National Audit Office

REPORT

Resilience of the food supply chain to disruptions

Department for Environment, Food & Rural Affairs

SESSION 2026-27
4 SEPTEMBER 2026
HC 587

We are the UK's independent public spending watchdog.

We support Parliament in holding government to account and we help improve public services through our high-quality audits.

The National Audit Office (NAO) scrutinises public spending for Parliament and is independent of government and the civil service. We help Parliament hold government to account and we use our insights to help people who manage and govern public bodies improve public services.

The Comptroller and Auditor General (C&AG), Gareth Davies, is an Officer of the House of Commons and leads the NAO. We audit the financial accounts of departments and other public bodies. We also examine and report on the value for money of how public money has been spent.

In 2025, we recognised £2.6 billion of positive financial impacts from our past work through reduced costs, improved service delivery, or other benefits to citizens. This represents about £24 for every pound of net expenditure.

National Audit Office

Resilience of the food supply chain to disruptions

Department for Environment, Food & Rural Affairs

Report by the Comptroller and Auditor General

Ordered by the House of Commons
to be printed on 2 September 2026

This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act

Gareth Davies
Comptroller and Auditor General
National Audit Office

5 August 2026

HC 587 | £10.00

Value for money reports

Our value for money reports examine government expenditure in order to form a judgement on whether value for money has been achieved. We also make recommendations to public bodies on how to improve public services.

The material featured in this document is subject to National Audit Office (NAO) copyright. The material may be copied or reproduced for non-commercial purposes only, namely reproduction for research, private study or for limited internal circulation within an organisation for the purpose of review.

Copying for non-commercial purposes is subject to the material being accompanied by a sufficient acknowledgement, reproduced accurately, and not being used in a misleading context. To reproduce NAO copyright material for any other use, you must contact copyright@nao.org.uk. Please tell us who you are, the organisation you represent (if any) and how and why you wish to use our material. Please include your full contact details: name, address, telephone number and email.

Please note that the material featured in this document may not be reproduced for commercial gain without the NAO's express and direct permission and that the NAO reserves its right to pursue copyright infringement proceedings against individuals or companies who reproduce material for commercial gain without our permission.

Links to external websites were valid at the time of publication of this report. The National Audit Office is not responsible for the future validity of the links.

016995 09/26 NAO

© National Audit Office 2026

Contents

Key facts 4

Summary 5

Part One
Response to recent disruptions and the key risks affecting the food supply chain 15

Part Two
Improving resilience, and understanding risks in the food supply chain 25

Part Three
Preparedness for catastrophic events that severely disrupt food supply 35

Appendix One
Our audit approach 42

This report can be found on the National Audit Office website at www.nao.org.uk

If you need a version of this report in an alternative format for accessibility reasons, or any of the figures in a different format, contact the NAO at enquiries@nao.org.uk

The National Audit Office study team consisted of:

Annie Parsons, Helen Roberts, Emma Taylor and Dan Varey, with assistance from Harjot Ajula, George Balden, Louis Champagnon, Vienna Goddard, Joseph Healey, Claire Hunter and Shah Tanzim, under the direction of Rich Sullivan-Jones.

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157–197 Buckingham Palace Road
Victoria
London
SW1W 9SP

020 7798 7400

www.nao.org.uk

@NAOorguk

Key facts

Food is fundamental to daily life and is strategically important for the UK economy

£148 billion was spent by UK households on food in 2025, excluding eating out.

In 2025, the UK's food 'self-sufficiency ratio' was around **60%**. This means that food produced in the UK was around 60% of the value of food consumed in the UK.

Food is **one of 13** Critical National Infrastructure sectors, that are essential to the country's functioning.

Food supply disruptions can have a significant impact on consumers, businesses and government

- Food price inflation from 2020 to 2025 peaked at **19.2%** in March 2023 because of higher input costs, global market conditions and geopolitical factors.
- Disruptions have increased operating costs for businesses and, in some cases, disrupted day-to-day operations (for example, the cyber-attacks on retailers in 2025).
- During the COVID-19 pandemic, the Department for Environment, Food & Rural Affairs (Defra) spent **£200 million** to deliver **4.7 million** food boxes to clinically vulnerable people.

The government is responding to increasing risks to the food supply chain, but more needs to be done

- The food supply chain faces a range of acute risks (such as extreme weather, cyber-attacks and energy disruptions) and longer-term chronic risks (including climate change), which are complex, becoming more likely and with potentially more severe impacts.
- Defra's 2025 publication *Towards a Good Food Cycle* identified resilience of the food supply chain to disruptions as one of 10 priority outcomes. However, it has not yet set out how it will achieve this or measure improvements.
- Defra maintains plans for responding to a range of food supply disruption scenarios, but the last time a severe disruption to food supply was tested through a national exercise was in 2023, which found limitations in its preparedness.
- The government's approach in recent years has shown limitations in engagement on household and community resilience; legal powers for Defra during emergencies; and capacity and clarity of expectations in local resilience forums to respond to food supply disruptions.

Summary

1 Food is fundamental to daily life, with UK households spending £148 billion on food in 2025 (excluding eating out). It is also a strategically important sector for the UK economy – the agri-food sector supported 4.1 million jobs across Great Britain in 2025 (11.7% of the workforce) and generated £162.3 billion in economic gross value added in 2024 (6.2% of the national total). The UK relies on a combination of domestic production and imported food. In 2025, the UK's food 'self-sufficiency ratio' was around 60%. This means food produced in the UK was an estimated 60% of the value of food consumed in the UK. Domestic food production also depends on a range of imported inputs, such as fertiliser and animal feed.

2 The food supply chain covers all stages from food production to consumption and includes agriculture, manufacturing, storage and distribution, wholesale, retail and catering. It is complex and highly interconnected, with goods often moving through multiple stages and locations before reaching consumers. The system is primarily industry-led, and businesses are responsible for managing their own operations and resilience to disruptions.

3 The government has designated food as one of 13 Critical National Infrastructure (CNI) sectors that it considers essential to the country's functioning. The Department for Environment, Food & Rural Affairs (Defra) is the lead government department responsible for security of food supply, while the Food Standards Agency has lead responsibility for food safety and public health standards. The Cabinet Office leads on cross-government CNI policy, with local authorities and local resilience forums having an important role in responding to emergencies at a local level across a range of different risks, including those affecting food supply. Defra's 2025 publication *Towards a Good Food Cycle* identified resilience as a priority, including improving preparedness for supply chain disruptions.

4 The food supply chain faces a wide range of risks that can cause disruption. These include 'acute risks' – discrete events requiring an emergency response – such as extreme weather, cyber-attacks, energy disruptions and animal, plant or human disease outbreaks. It also faces longer-term 'chronic risks' such as climate change, which can gradually erode resilience over time. Risks can be interrelated and may trigger or exacerbate other risks. For example, climate change is increasing the likelihood of extreme weather events.

5 Disruption to food supply can lead to food price inflation, less consumer choice, and vulnerable people struggling to access food, which can worsen issues such as food poverty and the health effects of poor diet. It can also increase operating costs and disrupt operations for businesses, and lead to significant costs for the government. The government's National Risk Register highlights several risks that, while considered low in likelihood, could cause catastrophic disruption (the highest impact category) if they occurred, and result in food shortages because of a failure of the food supply chain. Examples of these risks include a national power outage, pandemic, nuclear accident, or large-scale chemical, biological, radiological or nuclear attack.

Scope of this report

6 This report examines whether Defra, working with key public and private organisations, is taking effective action to ensure the food supply chain is resilient to disruptions. This report assesses:

- key risks affecting the food supply chain and how Defra and industry have responded to recent disruptions (Part One);
- Defra's understanding of risks to the food supply chain and its actions to improve resilience (Part Two); and
- Defra's preparedness for catastrophic disruption to the food supply chain (Part Three).

7 Food policy is a devolved matter. This report focuses on Defra's responsibilities for building food supply chain resilience in England. It does not cover how Defra works with the devolved governments, the Cabinet Office's coordination role for resilience across government, or the resilience or sustainability of domestic food production. Domestic food production is a vital part of the food supply chain, with concerns in recent years about profitability, resilience to long-term risks like climate change and anti-microbial resistance, and competing land use pressures. We intend to examine the resilience of domestic food production in future work.

Key findings

Response to recent disruptions and current key risks

8 The food supply chain has maintained overall food availability during recent disruptions, in most cases without material government intervention. The food sector adapted quickly and flexibly to recent disruptions including COVID-19, the war in Ukraine and cyber-attacks, maintaining overall food availability. Private sector businesses, which have commercial incentives to maintain food supply, led the response to these disruptions with limited government intervention. Their resilience was supported by the ability to rapidly switch suppliers or source alternate products from all over the world (paragraph 1.7).

9 However, recent food supply disruptions have had significant impacts on consumers, businesses and the government. For consumers, recent disruptions have led to food price inflation (peaking at 19.2% in March 2023), some occasional reduction in choice, and vulnerable people being unable to leave their homes to shop for food during the COVID-19 pandemic. Defra remains concerned about food price inflation, particularly the potential future impacts of conflict in the Middle East. Businesses in the food supply chain have faced increased costs and, in some cases, disruptions to day-to-day operations, for example following 2025 cyber-attacks on retailers such as Marks and Spencer and Co-op. Government intervention, when required, can involve significant expenditure. For example, Defra spent £200 million to distribute 4.7 million food boxes to clinically vulnerable people during the COVID-19 pandemic (paragraphs 1.8 and 1.9, and Figures 3 and 4).

10 Risks that could affect food supply are complex and becoming more likely, with potentially more severe impacts. The food supply chain faces a range of acute risks that businesses would need to respond to, as well as chronic risks which can exacerbate acute risks and reduce longer-term resilience. The way the food supply chain has developed over time has prioritised efficiency, which reduces costs for businesses, and therefore for consumers. However, it leaves the supply chain more vulnerable to disruptions. Defra and food supply chain stakeholders see risks increasing, and businesses are investing to address growing risks such as increased threats of cyber-attacks. Defra is less confident about the ability of businesses to withstand shocks without government intervention in the next five to 10 years because of increasing risks and the potential for more severe disruptions (paragraphs 1.10 to 1.13 and Figure 5).

11 The government and businesses have not faced a catastrophic event that caused a failure of food supply. Some recent disruptions required a significant response from businesses, the public and government, such as the COVID-19 pandemic, in which the availability of some products was affected by rapid changes to consumer behaviour. However, this did not cause a failure of the supply chain, and overall food supply was maintained. A catastrophic event that caused a failure of food supply would require much greater intervention by the government to ensure public access to food (paragraphs 1.7 and 1.13 and Figure 4).

Defra's understanding of food supply risks and actions to improve resilience

12 Defra's 2025 publication *Towards a Good Food Cycle* includes an objective to improve the resilience of the food supply chain, but Defra has not yet set out how it will achieve this or measure improvements. Defra's 2025 publication set out a high-level strategic vision for the food system and 10 priority outcomes, including ensuring greater preparedness of the food supply chain to disruptions. It is still developing many of the supporting policies, plans and metrics to monitor improvement. Food supply chain stakeholders were supportive of the vision but thought it lacked detail on implementation plans and outcome targets. Defra is currently updating its plans so that the outcomes it wishes to achieve across all its policy areas, including on food security, are more clearly linked to actions and indicators of progress (paragraphs 2.2 to 2.4 and Figure 6).

