledge loss, other factors, such as MHI job mobility, recruitment ease and attrition were flagged as continuing contributors to the loss of critical organisational knowledge in the FSA.

Interviewees in our study acknowledged the role of technologies in the delivery of a successful Operational Transformation Programme (OTP) but noted a key problem with the knowledge retention approach proposed by the OTP: despite the availability of technologies and policies that could streamline future inspection processes by assigning more responsibilities to FBOs, the knowledge requirement for effectively carrying out the FSA mandate by OVs and MHIs is context-specific and incorporates elements of culture, experience and interpretation. This implies that for the FSA to generate useful knowledge repositories for operational transformation, strategies must be put in place to store the context in which policy and procedural knowledge (know-how, know-who, know-what and know-where) are generated.

3.3 Risks external to the food network

Migration risks

Post-Brexit immigration policy privileges highly skilled migration which does not entirely reflect the demand for labour in food systems. While key shortages are also observed in high skilled occupations such as veterinarians and butchers, the shortages analysed in this report concentrate in low and medium skilled occupations and thus those with limited access to visas. The exception is the Seasonal Worker visa which traditionally has been used as a sector-based visa for agriculture but was extended in 2021 to address emergency shortages in HGV, poultry workers and butchers. For high-skilled occupations such as veterinarians and butchers the main challenges are the language test, particularly for butchers, and the immigration accreditation and recognition of qualifications for veterinarians [\(footnote 6\)](#).

For seasonal workers, returnees need to reapply without recognition of previous experience with consequences for producer cost, productivity and knock-on impacts for consumers.

Domiciled EU workers are another risk. Over 40% of EU workers have pre-settled status and would need to reapply in five years to consolidate their status in the UK. Since COVID-19 many EU workers returned to their countries of origin, contributing to the labour shortages examined here.

Other risks relating to migration are unequal treatment in the workplace (McAreavey, 2017, 2021; Lever and Milbourne, 2017), human trafficking and modern slavery (Craig et al., 2007).

For all immigration routes, clarity of different schemes would be beneficial, this includes dissemination of information on the visa types, application procedures and processes with employers and recruitment agencies ([footnote 7](#)).

Consumers and household food security

‘Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Based on this definition, four food security dimensions can be identified: food availability, economic and physical access to food, food utilization and stability over time’ (FAO, 2006; World Bank n.d.). The four dimensions clearly map on to at least some of the remit of the FSA and therefore show the relevance of food security to this report. It has already been noted that there is a direct correlation between the shortage of labour in food systems, resulting in among other things, rising prices which jeopardise food security.

Poverty and access to food: Overall, the UK is characterised by poor dietary health and increasing food poverty – consumers eat the most processed food in Europe and food bank distribution has been on the rise since 2010 (Power et al. 2020). Data reveals an increase in scurvy since 2010. Hospital admissions with a primary or secondary diagnosis of scurvy increased from 82 individuals in 2010-11 to 171 in 2020-21. Meanwhile similar figures for malnutrition over the same period increased from 4657 to 10,109 ([footnote 8](#)).

Food insecurity is not about a lack of food, it is about having insufficient income to buy food (Bramley et al. 2021). As well as food security relating to a fundamental lack of income, its meaning has evolved during the pandemic because of a lack of supply of food in the shops and/or individuals having to self-isolate and therefore being unable to go to the shops. In 2020/21 6% of people in the UK were in food poverty, including 9% of children. In April 2022 15.5% of all UK households were food insecure, i.e., ate less or went a day without eating because they couldn't access or afford food (Francis-Devine et al. 2022). With inflation predicted to remain high, the proportion of consumers facing food poverty is likely to rise further:

‘Within our forecast, which mainly because of big increases in gas prices has overall CPI inflation getting as high as 5% in the second quarter of next year, we expect food price inflation to rise to around the same rate at around the same point.’ (Dr Ben Broadbent, Deputy Governor, Bank of England, Bank of England EFRA oral evidence 09.11.21)

Meanwhile, reliance on food banks has risen dramatically since the pandemic; in the twelve months to March 2021, the Trussell Trust ([footnote 9](#)) distributed 2.5m food bank parcels, representing an increase of 33% in one year:

‘Our latest report reveals the extreme poverty faced by people at food banks going into the pandemic, with just £248 a month on average to survive on after housing costs. That money needs to cover energy and water costs, council tax, food, and other essentials’ ([footnote 10](#)).

