Agriculture in the United Kingdom

2019

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

Agriculture in the United Kingdom 2019

Produced by:
Department for Environment, Food and Rural Affairs
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Preface

Legal Basis

Agriculture in the United Kingdom (AUK) 2019 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 the policy issues, including proposals by the European Commission in respect to the Common Agricultural Policy (CAP) and the provision of agricultural support.

Revisions

Some of the figures now given for past years may differ from those published in proceeding 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 a calendar year basis and for 2019. Some data for 2019 are provisional and may be revised as more data becomes available.

The following points apply throughout:

- All figures relate to the United Kingdom unless otherwise stated
- Unless stated otherwise, Defra is the source for all data presented in tables and figures
- In the tables
  - \- means 'nil' or 'negligible' (less than half the last digit shown)
  - .. means 'not available' or 'not applicable'
- 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

- 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
- 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

Summary

All figures relate to 2019 and change between 2018 and 2019 unless otherwise stated.

Farm Structures

- The **Utilised Agricultural Area** (UAA) increased by 1.0% to 17.5 million hectares, covering 72% of land in the UK.
- The **total croppable** area rose by 0.8% to 6.1 million hectares.
- **Livestock** numbers remained stable, with changes of less than 2% for all types of livestock.
- The total **labour** force on commercial holdings has decreased by 0.3% to 476 thousand.

Incomes and productivity

- **Agriculture's contribution to the national economy** remained at less than 1% and its share of employment rose slightly to 1.45%.
- **Farm Business Income (FBI)** varies greatly between farms with just over a fifth of UK farms failing to make a positive FBI in 2018/19 while 28% of UK farms had a FBI of over £50,000.
- **Total Income from Farming** rose by £398 million (8.2%) to £5.3 billion in current price terms.
- **Gross output** increased by £571 million (2.1%) to £27.3 billion.
- **Gross value added at basic price**, which identifies agriculture's contribution to the Gross Domestic Product (GDP), increased by £633 million (6.5%) to £10.4 billion.
- The cost of **intermediate consumption** fell by £62 million (-0.4%) to £16.9 billion. In general, prices were higher and usage lower, with falls in costs of plant protection products, animal feed and seeds more than offsetting any increases seen in the other input costs.
- The annual **Agricultural Price Index (API)** for agricultural outputs decreased by 1.5%, while for agricultural inputs it increased by 1.7%.
- **Total factor productivity** of UK agriculture increased by 4.0%.

Commodities

- Harvested production of **wheat** increased by 20% to 16.2 million tonnes. The value of production was 16% higher at just over £2.4 billion.
- **Oilseed rape** production decreased by 13% to just under 1.8 million tonnes, mainly due to the lowest planted area since 2002. The value of production was down just over 10% at £586 million.
- **Sugar beet** production decreased by 2.0% to 7.5 million tonnes. The value of production was 2.9% lower at £208 million.
- The value of **fruit** production increased by 9.7% to £875 million.
- The value of **beef and veal** decreased by 6.5% to £2.08 billion.

- The value of **mutton and lamb** production decreased by 0.3% to £1.26 billion.
- The value of **pig meat** production increased by 5.2% to £1.32 billion.
- **Poultry meat** value increased by 1.0% to £2.65 billion.
- The value of **milk and milk products** decreased by 1.2% to £4.43 billion.

Environment

- Since the late 1990s **nitrogen and phosphate application rates** have fallen.
- A comparison of **soil nutrient balances** (in kg per hectare) from the year 2000 to 2018 show a 17% decrease for **nitrogen** and a 32% decrease for p**hosphate**.
- Between 2000 and 2018, estimated **nitrous oxide emissions** have fallen by 12%, and **methane** emissions have decreased by 11%.
- Between 2000 and 2017 estimated agricultural emissions of **ammonia** have fallen by 2.9%.
- The **farmland bird index** has decreased significantly since 1970 with the index for all farmland species in 2018 less than half of 1970 levels.