13 Defra has recently increased its skills and resources to manage food supply disruptions. Both the Cabinet Office's 2026 capability assessment and a Defra Resilience Board paper in 2025 highlighted concerns over Defra's capability to manage food supply disruptions. While Defra does not have a clear way to translate its understanding of risk and the level it is willing to tolerate (its 'risk appetite') into clear actions and priorities, it has recently strengthened its resilience governance and trained more staff in its Agri-Food Chain directorate. In May 2026, Defra increased the size of its Food Supply Chain Resilience team from 6.5 full-time equivalent staff to 16.5 (paragraphs 2.5 to 2.8).

14 Defra's engagement with food supply chain businesses is mixed, and some stakeholders think there are gaps in its understanding of risk. Food supply chain stakeholders praised Defra's engagement during COVID-19, and Defra has established groups, reports and tools to monitor risks and issues. However, several stakeholders told us that, compared with the past, the groups established to engage with businesses meet less frequently, lack clear objectives and receive less support from Defra. Some stakeholders thought Defra had a reasonable high-level understanding of how the food supply chain works and the risks it faces, while others highlighted gaps in Defra's understanding of specific areas such as the cold chain, which provides specialist temperature-controlled facilities across the supply chain (paragraphs 2.9 to 2.13 and Figures 7 and 8).

15 A more coordinated approach to managing risks to food supply across government would help build resilience. Some key risks to food supply are managed by other government departments, such as energy (Department for Energy Security & Net Zero) or transport (Department for Transport) disruptions. Defra therefore relies on cross-government coordination to strengthen food supply chain resilience in the long term. Defra participates in cross-government working groups and boards, facilitated by the Cabinet Office, to coordinate actions and share information across CNI sectors. There are also boards covering specific sectors, such as the Major Energy Risks Board, and across sectors and departmental interests such as the Supply Chains Resilience Steering Group. Defra engages directly with other government departments on specific dependencies, such as chemicals, that affect the food supply chain. However, in 2025 Defra stated it had "very little confidence" that current CNI cross-government governance is sufficiently joined-up, with limited cross-government work on resilience. Several food supply chain stakeholders we interviewed shared this view. In response to the 2026 Middle East conflict, Defra established the cross-government Food Impacts Coordination Group to ensure departments with critical links to the food supply chain understand the risks, are aware of contingency planning and can input into policy decisions (paragraphs 2.14 and 2.15).

16 There may be opportunities to improve resilience in the food supply chain by learning from approaches used in other CNI sectors and in other countries. Other than food safety and standards, food is a largely unregulated sector. Defra therefore has few levers to incentivise or compel supply chain businesses to improve resilience, compared with regulated sectors such as energy and water. There are also examples from other countries where governments take a more proactive approach to food supply chain resilience, such as stockpiling of essential foods, statutory identification of critical food infrastructure and direct government investment. These may have cost implications, which Defra would need to assess against other policy priorities (paragraphs 2.17 and 2.18, and Figure 9).

17 Until recently, the government has not made household and community resilience a priority, even though this can substantially reduce the impact of a disruption. Defra recognises that household and community resilience can reduce the immediate impacts of food supply disruptions, provide time for government and businesses in the supply chain to respond and recover, and reduce the financial impact of disruption. The government's public engagement on emergency preparedness in the UK has been limited. Recent comparative analysis by the Cabinet Office of preparedness surveys shows that, compared with several other countries, UK households are less prepared for emergencies, and government-led messaging to households on preparing for emergencies is less prominent. The government's Resilience Action Plan published in July 2025 highlighted the importance of 'whole-of-society' resilience. The Cabinet Office is developing revised guidance and plans to update the government's 'Prepare' website during 2026 and has established a Societal Resilience team. Further work to increase household and community resilience may mean higher up-front costs for households, or for the government. Defra recognises that households' ability to prepare for food disruptions depends on their individual circumstances, and it is starting to develop work aimed at strengthening community food resilience (paragraphs 2.19 to 2.22).

Defra's preparedness for a severe supply chain disruption

18 Defra is increasing its focus on planning for catastrophic events, where food supply would be seriously affected. In response to findings and recommendations from national exercising, Defra has increased its national power outage planning. Defra is also focusing on food supply as part of the Cabinet Office Home Defence Programme, amid intensifying geopolitical tensions such as Russia's invasion of Ukraine and conflict in the Middle East (paragraphs 3.2 and 3.5).

19 Defra's plans for responding to an event that severely disrupts food supply lack operational detail and industry involvement. Defra has an overarching 'playbook' for food supply disruptions that it uses to respond to a range of incidents. The playbook is focused on government structures and processes. It has not been developed with, or seen by, businesses in the food supply chain, or independently assured, creating risks that plans may not work in practice. A 2023 national exercise found that many response plans across government would not be sufficient in the event of a national power outage. It recommended that detailed national plans be produced across several key sectors, including food supply, which departments could enact automatically. Defra assessed that the cost of developing a full emergency plan for food was disproportionate to the level of risk and likelihood, although this decision was not informed by an explicit assessment of risk appetite. Defra is instead developing a more basic plan (paragraphs 3.3 to 3.5).

20 No specific food supply chain assets are currently included in the government's database of CNI assets. The government maintains a 'CNI Knowledge Base' tool which maps out CNI systems and assets. Currently, key infrastructure for the food supply chain is not included as Defra had previously assessed that no individual asset was sufficiently critical. This limits the government's ability to identify the most essential parts of the food supply chain, and which assets would need prioritising for support during a severe disruption. Defra began work in late 2025 to explore populating the Knowledge Base with information on food-related infrastructure and it is aiming to complete the initial phase by the end of 2026 (paragraphs 3.7 and 3.8).

21 The last exercise on a catastrophic event which tested the impact and response for food supply was in 2023, which identified limitations in Defra's approach. Defra tests its preparedness for food supply disruptions through exercises. It participates in national exercises, where the primary focus is not food supply disruption, and also runs its own specific food-related exercises. A national exercise in 2023 was the most recent to significantly test a catastrophic event that would severely disrupt the food supply chain. Defra therefore has not meaningfully tested changes it made to address limitations identified by that exercise. National exercises and most of Defra's own exercises have not involved food supply chain businesses, and some food supply chain stakeholders told us that more involvement in exercises would be useful (paragraphs 3.9 to 3.11 and Figure 10).

22 Defra lacks the legal powers it may need during a catastrophic event to maintain food supply. Most legal powers that can be used during food supply disruptions are held by other government departments. For example, during COVID-19 the then Department for Business, Energy & Industrial Strategy was responsible for the decision to relax competition laws, allowing food retailers to coordinate actions more effectively. While there is existing and planned legislation which could provide Defra with some powers during a food supply disruption, Defra considers that these would be insufficient to manage a catastrophic event. For example, it would be unable to direct businesses to take actions during an emergency situation. Other governments internationally, such as Norway, have more powers to require business participation during emergencies (paragraphs 3.13 to 3.16).

23 The capability and capacity of local resilience forums (LRFs) to respond to food supply disruptions is insufficient, and LRFs lack clarity on what is expected of them. The Ministry of Housing, Communities & Local Government (MHCLG) told us that most LRFs do not plan specifically for food supply disruptions, although this should form part of their planning for other risks, such as power outages. MHCLG and the Cabinet Office acknowledge that LRFs' capacity and capability across a range of risk areas do not match lead government departments' expectations. The Cabinet Office's 2026 National Capabilities Assessment relating to food supply highlighted a gap in the ability to respond at a local level during catastrophic scenarios. Defra has not been clear on what it would expect from LRFs during a severe food disruption. Limited resources, competing priorities, and lack of legal powers to direct local businesses (for example, supermarkets) during emergencies may reduce LRFs' effectiveness. Concerns also remain over LRFs' ability to identify vulnerable people who may need support in an emergency. Defra is planning to work with retailers and LRFs to develop a local food distribution framework for vulnerable people (paragraphs 3.17 to 3.20).

Conclusion on value for money

24 To date, Defra has largely relied on the private sector to manage disruptions to food supply. This has been possible because of the resilience in the UK food system, which can source from all over the world, and commercial incentives on businesses to invest against risks and respond during a crisis. However, the sector's ability to withstand catastrophic events that cause severe disruption has not been tested, and Defra's actions in recent years have not been sufficient to ensure the supply chain is resilient to such events.

25 Defra has recognised that risks of significant disruption are rising, and it has increased its capacity to support strategic work to build resilience within the food supply chain, communities and households. But this work remains at an early stage, and it is timely for Defra to assess whether its current approach and preparedness remain in line with the increasing level of risk. Defra could make better use of existing frameworks – such as using the government's 'CNI Knowledge Base' tool to identify critical food supply chain infrastructure – and learn from approaches taken in other countries. There is also opportunity to strengthen preparedness for emergencies by increasing the transparency of the government's planning assumptions and testing these with local government and industry. Some activities to reduce risk and increase resilience may have cost implications for the government, businesses or households. Defra will need to be clear on the level of risk it can accept to make informed decisions about its priorities, and whether these costs and their potential to increase resilience represent value for money.

Recommendations

26 Defra should:

a **define its risk appetite for levels of food supply disruption it is willing to tolerate and embed this into its policy and emergency response decision-making –** this would support it to make risk-informed decisions and trade-offs, including on when and how to intervene during emergency situations;

b **develop clear performance metrics to monitor progress against the outcomes in its 2025 publication** *Towards a Good Food Cycle*, including the specific outcome to ensure "greater preparedness for supply chain shocks, disruption, and impacts of chronic risks" – this could be part of its wider work to strengthen its overall framework for the outcomes it seeks to achieve;

c **refresh arrangements for engagement with food supply chain businesses –** it should assess the extent to which its current forums adequately cover the full supply chain, and ensure each group has clear objectives and adequate administrative support;

d **assess the potential costs and benefits of approaches used to build resilience in other sectors or countries and whether they are wholly or partly applicable for the UK's food supply chain –** this could include approaches that incentivise private companies to build resilience into their operations or building resilience through direct government actions (such as stockpiling);

e **review its response plans to determine whether they represent good practice in preparedness planning and would be effective in practice –** this could include:

- reviewing approaches in other areas of Defra oversight (such as animal disease contingency plans) and across government;
- greater involvement of the private sector supply chain in developing plans and exercises; and
- considering whether an independent review of its plans would help strengthen them.

Defra should regularly test these plans through exercises, including covering severe or catastrophic disruptions, and use the results to identify lessons and refine its approach; and

f **undertake a comprehensive review of the current legal powers it could use to respond to a catastrophic event which causes a severe food supply disruption –** if this identifies clear gaps, it should determine a timetable for bringing forward proposed legislative changes.

27 Working with the Cabinet Office and other government departments, Defra should:

g **ensure that future initiatives to encourage greater preparedness by households and communities include appropriate detail on food preparedness and the level of disruption households should reasonably expect to prepare for –** this work should be informed by examples from other countries;

h **assess the current cross-government governance approach to food supply resilience and identify and implement any improvements required,** to ensure policy alignment across all CNI sectors and a coordinated response during emergencies; and

i **accelerate its consideration of critical food infrastructure assets** and which, if any, should be included in the government's 'CNI Knowledge Base' tool.

28 Working with MHCLG, local authorities and LRFs, Defra should:

j **establish clear expectations for LRFs in the event of a severe food supply disruption and communicate this to all LRFs –** this should include:

- co-designing with the local government sector the measures needed to address severe disruptions to food supplies; and
- establishing a process for ongoing engagement with LRFs to understand their preparedness and disseminate information on, for example, latest risks to food supply and updates to policy and guidance.