Other research has shown how susceptibility to food insecurity has worsened for the economically vulnerable under COVID-19 conditions (Lambie-Mumford et al. 2020).

Geography of household food security: The geographies of household food security is notable. It is estimated that in 2019/20 the Trussell Trust distributed one emergency food parcel in the North East for every 27 people living in the region, compared with an England-wide figure of one for every 38 people – these figures are still likely underestimations as they do not cover all emergency food aid provision (Bailey 2021). These studies were conducted pre-pandemic and subsequent research has shown an increase in vulnerabilities, not least cost-price inflation.

For those families where a greater proportion of income is spent on food, they will want to be able to make their money to go further in terms of the food that they purchase (National Food Crime Unit, 2020). Relatedly there is a risk that food consumption is determined largely by income and education as the UK food system becomes 'two-tiered'. This means that food choices are more limited for those on lower incomes as compared to those on higher incomes (Azizi Fard et al., 2021).

Shifting consumption patterns: Consumers are shifting their food consumption patterns, due largely to concerns with the environment, health and animal welfare. There has been a corresponding rise in flexitarian, vegan and vegetarian diets, resulting in the substitution of meat for non-meat protein or meat alternatives and an overall reduction in meat consumption (IBIS World, 2021; Stewart et al., 2021). Between 2014 and 2019, sales of meat-free foods increased by 40% in the UK (Tso et al., 2021). This has implications for the FSA in terms of its inspection remit and the skills and knowledge required for inspecting 'new' foodstuffs including identifying fraud and adulteration risks in non-meat protein.

National Food Strategy: The recommendation of Dimpleby's national food strategy report of a 'Community Eatwell' programme would enable GPs to prescribe fruit and vegetables to less affluent families, paid for by tax. There is also an opportunity through the Levelling Up agenda to consider funnelling some of the funds into actions that would address some of the challenges of household food insecurity.

