

Agriculture in the United Kingdom

A black and white cow is grazing in a field of tall, dry grass. In the background, there are rolling green hills, a small village with a church spire, and a blue sky with light clouds.

2022

Department for Environment, Food and Rural Affairs

Department of Agriculture, Environment and Rural Affairs (Northern Ireland)

Welsh Government, Knowledge and Analytical Services

The Scottish Government, Rural and Environment Science and Analytical Services



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Produced by:
Department for Environment, Food and Rural Affairs
Department of Agriculture, Environment and Rural Affairs (Northern Ireland)
Welsh Government, Knowledge and Analytical Services
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Preface

Legal Basis

Agriculture in the United Kingdom (AUK) 2022 fulfils the requirement under the Agriculture Act 1993 that Ministers publish an annual report on such matters relating to price support for agricultural produce as they consider relevant. The Government will draw on this information when considering policy development, including new policies on the provision of agricultural support.

Changes

Some of the figures now given for past years may differ from those published in preceding issues. This is because of the use of later information, changes in scope and nature of available data, and improvements in statistical methods. Where modifications to the data are made a 'Revisions' section will be added to the chapter to explain the changes.

National Statistics status

National Statistics status guarantees that our statistics meet the highest standards of trustworthiness, quality and public value, and it is our responsibility to maintain compliance with these standards. These statistics last underwent a full assessment [Assessment Report 271 Statistics on Agriculture](#) against the Code of Practice for Statistics in 2014. Since the latest review by the Office for Statistics Regulation, we have continued to comply with the [Code of Practice for Statistics](#). We have also made improvements to enhance the quality of this publication by improving quality assurance procedures.

Content of document

The latest available data are used throughout this document. Most of the data are on calendar year basis and for 2022. Some data for 2022 are provisional and may be revised as more data becomes available. Where 2022 data are not yet available the most recent data is presented.

The following points apply throughout:

1. All figures relate to the United Kingdom unless otherwise stated
2. Unless stated otherwise, Defra is the source for all data presented in tables and charts
3. The figures for imports and exports include those from intervention stocks and the figures for exports include re-exports. Imports are based on country of consignment. Exports are based on country of reported final destination. The source of overseas trade statistics is HM Revenue and Customs

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4. Where statistics are shown for the European Union (EU) as a whole they represent the present Member States in all the years regardless of when they became members
5. Values are expressed as either current or as a real term value:
 - Current (or nominal) value is the value expressed in historical monetary terms
 - Real term value is the current value adjusted to take account of inflation

Table and figure headings

Throughout this report, some figures are presented as tables. This is because this pdf report was created based on the main Agriculture in the United Kingdom 2022 publication that was published in an online format this year. In the online format, some figures are interactive, a feature that is not supported in the pdf format. Any tables that are referred to as figures in this report contain the underlying data that is available in figure format in the online version: [Agriculture in the United Kingdom 2022 - GOV.UK](#).

Summary

All figures relate to 2022 and the change between 2021 and 2022 unless otherwise stated.

Structure of industry

- The **Utilised Agricultural Area (UAA)** decreased by 2.2% and was 17 million hectares, covering 69% of land in the UK.
- The **total croppable area** saw little change and was 6.0 million hectares.
- The **cereal crops area** decreased by 1.7% and was 3.2 million hectares.
- The **area of oilseed crops** planted increased by 13% and was 398 thousand hectares.
- The **total number of cattle and calves** remained almost unchanged and was 9.6 million animals. The beef herd decreased by 1.5% and was 1.5 million animals. The dairy herd decreased by 0.4% and was 1.8 million animals.
- The **total number of pigs** decreased by 2.5% and was 5.2 million animals. The total number of female pigs in the breeding herd decreased by 14% and was 343 thousand animals.
- The **total number of sheep and lamb** increased by 0.3% and was 33 million animals.
- The **total number of poultry** decreased by 1.0% and was 188 million birds.
- The **total labour force** on commercial holdings increased by 0.7% and was 471 thousand people.

Farming income

- In 2021/22, the average **Farm Business Income (FBI)** across all UK farm types, at current prices, was £72,000 compared to £46,500 in 2020/21.
- **FBI** varies greatly with 10% of UK farms failing to make a positive FBI in 2021/22 while 41% of farms had an FBI of over £50,000.
- In 2022/23, exceptional price volatility, both in terms of input costs and output revenue, is forecast to be one of the key factors influencing Farm Business Income.

Accounts

- **UK Total Income from Farming (TIFF)** in 2022 was £7.9 billion, an increase of £1.1 billion (17%) from 2021. Following an exceptional year of price volatility, this

Summary

large increase in TIFF was driven by price increases across the majority of commodities in this account, which more than offset increases in input prices.

- **Total livestock output** in 2022 was £19.3 billion, an increase of £2.7 billion (16%) from 2021. This increase was driven by a substantial 40% increase in the value of milk, which is consistently the largest contributor to livestock value. Milk reached record high farmgate prices of up to 51.6 pence per litre in 2022 as a result of high production costs, which also led to a slight reduction in production and supply.
- In 2022, **total crop output** increased by £2.4 billion (22%) from 2021, to £13.3 billion. This increase was driven by a 50% increase in the value of wheat, which saw a 35% increase in unit price following disruption to the global cereals market from the war in Ukraine, as well as a 10% increase in average yield boosted by favourable planting conditions in the autumn of 2021.
- **Intermediate consumption** increased by £3.6 billion (19%) from 2021, to £22.1 billion in 2022. This increase was predominantly driven by a 24% increase in the value of compound animal feed, which is consistently the largest contributor to intermediate consumption, and a 78% increase in the value of fertiliser. The average price of fertiliser increased by 104% from 2021, following substantially reduced domestic production as a result of rising natural gas prices.
- In 2022, **agriculture's contribution to the UK economy (Gross Value Added at basic prices)** was £13.9 billion (0.6% of GDP). This constitutes an increase of £1.8 billion (15%) in GVA compared to 2021.

Productivity

- **Total Factor Productivity** is estimated to have increased by 3.4% between 2021 and 2022. This was driven by a decrease in the volume of all inputs and a slight increase in the volume of all outputs.
- The volume of **all outputs** decreased by <0.1%. 2022 saw an increase in total crop output of 1.7% whilst total livestock output decreased by 1.7%. The notable changes in crop output were increases in oilseed rape (39%) and barley (12%), with decreases in sugar beet (-18%) and in 'vegetables and horticultural products' (-4.9%). All livestock outputs in 2022 changed by less than 4% up or down except for the output of eggs which fell by 21%.
- The volume of **all inputs** decreased by 3.3%. This decrease in the volume of inputs is the result of decreases across all input items in the account except veterinary expenses and labour, which saw small increases. The inputs that saw the largest percentage decreases were fertilisers (-13%), seeds (-12%) and animal feed (-6.7%).

Prices

- The annual average price index for all agricultural **outputs** increased by 19% from 2021 to 2022.

Summary

- The largest upward contribution to the annual inflation rate for agricultural **outputs** was from milk (8.2 percentage points), followed by wheat (3.1 percentage points) and barley (1.7 percentage points). The main downward contribution came from forage plants (-0.2 percentage points).
- The annual average price index for all agricultural **inputs** increased by 28% from 2021 to 2022.
- The largest upward contribution to the annual inflation rate for agricultural **inputs** was from fertilisers and soil improvers (9.6 percentage points), followed by compound feedingstuffs (6.8 percentage points) and energy and lubricants (4.2 percentage points).

Crops

- Harvested production of **wheat** increased by 11% to just over 15.5 million tonnes, primarily due to increased yields. The value of production was 50% higher at £4.1bn.
- Harvested production of **barley** increased by 6.1% to around 7.4 million tonnes. The value of production was 55% higher at £1.8bn.
- **Oilseed rape** production increased by 39% to around 1,361 thousand tonnes, due to the increase in planted area compared to 2021 (which was the lowest area since 1986) and average higher yields. The value of production increased by 80% to £877m due to higher prices
- **Sugar beet** production decreased by 18% to 6.0 million tonnes. The value of production was 6.2% higher at £223m.
- The value of **vegetable** production increased by 4.8% to £1.8bn.
- The value of **fruit** production increased by 9.5% to just over £1.0bn.

Livestock

- The value of **beef and veal** increased by 12% to £3.8bn. Home-fed production increased by 2.0% to 928 thousand tonnes.
- The value of **pig meat** increased by 18% to £1.7bn. Home-fed production increased by 0.5% to 1,002 thousand tonnes.
- The value of **mutton and lamb** production increased by 3.3% to £1.6bn. Home-fed production increased by 2.9% to 302 thousand tonnes.
- The value of **poultry meat** increased by 3.9% to £3.1bn. Home-fed production decreased by 1.9% to 2.0 million tonnes.

Summary

- The value of **milk and milk products** increased by 40% to £6.7bn, due to increased prices.
- The value of **eggs** for human consumption decreased by 4.0% to £786m. Production decreased by 7.2% to 0.9 billion dozens.

Intermediate consumption

- The total cost of **intermediate consumption** was £22,084 million, an increase of £3,560 million (19%) from 2021 to 2022.
- The value of **animal feed** increased by £1,690 million (26%) from 2021 to £8,270 million in 2022.
- The value of **energy** increased by £690 million (48%) from 2021 to £2,138 million in 2022.
- The total value of **fertilisers** was £2,490 million, an increase of £1,091 million (78%) from 2021 to 2022.

Public payments

- Total **direct payments** to farmers decreased by £83 million (-3.0%) from 2021, to £3,213 million in 2022.
- **Basic Payment Scheme (BPS)** payments decreased by £222 million (-7.9%) from 2021, to £2,603 million in 2022.
- Payments linked to **agri-environment schemes** increased by £2 million (0.5%) from 2021, to £357 million in 2022.

Agri-environment

- Estimated greenhouse gas and air pollution emissions from agriculture have fallen between the year 2000 and 2021.
- Since the late 1990's nitrogen and phosphate fertiliser application rates have fallen.
- A comparison of soil nutrient balances (in kg per hectare) from the year 2020 to 2021 shows a 5.3% increase for nitrogen and a 17% decrease for phosphorus.
- The farmland bird index, a good indicator for general biodiversity on farms, has decreased since 1970 with the index for all farmland species in 2021 less than half of 1970 levels.

Organic farming

- 509 thousand hectares were **farmed organically** in the UK.

Summary

- 61% (312 thousand hectares) of the total **UK organic area was in England**.
- **Permanent pasture (inc. rough grazing)** accounted for 62% of UK organic land, covering 314 thousand hectares.
- 9.7% of the total UK organic area was used to grow **cereals** (49 thousand hectares).
- 3.1% of the total UK **cattle population was reared organically**.
- There were a total of 5.5 thousand **organic operators** in the UK.

Overseas trade

- The value of **food, feed and drink exports** increased by £2.8 billion (13%) to £24.9 billion.
- The value of **food, feed and drink imports** increased by £3.0 billion (5.3%) to £58.1 billion.
- The trade gap in **food, feed and drink** increased slightly by £132 million (0.4%) to £33.2 billion.
- Principal destinations for **exports** were the Irish Republic (£3.9 billion), France (£2.7 billion), USA (£2.4 billion) and the Netherlands (£2 billion).
- The main countries of despatch for **imports** into the UK were the Netherlands (£7.3 billion), France (£5.8 billion), Irish Republic (£4.5 billion) and Belgium (£4.3 billion).
- Whisky continued to have the **highest export value**, totalling £6.4 billion. This was an increase of 28% compared to the previous year.
- Fresh fruit and vegetables together remained the **highest value category for imports**, totalling £6.6 billion, a decrease of 1.9% .
- **Exports of fresh vegetables** rose by 19.0% to £85 million, and **exports of fresh fruit** also rose by 3.3% to £64m.

The food chain

- In 2021, the agri-food sector (excluding fishing) in the United Kingdom accounted for a total estimated **Gross Value Added (GVA)** of £127bn or 6.2% of national GVA, a increase of 13% since 2020. The non-residential catering sector increased by 32% between 2020 and 2021. All other sectors also saw an increase.
- **Employment** in the agri-food sector grew by 3.3% over the 12-month period to the fourth quarter of 2022 to just under 4.2 million. The largest percent change was seen in non-residential catering which rose by 7.9% (144,000 employees).

Summary

- **Total factor productivity** of the food chain decreased by 1.5% while there was a decrease of 1.1% in productivity in the wider economy. In the 10 years prior to 2020, the average annual growth rate of the food chain was 0.1% while the wider economy's average annual growth rate was 0.2%.
- **Consumer expenditure** on food and alcoholic drinks (at constant prices) increased by 7% from 2021 to 2022 and was 20% higher than in 2012. Expenditure on food and drink eaten out increased by 29% from 2021 to 2022, whilst expenditure on household food and alcoholic drinks (off-licence only) decreased by 6.9% and 9.6% respectively.

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Government and policy

On the 7 January 2022, Defra announced at the Oxford Farming Conference that on average, Countryside Stewardship would increase by around 30% and also unveiled the next stages of plans to restore up to 300,000 hectares of habitat across England, sharing details on the Landscape Recovery programme.

On the 14 January 2022, Defra announced the extension of the second phase of the Future Farming Resilience Fund until September 2022.

On the 18 January 2022, the Farming in Protected Landscapes programme moved to a rolling application window and is now open. The programme was extended and closes for applications in 2024.

Applications opened for the Improving Farm Productivity grant on the 19 January 2022. This grant paid for some of the costs for either slurry treatment equipment or robotics and innovation equipment.

The application window for the first round of Landscape Recovery pilot projects opened on the 1 February. Landscape Recovery supports landowners and managers to take a large-scale, long-term approach to producing environmental and climate goods on their land.

Defra awarded 4,376 Farming Equipment and Technology Fund (FETF) Grant Funding Agreements (GFAs) totalling over £48.5 million on the 22 February 2022. The FETF provides investment towards specific items of equipment which will improve productivity and efficiency for farming, horticultural and forestry businesses.

On Wednesday 30 March 2022, Defra announced a new package of support for farmers ahead of the coming growing season. The package of measures covered:

- Changes to urea usage: a delay to the proposed changes in use of urea fertiliser to help farmers manage costs.
- Sustainable Farming Incentive 2022: further details were announced on guidance, including steps aimed at bringing about more sustainable fertiliser technologies.
- Farming Innovation Programme: a further £20.5 million in research and development (R&D) grants were made available to launch two new products aimed at boosting productivity.
- Farming Rules for Water: an update was provided to clarify the recent changes on manure spreading and use of fertilisers, which will be supported through new slurry storage grants.

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On Tuesday 12 April 2022, Defra announced the opening of applications for the Lump Sum Exit Scheme to facilitate farmers with a voluntary planned exit from farming.

On the 9 May 2022, Defra changed the way we make Basic Payment Scheme (BPS) payments. Farmers with eligible applications now receive half of their payment in July, and the rest in December. Bringing forward half of 2022's BPS payment gave farm businesses an advance injection of cash and helped farmers to make business decisions with more confidence.

The application window for expressions of interest for the Research Starter Projects Competition opened on 23 May 2022. The competition was designed to be an entry point to the innovation process for farmers, growers or foresters who have bold, ambitious, early-stage ideas for solving major problems.

The Farming Investment Fund: Adding Value grants opened for applications on the 9 June 2022. This £30 million fund offers grants focused on supporting farmers and growers to process, diversify and add value to their eligible agricultural products after they are harvested or reared.

The Sustainable Farming Incentive (SFI) opened for applications on the 30 June 2022. Through the SFI, farmers will be paid for looking after the natural environment in the course of their farming.

On 12 July 2022 Defra invited farmers, growers, foresters, businesses and researchers to apply for a share of £12.5 million to focus on the research and development of sustainable farm-based protein. The application window ran from 25 July until 21 September with projects expected to start from 1 April 2023.

Defra confirmed the opening of the final phase of free business advice to any farmer or land manager who receives BPS in England on 14 July 2023. Under the Future Farming Resilience Fund, the support opened in October and has been scaled up. £32 million was awarded to 17 organisations and will support up to 32,000 farmers and land managers.

Defra launched the England Woodland Creation Offer on 9 August 2022. Eligible farmers and land managers were invited to apply for a share of £25 million available this financial year to support woodland creation in England. Applications can be submitted at any time of the year and there is no deadline.

As part of the Farming Innovation Programme, on 22 August 2022, Defra announced that from 31 August Farmers, growers, foresters, businesses and researchers can apply for:

- a share of £5.5 million to fund feasibility projects
- a share of £11 million to fund small research & development partnership projects

In September 2022, Defra put a new online service in place to make it easier for farmers to apply for the Sustainable Farming Incentive. The automated service lets you see which parts of your land are eligible for each SFI standard. This, in turn, makes it quicker for us to process applications.

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Applications for the New Entrant Support Scheme pilot opened on 24 November 2022. The New Entrant Support Scheme aims to better support those who want to enter farming and develop land-based businesses.

The first round of the Slurry Infrastructure grants opened for applications on the 6 December 2022. The grant helps replace, build new or expand existing slurry stores to provide 6 months' storage.

On the 16 December 2022, Defra announced that 45,000 visas for seasonal workers will be available to horticulture businesses in 2023 - an uplift of 15,000 compared to what was available to businesses at the start of 2022.

Key contextual factors

Global events

Coronavirus (COVID-19)

In 2022, the UK was still recovering from the coronavirus (COVID-19) pandemic, which had impacted a wide range of areas including markets, supply chains, worker shortages and prices.

Ukraine

Russia's invasion of Ukraine had a significant impact on prices in the agricultural sector, in particular on cereals, oilseeds, fuel and energy, which saw rapid price increases due to global trade disruption. The individual chapters in this report provide more detail on how the invasion of Ukraine has impacted the agricultural sector.

Price volatility

2022 saw an exceptional year of price volatility, with prices for both agricultural inputs and agricultural commodities driven up by rising oil and energy costs, shortages of fertilisers and Carbon Dioxide as well as trade disruption amid the conflict in Ukraine. Overall, price increases across commodities more than offset the impact of high input prices and associated decreases in production in some sectors. Rising commodity prices meant high food price inflation, which further contributed to the national cost of living crisis.

Pig market disruption

The challenges faced by the pig industry in 2021 continued to impact on the sector through 2022. In 2021, COVID-19 caused disruption to CO₂ supplies, a temporary shortage of labour in the processing sector, the loss of exports to the Chinese market for some pig processors and oversupply on farms, resulting in an on-farm backlog by winter 2021. The effects of this continued into the first half of 2022, driving production gains. Q1 2022 had the highest recorded average clean pig carcass weight at 93.58 kg/head. The war in Ukraine has further disrupted the pig market with high feed and energy costs impacting further on the profitability of pig producers. As a result, there has

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been significant re-structuring in the sector and a 15% decrease in the size of the pig breeding herd by June 2022.

Labour shortages

The agricultural sector has been impacted by labour shortages, resulting in part from EU Exit and the COVID-19 pandemic. In 2022, Defra announced an Independent Review into Labour Shortages in the Food Supply Chain to consider the challenges facing food and farming businesses to recruit and retain labour. The report aimed to provide recommendations for industry and government to consider and [was published on 30 June 2023](#).

Exchange rates

The relationship between the Pound and Euro has a key bearing on the fortunes of UK farming as the majority of UK exports of agricultural commodities are made to the Eurozone. A weaker pound increases the competitiveness of UK exports but increases the price of imports, including inputs such as fertilisers and pesticides. The pound weakened against the Euro in 2016 and has remained relatively stable since. In recent years, the pound strengthened slightly against the Euro in 2021 and early 2022, before weakening again later in 2022.

Weather

2022 was the warmest year on record for the UK (since 1884), with all months except December experiencing warmer than average weather. It was a dry year, with below average rainfall for all but the autumn months. However this wet weather was not enough to offset the previous dry months.

Winter

Overall the winter was the UK's eighth mildest in a series since 1884, with a mixture of settled and wetter weather. January 2022 was a particularly dry month, with only half the average rainfall. England had its sunniest January since 1919, but it was notably cold at night in England and Wales. It was especially mild in Scotland where monthly mean temperatures were 0.8 °C above average. Towards the end of January it became milder and wetter, and February experienced frequent rain in most areas. There was a particularly stormy spell between 16th and 21st including storms Dudley, Eunice and Franklin. February was relatively mild and frost-free, especially in southern areas, ending up 1.5 °C above average overall.

Spring

Spring 2022 was warmer than average, by up to 1.0 °C in most areas. This was largely due to daytime temperatures in March and night-time temperatures in May being higher than average. Mean temperatures for March were 1.0 °C above the long-term average, with Scotland and Northern Ireland having their sunniest March since 1919. In April there were some cold nights and late frosts, but daytime temperatures were slightly higher (0.2 °C overall average for the month). May was mostly warm but cooled slightly

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towards the end of the month giving an overall temperature 1.2 °C above average. Overall, rainfall in March and April was below average for most of the UK. However, May was very wet in Scotland, and dry in some parts of England and Wales.

Summer

Summer 2022 was warm and dry, with all three summer months experiencing above average temperatures. This was particularly true in the Eastern counties of England where temperatures were nearly 2 °C above average. There were hot spells in each month, but on the 19 July a new UK record of 40.3 °C was set in Lincolnshire. All three months were generally sunnier than average, especially in England. Rainfall was below average in June, with only a few western counties in England exceeding the average. This gave a UK-wide figure of 76% of average rainfall. During July and August there was little rain in most areas, with only approximately half of average rainfall (54% and 56% of average, respectively).

Autumn

Autumn 2022 had higher average temperatures across all three months, and was the UK's third warmest autumn since 1884, with 2006 and 2011 being the only warmer years. The weather was unsettled for most of the time, giving above-average rainfall. From mid-September the weather became unsettled and turned cooler. Rainfall in September was near average, though East Anglia, Lincolnshire and Scotland were drier. Overall temperatures were 0.5 °C above average. October was on the warm-side with temperatures 1.8 °C above average. The weather was drier along eastern coasts, but most other areas were wetter than average. November was mild with temperatures 1.8 °C above average, the third warmest on record. There were fewer frosts than normal, but it was a wet month, with some areas having double the average rainfall.

Animal Health

Avian influenza

In 2022 calendar year, there were 1446 incidents of highly pathogenic avian influenza (HPAI) H5N1 in the UK. The majority of cases were in wild birds (1207), with 177 cases in farmed birds, 50 in smallholder establishments, and 12 in captive birds in zoos or wildlife centres. In England there were 752 cases of HPAI H5N1 in wild birds, 162 in commercial poultry, 39 in smallholder establishments and 10 in other captive birds. Scotland reported 353 cases of H5N1 in wild birds, 11 in commercial poultry, 8 in smallholder establishments and 1 in captive birds. In Wales there were 69 cases of H5N1 in wild birds, 4 in commercial poultry and 3 in smallholder establishments. In Northern Ireland there were 33 cases of H5N1 in wild birds and 1 in captive birds.

For the first time the HPAI H5N1 virus continued to circulate during the summer months and many cases were detected in colony breeding sea birds during the summer. Wild bird surveillance is not intended to provide an accurate account of each infected wild bird; it is based on findings of dead birds of target species and a triage system is used to test only a proportion of those reported, to provide actionable intelligence and inform

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policy decisions. The numbers presented here are based on the calendar year and not the avian influenza season, which runs between October to September to coincide with the waterfowl migration season.

Bovine Tuberculosis (bTB)

England

The percentage of herds officially TB free in England was 95.5% at the end of 2022, a slight increase on 2021. Government strategy is driving for TB eradication by 2038. [See the full set of the 2022 National Statistics for TB in cattle in GB.](#)

The Bovine TB Partnership in England met six times in 2022 to continue the shared ownership, co-ordination and decision-making surrounding England's 25 year bTB eradication strategy.

The first phase of field trials for a new cattle TB vaccine and allied skin test (DIVA - Detect Infected among Vaccinated Animals) were completed in 2022. The second phase is ongoing. If trials are successful, we will move closer to being able to vaccinate cattle against bTB.

A Defra-funded project in East Sussex that supports the farming community to deploy badger vaccinations completed its second year in 2022, with 562 badgers vaccinated over 256 km². Defra launched a simplified licence for vaccinating badgers, alongside a smartphone reporting app, reducing the administrative burden.

In England a total of 2,434 badgers were vaccinated against TB in 2022, an increase of 55% from the 1,575 badgers vaccinated in 2021.

Natural England (NE) licensed eleven new badger TB control areas in 2022. This brought the total number of intensive culling areas in England to forty including one in the Low Risk Area. NE also licenced 10 new supplementary badger control areas bringing the total number of areas to 29.

In line with the transition away from culling towards wide scale badger vaccination, the 11 new intensive culling licences issued in 2022 were the last. As in 2021, new supplementary badger control licences were licensed for two years.

Wales

In Wales there were fewer new TB incidents in the High West TB Area in the 12 months to December 2022 compared to the previous period, in line with current trends observed for this TB Area. However, there were increases in the Intermediate North (2.3% increase) and High TB Area East (15.9% increase). The 12-month rolling average in new incidents has also increased to 16 and has been generally increasing since January 2022.

From 17 January 2022, the 3-year inconclusive reactor (IR) rule has been revoked. This rule stated that if there was a TB breakdown (with lesion and/or culture positive) on the

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holding within the past three years then the whole herd movement restrictions remain until the IR is re-tested.

From 17 January 2022 all new TB breakdowns across Wales, will be classified as Officially TB Free Status (OTF) Withdrawn. There are two exceptions, which will continue to be classified as OTF suspended (OTFS):

- OTF herds with one or more suspected slaughterhouse cases where culture results are still pending.
- Breakdown herds where non-homebred animals positive to Interferon-gamma and/ or IDEXX antibody testing only (i.e. no skin reactors) have been disclosed and disease has not been confirmed on culture results.

OTFS herds where the breakdown started prior to 15 November 2021 will remain OTFS unless any further skin test reactor is disclosed, or epidemiological risk factors apply.

To develop a clearer understanding of the escalating disease picture in North Wales, additional blood testing in farms in Wrexham, Clwyd Valley, Denbighshire, and the Pennal area in the Intermediate TB Area Mid, commenced in June 2021 and finished in April 2023. Alongside the skin test several ancillary tests such as the gamma test, the flexible extended gamma test and the IDEXX Antibody Test are used to improve the detection of bovine TB infected animals. No single test or combination of tests for bovine TB provides 100% test specificity or sensitivity. Other measures introduced in Wrexham, Clwyd Valley, Denbighshire and Pennal area in 2021 and continued into 2022 include:

- Interpretation being maintained at severe through the breakdown with an exit strategy.
- Additional contiguous tests.
- Action Plans for herd breakdowns recurrent and up to the 6-month test (provided not due to purchase).
- Cymorth Keep It Out visits for contiguous herds.

Scotland

In Scotland a public consultation was held between 9 May – 1 August 2022 to gather views on amendments to the Tuberculosis (Scotland) Order. Following this, a minor amendment was made under The Tuberculosis (Scotland) Amendment Order 2022 to introduce a requirement for permission to be sought from Scottish Ministers where samples are taken with the intention of testing them for TB. A full consolidation of Scotland's TB legislation, including a number of changes, will also take place in 2023 to take forward the remaining changes identified as a result of the consultation.

Northern Ireland

In Northern Ireland, herd incidence for 2022 was 10.20% with animal incidence standing at 0.934%. Herd and animal incidence both rose over the past year (from 8.85% in 2021 for herd incidence and from 0.786% for animal incidence). This represents the highest herd incidence rate in Northern Ireland since the aftermath of the Foot and Mouth

Chapter 1: Key Events

Disease which disrupted the bTB programme in the early 2000s.

These disappointing figures highlight the need for additional measures to tackle the disease and work has progressed on the implementation of the new bTB Eradication Strategy for Northern Ireland which was launched by former Minister Poots in March 2022. The Strategy is the product of several years' work, including the 2016 recommendations of the TB Strategic Partnership Group and two subsequent public consultations. However, the proposed wildlife intervention has been the subject of a legal challenge from two environmental groups. A judicial review hearing took place in Belfast in November 2022 and, at the time of writing (May 2023), a decision is still awaited.

Note: More information on Bovine Tuberculosis can be found at the [TB hub](#).

Chapter 2: Structure of Industry

Summary

Key results for 2022 compared to 2021:

- The **Utilised Agricultural Area (UAA)** decreased by 2.2% and was 17 million hectares, covering 69% of land in the UK.
- The **total croppable area** saw little change and was 6.0 million hectares.
- The **cereal crops area** decreased by 1.7% and was 3.2 million hectares.
- The **area of oilseed crops** planted increased by 13% and was 398 thousand hectares.
- The **total number of cattle and calves** remained almost unchanged and was 9.6 million animals. The beef herd decreased by 1.5% and was 1.5 million animals. The dairy herd decreased by 0.4% and was 1.8 million animals.
- The **total number of pigs** decreased by 2.5% and was 5.2 million animals. The total number of female pigs in the breeding herd decreased by 14% and was 343 thousand animals.
- The **total number of sheep and lamb** increased by 0.3% and was 33 million animals.
- The **total number of poultry** decreased by 1.0% and was 188 million birds.
- The **total labour force** on commercial holdings increased by 0.7% and was 471 thousand people.

Introduction

The tables and charts in this chapter show the size and structure of the agricultural industry in the United Kingdom at 1 June each year. They provide information on land use and livestock numbers, on the distribution of these between holdings and on the labour force.

Data in this chapter are sourced primarily from the June Surveys of Agriculture carried out in the four UK countries each year. The exception to this are most of the land use data in Scotland (sourced from Single Application Form (SAF) subsidy data). Also, cattle data are sourced from the Cattle Tracing System (CTS) in England, Wales and Scotland and from the equivalent Animal and Public Health Administration (APHIS) system in Northern Ireland.

Northern Ireland delayed publication of their 2022 June survey results and as a result their 2021 data have been carried forward so results agree with those published for the United Kingdom in December 2022. Scotland used administrative data from the Single Application Form (SAF) in place of 2022 June Survey results due to undertaking an Agricultural Statistics Transformation Programme. Data have not been scaled to account for holdings not captured within the SAF returns, so land recorded may be lower for some items such as grassland.

England data relate to commercial holdings only. Commercial holdings are defined as those with significant levels of farming activity, i.e. holdings with more than five hectares of agricultural land, one hectare of orchards, 0.5 hectares of vegetables or 0.1 hectares of protected crops, or more than 10 cows, 50 pigs, 20 sheep, 20 goats or 1,000 poultry.

For more information on the June Survey and for more detailed results, please see the pages for [England](#), [Scotland](#), [Wales](#) and [Northern Ireland](#).

Land use and crop areas

At June 2022 the Utilised Agricultural Area (UAA) was 17 million hectares, covering 69% of the total UK land area. UAA is made up of arable and horticultural crops, uncropped arable land, common rough grazing, temporary and permanent grassland and land used for outdoor pigs. It does not include woodland and other non-agricultural land.

The total croppable area saw little change between 2021 and 2022, however some categories within this total had greater changes than others (see Table 2.1).

Cereal crops accounted for the majority (69%) of the cropped area. Wheat and barley are the predominant cereal crops. In 2022, the area of wheat increased by 1.0% and was 1.8 million hectares. The area of barley decreased by 3.9% and was 1.1 million hectares.

The area of oilseed rape increased by 18% in 2022 and was 364 thousand hectares.

Potatoes decreased by 7.6% to 127 thousand hectares in 2022.

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The remaining arable crops covered 717 thousand hectares. Peas for harvesting dry, field beans and maize together account for 68% of this area. The area of peas and field beans increased by 8.2% whilst the area of maize decreased by 2.4%.

Figures 2.1a to 2.1c provide further detailed breakdowns of crop areas.

Table 2.1 Agricultural land use at June of each year (thousand hectares)

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Category	2020	2021	2022
UAA (Utilised Agricultural Area)	17,269	17,227	16,843
UAA as a proportion of total UK area	71%	71%	69%
Total agricultural land	18,628	18,631	18,107
Common rough grazing	1,194	1,194	1,194
Total area on agricultural holdings	17,434	17,436	16,912
Total croppable area	6,024	6,056	6,040
Total crops	4,481	4,574	4,550
Arable crops	4,314	4,413	4,398
Cereals	3,038	3,211	3,156
Oilseeds	415	352	398
Potatoes	142	137	127
Other arable crops	719	713	717
Horticultural crops	166	161	152
Uncropped arable land	362	265	265
Temporary grass under 5 years old	1,181	1,217	1,225
Total permanent grassland	10,042	9,965	9,597
Grass over 5 years old	6,118	6,071	6,030
Sole right rough grazing	3,924	3,894	3,567
Other land on agricultural holdings	1,368	1,416	1,275
Woodland	1,065	1,076	931
Land used for outdoor pigs	10	12	12
All other non-agricultural land	293	328	333

Notes for table 2.1:

1. Scotland have used administrative data from the Single Application Form (SAF) in place of June Survey results while their Agricultural Statistic Transformation program runs. Scottish data have not been scaled to account for holdings not captured within the SAF returns, so land recorded may be lower for some items

such as grassland. Therefore, the drop in UAA/total area seen in 2022 is mostly due to this temporary change in methodology for Scotland.

2. UAA includes all arable and horticultural crops, uncropped arable land, common rough grazing, temporary and permanent grassland and land used for outdoor pigs (it excludes woodland and other non-agricultural land).
3. Uncropped arable land includes all arable land not in production, including land managed in Good Agricultural and Environmental Condition (GAEC12), wild bird cover and game cover.
4. Sole right rough grazing includes mountains, hills, heathland or moorland.

Source: UK Agriculture departments June Survey/Census of Agriculture

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Figures 2.1a to 2.1c - Crop areas at June of each year

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Figure 2.1a Cereal crop areas (thousand hectares)

Year	Wheat	Barley	Oats	Rye, mixed corn and triticale	Total
2020	1,387	1,388	210	53	3,038
2021	1,790	1,150	200	71	3,211
2022	1,809	1,104	174	69	3,156

Figure 2.1b Other arable crop areas (thousand hectares)

Year	Oilseed rape (including linseed)	Potatoes	Sugar beet (not for stockfeeding)	Peas for harvesting dry and field beans	Maize	Remaining arable crops	Total
2020	412	142	111	233	228	149	1,276
2021	348	137	95	249	227	146	1,202
2022	392	127	91	269	222	142	1,242

Figure 2.1c Horticultural crop areas (thousand hectares)

Year	Vegetables grown outdoors	Orchard fruit	Soft fruit & wine grapes	Outdoor plants and flowers	Glasshouse crops	Total
2020	118	23	11	11	3	166
2021	112	23	10	13	3	161
2022	107	22	10	10	3	152

Notes for figures 2.1a to 2.1c:

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1. Vegetables grown outdoors excludes potatoes, peas for harvesting dry and mushrooms.
2. Orchard fruit includes non-commercial orchards.
3. Soft fruit is strawberries, raspberries, blackcurrants, wine grapes and all other soft fruit

Source: June Surveys/Census of Agriculture/SAF land data

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Livestock numbers

In 2022, the total number of cattle and calves was 9.6 million, which was almost unchanged from 2021. The beef herd decreased by 1.5% and was 1.5 million animals and the dairy herd decreased by 0.4% and was 1.8 million animals.

The number of lambs under one year old was 16 million in 2022, which did not change substantially from 2021. The female breeding flock increased by 1.0% at 16 million animals. As a result, the total UK sheep and lamb population was 33 million which increased by 0.3% compared to 2021.

The total number of pigs was 5.2 million which decreased by 2.5% from 2021. The number of pigs in the female breeding herd decreased by 14% and was 343 thousand in 2022.

The total number of poultry in the UK decreased by 1.0% and was 188 million birds in 2022. Table fowl account for 67% of the total and decreased by 0.5% at 126 million birds in 2022. The breeding flock increased by 0.4% between 2021 and 2022 and sits at 12 million birds.

Figures 2.2a to 2.2d provide breakdowns of livestock populations.

Figures 2.2a to 2.2d - Livestock numbers at June of each year

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Figure 2.2a Female cattle breeding herd (thousand head)

Year	Cows in the beef herd	Cows in the dairy herd	Total breeding herd
2020	1,509	1,850	3,359
2021	1,485	1,850	3,335
2022	1,463	1,842	3,305

Figure 2.2b Sheep numbers (thousand head)

Year	Female breeding flock	Other sheep and lambs	Total
2020	15,370	17,328	32,697
2021	15,624	17,333	32,957
2022	15,779	17,287	33,066

Figure 2.2c Female pig breeding herd (thousand head)

Year	Sows in pig	Gilts in pig	Other sows for breeding	Total breeding herd
2020	295	57	50	402
2021	282	54	63	398
2022	249	42	52	343

Figure 2.2d Poultry numbers (thousand birds)

Year	Laying flock (including pullets)	Breeding flock	Table fowl	Turkeys, ducks, geese, all other poultry	Total
2020	39,758	13,785	118,388	10,025	181,957
2021	40,568	12,271	126,693	10,487	190,019
2022	40,246	12,325	126,052	9,564	188,187

Notes for figures 2.2a to 2.2d:

1. Dairy cows are defined as female dairy cows over 2 years old with offspring.
2. Beef cows are defined as female beef cows over 2 years old with offspring.

Source: June Surveys/Census of Agriculture; Cattle Tracing System/APHIS

[Download the full Structure of industry dataset](#)

Numbers and sizes of holdings and enterprises

Tables 2.2a through to 2.2d compare the number of holdings and area by farm size in 2017 and 2022. In 2022, the total number of holdings was 191 thousand which decreased by 12% compared to 2017. Within the five-year period the total area on holdings has decreased by 4.1%.

Between 2017 and 2022 the average area of all holdings increased by 8.8% and the average croppable area of holdings increased by 9.5%. Care should be taken when comparing averages, total areas and numbers of holdings between 2017 and 2022 due to the temporary change in coverage of Scottish estimates for 2022 - see footnote 6 below for further details.

Figure 2.3a shows the proportion of holdings and total area by size bands. This shows that around a fifth of holdings have 100 hectares or more, but these holdings account for three quarters of the total area. Most holdings in 2017 and 2022 had fewer than 20 hectares and accounted for just 4% of the total area. A similar picture can be drawn for the croppable area which is shown in figure 2.3c

Tables 2.2a to 2.2d and 2.3a to 2.3b show number of holdings and total areas for the UK and by country, respectively.

Numbers and sizes of holdings and enterprises at June of each year

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Table 2.2a Numbers of holdings by total area size group (thousand)

Year	Under 20 hectares	20 to under 50 hectares	50 to under 100 hectares	100 hectares and over	Total
2017	103	41	32	41	217
2022	80	40	30	41	191

Table 2.2b Total area on holdings by size group (thousand hectares)

Year	Under 20 hectares	20 to under 50 hectares	50 to under 100 hectares	100 hectares and over	Total area
2017	682	1,359	2,262	13,334	17,637
2022	626	1,314	2,175	12,797	16,912

Figure 2.3a Proportion of holdings and total area by size group

Category	under 20 hectares	20 to under 50 hectares	50 to under 100 hectares	100 hectares and over	Total
2017 - Proportion of holdings	47%	19%	15%	19%	100%
2022 - Proportion of holdings	42%	21%	16%	21%	100%
2017 - Proportion of total area	4%	8%	13%	75%	100%
2022 - Proportion of total area	4%	8%	13%	75%	100%

Figure 2.3b Average total and croppable areas on holdings (hectares)

Year	Average total area	Average total area on holdings with >=20 hectares	Average croppable area
2017	81	149	63
2022	89	147	69

Table 2.2c Numbers of holdings with croppable area by size group (thousand)

Year	Croppable area 0.1 to under 20 hectares	Croppable area 20 to under 50 hectares	Croppable area 50 to under 100 hectares	Croppable area 100 hectares and over	Total
2017	46	19	14	17	97
2022	40	17	13	17	87

Table 2.2d Croppable area on holdings by size group (thousand hectares)

Year	Croppable area 0.1 to under 20 hectares	Croppable area 20 to under 50 hectares	Croppable area 50 to under 100 hectares	Croppable area 100 hectares and over	Total croppable area
2017	303	630	1,005	4,193	6,131
2022	270	555	944	4,271	6,040

Figure 2.3c Proportion of holdings and croppable area by size group

Category	0.1 to under 20 hectares	20 to under 50 hectares	50 to under 100 hectares	100 hectares and over	Total
2017 - Proportion of holdings with croppable area	47%	20%	15%	18%	100%
2022 - Proportion of holdings with croppable area	46%	19%	15%	20%	100%
2017 - Proportion of croppable area	5%	10%	17%	68%	100%
2022 - Proportion of croppable area	4%	9%	16%	71%	100%

Notes for tables 2.2a to 2.2d:

1. Croppable area is defined as land under crops, temporary grass under five years old and uncropped arable land.
2. No Scottish agricultural census took place in 2022. Therefore, data provided only relate to data collected via the Single Application Form (SAF), which does not include all farms within the agricultural census. Smaller farms are under-

represented resulting in low numbers for holdings under 20 hectares in 2022 and therefore higher averages overall.

Source: June Surveys/Census of Agriculture/SAF land data Scotland.

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Tables 2.3a to 2.3b - Numbers of holdings and areas by size group and country at June of each year

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Table 2.3a Numbers of holdings by total area size group and country (thousand)

Country	Under 20 hectares	20 to under 50 hectares	50 to under 100 hectares	100 hectares and over	Total
England	41	21	18	25	104
Wales	21	6	5	5	37
Scotland	7	4	4	8	23
Northern Ireland	11	8	4	2	26

Table 2.3b Total area on holdings by size group and country (thousand hectares)

Country	Under 20 hectares	20 to under 50 hectares	50 to under 100 hectares	100 hectares and over	Total area
England	336	709	1,256	6,797	9,098
Wales	120	214	363	1,069	1,766
Scotland	58	124	270	4,561	5,013
Northern Ireland	113	267	286	370	1,036

Figure 2.4 Average total area on holdings by country (hectares)

Country	Average total area	Average total area on holdings with >=20 hectares
England	87	137
Wales	48	99
Scotland	215	311
Northern Ireland	40	63
United Kingdom	89	147

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Notes for tables 2.3a to 2.3b:

1. No Scottish agricultural census took place in 2022. Therefore, data provided only relate to data collected via the Single Application Form (SAF), which does not include all farms within the agricultural census. Smaller farms are under-represented resulting in low numbers for holdings under 20 hectares in 2022 and therefore higher averages overall.

Source: June Surveys/Census of Agriculture/SAF land data Scotland.

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Agriculture Workforce

The agricultural workforce in 2022 increased by 0.7% and was 471 thousand people. Farmers, business partners, directors and spouses accounted for 64% of the total labour force.

Figure 2.5 Agricultural labour force on commercial holdings at June of each year (thousands)

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Year	Farmers, business partners, directors and spouses (full time)	Farmers, business partners, directors and spouses (part time)	Regular employees, salaried managers and casual workers	Total labour force
2020	147	153	171	472
2021	147	153	167	467
2022	148	154	169	471

Notes:

1. Part-time is defined as working less than 39 hours per week (England & Wales), 38 hours per week (Scotland) and 30 hours per week (N. Ireland).
2. Regular employees include salaried managers as not all UK countries collect separate estimates.
3. For labour force numbers in earlier years see [Structure of the agricultural industry](#).

Source: June Surveys/Census of Agriculture

[Download the full Structure of industry dataset](#)

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Data on the proportion of holders in each age group (previously table 2.6 in last year's AUK) was not collected by all United Kingdom countries in 2021 and 2022. Therefore, this data table has been removed from this chapter. Historical data, up to and including 2016, are still available and can be found in table 2.6 of the [dataset for this chapter](#)

Chapter 3: Farming Income

Summary

- In 2021/22, the average **Farm Business Income (FBI)** across all UK farm types, at current prices, was £72,000 compared to £46,500 in 2020/21.
- **FBI** varies greatly with 10% of UK farms failing to make a positive FBI in 2021/22 while 41% of farms had an FBI of over £50,000.
- In 2022/23, exceptional price volatility, both in terms of input costs and output revenue, is forecast to be one of the key factors influencing Farm Business Income.

Introduction

This chapter presents **Farm Business Income. Total Income from Farming (TIFF)** data can be found in Chapter 4.

Farm Business Income (FBI) is the preferred measure for comparisons of farm type and represents the return to all unpaid labour (farmers, spouses and others with an entrepreneurial interest in the farm business) and to all their capital invested in the farm business including land and farm buildings.

Total Income from Farming (TIFF) represents business profits and remuneration for work done by owners and other unpaid workers. It is used to assess UK agriculture as a whole.

Table 3.3, found at the end of this chapter, provides more detailed information on definition, method used and similarities and differences for the two income measures.

Farm Business Incomes by farm type

The estimates of Farm Business Income are averages. It should be noted that across different regions and farm types, some farmers receive considerably more or less than these averages.

Forecasts of Farm Business Income for 2022/23 (i.e. the year ending February 2023 and harvest 2022) at current prices are shown in Table 3.3a for England and Northern Ireland alongside outturn data for earlier years. These forecasts include Basic Payment Scheme receipts which are recorded as due for the appropriate accounting year, for example receipts of the 2022 Basic Payment Scheme are recorded in the 2022/23 accounting year.

Note that forecasts of Farm Business Income for Wales and Scotland are not produced. In England, no income forecasts for 2022/23 have been produced for specialist pig, specialist poultry or horticulture farms. These forecasts are subject to a considerable degree of uncertainty, reflecting both the structure of these sectors and the relatively small sample of these farms in the Farm Business Survey. These factors, combined with the market uncertainties and extreme price volatility of the last year, have meant it has not been possible to produce robust forecast estimates.