Part One

Response to recent disruptions and the key risks affecting the food supply chain

1.1 In this part, we set out how the food supply chain is organised, and roles and responsibilities across industry and government. We then examine:

- how the food supply chain and the Department for Environment, Food & Rural Affairs (Defra) have responded to recent disruptions and what impact they have had; and
- the key risks facing food supply now and in future.

Structure and dependencies of the food supply chain

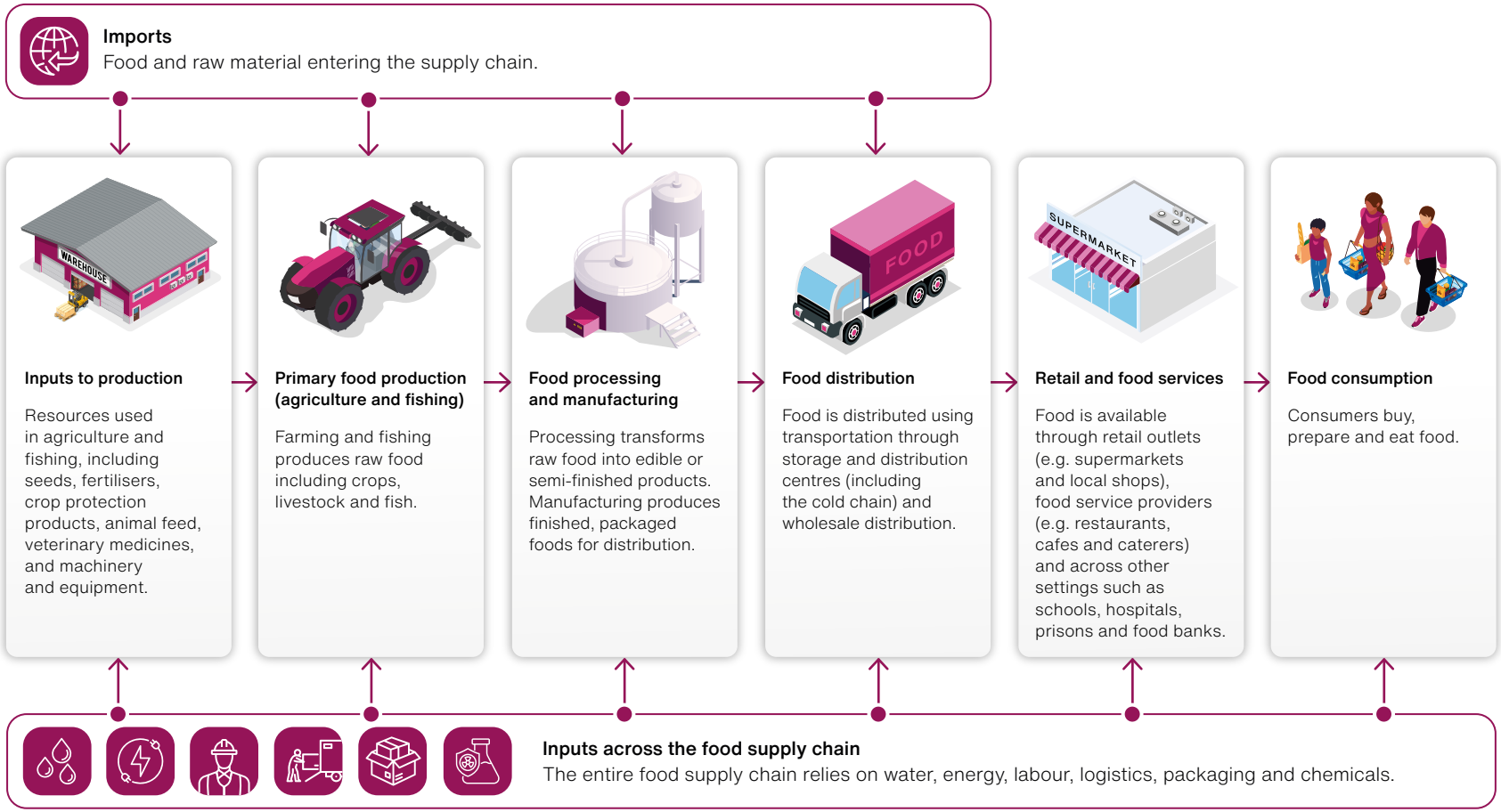
1.2 The food supply chain covers all stages from primary production to final consumption. It begins with growing and harvesting food or rearing livestock, which is then processed and manufactured into food products. These are packaged, and may be stored, before being made ready to sell by wholesalers, retailers or caterers. The supply chain is highly interconnected, with products often transported, processed and stored across multiple sites before reaching consumers (**Figure 1** overleaf).

1.3 To maintain food availability, the UK relies on a combination of domestic production and imported food. In 2025, the UK's food 'self-sufficiency ratio' was around 60%. This means that food produced in the UK was an estimated 60% of the value of food consumed in the UK (**Figure 2** on page 17).[1] Domestic food production and manufacturing in the UK also depends on key inputs, many of which are imported, such as fertilisers, animal feed, food-grade chemicals and gases (such as carbon dioxide), energy (electricity, gas and fuel) and packaging materials.

1 The food production to supply ratio (also referred to as the 'self-sufficiency ratio'), is calculated as the farm-gate value of raw food production divided by the value of raw food for human consumption.

Figure 1
The food supply chain

The food supply chain spans the full journey from food production to consumption



Notes

1 This is a high-level illustration of key elements of the food supply chain but does not include all flows of goods between all parts of the supply chain.

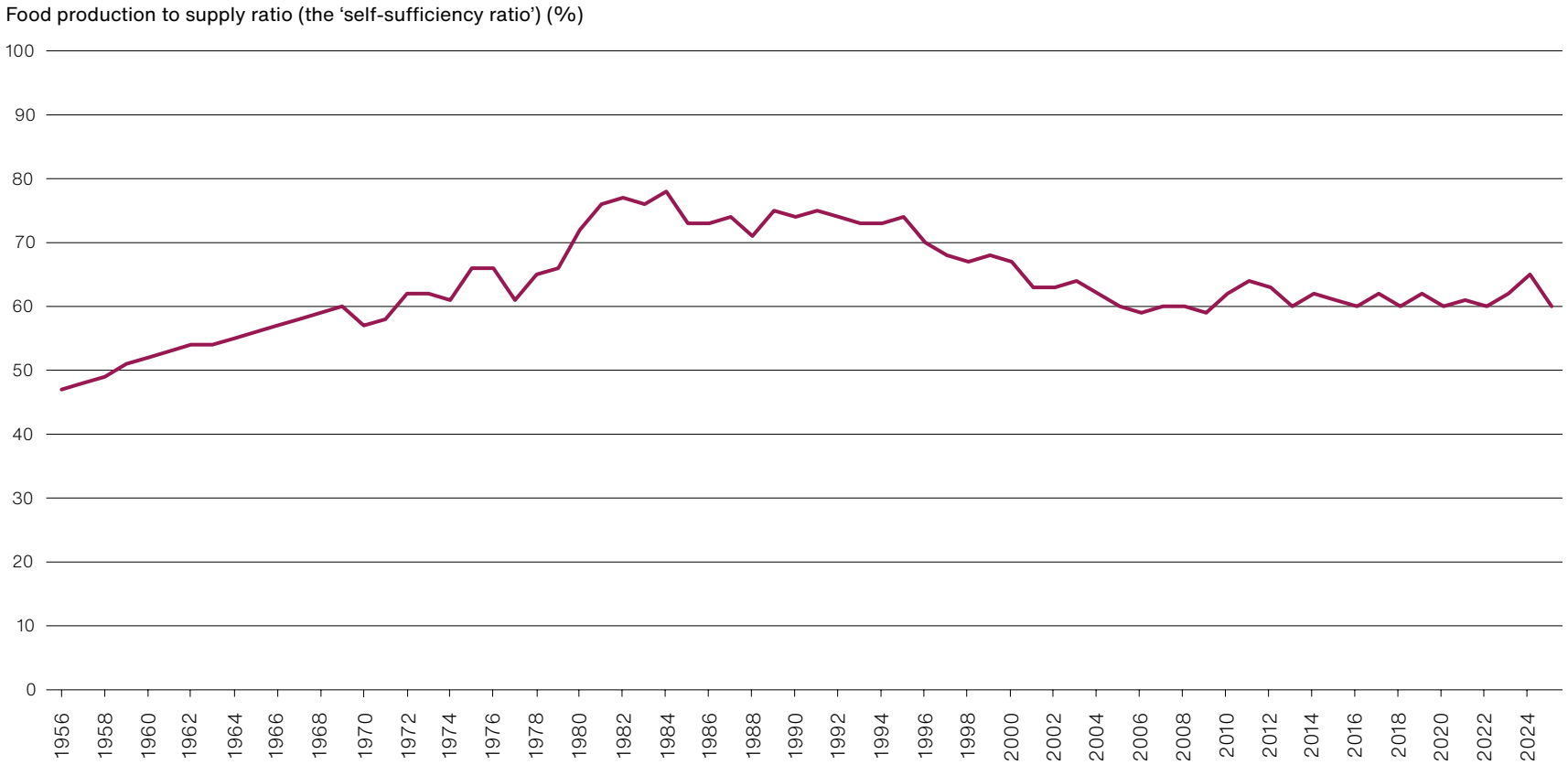
2 The cold chain provides specialist temperature-controlled facilities across the supply chain.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs' documents and publicly available information

Figure 2

UK food production compared with food consumed in the UK, 1956 to 2025

After peaking in the early 1980s, the proportion of food consumed in the UK that is produced domestically declined and has remained relatively stable over the past decade



Notes

1 UK food production relies on imported key inputs (such as fertilisers, feed, chemicals, energy and packaging).

2 The figure shows the Food Production to Supply Ratio (commonly referred to as the 'self-sufficiency ratio'). This is calculated as the farm-gate value of raw food production divided by the value of raw food for human consumption. The 'farm-gate value' of raw food is the price farmers directly receive for their agricultural produce at the farm, before any additional costs for processing and transport.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs data

Roles and responsibilities

1.4 The food supply chain is primarily industry-led, with businesses responsible for managing their own operations and resilience to disruptions. Other than food safety and public health standards, which are overseen by the Food Standards Agency, the food supply chain is largely unregulated. Its complexity means no single government department has oversight of the entire supply chain and all its supporting parts, which include international trade, energy and transport.

1.5 The government has designated food as one of 13 Critical National Infrastructure (CNI) sectors.[2] The Cabinet Office leads cross-government CNI policy, while Defra is the lead government department for security of food supply, with responsibility for policy, guidance and engagement with industry. As lead government department, Defra is also responsible for managing the response and taking action when an event causes disruption to food supply that is too severe for industry to manage.

1.6 Local authorities and 38 local resilience forums (LRFs) in England play an important role in preparing for, and responding to, local and national emergencies in their local areas across the full range of risks on the government's National Risk Register. This includes food supply disruptions. For example, during the COVID-19 pandemic, local authorities played an important role in distributing food packages to vulnerable people. In Part Three, we look at the role of LRFs and how they are planning for food supply disruptions.