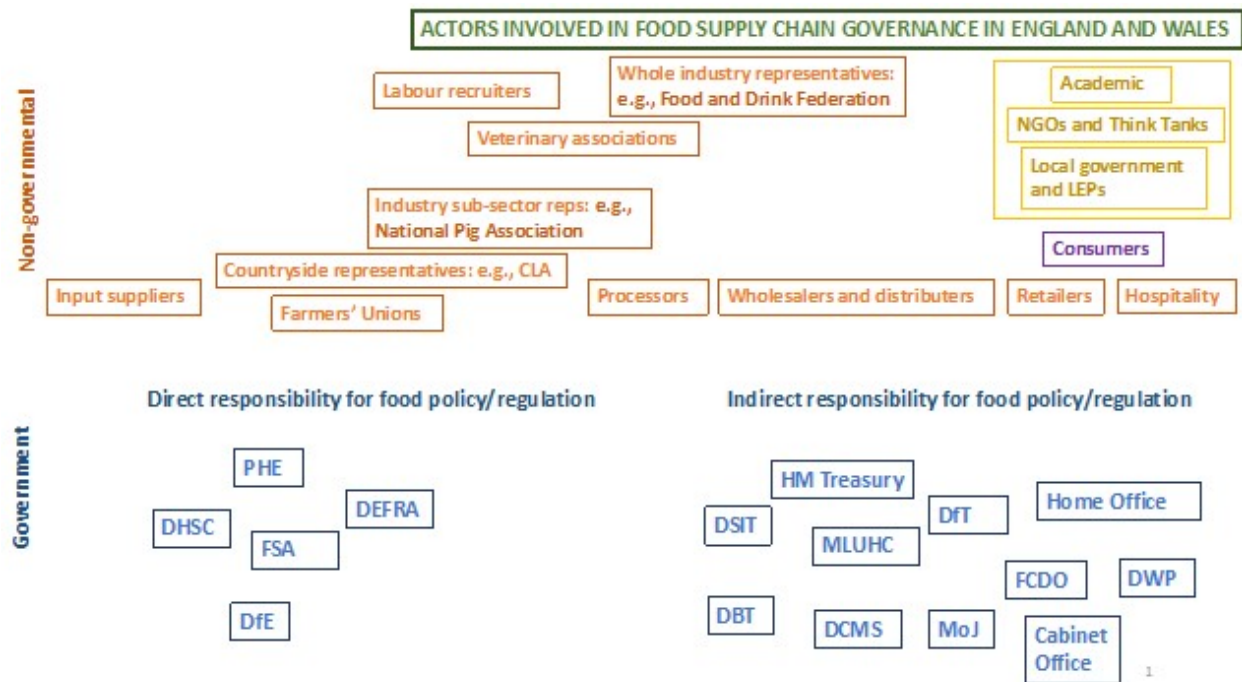
Wider UK food-system risks

Governance

The policymaking environment in the UK is complex and fragmented, particularly as it relates to food systems governance. Figure 9 depicts the complexity of the different bodies involved in the food supply chain. Governing this complexity to guard against shortages in labour is equally complex.

Like elsewhere in the EU in the mid-late 20th century, UK agri-environmental policymaking was centralised, with agri-food policy developed mainly by a closed network of farm ministries and farm groups (farmers' unions in particular) (Smith, 1990; Wales et al., 2006). But in the 1990s, the Bovine Spongiform Encephalopathy (BSE) crisis, changes in the Common Agricultural Policy (CAP), a change in government and a move towards devolution provided grounds for a "radical shift in divisions of government responsibility" (Wales et al., 2006, p. 189). An 'arms-length' mode of governance emerged, and UK agri-environmental policymaking became de-centralised and diversified. Since then, regulation of the UK food system has become the remit of multiple government departments, agencies and non-departmental public bodies. Previous research provides a breakdown of the responsibilities of key actors in England which is reproduced in Figure 9 below. This underscores the challenge in developing coherent policy that ensures adequate labour within food systems.

Figure 9. Actors involved in food supply chain governance in England and Wales



Source: Adapted by the authors from Freeguard (2016) and Parsons (2020, 2021) and analysis of wider literature.

There are risks associated with the current policymaking structure in the UK that affect labour supply. Parsons (2021) identifies the following that are relevant to the FSA's remit and labour shortages:

- i. A fragmented food supply chain policy due to responsibilities sitting with different government departments. In some cases, this fragmented approach can cause 'policy disconnects', which can result in the development of ineffective policies and hamper policymakers' abilities to tackle complex and systemic problems, such the shortage of seasonal labour which, as described earlier, is present in the food system. It impacts on agriculture, which is governed by Defra, but the immigration system falls under the Home Office.
- ii. 'High quality' domestic food production standards are found to be incoherent with trade policies that permit potentially 'lower standard' food from elsewhere, and trade policies do not connect with health objectives related to food safety or nutrition.
- iii. The persistence of poor rural digital connectivity undermines the government's objective to better utilise technologies that could potentially overcome some labour shortages, such as relating to agri-tech for producers and wider technological solutions within FBOs.

1. That is, at a country level. We return to the issue of household-level food insecurity in the section Consumers and household food security.
2. For Figure 7 on concerns about food availability we employ the same postestimation method as in Figure 8 for concerns on food safety.
3. The postestimation analysis shown in Figure 7 focuses on the elements of the food supply chain that had a significant impact on consumers' concerns about food availability in the multivariate analysis. Estimated probabilities for food availability concerns correspond to a

representative consumer using the mode values for the explanatory variables used in the multivariate regression.

4. Data in this paragraph from UK Hospitality EFRA oral evidence 09.11.21.
5. [FSA 22-06-18 - Veterinary Resourcing Update | Food Standards Agency](#)
6. In 2021 the Council of the Royal College of Veterinary Surgeons introduced more flexibility into the English language requirements for overseas-qualified veterinary surgeons wishing to join the RCVS Register, see [RCVS Council amends English-language requirements for overseas-qualified vets](#).
7. For example, confirmation of hourly rates for those on the Seasonal Worker Scheme was given by government on 6 April 2022, only three weeks before they came into force. This causes a lot of confusion and frustration for producers recruiting through the scheme. See [Seasonal Worker Scheme – essential information for growers – NFUonline](#).
8. [Admissions for scurvy, rickets and malnutrition - NHS Digital](#)
9. [Trussell Trust: End of Year Stats 2020 / 2021](#)
10. [Trussell Trust: State of Hunger](#)