Exceptional price volatility, both in terms of input costs and output revenue, is expected to be one of the key factors influencing Farm Business Incomes in 2022/23. For some farm types, substantially higher output revenue is expected to more than offset rises to input costs, while for other sectors cost increases are forecast to outstrip increased output, leading to an overall fall in income. In England, the average Basic Payment is expected to be around 24% lower across all farm types, reflecting the second year of progressive reductions to the payment.

On cereal farms in England, average income is expected to increase by 11% in 2022/23 to £134,000. The rise is forecast to be driven by a sizeable increase to output from crop enterprises, particularly wheat and oilseed rape. Overall, crop output is expected to rise

Chapter 3: Farming Income

by 31% reflecting a combination of higher prices, tight global supplies (both influenced by the war in Ukraine) and increased yields. The rise in output is forecast to more than offset higher input costs. In terms of price, virtually all inputs are predicted to increase with higher fertiliser costs (expected to more than double) having the greatest impact for cereal farms.

In England, average income on general cropping farms is forecast to be 14% lower than 2021/22 (when average income more than doubled), primarily as a result of higher input costs which are expected to increase by 16%. As with cereal farms, substantially higher (nearly double) fertiliser costs, reflecting uncertainties around gas supplies in Europe, will be a key driver. Output is also expected to rise, although to a lesser extent than costs. Higher output from cereals and oilseed rape is forecast to be partially offset by a fall in output from potatoes, peas and beans with the hot, dry summer expected to take a toll on yields.

Average income on dairy farms in Northern Ireland is expected to increase by 59% in 2022/23, largely driven by higher output prices. A similar picture is expected on dairy farms in England where income is forecast to rise by 78%. A substantial rise in livestock output will be almost entirely driven by an increase in output from milk. It is anticipated that the overall volume of milk and number of animals will be little changed compared to 2021/22, but that tight supplies during the year will support higher milk prices. Crop output is also expected to rise (particularly wheat, driven by higher yields and firm prices). These increases are forecast to more than offset a rise to input costs, most notably for feed and fertilisers.

In England, income on lowland grazing livestock farms is predicted to fall by around half in 2022/23. Higher input costs are expected to be a key driver, particularly those associated with fertiliser, feed and machinery. At the same time, total output is forecast to be lower compared to 2021/22, as a result of a very small fall in output from livestock largely offset by an increase from cropping activities. Similar drivers for grazing livestock farms in Less Favoured Areas are forecast to result in a fall in average income of around two thirds in both England and Northern Ireland.

Incomes on mixed farms in England are expected to fall by 14%. The changes reported previously for specialist farm types will all have influenced the incomes for this farm type.

Table 3.1a and 3.1b

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Email: fbs.queries@defra.gov.uk**Table 3.1a Farm Business Income by country and type of farm (average Farm Business Income per farm at current prices, £/farm)**

Standard Output Typology	2019/20	2020/21	2021/22	2022/23 (Provisional)
England				
Cereals	63,000	71,500	120,000	134,000
General cropping	84,500	67,000	145,500	125,000
Dairy	85,000	92,500	140,000	249,000
Grazing livestock (lowland)	9,500	18,500	34,000	17,000
Grazing livestock (LFA)	23,000	33,500	43,000	16,000
Specialist pigs	37,500	48,000	12,000	..
Specialist poultry	88,000	77,500	138,000	..
Mixed	29,000	40,000	74,000	63,000
Wales				
Dairy	50,500	60,000	88,000	..
Grazing livestock (lowland)	16,500	23,000	26,500	..
Grazing livestock (LFA)	22,500	30,000	38,500	..
Scotland				
Cereals	41,000	65,000	84,500	..
General cropping	69,000	72,000	82,500	..
Dairy	51,000	101,500	162,000	..
Grazing livestock (lowland)	13,500	30,500	34,000	..
Grazing livestock (LFA)	15,500	19,500	23,500	..
Mixed	8,000	46,000	60,000	..
Northern Ireland				
Dairy	52,000	63,000	83,000	132,000
Grazing livestock (LFA)	15,000	20,500	23,000	8,000

Table 3.1b Farm Business Income by type of farm in the UK (Average Farm Business Income per farm, £/farm)

Standard Output Typology	2019/20	2020/21	2021/22	2022/23 (Provisional)
At current prices				
Cereals	60,500	70,500	115,000	..
General cropping	80,500	67,500	132,000	..
Dairy	70,000	81,500	119,500	..
Grazing livestock (lowland)	10,500	19,500	32,500	..
Grazing livestock (LFA)	19,500	26,500	33,000	..
Specialist pigs	39,500	50,500	14,000	..
Specialist poultry	88,000	77,500	138,000	..
Mixed	25,500	41,500	71,000	..
All types (including Horticulture)	39,000	46,500	72,000	..
In real terms (at 2021/22 prices)				
Cereals	63,500	70,000	115,000	..
General cropping	85,000	67,000	132,000	..
Dairy	74,000	81,000	119,500	..
Grazing livestock (lowland)	11,000	19,500	32,500	..
Grazing livestock (LFA)	20,500	26,500	33,000	..
Specialist pigs	42,000	50,500	14,000	..
Specialist poultry	92,500	77,000	138,000	..
Mixed	26,500	41,000	71,000	..
All types (including Horticulture)	41,500	46,000	72,000	..

Notes for table 3.1a and 3.1b:

1. .. data unavailable.
2. All Table 3.1a figures are at current prices.
3. Figures for 2022/23 are provisional and subject to revision.
4. Figures for 2019/20 to 2021/22 rounded to nearest £500.
5. Forecast figures for 2022/23 rounded to the nearest £1,000.
6. Years are accounting years ending on average in February.

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Distribution of farm incomes and performance

Tables 3.2a to 3.2c show the variation in the level of Farm Business Income, Net Farm Income and Cash Income across farms in England, Wales, Scotland and Northern Ireland for 2021/22.

Around 10% of farms in the UK failed to make a positive Farm Business Income compared to 16% in 2020/21, although there was some variation between countries. The proportion was higher in Scotland at 18%, while in England it was slightly lower at 9%. Just over a third of farms in the UK fell into the lower income brackets (less than £20,000). At the top end of the scale, 41% of farms in the UK had a Farm Business Income of more than £50,000, considerably more than in 2020/21 when the figure was 28% of farms. However, there was again some variation between UK countries in this highest income category. Wales and Northern Ireland each had 29% of their farms in the highest income band, while for England and Scotland the proportion of farms was 46% and 34% respectively.

A greater proportion of farms fall into lower band income ranges for Net Farm Income. This is because Net Farm Income is a narrower measure of income; it is net of an imputed rent on owned land and an imputed cost for unpaid labour (apart from farmer and spouse). On this basis 19% of farms in the UK failed to make a profit.

For comparison, the full distribution of farm incomes for 2020/21 can be found in [Chapter 3 of the 2021 Agriculture in the UK](#).

Tables 3.2a to 3.2c All farm types: distribution of farm incomes by country 2021/22 (percentage of farms)

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Table 3.2a Farm Business Income (percentage of farms)

Farm Business Income	England	Wales	Scotland	Northern Ireland	United Kingdom
Less than zero	9	10	18	10	10
0 to less than £5,000	3	5	4	6	4
£5,000 to less than £10,000	6	9	5	9	6
£10,000 to less than £20,000	12	16	12	17	13
£20,000 to less than £30,000	10	14	13	8	11
£30,000 to less than £50,000	14	17	15	20	15
£50,000 and over	46	29	34	29	41
Average (£ thousand per farm)	86	45	50	43	72

Table 3.2b Net Farm Income (percentage of farms)

Net Farm Income	England	Wales	Scotland	Northern Ireland	United Kingdom
Less than zero	17	22	27	18	19
0 to less than £5,000	5	8	5	13	6
£5,000 to less than £10,000	7	9	6	9	7
£10,000 to less than £20,000	13	14	13	14	13
£20,000 to less than £30,000	8	11	10	9	9
£30,000 to less than £50,000	12	15	13	11	12
£50,000 and over	38	22	27	26	34
Average (£ thousand per farm)	70	32	36	35	57

Table 3.2c Cash Income (percentage of farms)

Cash Income	England	Wales	Scotland	Northern Ireland	United Kingdom
Less than zero	10	9	10	5	10
0 to less than £5,000	4	4	5	5	4
£5,000 to less than £10,000	3	4	2	4	3
£10,000 to less than £20,000	12	13	9	11	11
£20,000 to less than £30,000	8	12	12	17	10
£30,000 to less than £50,000	16	21	18	22	18
£50,000 and over	47	38	45	36	45
Average (£ thousand per farm)	92	59	67	59	77

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Figure 3.1 shows the differences in performance of farms in England for 2021/22. Performance is measured as “£ of output per £100 of input”. An imputed value for unpaid labour is added to the input costs. The chart illustrates the significant variation in performance with 37% of farms failing to recover their costs in that year.

Figure 3.1 Distribution of performance across farms 2021/22: England only (£ output per £100 input)

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£ output per £100 input	%
0 < 60	3.6
60 < 70	3.9
70 < 80	6.0
80 < 90	10.7
90 < 100	13.2
100 < 110	15.7
110 < 120	13.5
120 < 130	9.4
130 < 140	7.6
140 < 150	4.6
150 < 160	4.3
160 < 170	2.9
170 and over	4.7

Notes:

1. Performance is based on the ratio of farm business output to farm business costs which includes an adjustment for unpaid labour

Source: Farm Business Survey

[Download the full Farming Income dataset](#)

Definitions and explanatory note

There are two main measures of agricultural income which are closely related and complement each other. Total Income from Farming provides an estimate of total income for agriculture as a whole whereas Farm Business Income provides a breakdown of average incomes by farm type. Table 3.3 compares the two measures in terms of definition, methodology and main similarities and differences.

Table 3.3 Comparison table showing main similarities and differences between Total Income from Farming (TIFF) and Farm Business Income (FBI) statistics

	Total Income from Farming	Farm Business Income
Geographic scope	United Kingdom	England
Reference period	Calendar year	12-month period March to February
Definition	Represents business profits and remuneration for work done by owners and other unpaid workers.	Represents the return to all unpaid labour (farmers, spouses and others with an entrepreneurial interest in the farm business) and to all their capital invested in the farm business including land and farm buildings.
Data source	A wide range of data sources including industry data and Defra survey data (i.e. the Farm Business Survey).	Farm Business Survey: annual sample surveys run by each of the four UK countries.
Method	Gross output at basic prices plus Other subsidies less taxes less Total intermediate consumption, rent, paid labour less Total consumption of fixed capital (depreciation) less interest	Total output from agriculture (includes crop and livestock valuation change) plus Total output from agri-environment schemes plus Total output from diversification plus Single/Basic payment scheme less Expenditure (costs, overheads, fuel, repairs, rent, depreciation, paid labour) plus Profit / (loss) on sale of fixed assets.
Differences	The main aggregate measure of farm income used to assess agriculture as a whole. Treatment of stocks: the physical changes in stocks valued at average calendar year prices.	The preferred measure for comparisons of farm type. Treatment of stocks: the change in the book value of stocks between the start and end of the accounting year.
Similarities	Complete range of on-farm activities including income from diversified activities	Complete range of on-farm activities including income from diversified activities where they are included in the farm

Total Income from Farming	Farm Business Income
where they are included in the farm accounts.	accounts.
Does not subtract imputed rent for owner occupiers.	Does not subtract imputed rent for owner occupiers.

Revisions

Compared with the provisional 2021/22 results published in the 2021 edition of AUK, the outturns (based on actual survey results from the Farm Business Survey) for cereal and specialist pig farms in England were within the confidence intervals of the survey outturns. The average income for general cropping farms was considerably higher than forecast due to an underestimation of crop and livestock output, while input costs were lower than anticipated. For dairy farms income was also higher than forecast, the result of an underestimation of the value of output from milk and milk products. On grazing livestock farms both lowland and LFA average income was higher than expected, largely due to an underestimation of output from sheep and cattle enterprises. Average income on specialist poultry farms was substantially higher than predicted with egg and poultry meat output both greater than forecast. On mixed farms both inputs and output were underestimated, but particularly output, leading to a higher average income than anticipated.

In Northern Ireland the actual income for dairy farms closely matched the provisional 2021/22 estimate. For LFA grazing farms, the average income was slightly higher than expected due to an underestimation of the value of outputs.

Chapter 4: Accounts

There may be small discrepancies between numbers presented in this chapter and those in Chapter 7: Crops and Chapter 8: Livestock due to slight differences in calculation methodology and minor data revisions since the UK Accounts were computed. There has been one more substantial data revision for eggs, which is detailed in the [Livestock](#) section of this chapter.

Summary

In this section, all values are provided in current prices which is considered the most intuitive approach for comparisons over a short time period. It should be noted that these values have not been adjusted for inflation, which was unusually high in 2022 at 5.0%.

Key results for 2022:

- **UK Total Income from Farming (TIFF)** in 2022 was £7.9 billion, an increase of £1.1 billion (17%) from 2021. Following an exceptional year of price volatility, this large increase in TIFF was driven by price increases across the majority of commodities in this account, which more than offset increases in input prices.
- **Total livestock output** in 2022 was £19.3 billion, an increase of £2.7 billion (16%) from 2021. This increase was driven by a substantial 40% increase in the value of milk, which is consistently the largest contributor to livestock value. Milk reached record high farmgate prices of up to 51.6 pence per litre in 2022 as a result of high production costs, which also led to a slight reduction in production and supply.
- In 2022, **total crop output** increased by £2.4 billion (22%) from 2021, to £13.3 billion. This increase was driven by a 50% increase in the value of wheat, which saw a 35% increase in unit price following disruption to the global cereals market from the war in Ukraine, as well as a 10% increase in average yield boosted by favourable planting conditions in the autumn of 2021.
- **Intermediate consumption** increased by £3.6 billion (19%) from 2021, to £22.1 billion in 2022. This increase was predominantly driven by a 24% increase in the value of compound animal feed, which is consistently the largest contributor to intermediate consumption, and a 78% increase in the value of fertiliser. The average price of fertiliser increased by 104% from 2021, following substantially reduced domestic production as a result of rising natural gas prices.
- In 2022, **agriculture's contribution to the UK economy (Gross Value Added at basic prices)** was £13.9 billion (0.6% of GDP). This constitutes an increase of £1.8 billion (15%) in GVA compared to 2021.

Introduction

This chapter shows production and income accounts for agriculture in the United Kingdom.

These accounts conform to internationally agreed accounting principles required by the United Kingdom's Office for National Statistics.

Total Income from Farming is the total profit from all UK farming businesses on a calendar year basis. It measures the return to all entrepreneurs for their management, inputs, labour and capital invested. For differences between TIFFF and Farm Business Income statistics presented in Chapter 3, see Table 3.3.

When comparing more recent years, values are presented at current prices (not adjusted for inflation). For long term trends in TIFFF, values are presented in real terms. This means the figures have been adjusted to account for inflation, which allows more meaningful comparisons between years over the longer term.

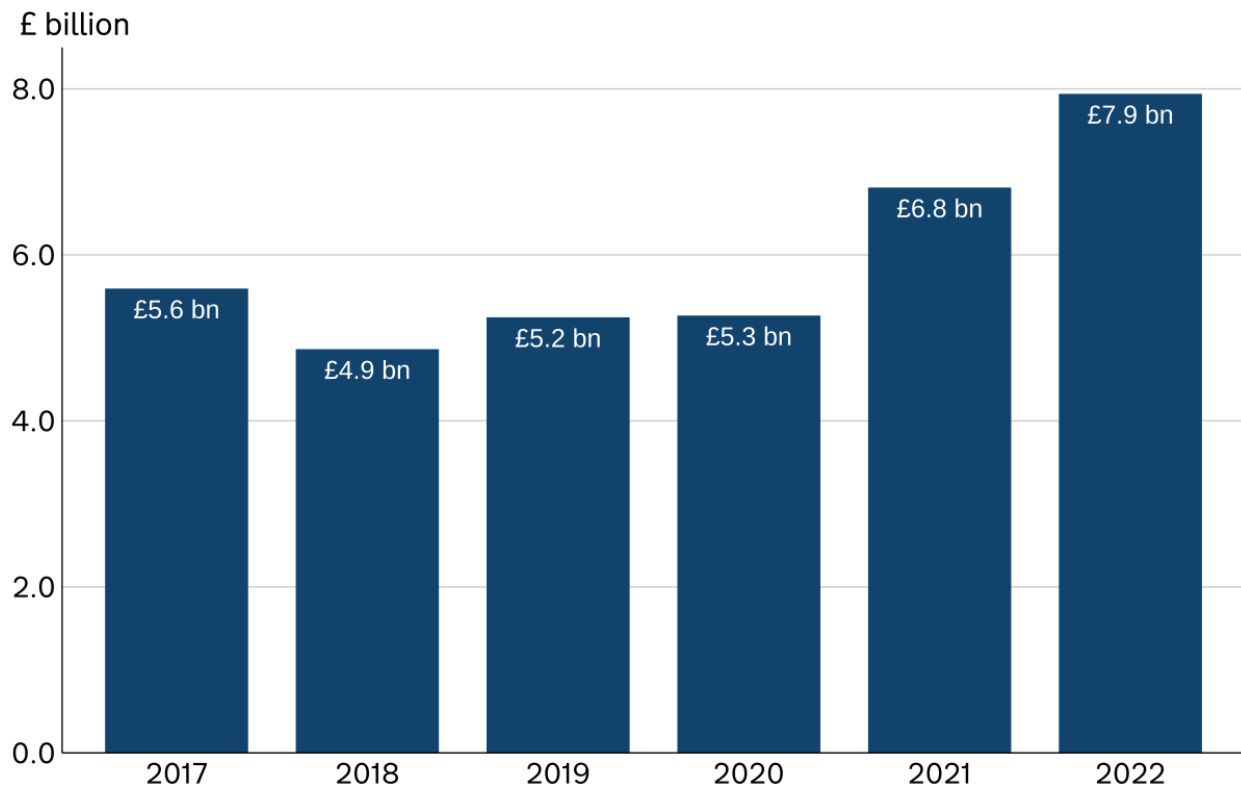
TIFF in recent years

In this section, all values are provided in current prices which is considered the most intuitive approach for comparisons over a short time period. It should be noted that these values have not been adjusted for inflation, which was unusually high in 2022 at 5.0%.

Figure 4.1: Total Income from Farming for the United Kingdom: 2017 to 2022 at current prices

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Text description of Figure 4.1: Figure 4.1 shows the value of TIFF from 2017 to 2022 at current prices. TIFF is presented in billions.

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Since 2017, the average value of TIFF has been £6.0 billion, with the lowest value of £4.9 billion occurring in 2018, and the highest value of £7.9 billion occurring in 2022, an increase of £1.1 billion (17%) from 2021.

Below we provide a detailed comparison of the TIFF account from recent years in current terms. This approach is considered the most intuitive for comparisons over a short time period.

Outputs and subsidies

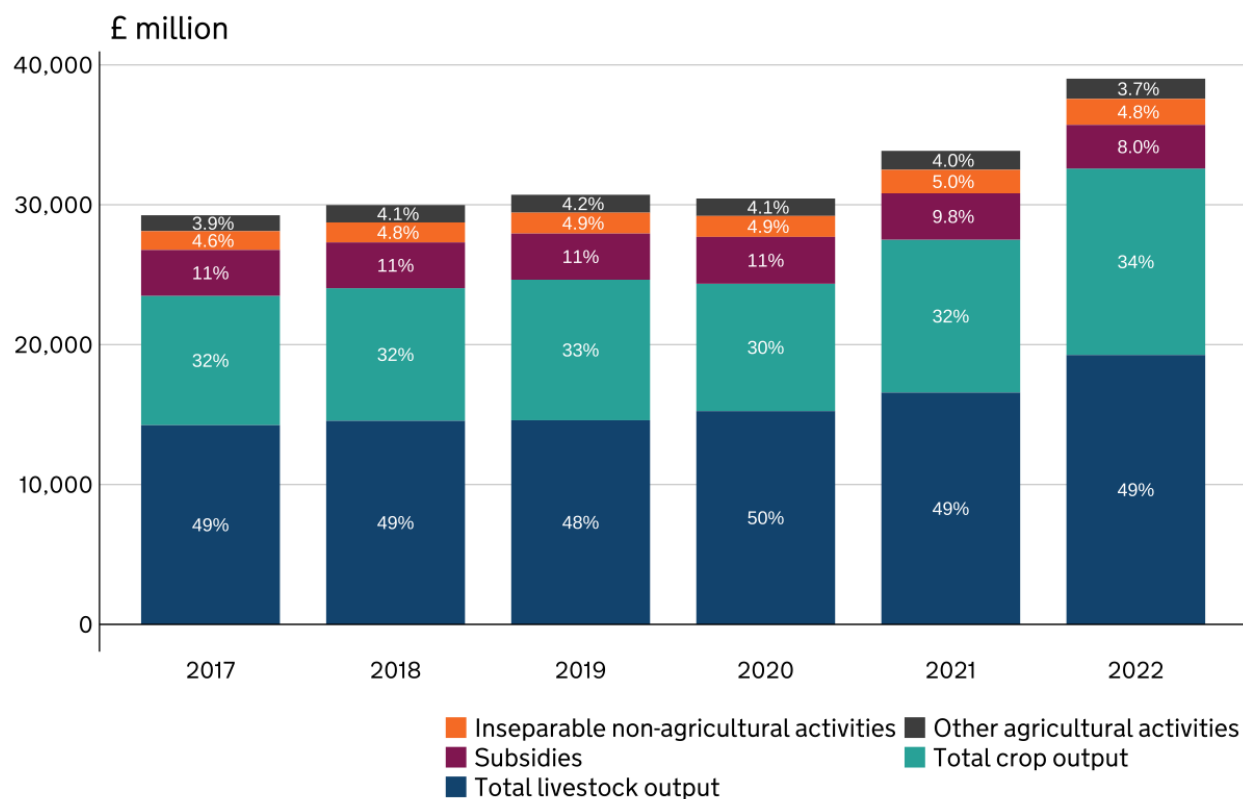
In this section, all values are provided in current prices which is considered the most intuitive approach for comparisons over a short time period. It should be noted that these values have not been adjusted for inflation, which was unusually high in 2022 at 5.0%.

Overview

Figure 4.2: Summary of outputs and subsidies, 2017 to 2022

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Text description of Figure 4.2: Figure 4.2 shows the value of all outputs and subsidies from 2017 to 2022. Values are presented in millions. Outputs and subsidies represent all financial incomes to farmers. Total livestock output is consistently the largest contributor to the value of all outputs and subsidies.

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In 2022, total livestock output was £19,261 million, an increase of £2,687 million (16%) on 2021. The second largest contribution to the value of outputs and subsidies in 2022 was total crop output at £13,330 million, an increase of £2,398 million (22%) on 2021. The remaining incomes to farmers in 2022 were subsidies (£3,120 million), inseparable non-agricultural activities (£1,857 million) and other agricultural activities (£1,448 million).

Total livestock output

Egg production figures have been revised following the publication of Total Income from Farming 2022. As such, the 2022 egg production and value of production figures quoted here will differ from those in Chapter 8: Livestock.

Figure 4.3: Main contributions to total livestock output (£ million)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

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Item	2021	2022
Milk	4,768	6,655
Beef	3,349	3,758
Poultry	3,031	3,149
Pigmeat	1,461	1,727
Mutton and lamb	1,574	1,626
Livestock gross fixed capital formation	1,422	1,539
Eggs	818	640

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The largest contribution to total livestock output in 2022 was milk with a value of £6,655 million. Milk also has the largest increase in value within total livestock output, with an increase of £1,887 million (40%) from 2021. This value increase was due to an increase in the price of milk, with the farmgate price of milk per litre being 12.9p (41%) higher than in 2021. Historically milk prices have been increasing steadily year-on-year whilst following a seasonal pattern of rising to a high in winter and falling to a low in early summer. Milk prices started in 2022 at an all time high, in current prices, and continued to rise every month throughout the year. These price increases were driven by a record high cost of production, which initially pushed some farmers out of the industry. However, the high milk prices encouraged farmers to keep production volumes high and so the volume of milk production was only down by 0.5% from 2021.

In 2022, the second largest increase in value in total livestock output was beef with an increase of £409 million (12%) on 2021. 2022 saw another year of high beef production with the volume of production increasing by 2.0% from 2021. Although demand for beef declined slightly at the beginning of the year, prices remained high as drought and increased feed costs led to some tightness in supply. Prices for beef were on average 8.7% higher each month than in 2021.

The largest decrease in value was eggs, with a decrease of £178 million (-22%) on 2021, driven by an overall decrease in production and a lower proportion of high value free range eggs, which together outweighed the impact of price increases throughout the year. There was a general decrease in production as a result of high input costs, Avian Influenza and a sectoral shift away from intensive and towards free range/barn production systems. Additionally, housing orders due to Avian Influenza in Spring and

Winter 2022 meant that eggs normally produced through free range systems were instead sold as lower value barn eggs.

Total crop output

Figure 4.4: Main contributions to total crop output (£ million)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

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Item	2021	2022
Wheat	2,705	4,059
Barley	1,168	1,815
Fresh vegetables	1,685	1,770
Plants and flowers	1,562	1,538
Fruit	890	989
Oilseed rape	488	878
Potatoes	746	705
Other crop products	845	601
Other industrial crops	426	456
Forage plants	205	158

Notes:

1. Potato prices and yield information were previously obtained from the AHDB who stopped producing data midway through in 2021. For 2022 we have estimated yields based on input from sector representatives, devolved administrations and coverage of the sector in the farming press. For prices we made use of the Northern Ireland published potato price figures.
2. 'Other industrial crops' includes the value of protein crops and sugar beet.

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The largest contribution to total crop output in 2022 was wheat with a value of £4,059 million. Wheat also saw the largest increase in value within total crop output, with an increase of £1,354 million (50%) from 2021, as a result of increases in both price and volume of production. In 2022 the unit value of wheat increased by 35% because the global cereals market was severely impacted by the invasion of Ukraine by Russia in February 2022. The volume of wheat produced in 2022 was 11% higher than in 2021, driven by an increased average yield of 10%. The crop benefited from strong planting conditions at the end of 2021 and was able to be harvested slightly earlier because of the unusually hot summer months.

In 2022, the second largest increase in value within total crop output was barley, with an increase of £647 million (55%) from 2021, driven by a price increase of 45%. This

moved barley from its usual position as the fourth or fifth largest contributor to total crop value to have the second largest output value of any crop in the account. As for wheat, the price increase was mainly dictated by the global cereals market, but there was also a bounce back of the brewing industry following Covid-19 which increased demand for barley and therefore price. Both winter and spring barley saw an increase in yield and, despite the reduction in planting area of spring barley, there was an overall increased production of barley in 2022 of 7.0%.

Oilseed rape in 2022 saw a substantial increase in value of £390 million (80%) from 2021. This increase was due to a 19% increase in area grown (though this was still the second lowest area since 1989) combined with a 16% increase in yield which led to a 39% increase in volume of production. Oilseed rape prices increased sharply following the instigation of the conflict in Ukraine, peaking in April before coming back down as the year went on, with an overall average price increase of 30%. Despite the high prices farmers are wary of growing oilseed rape due to the banning of common treatments that help stave off the cabbage stem flea beetle.

Other Outputs and Subsidies

Table 4.1: Breakdown of other incomes and subsidies (£ million)

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Item	2021	2022
Subsidies not linked to production	3,266	3,073
Inseparable non-agricultural activities	1,681	1,857
Other agricultural activities	1,354	1,448
Subsidies linked to production	47	47

Notes:

1. Since 2012, subsidies linked to production have only been paid in Scotland.
2. 'Subsidies not linked to production' includes all subsidies not directly linked to production, including the basic payment scheme and agri-environment schemes.

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Inputs and costs

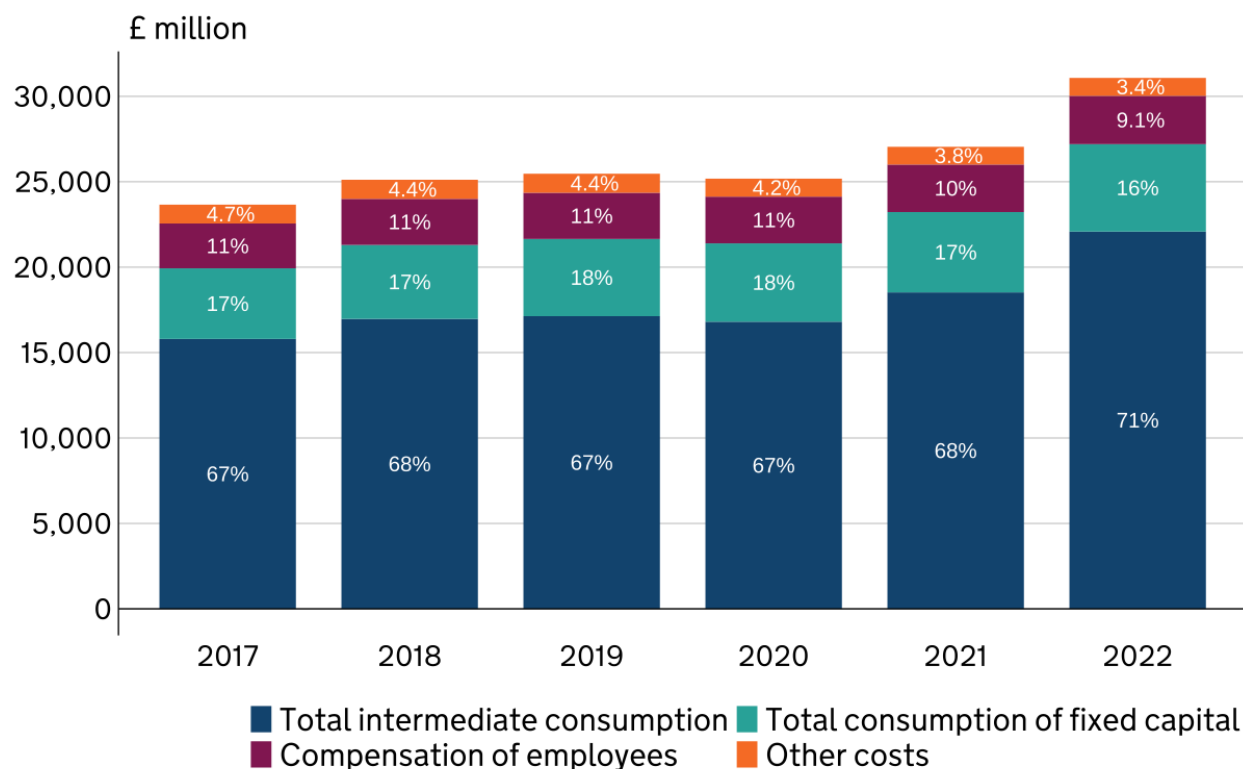
In this section, all values are provided in current prices which is considered the most intuitive approach for comparisons over a short time period. It should be noted that these values have not been adjusted for inflation, which was unusually high in 2022 at 5.0%.

Overview

Figure 4.5: Summary of inputs and costs, 2017 to 2022

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Text description of Figure 4.5: Figure 4.5 shows the make-up of all inputs and costs from 2017 to 2022. Inputs and costs represent all money paid out by farmers during a calendar year. Values are presented in millions.

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The make-up of all inputs and costs has been remarkably constant for the last 5 years. The largest cost facing farmers is intermediate consumption. In 2022 the value of intermediate consumption was £22,084 million, an increase of £3,560 million (19%) on 2021. The remaining costs in 2022 were total consumption of fixed capital (£5,116 million), compensation of employees (£2,828 million) and other costs (£1,047 million).

Inputs: Intermediate consumption

Figure 4.6: Main contributions to intermediate consumption (£ million)

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Chapter 4: Accounts

Item	2021	2022
Animal feed: compounds	3,998	4,945
Other goods and services	3,487	3,378
Fertilisers	1,400	2,490
Total maintenance	1,923	2,005
Animal feed: straights	1,778	1,926
Agricultural services	1,354	1,448
Animal feed: other	803	1,398
Motor and machinery fuels	921	1,371
Plant protection products	880	967
Electricity and fuels for heating	527	767
Seeds	812	748
Veterinary expenses	482	496

Notes:

1. Animal feed: other represents feed produced and used on farm or purchased from other farms.

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The largest contribution to intermediate consumption was compound animal feed with a value of £4,945 million, an increase of £946 million (24%) from 2021. In 2022 the volume of compound animal feed decreased across most sectors which led to a 4.5% overall reduction in volume from 2021. This reduction in volume was countered by a 30% increase in price which caused the overall increase in value.

The largest increase in value in intermediate consumption in 2022 was fertilisers, with an increase of £1,091 million (78%) from 2021. This rise was due to an increase in the price of fertiliser that far outweighed the reduction in volume used. Fertiliser production is energy intensive and the industry was heavily impacted by increasing natural gas prices, resulting in reduced domestic production and supply. In 2022 the average price of fertiliser increased by 104% from 2021 (with some individual fertiliser prices up by more than 300%). The reduction in volume of 13% came about because farmers were incentivised, by the high cost of fertiliser, to target application far more specifically than in other years, something which was only feasible due to the excellent growing conditions from late 2021 into 2022.

Total energy consumption ('motor and machinery fuels' and 'electricity and fuels for heating') saw an increase of £690 million (48%) from 2021 to 2022. This is reflective of the wider UK energy crisis, which has been further impacted by the war in Ukraine. There was a slight reduction in volume, primarily in electricity and fuels for heating, as less drying of crops was required due to warm harvesting weather.

Other Inputs and Costs

Table 4.2: Breakdown of other inputs and costs (£ million)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601
 Email: farmaccounts@defra.gov.uk

Item	2021	2022
Total consumption of fixed capital	4,701	5,116
Equipment consumption of fixed capital	2,144	2,353
Livestock consumption of fixed capital	1,438	1,544
Buildings consumption of fixed capital	1,120	1,220
Other taxes on production	-104	-104
Compensation of employees	2,781	2,828
Rent	541	537
Interest	392	406

Notes:

1. Due to high variability in the wages data, used in the calculation of compensation of employees, for the year 2021/2022, data for 2020/2021 has been carried forward. See [Revisions](#) for details

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Long Term Trends in TIFF

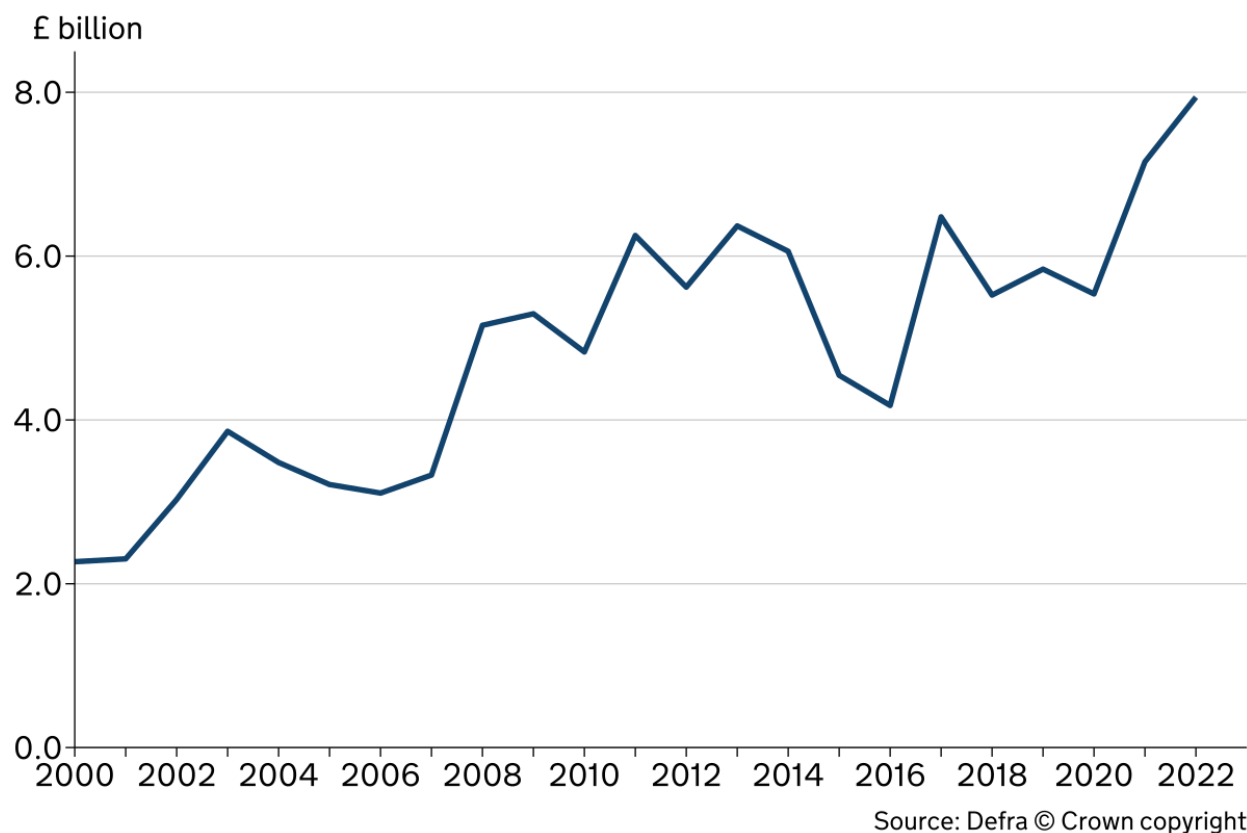
Values in this section are expressed in real terms at 2022 prices. The figures have been adjusted to account for inflation, which allows more meaningful comparisons between years over the longer term. However it should be noted that inflation was unusually high in 2022 at 5.0%.

Values in this section are expressed in real terms at 2022 prices. The figures have been adjusted to account for inflation, which allows more meaningful comparisons between years over the longer term. However it should be noted that inflation was unusually high in 2022 at 5.0%.

Figure 4.7: Long term trends in TIFF, 2000 to 2022

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Chapter 4: Accounts



Text description of Figure 4.7: Figure 4.7 shows the long term trend in TIFF from 2000 to 2022. TIFF is presented in millions.

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Table 4.3: Headline figures in real terms 2017 to 2022 (£ billion)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk

Item	2017	2018	2019	2020	2021	2022
Total crop output	10.7	10.8	11.2	9.6	11.5	13.3
Total livestock output	16.5	16.5	16.2	16.0	17.4	19.3
Total intermediate consumption	18.3	19.3	19.1	17.7	19.5	22.1
Total income from farming	6.5	5.5	5.8	5.5	7.2	7.9

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In real terms, UK TIFF rose strongly between 2000 and 2008, then remained around the £4 billion to £6 billion range, with some large year-on-year fluctuations, up to 2020.

TIFF fell sharply in 2015 driven by lower commodity prices and a stronger pound. In 2016 the exchange rate improved but a poor harvest and continued low commodity prices kept income low. In 2017, TIFF reached the highest point for 20 years as a result

of a favourable combination of a weaker pound, strong commodity prices and high levels of production. In 2018, extreme weather conditions led to poor yields and pushed up the price of key inputs. These factors were not fully offset by strong commodity prices resulting in a 14.7% fall in TIFFF that year.

More recently, favourable weather in 2019 produced modest increases to both crop output and TIFFF. In 2020, poor weather during winter sowing resulted in the lowest wheat value, in real terms, since 2006. This was offset by a strong year for livestock and relatively low year for costs, resulting in a modest 5.1% fall in TIFFF from 2019. 2021 saw more typical weather than 2020 resulting in a large increase in output values, particularly crops, which outweighed increases in inputs and costs. This, combined with inflation of less than 0.1%, led to the sharp increase (29.1%) in TIFFF seen between 2020 and 2021.

In 2022, TIFFF was £7.9 billion, an increase of £0.8 billion (11%) in real terms from 2021. Although high prices raised input costs, these were outweighed by high output prices resulting in the highest TIFFF value, in real terms, since 1995.

Balance Sheet for the United Kingdom Agricultural Industry

Table 4.4: Balance sheet (£ million)

Item	2019	2020	2021	2022
Total fixed assets	275,284	286,416	329,139	324,802
Total current assets	15,334	16,306	16,676	18,392
Total assets	290,619	302,722	345,815	343,194
Total long and medium term liabilities	15,286	15,523	15,696	15,587
Total short term liabilities	6,003	5,466	5,543	5,582
Total liabilities	21,290	20,989	21,239	21,169
Net worth	269,329	281,733	324,576	322,025

Notes:

1. Balance sheet as at December each year

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Table 4.4 presents the agricultural balance sheet which values the assets and liabilities for agriculture at the end of each calendar year and estimates the net worth of the industry. Overall net worth is estimated to have been £322,025 million in 2022, a decrease of £2,551 million (-0.8%) on 2021. This was the result of a decrease in total assets of -0.8% and a decrease in total liabilities of -0.3%. Land is the largest fixed asset in the agricultural industry with a value of £277,001 million in 2022, a decrease of -2.0% on 2021.

Table 4.5: Balance sheet in real terms (£ million)

Item	2019	2020	2021	2022
------	------	------	------	------

Chapter 4: Accounts

Item	2019	2020	2021	2022
Total assets	323,458	318,158	363,105	343,194
Total liabilities	23,695	22,059	22,301	21,169
Net worth	299,763	296,099	340,805	322,025

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In real terms at 2022 prices, net worth decreased by -5.5% from 2021. Total assets decreased by -5.5% and total liabilities decreased by -5.1%.

Revisions

The estimate of TIFF for 2021, published in May 2022, has been revised upwards by £813 million (13.5%). TIFF is calculated as the (relatively small) difference between two large numbers, 'outputs and subsidies' and 'inputs and costs', and so minor changes in these numbers can feed through to cause a large change in the value of TIFF. The 13.5% increase in TIFF in 2021 is the result of a 1.0% increase in 'outputs and subsidies' and a 1.6% decrease in 'inputs and costs' (See Table 6 below).

Table 4.6: Revisions in total outputs, costs and TIFF (£ million)

Item	Previous estimate for 2021 (Published May 2022)	Current estimate for 2021 (Published May 2023)	% change (from May 22 to May 23 estimate)
All outputs and subsidies	33,221	33,751	1.6%
All inputs and costs	27,223	26,940	-1.0%
Total income from farming	5,998	6,811	13.5%

The main amendments on the output side of the account were in inseparable non-agricultural activities (diversification) and in the value of poultry. Due to a lack of data at the time of the previous release the value for diversification was carried forward from 2020, this year using the Farm Business Survey data we have estimated diversification in 2021 to be £184 million higher than the previously used value. The value of poultry for meat for 2021 was revised upwards due to a change in the methodology in estimating hatchery numbers, this had the effect of increasing the value of poultry by £130 million.

Table 4.7: Revisions larger than £100 million in outputs from 2021 (£ million)

Item	Previous estimate for 2021 (Published May 2022)	Current estimate for 2021 (Published May 2023)	% change (from May 22 to May 23 estimate)
Poultry	2,901	3,031	4.5%

Chapter 4: Accounts

Item	Previous estimate for 2021 (Published May 2022)	Current estimate for 2021 (Published May 2023)	% change (from May 22 to May 23 estimate)
Inseparable non-agricultural activities	1,496	1,681	12.3%

The largest amendments on the costs side of the account were decreases in fertilisers and compound animal feed with an increase in straight animal feed. Revisions to 2021 animal feed accounts are due to a combination of revised usage data and trade figures, the revision in compound animal feed was a revision down of £256 million and the revision in straight animal feed was an increase of £120 million. The fertiliser market commentary which our estimate was based on predicted an increase in 2021 larger than results of the Farm Business Survey would indicate. This is possibly because there was a feed through of forward buying which meant that the volume of fertilisers used and thus reflected in the market commentary did not reflect the volume of fertiliser bought.

Table 4.8: Revisions larger than £100 million in inputs and costs (£ million)

Item	Previous estimate for 2021 (Published May 2022)	Current estimate for 2021 (Published May 2023)	% change (from May 22 to May 23 estimate)
Fertilisers	1,617	1,400	-13.4%
Animal feed: compounds	4,254	3,998	-6.0%
Animal feed: straights	1,658	1,778	7.2%

As a result of more data becoming available over time there have also been minor revisions to earlier years in this release. These revisions are intended to enhance the precision of these estimates. Sometimes additional revisions are necessary to refine the methodology or correct historical errors.

Below are a list of further revisions that have been carried out since the last publication:

- There have been minor revisions to the value of most outputs and inputs for 2021, owing to additional data becoming available since the 2021 estimate was published. Primarily this is data from Wales and Northern Ireland.
- The wages for salaried managers as reported in the 2021/2022 were subject to several anomalous responses and so the wages for the 2020/2021 Farm Business Survey have been carried over so any changes to the value of compensation of employees is due to a change in numbers of workers

Chapter 4: Accounts

- Due to a corrected mistake there have been revisions to livestock slaughter and herd numbers for 2021. For more details of this revision see [Monthly UK statistics on cattle, sheep and pig slaughter and meat production - statistics notice](#)

Glossary of other key Terms

- **Gross Value Added (GVA)** is computed as Gross output minus intermediate consumption and represents that contribution of a business, sector or industry to Gross Domestic Product (GDP).
- **Basic price** is the market price plus directly paid subsidies that are linked to the production of specific products.
- **Current price** is the value based on prices observed during the reference year (i.e. values not adjusted for inflation). The alternative to current price is 'real terms'.
- **Real terms** is where values from previous years have been adjusted for inflation. The alternative to real terms is 'current price'.
- **Intermediate consumption** is the goods and services used as inputs in the productive process, e.g. feed, energy and fertilisers.
- **Other costs** includes other taxes on production, rent and interest paid.