Response to recent food supply disruptions and their impacts

1.7 Over recent years, England has faced food disruptions – including from the COVID-19 pandemic, the war in Ukraine, supply shortages and cyber-attacks – but overall the food supply chain maintained food availability, largely without government intervention. The sector adapted quickly, driven by commercial incentives to maintain supply. Resilience was also supported by structural features of the food sector, which allow food to be sourced from different places, be moved in different ways, and be sold through different retailers when disruptions occurred. The availability of some products was affected at the start of the pandemic because of rapid changes to consumer behaviour. In some cases, retailers have implemented short-term measures to manage shortages, such as limiting purchases of specific items.

2 Critical National Infrastructure (CNI) is defined as critical elements of infrastructure (assets, facilities, systems, networks, processes or workers that operate them), the loss of or compromise of which could result in: major detrimental impact on the availability, integrity or delivery of essential services; and/or national security, national defence or the functioning of the state.

1.8 Despite maintaining the overall availability of food, disruptions have significantly affected consumers, businesses and the government. Consumers have faced rising prices, reflecting higher costs, global market conditions and geopolitical factors, exacerbating concerns about affordability and food poverty. Food price inflation reached 19.2% in the 12 months to March 2023 (**Figure 3** overleaf). Defra remains concerned about food price inflation, particularly because of the ongoing conflict in the Middle East. Disruptions have also occasionally reduced consumer choice or limited access for vulnerable people who were unable to leave their homes to shop for food during the COVID-19 pandemic (such as shielding households).

1.9 Disruptions have increased operating costs for businesses and disrupted day-to-day operations; for example, cyber-attacks on retailers in 2025, such as Marks and Spencer and Co-op, affected their core digital systems. The government has intervened selectively where disruptions posed more significant risks, including:

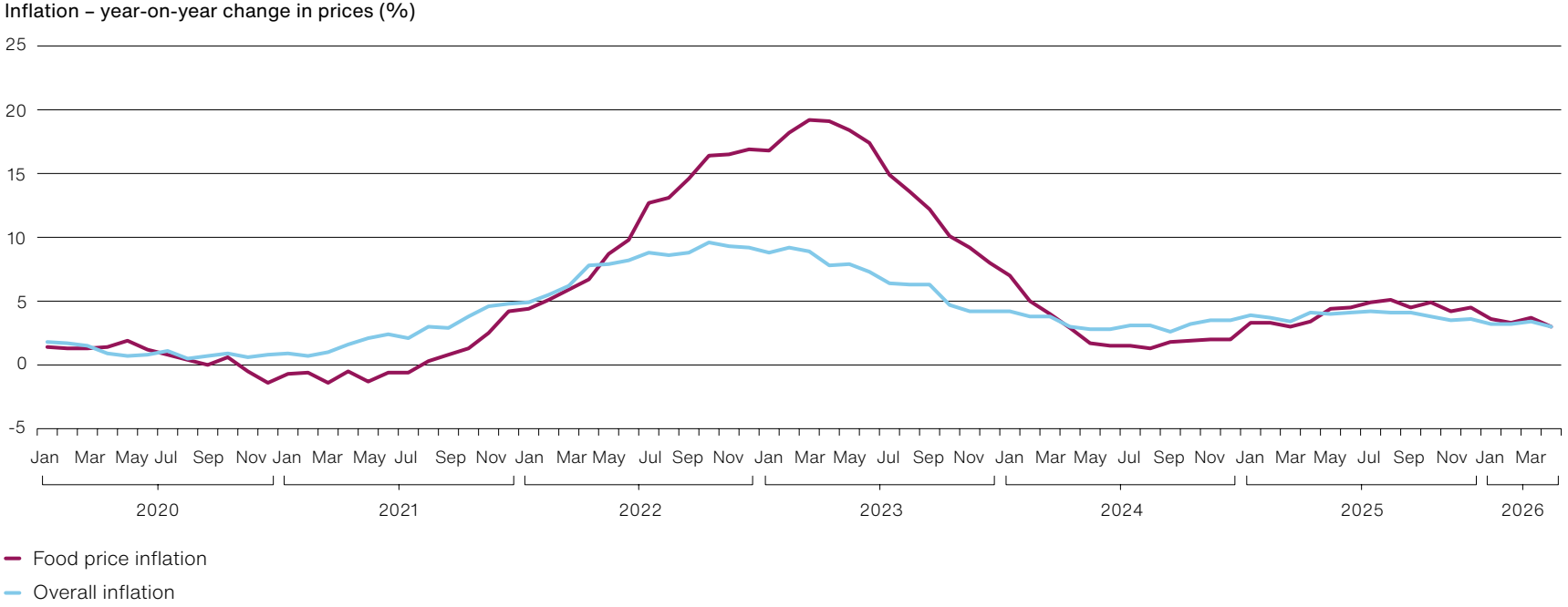
- providing regulatory flexibilities and food boxes to clinically vulnerable people during COVID-19;
- financial support to businesses to help with energy costs; and
- securing supplies of critical inputs such as carbon dioxide (**Figure 4** on pages 22 and 23).

Government intervention, when required, can involve significant expenditure. For example, Defra spent £200 million to distribute 4.7 million food boxes to clinically vulnerable people during the COVID-19 pandemic.

Figure 3

Food price inflation compared with overall inflation in the UK, January 2020 to April 2026

Food price inflation was substantially higher than overall inflation for long periods during 2022 and 2023



Notes

1 Overall inflation data are taken from the Consumer Prices Index including owner occupiers' housing costs (CPIH), consistent with the Department for Environment, Food & Rural Affairs' Food Statistics Pocketbook. CPIH is the UK's most comprehensive measure of consumer price inflation, as it includes housing-related costs for owner occupiers, such as the cost of living in and maintaining a home, and Council Tax.

2 Food price inflation data are taken from the CPIH 'food and non-alcoholic beverages' component. This measures price change for food and drink items only, excluding other categories such as housing, transport and services. It is one component of CPIH and contributes to, but does not represent, overall inflation.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs' Food Statistics Pocketbook data (July 2026)

Risks facing the food supply chain

1.10 Recent disruptions have highlighted multiple risks to the food supply chain affecting consumers, businesses and the government. These include acute risks – discrete events requiring an emergency response – such as cyber-attacks, extreme weather, energy infrastructure failure (causing price and supply shocks), and disease outbreaks. The food supply chain is also affected by chronic risks – longer-term challenges that can gradually erode resilience over time – such as climate change. Chronic risks may trigger or exacerbate acute risks, creating a more volatile and rapidly evolving risk environment (**Figure 5** on page 24). For example, climate change is increasing the likelihood of extreme weather events.

1.11 The way the food supply chain has developed over time has prioritised efficiency. The 'just-in-time' inventory management model (where products move through the supply chain quickly, rather than being stored in warehouses), especially in the retail sector, means little or no stock is held on-site. This reduces costs for businesses and therefore for consumers, because holding stock is expensive. However, it relies on continuous restocking, making it more vulnerable to disruptions. Some parts of the supply chain, such as manufacturers and the cold chain (which provides specialist temperature-controlled facilities across the supply chain), hold some stock, providing a degree of resilience across the system.

1.12 The risks that could affect food supply are complex, and some are increasing in likelihood with potentially more severe impacts. The government and food supply chain stakeholders have highlighted particular concerns around rising geopolitical tensions, the impacts of climate change, and constant and evolving cyber threats. For example, we heard from several stakeholders about substantial investments businesses are making to manage the threat and incidence of cyber-attacks, although some said overall economic pressure on businesses is making this and other resilience investments more difficult.

1.13 Defra told us that, due to increasing risks, it is less confident about the ability of businesses in the food supply chain to withstand shocks without government intervention over the next five to 10 years. While recent disruptions have tested the supply chain, they have not resulted in a failure of food supply. The government's National Risk Register highlights several risks that, while considered to be low in likelihood, could cause catastrophic disruption and lead to a failure of the food supply chain. For example, Defra believes a national power outage would have rapid and widespread impacts on food supply and distribution and could cause food shortages. Such catastrophic events would require much greater intervention by the government to maintain food supply. We examine Defra's preparedness for a catastrophic event that severely disrupts food supply in Part Three.

Figure 4

Examples of impacts and interventions from recent disruptions to the food supply chain affecting consumers, businesses and the government

Recent disruptions have had varied and sometimes significant impacts across consumers, businesses and the government

Event	Impacts on consumers	Impacts on businesses	Government actions and impacts
EU exit In 2020, the UK exited the European Union (EU), introducing new labour, border and regulatory requirements for the food supply chain.	• Reduced imports of some EU-sourced foods.	• Labour shortages across the food supply chain. • Increased regulatory and administrative requirements for EU food trade.	• New customs and sanitary and phytosanitary (SPS) controls at the UK-EU border. • Loss of access to some food-related EU data-sharing and intelligence systems. • Changes to the Seasonal Worker Scheme to address labour shortages in agriculture.
COVID-19 pandemic The pandemic affected all aspects of daily life in the UK.	• Clinically extremely vulnerable people were advised to stay at home, affecting their ability to buy food. • Increased use of foodbanks due to higher financial insecurity. • Empty shelves during the early stages of the pandemic.	• Increased consumer demand and changes in purchasing methods put significant pressure on the food supply chain. • Closure of food service and hospitality businesses created a significant shock for food and drink suppliers. • Loss of capacity across the supply chain due to staff absences, social distancing requirements and financial difficulties.	• Relaxed driver hours to allow continued transport of goods and relaxed competition law to allow supermarkets to work together. • Defra spent £200 million to deliver 4.7 million food boxes to clinically extremely vulnerable people. • Introduced COVID-19 loan guarantee schemes for businesses (including the food sector).
Conflict in Ukraine In February 2022, Russia launched a full-scale invasion of Ukraine, which remains ongoing.	• Higher food prices due to higher energy, fertiliser and grain prices. • Temporary reduction in availability of tomatoes and peppers in early 2023 due to increased energy costs affecting the horticulture sector.	• Increased costs to UK farmers and other parts of the food supply chain. • Shortfalls in some key inputs to food processing and substitution to other inputs (e.g. sunflower oil to rapeseed oil).	• Introduced the Energy Bills Relief Scheme to support non-domestic energy users, including food businesses, between October 2022 and March 2023.
Fruit and vegetable shortages In 2023, unseasonal weather in growing regions and high energy costs reduced supply of some fruits and vegetables.	• Minor shortages of specific food items, purchase restrictions in some supermarkets and higher prices.	• Some supermarkets introduced purchase limits on tomatoes, peppers and salad items.	• Engaged with retailers, primary producers and industry bodies to monitor supply chain pressures and discuss mitigations.
Avian influenza outbreaks Recurrent outbreaks in recent years have affected poultry populations, with implications for meat and egg production capacity.	• Contributed to increased egg prices during 2023.	• Large-scale culling of poultry. • Significant impact on affected poultry businesses and their suppliers.	• Deployed Animal & Plant Health Agency staff and contractors to undertake culling. • Paid compensation to businesses for healthy birds culled.
Carbon dioxide (CO_2) shortages CO_2 is a key input used across the food supply chain. Supplies have come under pressure in recent years (e.g. 2018, 2022).	• Reduced availability of some food and drink products.	• Food and drink manufacturers required to stop or change manufacturing processes. • Animal welfare issues at abattoirs. • Increased cost of CO_2.	• Various interventions to support UK CO_2 production, such as in 2026 to restart production at a bioethanol plant.
Cyber-attacks on retailers Major food retailers suffered cyber-attacks in 2024 and 2025 (e.g. Marks and Spencer).	• Reduced availability of some food at affected retailers.	• Significant impact on affected retailers' operations and sales.	• Engagement with food retailers on cyber security. • The National Cyber Security Centre (NCSC) provides support to nationally significant organisations, which it told us includes all major food retailers and consists of: bespoke information-sharing communities; sharing NCSC best practice; incident support; and malicious activity alerts.
Middle East conflict Conflict involving the United States, Israel and Iran which commenced in February 2026.	• Potential for higher food prices.	• Increased energy costs across the food supply chain • Increased fertiliser prices for farmers.	• Defra is monitoring the situation in the Middle East and its impact on the food supply chain. It told us it is engaging extensively with industry to understand the impacts. • Targeted food tariff cuts. • Action on CO_2 (above). • Extended 5p fuel duty cut until end of 2026.