Trade

- The value of food, feed and drink (FFD) **exports** was £23.6 billion, an increase of £0.7bn (2.9%) in real terms.
- The value of food, feed and drink **imports** increased by £0.2 billion (0.3%) in real terms to £47.9 billion.
- As a result, the **trade gap** in food, feed and drink narrowed by £0.5 billion (2.0%) to £24.3 billion.

Organics

- The **area of land farmed organically** increased by 2.4% to 485 thousand hectares.
- The **area in-conversion** showed a 15% decrease, the first decrease since 2014.

Food chain

- In 2018 the agri-food sector in the United Kingdom accounted for a total estimated **Gross Value Added (GVA)** of £120 billion or 6.3% of national GVA.
- **Employment** in the agri-food sector rose 0.7% over the 12 month period to the fourth quarter of 2019 to just under 4 million.
- **Total factor productivity** of the UK food chain beyond the farmgate has risen by 0.8% between 2017 and 2018. Productivity in the wider economy fell by 0.2% in 2018.
- Expenditure on **food eaten out** increased 6.1%, whilst expenditure on household food decreased 2.1%.

Chapter 1 Key events

Government and policy

The Countryside Stewardship application round for 2020 agreements opened on 18 February 2019. In response to feedback, significant improvements were made to the scheme including the provision of a simplified guidance handbook and the option for applicants to apply for all of the wildlife offers online.

On 9 April 2019 a consultation was launched with proposals for a shake-up of current agricultural tenancy legislation, looking to introduce more flexibility for tenant farmers in order to unlock the potential of the sector as a whole.

On 10 August 2019 Defra announced a round of the Farming Recovery Fund, with £2 million of funding available for farming businesses affected in Wainfleet and North Yorkshire that were particularly hard-hit by flooding. An extension to this round was announced later in the year to support to farmers affected by the November flooding in South Yorkshire, Derbyshire, Nottinghamshire, Lincolnshire, Worcestershire and Gloucestershire.

On 28 October 2019, Defra launched another round of the popular Countryside Productivity Small Grants scheme with £22 million of funding available for farmers to apply for grants of between £3,000 and £12,000 to invest in new and innovative equipment.

Work continued on the development of the new Environmental Land Management scheme, with farmer-led tests and trials across the country starting projects to explore potential building blocks of the future scheme, which is expected to be rolled out in late 2024.

Defra published Farming is Changing – here's what you need to know, setting out the planned changes for agricultural policy in England from January 2021. As well as sharing online, a physical leaflet was created and sent out to farmers.

Global factors

Exchange rates

The relationship between the Pound and Euro has a key bearing on the fortunes of UK farming. Direct subsidies received by farmers are set in Euros then converted to Sterling in September each year. A strong Euro therefore increases the value in Pounds of the payments for that year. In addition, the majority of UK exports of agricultural commodities are made to the Eurozone. The pound weakened against the Euro throughout 2016 and 2017. It remained stable but weak throughout 2018 and 2019, increasing the competitiveness of UK exports but also pushing up the price of imports, including inputs such as fertilisers and pesticides.

Weather (source: Met Office)

2019 was a year of extremes: record-breaking heat and rain, along with notable spells of cold and windy weather have all been prominent.

Winter
January got off to a cold start and in parts was one of the driest Januarys on record. However, in spite of starting with snow and freezing temperatures, February saw the warmest winter temperatures on record in several areas. Overall, it proved to be one of the warmest, sunniest and driest winters compared to the long-term average.

Spring
March was 1.3 °C warmer than average and Easter saw record temperatures for April in many parts of the country. Through April, England saw particularly low levels of rainfall, especially in the east. East Anglia received just 25% of its average monthly rainfall. Essex was the driest county, with just 9.2mm of rain throughout the whole of April.