Chapter 5: Productivity

Summary

Key results for 2022 compared to 2021:

- **Total Factor Productivity** is estimated to have increased by 3.4% between 2021 and 2022. This was driven by a decrease in the volume of all inputs and a slight increase in the volume of all outputs.
- The volume of **all outputs** decreased by <0.1%. 2022 saw an increase in total crop output of 1.7% whilst total livestock output decreased by 1.7%. The notable changes in crop output were increases in oilseed rape (39%) and barley (12%), with decreases in sugar beet (-18%) and in 'vegetables and horticultural products' (-4.9%). All livestock outputs in 2022 changed by less than 4% up or down except for the output of eggs which fell by 21%.
- The volume of **all inputs** decreased by 3.3%. This decrease in the volume of inputs is the result of decreases across all input items in the account except veterinary expenses and labour, which saw small increases. The inputs that saw the largest percentage decreases were fertilisers (-13%), seeds (-12%) and animal feed (-6.7%).

Figure 5.1: Summary of key indices 2021 to 2022 (1973 = 100)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk

Item	2021	2022
All outputs	137.9	137.9
All inputs	85.2	82.4
Total factor productivity	161.8	167.3

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Introduction

Total Factor Productivity (TFP) is a measure of how well inputs are converted into outputs, giving an indication of the efficiency and competitiveness of the agricultural industry. Although external factors such as weather conditions or disease outbreaks may have a short-term impact on productivity, it is developments that improve productivity over a longer period that constitute one of the main drivers of agricultural income.

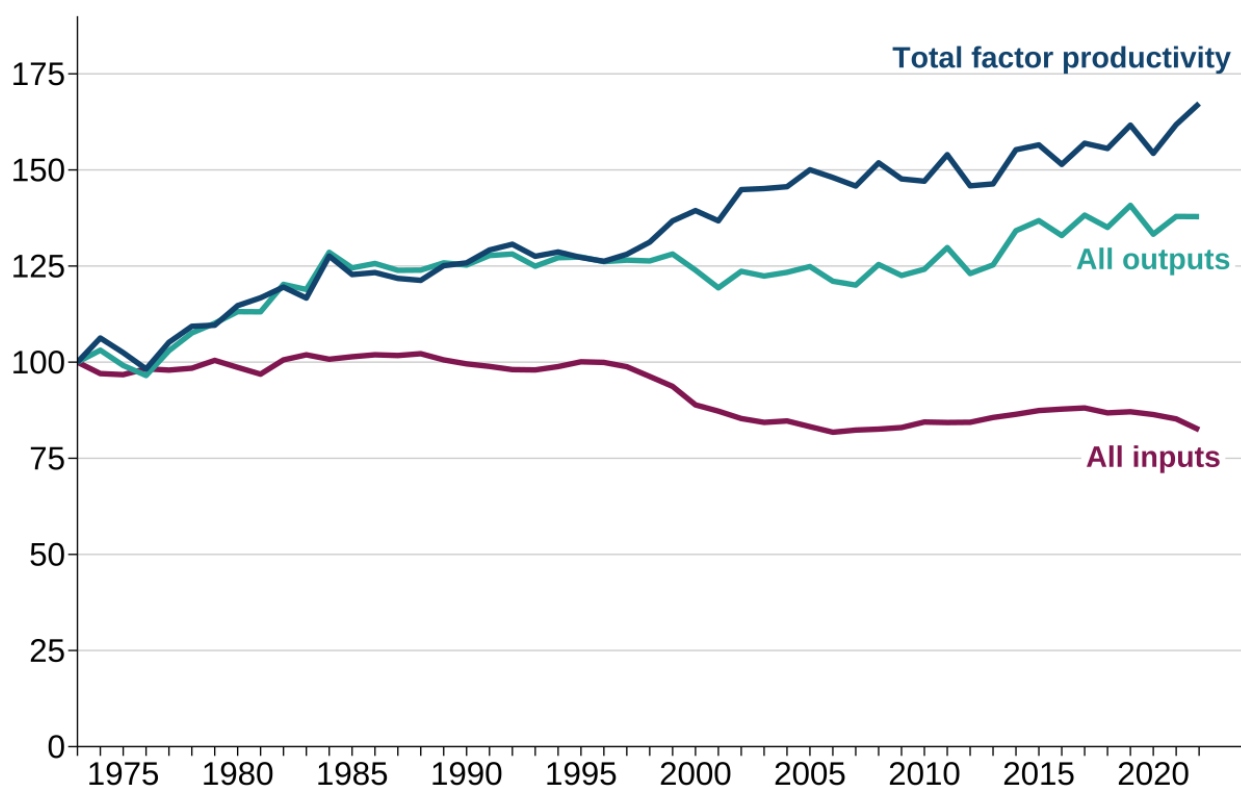
TFP estimates are derived from the aggregate farm accounts data used to calculate UK Total Income from Farming (TIFF) presented in Chapter 4.

Long term trends

Figure 5.2: Long term trend in TFP of the UK agricultural industry (1973 = 100)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk



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Text description of Figure 5.2: Figure 5.2 is a line chart showing the trend in Total Factor Productivity from 1973 to 2022. The chart is presented as an index (1973 = 100). Data is shown for All inputs, All outputs and Total factor productivity.

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TFP of the agricultural industry in the United Kingdom increased by 3.4% between 2021 and 2022. This was driven by a decrease in the volume of all inputs whilst the volume of all outputs decreased by <0.1%. As shown in Figure 5.2, this continues the pattern of annual fluctuations seen from around the year 2000 onwards. Despite this annual variability, the long-term trend is still one of slow but overall improvement in TFP.

Since the series began in 1973, TFP has increased by 67%, driven by an increase in the volume of all outputs of 38% and a decrease in the volume of all inputs of 18%.

Annual changes, 2021 to 2022

Headline Figures

All outputs

'All outputs' represents the change in volume (expressed as an index based to 1973) of all outputs sold off the farm, excluding transactions within the agricultural industry.

Table 5.1: Volume indices for outputs (1973 = 100)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

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Item	2021	2022	Annual Change
Output of cereals	175.5	183.8	4.7%
Output of industrial crops	210.6	237.5	13%
Output of forage plants	99.3	99.3	0.0%
Output of vegetables and horticultural products	81.8	77.8	-4.9%
Output of potatoes	91.6	85.4	-6.9%
Output of fruit	123.2	132.8	7.8%
Output of other crop products	126.9	120.0	-5.4%
Total crop output	141.9	144.3	1.7%
Output of livestock (meat)	133.3	132.2	-0.8%
Output of livestock products	109.4	105.9	-3.2%
Total livestock output	123.5	121.4	-1.7%
Inseparable non-agricultural activities	600.5	635.0	5.7%
All outputs	137.9	137.9	0.0%

Notes:

1. Potato prices and yield information were previously obtained from the AHDB who stopped producing data midway through in 2021. For 2022 we have estimated yields based on input from sector representatives, devolved administrations and coverage of the sector in the farming press.

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Chapter 5: Productivity

The volume of all outputs decreased by <0.1% between 2021 and 2022. This was the result of an increase of 1.7% in the volume of total crop output and a decrease of 1.7% in the volume of total livestock output.

The largest percentage increase within total crop output was in the industrial crops, which increased by 13%. This rise in industrial crops was primarily due to a 39% increase in the volume of oilseed rape produced, as a result of an 19% increase in the area grown and a 16% increase in average yield from 2021.

The biggest change in total livestock output was in the output of livestock products, which decreased by 3.2%. This fall in the volume of livestock products was driven by a 22% decrease in the volume of production of eggs, which was impacted by Avian Influenza, high input costs and a sectoral shift away from intensive and towards free range/barn production systems.

All inputs

'All inputs' represents the change in volume (expressed as an index based to 1973) of all goods and services purchased and consumed, excluding transactions within the agricultural industry.

Table 5.2: Volume indices for inputs (1973 = 100)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk

Item	2021	2022	Annual Change
Seeds	115.7	101.9	-12%
Energy	49.1	48.1	-2.1%
Fertilisers	59.9	52.2	-13%
Plant protection products	299.5	298.4	-0.4%
Veterinary expenses	121.1	122.9	1.5%
Animal feed	136.2	127.2	-6.7%
Total maintenance	57.8	54.1	-6.3%
FISIM	100.0	100.0	0.0%
Other goods and services	129.9	127.6	-1.8%
Intermediate consumption	101.9	96.1	-5.7%
Consumption of fixed capital	123.0	122.9	-0.1%
All labour	51.2	51.2	0.1%
Land	97.3	95.1	-2.2%
All inputs and entrepreneurial labour	85.2	82.4	-3.3%

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Chapter 5: Productivity

The volume of all inputs decreased by 3.3% between 2021 and 2022. As seen in Table 5.2, this decrease in the volume of inputs is the result of decreases across all of the individual items apart from veterinary expenses and labour in 2022.

The largest percentage decrease in inputs was fertilisers, which decreased by 13%. The decrease in fertiliser seen in 2022 was the result of farmers cutting down on fertiliser usage in response to record high prices. Fertiliser production is energy intensive and the industry was heavily impacted by increasing natural gas prices, resulting in reduced domestic production and supply. The reduction in volume of 13% came about because farmers were incentivised, by the high cost of fertiliser, to target application far more specifically than in other years, something which was only feasible due to the excellent growing conditions from late 2021 into 2022.

The second largest decrease in inputs was in seeds which decreased by 12% from 2021, primarily in the cereals sector. Seed usage is driven by a combination of crop area, time of drilling, and drilling conditions. For crops planted in spring 2022, seed rates decreased as a result of good drilling conditions, which enabled crops to be sown during optimal time windows without needing to increase the seed rate. The area of spring 2022 crops also decreased from 2021 due to an increase in winter cropping (planted in autumn 2021), with a 13% reduction seen in the area of spring barley. Favourable weather conditions also led to a slight increase in winter crop areas in autumn 2022 from 2021.

Partial productivity

Partial productivity shows the impact key inputs have on productivity. It measures total outputs against a part of the inputs.

Table 5.3: Partial factor productivity (1973 = 100)

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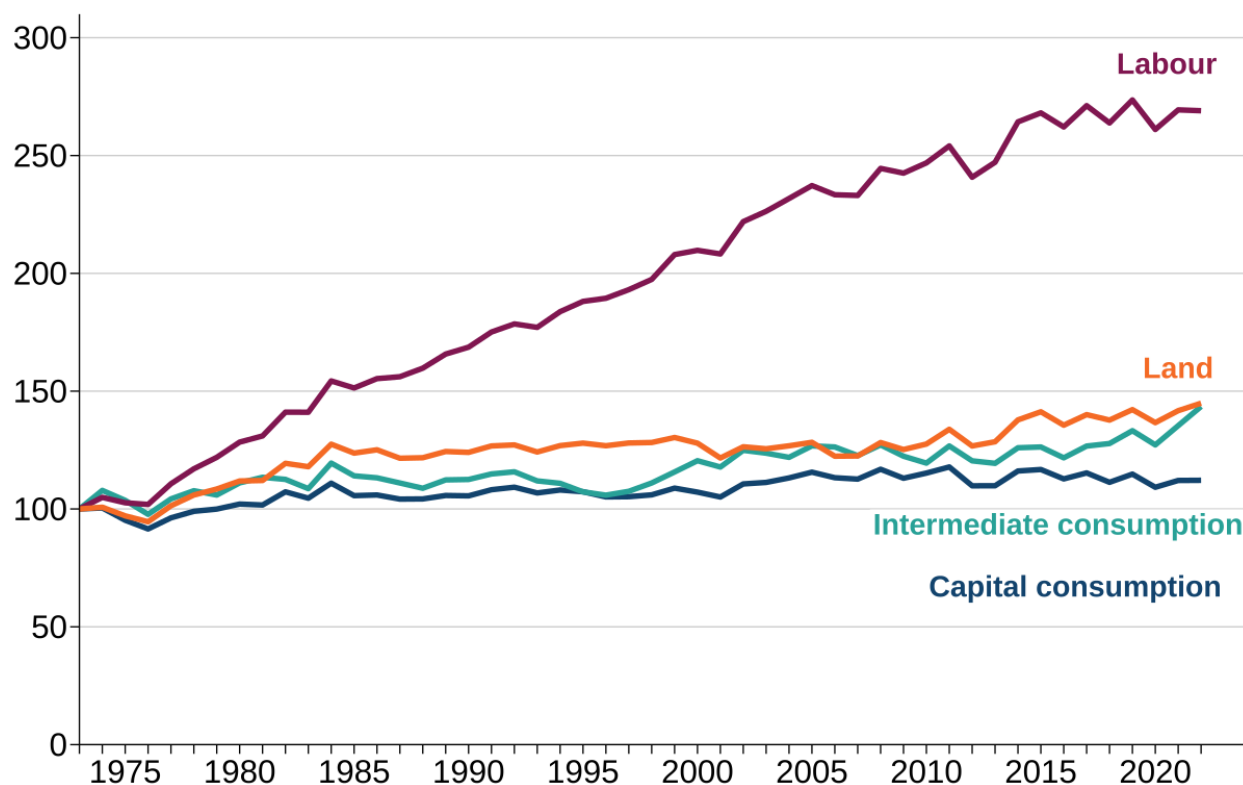
Email: farmaccounts@defra.gov.uk

Item	2021	2022	Annual Change
Productivity by intermediate consumption	135.4	143.5	6.0%
Productivity by capital consumption	112.1	112.2	0.1%
Productivity by labour	269.4	269.0	-0.1%
Productivity by land	141.7	144.9	2.2%

Figure 5.3: Long term trend in partial productivity indicators (1973 = 100)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk



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Text description of Figure 5.3: Figure 5.3 is a line chart showing the long term trend in partial productivity indicators from 1973 to 2022. The chart is presented as an index (1973 = 100). Data is shown for labour, land, intermediate consumption and capital consumption.

Table 5.3 and Figure 5.3 show that labour is the key input driving productivity gains. Productivity by labour shows a steady increase over the whole period since 1973. Labour volumes are now approximately half of what they were in 1973. However, more recent growth in labour productivity is due to increased output rather than a reduction in labour volume.

Revisions

Figures for 2022 are provisional and subject to revision.

As a result of more data becoming available over time there have been minor revisions to earlier years in this release. These revisions are intended to enhance the precision of

Chapter 5: Productivity

these estimates. Sometimes additional revisions are necessary to refine the methodology or correct historical errors.

Below are a list of key revisions that have been carried out since the last publication:

- The 2021 volumes for most outputs have been revised slightly, owing to additional data becoming available since the publication of the estimate for 2021 in May 2022.
- The volume indices for poultry have been revised for 2021 following a review of the methodology for acquiring slaughter numbers.
- Potato prices and yield information were previously obtained from the AHDB who stopped producing data midway through in 2021. For 2022 we have estimated yields based on input from sector representatives, devolved administrations and coverage of the sector in the farming press.
- The 2021 volume indices for inputs have been updated following incorporation of the latest available survey data, which has replaced market intelligence and forecast data that were previously used in production of the estimates. The most notable changes are decreases in fertiliser and plant protection products. These items saw larger changes due to manufacturing difficulties in the UK following the closure of factories due to the cost of production.

Chapter 6: Prices

Summary

- The annual average price index for all agricultural **outputs** increased by 19% from 2021 to 2022.
- The largest upward contribution to the annual inflation rate for agricultural **outputs** was from milk (8.2 percentage points), followed by wheat (3.1 percentage points) and barley (1.7 percentage points). The main downward contribution came from forage plants (-0.2 percentage points).
- The annual average price index for all agricultural **inputs** increased by 28% from 2021 to 2022.
- The largest upward contribution to the annual inflation rate for agricultural **inputs** was from fertilisers and soil improvers (9.6 percentage points), followed by compound feedingstuffs (6.8 percentage points) and energy and lubricants (4.2 percentage points).

Data sources

The Agricultural Price Index (API) measures the monthly price changes in agricultural outputs and inputs for the UK.

The output series reflects the prices farmers receive for their products, also referred to as farm-gate prices. Information is collected for all major crops (for example cereals, fruit and vegetables), and for livestock and animal products (for example sheep, milk, and eggs). It should also be noted that the price index for poultry is based on deadweight price reporting by processors. These prices are not directly comparable with poultry prices referenced in Chapter 8 which estimate the cost to producers.

The input series reflects the prices farmers pay for goods and services and is split into two groups: goods and services currently consumed, and goods and services contributing to investment. Goods and services currently consumed refer to items that are used up in the production process (for example fertiliser or seed). Goods and services contributing to investment relate to items that are required but not consumed in the production process, such as tractors or farm buildings.

Further information can be found in the monthly [Agricultural Price Index](#) publication.

Summary chart for price indices

Figure 6.1: Annual average price indices for agricultural outputs and inputs, 2020 to 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk

Year	All agricultural outputs	All agricultural inputs
2020	100.0	100.0
2021	109.9	111.4
2022	130.6	143.2

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Figure 6.1 shows the annual average price indices for agricultural outputs and inputs since 2020. Compared with 2021, the annual average price index for 2022 is 19% higher for agricultural outputs and 28% higher for agricultural inputs.

In contrast with 2021, the price index for inputs was greater than that for outputs in 2022. Both price indices are currently at their highest value in the time series.

Contributions to the annual agricultural outputs and inputs inflation rates

Figure 6.2: Contributions to change in the agricultural outputs annual inflation rate between 2021 and 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

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Category	Contribution (percentage points)
Milk	8.2
Wheat	3.1
Barley	1.7
Cattle and calves	1.4
Pigs	1.1
Oilseed rape	1.1
Fresh vegetables	0.7
Eggs	0.3
Poultry	0.3
Sugar beet	0.2
Oats	0.2
Plants and flowers	0.2
Potatoes	0.1
Sheep and lambs	-0.1
Fresh fruit	-0.1
Forage plants	-0.2

Notes:

1. Not all agricultural output categories are shown in Figure 6.2. Therefore, the sum of the contributions in Figure 6.2 may be slightly less than the annual inflation rate.

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Figure 6.2 shows the contributions to the agricultural outputs inflation rate of 19% observed between 2021 and 2022. Thirteen out of the sixteen output categories shown reported higher prices. The largest upward contribution came from milk - much of this can be explained by sharp price rises in inputs used in milk production, particularly fuel and animal feed. The emergence of conflict between Russia and Ukraine has seen significant upward contributions from key cereal crops, including wheat and barley.

Figure 6.3: Contributions to change in the agricultural inputs annual inflation rate between 2021 and 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk

Category	Contribution (percentage points)
Fertilisers and soil improvers	9.6
Compound feedingstuffs	6.8
Energy and lubricants	4.2
Straight feedingstuffs	2.2
Materials	1.7
Buildings	1.1
Other goods and services	0.9
Maintenance of buildings	0.8
Plant protection products	0.5
Maintenance of materials	0.4
Seeds	0.2
Veterinary services	0.0

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Figure 6.3 shows the contributions to the agricultural inputs inflation rate of 28% observed between 2021 and 2022. All twelve output categories shown reported higher prices. The largest upward contributions came from fertilisers and soil improvers, followed by compound feedingstuffs, and energy and lubricants. As energy-intensive commodities, fertiliser prices have been strongly impacted by the large rises in wholesale energy costs. Conflict between Russia and Ukraine has led to tight supplies of several key animal feedingstuffs, including feed wheat and feed barley, placing both compound and straight feedingstuffs as significant upward contributors to the agricultural inputs inflation rate.

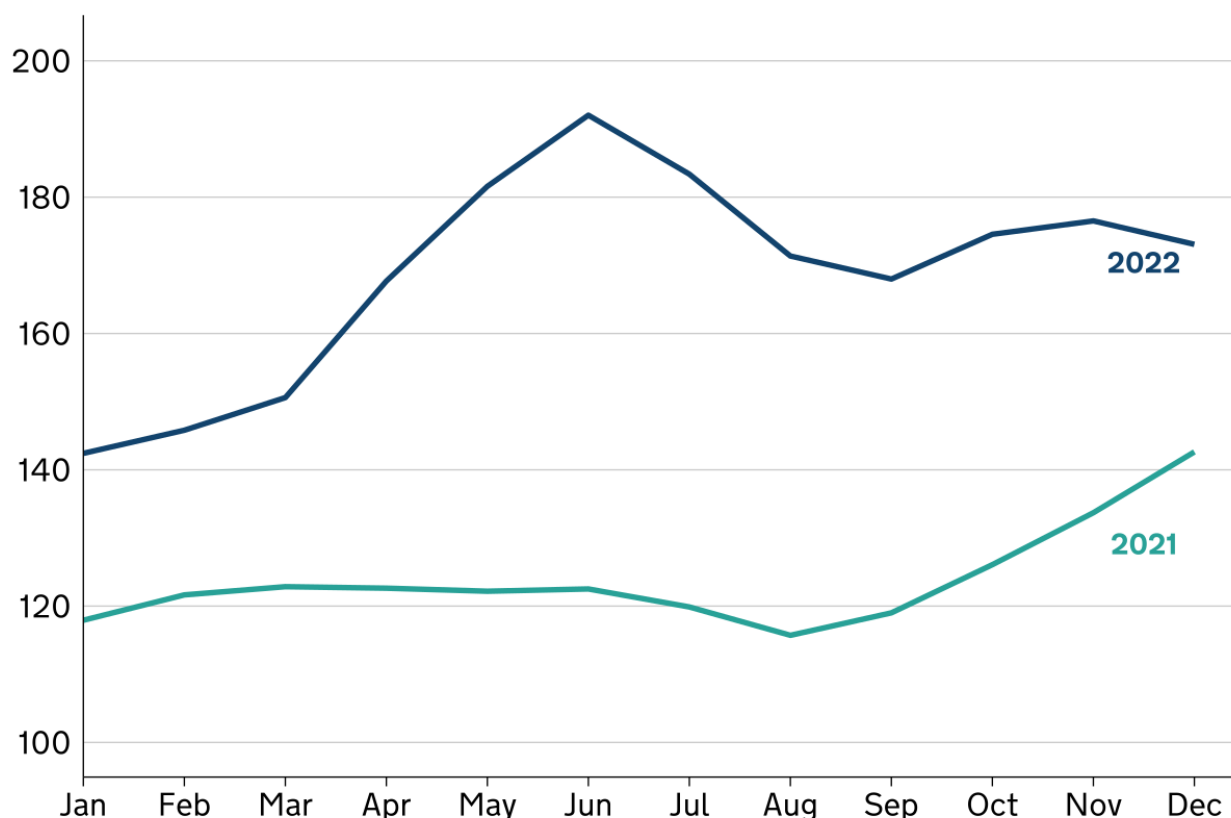
Trends in price indices through the year

Agricultural outputs

Figure 6.4: Monthly cereal price index, 2021 and 2022 (2020 = 100)

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Email: katie.fisher@defra.gov.uk



Text description for Figure 6.4: Figure 6.4 is a line chart showing the monthly price index for cereals in 2021 and 2022. The cereals price index increased significantly in the final four months of 2021 and the first half of 2022, peaking in June 2022. Steady declines and a minor fluctuation were observed in the second half of 2022.

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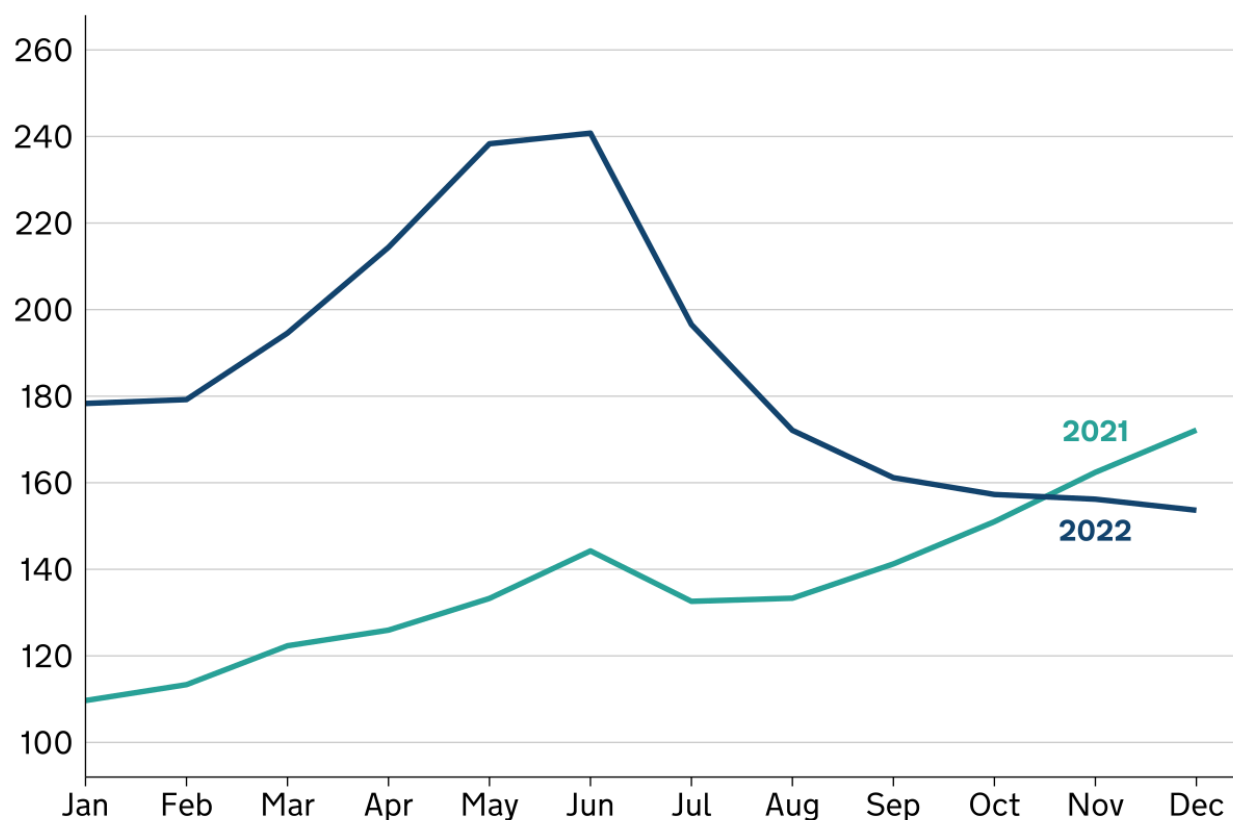
The annual price index for cereals increased by 36% in 2022 compared with 2021. This was driven by the tight supply-demand balance that dominated 2022, brought about by the onset of the conflict between Russia and Ukraine in February. Prices rose rapidly throughout the first half of the year, before falling from July when a deal was signed between the two countries to allow the resumption of grain exports from the Black Sea region. Prices remained volatile as uncertainties remained over subsequent extensions of the grain export deal, with slow plantings in the Southern Hemisphere, particularly in Argentina, contributing to continued high prices towards the end of 2022.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.5: Monthly oilseed rape price index, 2021 and 2022 (2020 = 100)

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Email: katie.fisher@defra.gov.uk



Text description for Figure 6.5: Figure 6.5 is a line chart showing the monthly price index for oilseed rape in 2021 and 2022. The price index for oilseed rape increased steadily throughout 2021 and strongly in the first half of 2022, reaching a peak in June 2022. Strong declines were then observed in the summer before more steady declines towards the end of the year.

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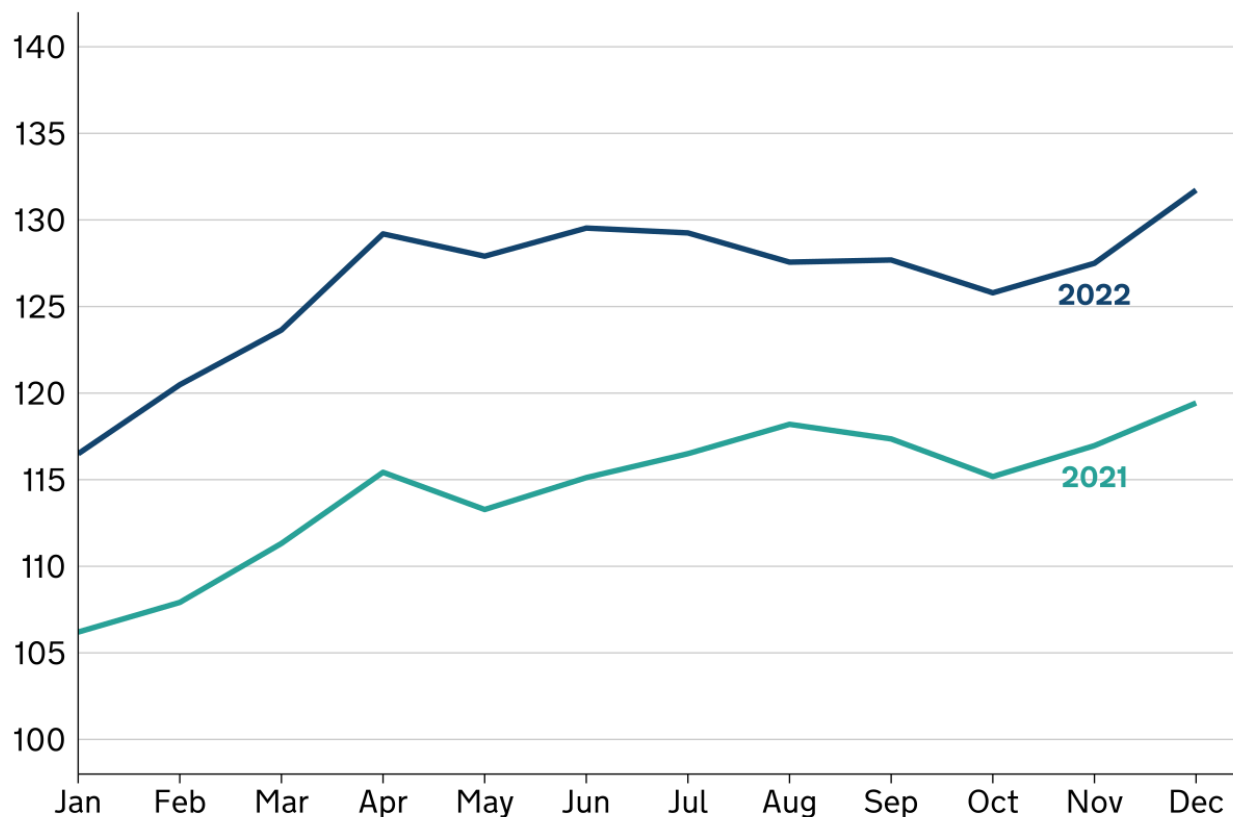
The annual price index for oilseed rape increased by 37% in 2022 compared with 2021. As for cereals, a mid-year peak was observed for oilseed rape prices, with price declines in the second half of the year. The observed price increases were driven by significantly reduced Ukrainian exports amid the conflict with Russia, with the Black Sea export deal helping to ease prices in the second half of the year.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.6: Monthly cattle and calves price index, 2021 and 2022 (2020 = 100)

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Text description for Figure 6.6: Figure 6.6 is a line chart showing the monthly price index for cattle and calves in 2021 and 2022. The price index for cattle and calves steadily increased throughout 2021 and 2022, with slight drops in May and October of both years.

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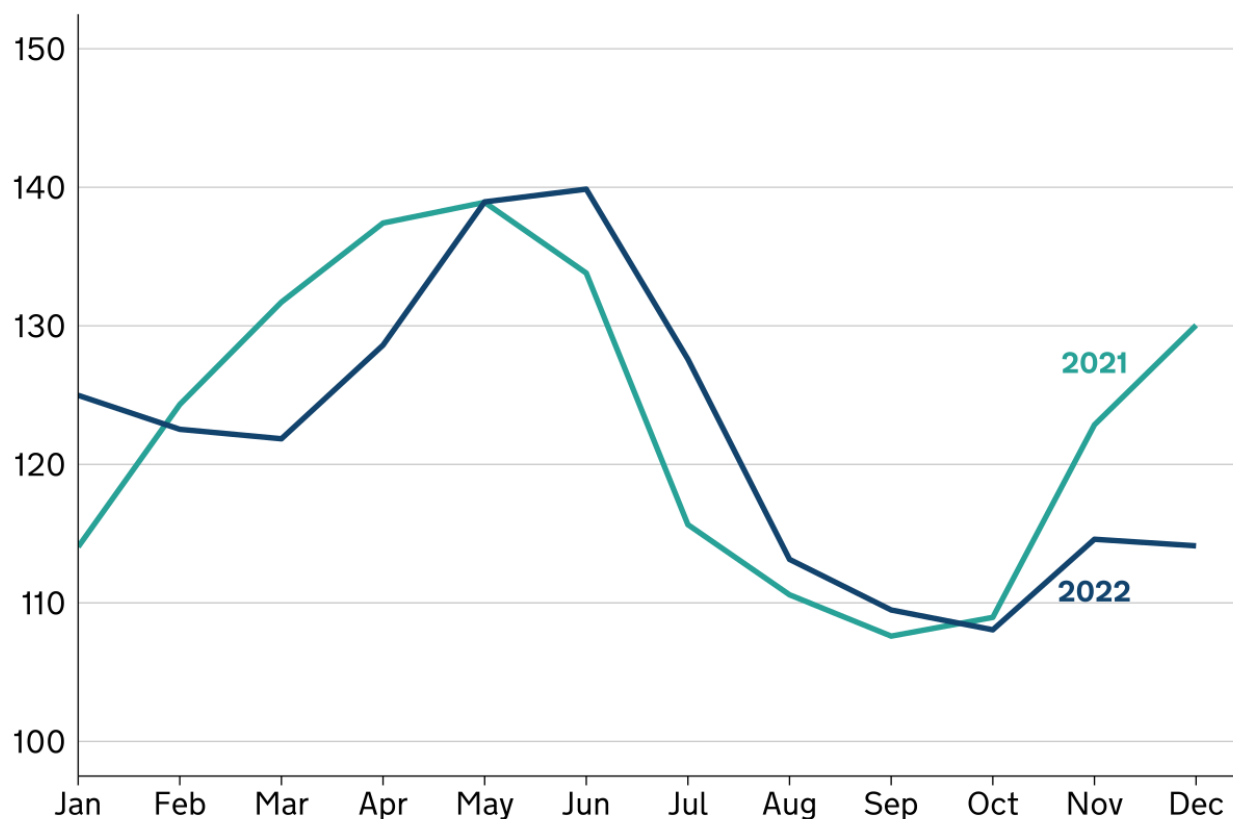
The annual price index for cattle and calves increased by 10% in 2022 compared with 2021. Moderate price increases were recorded in the first quarter of 2022 with prices stabilising over the rest of the year. The observed increases can be attributed to rises in animal feed costs, which saw strong price growth early in 2022 in line with cereal price growth. Increases in throughput later in the year were able to keep prices for cattle somewhat stable despite the high feed prices, though seasonal price growth was observed at the end of the year.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.7: Monthly sheep and lambs price index, 2021 and 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk



Text description for Figure 6.7: Figure 6.7 is a line chart showing the price index for sheep and lambs for 2021 and 2022. The price index fluctuated in both years, with the highest values observed in the spring and early summer months. Increases were also observed towards the end of each year, particularly in 2021.

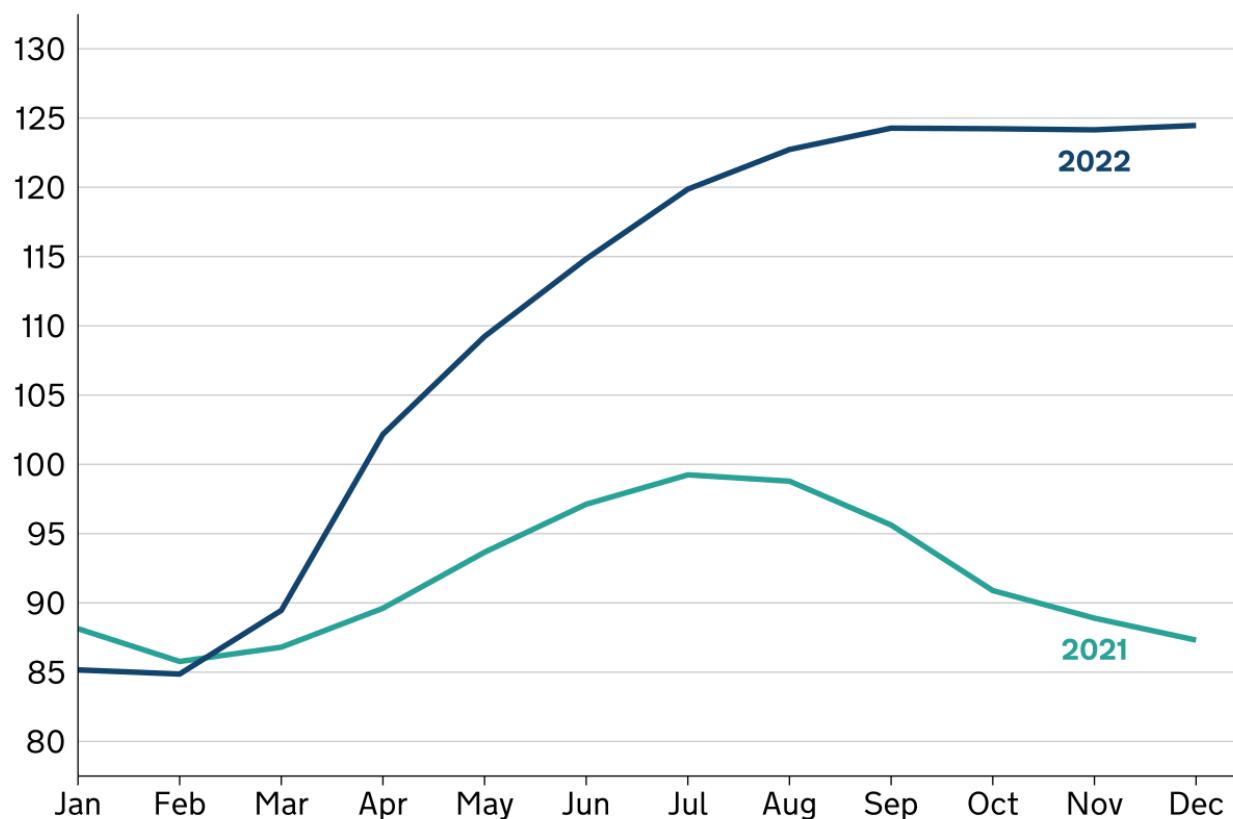
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The annual price index for sheep and lambs decreased by 0.7% in 2022 compared with 2021, with fluctuations observed across the year similar to those seen in 2021. Price increases were seen in the first half of the year as a result of lower throughput. Retail sales of lamb fell over the summer months as inflation climbed and consumers switched to cheaper forms of protein (e.g. pork), contributing to the price falls seen over this time. Lamb prices continued to ease towards the end of the year in line with feed prices and with increased throughputs.

Figure 6.8: Monthly pigs price index, 2021 and 2022 (2020 = 100)

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Text description for Figure 6.8: Figure 6.8 is a line chart showing the monthly price index for pigs for 2021 and 2022. The price index for pigs fluctuated in 2021, peaking in July, while strong increases were observed in 2022, particularly in the spring. The price index levelled off towards the end of 2022.

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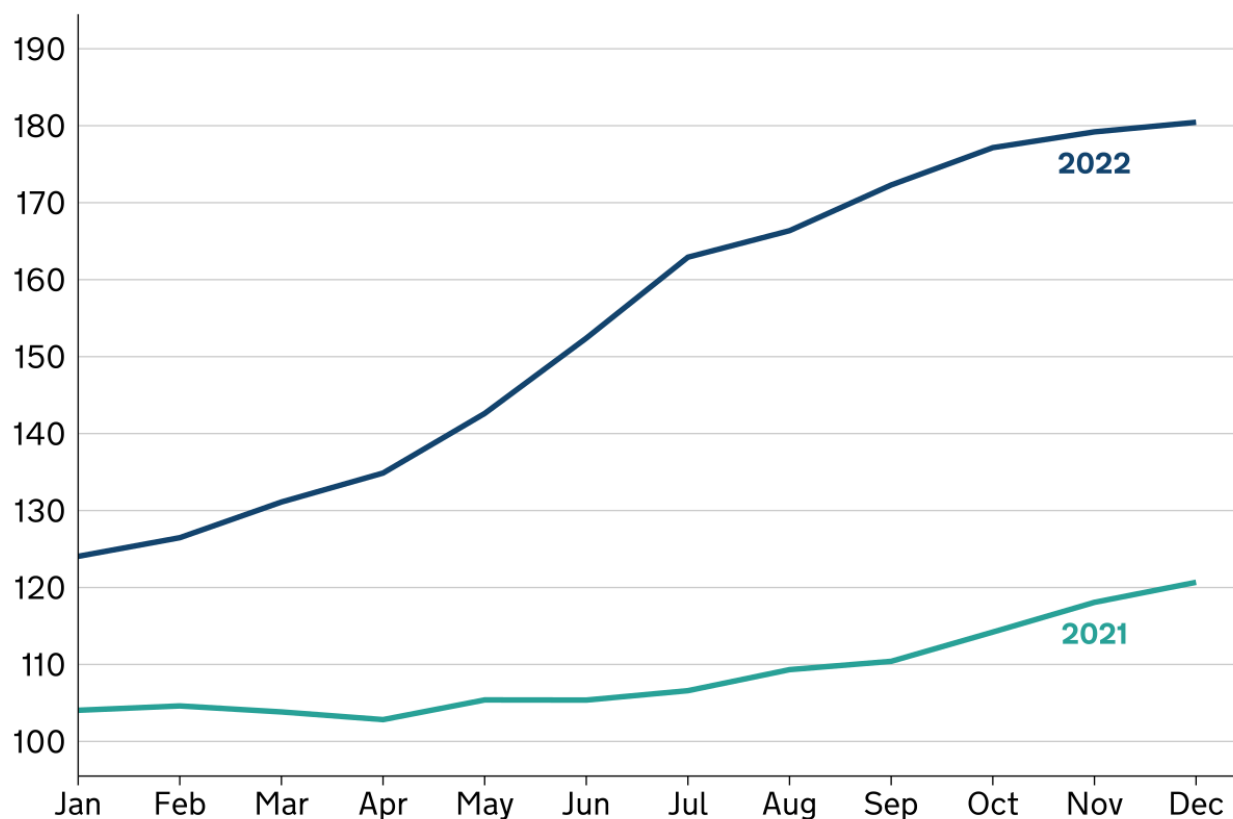
The annual price index for pigs increased by 20% in 2022 compared with 2021. Strong price growth was observed in the first half of 2021 with rapid increases in animal feed prices, driven by the impact of the war in Ukraine on the global cereals market. A notable change for 2022 is the lack of the usual seasonal price movements for pork, which would usually follow a pattern of price increases leading up to the summer followed by decreases thereafter. Prices have instead remained high this year and have continued to increase steadily over the summer and remained high through the autumn. This is due to elevated feed and energy prices - key commodities associated with the production of pig meat.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.9: Monthly milk price index, 2021 and 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk



Text description for Figure 6.9: Figure 6.9 is a line chart showing the monthly price index for milk in 2021 and 2022. The price index for milk initially remained stable before steadily increasing throughout the latter half of 2021 and increasing more rapidly in 2022, particularly over the summer. Price increases slowed down towards the end of 2022.

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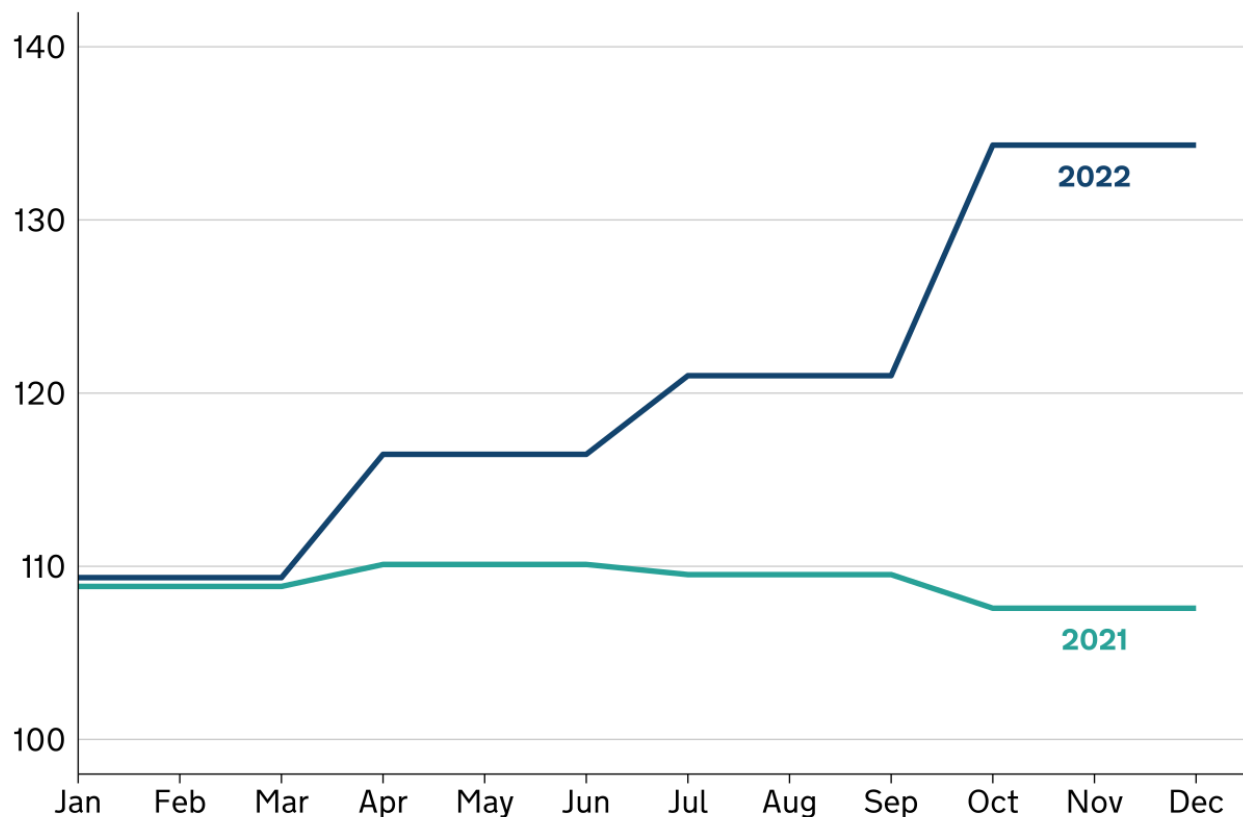
The annual price index for milk increased by 42% in 2022 compared with 2021. Milk prices saw persistent growth throughout 2022 with particularly strong rises in the summer months. These increases were a result of significant input cost increases, particularly with fertiliser, feed and fuel, with these three items accounting for around a third of total production costs. Despite these cost challenges, the vast majority of dairy farmers chose to remain in the industry, with a reduction of only 150 producers being observed between October 2021 and October 2022.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.10: Quarterly eggs price index, 2021 and 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk



Text description for Figure 6.10: Figure 6.10 is a line graph showing the quarterly price index for eggs in 2021 and 2022. The price index for eggs remained stable throughout 2021, dropping slightly in the final quarter. Substantial price increases were observed in 2022, with the largest increase occurring in the final quarter.