Notes

1 The examples focus on food-related impacts.

2 During these disruptions, national food supply remained broadly sufficient, but distribution and access disruptions led to temporary shortages and reduced availability for some consumers.

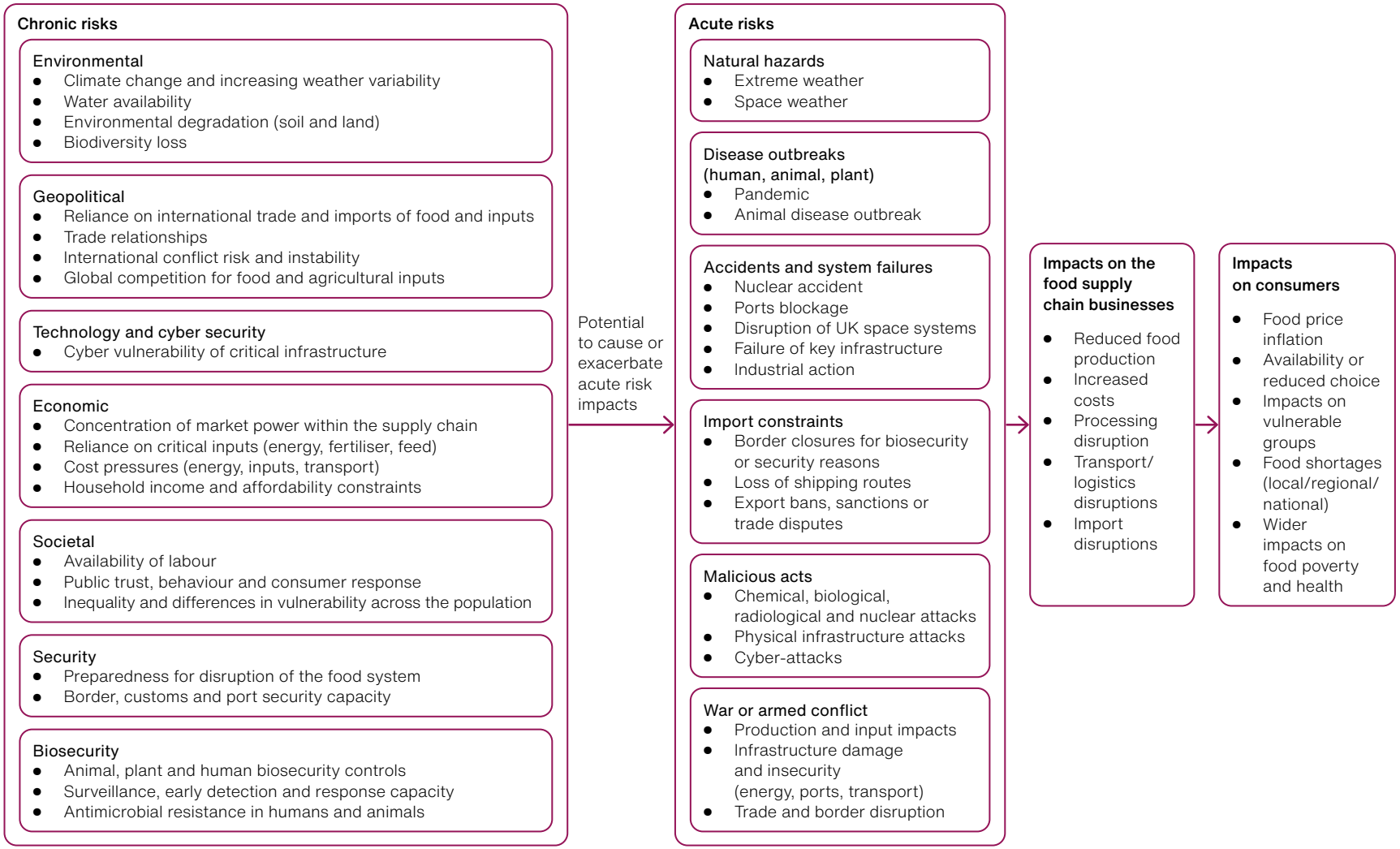
3 The table provides illustrative examples of the impacts of disruptions to the food supply chain. These are not intended to be an exhaustive list of all disruptions and impacts.

Source: National Audit Office analysis of publicly available information and Department for Environment, Food & Rural Affairs' documents

Figure 5

Risks to the food supply chain and their impacts

The food supply chain faces acute and chronic risks that can have significant impacts on consumers and food supply chain businesses



Note

1 Acute risks are discrete events requiring an emergency response. Chronic risks are longer-term challenges that erode our economy, community, way of life and/or national security.

Source: National Audit Office analysis of government and publicly available documents

Part Two

Improving resilience, and understanding risks in the food supply chain

2.1 In this part we examine:

- the Department for Environment, Food & Rural Affairs' (Defra's) strategic approach to food supply resilience;
- Defra's capability to manage disruptions to food supply;
- how Defra engages with the food supply chain and understands and anticipates risks to food supply;
- how the wider government is set up to manage risks to food supply and lessons from other Critical National Infrastructure (CNI) sectors and countries; and
- the extent to which the government is prioritising household and community resilience.

Defra's strategic approach to resilience in the food supply chain

2.2 In July 2025, Defra published *Towards a Good Food Cycle: a UK government food strategy for England*, which sets out a high-level strategic vision for the UK food system, 10 priority outcomes (**Figure 6** overleaf) and next steps for their delivery.[3] It recognises that while the UK food system is resilient in some important respects, businesses, households, communities and the country could be better prepared for shocks and disruptions to food supply. It identifies resilience as a priority and includes a specific outcome to achieve "greater preparedness for supply chain shocks, disruption, and impacts of chronic risks".

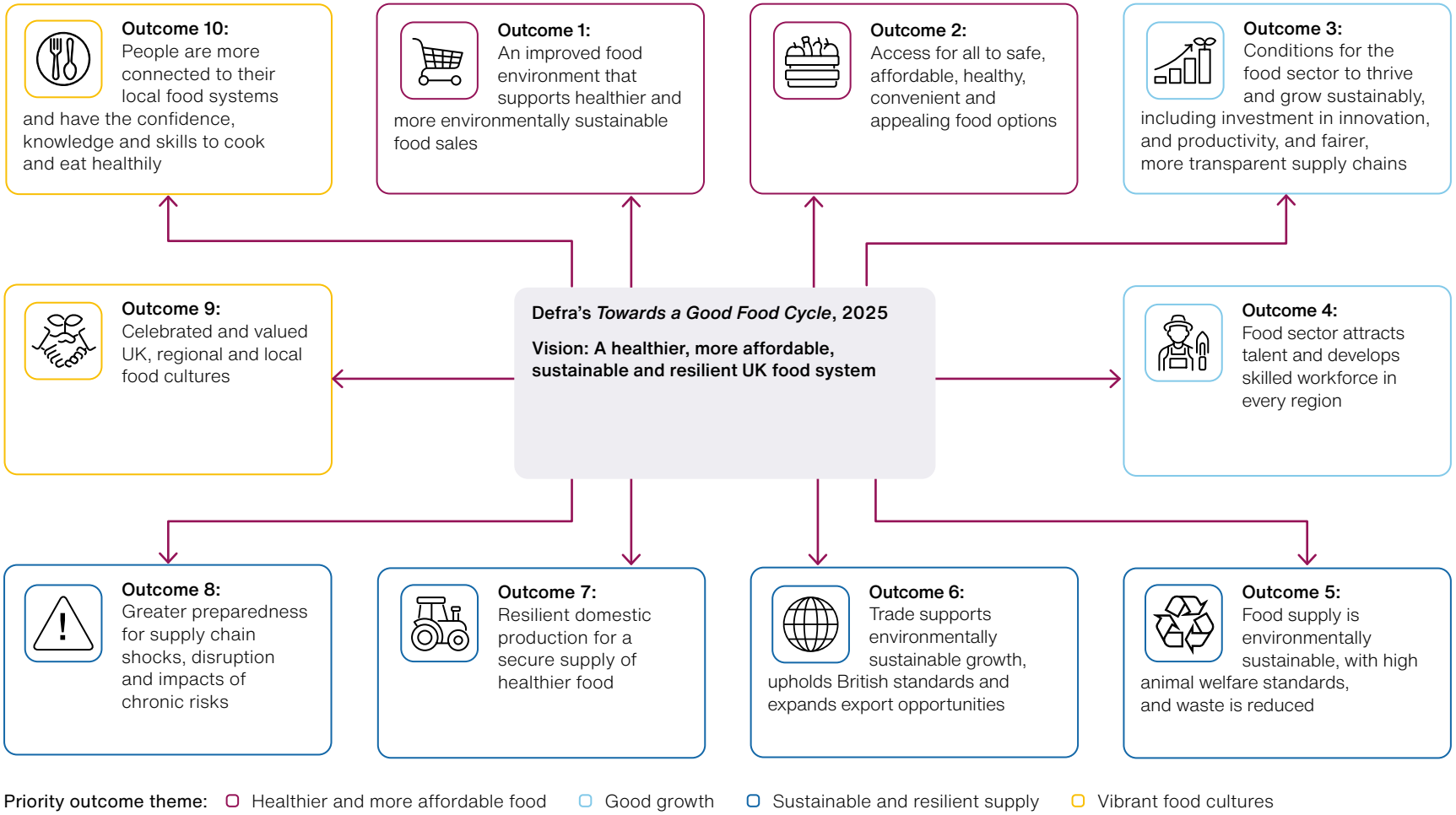
2.3 Food supply chain stakeholders told us they broadly welcomed the publication's scope and aims, but that it lacked detail on implementation plans and outcome targets. Achieving the outcomes depends on actions by the government, businesses, civil society and individuals, and Defra is still developing many supporting policies, plans and metrics to monitor improvement. Defra has established the Food Strategy Advisory Board, an independent expert advisory group, to support delivery.

3 Department for Environment, Food & Rural Affairs, *Towards a Good Food Cycle: a UK government food strategy for England, considering the wider UK food system,* July 2025 (viewed on 24 June 2026).

Figure 6

Priority outcomes set out in the Department for Environment, Food & Rural Affairs' (Defra's) 2025 publication *Towards a Good Food Cycle*

Defra's publication sets out its vision for the food system and 10 priority outcomes



Priority outcome theme: Healthier and more affordable food · Good growth · Sustainable and resilient supply · Vibrant food cultures

Note

1 Priority outcome themes reflect the groupings used in Defra's *Towards a Good Food Cycle* publication.

Source: Department for Environment, Food & Rural Affairs, *Towards a Good Food Cycle: a UK government food strategy for England, considering the wider UK food system*, July 2025

2.4 Defra is currently updating its overall framework for the outcomes it seeks to achieve, which include food security. It told us that the revised framework will more clearly link outcomes, actions and indicators of progress and that it is currently being reviewed internally.