Summer
June was a significantly wet month for some parts of the UK. Notably, Lincolnshire received 230% of the rainfall expected for the month. July will be remembered for the hottest day on record ever recorded in the UK. A maximum temperature of 38.7 °C was recorded at Cambridge University Botanic Garden on 25 July. Overall, summer 2019 was the twelfth warmest on record since 1910 across the UK, but unusually this summer was also relatively wet. Previous hot summers have been largely dry, but this summer was seventh wettest overall in the UK in a series dating back to 1910.

Autumn
Autumn 2019 was a very wet season, with significant flooding in parts of the Midlands and days of prolonged rainfall. This wasn't the case across the whole of the UK. Whilst England as a whole had one of its wettest autumns on record, northern and western Scotland remained much drier than average, with the north Scotland climate region having just 69% of the seasonal average.

Animal Health

Avian influenza

Low pathogenic avian influenza (H5N3) was confirmed at a commercial chicken farm in England in December 2019. The Restricted Zone was lifted in January 2020. The Animal and Plant Health Agency has completed surveillance and confirmed there are no signs of bird flu in the zone and no further cases reported in the UK. Self-declaration to the OIE (World Organisation for Animal Health) of our avian influenza disease free status will be made in June 2020.

Bovine Tuberculosis (bTB)

Note: More information on Bovine Tuberculosis can be found at the TB hub.

During 2019 the government engaged with stakeholders as it developed its response to the 2018 independent review of its 25 year bovine TB eradication strategy. Natural England licensed eleven new badger control areas in 2019. This brought the total number of culling areas in England to forty-three. Forty of these were in the High Risk Area for bovine TB, two were in the Edge Area (Cheshire) and one was in the Low Risk Area (East Cumbria). Natural England's Chief Scientific Adviser and Defra's Chief Veterinary Officer concluded that the industry-led licensed culling operations were again conducted effectively, safely and humanely. Defra published the results of a Cattle Farm Practices Survey in September 2019. The main purpose of the Survey was to determine whether there were any differences in farm practices between farms with different characteristics. This includes their bovine TB breakdown history, bovine TB risk area, number of cattle,

region, farm type and farm size. In October 2019, the Animal and Plant Health Agency applied for Animal Test Certificates to conduct field trials of bovine TB vaccination in cattle. This would involve the candidate BCG cattle vaccine and the associated diagnostic test to differentiate infected from vaccinated animals (the “DIVA test”). Defra successfully defended a legal challenge to the legitimacy of a decision to compulsorily slaughter a TB test positive alpaca in the High Court.

Following discussions with industry, cattle testing inconclusive at standard interpretation of the skin test in persistent breakdowns continue to be removed in Wales. However, cattle testing inconclusive at severe interpretation will be subject to both a gamma interferon test and an antibody test (IDEXX). No single test or combination of tests for bovine TB provides 100% test specificity or sensitivity. The skin test is the only official test recognised for demonstrating Officially TB-Free status, the Welsh Government is using alongside the gamma test, a flexible extended gamma test as well as the IDEXX Antibody Test, a blood test, which detects a different immune response to TB from the skin TB test and the Interferon-gamma test. The rules regarding the management of TB breakdown herds have changed for herd owners keeping cattle on multiple holdings run as one business. A single restriction, Notice Prohibiting the Movement of Bovine Animals (TB02), will no longer be used to place all of these separate holdings under the same TB restrictions. Each holding (CPH) will be served with a separate TB02 Notice. This means that unlicensed movements of cattle between the holdings will not be possible. Concerns were raised by the industry around aspects of on farm slaughter. A pilot has started that will allow farmers to request for some groups of animals to be euthanized by lethal injection.

In Scotland, there were 14 new confirmed TB breakdowns in 2019, which is consistent with another year of officially TB-free status. We continue to monitor the effectiveness of our surveillance programme in Scotland.