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The annual price index for eggs increased by 10% in 2022 compared with 2021. Prices increased throughout the first three quarters of the year, driven by high input costs and production contraction following a sectoral shift away from intensive and towards free range/barn production systems. Production decreased further as some farmers were forced to leave the industry or reduce the size of their flocks in response to the rising input costs, which were further exacerbated by the need to house all birds indoors for much of the year amid outbreaks of Avian Influenza.

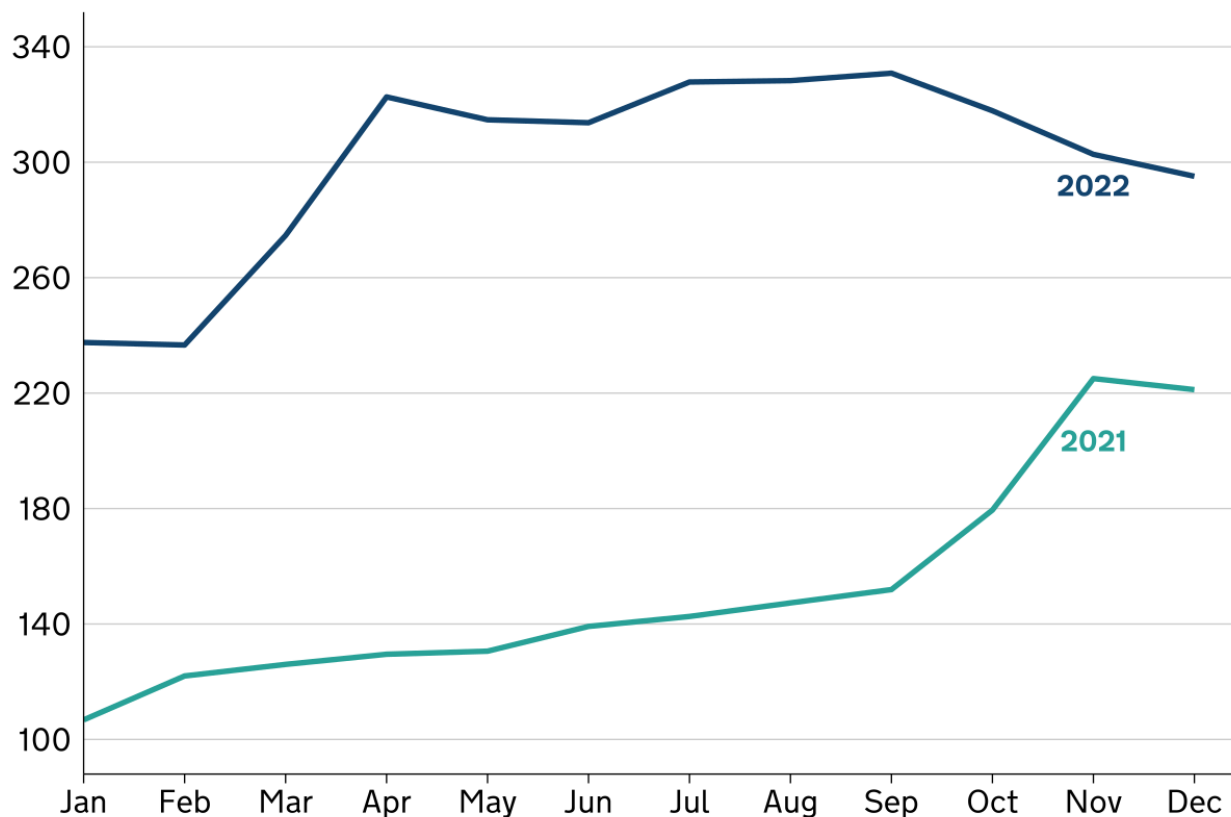
These data come from the monthly [Agricultural Price Index](#) publication.

Agricultural inputs

Figure 6.11: Monthly fertilisers and soil improvers price index, 2021 and 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk



Text description for Figure 6.11: Figure 6.11 is a line chart showing the monthly price index for fertilisers and soil improvers for 2021 and 2022. The price index for fertilisers and soil improvers increased steadily over the first three quarters of 2021, increasing more rapidly towards the end of the year and into 2022, reaching a peak in summer 2022. Steady declines were observed towards the end of 2022.

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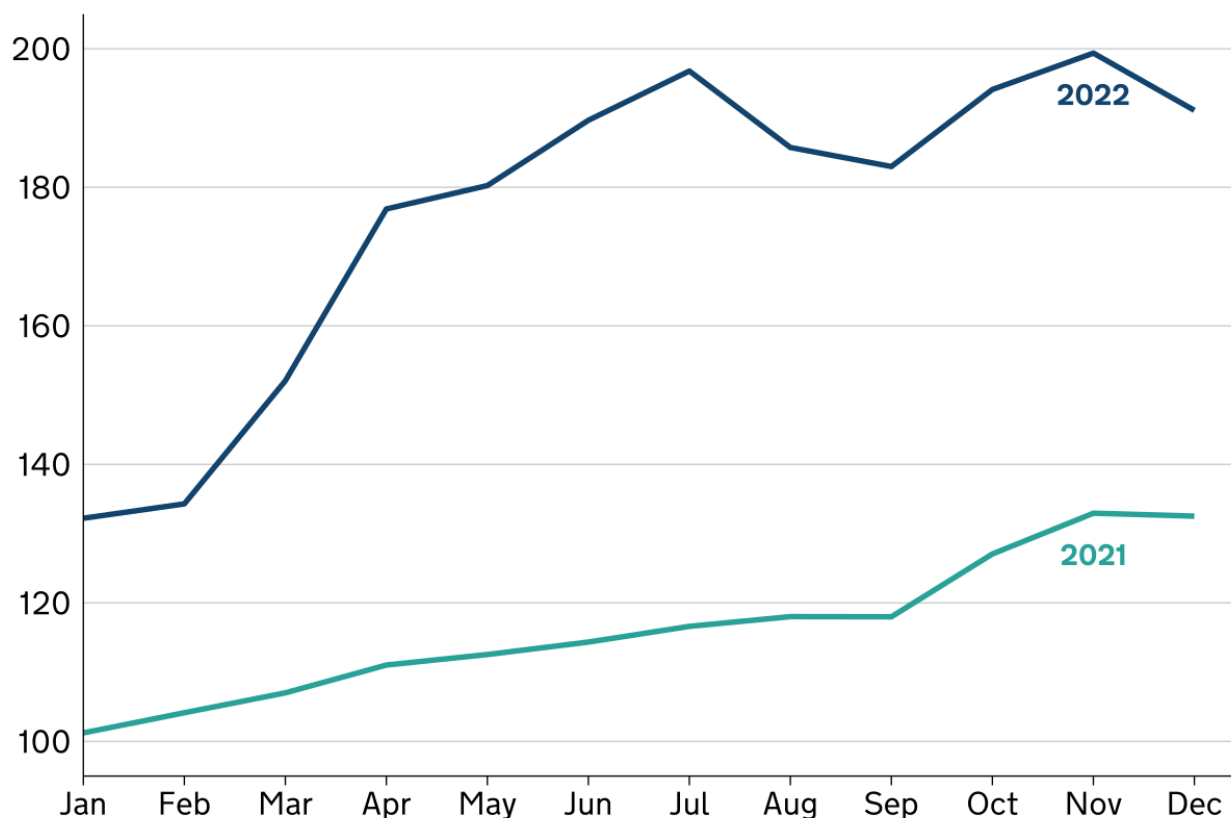
The annual price index for fertilisers and soil improvers increased by 104% in 2022 compared with 2021. Inflation in this index was strongest in the first half of 2022 amid the emergence of conflict between Russia and Ukraine and was overwhelmingly driven by fertilisers, with soil improvers seeing a much less significant rise. Fertiliser production is energy intensive and the industry was heavily impacted by increasing natural gas prices, resulting in reduced domestic production and supply, with some individual fertiliser prices up by more than 300%. Fertiliser prices started to drop towards the end of 2022 in line with reductions in wholesale gas prices, pressured by lower demand amid mild autumnal weather in Europe.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.12: Monthly energy and lubricants price index, 2021 and 2022 (2020 = 100)

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Text description for Figure 6.12: Figure 6.12 is a line chart showing the monthly price index for energy and lubricants for 2021 and 2022. The price index for energy and lubricants increased steadily throughout 2021 and more rapidly going into 2022, before fluctuating over the summer and reaching a peak in November 2022. A modest decrease was observed at the end of the year.

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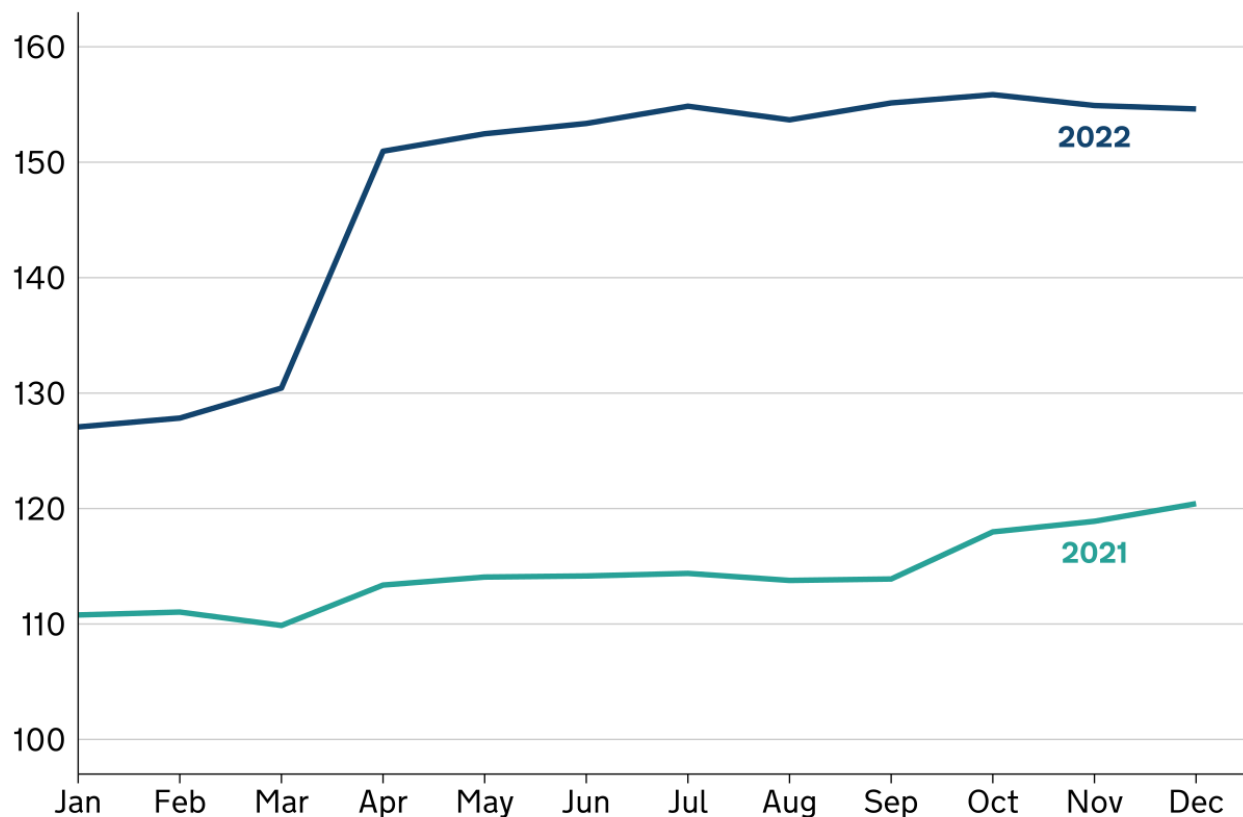
The annual price index for energy and lubricants increased by 52% in 2022 compared with 2021. The strongest price rises were observed in the first half of 2022 amid rising wholesale gas prices, with prices remaining elevated over the summer months and peaking in November 2022. In contrast to fertilisers and soil improvers, another index driven by movements in wholesale gas prices, reductions in the energy and lubricants price index were not seen until the end of 2022 due to the persistence of high road petrol and diesel prices.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.13: Monthly animal feedingstuffs price index, 2021 and 2022 (2020 = 100)

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Text description for Figure 6.13: Figure 6.13 is a line chart showing the price index for animal feedingstuffs for 2021 and 2022. The price index for animal feedingstuffs remained stable throughout 2021, though increased slightly towards the end of the year. Substantial increases were observed in 2022, with the largest increase occurring between March and April. Thereafter, the price index increased slightly into the summer months, before holding steady for the remainder of the year.

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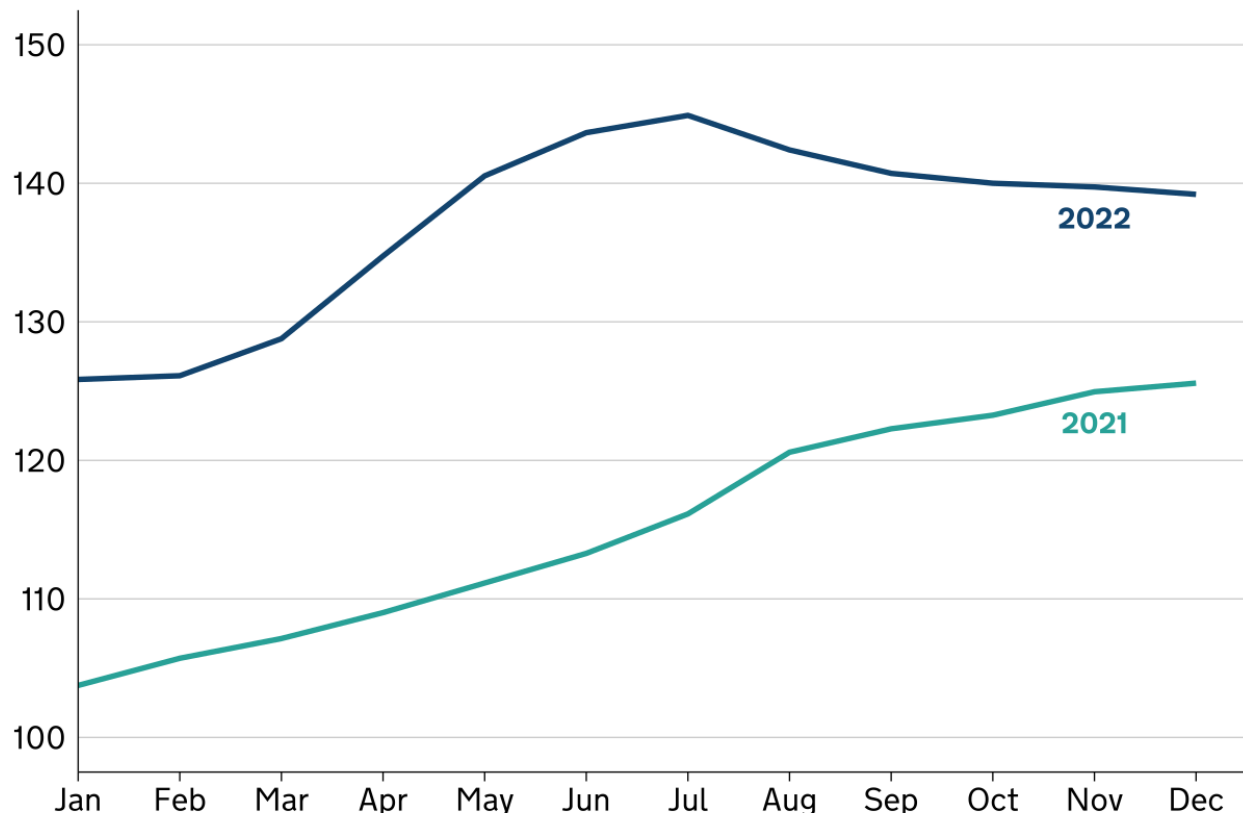
The annual price index for animal feedingstuffs increased by 29% in 2022 compared with 2021. The strongest price rises were seen in the spring, with prices stabilising over the summer and into the autumn. By-products of cereals (e.g. feed oats) saw the most significant price rises in the face of tightened wheat supplies as the conflict between Russia and Ukraine took hold. This was countered by increased associated UK crop yields, with wheat, barley, oats and oilseed rape all reporting increased yields in 2022 over 2021.

These data come from the monthly [Agricultural Price Index](#) publication.

Figure 6.14: Monthly maintenance of buildings price index, 2021 and 2022 (2020 = 100)

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Text description for Figure 6.14: Figure 6.14 is a line chart showing the monthly price index for maintenance of buildings for 2021 and 2022. The price index for maintenance of buildings increased steadily throughout 2021 and the first half of 2022, reaching a peak in July, before steadily falling in the remainder of the year.

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The annual price index for maintenance of buildings increased by 19% in 2022 compared with 2021. The most significant price rises took place in the first half of 2022, with prices stabilising over the summer and autumn months. Insulating materials and sand & gravel have seen the most significant price rises, with the latter seeing continually falling sales throughout 2022.

These data come from the monthly [Agricultural Price Index](#) publication.

Summary table of price indices

Table 6.1: Annual average price indices for agricultural outputs, 2021 to 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

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Category	2021	2022	Annual inflation rate (%)
Wheat	121.8	161.6	33
Barley	131.2	185.7	42
Oats	111.1	164.0	48
Oilseed rape	136.8	186.9	37
Sugar beet	101.1	131.4	30
Forage plants	136.1	78.4	-42
Fresh vegetables	106.6	118.1	11
Plants and flowers	106.8	110.6	3.5
Potatoes	102.6	107.7	4.9
Fresh fruit	95.7	94.0	-1.8
Cattle and calves	114.3	126.3	10
Pigs	91.8	110.5	20
Sheep and lambs	121.8	120.9	-0.7
Poultry	100.7	103.5	2.8
Milk	108.8	154.2	42
Eggs	109.0	120.4	10
All agricultural outputs	109.9	130.6	19

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Table 6.2: Annual average price indices for agricultural inputs, 2021 to 2022 (2020 = 100)

Enquiries: Katie Fisher on +44 (0)20 8565 4419

Email: katie.fisher@defra.gov.uk

Category	2021	2022	Annual inflation rate (%)
Seeds	104.4	109.3	4.7
Energy and lubricants	116.3	176.3	52
Fertilisers and soil improvers	145.8	297.9	104
Plant protection products	100.9	111.5	11
Veterinary services	100.8	102.3	1.5
Straight feedingstuffs	115.6	144.0	24
Compound feedingstuffs	113.9	148.5	30
Maintenance of materials	103.9	110.6	6.5
Maintenance of buildings	115.2	137.2	19
Other goods and services	103.0	110.6	7.4
Materials	102.4	118.3	16
Buildings	112.6	133.7	19
All agricultural inputs	111.4	143.2	28

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Chapter 7: Crops

Summary

Key results for 2022 compared to 2021

- Harvested production of **wheat** increased by 11% to just over 15.5 million tonnes, primarily due to increased yields. The value of production was 50% higher at £4.1bn.
- Harvested production of **barley** increased by 6.1% to around 7.4 million tonnes. The value of production was 55% higher at £1.8bn.
- **Oilseed rape** production increased by 39% to around 1,361 thousand tonnes, due to the increase in planted area compared to 2021 (which was the lowest area since 1986) and average higher yields. The value of production increased by 80% to £877m due to higher prices
- **Sugar beet** production decreased by 18% to 6.0 million tonnes. The value of production was 6.2% higher at £223m.
- The value of **vegetable** production increased by 4.8% to £1.8bn.
- The value of **fruit** production increased by 9.5% to just over £1.0bn.

Cereals

Table 7.1a to 7.1b Total cereals production (thousand tonnes unless specified otherwise)

Enquiries: Allan Howsam on +44(0)20 802 66123

Email: Crops-statistics@defra.gov.uk

Table 7.1a

Production	2020	2021	2022
Area (thousand hectares)	3,038	3,211	3,156
Volume of harvested production	18,962	22,369	24,262
Value of production (£ million)	2,762	4,027	6,182

Table 7.1b

Supply and use	2020	2021	2022
Production	18,962	22,369	24,262
EU Imports	2,802	2,798	2,495
Non-EU imports	2,128	2,041	1,732
EU exports	1,736	1,113	2,043
Non-EU exports	565	117	57
Total new supply	21,591	25,978	26,389
Change in farm and other stocks	-2,687	1,352	1,881
Total domestic uses	24,278	24,626	24,508
Production as % of total new supply for use in the UK	88%	86%	92%

Notes for table 7.1a and 7.1b:

1. All cereal production estimates have been standardised to 14.5% moisture content, with the exception of 2022 when the hot dry conditions led to lower average moisture contents in the harvested crops. 2022 production data will only be adjusted for farms which have reported moisture content above 14.5% for cereals and 9.0% for oilseed rape. Any production data which has been reported with lower moisture contents has not been adjusted.
2. Excludes farm saved seed.

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In 2022, total cereal production of wheat, barley, oats and minor cereals (rye, triticale and mixed grain) in the UK was just under 24.3 million tonnes, an 8% increase compared to 2021. This was due to higher average yields offsetting a 1.7% drop in the planted area. The value of production increased by 54% to around £6.2 bn due to a combination of higher prices and increased production.

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Average yields for wheat, barley and oats were higher in 2022 compared to 2021, and generally above the 5-year average. Winter planting was undertaken under good conditions and on schedule allowing the crops to establish well. Most planned winter sowing was complete by the end of November. Spring crop sowing also progressed well although the dry April hindered establishment on lighter soils and where practical irrigation was used to relieve water stress. Similar to 2021, without the need to sow spring crops to compensate for poor or failed winter crops, growers reverted back to more typical winter plantings. This effect can be seen in the increased winter barley area which was up 6.9% to 433 thousand hectares whereas the area of spring barley fell by 9.9% to 671 thousand hectares. A full breakdown of cereal and oilseed rape production including at the regional level can be found in [Defra cereal production](#).

Harvest 2022 progressed well and finished earlier than the previous 5 years. For most of England and Wales harvest was completed by the end of August and for Scotland and areas of North-East England by mid- September. Harvest was completed before heavy rains arrived later on in September. With the exceptionally hot weather grain required little additional drying this year.

Cereal prices for 2022 were above 2021 values with global markets reacting to the Russia / Ukraine conflict in the spring. Although prices did fall towards the end of the year, they remained higher than the equivalent 2021 levels.

For data and information for cereals on a crop year basis (July to June) please see the official UK cereal balance sheets published by the [Agriculture and Horticulture Development Board](#).

Wheat

Table 7.2a to 7.2c Wheat; production, value, supply and use (thousand tonnes unless specified otherwise)

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Email: Crops-statistics@defra.gov.uk

Table 7.2a

Production	2020	2021	2022
Area (thousand hectares)	1,387	1,790	1,809
Yield (tonnes per hectare)	7.0	7.8	8.6
Volume of harvested production	9,658	13,988	15,540
Value of production (£ million)	1,544	2,705	4,059
Sales	1,918	1,969	3,316
On farm use	209	253	703
Change in stocks	-583	483	41

Table 7.2b

Prices (£ per tonne)	2020	2021	2022
Milling wheat	172	210	280
Feed wheat	160	191	261

Table 7.2c

Supply and use	2020	2021	2022
Production	9,658	13,988	15,540
EU imports	1,547	1,446	1,066
Non-EU imports	586	614	568
EU exports	377	294	820
Non-EU exports	143	1	44
Total new supply	11,271	15,753	16,310
Change in farm and other stocks	-2,792	1,873	1,623
Total domestic uses	14,063	13,880	14,687
Flour milling	5,924	5,821	5,985
Animal feed	6,942	6,677	7,118
Seed	215	278	280
Other uses and waste	982	1,104	1,304
Production as % of total new supply for use in UK	86%	89%	95%
% of home grown wheat in milling grist	81%	77%	84%

Notes for tables 7.2a to 7.2c:

1. All cereal production estimates have been standardised to 14.5% moisture content with the exception of 2022 when the hot dry conditions led to lower average moisture contents in the harvested crops. 2022 production data will only be adjusted for farms which have reported moisture content above 14.5% for cereals and 9.0% for oilseed rape. Any production data which has been reported with lower moisture contents has not been adjusted
2. Excludes farm saved seed.

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Harvested production of wheat was 11% higher in 2022 than 2021 at just over 15.5 million tonnes, which represents an above average UK production. This was primarily due to an increase in both the yield and planted area which rose by 9.9% and 1.1%, respectively. The value of production of wheat was 50% higher in 2021 at £4.1bn.

Domestic Human and Industrial wheat demand for flour milling (including starch and bio-ethanol) was 2.8% higher in 2022 compared to 2021 at just under 6 million tonnes, with imports decreasing by 17% to 0.9 million tonnes. Demand from flour millers was similar to last year but with a larger domestic crop, less imports were required. From

May 2022 both UK biofuels plants were operational which increased demand for feed wheat. Usage of wheat for animal feed was 6.6% higher at just over 7.1 million tonnes. The percentage of wheat in the cereal ration has now recovered to more typical levels after the drop caused by the poor 2020 harvest reducing availability. The AHDB publish cereal usage statistics which can be found at [AHDB Human and Industrial cereal usage](#).

Total wheat imports in 2021 were 21% lower at 1.6 million tonnes mainly due to greater domestic availability and reduced requirements from the flour milling sector. Exports in 2022 were 864 thousand tonnes compared to 295 million tonnes in 2021, with greater domestic supplies increasing the quantity of wheat available for export. The UK has been a net importer of wheat since 2016.

Barley

Table 7.3a to 7.3c Barley; production, value, supply and use (thousand tonnes unless otherwise specified)

Enquiries: Allan Howsam on +44 (0)20 802 66123
Email: Crops-statistics@defra.gov.uk

Table 7.3a

Production	2020	2021	2022
Area (thousand hectares)	1,388	1,150	1,104
Yield (tonnes per hectare)	5.9	6.1	6.7
Volume of harvested production	8,117	6,961	7,385
Value of production (£ million)	1,062	1,168	1,815
Sales	761	934	1,316
On farm use	286	340	465
Change in stocks	15	-106	34

Table 7.3b

Prices (£ per tonne)	2020	2021	2022
Malting barley	140	190	276
Feed barley	130	163	238

Table 7.3c

Supply and use	2020	2021	2022
Production	8,117	6,961	7,385
EU imports	97	118	78
Non-EU imports	2	5	4
EU exports	1,157	664	892
Non-EU exports	418	108	6
Total new supply	6,641	6,312	6,569
Change in farm and other stocks	76	-657	382
Total domestic uses	6,565	6,969	6,187
Brewing/distilling	1,639	1,807	1,918
Animal feed	4,688	4,951	4,042
Seed	185	164	178
Other uses and waste	53	47	49
Production as % of total new supply for use in UK	122%	110%	112%

Notes for tables 7.3a to 7.3c:

1. All cereal production estimates have been standardised to 14.5% moisture content with the exception of 2022 when the hot dry conditions led to lower average moisture contents in the harvested crops. 2022 production data will only be adjusted for farms which have reported moisture content above 14.5% for cereals and 9.0% for oilseed rape. Any production data which has been reported with lower moisture contents has not been adjusted
2. Value of production excludes farm-saved seed.

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The value of barley increased by 55% between 2021 and 2022 to £1.8bn. The production of barley increased by 6.1% to 7.4 million tonnes due to increased yields offsetting a 4.0% decrease in area. The area change was driven by a decrease for spring barley of 9.9% to 671 thousand hectares which offset a 6.9% increase in winter barley area to 433 thousand hectares. Growers continued to switch back to winter barley due to more favourable winter planting / crop conditions negating the need for replacement spring crops. Full details of barley production can be found here; [Defra cereal production](#).

Barley exports increased to 898 thousand tonnes in 2022 from just over 770 tonnes in 2021. Most UK exports are to the EU, especially Spain which experienced a poor 2022 barley harvest.

Demand for barley from the brewing, malting and distilling sector continued to recover from the Covid-19 related slump of 2020. Usage from the Brewing Malting and Distilling sector increased to 1.9 million tonnes, an increase of 6.2% on the 1.8 million tonnes in 2021. Demand for barley from the animal feed sector fell by 18% to 4 million tonnes in

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2022, due to a general reduction in the animal feed sector and wheat increasing its share of the cereal ration at the expense of other cereals.

Oats

Table 7.4a to 7.4c Oats production, value, supply and use (thousand tonnes unless specified otherwise)

Enquiries: Allan Howsam on +44 (0)20 802 66123

Email: Crops-statistics@defra.gov.uk

Table 7.4a

Production	2020	2021	2022
Area (thousand hectares)	210	200	174
Yield (tonnes per hectare)	4.9	5.6	5.8
Volume of harvested production	1,031	1,123	1,007
Value of production (£ million)	150	148	301
Sales	103	115	182
On farm use	32	36	102
Change in stocks	15	-3	17

Table 7.4b

Prices (£ per tonne)	2020	2021	2022
Milling oats	137	152	222
Feed oats	115	135	200

Table 7.4c

Supply and use	2020	2021	2022
Production	1,031	1,123	1007
EU imports	25	28	22
Non-EU imports	0	0	0
EU exports	62	29	187
Non-EU exports	4	8	7
Total new supply	990	1,114	835
Change in farm and other stocks	29	136	-124
Total domestic uses	961	978	959
Milling	561	505	510
Animal feed	366	439	420
Seed	29	28	24
Other uses and waste	5	6	5
Production as % of total new supply for use in UK	104%	101%	121%

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Notes for tables 7.4a to 7.4c:

3. All production estimates have been standardised to 14.5% moisture content with the exception of 2022 when the hot dry conditions led to lower average moisture contents in the harvested crops. 2022 production data will only be adjusted for farms which have reported moisture content above 14.5% for cereals and 9.0% for oilseed rape. Any production data which has been reported with lower moisture contents has not been adjusted
4. Value of production excludes farm saved seed.

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In 2022, the harvested production of oats decreased by 10% to 1.0 million tonnes driven by a 13% decrease in area offsetting an increase in yield (up 3%). The value of production doubled to £301m due to higher prices.

UK oats usage is dominated by the oat milling sector which increased by 1.0% to 510 thousand tonnes in 2022 from 505 thousand tonnes in 2021. Use of oats in animal feed decreased by 4.3% to 420 thousand tonnes due to reduced demand for animal feed and more wheat being available. Oats have a high fibre content which is useful for ruminant diets and horses but not suitable for poultry. Oat exports increased from 37 thousand tonnes to 194 thousand tonnes - the majority of UK exports continue to be to EU countries. Exports have been strong to Germany, Belgium, Spain, and the Netherlands on the back of tighter EU supplies. Imports were 6 thousand tonnes lower in 2022 at 22 thousand tonnes.

Straw

Cereal straw production in 2022 was estimated at 9.9 million tonnes, a decrease of 8.1% on the 2021 crop (11 million tonnes). The 2022 harvest season was characterised by a prolonged period of settled, dry weather and high temperatures. Straw yields were better than feared, given the water stress affecting crops, with wheat averaging 3.8 tonnes per hectare, winter barley 3.5 t/ha, spring barley at 2.6 t/ha and oats at 2.7 t/ha.

Despite early concerns over straw yields, they ended up close to the 5-year average and only slightly lower than those seen in 2021. Areas baled reduced by 4.1% at 2.4 million hectares with bedding sales reducing by 8.1% at 8.3 million tonnes. Percent area baled was similar to the 5-year average, but for all cereals was below that seen in 2019. An estimated 73% of wheat straw, 91% of winter barley straw and 82% of spring barley straw were baled.

Oilseed rape and linseed

Table 7.5a to 7.5b Oilseed rape production; value, supply and use (thousand tonnes unless specified otherwise)

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Email: Crops-statistics@defra.gov.uk

Table 7.5a

Production	2020	2021	2022
Area (thousand hectares)	382	307	364
Yield (tonnes per hectare)	2.7	3.2	3.7
Volume of harvested production	1,038	981	1,361
Value of production (£ million)	360	488	877
sales	459	499	779
change in stocks	-99	-11	98
Prices (£ per tonne)	347	497	644

Table 7.5b

Supply and use	2020	2021	2022
Production	1,038	981	1,361
EU imports	224	449	424
Non-EU imports	279	477	387
EU exports	114	25	49
Non-EU exports	0	0	0
Total new supply	1,426	1,881	2,124
Production as % of total new supply for use in UK	73%	52%	64%

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Oilseed rape production rose by 39% to 1361 thousand tonnes, with the area planted increasing by 18% at 364 thousand hectares and average yields increasing from 3.2 to 3.7t/ha. The value increased by 80% at £877 million, with prices increasing 29% to £644 per tonne.

UK oilseed rape production has fallen in the last few years from 2 million tonnes per year to just over 1m tonnes, as the trend for recent years of the crop area planted reduced in line with the withdrawal of the neonicotinoid insecticides needed to control the cabbage stem flea beetle. This year has seen tight imported supplies, after the small 2021 oilseed harvest in Canada followed by the disruption to Black Sea supplies since Russia's invasion of Ukraine in February. This has led to a steep increase in rapeseed values and volatile trading on top of high energy costs for processing.

Table 7.6 Linseed production; value, supply and use

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Table 7.6 Linseed figures are no longer presented here as the area grown in the UK is so small. Historical data can be found in the datasets (Table 7.6). Area data can be found in chapter 2 (Structure of the industry) Table 2.2 Crop areas and livestock numbers.

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Sugar beet

Table 7.7a to 7.7b Sugar Beet production and value; Refined Sugar production and supply (thousand tonnes unless specified otherwise)

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Email: Crops-statistics@defra.gov.uk

Table 7.7a

Sugar Beet	2020	2021	2022
Area (thousand hectares)	104	91	87
Yield (tonnes per hectare)	57	81	69
Volume of harvested production	5,894	7,364	6,015
Value of production (£ million)	167	210	223
Sugar content %	16	17	16
Price (average market price (£ per adjusted tonne))	28	29	37

Table 7.7b

All Sugar (refined basis)	2020	2021	2022
Production	906	1,038	818
EU imports	271	194	261
Non-EU imports	428	469	410
EU exports	91	15	33
Non-EU exports	70	25	21
Total new supply	1,443	1,660	1,435
Production as % of total new supply for UK use	63%	63%	57%

Notes for tables 7.7a and 7.7b:

1. Average price for all sugar, including transport allowance and bonus
2. Sugar coming out of the factory in the early part of the year is regarded as being part of production in the previous calendar year.

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Sugar beet production decreased by 18% to 6 million tonnes. The value of production rose by 6.2% to £223 million with prices increasing by 30% at £37.1t/Ha. The planted area showed a decrease of 3.8% at 87 thousand hectares. Seed and initial growth was positive, however the crop suffered a severe drought in August. Beet moth infestations were seen for the first time in the UK - the dry conditions are an ideal climate for them, feeding on the weakened plants. As a result, yields are expected to be around 25% to 28% less than average. In mid-December the crop suffered a frost event, which was later declared to have triggered a Frost Insurance Payment funded by British Sugar. The Frost event was widespread across the growing areas. Overall yields decreased by 15% to 69t/Ha.

Protein crops (Field Peas and Field Beans)

Table 7.8a and 7.8b Protein crops (Field Peas and Field Beans (thousand tonnes unless specified otherwise)

Enquiries: Allan Howsam on +44 (0)20 802 66123

Email: Crops-statistics@defra.gov.uk

Table 7.8a

Peas for harvesting dry	2020	2021	2022
Area (thousand hectares)	52	61	57
Yield (tonnes per hectare)	3.1	3.2	2.8
For animal feed			
Volume of harvested production	94	176	144
Value of production (£ million)	19	39	39
For human consumption			
Volume of harvested production	66	20	16
Value of production (£ million)	12	4	3

Table 7.8b

Field beans	2020	2021	2022
Area (thousand hectares)	181	188	212
Yield (tonnes per hectare)	3.0	3.7	3.0
Volume of harvested production	544	694	635
Value of production (£ million)	111	160	178

Notes for tables 7.8a and 7.8b:

1. Peas exclude vining peas
2. Animal feed figures cover only that part of the crop which is assumed to be used for stock-feed including for pets and specialist bird food. It also includes an

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estimate for those varieties originally grown for human consumption but did not meet the required grade. The percentage utilised for animal feed is variable with typical estimates ranging from 30-60%

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The overall area of pulses in 2022 showed an increase from those seen in 2021 with an increased bean area offsetting a fall in the pea area. Pulses remained a popular crop option due to greening requirements of the Common Agricultural Policy although restrictions on the use of plant protection products on crops grown on Ecological Focus Areas (EFA) and UK exit from the EU may affect the area planted going forward. Pulses are a good source of energy and protein and can be used in the diets of poultry, cattle and pigs as well as aquaculture and pet food. Pulses are also able to fixate nitrogen from the atmosphere into the soil.

The total area of field peas decreased by 6.1% in 2022 to just over 57 thousand hectares. The proportion of production utilised for animal feed was estimated at 90%, similar to 2021. Total production for animal feed decreased by 18% to an estimated 144 thousand tonnes. The production utilised for human consumption decreased by 18% to an estimated 16 thousand tonnes. Field peas yield averaged 2.8t/ha compared to 3.2t/ha in 2021. There was a variation in yields dependant on how well soils retained moisture during the dry spring. Best yields of peas were from the South-West; overall quality was mixed with the hot weather making peas prone to splitting- however there were fewer virus and disease problems this year.

Increased prices were not sufficient to offset the drop in production and the overall value of field peas in 2022 was £38.7 million compared to £39.0 million in 2021 (0.8% decrease).

The area of field beans was 13% higher than last year at 212 thousand hectares. Despite the increased area, lower average yields meant production decreased by 8.5% to an estimated 635 thousand tonnes. Average yields decreased to 3.0t/ha from 3.7t/ha in 2021. The highest yields were seen in the North-East and West-Midlands. Winter beans fared much better than spring beans, aided by good planting conditions throughout autumn 2021 which led to good crop establishment. Whilst the dry spring did adversely affect winter beans grown on lighter soils those on moisture retentive heavier soils performed well. Spring beans planted during cool dry conditions suffered from moisture deficit and lower yields. Bruchid beetle activity was reduced this year across most areas particularly in northern areas with the notable exception of the South-West where activity increased. The quality of field beans was variable, with winter beans tending to have achieved good quality, whilst spring beans tended to be of poor quality.

Average prices increased, offsetting a drop in production and the overall value of field beans in 2022 was £178 million compared to £160 million in 2021 (11% increase).

Fresh vegetables

Table 7.9a to 7.9c Fresh vegetables production, value, supply and use (thousand tonnes unless specified otherwise)

Enquiries: Lisa Brown on +44 (0)20 802 66340

Email: Crops-statistics@defra.gov.uk

Table 7.9a

Production	2020	2021	2022
Area (thousand hectares):	119	113	107
Grown in the open	118	112	107
Protected	0.9	0.8	0.7
Value of production (£ million):	1,676	1,685	1,766
Grown in the open	1,312	1,297	1,395
Protected	364	388	371
Selected crops:			
Cabbages	83	73	77
Carrots	185	185	178
Cauliflowers	78	64	58
Calabrese	81	83	112
Lettuces	208	207	240
Mushrooms	144	132	136
Onions	148	154	137
Tomatoes	89	123	101

Table 7.9b

Prices (farm gate price (£ per tonne))	2020	2021	2022
Selected crops:			
Cauliflowers	771	691	713
Tomatoes	1,363	1,803	1,409

Table 7.9c

Supply and use	2020	2021	2022
Total production	2,599	2,548	2,401
EU imports	1,892	1,577	1,679
Non-EU imports	321	401	365
EU exports	102	67	83
Non-EU exports	6	2	14
Total new supply	4,704	4,457	4,349
Production as % of total new supply for use in UK	55%	57%	55%

Notes for tables 7.9a to 7.9c:

1. Data for vegetables and salad crops grown in the open is from the June Survey
2. Protected area excludes area of mushrooms

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The value of vegetable production increased by 4.8% to £1.8bn between 2021 and 2022, with total production decreasing by 5.8% at 2.4 million tonnes. Areas for vegetables reduced by 5% at 107 thousand ha. Domestic production as a percentage of total new supply to the UK for all fresh vegetables was 55% in 2022, down 2 percentage points from 2021.

January was particularly dry with optimal conditions for carrot, parsnip and onion drilling and planting. February was increasingly unsettled, with storms hitting some parts of the country, causing damage. The spring and summer were generally warmer than average and many areas experienced drought especially in the South and East with a new UK record temperature of 40.3oC recorded in July. The hot, dry summer presented challenges for growers, needing to irrigate crops far more than usual. The increasing costs of all inputs such as energy, diesel, fertiliser and plant protection products have squeezed grower profitability significantly.

Plants and flowers

Table 7.10a to 7.10b Plants and flowers area, value of production and trade (thousand tonnes unless otherwise specified)

Enquiries: Lisa Brown on +44 (0)20 802 66340

Email: Crops-statistics@defra.gov.uk

Table 7.10a

Production	2020	2021	2022
Area (thousand hectares):	12	12	13
Value of production (£ million)	1,394	1,562	1,538
Flowers and bulbs	127	129	165
Pot plants	283	325	285
Hardy ornamental nursery stock	984	1,108	1,088

Table 7.10b

Trade (£ million)	2020	2021	2022
Total imports (exc. Channel Islands)	1,228	1,258	1,534
Bulbs	83	71	95
Cut flowers	643	693	705
Foliage	50	68	69
Indoor plants	164	148	171
Outdoor plants	94	107	148
Trees	104	110	242
Other	90	61	104
Total exports	68	56	49
Bulbs	7	7	8
Cut flowers	26	22	23
Foliage	1	1	1
Indoor plants	10	7	1
Outdoor plants	4	3	2
Trees	3	6	4
Other	18	9	9

Notes for table 7.10a and 7.10b:

1. Areas relate to field areas multiplied by the number of crops in the year and hence differ from those shown in table 2.2.
2. Trade totals may differ to the sum of the components due to rounding.

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Chapter 7: Crops

The value of production in the ornamental sector decreased by 1.5% to £1.5bn between 2021 and 2022.

2022 was a challenging year for the hardy nursery stock (HNS) sector, due largely to the prolonged severe drought and heatwave that affected most of the UK for much of the summer and the increased cost-of-living that impacted discretionary spend and so demand, particularly in garden retail sector.

In 2022, hardy nursery stock showed a 1.8% decrease in value at an estimated £1.1 billion.

Container grown nursery stock sales returned to pre COVID-19 levels. Water shortages with the reducing consumer demand because of the drought conditions and increased cost-of-living further exacerbated matters, particularly in the latter part of the year. Outdoor narcissi, 'other bulb flowers' and dry bulb production benefitted from better labour availability, good yield and an increased price per stem / dry bulb in 2022, contributing to increased unit value estimates for most categories. Flowers and bulbs showed a 29% increase in value at an estimated £165m.

The protected ornamentals sector (bedding and pot plants) saw adjustments where some growers reduced production across the board because of the rise in the cost of living and increased cost of materials (pots, growing media etc) which would increase retail prices. The pot plant sector saw a 12% decrease in value at £285m.

Potatoes

Table 7.11a to 7.11c Potatoes production, value, supply and use (thousand tonnes unless specified otherwise)

Enquiries: Lisa Brown on +44 (0)20 802 66340

Email: Crops-statistics@defra.gov.uk

Table 7.11a

Production	2020	2021	2022
Area sown (thousand hectares)	142	137	127
Area harvested (thousand hectares)	120	112	115
Yield (tonnes per hectare harvested)	46	46	42
Volume of harvested production	5,513	5,127	4,797
For human consumption	3,858	3,697	3,028
Seed	366	365	364
Stockfeed and waste	1,289	1,066	1,406
Sales	5,132	5,255	4,888
For human consumption	3,548	3,883	3,201
Seed	366	365	364
Sold for stockfeed	1,219	1,007	1,323
End year stocks	2,664	2,477	2,304
Change in stocks	310	-186	-173
Value of production (£ million)	821	748	705
Sold for human consumption	633	649	604
Sold for seed (including farm saved seed)	120	120	120
Sold for stockfeed	12	10	13
Change in stocks	55	-31	-33

Table 7.11b

Prices (paid to registered producers (£ per tonne))	2020	2021	2022
Early/maincrop (for human consumption)	179	167	189
Seed	329	329	329
Stockfeed	10	10	10

Table 7.11c

Supply and use	2020	2021	2022
Total production	4,224	4,062	3,391
Imports	2,347	1,828	2,481
Exports	595	431	466
Net trade (negative means net export)	1,753	1,397	2,014
Early/maincrop	49	-58	-116
Seed	-102	-75	-92
Processed (raw equivalent)	1,806	1,530	2,222
Total new supply (raw equivalent)	5,976	5,459	5,406
Production as % of total new supply for use in UK	71%	74%	63%

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The value of potatoes was £705 million in 2022, a decrease of 5.8% from 2021 (£748 million) with the area planted reducing by 7.6% to 127 thousand hectares. Yields fell by 8.7% to 42t/ha and prices rose by 13% to £189 per tonne. Prices and yield information were previously obtained from the AHDB who stopped producing data midway through in 2021. For 2022 we have estimated yields based on input from sector representatives, devolved administrations and coverage of the sector in the farming press. For prices we made use of the Northern Ireland published potato price figures.