Defra's capability to manage disruptions to food supply

2.5 In its 2026 National Capabilities Assessment, the Cabinet Office assessed Defra's capability to respond to food supply disruption as 'Moderate Improvement Needed'. It recognised that Defra is enhancing its capability in response to escalating risks, and highlights the need for continued work in several areas including the following: scoping potential regulatory levers; establishing greater oversight of resilience preparedness; and working with local resilience forums to ensure effective local plans. This follows the Cabinet Office's 2023 assessment which rated Defra's capability to manage food supply risks as 'amber', indicating that preparedness fell short of being able to respond with minimal disruption.

2.6 Across the department, Defra has strengthened its resilience governance. It established a Resilience Board in 2023, published a Group Resilience Strategy in 2024 which sets out how it will implement the UK Government Resilience Framework across its policy areas, and established a central Policy Response and Resilience Unit to provide strategic oversight and coordination for cross-cutting and emerging risks across policy areas.[4] However, Defra does not have a clear way to translate its understanding of risk and the level it is willing to tolerate (its 'risk appetite') into clear actions and priorities, as we found in our previous report on resilience to animal diseases.[5]

2.7 In November 2025, a Defra Resilience Board paper highlighted that Defra's capability to mitigate and respond to external risks to food supply was under pressure because of a combination of the outcome of the 2025 Spending Review and increasing demands on its Food Supply Chain Resilience Team, including increased work planning for the risk of a national power outage (paragraphs 3.2 to 3.5).

2.8 Defra has since increased staffing capability and capacity in its Agri-Food Chain directorate through staff training, increasing the number of reserve staff, and staff with high-level security clearance, and introducing specialist pay to retain key resilience staff. Defra told us that, in May 2026, it prioritised increasing the resources of its Food Supply Chain Resilience team through its internal business planning, resulting in an increase in full-time equivalent staff from 6.5 to 16.5 for an initial 12-month period.

4 HM Government, *The UK Government Resilience Framework*, December 2022 (viewed on 24 June 2026).
5 Comptroller and Auditor General, *Resilience to animal diseases*, Session 2024-25, HC 946, National Audit Office, June 2025.

Defra's understanding of risks to the supply chain

Risk assessment and horizon-scanning activities

2.9 It is important that Defra understands current and emerging risks to food supply, especially those that may cause a severe disruption requiring a government response. To support this, Defra has established internal and cross-government groups to identify, assess and share information on food supply risks. Defra also participates in the NATO Food and Agriculture Planning Group. Defra has developed a range of intelligence products that include the following:

- a Food Supply Issues Log which is updated fortnightly following meetings of its internal Food Supply Issues Group;
- a monthly food supply chain dashboard; and
- a vulnerabilities matrix tracking key inputs used in manufacturing essential food products.

2.10 The Cabinet Office requires Defra, as the lead government department for the security of food supply, to hold a sectoral risk register and report on the top 10 risks to the food sector every two years as part of CNI assurance processes. Defra also publishes the UK Food Security Report every three years, as required under the Agriculture Act 2020, and the UK Food Security Digest in the interim years.[6,7] However, some food supply chain stakeholders said the digest was of limited value as it is focused on historic trends rather than being forward looking.

Engagement with the private sector

2.11 Defra's understanding of risks is supplemented by input from several food supply chain forums (**Figure 7**) and targeted engagement with businesses on specific issues, such as recent discussions with major retailers on cyber security. During the COVID-19 pandemic, Defra established the Food Resilience Industry Forum (FRIF), which provided a problem-solving forum with wide representation of industry stakeholders. Food supply chain stakeholders praised Defra's engagement during the pandemic. The FRIF and its sub-groups do not meet routinely but can be convened at short notice during disruptions, as seen in the early stages of Russia's invasion of Ukraine.

6 Department for Environment, Food & Rural Affairs, *United Kingdom Food Security Report 2024*, December 2024 (viewed on 24 June 2026).
7 Department for Environment, Food & Rural Affairs, *United Kingdom Food Security Digest 2025*, December 2025 (viewed on 24 June 2026).

Figure 7

Examples of the Department for Environment, Food & Rural Affairs' (Defra's) engagement with organisations across the food supply chain

Defra has several groups through which it engages with the food supply chain; these have helped inform its understanding of risks and issues

Group	Role
Food Strategy Advisory Board	An independent expert advisory group established in March 2025 to support the government in creating and delivering its food strategy.
F4 forum	Brings together representatives from across the food supply chain, comprising the National Farmers Union, Food and Drink Federation, British Retail Consortium and UK Hospitality, to inform policy thinking and share industry issues and risks.
Retailer Forum	Brings together lead organisations in the food retail sector to provide early input to policy development and understanding of current industry risks and issues.
Small and medium-sized enterprises (SME) Food and Drink Manufacturing Forum	Brings together representatives across the SME sector to share views on current or future policy changes and the sector's current challenges and opportunities.

Note

1 This is not a complete list of all the groups and forums Defra uses to engage with industry.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs documents

2.12 However, several food supply chain stakeholders told us that, compared with the past, these groups now meet less frequently, lack clear objectives and receive less support from Defra. Others told us they currently have no engagement with the government about resilience. We found an appetite among stakeholders for more sustained and structured engagement with Defra outside of periods of disruption, to help the sector build resilience.

2.13 Food supply chain stakeholders expressed mixed views on Defra's understanding of the sector, citing this as a barrier to properly understanding the risks it faces. While some thought Defra has a reasonable, high-level understanding of the sector, others highlighted gaps in Defra's understanding in specific areas. For example, the Cold Chain Federation told us Defra understands the cold chain in broad terms but lacks detail on its critical role in providing storage for retail and managing demand fluctuations, and the serious risks if key facilities fail (**Figure 8** overleaf).

Figure 8

The role of the cold chain in food supply and the key risks it faces

The cold chain plays an important role in providing storage and distribution facilities for multiple sectors, including retail, healthcare, hospitality, education and food banks

Definition of the cold chain	The cold chain is a network of specialist facilities, vehicles and infrastructure that maintains perishable goods in a secure, temperature-controlled environment from production through to use or consumption. It provides services to multiple sectors, including retail, healthcare, hospitality, education and food banks.
The cold chain's importance to the food supply chain	• Around 50% of food for consumption in the UK goes through the cold chain. • It ensures the safety, quality and shelf-life of perishable food. • It supports producers and suppliers to manage fluctuations in availability and demand, including storing seasonal produce, and safeguarding the continuity and reliability of the UK's chilled and frozen food supply. • It enables domestic and international trade in perishable goods. • It helps reduce food-borne illness and food waste. • It supports economic activity across the food and logistics sectors.
Key risks to the cold chain	• Exposure to cyber incidents affecting temperature-control, monitoring and logistics systems supporting the cold chain. • Ageing facilities and infrastructure that are not well equipped for more frequent heatwaves associated with climate change. • Dependence on energy supply, grid reliability and energy costs due to the energy-intensive nature of refrigeration in warehouses and refrigerated Heavy Goods Vehicles (HGVs). • Insufficient availability of labour for temperature-controlled warehouses and driving refrigerated HGVs.

Note

1 In April 2026, we visited Magnavale Easton, one of the UK's largest cold storage facilities, to aid our understanding of the cold chain and the risks it faces.

Source: National Audit Office review of publicly available information and reports provided by cold chain stakeholders

Cross-government working to build food supply chain resilience

2.14 Several risks affecting the food supply chain are managed by other government departments responsible for those sectors, such as energy (Department for Energy Security & Net Zero) or transport (Department for Transport) disruptions. Defra engages directly with departments on key dependencies that affect food supply, such as with the Department for Business, Innovation, Science & Trade (BIST) on critical chemicals inputs. It sits on the Supply Chains Resilience Steering Group, chaired by BIST, which provides strategic oversight and direction of the government's work to build the resilience of the UK's critical domestic and international supply chains. Defra also participates in Cabinet Office facilitated cross-government groups and boards to coordinate actions and share information across CNI sectors. There are also sector specific groups, such as the Major Energy Risks Board co-chaired by the Department for Energy Security & Net Zero and the Cabinet Office.

2.15 In 2025, the Cabinet Office ran a self-assessment survey of lead government departments for CNI sectors. Defra responded with a rating of "very little confidence" in reference to whether cross-government governance was sufficient, noting that there was limited cross-government work on resilience. Several food supply chain stakeholders highlighted fragmentation of policy responsibility across departments, leading to a risk of conflicting policy decisions. In response to the Middle East conflict, which started in February 2026, Defra established the Food Impacts Coordination Group. The purpose of this cross-government group is to ensure that departments with critical links to the food supply chain: understand the core pressures and inputs into the food supply chain; are aware of contingency planning; and can highlight risks and proposed interventions to support policy decisions.

2.16 This lack of a joined-up view is consistent with previous government findings and recommendations across CNI sectors. In 2023, a national exercise found that the government's planning and response mechanisms for catastrophic risks did not facilitate a shared understanding of the interdependencies between CNI sectors, including food. During the exercise, this resulted in siloed departmental responses, with little consideration of how this would need to be underpinned by other departments' activities.

Approaches used in other CNI sectors and other countries to build resilience

2.17 The food supply chain operates in a largely unregulated market (except for food safety and public health standards, regulated by the Food Standards Agency). Defra therefore has few levers, beyond providing guidance and information, to incentivise or compel businesses to improve resilience beyond what is commercially viable for individual companies. Regulated CNI sectors such as energy and water have more scope to incentivise or compel businesses to act, as shown in the following examples:

- Water companies have a duty to produce water resource management plans every five years, setting out how they will continue to supply water in their area over at least the next 25 years.
- Ofgem has approved £70 billion of investment by energy networks over the next six years (2025 to 2031) to improve resilience and expand network capacity to deal with increased renewable energy generation and electrification. This will be funded through energy bills.

2.18 As part of our fieldwork, we reviewed approaches taken by governments in some other countries to strengthen the resilience of their food supply chains (**Figure 9**). Different countries' governments make decisions about food resilience based on factors such as geography, climate, culture and the extent of domestic food production. There may be opportunities to improve resilience in the UK food supply chain by learning from approaches used in other CNI sectors and other countries. These may have cost implications, which Defra would need to assess against other policy priorities.

Household and community resilience

2.19 Defra recognises that household and community resilience can reduce the immediate impacts of food supply disruptions, provide time for government and businesses in the food supply chain to respond and recover, and reduce the financial impact of disruption. Examples of household and community resilience include storing ready-to-eat food and water at home and growing food in community gardens, farms, orchards and allotments.

Figure 9

Examples of approaches taken by other countries to strengthen food supply chain resilience

Other countries have adopted approaches not currently used by the UK

Finland

Stockpiling of grain: Finland maintains government-owned grain reserves covering about nine months of consumption. The grain is stored in private sector facilities through government contracts that are reset every four years through a competitive process. Funding is ringfenced, supported by a small share of Finland's energy-use tax.

Industry collaboration and information sharing: Finland maintains a register of around 1,500 companies deemed critical to society. With them, the government has built a public–private partnership network across seven sectors, including food supply. Companies provide monthly situation updates, and the government shares a consolidated monthly report with the entire network.