Fresh Fruit

Table 7.12a to 7.12c Fresh fruit production, value, supply and use (thousand tonnes unless specified otherwise)

Enquiries: Lisa Brown on +44 (0)20 802 66340

Email: Crops-statistics@defra.gov.uk

Table 7.12a

Production	2020	2021	2022
Outdoor fruit area (thousand hectares):	34	33	32
Orchard fruit	23	23	22
Soft fruit	11	10	10
End year stocks	61	106	119
Value of production (£ million):	1,045	922	1,010
Orchard fruit	340	287	377
Soft fruit	705	635	633
Sales	1,044	880	989
Change in stocks	1	42	20
Selected crops:			
Dessert apples	158	154	183
Culinary apples	81	43	94
Pears	20	22	15
Raspberries	140	154	136
Strawberries	473	399	426

Table 7.12b

Prices (farm gate price (£/tonne))	2020	2021	2022
Selected crops:			
Dessert apples	788	817	890
Culinary apples	405	228	458
Pears	216	360	180
Raspberries	5,598	7,977	7,601
Strawberries	3,145	2,541	2,608

Table 7.12c

Supply and use	2020	2021	2022
Total production	657	577	652
EU imports	1,265	997	1,109
Non-EU imports	2,299	2,330	2,168
EU exports	174	35	35
Non-EU exports	3	2	2
Total new supply	4,043	3,867	3,891
Change in stocks	1	42	20
Total domestic uses	4,043	3,825	3,871
Production as % of total new supply for use in UK	16%	15%	17%

Notes for table 7.12a to 7.12c:

1. Orchard fruit includes field area of commercial and non-commercial orchards only.
2. Stock data relates to apples and pears.
3. Value of production excludes change in stocks for apples and pears
4. Value of production includes glasshouse fruit.
5. Excludes change in stocks for apples and pears
6. EU trade data no longer includes dried fruit.

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Dry weather at the start of the year gave growers the ability to raise polytunnels for soft fruit earlier in the year and soil conditions were good for planting strawberries, raspberries and orchards. Though some damage to tunnels occurred with the Dudley, Eunice, and Franklin storms in February. Unusually hot days in March and April brought the season forward for both top and soft fruit crops but it left them vulnerable to the late frosts in April which caused some damage. Harvesting of all fruit crops started early due to the continuing effects of the mild spring and the summer heatwave.

The value of fruit production increased by 9.5% between 2021 and 2022 to just over £1 bn, with orchard fruit increasing by 31% to £377m and soft fruit decreasing by 0.3% to £633m.

Domestic production of fresh fruit as a percentage of total new supply increased from 15% to 17% in 2022.

Data Sources and Revisions

Further detailed information on vegetables, plant and flowers and fruit statistics can be found in the annual publication [Horticultural Statistics](#). Some of the more detailed commentary in this chapter is based on data in that report that is not presented here.

Figures for 2022 are provisional and may be subject to revision.

Chapter 7: Crops

There have been revisions to the data for wheat, barley and oats back to 2020, and some fruit data to 2016.

Chapter 8: Livestock

Summary

Key results for 2022 compared to 2021

- The value of **beef and veal** increased by 12% to £3.8bn. Home-fed production increased by 2.0% to 928 thousand tonnes.
- The value of **pig meat** increased by 18% to £1.7bn. Home-fed production increased by 0.5% to 1,002 thousand tonnes.
- The value of **mutton and lamb** production increased by 3.3% to £1.6bn. Home-fed production increased by 2.9% to 302 thousand tonnes.
- The value of **poultry meat** increased by 3.9% to £3.1bn. Home-fed production decreased by 1.9% to 2.0 million tonnes.
- The value of **milk and milk products** increased by 40% to £6.7bn, due to increased prices.
- The value of **eggs** for human consumption decreased by 4.0% to £786m. Production decreased by 7.2% to 0.9 billion dozens.

Meat production

Total meat production in 2022 remained at 4.2 million tonnes, 18% higher than a decade earlier. Red meat production increased in 2022, with mutton and lamb production showing the largest increase (2.9%). This was balanced out by a 1.9% decrease in poultry production. Poultry continues to make up 47% of home-fed meat production.

The total value of meat increased by 9.0% to £10.3bn, due to high prices throughout 2022. There was notable increases in the value of cattle and pig meat production (12% and 18% respectively). This the 7th consecutive year of increases in the value of poultry meat production, with a 3.9% increase in 2022 despite a fall in production this year.

Table 8.1a to 8.1b - Meat production

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk

Table 8.1a

Home-fed production ('000 tonnes)	2020	2021	2022
Cattle	935	910	928
Pigs	944	997	1,002
Sheep	306	293	302
Poultry	1,993	1,989	1,951
Total production	4,178	4,188	4,182

Table 8.1b

Value of production (£ million)	2020	2021	2022
Cattle	2,955	3,349	3,758
Pigs	1,481	1,461	1,727
Sheep	1,363	1,574	1,626
Poultry	2,829	3,031	3,149
Total value	8,628	9,415	10,260

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Cattle and calves: beef and veal

The value of beef and veal production increased by 12% to £3.8bn in 2022, following an increase of 13% in 2021. In 2022 this increase in value was driven by increasing prices, including an 8.5% increase in the price of finished prime cattle. However, farmers experienced drastically increased input costs, with a 34% increase in the average price of cattle and calf feed in Q3 2022 compared to Q3 2021 (see [Animal feed prices](#)).

Home-fed cattle production increased by 2.0% to 928 thousand tonnes, following a decrease of 2.7% between 2020 and 2021. Retail demand was highly variable across the year. There was an early decrease in demand partially due to COVID-19. However, by the summer demand recovered before falling again in the autumn and winter due to increases in the cost of living. The impact of drought in the summer was minimal due to sufficient grass growth. Total beef and veal exports to the EU increased by 34% from 2021, a 11% increase on the 5-year average.

Table 8.2a to 8.2c - Cattle and calves; beef and veal

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk

Table 8.2a

Population (thousand head at June)	2020	2021	2022
Total cattle and calves	9,615	9,603	9,632
Dairy cows	1,850	1,850	1,842
Beef cows	1,509	1,485	1,463

Table 8.2b

Production	2020	2021	2022
Total home-fed marketings (thousand head)	2,854	2,776	2,844
Steers, heifers and young bulls	2,047	2,017	2,062
Calves	106	128	126
Cows and adult bulls	700	631	656
Average dressed carcass weight (kg):			
Steers, heifers and young bulls	346	347	346
Calves	76	88	79
Cows and adult bulls	312	315	313
Production (dressed carcass weight):			
Home-fed production	935	910	928
Value of production (£ million)	2,955	3,349	3,758
Value of home-fed production	3,013	3,312	3,744
Change in work-in-progress	-57	39	33
Less imported livestock	1	2	21
Plus breeding animals exported	-	-	1
Subsidies	40	40	40
Value of production at basic price (£ million)	2,995	3,389	3,798
Price (pence per kg deadweight)			
Finished cattle: All prime cattle	353	398	432

Table 8.2c

Supply & use (thousand tonnes dressed carcase weight equivalent)	2020	2021	2022
Home-fed production	935	910	928
Imports from EU	301	310	284
Imports from the rest of the world	6	11	13
Exports to EU	113	98	131
Exports to the rest of the world	35	34	22
Total new supply	1,094	1,099	1,072
Home-fed production as % of new supply for use in the UK	85%	83%	87%

Notes for tables 8.2a to 8.2c:

1. Measures of home-fed marketings, dressed carcase weights, production and value include animals raised and slaughtered in the UK, excluding any animals removed from the food chain.
2. Change in work-in-progress is a valuation of the change in work-in-progress of animals to be slaughtered.
3. Subsidies refer to the Scottish Suckler Beef Support Scheme.
4. Value of production at basic price includes subsidies and taxes.
5. Dressed carcase weight does not include meat offals or trade in preserved or manufactured meat products. Boneless meat has been converted to bone-in weights to enable calculation of home fed production as % of total new supply. Volumes may be different to those in Chapter 13 -Trade.
6. EU trade includes meat from live finished animals both in the EU and the rest of the world.
7. – means ‘nil’ or ‘negligible’.

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Pigs and pig meat

Home-fed pig meat production in 2022 reached the highest level since 1999 at 1,002 thousand tonnes, increasing by 0.5% from 2021. The effects of the pig backlog in autumn/winter 2021 continued into the first half of 2022, driving production gains. Q1 2022 had the highest recorded average clean pig carcase weight at 93.58 kg/head, a 4.8% increase on Q1 2021 (see [Cattle, sheep and pig slaughter statistics](#)). The value of home-fed pig meat production increased by 21% due to very high prices. The average clean pig deadweight price increased by 20% (29.5 pence per kg) to £1.78 per kg. Prices were below average at the start of the year due the over-supply issues encountered in 2021 before reaching historical highs in the latter half of the year. Input costs were high throughout the year, with the average cost of compound pig feed increasing by 33% compared to 2021 (see [Animal feed prices](#)).

Table 8.3a to 8.3c - Pigs and pig meat

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk**Table 8.3a**

Population	2020	2021	2022
Total pigs (thousand head at June)	5,055	5,323	5,192
Sows in pig and other sows for breeding	345	345	301
Gilts in pig	57	54	42

Table 8.3b

Production	2020	2021	2022
Total home-fed marketings (thousand head)	10,693	11,070	10,964
Clean pigs	10,436	10,793	10,683
Sows and boars	257	278	280
Average dressed carcase weight (kg):			
Clean pigs	87	89	90
Sows and boars	144	146	144
Production (dressed carcase weight):			
Home-fed production	944	997	1,002
Value of production (£ million)	1,481	1,461	1,727
Value of home-fed production	1,474	1,439	1,743
Change in work in progress	4	20	-16
Less imported livestock	..	..	..
Plus breeding animals exported	3	2	0
Price (pence per kg deadweight)			
Clean pigs	161	148	178

Table 8.3c

Supply & use (thousand tonnes dressed carcase weight equivalent)	2020	2021	2022
Home-fed production	944	997	1,002
Imports from EU	665	623	658
Imports from rest of the world	1	1	1
Exports to EU	138	85	117
Exports to rest of the world	147	126	100
Total new supply	1,325	1,409	1,444
Home-fed production as % of new supply for use in the UK	71%	71%	69%

Chapter 8: Livestock

Notes for tables 8.3a to 8.3c:

1. Measures of home-fed marketings, dressed carcass weights, production and value include animals raised and slaughtered in the UK, excluding any animals removed from the food chain.
2. A valuation has been made of the change in work-in-progress of animals to be slaughtered.
3. Dressed carcass weights do not include meat offals or trade in preserved or manufactured meat products. Boneless meat has been converted to bone-in weights to enable calculation of home fed production as % of total new supply. Volumes may be different to those in Chapter 13 - Trade.
4. EU trade includes meat from live finished animals both in the EU and the rest of the world.
5. . . indicates that no data is available

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Sheep and lambs: mutton and lamb

The value of home-fed sheep meat production increased by 3.4% to £1.6bn. This is due to an increase in home-fed production which increased by 2.9% to 302 thousand tonnes compared to 2021. The price of finished sheep in Great Britain slightly dropped (-1.7%) compared to 2021, at £5.67 per kg. However, this drop in price should be understood in context of a historically high price in 2021 (£5.76 per kg). Sheep are less reliant on feed compared to other areas of meat production, so the industry has been less affected by a 29% increase in compound sheep feed prices during 2022 (see [Animal feed prices](#)).

Both imports and exports of lamb and mutton have bounced back after a decline in 2021, increasing by 15% and 7.1% respectively. These increases have been driven by lamb and mutton trade with the EU stabilising after a decline in EU trade in early 2021. There has been an increase in imports from Ireland, who are now the second largest supplier of sheep meat to the UK (after New Zealand).

Table 8.4a to 8.4c - Sheep and lambs: mutton and lamb

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk**Table 8.4a**

Population	2020	2021	2022
Total sheep and lambs (thousand head at June)	32,697	32,957	33,066
Breeding flock 1 year and over	15,370	15,624	15,779
Lambs under one year old	16,486	16,403	16,401

Table 8.4b

Production	2020	2021	2022
Total home-fed marketings (thousand head)	14,985	14,010	14,443
Clean sheep and lambs	13,482	12,261	12,684
Ewes and rams	1,502	1,749	1,759
Average dressed carcass weight (kg):			
Clean sheep and lambs	20	20	20
Ewes and rams	27	27	26
Production (dressed carcass weight):			
Home-fed production	306	293	302
Value of production (£ million)	1,363	1,574	1 626
Value of home-fed production	1,373	1,572	1 625
Change in work in progress	-10	3	1
Less imported livestock	-	-	-
Plus breeding animals exported	-	-	-
Subsidies	7	7	7
Value of production at basic prices (£ million)	1,370	1,581	1,633
Price			
Finished sheep (Great Britain pence per kg dressed carcass weight)	475	576	567

Table 8.4c

Supply & use (dressed carcase weight equivalent)	2020	2021	2022
Home-fed production	306	293	302
Imports from the EU	14	7	16
Imports from the rest of the world	58	52	52
Exports to the EU	92	75	82
Exports to the rest of the world	9	6	5
Total new supply	276	271	283
Home-fed production as % of new supply for use in the UK	111%	108%	107%

Notes for tables 8.4a to 8.4c:

1. Measures of home-fed marketings, dressed carcase weights, production and value include animals raised and slaughtered in the UK, excluding any animals removed from the food chain.
2. A valuation of the change in work-in-progress of animals to be slaughtered.
3. Subsidies refer to Scottish Upland Sheep Support Scheme.
4. Including subsidies and taxes.
5. Price is unweighted average of weekly prices at representative markets.
6. Supply and use figures do not include meat offals or trade in preserved or manufactured meat products. Boneless meat has been converted to bone-in weights to enable calculation of home fed production as % of total new supply. Volumes may be different to those in Chapter 13 – Trade.
7. EU trade includes meat from live finished animals both in the EU and the rest of the world.
8. Home fed marketings and production for 2021 and 2022 is based on Food Standards Agency administrative slaughter data.
9. – means ‘nil’ or ‘negligible’.

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Poultry and poultry meat

The overall value of home-fed poultry meat production increased by 3.9% in 2021 to £3.1bn. This was primarily driven by a 5.1% increase in the value of table chickens. The producer price of poultry increased, with a 6.2% increase in the price of table chickens to £1.48 per kg.

Overall home-fed poultry meat production decreased by 1.9% to 1.95bn tonnes, with a 1.1% decrease in table chicken meat production to 1.75bn tonnes. There were large reductions in the home-fed production of other poultry meat, with a 6.6% reduction in turkey meat. This contraction in production was driven by very high input costs, with a 31% increase in poultry feed (see [Animal feed prices](#)). Avian Influenza outbreaks at the start and end of 2022, and the subsequent housing orders, also contributed to a decrease in production.

The combination of high energy costs, high feed costs and Avian Influenza have also impacted poultry populations and the number of chick placements. Overall poultry numbers at June 2022 have dropped by 1% to 188 million, with a 0.5% decrease in table chicken population and an 8.8% reduction in other poultry (ducks, geese, turkeys, all other poultry). Placements have also fallen in 2022, with a 4.0% reduction in commercial broiler chick placements and a 9.0% reduction in turkey poult placements (see [Poultry slaughter and hatchery statistics](#)).

Table 8.5a to 8.5c - Poultry and poultry meat

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk

Table 8.5a

Population	2020	2021	2022
Number (thousand head at June):	181,957	190,019	188,187
Table chickens	118,388	126,693	126,052
Laying and breeding fowl	53,544	52,839	52,570
Turkeys, ducks, geese and all other poultry	10,025	10,487	9,564

Table 8.5b

Production	2020	2021	2022
Slaughterings (millions):	1,182	1,194	1,146
Table chickens	1,097	1,123	1,085
Boiling fowls (culled hens)	58	49	43
Turkeys	16	12	10
Ducks & geese	11	10	9
Production (carcase weight):	1,993	1,989	1,951
Chickens and other table fowls	1,711	1,770	1,751
Boiling fowls (culled hens)	84	70	64
Turkeys	174	125	117
Ducks & geese	25	23	20
Value of production (£ million):	2,829	3,031	3,149
Table chickens	2,256	2,473	2,598
Boiling fowls (culled hens)	8	7	6
Turkeys, ducks, geese	379	329	310
Change in work in progress in fowls	-11	20	1
Exports of live poultry	161	162	178
Hatching eggs for export	92	75	84
Less live poultry imported	18	11	7
Less hatching eggs imported	38	22	23

Table 8.5c

Supply & use (thousand tonnes dressed carcase weight equivalent)	2020	2021	2022
Production	1,993	1,989	1,951
Imports from the EU	420	395	395
Imports to the rest of the world	14	23	23
Exports to the EU	313	237	237
Exports to the rest of the world	97	97	97
Total new supply	2,017	2,073	2,035
Production as % of new supply for use in the UK	99%	96%	96%

Notes for tables 8.5a to 8.5c:

1. Laying and breeding fowl are hens and pullets kept mainly for producing eggs for eating.
2. Carcase weight figures do not include meat offals or trade in preserved or manufactured meat products. Boneless meat has been converted to bone-in weights to enable calculation of home fed production as % of total new supply. Volumes may be different to those in Chapter 13 – Trade.
3. A valuation has been made of the change in work-in-progress of fowls to be slaughtered.
4. Prices are average producer prices
5. . . means ‘not available’ or ‘not applicable’.

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Milk

Milk production for human consumption decreased by less than 1% to 14.9 billion litres, a second year-on-year decrease. The dairy herd fell by less than 1% to 1848 thousand head and the average yield per cow decreased by less than 1% to 8,166 per annum.

The average milk price across the 2022 calendar year (excluding bonus payments) increased by 13 pence per litre (ppl) to a historic high of 44.0 ppl, an increase of 42%. High input costs and issues with sourcing on-farm labour led to a contraction in the milk supply at the end of 2021 and into 2022. In response processors increased prices to farmers to encourage production, with farm-gate prices reaching a record 51.6ppl in December 2022 (see [Milk Prices](#)). The price rises meant that the total value of production increased by 40% to the highest value on record of £6.7n.

Table 8.6a to 8.6c – Milk

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk**Table 8.6a**

Population and yield	2020	2021	2022
Dairy herd (annual average, thousand head)	1,856	1,853	1,848
Average yield per dairy cow (litres per annum)	8,208	8,213	8,166

Table 8.6b

Production (million litres)	2020	2021	2022
Milk from the dairy herd	15,229	15,214	15,088
Milk from the beef herd	-	-	-
Raw milk leaving farm	15,002	14,983	14,857
Milk processed on farm	87	90	91
On farm use	139	140	139
Volume for human consumption	15,089	15,073	14,949
Value of production (£ million)	4,426	4,769	6,659
Raw milk leaving farm	4,337	4,674	6,532
Processed milk products from farm	49	51	66
On farm use	40	44	61
Subsidies	..	..	..
Less levies	..	..	..
Value of production at market prices (£ million)	4,426	4,770	6,659
Prices (average milk producer prices, net of delivery charges (pence per litre))			
Farmgate price excluding bonus payments	29	31	44
Farmgate price including bonus payments	29	31	44

Table 8.6c

Supply & use (million litres)	2020	2021	2022
Production (excludes on farm use from 2015)	15,089	15,073	14,949
Imports	116	177	177
Exports	872	885	885
Total new supply	14,333	14,366	14,242
For liquid consumption	6,228	6,129	6,016
for manufacture	7,813	7,972	7,944
Butter	408	438	426
Cheese	4,641	4,703	4,844
Cream	327	326	326
Yoghurt	528	463	423
Condensed milk	351	343	337
Milk powders	875	1,003	948
Other products	682	696	639
Dairy wastage and stock change	292	266	282
Other uses	130	130	129
Production as a % of new supply	105%	105%	105%

Notes for tables 8.6a to 8.6c:

1. Dairy herd figures are the average size of the dairy herd across the whole year.
2. Dairy herd is defined as dairy cows over two years of age with offspring.
3. Milk from dairy herd excludes suckled milk. Milk from beef cows is no longer recorded as no longer considered significant. This item has been removed from this table but can still be found in the accompanying dataset to 2016.
4. On-farm use is farmhouse consumption and milk fed to livestock.
5. Raw milk leaving farm in the value of raw milk sold to other businesses (dairies) for processing.
6. Processed milk products from farm are sold direct to the consumer.
7. Prices are average milk producer prices, net of delivery charges
8. Condensed milk includes that used in the production of chocolate crumb and in the production of machine skimmed milk.
9. "Other uses" include farmhouse consumption, milk fed to stock and on farm waste. Excludes suckled milk.

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Hen eggs

The value of egg production for human consumption decreased by 4.0% to £786 million after five consecutive year on year increases. This decrease was driven by a reduction in overall egg production which decreased by 6.5% on 2021. Eggs for human consumption fell by 7.2% and eggs for hatching decreased by 1.9%. Layer chick placements also fell in 2022 to 13.7 million chicks, a decrease of 8.7% (see [Poultry slaughter and hatchery statistics](#)). High input costs and the impacts of Avian Influenza led to scaled back egg production in 2022, despite strong retail demand.

The average price of eggs increased by 3.4% (2.8 pence per dozen) to 84.5 pence per dozen. This average price rise is mainly due to the contraction in the supply of eggs. An increase in the free-range market share also contributed to a higher overall farmgate price, increasing from 59% in 2021 to 61% in 2022 (see [Egg production and prices](#)).

Egg imports have recovered in 2022 after 2021 which had the lowest egg imports since 2002. Imports have increased by 7.5% in 2022 although they remain well below the 5-year average. In contrast, exports have decreased by 20%.

Table 8.7a to 8.7c - Hen eggs

Enquiries: Alexandra Hall on +44 20 7714 1374

Email: defra.fisu@defra.gov.uk

Table 8.7a

Population (thousands at June)	2020	2021	2022
Number of laying fowl	39,758	40,568	40,246

Table 8.7b

Production	2020	2021	2022
Volume of production of eggs	1,105	1,150	1,075
Eggs for human consumption	962	1,001	929
Eggs for hatching	128	131	128
Other	16	18	18
Value of production of eggs for human consumption (£ million)	740	818	786
Prices (pence per dozen)			
Weighted average of eggs graded in the UK	76.9	81.7	84.5

Table 8.7c

Supply and use	2020	2021	2022
UK production of eggs for human consumption	962	1,001	929
Eggs sold in shell	852	882	818
Eggs processed	109	119	111
Imports from the EU	148	118	127
Imports from the rest of the world	1	1	1
Exports to the EU	26	34	27
Exports to the rest of the world	-	1	1
Total new supply	1,084	1,085	1,029
Production as % of new supply for use in the UK	89%	92%	90%

Notes for tables 8.7a to 8.7c:

1. "Other" eggs include hatching eggs for export and waste
2. Eggs for hatching and hatching egg exports are not valued as they are included in the final value for poultry in table 8.5.
3. Prices are those paid by packers to producers in the United Kingdom and take account of all egg systems - intensive, free range, barn and organic. Bonus payments are included
4. EU trade figures include shell egg equivalent of whole (dried, frozen and liquid) egg, egg yolk and albumen.
5. – indicates a 'nil' or 'negligible' value
6. Egg production figures have been revised following the publication of Total Income from Farming 2022. As such, the 2022 egg production and value of production figures quoted in tables 8.7a-c in Chapter 8 and table 8.7 in the dataset will differ from those in Chapter 4 - Accounts.

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Revisions

Figures in these tables for 2022 are provisional and may be subject to revision.

Revisions have been made to previous data due to on-going revisions caused by estimated survey data being replaced with actual data when it is received; survey respondents supplying amended figures for previous survey periods; changes to data supplied by Scotland and Northern Ireland and amended administrative data; updates to trade data supplied by HMRC; and methodological changes.

Chapter 9: Intermediate Consumption

Summary

In this summary, all values are provided in current prices which is considered the most intuitive approach for comparisons over a short time period. It should be noted that these values have not been adjusted for inflation, which was unusually high in 2022 at 5.0%. For the current prices dataset please see Chapter 4: Accounts.

In 2022:

- The total cost of **intermediate consumption** was £22,084 million, an increase of £3,560 million (19%) from 2021 to 2022.
- The value of **animal feed** increased by £1,690 million (26%) from 2021 to £8,270 million in 2022.
- The value of **energy** increased by £690 million (48%) from 2021 to £2,138 million in 2022.
- The total value of **fertilisers** was £2,490 million, an increase of £1,091 million (78%) from 2021 to 2022.

Introduction

Chapter 4 provides more detailed information on input costs and gives a full breakdown of intermediate consumption.

Figures 9.3 and 9.4 present the value of energy and fertilisers respectively. These are presented in real terms, adjusted for inflation, which provides more meaningful comparisons over longer time periods. Comparisons over more recent years are presented at current prices, not adjusted for inflation, which is considered the most intuitive for comparisons over shorter time periods.

Inputs

Figure 9.1 Intermediate consumption (at current prices)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk

Year	Intermediate Consumption (£ billion)
2017	15.8
2018	17.0
2019	17.1
2020	16.8
2021	18.5
2022	22.1

[Download the full Intermediate consumption dataset](#)

Figure 9.1 shows the value of intermediate consumption from 2017 to 2022. Since 2017, the average value of intermediate consumption has been £17.9 billion, with the lowest value of £15.8 billion occurring in 2017 and the highest value of £22.1 billion occurring in 2022, an increase of £3.6 billion (19%) from 2021.

Animal Feed

Table 9.1 Animal feed (thousand tonnes unless stated otherwise)

Enquiries: Allan Howsam on +44 (0) 20 802 66123

Email: allan.howsam@defra.gov.uk

	2020	2021	2022
Compounds:			
Cattle	5,033	5,078	4,991
Calves	278	277	260
Pigs	2,247	2,343	2,263
Poultry	5,170	5,209	4,826
Sheep	846	898	861
Total compounds plus imports less exports	13,532	13,681	13,077
Straight concentrates	7,036	6,939	6,153
Non-concentrates	525	525	525
Inter/intra farm transfer	9,479	8,941	8,738
Total all purchased animal feed	30,571	30,086	28,493
Value of purchased animal feed (£ million)	£5,732	£6,580	£8,270

Notes:

1. Compounds poultry: includes poultry feed produced by 'retail' compounders but excludes production from integrated poultry units which are included within the straight concentrates data.
2. 'Maize for stockfeed' is included within the 'inter/intra farm transfer' category.
3. See Chapter 4: Accounts for a breakdown of the value of animal feed. There may be minor discrepancies between values presented here and those in Chapter 4: Accounts because of data updates since the UK Accounts were computed.

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The cost of animal feed is the largest item of expenditure recorded in the production and income account. Usage remained broadly level from 1993 to 2009 (around 25 million tonnes) before rising steadily since then to reach a peak of 30.8 million tonnes in 2018 before falling to 28.5 million tonnes in 2022. Despite the broadly increased usage, the value of animal feed used within the agricultural industry has closely followed trends in commodity prices, shaped by exchange rates and world prices.

The total value of all animal feed increased by 26% between 2021 and 2022 to £8.3 million and the total volume of all 'purchased' animal feed decreased by 5.3% to 28.5 million tonnes. Total compound feed production decreased by 4.4% with decreases in poultry (-7.4%), calves (-6.1%), sheep (-4.1%), pigs (-3.4%) and cattle (-1.7%). 2022 been one of the most challenging years for the pork sector, with negative margins

Chapter 9: Intermediate Consumption

leading to a significant drop in the breeding herd. Last year's backlog of pigs to slaughter has cleared which temporally increased demand as the pigs grew bigger and therefore needed additional feed. The poultry industry faced challenges of squeezed margins from high costs and the impacts of Avian Flu.

2022 saw the price of commodities rise; the Russia / Ukraine conflict caused disruption to the supplies of key cereals and oilseeds; Prices peaked in the summer before slowly falling towards the end of the year (albeit still higher prices than 2021). The ruminant sector is likely to have maximised forage and grass to help keep feed costs down.

Defra June 2022 Survey results showed a 1.0% decrease in poultry to 188 million birds. Broiler numbers saw a decrease of 0.5%, to 126 million and the breeding and laying flock fell by 0.5% to almost 53 million. The total number of pigs in the UK decreased by 2.5% to 5.2 million animals. Breeding pigs decreased by 15%, while fattening pigs decreased by 1.1%. Sheep and lambs showed increase by 0.3%, to just over 33.0 million. The female breeding flock increased by 1.0% to 15.8 million whilst the number of lambs saw little change and remains at 16.4 million whereas the population of cattle / calves showed little change at 9.6 million.

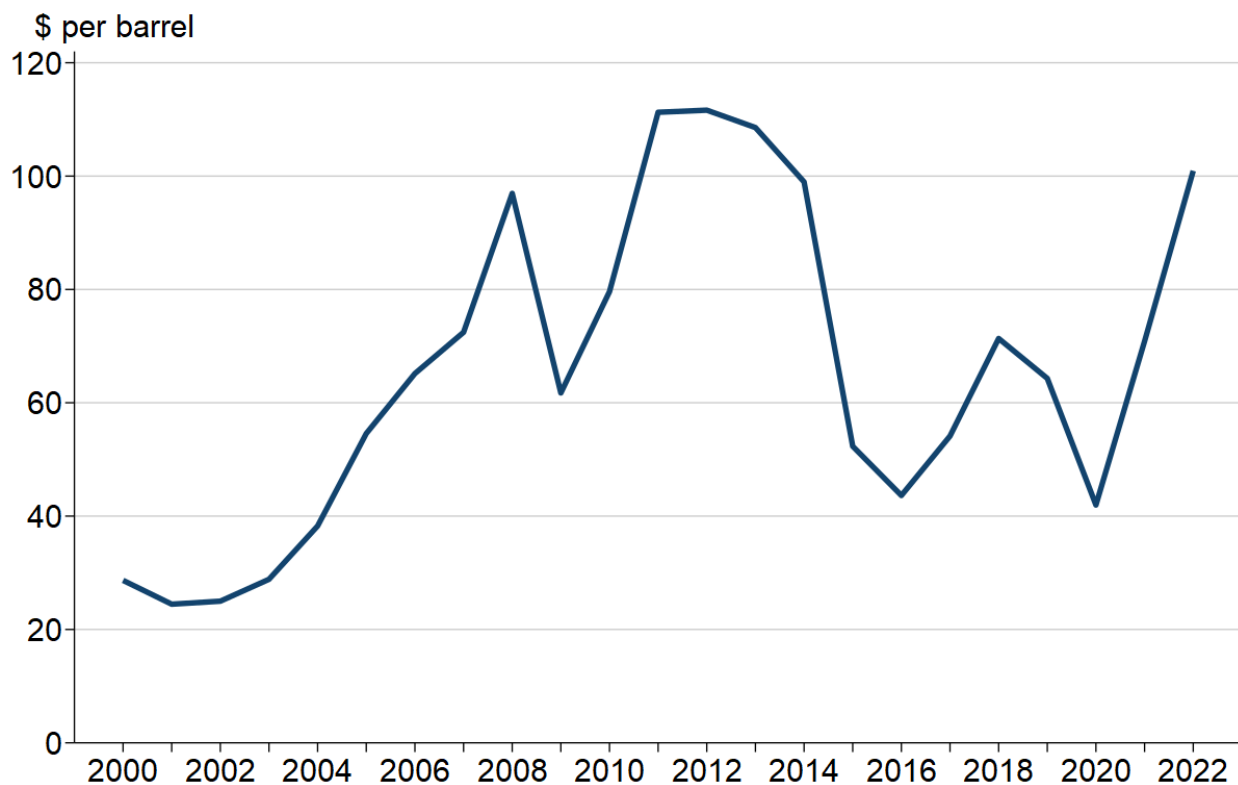
Besides compound feed usage there was a decrease of 11% in purchased straight concentrates and a 2.3% decrease in inter/intra farm sales.

Oil Prices

Figure 9.2 Annual Europe Brent Spot Price

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk



Source: US Energy Information Administration

Text description for Figure 9.2: Figure 9.2 is a line chart showing the Europe Brent Spot Price from 2000 to 2022. Values are presented as \$per barrel.

[Download the full Intermediate consumption dataset](#)

Some inputs, such as fuel, electricity and fertilisers, are closely linked to oil price. Consequently, oil price plays a role in the increase or decrease of the costs for running machinery and for heating, lighting, drying crops and the cost of fertiliser purchases.

Figure 9.2 shows the trend in annual Europe Brent crude oil prices since 2000. Oil prices rose strongly between 2002 and 2008, but fell sharply in 2009 as a global financial crisis hit. Between 2011 and 2014, oil prices were high but relatively stable due to a weak global economy and tension in the Middle East.

Into 2015, strong global production exceeded demand, causing prices to fall rapidly, dropping below \$45 per barrel by 2016. Prices rose steadily through 2017 and 2018, reaching just over \$70 a barrel, amid fears of US sanctions and global shortages.

Chapter 9: Intermediate Consumption

However, the price was still much lower compared to the high prices seen at the start of the decade.

In 2020, coronavirus related restrictions resulted in a rapid contraction in global demand for oil, particularly for travel. This caused the price to fall below \$42 per barrel for the first time since 2004. The price rebounded strongly in 2021, as the easing of Covid-19 restrictions globally saw the demand for oil outpace supply. The average price in 2021 was \$71 per barrel, slightly lower than the peak in 2018 and still considerably lower than the highest price of \$112 per barrel in 2012.

This increase of 69% from 2020 to 2021 was followed by an increase of 42% to see oil prices at \$101 per barrel in 2022. Russia's invasion of Ukraine in February 2022 had a significant impact on the import of crude oil to Europe, with the volume of Russian oil decreasing throughout the year from approximately 28% of total imports in January to 4% in December. This decrease in volume coupled with uncertainty of supply saw oil prices peak in July 2022 at \$122 per barrel before stabilising throughout the year as dependency on Russian imports decreased.

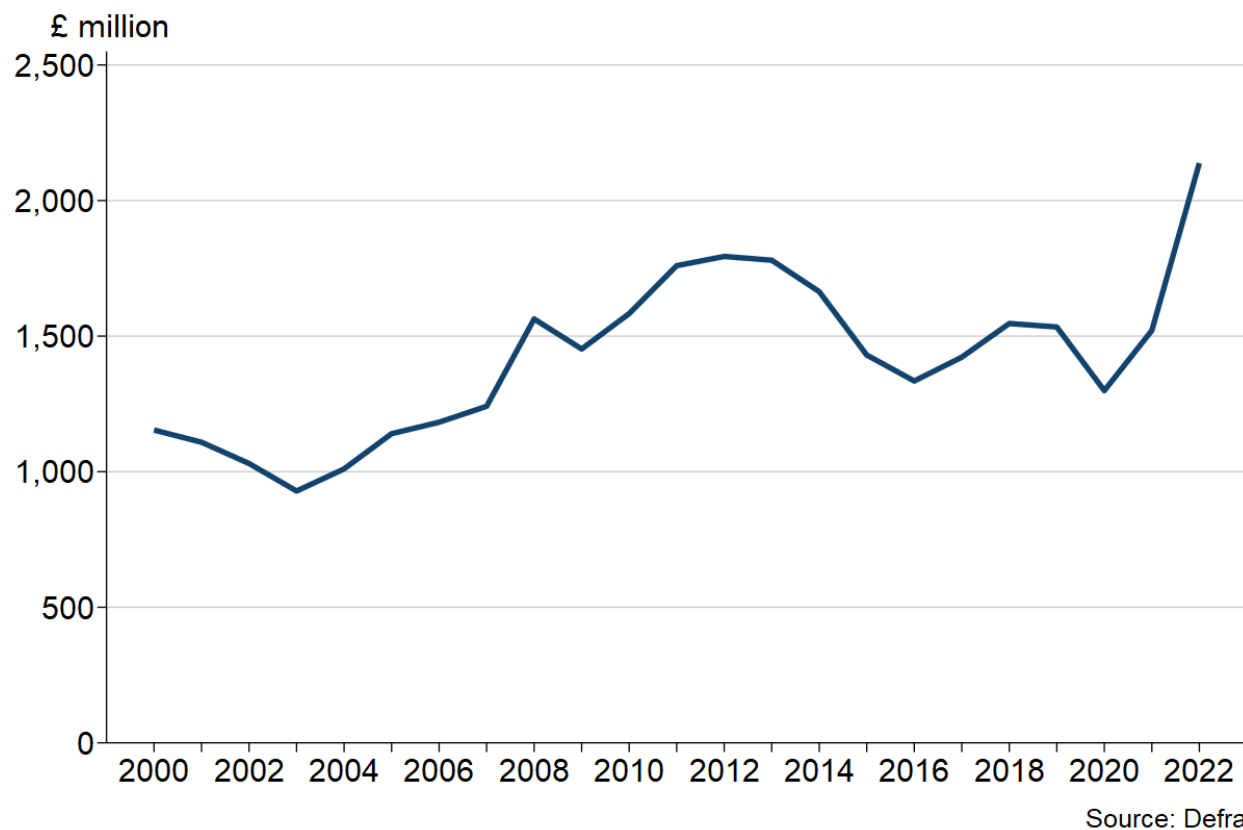
For more information on European oil prices see this eurostat article: [Crude oil imports and prices: changes in 2022](#)

Energy

Figure 9.3 Energy (in real terms)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk



Text description for Figure 9.3: Figure 9.3 is a line chart showing the value of energy in real terms from 2000 to 2022. Values are presented in millions,

[Download the full Intermediate consumption dataset](#)

Figure 9.3 shows the value of energy usage for agriculture in real terms. Over the long term the value of energy costs has followed a similar pattern to that of the crude oil price (see Figure 9.2). Energy costs steadily increased during the 2000s reaching the highest cost since 2000 in 2012 before falling in 2013, 2014 and 2015. From 2015-2021 energy costs have averaged £1,441 million (in real terms), but with some relatively large year on year fluctuations.

In 2022 the total cost of energy was £2,138 million, an increase of £690 million (48%) from 2021 at current prices. This value of energy is the highest in real terms since the dataset began in 1973 and is the first time that, in real terms, energy costs have been over £2,000 million. This was mainly driven by an increase in motor and machinery fuels of £449 million (49%) to £1,371 million. Similarly, electricity and fuels for heating increased in 2022, rising by £240 million (46%) to £767 million. This is reflective of the

wider UK energy crisis, which has been further impacted by the war in Ukraine. There was a slight reduction in volume, primarily in electricity and fuels for heating, as less drying of crops was required due to warm harvesting weather.

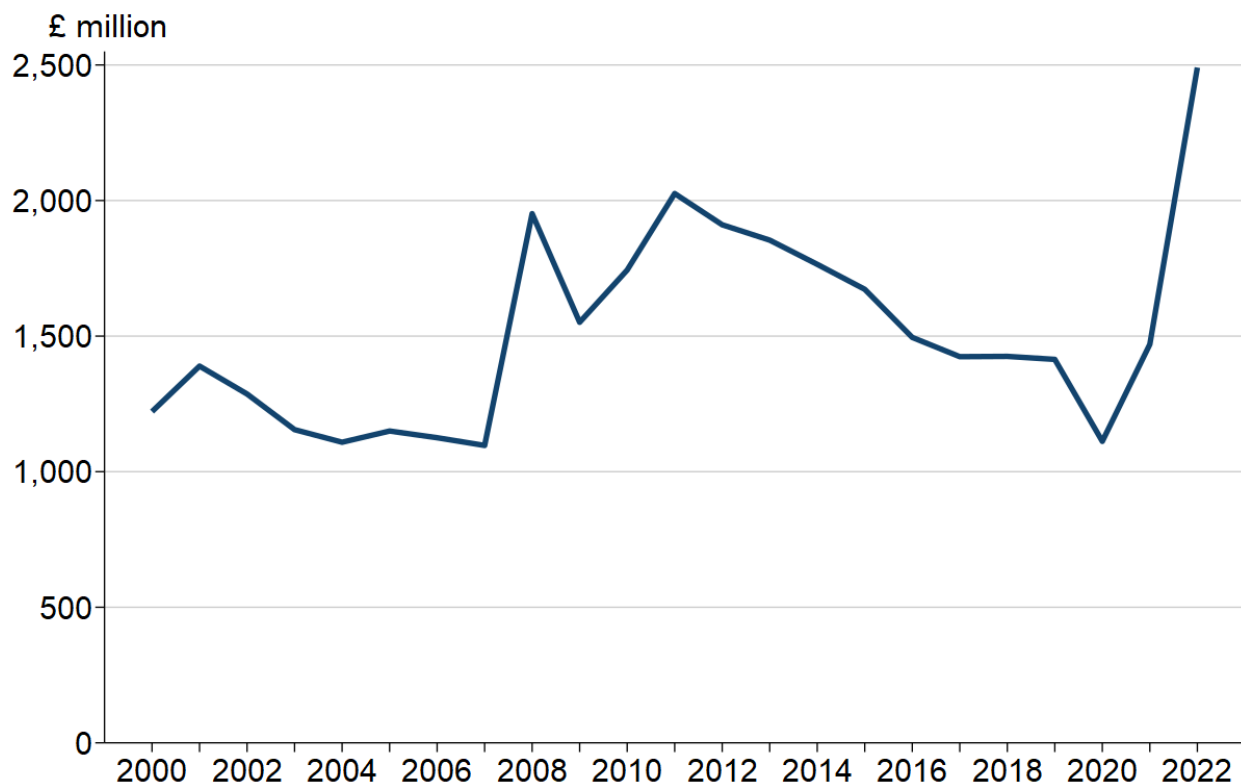
For the full current prices and real terms dataset see Chapter 4: Accounts

Fertilisers

Figure 9.4 Fertilisers (in real terms)

Enquiries: Tim Buttanshaw on +44 (0) 20 8026 3601

Email: farmaccounts@defra.gov.uk



Source: Defra

Text description for Figure 9.4: Figure 9.4 is a line chart showing the value of fertilisers in real terms from 2000 to 2022. Values are presented in millions,

[Download the full Intermediate consumption dataset](#)

As the price of oil directly influences the price of energy it also affects the cost of fertiliser. Natural gas is used in the process of manufacturing nitrogen fertilisers and its price is closely linked to the price of oil. Consequently, if the price of oil rises so does the cost of producing fertiliser.

Figure 9.4 shows the cost of fertilisers since 2000 in real terms. Between 2000 and 2007 the cost of fertilisers was largely stable. However, from 2007 to 2008 the cost of fertilisers increased by 78% (in real terms). The cost of fertiliser then dropped in 2009

Chapter 9: Intermediate Consumption

by 21% before rising in 2010 and in 2011 when it reached the highest cost in real terms since 2000. Between 2012 and 2019 the cost of fertilisers steadily declined. In 2020, there was a sharp drop in the cost of fertilisers resulting from reductions in prices as well as the volume of fertilisers used. 2021 saw an increase of 53% from 2020, more than bouncing back from the sharp decrease which had been seen in 2020.

2022 saw a dramatic increase in the cost of fertilisers, with an increase of £1,091 million (78%) (at current prices) from 2021, to £2,490 million, the highest value in real terms since 1986. The main driver of this increase was higher prices, with an average increase in price of 46% across all fertilisers. This price increase was largely the result of higher energy prices raising the cost of manufacturing, coupled with higher demand as a result of reduced production. There was also a 4.5% increase in the volume of fertilisers used in 2022, due to a return to more fertiliser intensive winter sowing.

Other Input Costs

The cost of seeds in 2022 was £748 million, a decrease of £64 million (-7.9%) from 2021. Seed usage is driven by a combination of crop area, time of drilling, and drilling conditions. For crops planted in spring 2022, seed rates decreased as a result of good drilling conditions, which enabled crops to be sown during optimal time windows without needing to increase the seed rate. The area of spring 2022 crops also decreased from 2021 due to an increase in winter cropping (planted in autumn 2021), with a 13% reduction seen in the area of spring barley. Favourable weather conditions also led to a slight increase in winter crop areas in autumn 2022 from 2021.

The cost of plant protection products in 2022 was £967 million, an increase of £87 million (9.9%) from 2021. This increase was largely driven by a 10% increase in average unit value across plant protection products, which offset a weighted decrease in usage of 0.4% from 2021.

Chapter 10: Public Payments

Summary

Key results for 2022

- Total **direct payments** to farmers decreased by £83 million (-3.0%) from 2021, to £3,213 million in 2022.
- **Basic Payment Scheme (BPS)** payments decreased by £222 million (-7.9%) from 2021, to £2,603 million in 2022.
- Payments linked to **agri-environment schemes** increased by £2 million (0.5%) from 2021, to £357 million in 2022.

Introduction

This chapter shows the value of agricultural support payments in the United Kingdom. Agricultural support will vary as older schemes close and new schemes are introduced, therefore care should be taken when comparing between UK countries and years.

In 2021, agricultural support payments began to change following the UK's departure from the EU Common Agricultural Policy (CAP).

Payments made to UK farmers under the Basic Payment Scheme (BPS) before 2021 were set in Euros and converted to Sterling using the exchange rate set by the European Central Bank for the month of September as a whole. From 2021 onward all BPS payments are funded by the UK exchequer and includes young farmer and redistributive payments.

Existing schemes under rural development programmes will continue to be co-funded from the European Agricultural Fund for Rural Development (EAFRD) until 2024 or until remaining funds are depleted, whichever is sooner.

Payments previously made under the CAP will gradually be replaced by payments from the devolved governments. Agricultural domestic support will be administered through new schemes introduced in each country, and will generally be targeted at improving agri-environmental performance.

Direct Payments

The tables below show the direct payments made to agricultural producers that feed into the agricultural accounts (see Chapter 4). Amounts are shown by year and by country for the year 2022.

Values shown for a particular year refer to schemes operating in that year and are shown in current price, i.e. not adjusted for inflation, and are expressed as amounts expected to be paid.

Table 10.1: Direct payments to farmers 2020 to 2022 (£ million)

Enquiries: Katie Fisher on 020 856 54419

Email: farmaccounts@defra.gov.uk

	2020	2021	2022
Decoupled and other payments			
Basic payment scheme	2,778	2,825	2,603
Agri-environment schemes	433	355	357
Less favoured areas support schemes	30	31	117
Animal disease compensation	25	27	68
Other	31	12	20
Total decoupled and other payments	3,297	3,249	3,166
Coupled payments (linked to production)			
Total coupled payments less levies	47	47	48
Total direct payments less levies	3,344	3,296	3,213

Notes:

1. Decoupled payments are not linked to production and include the Basic Payment Scheme and agri-environment schemes. Coupled payments are linked to production.
2. Other payments in 2022 include the New Entrants scheme operated in Scotland, and Covid 19 support schemes in Northern Ireland.
3. Coupled payment schemes in 2022 include the Scottish Suckler Beef Support Scheme, the Scottish Upland Sheep Scheme and the Northern Ireland Protein Crops Scheme. Total payments under the Protein Crops Scheme were less than £0.5 million and so are not shown in Table 10.2 below.

[Download the full Public Payments dataset](#)

Table 10.2: Direct payments to farmers by country (£ million).

Enquiries: Katie Fisher on 020 856 54419

Email: farmaccounts@defra.gov.uk

	England	Wales	Scotland	Northern Ireland
Decoupled and other payments				
Basic payment scheme	1,648	237	421	297
Agri-environment schemes	286	41	24	6
Less favoured areas support schemes	..	..	117	..
Animal disease compensation	52	5	1	11
Other	10	..	10	1
Coupled payments	..	..	47	..
Total direct payments less levies	1,995	283	620	315

Notes:

1. ‘..’ means not applicable.

[Download the full Public Payments dataset](#)

Take-up of agri-environment schemes

Agri-environment schemes provide an incentive to farmers to adopt land management and farm practices that are beneficial to the environment. The take-up of agri-environment schemes is shown by the total number of agri-environment agreements in place and the total area of land under these agreements. Due to the differing requirements of schemes, care should be taken when making comparisons. Fluctuations in areas and numbers occur as old schemes expire and new schemes begin.

Figure 10.1 Area under agri-environment schemes by country for 2020 to 2022 (thousand hectares)

Enquiries: Resham Chana

Email: resham.chana@defra.gov.uk

Year	England	Wales	Scotland	Northern Ireland	UK
2020	2,789	677	1,212	53	4,731
2021	3,035	647	1,179	61	4,922
2022	3,565	554	870	63	5,052

[Download the full Public Payments dataset](#)

Figure 10.2 Number of agri-environment agreements by country for 2020 to 2022

Enquiries: Resham Chana
 Email: resham.chana@defra.gov.uk

Year	England	Wales	Scotland	Northern Ireland	UK
2020	27,800	3,100	4,400	5,000	40,300
2021	28,800	3,000	4,200	5,500	41,500
2022	34,500	2,800	3,400	5,000	45,700

[Download the full Public Payments dataset](#)

Common Agricultural Policy (CAP) payments

Figure 10.3 shows all Pillar 2 Common Agricultural Policy payments for 2017 to 2022. Pillar 2 funds rural development programmes and schemes are co-funded by the European Agricultural Fund for Rural Development until 2024, or until funds are depleted. Data is presented by European Union agricultural financial years and shown in Euros.

CAP-funded Pillar 1 payments ended in 2021 and legacy schemes have switched to UK funding. CAP Pillar 1 payments prior to 2021 can be viewed in the full dataset.

Figure 10.3: Pillar 2 Common Agricultural Policy payments for 2017 to 2022 (EUR million)

Enquiries: Michael Redfern on +44 (0)207 764 2327
 Email: michael.redfern@ukcoordinatingbody.gov.uk

Year	EAFRD	Co-financing	Total
2017	542	261	803
2018	581	179	760
2019	776	225	1,001
2020	766	227	993
2021	638	189	827
2022	475	171	646

[Download the full Public Payments dataset](#)

General Services Support

Table 10.3 shows the annual cost of general services funded by UK Government and Devolved Administrations to support the agricultural industry. These are services that benefit the sector as a whole, and do not include payments to individual producers.

Table 10.3: General services support for 2021 to 2022 (£ million)

Enquiries: Katie Fisher on 020 856 54419

Email: farmaccounts@defra.gov.uk

	2021	2022
Agricultural research	262	259
Pest and disease control	3	21
Training services	3	2
Extension and advisory services	75	30
Inspection services	199	288
Marketing and promotions services	42	43
Infrastructural services	43	36

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Revisions

Figures for 2022 are provisional and subject to revision.

As a result of more data becoming available over time there have been minor revisions to earlier years in this release. These revisions are intended to enhance the precision of these estimates. Sometimes additional revisions are necessary to refine the methodology or correct historical errors, such revisions will always be noted.

Below are a list of key revisions that have been carried out since the last publication:

- Figures for the area of land and number of agreements under agri-environment schemes for England have been updated to include 2021 data.

Chapter 11: Environment

Summary

- Estimated greenhouse gas and air pollution emissions from agriculture have fallen between the year 2000 and 2021.
- Since the late 1990's nitrogen and phosphate fertiliser application rates have fallen.
- A comparison of soil nutrient balances (in kg per hectare) from the year 2020 to 2021 shows a 5.3% increase for nitrogen and a 17% decrease for phosphorus.
- The farmland bird index, a good indicator for general biodiversity on farms, has decreased since 1970 with the index for all farmland species in 2021 less than half of 1970 levels.

Introduction

Whilst agriculture contributes less than 1% to the United Kingdom's economy, it provides around three-quarters of the indigenous food we eat and is responsible for around 70% of land use. As well as being vital for food production, agriculture helps to shape the landscape, providing important recreational, spiritual and other cultural benefits. This can be viewed in terms of delivering vital ecosystems services, with food production being a provisioning service whilst other environmental and societal benefits are delivered by, for example, cultural and regulating services.

Agricultural production and the associated land use and management are key drivers of the environmental impacts from the sector. A key challenge is to decouple production from its environmental impact so that production can be increased whilst reducing the overall environmental footprint.

Farm practices and the use of inputs (particularly fertilisers and pesticides) directly influence the environmental pressures from farming including the quality, composition and availability of habitats and impact on air, water and soils.

In recent years, the key drivers of change in terms of environmental pressures from agriculture are declines in the number of livestock, specifically ruminants, and reductions in fertiliser applications, particularly on grassland. Reforms to the Common Agricultural Policy, and in particular the decoupling of subsidy payments from production, have been instrumental to these drivers of change. As a result of these reforms, agriculture has become more responsive to market conditions which may influence both positive and negative environmental impacts.

All the data presented in this chapter is the most recent at the time of publication. Links to further information on source data has been provided for each section of this chapter.

Emissions

Figure 11.1 Emissions from agriculture (%)

Enquiries: Maisie Duckham on +44 (0)20 802 67471

Email: AUK_stats_team@defra.gov.uk

Emission	Other sectors, use or sources	Agriculture	Total
Methane	51%	49%	100%
Nitrous oxide	29%	71%	100%
Carbon dioxide	98%	2%	100%
Total GHG emissions	89%	11%	100%
Ammonia	13%	87%	100%

Notes:

1. The entire time series is revised each year to take account of methodological improvements in the UK emissions inventory.

Source: [UK greenhouse gas emissions, Department for Business, Energy and Industrial Strategy, Emissions of Air Pollutants, Defra](#)

[Download the full Agri-environment dataset](#)

Agriculture accounts for approximately 11% of total greenhouse gas emissions in the UK. Three greenhouse gasses emitted by agriculture are nitrous oxide, methane and carbon dioxide.

Agriculture is a major source of both nitrous oxide and methane emissions in the UK, accounting for 71% of total nitrous oxide emissions and 49% of all methane emissions in 2021. In contrast, agriculture only accounted for about 2% of total carbon dioxide emissions in the UK.

Figure 11.2 Nitrous oxide emissions (million tonnes carbon dioxide equivalent)

Enquiries: Maisie Duckham on +44 (0)20 802 67471

Email: AUK_stats_team@defra.gov.uk

year	Non-agriculture	Agriculture	UK total
2010	6.7	13.9	20.6
2011	5.9	13.9	19.9
2012	5.8	13.8	19.6
2013	5.8	13.8	19.6
2014	5.7	14.4	20.1
2015	5.7	14.2	19.9
2016	5.6	13.8	19.5
2017	5.7	14.2	19.8
2018	5.7	14.0	19.7
2019	5.7	14.1	19.8
2020	5.4	13.2	18.6
2021	5.5	13.6	19.1

Notes:

1. The entire time series is revised each year to take account of methodological improvements in the UK emissions inventory.

Source: [UK greenhouse gas emissions, Department for Business, Energy and Industrial Strategy](#)

[Download the full Agri-environment dataset](#)

The majority of agricultural nitrous oxide emissions are sourced from soils, particularly as a result of nitrogen fertiliser application, manure (both applied and excreted on pasture) and leaching/run-off. In 2021 nitrous oxide emissions from agriculture are estimated to have fallen by approximately 18% since 1990 and approximately 14%

since 2000 (see Figure 11.2). This is consistent with trends in fertiliser usage over the same period.

Figure 11.3 Methane emissions (million tonnes carbon dioxide equivalent)

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year	Non-agriculture	Agriculture	UK total
2010	47.1	28.2	75.2
2011	44.3	28.0	72.3
2012	42.6	27.9	70.5
2013	38.1	27.7	65.8
2014	35.1	28.5	63.6
2015	33.9	28.6	62.5
2016	32.0	28.5	60.5
2017	32.3	28.6	60.9
2018	32.4	28.1	60.4
2019	31.9	28.1	60.0
2020	29.8	27.7	57.5
2021	29.1	27.9	57.0

Notes:

1. The entire time series is revised each year to take account of methodological improvements in the UK emissions inventory.

Source: [UK greenhouse gas emissions, Department for Business, Energy and Industrial Strategy](#)

[Download the full Agri-environment dataset](#)

The majority of methane emissions from agriculture arise from enteric fermentation (digestive processes) in ruminating animals, with manure management practices accounting for the remainder. In 2021, methane emissions from agriculture are estimated to have fallen by 14% since 1990 and 12% since 2000 (see Figure 11.3), mainly as a result of decreasing livestock numbers, particularly in cattle.

[Further information on greenhouse gas emissions from agriculture](#)

Ammonia emissions impact on air quality and subsequently human and animal health. High nutrient concentrations, particularly phosphorus, can cause nutrient enrichment (eutrophication) resulting in excessive growth of macrophytes and algae which can deplete dissolved oxygen levels. Deposition of ammonia can damage sensitive habitats due to eutrophication and the acidification of soils.

Figure 11.4 Ammonia Emissions (thousand tonnes)

Enquiries: Maisie Duckham on +44 (0)20 802 67471

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year	Non-agriculture	Agriculture	UK total
2010	37.5	223.9	261.4
2011	37.4	223.6	261.0
2012	36.4	223.7	260.1
2013	35.0	220.5	255.5
2014	33.7	233.2	266.8
2015	32.3	236.8	269.0
2016	32.5	238.5	271.0
2017	33.2	240.8	274.0
2018	32.2	237.8	270.1
2019	32.2	237.0	269.2
2020	33.4	226.7	260.1
2021	34.5	230.5	265.0

Source: [Emissions of Air Pollutants, Defra](#)

[Download the full Agri-environment dataset](#)

In 2021 agriculture accounted for 87% of the UK's ammonia emissions. The main sources of ammonia emissions in the UK are agricultural soils and livestock, in particular cattle. In 2021 ammonia emissions from agriculture are estimated to have fallen by 17% since 1990 and 7.3% since 2000 (see Figure 11.4) due to long-term reductions in cattle numbers and more efficient fertiliser use. Despite decreasing over time, ammonia emissions have slightly increased over the past few years since emissions from agriculture reached their lowest point in 2013. This recent increase is largely due to an increase in ammonia emissions from agricultural soils.

[Further information on emissions of air pollutants.](#)

Pesticide usage

Plant protection products (pesticides) are used to regulate growth and to manage pests and diseases in crops. They play a major role in maintaining high crop yields and therefore greater production from agricultural land. However, they can have detrimental impacts on the environment, particularly on terrestrial and aquatic biodiversity.

The need for pesticide usage varies from year to year depending on growing conditions, particularly the weather which influences disease, weed and pest pressures. In addition, longer term variations are due to changes in the range and activity of active substances, the economics of pest control, and resistance issues. In the United Kingdom the treated area of arable crops (number of hectares multiplied by number of applications) has

remained relatively stable since 2008, whilst the total amount of pesticide applied (kg/ha) has shown an overall decline.

In recent years cereals accounted for the majority of both treated area and the weight of pesticides applied to arable crops in the United Kingdom. Figure 11.5 shows the application rates for different types of pesticides used on cereal crops in Great Britain. The majority of UK cereals (more than 80%) are grown in England.

Figure 11.5 Pesticide use on cereals, Great Britain (kg/ha)

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year	Fungicides	Growth regulators	Herbicides	Insecticides	Molluscicides	Total
2010	0.20	0.60	0.39	0.07	0.19	1.46
2012	0.20	0.50	0.41	0.05	0.15	1.32
2014	0.22	0.49	0.40	0.03	0.13	1.27
2016	0.24	0.48	0.45	0.02	0.11	1.30
2018	0.24	0.47	0.48	0.02	0.12	1.32
2020	0.21	0.45	0.41	0.01	0.10	1.18

Notes:

1. All pesticides include seed treatments.

Source: [Pesticide usage survey](#)

[Download the full Agri-environment dataset](#)

Further information can be found on the [pesticide usage webpage](#).

Fertiliser usage

Nitrogen and phosphorous are key nutrients needed for crop growth. A deficit in either or both of these nutrients can have a negative impact on crop yields and levels of production. The main source of these nutrients are mineral fertilisers and organic fertilisers such as manures and slurries from livestock.

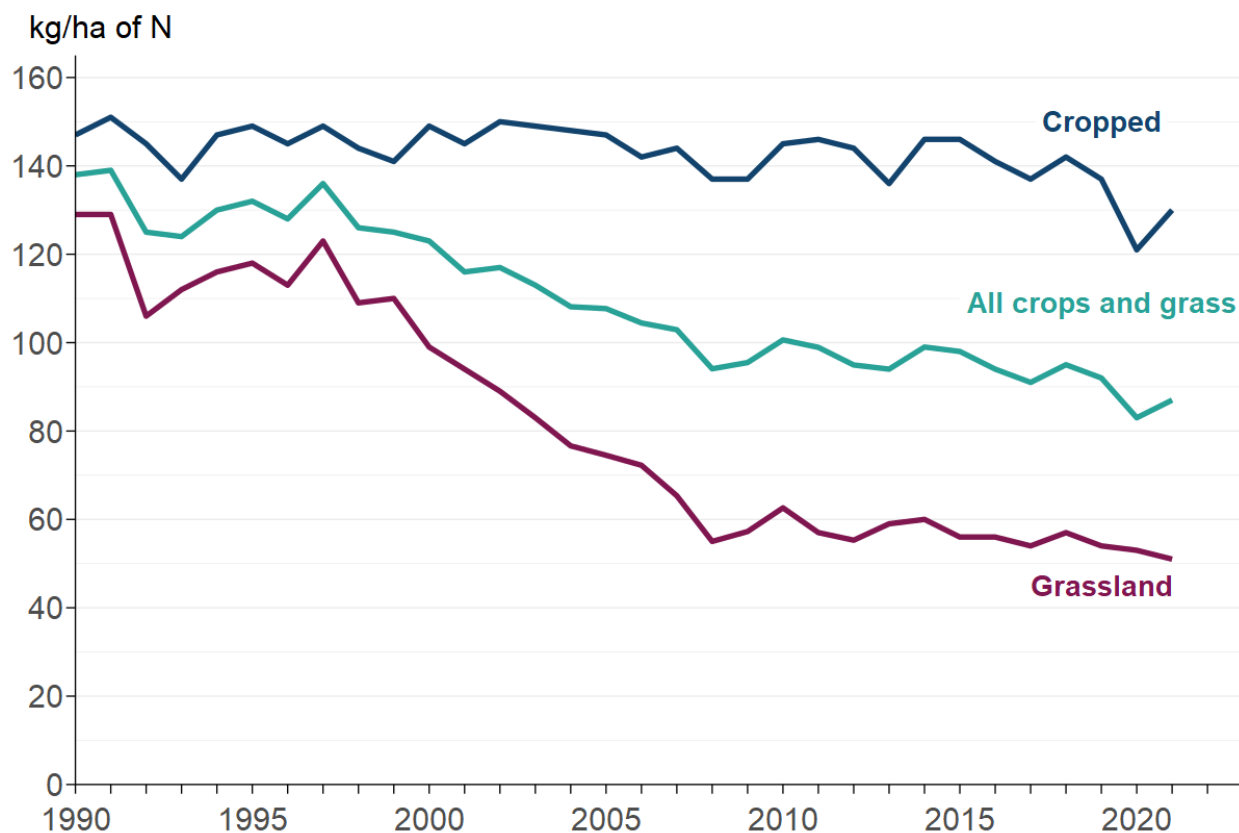
Fertilisers can have an adverse impact on the environment depending on the application method, through over-application and natural losses from soils and manures. These impacts include water quality (nitrogen and phosphorous levels in waterbodies), air quality (ammonia emissions) and climate change (nitrous oxide emissions).

Most agricultural soils do not contain enough naturally occurring plant-available nitrogen to meet the needs of a crop throughout the growing season so supplementary nitrogen applications are needed each year. Nitrogen usually has a large immediate effect on crop growth, yield and quality. Correct rate and timing of applications is important to ensure crop growth requirements are met.

Figure 11.6 Nitrogen (N) use (kg/ha) on all crops and grass, Great Britain

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Email: AUK_stats_team@defra.gov.uk



Notes:

1. Cropped land is tillage crops.

Source: [British survey of fertiliser practice](#)

Text description of Figure 11.6: Figure 11.6 is a line chart showing nitrogen use on all crops and grass from 1990 to 2021. Nitrogen use has shown a decline on grassland, steadily decreasing from around 1998 and levelling off in around 2008, since when rates of use have been similar. Nitrogen use on cropped land remained at similar levels but has decreased in recent years.

[Download the full Agri-environment dataset](#)

In Great Britain between 1990 and 2018 the overall mineral nitrogen application rate on tillage crops was largely in the range of 140 -150 kg/ha, but it has declined in recent years. The rate of nitrogen application increased by 9 kg/ha to 130 kg/ha in 2021 compared to 2020.

For grassland, nutrient application rates have always been lower than for cropped land. Between 1990 and 2021 there has been a downward trend in the overall mineral

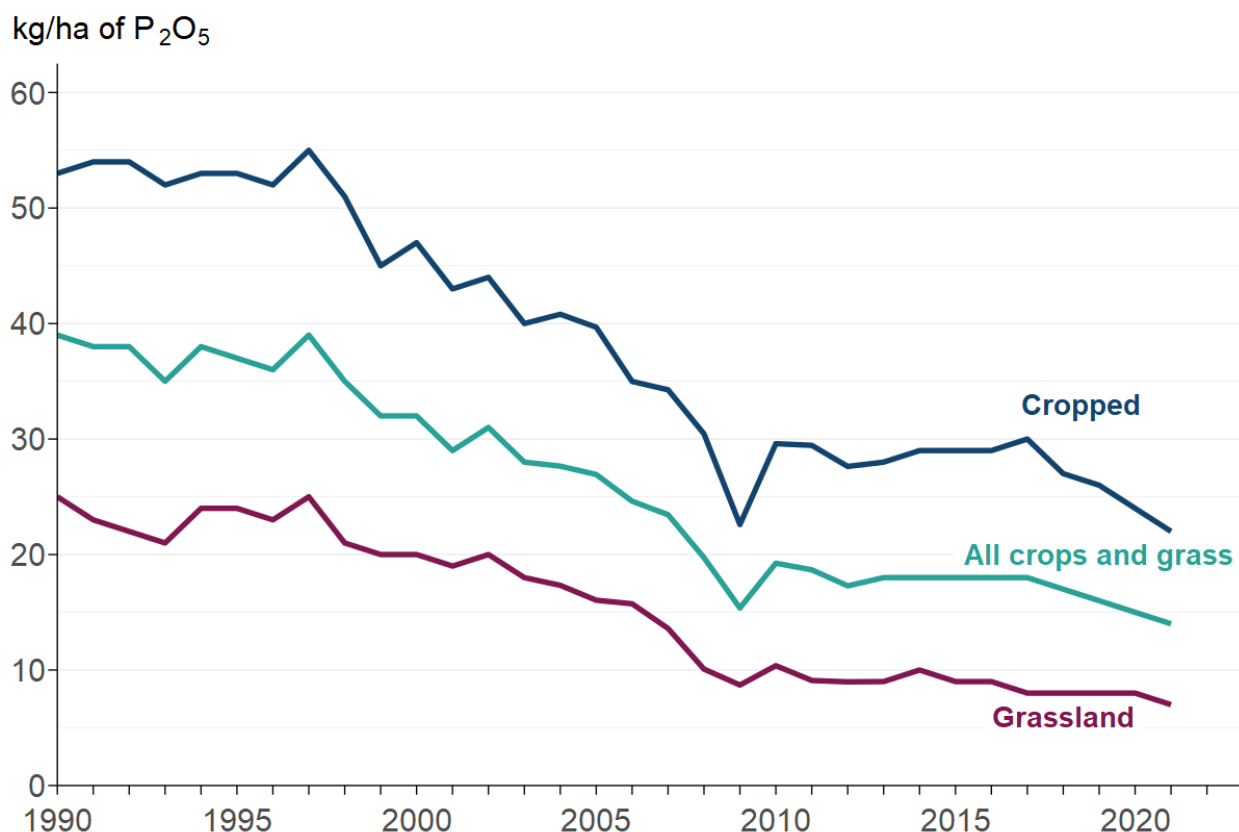
nitrogen application rate on grassland and in 2021 the rate was 51 kg/ha, the lowest rate recorded since 1984. A reduction in total cattle numbers is thought to have contributed to this, possibly in conjunction with some improvements in manure use efficiency.

Phosphate is applied in fertilisers and manures, particularly to replace the quantities removed in harvested crops. Most British soils can hold large quantities of phosphate in forms that are available for crop uptake over several years. Therefore, managing the supply of phosphate is based on maintaining appropriate levels in the soil with the timing of applications less critical

Figure 11.7 Phosphate (P₂O₅) use (kg/ha) on all crops and grass, Great Britain

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Notes:

1. Cropped land is tillage crops.

Source: [British survey of fertiliser practice](#)

Text description of Figure 11.7: Figure 11.7 is a line chart showing phosphate use on all crops and grass from 1990 to 2021. Whilst overall use has been higher on cropped land, the trends of phosphate use on cropped land and grassland have been similar,

showing a steady overall decline. In the past few years, the decline in use on cropped land has continued, whereas rates of use on grassland have remained similar.

[Download the full Agri-environment dataset](#)

From 1990 to 2021 total mineral phosphate application rates have more than halved to a rate of 14kg/ha in 2021. More recently the decline has levelled off with a similar rate seen since 2012. For grassland, rates applied have always been less than on cropped land. Both rates on grassland and cropped land have shown an overall downward trend between 1990 and 2021, with rates applied on grassland remaining at a similar rate for the last few years.

Annual levels of use of nitrogen and phosphate application are influenced by fertiliser prices, crop prices, crop type and weather-related issues during the growing season, for example the fall in phosphorus application rates in 2009 was related to high fertiliser prices and the changes in nitrogen use seen in 2019/20 reflect exceptional changes in the balance of the winter and spring cropping seasons (see Figures 11.6 and 11.7).

[Further information on fertiliser usage.](#)

Soil health

The success of UK agriculture depends upon healthy soils; they are arguably a farmer's most valuable asset. Soil degradation costs England and Wales an estimated £0.9bn - £1.4bn per year ¹. In the face of a changing climate and increase in food demand, it is important to mitigate the risks to long-term productive capacity and encourage farmers to manage their soils in a sustainable way. While rates of soil erosion in England are not excessively high, it is estimated to affect around 17% of land in England and Wales with impacts in the form of loss of productive capacity and nutrients, but also off-site costs to the environment. Around 3.9 million hectares of our soils are at risk of soil compaction which could lead to a total yield penalty of around £163 million per year ².

Actions to improve soil organic matter can be mutually beneficial for soil and production. For example, early establishment of crops in the autumn reduces soil erosion risk during the late autumn and winter months ³ and can also increase winter cereal yields ⁴.

Soil nutrient balances provide an indication of the overall environmental pressure from nitrogen and phosphorus in agricultural soils. They measure the difference between

¹ Total costs of soil degradation project 2011 Defra

² Total costs of soil degradation project 2011 Defra

³ Controlling Soil Water Erosion and Phosphorus Losses from Arable Land in England and Wales, Chambers et al. 2000

⁴ Time of sowing and the yield of winter wheat, Green et al, 1985

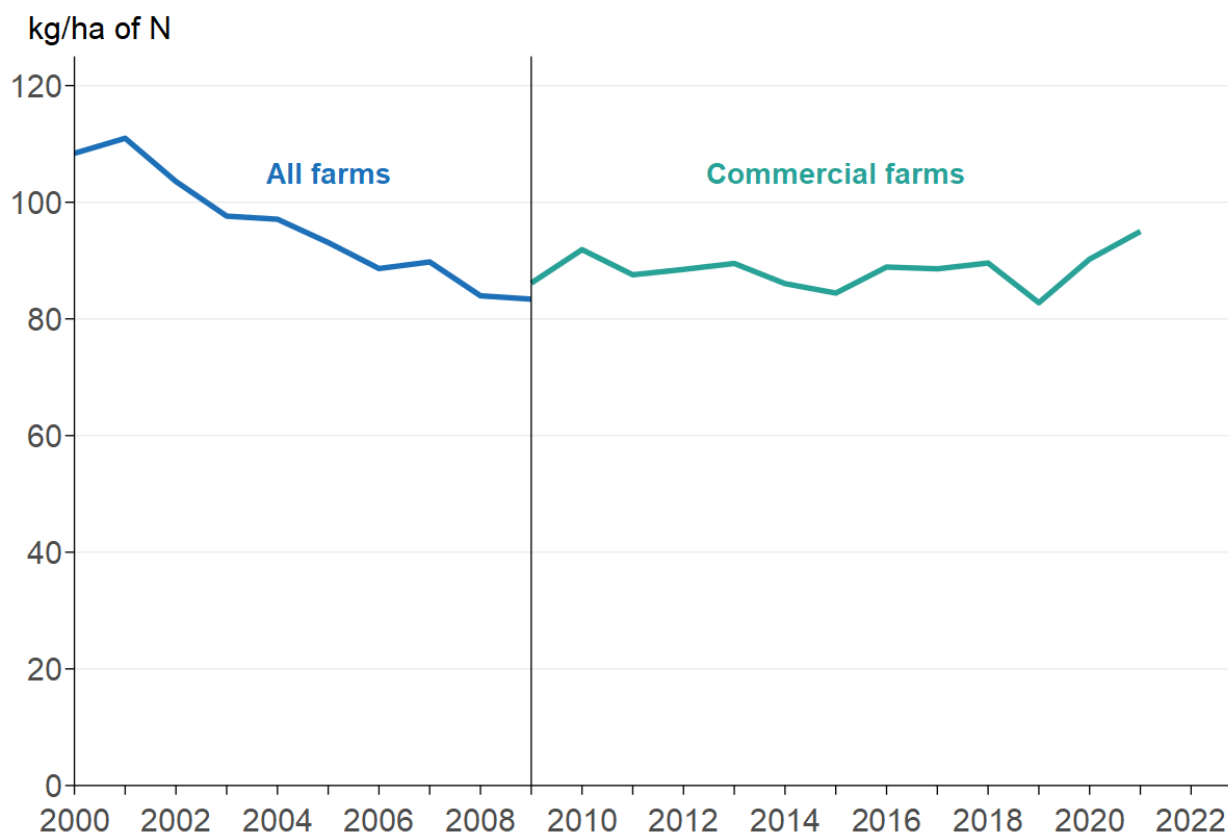
nutrients applied to soils (largely as fertilisers and manures) and those removed from soils by the growth of crops, including grass for fodder and grazing.

An increase in the balance per hectare indicates a greater environmental risk from nutrient losses and their associated emissions whereas a decrease in the balance per hectare broadly indicates a reduced environmental risk. However, there is a risk that nutrient deficits lead to poor soil fertility and subsequent loss of yields.

Figure 11.8 Nitrogen (N) soil nutrient balance (kg/ha)

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Notes:

1. The series break in 2009 is due to changes in [farm survey data collection](#).
2. From 2010 in England, June survey data for land and animals is collected only for commercial farms.
3. From 2000 to 2008 data is for all farms and hence based on a larger population.
4. For comparability, data for 2009 have been presented on both the definition used for 2000 to 2008 and that used from 2010 onwards.

Source: [Soil nutrient balances](#)

Text description of Figure 11.8: Figure 11.8 is a line chart showing the nitrogen soil nutrient balance on farms from 2000 to 2021. Balances have fluctuated slightly over time, but have remained between 80 kg/ha and 100 kg/ha since 2002.

[Download the full Agri-environment dataset](#)

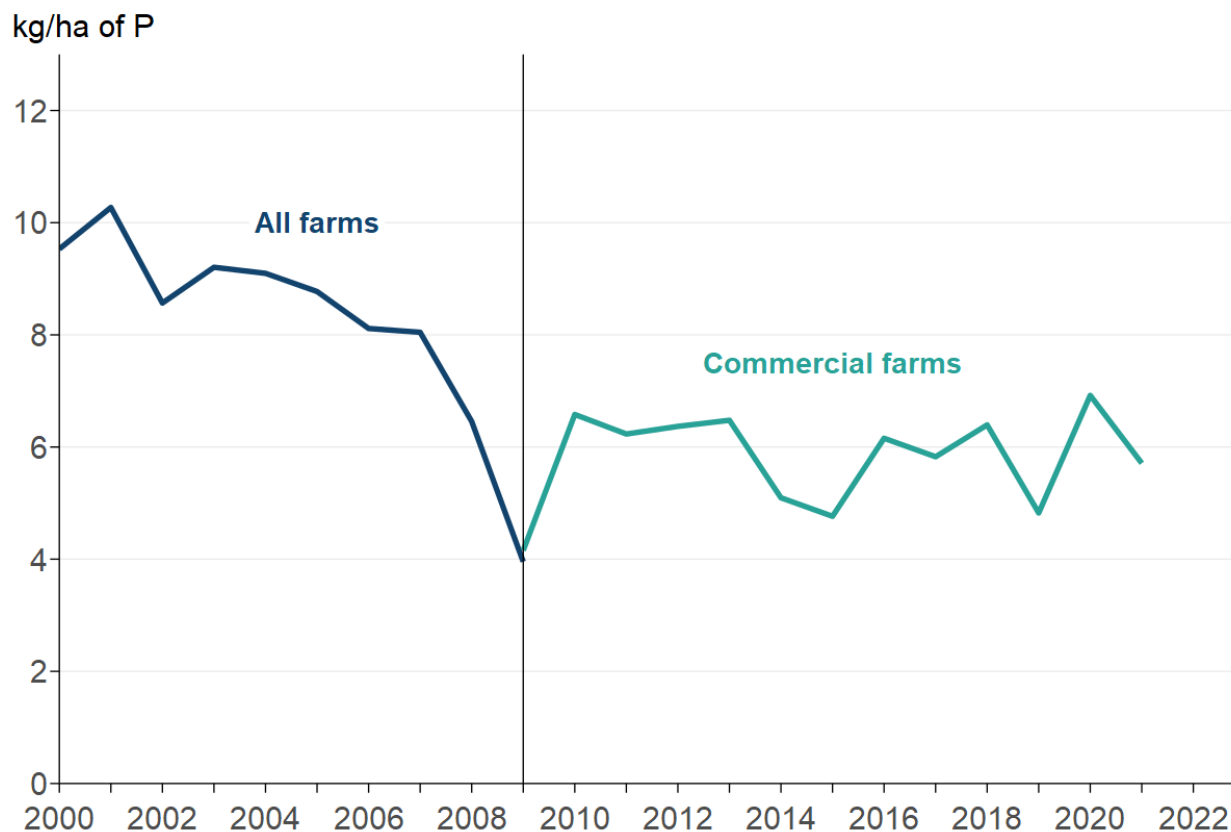
Provisional estimates for 2021 show that the nitrogen balance for the UK was a surplus of 95 kg/ha on managed agricultural land (see Figure 11.8). This is an increase of 5 kg/ha (5.3%) to the nitrogen balance surplus compared to 2020. This was driven by an increase in inputs of 7.8 kg/ha (4.2%) (mainly from increased use of inorganic manufactured fertilisers) which was partially offset by an increase in offtake of 3.0 kg/ha (3.1%) (mainly from increased cereal production) over the same period.

The longer-term trend shows a reduction of 13.4 kg/ha (12%) to the nitrogen balance surplus compared to 2000. Over this time, inputs decreased by 42 kg/ha (18%), which more than offset a decrease in offtake of 28 kg/ha (22%). The main drivers for this fall have been reductions in the application of inorganic (manufactured) fertilisers and manure production due to lower livestock numbers, The main driver behind the decrease in offtake was a reduction in forage due to a reduction in livestock numbers.

Figure 11.9 Phosphorus (P) soil nutrient balance (kg/ha)

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Notes:

1. The series break in 2009 is due to changes in [farm survey data collection](#).
2. From 2010 in England, June survey data for land and animals is collected only for commercial farms.
3. From 2000 to 2008 data is for all farms and hence based on a larger population.
4. For comparability, data for 2009 have been presented on both the definition used for 2000 to 2008 and that used from 2010 onwards.

Source: Source: [Soil nutrient balances](#)

Text description for Figure 11.9: Figure 11.9 is a line chart showing the phosphorus soil nutrient balance on farms from 2000 to 2021. Following an overall steady decline from approximately 10 kg/ha in 2000 to approximately 4 kg/ha in 2009, the soil nutrient balance has since fluctuated but remained between 4 and 8 kg/ha to 2021.

[Download the full Agri-environment dataset](#)

Provisional estimates for 2021 show that the phosphorus balance for the UK was a surplus of 5.7 kg/ha on managed agricultural land (see Figure 11.9).

This is a decrease of -1.2 kg/ha (17%) to the phosphorus balance surplus compared to 2020. The biggest contribution to the decrease was made by increased offtake from cereal production.

The longer-term trend (compared to 2000) shows an overall reduction of -3.8 kg/ha (40%). Over this time, inputs of phosphorus decreased by 8.0 kg/ha (26%), which more than offset a decrease in offtake of 4.2 kg/ha (20%). As with nitrogen, the main drivers behind the decrease in phosphorus inputs were reductions in the application of both inorganic fertilisers and cattle manure. The main driver behind the decrease in offtake was a reduction in forage due to reduced livestock numbers.

[Further information found on the soil nutrient balances publication can be found here](#)

Water abstraction

Water abstraction from groundwater and surface water sources may be needed for irrigation purposes to maintain high yields and good crop quality, particularly in areas with low rainfall and for certain crop types. Over abstraction can be detrimental to aquatic ecosystems and limit resource for other industries.

Volumes of water abstracted for agricultural purposes is highly variable from year to year and greatly influenced by rainfall amounts, especially during the growing season. In 2018, agriculture was responsible for 1% of total water abstraction in England. As demonstrated in Figure 11.10, in 2018, the recorded abstraction rate in England was 150 million cubic litres, an increase from 109 million cubic litres in 2017. This was due to an increase in spray irrigation of 48%, whereas other abstraction for other agricultural purposes remained similar to 2017 levels.

Figure 11.10 Water abstraction, England (million cubic metres)

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year	Other agriculture	Spray irrigation	Total
2010	25	104	129
2011	26	118	144
2012	26	50	76
2013	26	100	126
2014	27	89	116
2015	25	94	119
2016	26	84	110
2017	22	87	109
2018	21	129	150

Notes:

1. Spray irrigation includes small amounts of non-agricultural irrigation.
2. 2015 figure has a break in the series where information concerning abstractions in the country of England and the Dee/Wye regional charge areas (formally the Wales regional charge area) has been amalgamated into the North West and Midlands regional charge areas respectively.

Source: [Water abstraction in England](#)

[Download the full Agri-environment dataset](#)

[Further information on the water abstraction webpage.](#)

Water quality

Due to the implementation of the Water Framework Directive (WFD) a revised approach to monitoring water quality across the UK was introduced in 2009. The WFD assesses water quality using three categories (ecological quality, chemical quality and hydrological quality). For each site each category is assigned a grade which is then combined to provide an overall classification. The combined score is based on 'one out, all out', e.g., if one category is ranked as 'poor' the water body will be classified as 'poor'.

High nutrient concentrations, particularly phosphorus, can cause nutrient enrichment (eutrophication) resulting in excessive growth of macrophytes and algae which can deplete dissolved oxygen levels. Excessive levels of nutrients must be removed from water bodies used for drinking water to meet legal limits, with water companies incurring significant costs. It has been estimated that agriculture accounts for around 61% of the

Chapter 11: Environment

total nitrogen in river water in England and Wales ⁵ and around 28% of the total phosphorus load in river water in Great Britain ⁶, although this estimate may also include phosphorus from septic tanks ⁷.

Agriculture contributes to the pollution of water bodies through the leaching of fertilisers, pesticides, and manure (nutrients and faecal bacteria) as well as an increase in sediments. Rainfall may wash a proportion of fertiliser off fields into local water bodies or cause soluble nutrients to filter into groundwater. Pesticides can be washed into water bodies by rainwater or may enter them directly if they are sprayed close to water. Pesticides can also enter groundwater via soil infiltration. In addition, erosion can wash topsoil into water bodies which can carry large amounts of phosphates and agricultural chemicals that are bonded to clay particles.

As in 2019, 36% of surface water bodies assessed under WFD in the UK were in 'high' or 'good' status in 2020. Diffuse water pollution from agriculture and rural land use has been directly attributed to 28% of failures to meet the WFD standards in England ⁸.

⁵ Updating an estimate of the sources of nitrogen to waters in England and Wales. Defra project WT03016. Hunt, D.T.E., et al, 2004

⁶ Updating the estimate of the sources of phosphorus in UK waters. Defra project WT0701CSF. White, P.J. and Hammond, J.P., 2006

⁷ The impact of phosphorus inputs from small discharges on designated freshwater sites. Report to Natural England and Broads Authority, SWR/CONTRACTS/08-09/112. May, L., et al, 2011

⁸ POSTnote 478 October 2014 Diffuse Pollution of Water by Agriculture, 2014

Figure 11.11 UK surface water bodies under the water framework directive

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year	High	Good	Moderate	Poor	Bad	Total (excluding unassessed)
2009	4%	32%	48%	13%	3%	100%
2010	4%	32%	47%	13%	3%	100%
2011	4%	33%	45%	15%	3%	100%
2012	4%	33%	45%	15%	3%	100%
2013	4%	32%	44%	16%	3%	100%
2014	3%	32%	45%	17%	3%	100%
2015	4%	31%	47%	15%	2%	100%
2016	5%	30%	47%	15%	3%	100%
2017	5%	30%	47%	14%	3%	100%
2018	5%	31%	47%	15%	3%	100%
2019	5%	31%	47%	14%	3%	100%
2020	5%	31%	48%	14%	2%	100%

Notes:

1. Based on numbers of surface water bodies classified under the Water Framework Directive (WFD) in England, Wales, Scotland and Northern Ireland. Includes rivers, canals (Northern Ireland does not report on canals), lakes, estuaries and coastal water bodies.
2. A water body is a management unit, as defined by the relevant authorities.
3. Water bodies that are heavily modified or artificial (HMAWBs) are included in this indicator alongside natural water bodies. HMAWBs are classified as high, good, moderate, poor or bad 'ecological potential'. Results have been combined; for example, the number of water bodies with a high status class has been added to the number of HMAWBs with high ecological potential.
4. The results published each year relate to data reported in that year under the WFD; data reported in a given year relate to data collected over the previous year (for Scotland) and previous 3 years (for England, Wales and Northern Ireland).
5. From 2016, England, Wales and Northern Ireland have moved to a triennial reporting system. Wales and Northern Ireland reported in 2018 and whilst due to report in 2021, the data was not available in time for this publication; England reported in 2016 (classifications carried forward for 2017 and 2018) and 2019. The most recent classification for England was in 2019 and therefore these classifications have been carried forward to 2020. Classifications are valid until they are next assessed; therefore, for years where a country does not report, their latest available data are carried forward.

Chapter 11: Environment

6. Percentage of water bodies in each status class has been calculated based on the total number of water bodies assessed in each year. Totals may not agree due to rounding.
7. The number of water body assessments included varies slightly from year to year.
8. The reductions in the number of assessments made in 2015 and 2016 were primarily due to Wales and then England adopting the monitoring and classification standards laid down in Cycle 2 of the WFD. This resulted in the removal of a number of water bodies that were below the 10km² catchment area in line with WFD guidance. It also means that data from 2015 onwards are not directly comparable to those in earlier years.

Source: [UK Biodiversity indicators](#)

[Download the full Agri-environment dataset](#)

[Further information on classification of water bodies](#)

Biodiversity

Bird populations are considered to be a good indicator of the general state of wildlife as they have a wide habitat distribution, are near the top of the food chain and are able to be monitored over time as long-term datasets are available for the UK. Agriculture provides valuable resources for farmland bird populations in terms of winter food, spring forage and nesting habitats.

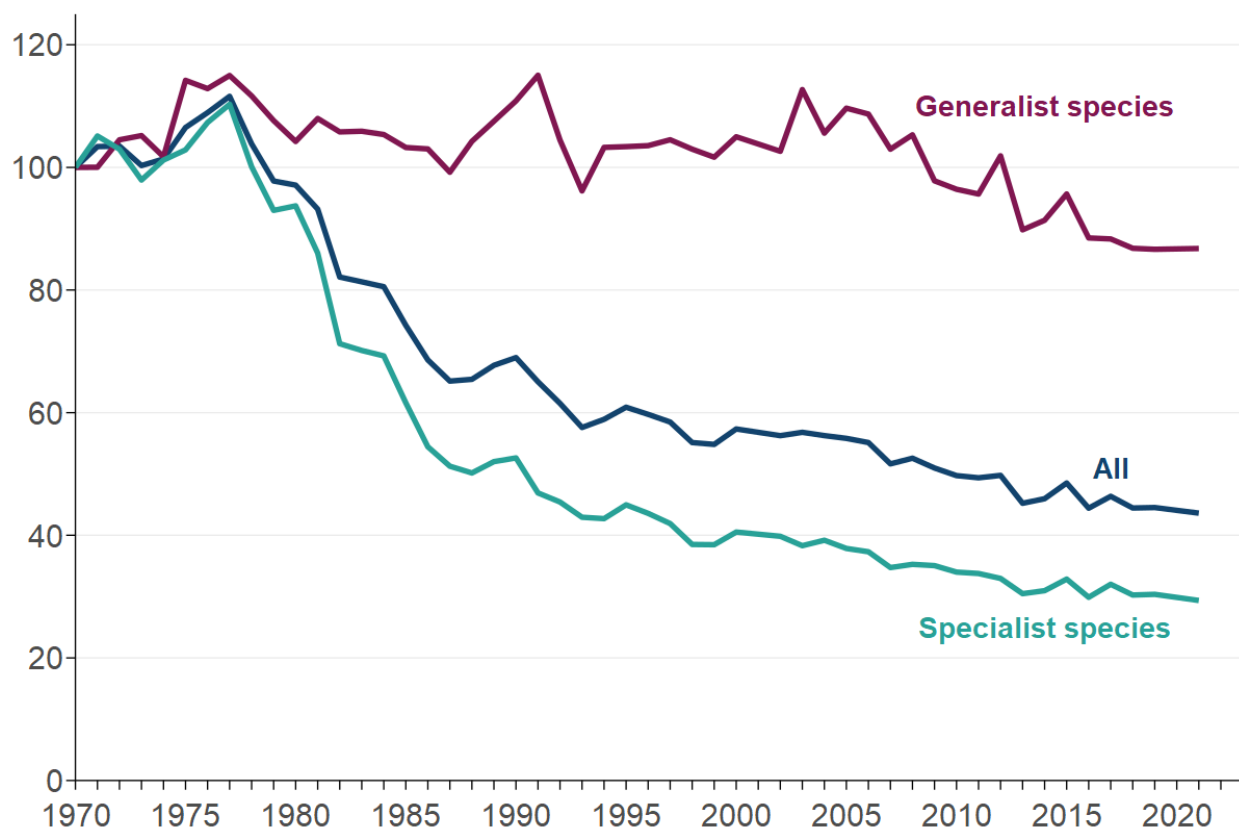
The farmland bird index comprises 19 species of bird. The long-term decline of farmland birds in the UK has been mainly driven by the decline of the 12 species known as the 'specialists' that are restricted to, or highly dependent on, farmland habitats (see Figure 11.12). Between 1970 and 2021, populations of farmland specialists declined by 71% whereas farmland generalists have declined by 13%. The 2021 index for all farmland bird species was 56% less than its level in 1970.