Sweden

Direct government investment in resilience: Sweden is piloting a government programme to invest in state-owned power generators that are mobile for critical parts of the food supply chain during power disruptions. It has started to build up government-owned grain reserves and is considering investing in mobile mills to be able to process the stored grain.

Advice to industry: In January 2026, the Swedish government published a brochure, *Preparedness for businesses: in case of crisis or war*, outlining the role of Swedish companies and steps they can take to prepare; it is not specific to the food supply chain.

European Union (EU)

Legislation/Identifying critical infrastructure: The EU Critical Entities Resilience Directive, in force since January 2023, covers sectors including food production, processing and distribution. Member states must identify critical entities by July 2026, after which those entities are required to implement measures to strengthen their resilience.

Note

1 We have not undertaken an audit of the effectiveness of the measures introduced.

Source: National Audit Office analysis of interview notes and review of publicly available information

2.20 The government's public engagement on emergency preparedness, including guidance on preparing for food supply disruptions, has been limited. In 2024, the Cabinet Office launched the government's 'Prepare' website to improve public preparedness.[8] However, its 2025 survey found 51% of respondents said their household was slightly or not at all prepared for an emergency. While 75% of respondents had not seen or heard emergency preparedness advice in the past year, 66% said they had non-perishable food (that did not require cooking) that would last their household approximately three days. Recent comparative analysis by the Cabinet Office of a range of UK and European population preparedness surveys highlights that, compared with several other countries, UK households are less prepared for emergencies, and government-led messaging to households on preparing for emergencies is less prominent.

8 UK Government, *Prepare* (viewed on 24 June 2026).

2.21 In February 2025, the National Preparedness Commission's report on civil food resilience highlighted the importance of community-level resilience.[9] It made a case for better government advice in areas including the type and quantity of food to store, how food can be safely stored, and nutrition and food preparation in emergency conditions.

2.22 In July 2025, the government published its *Resilience Action Plan*, which highlights the importance of 'whole-of-society' resilience, including household and community resilience.[10] The Cabinet Office is developing revised public preparedness guidance, with updates to the government's Prepare website planned during 2026. It has also established a Societal Resilience team dedicated to improving household and community resilience. Defra is contributing to the food-related elements of this guidance. Further work to increase household or community resilience may mean higher up-front costs for households, or for the government. Defra recognises that households' ability to prepare for food disruption depends on their income, storage space, and capability to prepare. It is planning a programme of work to strengthen community food resilience, working with local authorities, local resilience forums, industry, and voluntary, community and faith groups. Defra told us that it plans to start this work in autumn 2026 once it has secured additional staff.

9 T Lang, N Neumann and A So, *Just in Case: narrowing the UK civil food resilience gap*, National Preparedness Commission, February 2025.
10 HM Government, *The UK Government Resilience Action Plan: The UK's strategic approach to resilience*, July 2025 (viewed on 26 June 2026).

Part Three

Preparedness for catastrophic events that severely disrupt food supply

3.1 This part of the report examines:

- the Department for Environment, Food & Rural Affairs' (Defra's) activities to plan and prepare for a catastrophic event that could severely disrupt food supply;
- whether Defra has the legislative levers in place to respond effectively during a catastrophic event that severely disrupts food supply; and
- local capability and capacity to respond to food supply disruptions.

Planning and preparing for a catastrophic event that severely disrupts food supply

3.2 The government's National Risk Register sets out some low-likelihood catastrophic risks that could cause a failure of the food supply chain (paragraphs 1.12 to 1.13). A food supply failure would require government intervention and expenditure to ensure the public's continued access to food. Defra has increased its focus on catastrophic risk planning. For example, it is developing plans for food supply during a national power outage and as part of the government's Home Defence Programme, amid rising geopolitical tensions such as Russia's invasion of Ukraine and conflict in the Middle East.

Defra's plans for responding to food supply disruptions

3.3 Since 2023, Defra has maintained an overarching food supply response 'playbook', intended as a basic plan and operating model that can be used under a range of disruption scenarios. The playbook focuses on government structures and processes, including overall governance, escalation processes, accountability and legislative options. Defra told us that the playbook was updated in May 2025 and that it plans a further update during 2026. The playbook has not been independently assured. Our guidance on managing risks in government highlights the importance of gaining assurance over risk management processes.[11] In 2025, Defra's self-assessment of the playbook identified "moderate improvement needed" around human aspects and senior oversight. Defra also has some incident-specific playbooks (for example for cyber incidents, rolling power outages and pandemics) in a similar format which cover, but are not focused on, food supply.

3.4 Several food supply chain stakeholders raised concerns about their lack of involvement with the development of Defra's playbooks. They had not seen the playbooks which Defra expects to use during catastrophic events affecting food supply. Given the highly privatised nature of the supply chain, limited involvement of businesses creates risks that plans may not work in practice. Defra's overarching food supply playbook has limited operational detail on how it would work with the private sector in the event of food shortages.

3.5 In 2023, a national exercise testing preparedness found that many government response plans were insufficient to maintain critical services such as food, water and other essential services during a national power outage. It recommended departments develop detailed, automatically triggered national plans across key sectors, including food supply. Defra initially assessed the viability of a 'Food Plan' to distribute food to vulnerable people during a catastrophic event, including a national power outage. In 2024, Defra concluded that the cost of developing a full emergency food plan was disproportionate to the level of risk and likelihood. However, this decision was not informed by an explicit assessment of risk appetite. Instead, Defra is developing a more basic 'minimum viable product' plan that it hopes will support food availability and supply following a catastrophic event. Substantial work in these areas remains, but Defra's ambition is to:

- raise awareness of the need for household and community resilience;
- explore options for providing infants under 6 months with nutrition support during a national power outage (although the Spending Review 2025 did not provide specific funding for this); and
- support industry with recovery following a national power outage.

11 National Audit Office, *Overcoming challenges to managing risks in government*, December 2023.

3.6 Some causes of severe disruption to food supply (such as transport or energy incidents) may be the responsibility of other government departments to plan for. In these cases, it is not always clear how impacts on the food supply chain will be managed and whether interdependencies are fully understood. For example, several food supply chain stakeholders lacked clarity about the extent to which the food supply chain would be prioritised during energy disruptions (such as diesel fuel or electricity). The Department for Energy Security & Net Zero told us it has made the protection and prioritisation criteria for electricity and gas emergencies clear across government, has agreed with Defra the importance of including critical areas of the food supply chain in its fuel prioritisation list in the event of fuel disruption, and is currently engaging with Defra to reflect this.

Defra's understanding of critical food supply chain assets

3.7 Defra, as lead government department for security of food supply, is responsible for identifying and assessing key assets within the sector. To date, Defra has not designated any individual food sector assets as critical. Defra views the supply chain as having significant levels of resilience through global sourcing of food, supply chain alternatives, and commercial competition providing incentives for operators in the sector to step in if difficulties arise. Defra is currently re-assessing this with the Cabinet Office. Stakeholders responsible for certain elements of the food supply chain, such as cold storage facilities, told us that key assets should be designated as critical because they are essential to food storage and distribution, including during disruptions.

3.8 The government maintains 'CNI Knowledge Base', which is a digital tool that maps Critical National Infrastructure (CNI) systems and assets and allows users to view interdependencies and relationships between assets to understand how risks or problems in some sectors may affect others. Historically, this tool has not covered the food supply chain because of the diversity of its individual assets, which Defra had previously assessed were not sufficiently critical. This limits the government's ability to identify the essential parts of the food supply chain, which assets would need prioritising during a severe disruption, and their interdependence with other CNI assets. In late 2025, Defra began work to explore adding information on food-related critical assets to Knowledge Base, starting with supermarket distribution centres. Defra told us it is currently in the early stages of updating Knowledge Base, with an aim to complete the initial mapping phase by the end of 2026.

Testing preparedness through exercises

3.9 Exercises are a way of testing processes, skills, people, capacity and knowledge to identify how ready a department, or government, is for an incident, and any improvements needed. In its 2024 Resilience Strategy, Defra committed to run exercises and review the food supply playbook annually.

3.10 Defra undertakes specific food-related exercises which, since 2023, have focused on testing responses to a cyber incident affecting the food sector. It has also participated in national exercises led by other government departments where the primary risk being tested was not food supply disruption, but where food supply may be affected, such as during a pandemic or national power outage (**Figure 10**). Exercise Mighty Oak (national power outage) focused on the impacts on key sectors such as food and water and led to a recommendation for detailed national plans (paragraph 3.5). Defra has not meaningfully tested changes it has made to address limitations identified by Mighty Oak in 2023. Defra told us its preparations for other national exercises, such as Pegasus (national pandemic), helped identify areas for improvement, although food supply was not ultimately tested during the exercise. For example, exercise Pegasus demonstrated the usefulness of data from supermarkets on product availability, provided a better understanding of staff absences in the food supply chain during a pandemic, and identified ways to coordinate public messaging across departments.

Figure 10
Preparedness exercises relating to food supply chain disruptions between 2023 and 2025

The Department for Environment, Food & Rural Affairs (Defra) has participated in national and departmental exercises to test preparedness for food supply disruptions

Exercise name	Date of exercise	Primary focus of exercise	Government department leading the exercise
National exercises:			
Mighty Oak	2023	National power outage	Department for Energy Security & Net Zero
Pegasus	2025	Pandemic	Department of Health & Social Care
Aspen	2025	Foot and mouth disease outbreak	Defra and Animal & Plant Health Agency
Defra exercises:			
Four exercises during 2023 and 2025 covering cyber incidents across the food sector			

Note

1 National exercises led by other government departments test primary risks (such as a pandemic or national power outage), where there may be impacts on the food supply chain, though these are not always examined in detail. Exercise Mighty Oak focused on the cross-government response to a national power outage, including its impacts on critical sectors such as food and water.

Source: National Audit Office review of Department for Environment, Food & Rural Affairs documentation

3.11 There are limitations to Defra's approach to exercises. In 2026, Defra assessed its capability for testing preparedness for food supply disruption as 'adequate', but highlighted resource constraints limiting its ability to run exercises, and a lack of independent verification of its exercising programme. In addition, only one of the seven food-related exercises in Figure 10 that Defra has participated in since 2023 involved representatives from the food supply chain. Their involvement allowed Defra to understand more about industry's confidence in points of contact in government, whether information flows between industry and government are fit for purpose, and what support Defra can provide during a cyber incident. We heard from some food supply chain stakeholders that more private sector involvement in exercising would be useful.

Defra's learning from previous disruptions

3.12 As well as simulated exercises, departments can also learn from real events to improve preparedness for future disruptions. Examples of where Defra has learned and implemented actions following a potential or actual disruption to food supply include the following:

- Cross-government civil contingency planning for a 'no-deal' EU exit (Operation Yellowhammer) provided Defra with key structures and contacts with industry, which subsequently helped it respond more quickly to the COVID-19 pandemic.
- Establishing the Food Resilience Industry Forum during COVID-19 provided a problem-solving forum with wide representation from industry. This has been retained and used again, such as during the early stages of Russia's invasion of Ukraine.
- Following COVID-19, Defra commissioned research into consumer behaviour, stockpiling and panic buying. Results from this have been used to inform Defra's future risk planning and updated contingency plans.