The largest declines in farmland bird populations occurred between the late 1970s and early 1990s due to the impact of rapid changes in farmland management. Whilst agri-environment schemes offer specific measures designed to help stabilise and recover farmland bird populations, the situation is complex with other pressures such as weather effects and disease pressures adversely impacting some species.

Figure 11.12 Farmland Bird Index (1970 = 100)

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Source: [Wild bird populations in the UK](#)

Text description for Figure 11.12: Figure 11.12 is a line chart showing the farmland bird index for specialist species, generalist species and all farmland birds from 1970 to 2021. In this indexed chart, 1970 = 100. The chart shows that all birds and specialist species have shown a steady decline over time and populations in 2021 were under half of 1970 levels. Generalist species have shown less of a decline, with populations approximately 10-20% less than 1970 levels.

[Download the full Agri-environment dataset](#)

[Further information on the farmland bird index.](#)

Chapter 12: Organic Farming

Summary

In 2022:

- 509 thousand hectares were **farmed organically** in the UK.
- 61% (312 thousand hectares) of the total **UK organic area was in England**.
- **Permanent pasture (inc. rough grazing)** accounted for 62% of UK organic land, covering 314 thousand hectares.
- 9.7% of the total UK organic area was used to grow **cereals** (49 thousand hectares).
- 3.1% of the total UK **cattle population was reared organically**.
- There were a total of 5.5 thousand **organic operators** in the UK.

Introduction

Organic farming is a method of farming that requires farmers to operate to a system based on ecological principles which impose strict limitations on the inputs that can be used to minimise damage to the environment and wildlife. Emphasis is placed on natural methods of production and pest control.

All foods sold as organic must originate from growers, processors and importers who are registered with an approved certification body and subject to regular inspection. During these inspections, the crop areas and numbers of livestock present on the organic holding are recorded. Due to the nature of the inspections, the data are collected at varying times through the year. The data presented in this chapter therefore do not give an exact snapshot of organic farming at any specific time of year and this should be considered when interpreting the results.

Land area

Land farmed organically

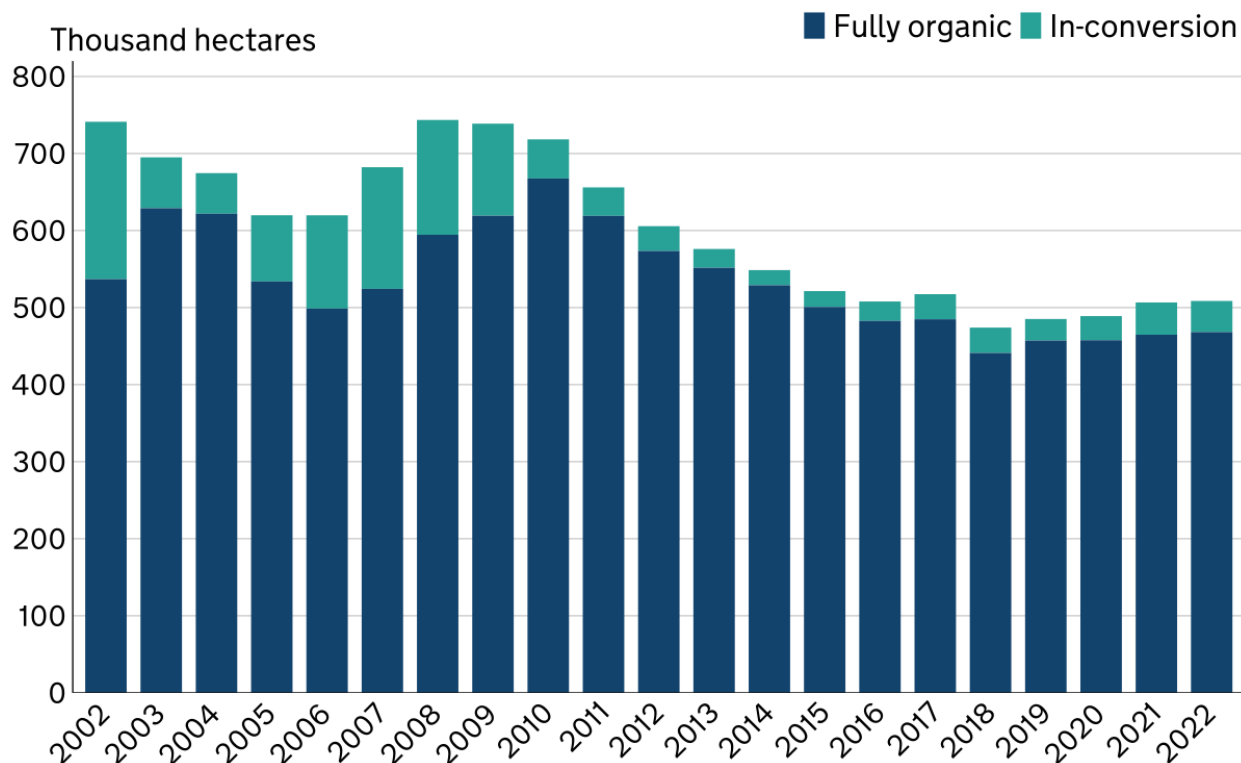
In 2022, the UK had a total area of 509 thousand hectares of land farmed organically (i.e. the fully converted area and area under conversion), an increase of 0.4% compared to 2021. This increase was driven by an increase of 0.8% in the area of fully organic land, which was offset by a decrease of 3.9% in the area of in-conversion land. Since 2008, when the area of land farmed organically peaked, the organically farmed area has decreased by 32%. The organically farmed area represents 3.0% of the total farmed area on agricultural holdings in the UK.

England had 61% of the organically managed land, Scotland had 22%, Wales 15% and Northern Ireland 1.5%. Within England, 49% of the organically managed land fell within the South West region.

Figure 12.1: Land area farmed organically

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk



Source: Organic certification bodies collated by Defra statistics.

Figure 12.1 description: Figure 12.1 shows the area of land farmed in the UK that is either fully organic or in-conversion to fully organic, in thousand hectares from 0 to 800, between 2002 and 2022. The area of organic land farmed in the UK peaked in 2008 at 744 thousand hectares, it then decreased to a low in 2018 of 474 thousand hectares. Since then the total area of organically farmed land has increased year on year to 2022. 2010 had the highest area of fully organic land (668 thousand hectares) and 2002 had the greatest area in-conversion (204 thousand hectares).

[Download the full Organics dataset](#)

Table 12.1: Land area farmed organically, 2019 to 2022 (thousand hectares)

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Type	2019	2020	2021	2022	Percentage change 2022/2021
In-conversion	28.1	31.3	42.0	40.3	-3.9%
Fully organic	457.1	457.6	464.7	468.3	0.8%
Total	485.2	489.0	506.6	508.6	0.4%

Source: Organic certification bodies collated by Defra statistics.

[Download the full Organics dataset](#)**Table 12.2: Area farmed organically by country and English region, 2022 (thousand hectares)**

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Region	Area in-conversion	Fully organic area	Total organic area	Total agricultural area at June	Total organic area as % of June area
United Kingdom	40.3	468.3	508.6	16,912.4	3.0%
Wales	2.1	75.5	77.6	1,765.6	4.4%
Scotland	18.4	92.5	110.9	5,013.0	2.2%
Northern Ireland	0.2	7.5	7.7	1,035.6	0.7%
England	19.6	292.7	312.4	9,098.3	3.4%
North East	1.7	23.2	24.9	622.1	4.0%
North West	0.8	11.1	11.9	963.4	1.2%
Yorkshire & The Humber	0.5	10.5	10.9	1,120.7	1.0%
East Midlands	2.7	11.5	14.2	1,176.8	1.2%
West Midlands	2.1	33.3	35.4	930.6	3.8%
Eastern	1.4	17.5	18.9	1,393.7	1.4%
South East (inc. London)	2.5	40.2	42.7	1,114.1	3.8%
South West	8.0	145.4	153.4	1,776.8	8.6%

Notes:

1. Excludes common land.

Source: Organic certification bodies collated by Defra statistics and [June Survey of Agriculture](#).

[Download the full Organics dataset](#)

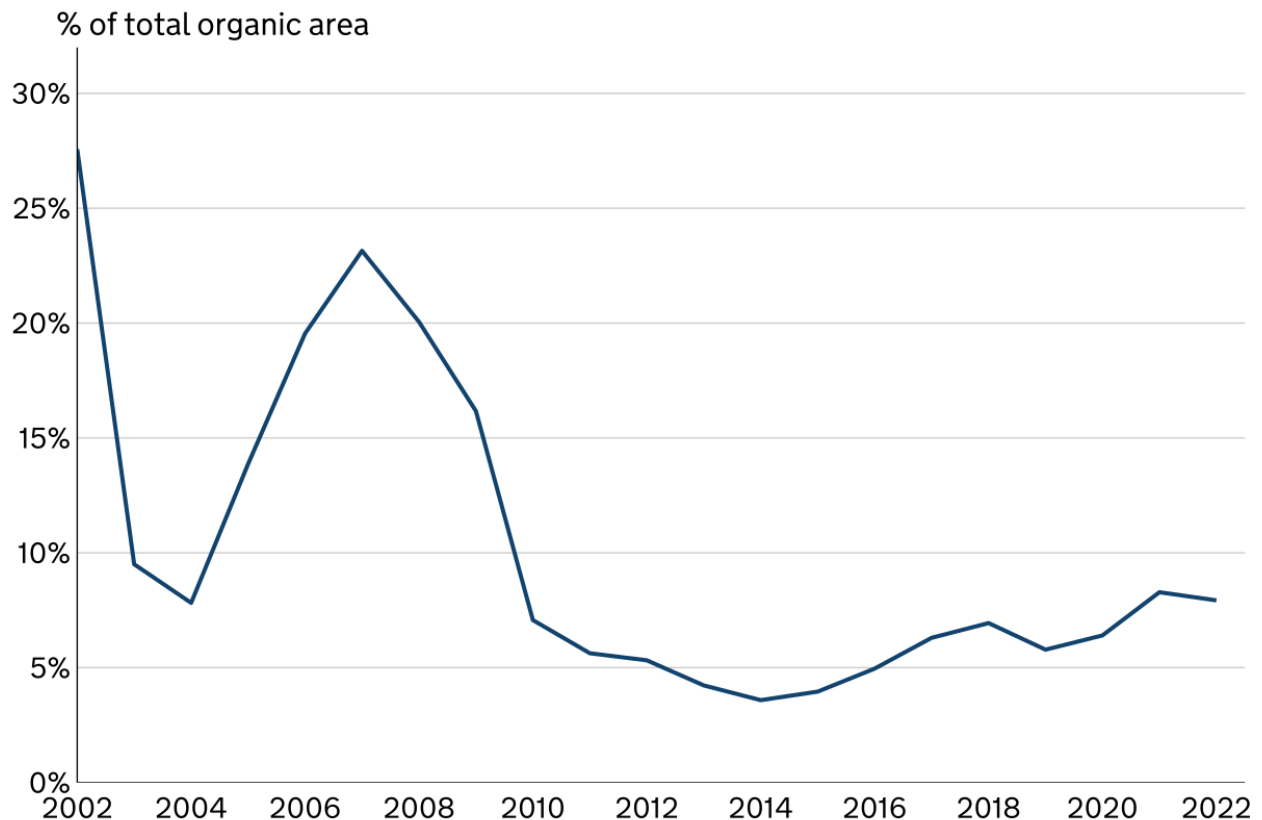
Land in-conversion

Organic production comes from fully converted land. Before an area can be considered as fully organic, it must undergo a conversion process. The area in-conversion expressed as a percentage of the total organic area can give an indication of the potential growth in the organic sector. With the exception of 2019, the area of land in-conversion had seen a modest increase every year since 2014. However, in 2022 there has been an area decrease of 3.9% compared to 2021.

Figure 12.2: Land in-conversion as a proportion of the total area farmed organically

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk



Source: Organic certification bodies collated by Defra statistics.

Figure 12.2 description: Figure 12.2 shows the area of land in-conversion as a proportion of total land area farmed organically in the UK, with percentage of in-

conversion land ranging from 0% to 30%, between 2002 and 2022. The percentage of land in-conversion in the UK peaked in 2002 at 28%, it then fluctuated year on year, with the lowest area of in-conversion land occurring in 2014 at 3.6%. Since then the area of in-conversion land has risen steadily year on year, with the exception of 2019 and 2022, which saw a modest decreases.

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Land use

Organic land use

Permanent pasture accounts for the biggest share of the organic area (62%) followed by temporary pasture (19%) and cereals (9.7%). The full breakdown of organic land use in the UK is shown in figure 12.3 and tables 12.3 and 12.4.

Figure 12.3: Organic land use, 2022

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Use	Area (thousand hectares)
Permanent pasture (inc. rough grazing)	314.1
Temporary pasture	96.1
Cereals	49.5
Woodland	17.3
Other arable crops	10.7
Vegetables (inc. potatoes)	10.3
Unutilised and unknown	7.7
Fruit & nuts	2.3
Herbaceous & ornamentals	0.7

Notes:

1. Includes fully organic land and land in-conversion.

Source: Organic certification bodies collated by Defra statistics.

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Table 12.3: Fully organic and in-conversion land use, 2019 to 2022 (thousand hectares)

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Use	2019	2020	2021	2022	Percentage change 2022/2021
Cereals	39.7	42.7	46.6	49.5	6.2%
Other arable crops	8.9	9.2	10.8	10.7	-1.0%
Fruit & nuts	2.0	2.0	2.4	2.3	-4.7%
Vegetables (inc. potatoes)	9.4	9.5	9.8	10.3	4.8%
Herbaceous & ornamentals	0.4	0.4	0.6	0.7	4.0%
Temporary pasture	95.1	97.1	99.7	96.1	-3.6%
Permanent pasture (inc. rough grazing)	305.4	304.5	310.8	314.1	1.1%
Woodland	15.2	16.0	17.4	17.3	-0.7%
Unutilised land	4.5	2.8	3.3	3.2	-1.5%
Unknown	4.5	4.9	5.2	4.4	-15%
Total	485.2	489.0	506.6	508.6	0.4%

Notes:

1. Includes fully organic and in-conversion areas.
2. Some land areas are provided without a crop category or land use description, therefore these are classified as unknown.
3. In 2019 data issues were identified with the detailed split of crops provided for 2018. The overall totals for 2018 remain unaffected but the breakdowns are subject to a degree of error and therefore should be treated with caution.

Source: Organic certification bodies collated by Defra statistics.

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Table 12.4: Detailed fully organic and in-conversion land use, 2022 (thousand hectares)

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Use	Area in-conversion	Fully organic area	Total organic area	Total agricultural area at June	Total organic area as % of June area
Cereals	3.2	46.3	49.5	3,156.1	1.6%
Wheat	1.5	15.6	17.1	1,809.2	0.9%
Barley	1.1	7.0	8.0	1,104.3	0.7%
Oats	0.4	17.5	17.9	173.9	10%
Other cereals	0.2	6.2	6.4	68.7	9.3%
Other arable crops	1.2	9.5	10.7	1,115.3	1.0%
Sugar beet	0.0	0.3	0.3	91.2	0.3%
Fodder, forage & silage	1.2	8.2	9.4	90.0	10%
Maize, oilseeds, & protein crops	0.1	1.0	1.0	934.1	0.1%
Fruit & nuts	0.3	2.0	2.3	32.4	7.0%
Vegetables	0.6	8.0	8.6	106.7	8.1%
Potatoes	0.0	1.7	1.7	126.6	1.4%
Herbaceous & ornamentals	0.0	0.6	0.7	10.1	6.5%
Temporary pasture	7.0	89.1	96.1	1,224.9	7.8%
Permanent pasture	12.6	233.5	246.1	6,030.1	4.1%
Rough grazing	13.9	54.1	68.0	3,567.3	1.9%
Woodland	1.2	16.1	17.3	930.6	1.9%
Unutilised land	0.2	3.0	3.2	X	X
Unknown	0.0	4.3	4.4	X	X
Total	40.3	468.3	508.6	X	X

Notes:

1. Excludes common land.
2. Some land areas are provided without a crop category or land use description, therefore these are classified as unknown.
3. X - no comparable June survey data is available.

Source: Organic certification bodies collated by Defra statistics and [June Survey of Agriculture](#).

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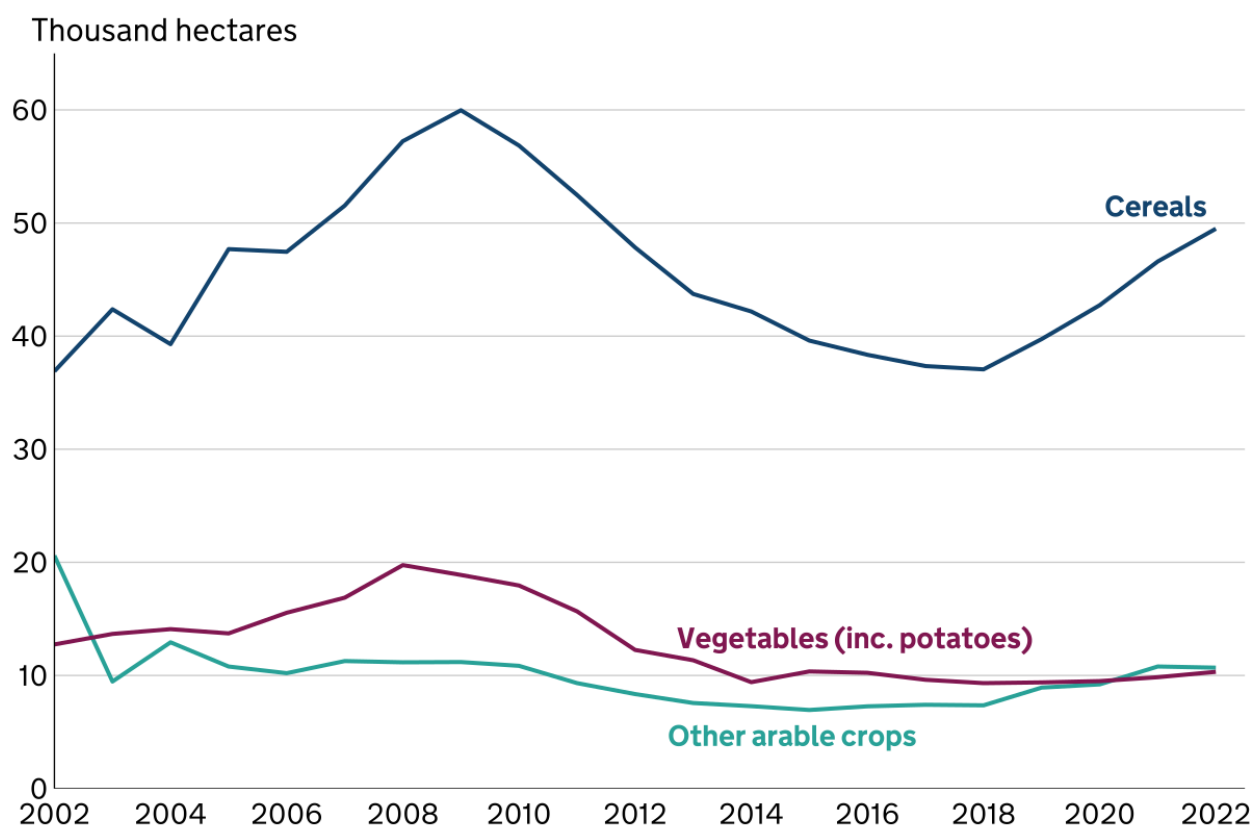
Land use for crops

The three main crop types grown organically are cereals, vegetables including potatoes, and other arable crops. In the UK the area of organically grown cereal crops increased by 6.2% to 49 thousand hectares in 2022. Other arable crops decreased by 1.0% to 11 thousand hectares. The area of organically grown vegetables (including potatoes) increased by 4.8% to 10 thousand hectares compared to 2021.

Figure 12.4: Organic crops

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk



Notes:

1. Includes fully organic land and land in-conversion.
2. Vegetables includes potatoes.

Source: Organic certification bodies collated by Defra statistics.

Figure 12.4 description: Figure 12.4 shows the area of land used to organically farm cereals, vegetables and other organic crops, in thousand hectares from 0 to 60, between 2002 to 2022. Cereals have the highest area of organic farming, which peaked in 2009 at 60.0 thousand hectares and then declined steadily until 2018, and has since increased year on year. Vegetables and other arable crops have had similar areas of organic farming throughout the time series. Vegetables peaked in 2008 at 19.8 thousand hectares and other arable crops peaked at 2002 with 20.6 thousand hectares. 2021 was the first time the area of organically farmed vegetables dipped below that of other arable crops since 2002.

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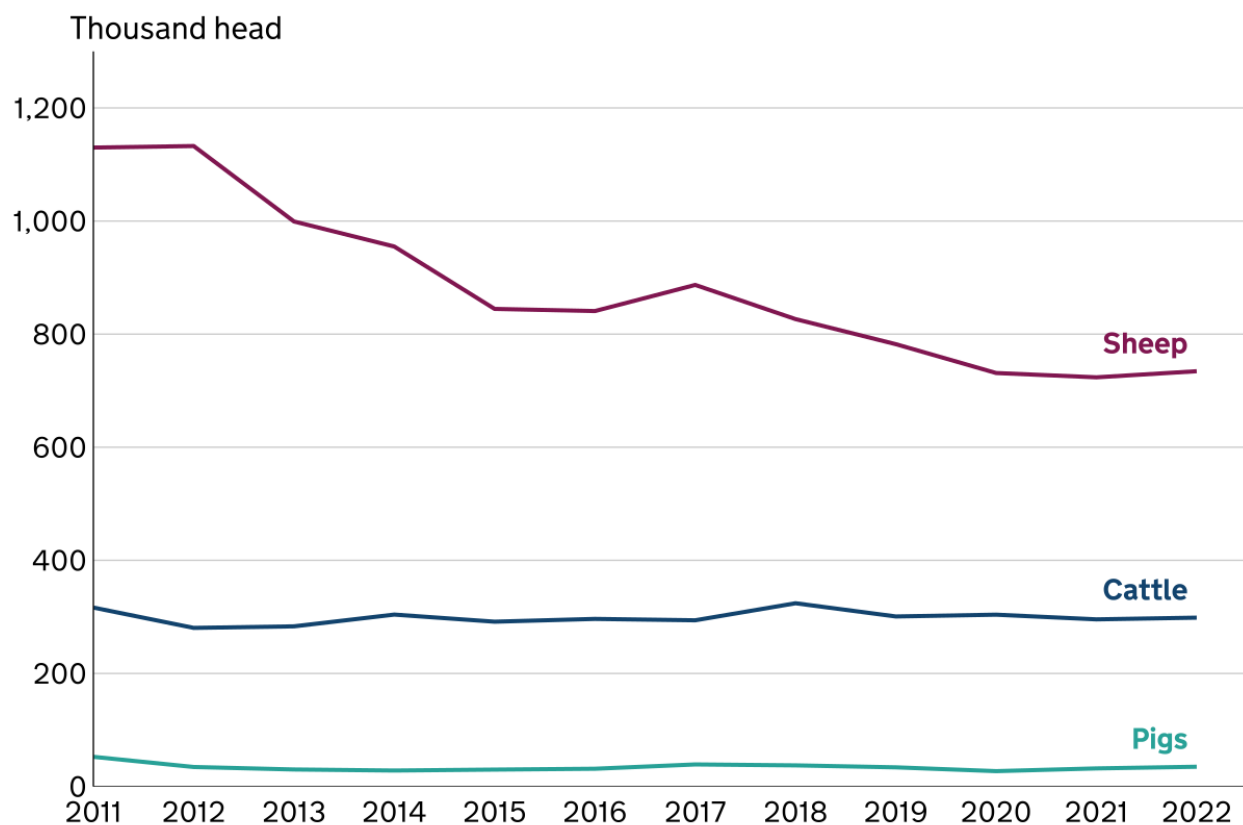
Livestock

In the UK organic red meat sector in 2022, sheep reared organically increased by 1.5% to 734 thousand animals and accounted for 2.2% of the total UK flock. Pigs reared organically increased by 9.2% to 35 thousand animals and accounted for 0.7% of the total UK pig herd. Organically reared cattle numbers increased by 1.0% to 299 thousand animals and accounted for 3.1% of the total UK herd. The number of poultry farmed organically decreased by 8.9% to 3,665 thousand birds, equating to 1.9% of the total UK poultry population.

Figure 12.5: Organic livestock

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk



Notes:

1. Data relates to fully organic only.

Source: Organic certification bodies collated by Defra statistics.

Figure 12.5 description: Figure 12.5 shows the number of livestock reared organically, from 0 to 1,200 thousand head, from 2011 to 2022. Sheep have consistently had the highest numbers of organically reared animals, peaking in 2012 at 1,133 thousand head. Since this peak, sheep numbers have fluctuated across the years, reaching an all time low in 2021. Both cattle and pig numbers have remained stable throughout the time series, with cattle ranging from 281 to 324 thousand head and pigs from 27 to 53 thousand head.

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Table 12.5: Number of livestock farmed organically, 2019 to 2022 (thousand head)

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Livestock	2019	2020	2021	2022	Percentage change 2022/2021
Cattle	300.8	303.9	295.6	298.6	1.0%
Sheep	782.2	731.2	723.6	734.4	1.5%
Pigs	34.0	27.2	32.1	35.0	9.2%
Poultry	3,464.1	3,786.3	4,020.8	3,664.9	-8.9%
Other livestock	6.0	6.5	5.7	7.9	40%

Notes:

1. Data relates to fully organic only.
2. "Other livestock" includes goats, farmed deer, horses, camelids and any livestock not recorded elsewhere.

Source: Organic certification bodies collated by Defra statistics.

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Table 12.6: Detailed organic livestock numbers, 2022 (thousand head)

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Livestock	Total Organic livestock	Total livestock at June	Organic livestock as % of June livestock
Cattle	298.6	9,631.9	3.1%
For slaughter	122.3	3,801.4	3.2%
Dairy cows	57.4	3,234.2	1.8%
Other cattle	119.0	2,596.3	4.6%
Sheep	734.4	33,066.5	2.2%
Breeding females	385.1	15,779.2	2.4%
Other sheep	349.4	17,287.3	2.0%
Pigs	35.0	5,191.9	0.7%
Fattening pigs	22.5	4,766.0	0.5%
Breeding sows	3.4	342.8	1.0%
Other pigs	9.1	83.1	11%
Poultry	3,664.9	188,186.5	1.9%
Broilers	1,576.6	126,051.8	1.3%
Laying hens	2,004.8	40,245.8	5.0%
Other poultry	83.5	21,889.0	0.4%
Other livestock	7.9	X	X
Farmed deer	4.9	42.4	12%
Goats	1.2	110.7	1.1%
Horses	1.5	218.4	0.7%
Others	0.3	X	X

Notes:

1. Data relates to fully organic only.
2. "Others" include camelids and any livestock not recorded elsewhere.
3. X - no comparable June survey data is available.

Source: Organic certification bodies collated by Defra statistics, [June survey of agriculture](#), and the Cattle Tracing system for cattle populations.

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Organic producers and processors

In 2022, there were 5.5 thousand producers and processors registered with the organic certification bodies in the UK, a decrease of 4.1% from 2021.

Figure 12.6: Organic producers and processors

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Years	Producers	Processors	Producers & processors	Total
2011	4,450	2,279	200	6,929
2012	4,118	2,206	163	6,487
2013	3,740	2,154	178	6,072
2014	3,521	2,307	174	6,002
2015	3,429	2,454	173	6,056
2016	3,398	2,804	161	6,363
2017	3,465	2,977	144	6,586
2018	3,483	2,569	136	6,188
2019	3,494	2,512	123	6,129
2020	3,407	2,150	197	5,754
2021	3,401	2,126	205	5,732
2022	3,285	1,988	223	5,496

Notes:

1. In 2018 work was carried out to clarify how operators were recorded. This resulted in a number of operators that were previously recorded as processors being recorded in the correct categories of wholesalers/traders/retailers etc. We were unable to backdate these changes so earlier data are not directly comparable.
2. In 2020 work was carried out by some control bodies to group existing operators together, so they effectively became 'one operator' whilst previously they may have been separate operators with separate licences.
3. Amendments have been made to 2018 and 2019 data following revisions to the number of organic producers and organic producer/processors.

Source: Organic certification bodies collated by Defra statistics.

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Table 12.7: Number of organic producers and processors by country and English region, 2022

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Region	Number of producers only	Number of producers and processors	Number of processors only	Total organic producers and processors
United Kingdom	3,285	223	1,988	5,496
Wales	552	29	82	663
Scotland	379	11	138	528
Northern Ireland	152	7	43	202
England	2,202	176	1,725	4,103
North East	73	5	34	112
North West	107	11	115	233
Yorkshire & The Humber	89	6	103	198
East Midlands	151	8	139	298
West Midlands	297	19	133	449
Eastern	169	10	228	407
South East (inc. London)	336	41	665	1,042
South West	980	76	308	1,364

Notes:

1. In 2018 work was carried out to clarify how operators were recorded. This resulted in a number of operators that were previously recorded as processors being recorded in the correct categories of wholesalers/traders/retailers etc. We were unable to backdate these changes so earlier data are not directly comparable.
In 2020 work was carried out by some control bodies to group existing operators together, so they effectively became 'one operator' whilst previously they may have been separate operators with separate licenses.
Amendments have been made to 2018 and 2019 data following revisions to the number of organic producers and organic producer/processors.

Source: Organic certification bodies collated by Defra statistics.

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Table 12.8: Number of organic producers and processors by country and English region, 2019 to 2022

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Region	2019	2020	2021	2022	Percentage change 2022/2021
United Kingdom	6,129	5,754	5,732	5,496	-4.1%
Wales	737	701	693	663	-4.3%
Scotland	559	541	529	528	-0.2%
Northern Ireland	206	205	214	202	-5.6%
England	4,627	4,307	4,296	4,103	-4.5%
North East	116	117	118	112	-5.1%
North West	274	241	244	233	-4.5%
Yorkshire & The Humber	246	227	216	198	-8.3%
East Midlands	353	328	308	298	-3.2%
West Midlands	460	468	454	449	-1.1%
Eastern	457	419	412	407	-1.2%
South East (inc. London)	1,217	1,092	1,143	1,042	-8.8%
South West	1,504	1,415	1,401	1,364	-2.6%

Notes:

1. In 2018 work was carried out to clarify how operators were recorded. This resulted in a number of operators that were previously recorded as processors being recorded in the correct categories of wholesalers/traders/retailers etc. We were unable to backdate these changes so earlier data are not directly comparable.
In 2020 work was carried out by some control bodies to group existing operators together, so they effectively became 'one operator' whilst previously they may have been separate operators with separate licenses.
2. Amendments have been made to 2018 and 2019 data following revisions to the number of organic producers and organic producer/processors.

Source: Organic certification bodies collated by Defra statistics.

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Table 12.9: Number of organic crop and livestock producers and processors by country and English region, 2022

Enquiries: Josh Moatt on +44 (0)20 771 41913

Email: organic-stats@defra.gov.uk

Region	Crop producers	Crop producers and processors	Livestock producers	Livestock producers and processors
United Kingdom	3,073	214	2,197	137
Wales	532	28	451	21
Scotland	350	11	269	9
Northern Ireland	121	7	111	4
England	2,070	168	1,366	103
North East	71	5	50	4
North West	104	11	74	9
Yorkshire & The Humber	84	6	63	3
East Midlands	137	8	100	5
West Midlands	288	19	172	13
Eastern	142	8	67	4
South East (inc. London)	308	39	161	18
South West	936	72	679	47

Notes:

1. Mixed organic holdings will be recorded under both the crop and livestock headings above. The numbers shown cannot be added together to arrive at total producers / processors by region as this will lead to double counting.
2. In 2018 work was carried out to clarify how operators were recorded. This resulted in a number of operators that were previously recorded as processors being recorded in the correct categories of wholesalers/traders/retailers etc. We were unable to backdate these changes so earlier data are not directly comparable.
3. In 2020 work was carried out by some control bodies to group existing operators together, so they effectively became 'one operator' whilst previously they may have been separate operators with separate licenses.
4. Amendments have been made to 2018 and 2019 data following revisions to the number of organic producers and organic producer/processors.

Source: Organic certification bodies collated by Defra statistics.

Chapter 12: Organic Farming

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Chapter 13: Overseas Trade

Summary

Key results for 2022 and compared to 2021 in real terms (adjusted for inflation).

- The value of **food, feed and drink exports** increased by £2.8 billion (13%) to £24.9 billion.
- The value of **food, feed and drink imports** increased by £3.0 billion (5.3%) to £58.1 billion.
- The trade gap in **food, feed and drink** increased slightly by £132 million (0.4%) to £33.2 billion.
- Principal destinations for **exports** were the Irish Republic (£3.9 billion), France (£2.7 billion), USA (£2.4 billion) and the Netherlands (£2 billion).
- The main countries of despatch for **imports** into the UK were the Netherlands (£7.3 billion), France (£5.8 billion), Irish Republic (£4.5 billion) and Belgium (£4.3 billion).
- Whisky continued to have the **highest export value**, totalling £6.4 billion. This was an increase of 28% compared to the previous year.
- Fresh fruit and vegetables together remained the **highest value category for imports**, totalling £6.6 billion, a decrease of 1.9% .
- **Exports of fresh vegetables** rose by 19.0% to £85 million, and **exports of fresh fruit** also rose by 3.3% to £64m.

Introduction

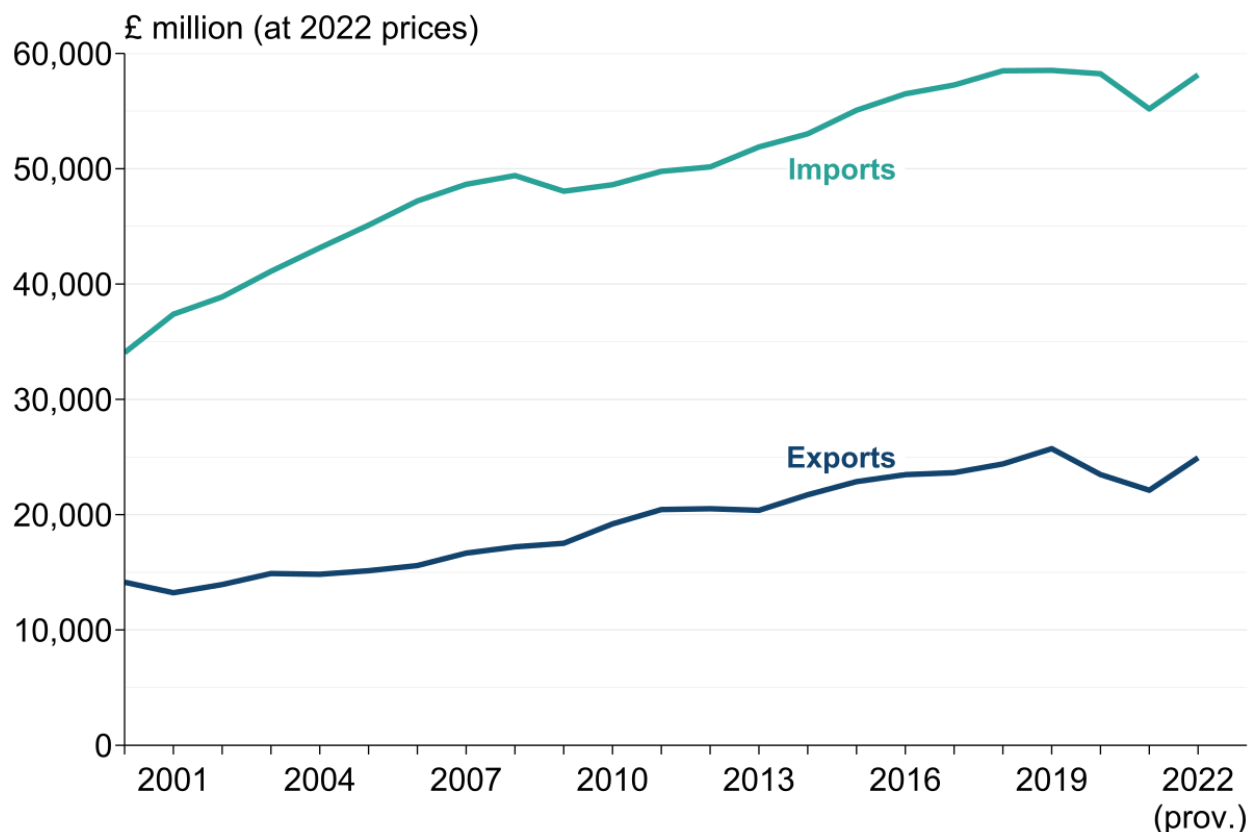
The Overseas Trade Statistics presented in this chapter are based on data collected by HM Revenue and Customs and are compiled from returns made by importers and exporters. Before the completion of the Single Market in the European Union at the end of 1992, all overseas trade data for the United Kingdom was compiled from Customs declarations made by traders. From the beginning of 1993 until the end of 2020, the collection of trade statistics was divided into two categories: that transacted between the United Kingdom and countries outside the European Union (extra-EU trade) and that between the United Kingdom and its European Union partners (intra-EU trade). In this period, extra-EU trade statistics were compiled, as before, from Customs declarations by importers, exporters and their agents, while intra-EU trade statistics were compiled using a system linked to traders' VAT returns, known as Intrastat. In 2021, following the United Kingdom's withdrawal from the European Union, there was a transitional approach to data collection due to the introduction of staged customs controls for imports from the European Union. All exports from the United Kingdom (except those from Northern Ireland to the EU) were compiled from customs declarations whilst imports to the United Kingdom from the European Union continued to be collected using the Intrastat system. From 2022 onwards, all trade statistics (except imports and exports between Northern Ireland and the European Union, for which Intrastat remains in place) are compiled from Customs declarations. These changes to data collection methods are known to have **some impact** on the trade statistics and some care should be taken when interpreting changes for recent years.

The trade statistics shown here may not match those shown in the commodities tables in Chapter 8 where, for example, trade in meat includes the carcase weight equivalent of trade in live animals and trade in milk is of raw milk before processing, and not of processed and packaged milk and cream as shown here.

Value of trade in food, feed and drink

Figure 13.1 Value of trade in food, feed and drink at 2022 prices; United Kingdom

Enquiries: Lilian Oluwakuyide
 Email: lilian.oluwakuyide@defra.gov.uk



Text description of Figure 13.1: Figure 13.1 is a line chart showing the value of trade in millions of pounds at 2022 prices, split by imports and exports. Since 2000, both imports and exports have steadily increased. Imports and exports fell between 2019 and 2021, before returning to 2019 levels in 2022. Data for 2022 remain provisional until September 2023 and will be updated in next year’s Agriculture in the UK publication.

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The value of exports of food, feed and drink was £24.9 billion in 2022. To compare 2022 exports with previous years, it is necessary to adjust for the effects of economic inflation. The real terms value of exports was £2.8 billion or 13% higher in 2022 than 2021 but remains £0.8 billion or 3.1% below 2019 (pre-pandemic and pre-EU exit). Since 2005 the real terms value of exports has risen by £9.8 billion or 65%. This long-term trend is a consequence of the combination of the relative strength of sterling, proactive responses to disease related issues, and an upward trend in world commodity prices.

The value of imports of food, feed and drink was £58.1 billion in 2022. To compare 2022 imports with previous years it is necessary to adjust for the effects of economic inflation. The real terms value of imports was £3.0 billion or 5.3% higher in 2022 than 2021 but £0.4 billion or 0.7% lower than 2019 (pre-pandemic and pre-EU Exit). The longer trend is for rising real terms import values. Since 2005, the real terms value of imports has risen by £13.0 billion or 29%.

The trade gap for food, feed and drink widened by 0.4% between 2021 and 2022. Over the longer term it has widened by 11% from £30.0 billion (in 2005) to £33.2 billion (in 2022) in real terms.

Looking at exports of specific food, feed and drink types, the largest percentage increase in real terms between 2021 and 2022 occurred in the beverages category for which there was a rise of 23% to £9.2 billion, followed by exports of cereals & cereal preparations which increased by 19% to £2.6 billion. Exports of fish & fish preparations decreased by 7.5% to £1.7 billion.

In real terms, imports of oils/fats & oilseeds increased by 32% to £3.8 billion between 2021 and 2022. Imports of cereals & cereal preparations rose by 19% to £5.9 billion, and imports of beverages increased by 12% to £7.5 billion. Imports of dairy products & eggs decreased by 17% to £3.6 billion in 2022.

Value of trade in food, feed and drink by types of commodity

Table 13.1a Value of trade in food, feed and drink at 2022 prices (£ million); United Kingdom

Enquiries: Lilian Oluwakuyide
Email: lilian.oluwakuyide@defra.gov.uk

Table 13.1a Exports

SITC Division Code	Type	2020	2021	2022
Exports				
1	Meat & Meat Preps	2,179	1,855	2,117
2	Dairy & Eggs	2,325	1,975	2,134
3	Fish & Fish Preps	1,971	1,870	1,729
4	Cereals & Cereal Preps	2,527	2,219	2,641
5	Fruit and Veg & Preps	1,262	853	1,008
6	Sugar & Sugar Preps	473	327	332
7	Coffee, tea, etc.	1,565	1,451	1,529
8	Animal feed	1,378	1,178	1,201
9	Misc. edible preps	2,383	2,087	2,191
11	Beverages	6,659	7,508	9,215
22 + S4	Oils/fats & Oilseeds	752	792	837
	Total	23,474	22,116	24,935

Table 13.1a Imports

SITC Division Code	Type	2020	2021	2022
Imports				
1	Meat & Meat Preps	7,949	7,339	7,771
2	Dairy & Eggs	5,047	4,343	3,624
3	Fish & Fish Preps	3,656	3,832	3,661
4	Cereals & Cereal Preps	5,317	4,994	5,931
5	Fruit and Veg & Preps	12,831	11,730	12,304
6	Sugar & Sugar Preps	1,418	1,560	1,488
7	Coffee, tea, etc.	4,739	4,409	4,734
8	Animal feed	3,213	3,224	3,333
9	Misc. edible preps	4,720	4,202	4,003
11	Beverages	6,397	6,670	7,474
22+S4	Oils/fats & Oilseeds	2,946	2,881	3,815
	Total	58,234	55,184	58,136

Notes:

1. 2022 figures are provisional and subject to revision

Source: HMRC

[Download the full Overseas trade dataset](#)

Table 13.1b Value of trade in food, feed and drink with EU countries at 2022 prices (£ million); United Kingdom

Enquiries: Lilian Oluwakuyide
 Email: lilian.oluwakuyide@defra.gov.uk

Table 13.1b Exports

SITC Division Code	Type	2020	2021	2022
Exports				
1	Meat & Meat Preps	1,569	1,265	1,563
2	Dairy & Eggs	1,722	1,405	1,607
3	Fish & Fish Preps	1,506	1,359	1,209
4	Cereals & Cereal Preps	1,749	1,469	1,867
5	Fruit and Veg & Preps	963	577	680
6	Sugar & Sugar Preps	293	202	221
7	Coffee, tea, etc.	1,119	952	965
8	Animal feed	887	680	676
9	Misc. edible preps	1,513	1,231	1,238
11	Beverages	2,580	2,680	3,076
22 + S4	Oils/fats & Oilseeds	660	593	734
	Total	14,562	12,412	13,837

Table 13.1b Imports

SITC Division Code	Type	2020	2021	2022
Imports				
1	Meat & Meat Preps	6,480	5,947	6,378
2	Dairy & Eggs	4,972	4,262	3,577
3	Fish & Fish Preps	1,207	837	749
4	Cereals & Cereal Preps	4,204	3,875	4,709
5	Fruit and Veg & Preps	8,394	7,094	7,742
6	Sugar & Sugar Preps	876	916	948
7	Coffee, tea, etc.	3,419	2,958	3,136
8	Animal feed	2,021	1,836	1,985
9	Misc. edible preps	3,754	3,238	3,221
11	Beverages	4,574	4,886	5,801
22 + S4	Oils/fats & Oilseeds	1,701	1,441	2,141
	Total	41,603	37,289	40,386

Notes:

1. Figures for 2022 are provisional and subject to revision.

Source: HMRC

Table 13.1c Value of trade in food, feed and drink with non-EU countries at 2022 prices (£ million); United KingdomEnquiries: Lilian Oluwakuyide
Email: lilian.oluwakuyide@defra.gov.uk**Table 13.1c Exports**

SITC Division Code	Type	2020	2021	2022
Exports				
1	Meat & Meat Preps	610	590	554
2	Dairy & Eggs	603	571	527
3	Fish & Fish Preps	464	511	520
4	Cereals & Cereal Preps	778	751	774
5	Fruit and Veg & Preps	298	276	328
6	Sugar & Sugar Preps	179	125	111
7	Coffee, tea, etc.	446	499	563
8	Animal feed	491	499	525
9	Misc. edible preps	870	856	953
11	Beverages	4,079	4,828	6,139
22 + S4	Oils/fats & Oilseeds	92	198	103
	Total	8,911	9,704	11,098

Table 13.1c Imports

SITC Division Code	Type	2020	2021	2022
Exports				
1	Meat & Meat Preps	1,469	1,392	1,392
2	Dairy & Eggs	75	81	47
3	Fish & Fish Preps	2,449	2,995	2,913
4	Cereals & Cereal Preps	1,114	1,119	1,222
5	Fruit and Veg & Preps	4,437	4,636	4,563
6	Sugar & Sugar Preps	542	644	540
7	Coffee, tea, etc.	1,319	1,451	1,597
8	Animal feed	1,191	1,389	1,347
9	Misc. edible preps	966	964	782
11	Beverages	1,823	1,784	1,673
22+S4	Oils/fats & Oilseeds	1,245	1,440	1,674
	Total	16,631	17,895	17,750

Chapter 13: Overseas Trade

Notes: (tables 13.1a, 13.1b and 13.1c)

Defra's aggregate 'Food, Feed and Drink' is composed of the following divisions from the Standard International Trade Classification:

1. Figures for 2022 are provisional and subject to revision.
2. Meat [01]: meat from cattle, sheep, pigs, goats, poultry, horses etc.; preparations including blood, juices, sausages, livers, offal.
3. Dairy [02]: includes milk (skimmed or otherwise), butter, buttermilk, cream, yoghurt, ice cream, whey, cheese and curd, all types of eggs both in and out of shell.
4. Fish [03]: All types of edible marine life excluding mammals, fresh, frozen, processed, prepared or preserved.
5. Cereals [04]: includes rice, wheat, barley, oats, maize, grain sorghum and preparations including sweet biscuits, waffles, gingerbread, and uncooked/unstuffed pasta.
6. Fruit and vegetables [05]: includes fresh, frozen or prepared fruit (except crystallised) and vegetables, nuts (except groundnuts), vegetable and fruit juices of all kinds except wine (see division 11), jams, marmalades, fruit or nut puree/paste etc.
7. Sugar [06]: includes both natural sugar and sugar confectionery (but not chocolate or cocoa), both natural and artificial honey, and liquorice.
8. Coffee, tea, etc. [07]: includes all types of tea, coffee (e.g. green, decaffeinated), extracts and substitutes thereof; cocoa and chocolate (of all kinds): all kinds of spices.
9. Animal feed [08]: includes hay, fodder, bran, sharps and other residues derived from cereals or leguminous plants, oil-cake and other solid residues, other residues, brewing dregs, all types of pet or animal food.
10. Miscellaneous [09]: includes margarine, shortening, homogenised products or preparations not elsewhere specified, sauces, vinegar, soups, yeasts, cooked/stuffed pasta, food preparations for infant use.
11. Beverages [11]: includes alcoholic drinks of all kinds; also natural or artificial mineral and aerated waters sweetened or otherwise.
12. Oils [22+S4]: includes groundnuts (peanuts), soya beans, sunflower seeds, rape seeds, palm nuts, linseed, poppy seeds etc., lard, pig fat, olive oil, rape oil, corn oil, linseed oil, beeswax etc.
13. Division 00, which covers all live animals, is excluded from the aggregate 'Food, Feed and Drink' because it includes non-food animals, particularly race horses. S4 stands for Section 4 in the SITC and covers animal and vegetable oils, fats and waxes.

Source: HMRC

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Total value of trade in food, feed and drink by trading partner

Figure 13.2 Exports of food, feed and drink by country of destination 2022; United Kingdom

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Country	£ million
Ireland	3850
France	2723
United States	2445
Netherlands	2027
Germany	1045
Spain	822
Belgium	801
China	760
Singapore	482
Italy	480

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Figure 13.3 Imports of food, feed and drink by country of dispatch 2022; United Kingdom

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Country	£ million
Netherlands	7342
France	5835
Ireland	4547
Belgium	4253
Spain	3873
Germany	3858
Italy	3751
Poland	2851
United States	1330
Brazil	1298

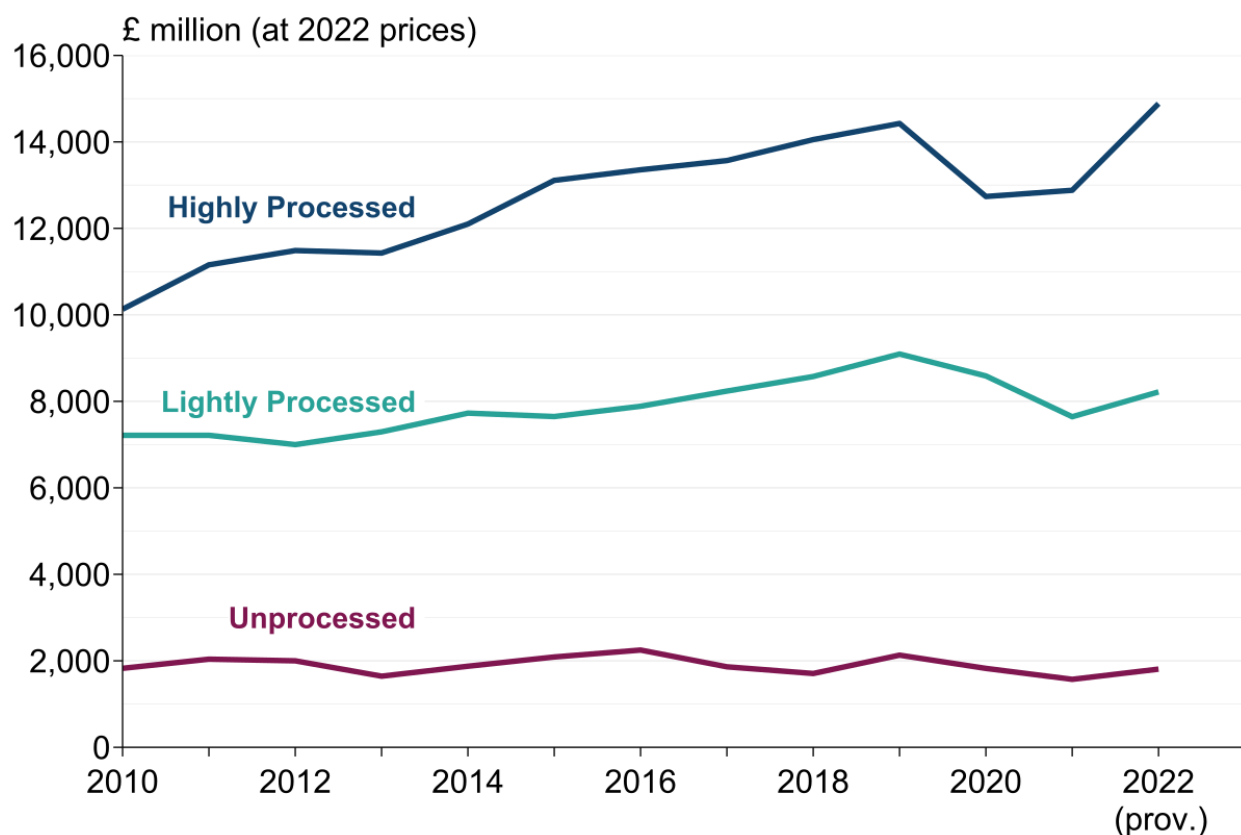
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Value of exports and imports by degree of processing

Trade in food, feed and drink covers a wide range of products from raw agricultural commodities through to lightly processed foods such as meat, cheese and butter, powdered milk, flour and sugar to highly processed products such as confectionery, canned meats, jams, alcoholic drinks and ice cream. By grouping foods into unprocessed, lightly processed and highly processed, additional insights in trading patterns can be found.

Figure 13.4 Exports in food, feed and drink by degree of processing at 2022 prices; United Kingdom

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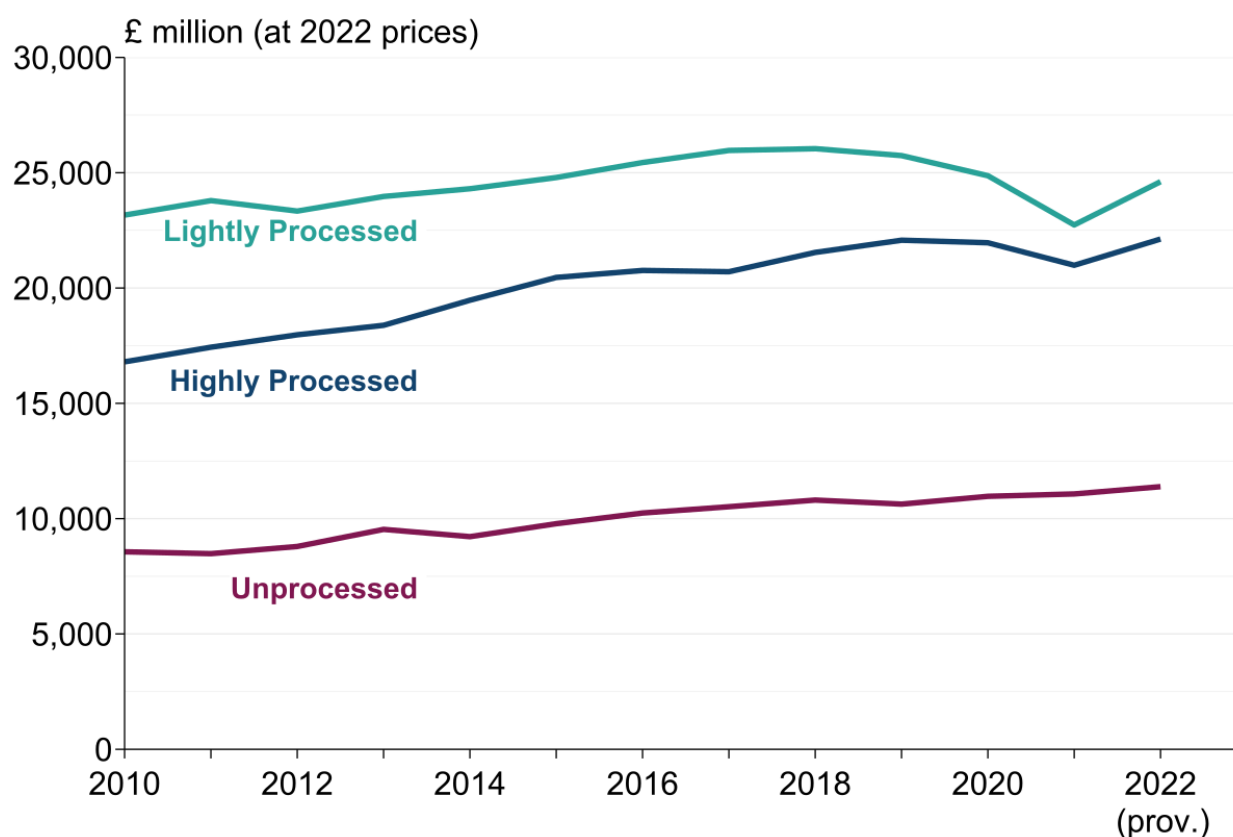
Text description of Figure 13.4: Figure 13.4 is a line chart showing the value of food, feed, and drink exports in millions of pounds at 2022 prices, broken down by degree of processing. Between 2010 and 2019, exports of highly and lightly processed goods increased steadily, with a greater fluctuation from 2019 onwards. Between 2010 and 2022, exports of unprocessed goods remained relatively stable. Data for 2022 remain provisional until September 2023 and will be updated in next year's Agriculture in the UK publication.

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Exports of highly processed foods such as confectionery, canned meats, jams, alcoholic drinks and ice cream, increased by 30% in real term value between 2012 and 2022. Exports of lightly processed food and drink, i.e. goods that retain their raw recognisable form, such as meat, cheese, butter and oils & fats increased by 17% in real term value between 2012 and 2022. Exports of unprocessed commodities, such as fresh fruit & vegetables, nuts, un-milled cereal and eggs were 9.6% lower in real term value in 2022 than in 2012.

Figure 13.5 Imports in food, feed and drink by degree of processing at 2022 prices; United Kingdom

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Text description of Figure 13.5: Figure 13.5 is a line chart showing the value of food, feed, and drink imports in millions of pounds at 2022 prices, broken down by degree of processing. Between 2010 and 2019, imports of highly and lightly processed goods increased steadily. Imports fell in 2021 before recovering in 2022. Between 2010 and 2022, imports of unprocessed goods increased steadily. Data for 2022 remain provisional until September 2023 and will be updated in next year’s Agriculture in the UK publication.

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Imports of highly processed food and drink increased by 23% in real term value between 2012 and 2022. Imports of lightly processed food and drink increased by 5.5% in real term value between 2012 and 2022. Imports of unprocessed commodities increased by 30% in real term value between 2012 and 2022.

Value and volume of trade in key commodities

The value of exports across a range of different commodities has broadly increased year on year in recent times. However, in 2014 and 2015, commodity prices for many sectors fell, due to a slowdown of global economic markets and the effect of exchange rates. Subsequent years saw a return to export growth in most of the main product groups. However, the effect of the coronavirus pandemic and EU Exit (including changes to data collection methods) have affected trade statistics since 2020.

The value of exports of whisky, the highest valued individual food, feed and drink export item, increased by 28% in real terms from 2021 to £6.4 billion in 2022. This is 48% higher than 2012 in real terms. Exports of beef and veal were £542 million in 2022, recovering from the reductions in 2020 and 2021. This was 24% higher than in 2012 in real terms. There was a considerable increase in the value of exports of unmilled wheat between 2021 and 2022 (250% in real terms), driven by the favourable harvest in 2021. Note that trade for this commodity can fluctuate considerably between years, influenced by various conditions such as the quality and size of the UK harvest and global commodity prices. Exports of cheese also increased by 12% in real terms to £786 million. Exports of poultrymeat decreased by 6.0% to £223 million between 2021 and 2022 in real terms, remaining below pre-pandemic and EU exit levels.

In 2022, imports of fresh fruit decreased by 4.6% in real terms from to £3.9 billion, while imports of fresh vegetables increased by 2.4% to £2.7 billion. Imports of both of these commodity groups remain below pre-pandemic and pre-EU Exit levels. Despite the slight decrease in fresh fruit imports, the range and quality of healthy eating options remains high. Imports of unmilled wheat increased by 2.4% in real terms to £558 million.

The value of wine imports in 2022, a high value commodity, increased by 6.5% in real terms from 2021, to £4.1 billion. The value of wine exported from the UK increased by 11% from 2021 in real terms to £554 million in 2022.

The overall volume of exports of food, feed and drink in 2022 increased by 14% to 12.5 billion tonnes. The trend over the last decade for the volume of exports has been slightly downwards year-on-year, linked to the economic slowdown followed by the effects of the Coronavirus pandemic and EU exit. Import volumes have stabilised in recent years; the volume of imports was 40.4 billion tonnes in 2022, 13% higher than 2012. [Source: UK trade info.](#)

The food, feed and drink Index provides a comparison of trade which accounts for the value density of different food groups. For example, high value per tonne exports (e.g. whisky) are given more weight in this indicator than low value per tonne exports (e.g. wheat and barley). According to the index, food, feed and drink exports in 2022 increased by 7.5% from 2021, while imports increased by 5.1%.

Table 13.2a and 13.2b Trade in key commodities in real terms at 2022 prices (£ million); United Kingdom

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Table 13.2a Exports

Commodity	2020	2021	2022
Whisky	4,071	4,955	6,364
Wine	539	500	554
Cheese	834	704	786
Poultry meat	311	237	223
Poultry meat products	118	77	98
Beef and veal	408	385	542
Wheat, unmilled	102	72	252
Lamb and mutton	470	467	494
Pork	432	346	334
Breakfast cereals	570	538	531
Milk and cream	358	352	404
Bacon and ham	54	34	48
Butter	238	227	263
Eggs and egg products	150	126	109
Fresh vegetables	109	72	85
Fresh fruit	179	62	64
Salmon (inc. smoked)	706	833	700

Table 13.2b Imports

Commodity	2020	2021	2022
Whisky	211	198	196
Wine	3,697	3,854	4,104
Cheese	2,633	2,156	1,808
Poultry meat	1,208	1,197	1,614
Poultry meat products	1,478	1,243	1,522
Beef and veal	1,212	1,381	1,244
Wheat, unmilled	487	545	558
Lamb and mutton	431	366	342
Pork	1,087	855	710
Breakfast cereals	380	268	321
Milk and cream	187	262	221
Bacon and ham	639	603	601
Butter	372	311	281
Eggs and egg products	267	193	221
Fresh vegetables	2,853	2,674	2,737
Fresh fruit	4,314	4,091	3,903
Salmon (inc. smoked)	536	757	703

Notes: See notes for table 13.3

Source: HMRC

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Table 13.3a and 13.3b Trade in key commodities by volume (thousand tonnes unless otherwise specified); United Kingdom

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Table 13.3a Exports

Commodity	2020	2021	2022
Whisky (million litres pure alcohol)	330	396	478
Wine (million litres)	93	36	33
Cheese	193	154	176
Poultry meat	452	352	254
Poultry meat products	30	21	26
Beef and veal	117	103	124
Wheat, unmilled	520	294	865
Lamb and mutton	88	70	75
Pork	260	193	190
Breakfast cereals	218	172	179
Milk and cream	792	757	787
Bacon and ham	14	10	17
Butter	61	52	49
Eggs and egg products	32	34	32
Fresh vegetables	108	69	96
Fresh fruit	178	37	38
Salmon (inc. smoked)	97	115	91
Food, feed and drink Index, 2009=100	119	108	117

Table 13.3b Imports

Commodity	2020	2021	2022
Whisky (million litres pure alcohol)	20	21	19
Wine (million litres)	1,485	1,376	1,314
Cheese	499	409	411
Poultry meat	416	408	503
Poultry meat products	362	324	420
Beef and veal	249	254	234
Wheat, unmilled	2,133	2,060	1,634
Lamb and mutton	59	47	54
Pork	388	336	322
Breakfast cereals	150	103	129
Milk and cream	220	343	306
Bacon and ham	171	174	202
Butter	79	57	54
Eggs and egg products	80	68	77
Fresh vegetables	2,213	1,978	2,044
Fresh fruit	3,564	3,327	3,277
Salmon (inc. smoked)	82	110	93
Food, feed and drink Index, 2009=100	121	111	117

Notes: (Tables 13.2 and 13.3)

1. Figures for 2022 are provisional and subject to revision
2. Whisky includes bourbon, scotch (malted and blended) and other whiskies.
3. Wine includes grape must, vermouth and wine of fresh grapes (sparkling and still).
4. Cheese includes grated or powdered, processed, blue-veined and fresh (e.g. curd).
5. Poultrymeat (inc. poultry offal) includes carcass meat, cuts and offal (inc. liver).
6. Poultry meat products includes prepared, preserved, salted or cooked poultrymeat and offal (inc. liver).
7. Beef and veal includes carcass meat and cuts, both bone-in and boneless.
8. Wheat, unmilled includes durum, other wheat (inc. spelt) and meslin.
9. Lamb and mutton includes carcass meat and cuts, both bone-in and boneless.
10. Pork includes carcass meat and cuts, both bone-in and boneless.
11. Breakfast cereals includes cereal grains worked or prepared for breakfast cereals
12. Milk and cream includes milk (inc. skimmed milk) and cream, not concentrated or sweetened.
13. Fresh vegetables excludes potatoes, dried legumes and processed vegetables.

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14. Fresh fruit excludes jams, juices, dried and processed fruit.
15. Salmon (inc. smoked) includes fresh, chilled, frozen or smoked, but not canned.
16. Note: Definitions of 'fresh vegetables' and 'fresh fruit' used have been revised in 2009 to be consistent with those used for AUK Chapter 5.

Source: HMRC

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Methodology Changes

The method of calculating the real terms value of trade has been changed from the previous edition of this publication. Instead of using one Gross Domestic Product deflator ([Office of National Statistics series YBGB](#)), the calculations now apply specific implied deflators for trade (sourced from the [MRET dataset from the Office of National Statistics](#)) at an SITC (standard international trade classification) level for EU and Non-EU imports and exports. This has been done to better reflect trade inflation for commodities and trade flows.

Chapter 14: The Food Chain

Summary

- In 2021, the agri-food sector (excluding fishing) in the United Kingdom accounted for a total estimated **Gross Value Added (GVA)** of £127bn or 6.2% of national GVA, a increase of 13% since 2020. The non-residential catering sector increased by 32% between 2020 and 2021. All other sectors also saw an increase.
- **Employment** in the agri-food sector grew by 3.3% over the 12-month period to the fourth quarter of 2022 to just under 4.2 million. The largest percent change was seen in non-residential catering which rose by 7.9% (144,000 employees).
- **Total factor productivity** of the food chain decreased by 1.5% while there was a decrease of 1.1% in productivity in the wider economy. In the 10 years prior to 2020, the average annual growth rate of the food chain was 0.1% while the wider economy's average annual growth rate was 0.2%.
- **Consumer expenditure** on food and alcoholic drinks (at constant prices) increased by 7% from 2021 to 2022 and was 20% higher than in 2012. Expenditure on food and drink eaten out increased by 29% from 2021 to 2022, whilst expenditure on household food and alcoholic drinks (off-licence only) decreased by 6.9% and 9.6% respectively.

Contribution of the agri-food sector to the national economy

Figure 14.1 Gross Value Added of the agri-food sector, 2021 (£ billion) (a)

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Sector	Gross Value Added	Share of total
Agriculture (not including fishing)	£12.1	9%
Food and Drink Manufacturing	£30.4	24%
Food and Drink Wholesaling	£12.7	10%
Food and Drink Retailing	£36.9	29%
Food and Drink Non-Residential Catering	£35.2	28%

Notes:

1. 2022 figures not yet available from the Annual Business Survey (ABS).

Source: [Annual Business Survey \(ONS\)](#), [Aggregate Agricultural Accounts \(Defra\)](#).

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In 2021 the agri-food sector (excluding fishing) contributed £127bn to the economy, 6.2% of the national GVA. Within this, retailing accounted for the largest proportion at 29% followed by catering at 28%. Wholesaling accounted for 10% of the sector. Agriculture made the smallest contribution at 9.5%. The non-residential catering sector increased 32% between 2020 and 2021. All other sectors saw an increase.

In 2020, two of the four food sectors had a higher productivity than in 2019. Wholesale has increased by 0.9% while retail increased by 3.7%. In 2020, catering showed a decrease of 10% due to COVID-19 impacts.

In the 10 years prior to 2020, the average annual growth rate of the food chain was 0.1% while the wider economy's average annual growth rate was 0.2%.

For more information please see the [Total Factor Productivity of the United Kingdom Food Chain](#) publication.

Table 14.1a to 14.1e - Agri-food sector contribution to the national economy (£ million unless otherwise specified)

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Table 14.1a

Sector	2020	2021	2022
Agri-food sector's contribution to total economy gross value added	112,857	127,237	..
Agriculture (not including fishing)	10,342	12,065	13,859
Food and Drink Manufacturing	28,177	30,428	..
Food and Drink Wholesaling	12,625	12,672	..
Food and Drink Retailing	34,961	36,870	..
Food and Drink Non-Residential Catering	26,752	35,202	..
% of national gross value added (current prices)	5.9%	6.2%	..

Table 14.1b

Sector	2020	2021	2022
Workforce in the food sector thousand persons	3,969	4,035	4,168
Agriculture (including fishing)	430	425	428
Food and Drink Manufacturing	418	414	419
Food and Drink Wholesaling	219	199	207
Food and Drink Retailing	1,152	1,162	1,134
Food and Drink Non-Residential Catering	1,750	1,835	1,979
% share of national workforce	13.3%	13.4%	13.4%

Table 14.1c

Trade in food feed and drink in real terms at 2022 prices	2020	2021	2022
Imports of food, feed and drink	58,234	55,184	58,136
% of total UK imports	9.3%	9.2%	8.7%
Exports of food, feed and drink	23,474	22,116	24,935
% of total UK exports	6.1%	5.5%	5.8%
UK Food Production to Supply Ratio ('Self-Sufficiency')			
% of all food	60%	61%	60%
% of indigenous type food	74%	74%	73%

Table 14.1d

Household final consumption expenditure on food and alcoholic drinks	2020	2021	2022
At current prices	220,434	246,404	281,397
Household food and non-alcoholic beverages	120,091	122,642	126,737
Food and drink eaten out	73,496	98,248	131,368
Alcoholic drinks (off-licence only)	26,847	25,514	23,292
At constant 2022 prices (£ million)	246,797	268,704	281,397
Household food and non-alcoholic beverages	134,453	133,741	126,737
Food and drink eaten out	82,286	107,140	131,368
Alcoholic drinks (off-licence only)	30,058	27,832	23,292
% of total household final consumption expenditure (current prices)	18.2%	18.7%	18.9%
Household food and non-alcoholic beverages	9.9%	9.3%	8.5%
Food and drink eaten out	6.1%	7.4%	8.8%
Alcoholic drinks (off-licence only)	2.2%	1.9%	1.6%

Table 14.1e

Consumer price index (2015 = 100)	2020	2021	2022
All items	108.7	111.6	121.7
Food and non-alcoholic beverages	103.9	104.2	115.5
Alcoholic beverages	102.0	103.3	105.8

Notes for tables 14.1a to 14.1e:

1. 2022 figures are provisional and subject to revision
2. .. means 'not available'

Sources: [Annual Business Survey \(ONS\)](#), [Aggregate Agricultural Accounts \(Defra\)](#), [Labour Force Survey GB \(ONS\)](#), [Overseas Trade Statistics \(HMRC\)](#), [Consumer Price Indices \(ONS\)](#).

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Agri-food sector employees and self-employed farmers

Figure 14.2 Agri-food sector employees and self-employed farmers, 2022 (millions)

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Sector	Number of employees	Share of total
Agriculture	0.4	10%
Food and Drink Manufacturing	0.4	10%
Food and Drink Wholesaling	0.2	5%
Food and Drink Retailing	1.1	27%
Food and Drink Non-Residential Catering	2.0	48%

Source: [Labour Force Survey GB \(ONS\)](#), [June Survey of Agriculture \(Defra\)](#)

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In 2022, the agri-food sector employed 4.2 million people, or 13% of all employees in Great Britain. This proportion has been broadly the same since 2001. Agriculture accounts for less than half a million employees or 10% of the agri-food sector.

In the twelve months to December 2022, employment in the agri-food sector increased by 3.3%. Employment fell in 2022 in retailing (2.4%), but increased in non-residential catering (7.9%), wholesaling (4.3%) and manufacturing (1.2%).

Employment across the whole GB economy rose by 3% over the same period (based on the total industries estimate from the same JOBS03 spreadsheet that covers SIC 2007 section A-T).

Employment in the agri-food sector has risen 16% since 2000. Changes in each of the sectors since 2000 show that employment in agriculture, manufacturing and wholesaling fell by 23%, 13% and 6.1% respectively, while retailing and non-residential catering increased by 4.1% and 57.3% respectively.

Total Factor Productivity

In 2020, the productivity of the food chain decreased by 1.5% while there was a decrease of 1.1% in productivity in the wider economy. In the 10 years prior to 2020, the average annual growth rate of the food chain was 0.1% while the wider economy's average annual growth rate was 0.2%.

In 2020, total factor productivity in **food and drink manufacturing** decreased by 3.1% and decreased by 0.2% over the last 10 years.

For more information on productivity please see the [Total Factor Productivity of the United Kingdom Food Chain](#) publication.

Chapter 14: The Food Chain

Total factor productivity of **food wholesaling** increased by 0.9% in 2020, while in the last 10 years has shown an average annual increase of 0.6%.

Productivity of the **food retail** sector increased by 3.7% in 2020. In the last 10 years, productivity has shown an average annual increase of 0.6%.

In 2020 non-residential catering (NRC) showed a decrease in productivity of 10.1%.

Trade in food, feed and drink

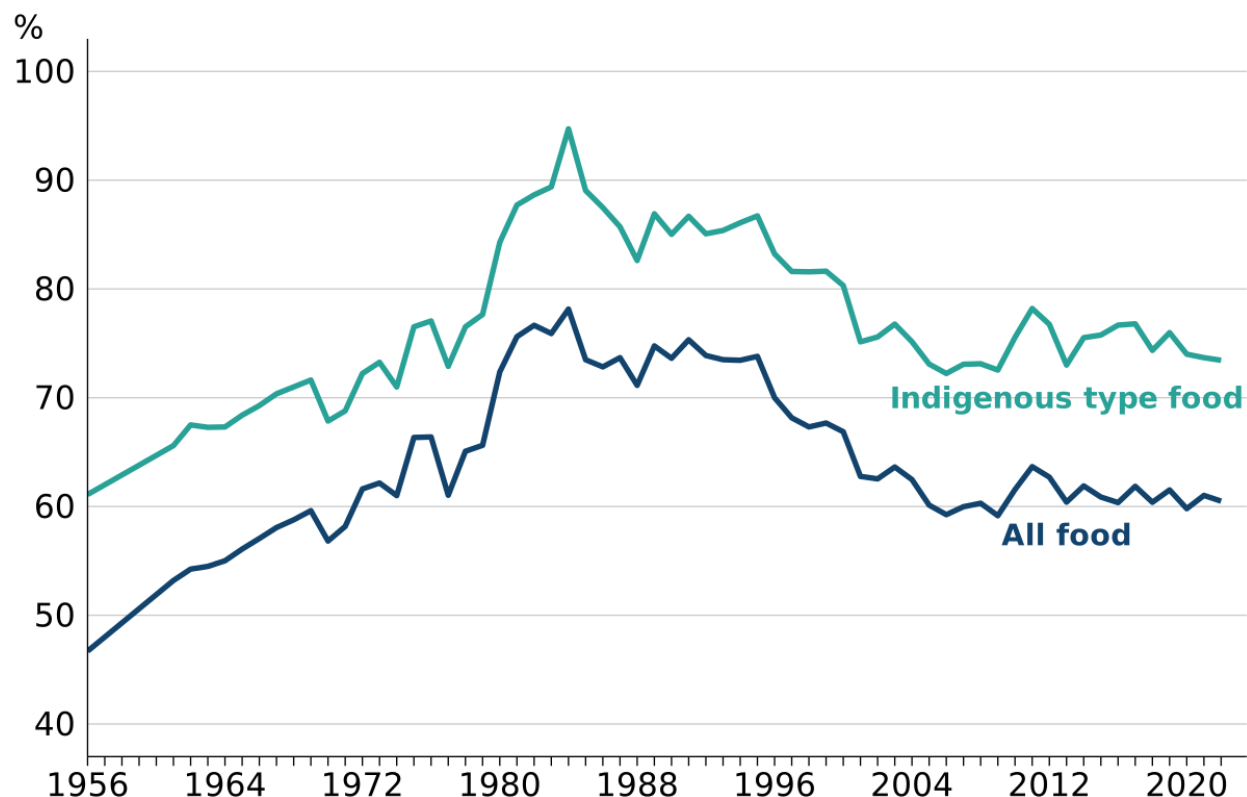
In 2022, the value of food, feed and drink exports was £24.9bn, an increase of 12.7% on 2021. In 2022 the value of food, feed and drink imports increased by 5.3% to £58.1bn in real terms, resulting in the trade gap in food, feed and drink of £33.2bn in real terms, an increase of 0.4% since 2021. See Chapter 13 for more detail on overseas trade.

Food production to supply ratio

Figure 14.3 Food production to supply ratio, 1956-2022

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Source: Defra analysis of [HMRC Overseas Trade Statistics](#)

Text description of Figure 14.3: Figure 14.3 is a line chart showing how the food production to supply ratio for the UK has changed from 1956 to 2022.

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The Food Production to Supply Ratio (commonly referred to as the “Self Sufficiency Ratio”), is calculated as the farmgate value of raw food production divided by the value of raw food for human consumption, and is estimated to be 60% for all food in 2022 and 73% of indigenous type food. In 2021, this was 61% and 74% respectively. Table 14.2 contains production to supply ratios for selected crops and other primary agricultural products. For these individual products, the production to supply ratio is calculated using volumes rather than value.

Table 14.2 Food Production to Supply Ratio

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	2020	2021	2022
Cereals	88%	86%	92%
Wheat	86%	89%	95%
Barley	122%	110%	112%
Oats	104%	101%	121%
Other crops			
Oilseed rape	73%	52%	64%
Sugar beet	63%	63%	57%
Fresh vegetables	55%	57%	55%
Potatoes	71%	74%	63%
Cabbages	89%	90%	86%
Cauliflowers and broccoli	61%	64%	55%
Carrots, turnips and swede	96%	95%	99%
Mushrooms	47%	47%	49%
Lettuce	33%	34%	44%
Tomatoes	15%	17%	16%
Fresh fruit	16%	15%	17%
Apples	39%	37%	40%
Pears	19%	16%	14%
Plums	19%	9%	14%
Strawberries	69%	64%	67%
Raspberries	37%	30%	38%
Meat and dairy			
Beef and veal	85%	83%	87%
Pigmeat	71%	71%	69%
Mutton and lamb	111%	108%	107%
Poultrymeat	99%	96%	96%
Milk	105%	105%	105%
Eggs	89%	92%	90%

Notes:

1. 2022 figures are provisional.
2. Average ratios for categories cereals, other crops, fresh vegetables and fresh fruit may include more items than the selected items listed in the table.

Source: Defra's Agriculture in the UK for category averages (e.g. fresh vegetables) and potatoes and all meat and dairy products. Defra's [Horticulture Statistics](#) for all other individual products.

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Distinction between competitiveness and food security

The food production to supply ratio provides a very broad indicator of the ability of United Kingdom agriculture to meet consumer demand - also described as competitiveness. The ratio is not an appropriate measure of "food security" since it fails to account for many dimensions of this complex issue.

A high food production to supply ratio fails to insulate a country against many possible disruptions to its supply chain.

Diversity enhances security. The United Kingdom sources foods from diverse stable countries, mainly European countries, and imports can make up for domestic supply shortages (see Figure 14.4).

A detailed analysis is given in the Defra publication '[UK Food Security Report 2021](#)'.

The UKFSR was the first comprehensive review of the UK's food security to be published since the UK Food Security Assessment (UKFSA), which was first published in 2009 and updated in 2010. The next edition will be published in 2024.

In the decade since the UKFSA, the food security landscape changed significantly. The UK's departure from the European Union brought changes in the areas of trade, farming, and access to fisheries, resulting in both challenges and opportunities in food security. Climate change and its impacts on farming and the food supply chain are now also better understood.

The COVID-19 pandemic and other concurrent events happening towards the end of 2020, such as the UK leaving the EU and increased food demand in the run up to Christmas, have stress-tested the supply chain, highlighting both the vulnerabilities in this complex system and the resilience and flexibility of the UK's food supply.

In addition, the pandemic has increased public awareness in a range of food security areas. This includes the complexities and dependencies of the UK's food supply chain, notably the advantages and risks of just-in-time food supplies, as well as the issues surrounding household food insecurity as households struggled to afford food.

Origins of food consumed in the United Kingdom

Figure 14.4 includes the proportion of United Kingdom food consumption that is produced in the United Kingdom. This should not be confused with the Food Production to Supply Ratio given in Figure 14.3. Figure 14.4 looks purely at the breakdown of food that the United Kingdom actually consumes.

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The Food Production to Supply Ratio (see figure 14.3) considers all United Kingdom food production, including food that the United Kingdom exports instead of consuming. A further, much smaller difference is that the United Kingdom food production used in the food production to supply ratio calculations has been adjusted to take account of the balance of trade in important inputs into agriculture.

Figure 14.4 Origins of food consumed in the United Kingdom, 2022.

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Origin of destination	2022
UK exports	-9%
UK	58%
EU	23%
Rest of Europe	3%
Africa	4%
Asia	4%
Australasia	1%
North America	3%
South America	4%

Notes:

1. Based on the farm-gate value of raw food.
2. Consumption of UK origin consists of UK domestic production minus UK exports.
3. UK exports are given as a percentage of total UK consumption.
4. Membership of the EU increased between 2002 and 2013, from 15 to 28 countries.

Source: Defra analysis of [HMRC Overseas Trade Statistics](#)

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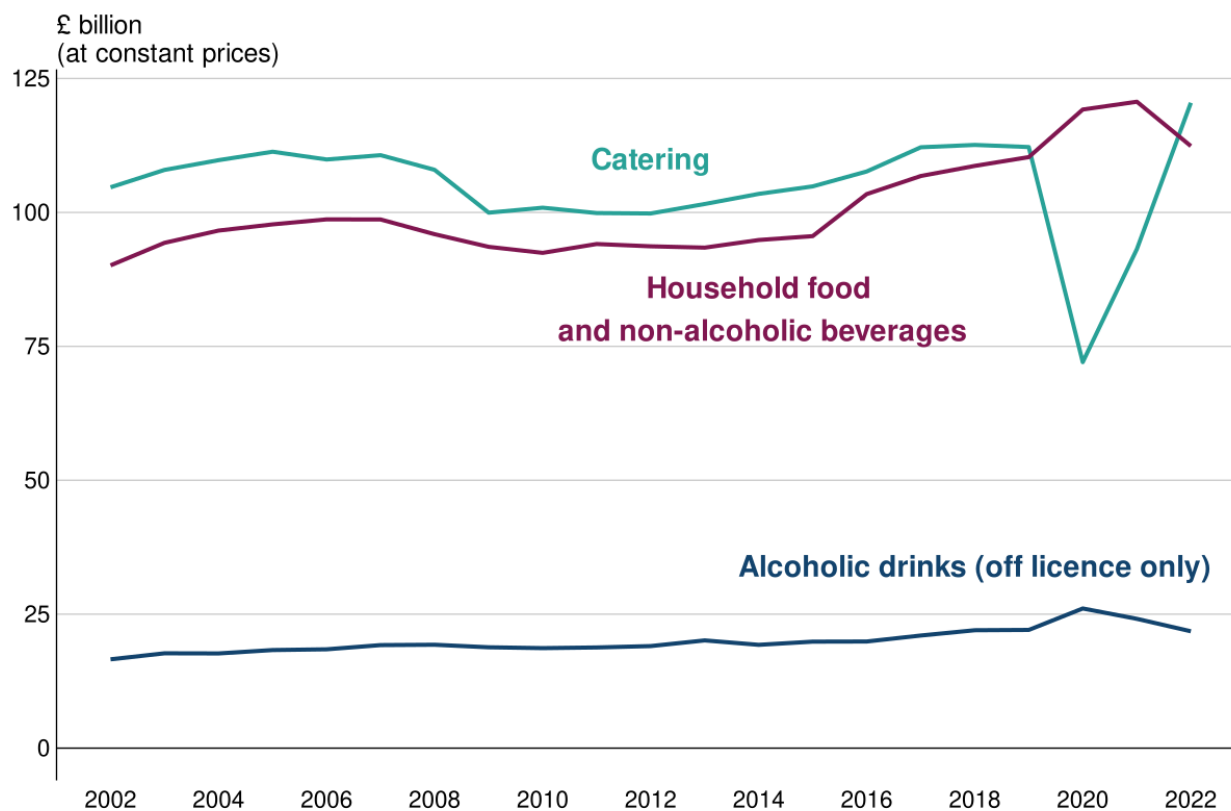
Supply includes domestic production plus imports and excludes exports of home production. In 2022, 58% of domestic consumption came from UK production (based on unprocessed value at farmgate), 23% from the EU and the remaining 19% from the rest of the world. 33 countries accounted for 90% of imported supply, and 22 for 80%. Some countries or regions are uniquely important to supply of particular products such as bananas from the Caribbean and Central America, reducing the security of this supply.

Consumers' expenditure

Figure 14.5 Consumers' expenditure on food, drink and eating out 2000-2022 (constant prices)

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Source: [Consumer trends, ONS](#)

Text description of Figure 14.5: Figure 14.5 is a line chart that shows the amount of consumer spending in the UK on food and non-alcoholic drink, alcoholic drink (off-licence only) and for catering from 2002 to 2022.

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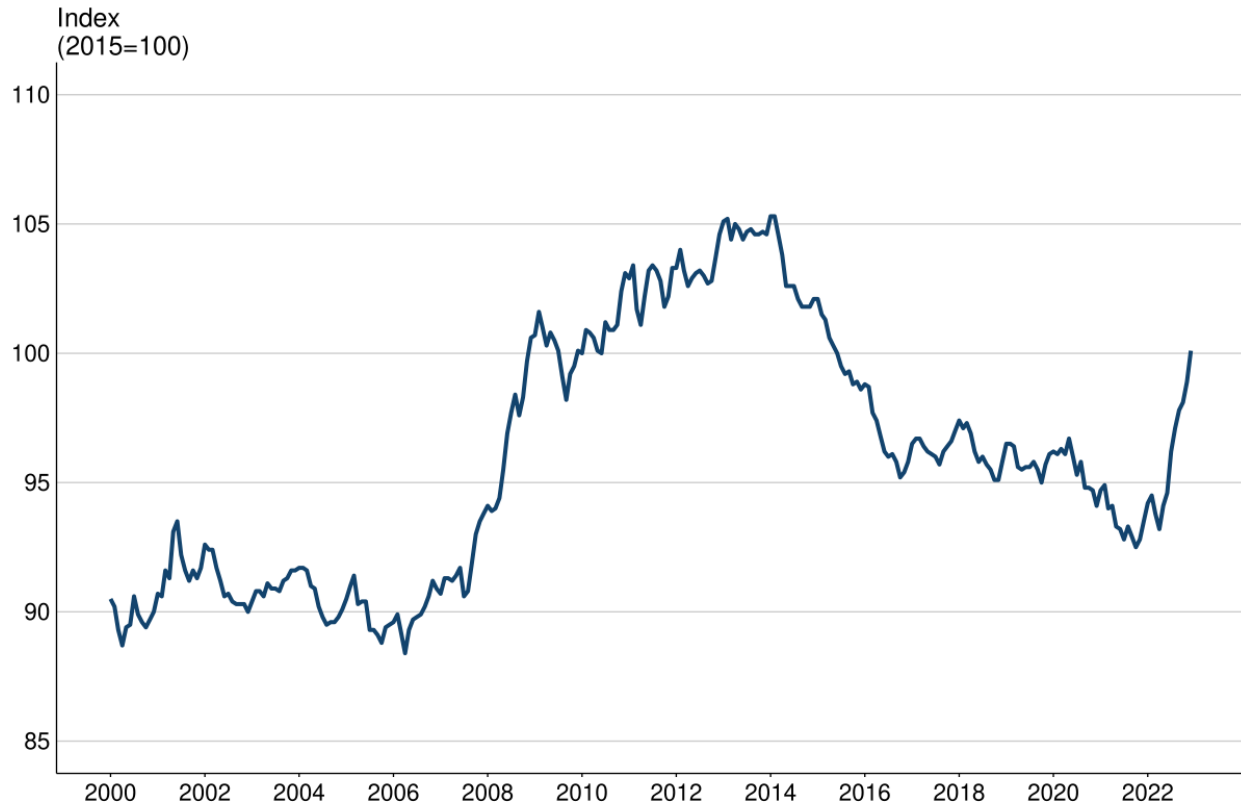
After taking into account the effects of price rises (constant prices) consumers' expenditure on food and alcoholic drinks (at constant prices) increased by 7% from £238bn in 2021 to £254bn in 2022 and was 20% higher than in 2012. Expenditure on food and drink eaten out increased by 29% from £93bn in 2021 to £120bn in 2022, whilst expenditure on household food and alcoholic drinks (off-licence only) decreased by 6.9% from £120bn to £112bn and 9.6% from £24bn to £22bn respectively.

Changes in consumers' price indices

Figure 14.6 Changes in the food price index (in constant prices, food and non-alcoholic beverages) 2000-2022

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Source: [Consumer Price Index \(ONS\)](#)

Text description of Figure 14.6: Figure 14.6 shows the changes in the consumer price index for food and non-alcoholic beverages from 2000 to 2022.

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Food and non-alcoholic beverage prices in real terms were fairly stable between 2000 and 2007, as measured by the Consumer Price Index (CPI), before rising by 12% between July 2007 and February 2009. Prices then returned to real terms stability until February 2014. From a peak in February 2014, food prices fell steadily to October 2016 and, after improving in 2017, fell again to November 2018. Food and non-alcoholic beverage prices fluctuated in 2019 before falling sharply in the second half of 2020. Prices remained low in 2021.

This has been followed by a recent spike from the early part of 2022, due to food prices generally rising faster than other items. This was in part a consequence of the onset of the war in Ukraine leading to global food supply issues and rising energy costs.

Glossary

Standard Industry Classification codes (SIC codes)

These are numerical codes that categorise the industries that companies belong to based on their business activities.

Economic definition of food and agri-food sector

The UK food sector is defined as food manufacturing, food wholesaling, food retailing and non- residential catering. In terms of the standard industrial classification (SIC 2007) it is defined as:

Category	SIC codes
Food Manufacturing:	10 + 11
Food Wholesaling:	46.3 (excluding 46.35) + 46.17
Food Retailing:	47.2 (excluding 47.26) + 47.11 + 47.81
Non-residential Catering:	56

- In SIC2007 the **food manufacturing** sector comprises of nine main categories including processing and preserving meat, dairy, fruit and vegetables, oils, bread, biscuits and cakes, and confectionery. Animal feed manufacturing is included, covering both farm animal feed and pet food. The drink manufacturing sector includes alcoholic beverages and soft drinks and mineral waters.
- **Food and drink wholesaling** consists of the buying, storage and reselling of food either manufactured or freshly produced. Wholesale of tobacco products (46.35) is not included, but SIC code 46.17 "Agents involved in the sale of food, beverages and tobacco" is included. This group includes wholesalers that trade on behalf of others on a fee or contract basis and also 46.3 which is "Wholesale of food, beverages and tobacco".
- **Food and drink retailing** is defined as the sale of food within both non-specialised stores (e.g. supermarkets), 47.11, and specialised stores such as butchers and bakers, 47.11 and 47.81. The sale of tobacco products is subtracted from the specialised stores using 47.26 and then subtracted from the non-specialised stores later on using a ratio for food and drink.
- **Non-residential catering** (NRC) consists of restaurants and bars involved in preparation and serving of food, alongside canteens and catering services. Hotels are not included.

The deductions are to remove non-food items as far as possible.

The agri-food sector is the food sector plus agriculture and fishing.

Gross Value Added (GVA)

GVA is the difference between output and intermediate consumption for any given sector / industry. This is the difference between the value of goods and services produced and the cost of raw materials and other inputs which are used up in production.

Total Factor Productivity (TFP)

Productivity measures the efficiency at which inputs are converted into outputs. Total Factor Productivity provides a comprehensive picture of growth.