Legislative powers to support response during a catastrophic event that disrupts food supply

3.13 'The Amber Book' *Managing crisis in central government* sets out the government's view that most crises can be managed effectively within existing legislative frameworks. Defra considers that existing legislation provides sufficient powers to support the supply chain to respond to low or medium levels of disruption but, in 2025, assessed that its current powers would be insufficient for a rapid and effective response to a catastrophic event. It identified gaps in powers relating to resilience of the food supply chain and its ability to respond to disruption, for example the ability to direct businesses to take actions during an emergency situation.

3.14 Emergency powers can provide legal authority to the government to maintain order and respond swiftly and effectively during crises. Most emergency powers that can be used during events which could cause severe food supply disruptions are held by government departments other than Defra. For example, during COVID-19, the then Department for Business, Energy & Industrial Strategy (now the Department for Business, Innovation, Science & Trade) was responsible for relaxing competition laws, allowing food retailers to coordinate actions more effectively.

3.15 Some existing and proposed legislation could provide greater powers to Defra, but these are untested.

- The Agriculture Act 2020 could provide powers to ask supermarkets for food stockpile information.
- The Civil Contingencies Act 2004 provides the legislative framework for departments to make emergency regulations to prevent or mitigate emergencies, which could include food rationing as well as other measures.
- The Cyber Security and Resilience Bill proposes new laws to improve UK cyber defences and protect essential services. The Bill is currently being progressed through Parliament. The food supply chain is currently not within scope of the bill.

3.16 Internationally, some governments have stronger legislative powers to support response during a severe food supply disruption. Under Norway's 'Total Defence' model, businesses can be required to support emergency responses, with the government funding mandated actions such as increasing food stock levels.

The capability and capacity of local resilience forums to respond to food supply disruptions

3.17 Local resilience forums (LRFs) are multi-agency partnerships involving emergency services, local authorities, the NHS, the Environment Agency and others. The 38 LRFs in England are responsible for planning for and responding to a range of localised incidents and catastrophic emergencies across the full range of National Risk Register risks. This includes those that may affect food supply. The 2022 *UK Government Resilience Framework* highlighted the importance of strengthening LRFs.[12]

3.18 The Ministry of Housing, Communities & Local Government (MHCLG) and the Cabinet Office lead on overseeing the capability of LRFs. Both MHCLG and the Cabinet Office acknowledge that LRFs' capacity and capability across a range of risk areas does not match the expectations of lead government departments responsible for those risks nationally. The Cabinet Office's 2026 National Capabilities Assessment relating to food supply highlighted a gap in the ability to respond at a local level during catastrophic scenarios. MHCLG told us limited resources, competing priorities and a lack of legal powers to direct local businesses (for example supermarkets) during emergencies would affect the effectiveness of their response.

3.19 MHCLG told us that food supply disruption is not a specific planning scenario for most LRFs, although it should be covered within wider risks such as power outages. MHCLG, the Local Government Association and LRFs felt that Defra's engagement with LRFs on food resilience has been insufficient, and there is a lack of clarity from Defra on what is expected from LRFs during a severe food supply disruption. A National Preparedness Commission report in 2025 found growing awareness among LRFs of local food resilience as an issue, but that there was uncertainty over responsibilities between local and central government. LRFs reported that food resilience was not yet embedded in their planning and that guidance from central government would be welcomed.

3.20 LRFs are expected to prioritise support to vulnerable people during an emergency response. However, in 2025 LRFs reported low confidence in identifying, locating and supporting vulnerable people and the Local Government Association was not confident that systems had improved since the COVID-19 pandemic, where this was a significant challenge. In response to national exercise findings, Defra told us it plans to work with retailers and LRFs to develop a local food distribution framework for vulnerable people, to be used in an emergency.

12 HM Government, *The UK Government Resilience Framework*, December 2022 (viewed on 24 June 2026).

Appendix One

Our audit approach

Our scope

1 This report examines whether the Department for Environment, Food & Rural Affairs (Defra), working with public and private bodies, is taking effective action to ensure the food supply chain is resilient to disruptions. Our audit questions focused on whether Defra:

- has a clear understanding of the risks to the food supply chain and the impact of disruptions, and whether roles and responsibilities are clear;
- is taking effective action to prevent disruptions to the food supply chain, and to mitigate the impact of such disruptions; and
- is adequately prepared to respond to and recover from food supply chain disruptions when they occur.

2 We did not assess:

- the long-term resilience of domestic food production – we intend to examine the resilience of domestic food production in future work;
- how the government and the food supply chain are responding to the underlying risks to the food supply chain, such as how they are increasing cyber security to manage cyber-attack risks;
- how the government is responding to some of the wider impacts of food supply disruptions such as food poverty, as a result of increased food prices for example, and health related impacts; and
- individual local resilience forum plans related to food supply resilience, the Cabinet Office's coordination role across government, or the performance of individual private sector companies.

3 We reached our independent conclusions based on analysis of evidence collected from October 2025 to April 2026. We used qualitative methods – document review, interviews, international comparisons and a site visit – to collect and analyse evidence. To triangulate the evidence, we developed a set of emerging findings towards the end of the evidence-gathering phase and systematically compared supporting evidence from across all methods. We assessed the consistency and strength of this evidence to refine, qualify or challenge our findings, and to add new findings where appropriate. Where evidence was inconsistent or limited, we reflected this in our findings. This process enabled us to ensure our conclusions and recommendations were supported by multiple sources. Details of the individual methods are set out below.

4 We used Microsoft's Copilot to support us in developing our key findings and collating supporting evidence. It was only used to support our original analysis with any inclusion into our evidence base checked for accuracy.

Our evidence base

Document review

5 We reviewed a number of documents throughout the study period which included:

- documents provided by Defra (including resilience strategies, risk registers, capability assessments, board and committee meeting minutes and papers, planning papers, response frameworks and playbooks and stakeholder newsletters);
- documents provided by stakeholders;
- published government documents such as the UK Food Security Reports, Defra's 2025 *Towards a Good Food Cycle*, select committee reports and evidence;
- evaluations by the Cabinet Office on Defra's capabilities relating to food supply; and
- reports on food system resilience and preparedness in other countries.

6 We developed an analytical framework based on our audit questions. We systematically reviewed documents using this framework, extracting and recording key evidence against the audit questions and themes. This enabled consistent assessment across sources and informed the findings presented in our report.

International comparisons

7 We developed a specific work package of literature review to look at examples of how other governments were managing the resilience of the food supply chain and any specific measures they employ which differ from those used in the UK. We also spoke to representatives of four overseas governments (see below for more details). We used this to illustrate our findings in our report.

Interviews

8 We conducted 56 online interviews between October 2025 and April 2026 with representatives from Defra, other public sector bodies, food supply chain stakeholders, academia and wider stakeholders to inform our audit. We wanted to obtain a broad range of views from government and across the food supply chain sector.

9 We conducted semi-structured interviews with Defra and other central government bodies selected based on their responsibilities relating to food supply chain resilience. The public sector bodies included the following:

- Cabinet Office.
- Food Standards Agency.
- Department for Transport.
- Department for Energy Security & Net Zero.
- Ministry of Housing, Communities & Local Government.
- Joint Nature Conservation Committee.

10 We attended online 'teach-ins' with officials from Defra to understand:

- how the UK food supply chain operates, its complexity, key dependencies and risks and Defra's role in the sector;
- the work Defra has been doing on cyber security across the food supply chain;
- how it has developed its critical dependencies and vulnerabilities matrixes;
- how it is building its internal capabilities and learning lessons;
- the work it is doing to plan for a national power outage and responding to national exercise recommendations;
- how it undertakes horizon scanning across the food supply chain;
- the approach to planning and running exercises across the Defra Group; and
- the role and work of Defra's Policy Response and Resilience Unit.

11 We conducted interviews with food supply chain stakeholders, including businesses from the food supply chain, industry representative organisations, academics, local government and voluntary and membership organisations, to capture a range of views to inform our findings. Stakeholders included:

- ACS (Association of Convenience Stores);
- Agricultural Industries Confederation;
- Associated British Foods;
- Tim Benton (Professor Emeritus, University of Leeds);
- Bidfood;
- Birmingham City Council;
- Booths;
- Bunge;
- Professor Sarah Bridle (Chair in Food, Climate and Society, University of York);
- British Retail Consortium;
- Cargill;
- Cleveland Emergency Planning Unit (Hartlepool Borough Council);
- Cold Chain Federation;
- Dewing Grain;
- FDF (Food & Drink Federation);
- FWD (Food & Drink Wholesale UK);
- Green Alliance;
- Dr John Ingram (Associate Professor and Senior Research Fellow at Somerville College, University of Oxford);
- Institute of Grocery Distribution;
- Professor Aled Jones (Director of the Global Sustainability Institute, Anglia Ruskin University);
- Professor Timothy Lang (Emeritus professor of food policy at the Centre for Food Policy, City St George's, University of London);
- Local Government Association;
- Marks and Spencer;
- Mondelez International;

- NFU (National Farmers' Union);
- Nomad Foods;
- Northumberland County Council;
- Packaging Federation;
- Dr Kelly Parsons (Assistant Research Professor, IMS Epidemiology, University of Cambridge);
- Soil Association;
- Tesco; and
- WWF.

12 We also conducted interviews with representatives of the following overseas governments:

- Norway.
- Czechia.
- Sweden.
- Finland.

13 In the interviews, we sought views on whether Defra is taking effective action to ensure that the UK food supply chain is resilient to shocks and disruptions. The main topics covered included:

- key risks to the food supply chain and how these are changing over time;
- governmental or organisational approaches to ensuring resilience to disruptions affecting the food supply chain;
- examples of recent disruptions that have affected organisations or countries (for example, the invasion of Ukraine and COVID-19) and how these were responded to;
- the government's role in maintaining and strengthening food supply chain resilience, and in responding to food supply chain disruptions;
- whether the government is working effectively with the food sector and incentivising companies to build resilience into supply chains; and
- what further action the government should take to strengthen the resilience of the food supply chain.

14 We tailored questions to the responsibilities and expertise of each interview participant, including interviews with international governments, where questions focused on risks, governance arrangements, and approaches to preparedness, response and recovery. We drew on evidence from interviews and discussions with stakeholders across government, industry, representative bodies and academia. As with all qualitative evidence of this kind, there is a risk that views expressed reflect the perspectives, interests and experiences of those consulted and may not be fully representative of the wider food supply chain. To mitigate this, we sought to engage a broad range of stakeholders covering different parts of the supply chain, and we triangulated stakeholder views, where possible, with documentary evidence.

15 We used these interviews to develop our understanding of the government's approach to food supply chain resilience, and how both the government and the private sector respond to and manage disruptions. Analysis of these interviews was conducted by collating interview notes, identifying key findings and assessing these against the key study themes. This was used to support the findings from our document review.

Site visit

16 With support from the Cold Chain Federation, we visited Magnavale Easton, one of the largest cold chain storage facilities in the UK and Europe. This helped us better understand the scale and significance of the cold chain in the food supply chain system.

This report has been printed on Pro Digital Silk and contains material sourced from responsibly managed and sustainable forests certified in accordance with the FSC (Forest Stewardship Council).

The wood pulp is totally recyclable and acid-free. Our printers also have full ISO 14001 environmental accreditation, which ensures that they have effective procedures in place to manage waste and practices that may affect the environment.

National Audit Office

Design and Production by NAO Communications Team
DP Ref: 016995-001

£10.00
ISBN: 978-1-78604-693-2