In Northern Ireland, herd and animal incidence rates have continued to fall from their high point in November 2017. The herd incidence for 2019 was 7.84% with animal incidence standing at 0.752%. This reduction has occurred since DAERA introduced additional testing measures in March 2018, including an increased application of the severe interpretation of the bTB skin test. These lower disease levels have also contributed to a 10% reduction in the cost of the NI bTB Programme. Work has also progressed on the development of a new bTB Eradication Strategy for Northern Ireland. Twenty-one recommendations across 6 themes have been developed and will now be considered by the new Minister of Agriculture, Environment and Rural Affairs. The Strategy has been the product of six years of policy development work and builds on the 2016 recommendations of the TB Strategic Partnership Group. Some of the proposed new measures will be subject to further public consultation, new legislation and business case approval.

Chapter 2 Structure of Industry

Summary

In 2019 compared with 2018:

- The **Utilised Agricultural Area** (UAA) increased by 1.0% to 17.5 million hectares, covering 72% of land in the UK.
- The **total croppable** area increased by 0.8% to 6.1 million hectares.
- The **cereal** crops area increased by 3.4% to 3.2 million hectares.
- The area of **oilseed** crops decreased by 10% to 547 thousand hectares.
- The **dairy herd** remained almost unchanged at 1.9 million.
- Total **pig** numbers have seen an increase of 1.3% to 5.1 million.
- **Sheep and lamb** numbers decreased by 0.6% to 34 million, largely due to a 1.5% decrease in the number of female breeding flock to just over 16 million.
- The total **labour** force on commercial holdings decreased by 0.3% to 476 thousand.

Introduction

This chapter presents statistics on the size and structure of UK agriculture. It includes data on land use, crop areas and livestock numbers, the distribution of farms by size and the labour force including age of farm holders.

Data in this chapter are sourced primarily from the June Surveys of Agriculture carried out in the four UK countries each year. The exceptions to this are the holder age data (sourced from the EU Farm Structure Survey) and most of the land use data in Scotland (sourced from Single Application Form (SAF) subsidy data). 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.

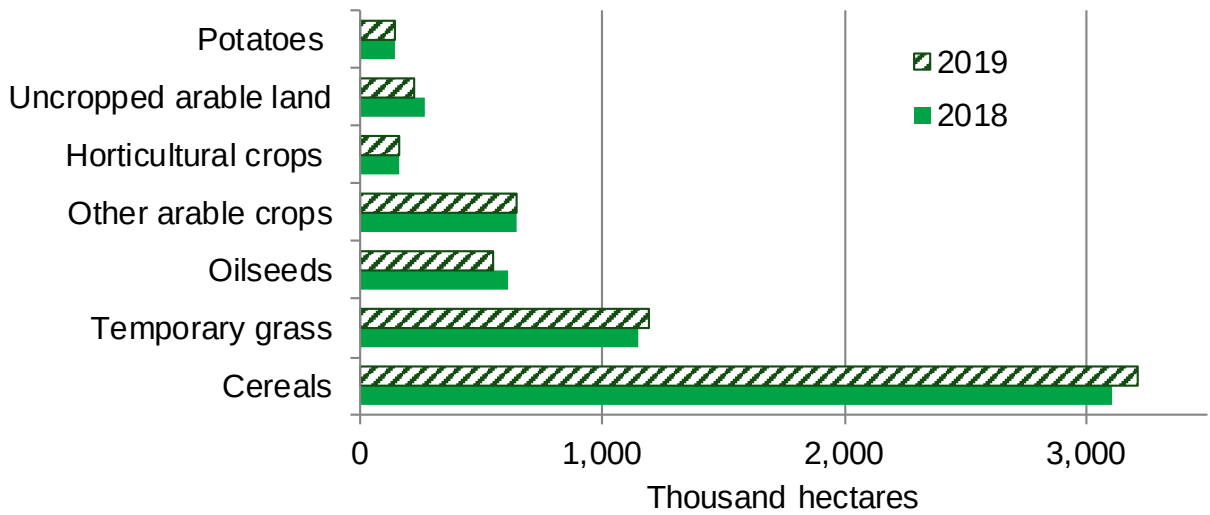
From 2009 onwards, England data relate to commercial holdings only. The term "commercial" covers all holdings in England which exceed certain thresholds specified in the EU Farm Structure Survey Regulation EC 1166/2008. These thresholds are based on either land and cropping areas or livestock numbers as follows:

- More than 5 hectares of agricultural land or 1 hectare of orchards or 0.5 hectares of vegetables or 0.1 hectares of protected crops
  or
- More than 10 cattle or 50 pigs or 20 sheep or 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, crop areas and livestock numbers
(Figure 2.1, Tables 2.1 and 2.2)

Figure 2.1 Breakdown of croppable area on agricultural holdings, June 2019 compared to 2018



At June 2019 the Utilised Agricultural Area (UAA) was 17.5 million hectares, covering 72% 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.

On the whole, the proportion of croppable land used for each purpose remained similar between 2018 and 2019, however some categories did see value changes (see Figure 2.1).

Cereal crops accounted for 52% of the croppable area. Wheat and barley were the predominant cereal crops at 1.8 and 1.2 million hectares respectively. The area of barley planted in the UK halved from 2 million hectares in 1984 to a low of 0.9 million hectares in 2006. However, since then the area has increased slightly and now sits at 1.2 million hectares.

The area of oilseed rape decreased by 9.2% in 2019 to 530 thousand hectares.

The total number of cattle and calves decreased by 1.5% from 9.9 million to 9.7 million between 2018 and 2019. The beef and dairy herds have remained largely unchanged in recent years at approximately 1.5 and 1.9 million animals respectively.

The UK population of sheep and lambs decreased by 0.6% to 34 million animals, largely due to a 1.5% decrease in the female breeding flock to just over 16 million. The number of lambs under one year old increased by 0.3% to 17 million.

The total number of pigs in the UK increased by 1.3%, from just over 5.0 million in 2018 to 5.1 million in 2019. The main reason for this was the 1.3% increase in sows in pig and other sows for breeding to 356 thousand.

The total number of poultry in the UK decreased by 0.8% to just under 187 million birds in 2019 compared to 188 million in 2018. Table chickens account for 65% of the total and fell by 2.0% to 122 million birds. Breeding fowl also saw a decrease, falling by 4.2% between 2018 and 2019.

Table 2.1 Agricultural land use (a)

Enquiries: Emma Howat on +44 (0) 3000 600 170, email: farming-statistics@defra.gov.uk

Thousand hectares — At June of each year

	2017	2018 (e)	2019
Utilised agricultural area (UAA) (b)	**17,476**	**17,361**	**17,532**
UAA as a proportion of total UK area	72%	71%	72%
Total agricultural area	**18,835**	**18,703**	**18,849**
Common rough grazing	**1,198**	**1,195**	**1,197**
Total area on agricultural holdings	**17,637**	**17,509**	**17,652**
Total croppable area	**6,131**	**6,084**	**6,132**
Total crops	**4,745**	**4,667**	**4,714**
Arable crops	4,577	4,502	4,551
Cereals	3,181	3,106	3,211
Oilseeds (includes linseed & borage)	590	609	547
Potatoes	145	140	144
Other crops	661	647	649
Horticultural crops	168	165	163
Uncropped arable land (c)	**241**	**265**	**224**
Temporary grass under 5 years old	**1,144**	**1,152**	**1,193**
Total permanent grassland	**10,138**	**10,072**	**10,193**
Grass over 5 years old	6,135	6,178	6,207
Sole right rough grazing (d)	4,003	3,895	3,986
Other land on agricultural holdings	**1,368**	**1,353**	**1,328**
Woodland	1,037	1,016	1,033
Land used for outdoor pigs	10	10	10
All other non-agricultural land	321	326	284

As the results are based on sample surveys, they are subject to a degree of sampling error and do not take into account other sources of survey errors, such as non-response bias or administrative data errors.

a) Figures for England relate to commercial holdings only
b) 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).
c) Includes all arable land not in production, including land managed in Good Agricultural and Environmental Condition (GAEC12), wild bird cover and game cover.
d) Also includes mountains, hills, heathland or moorland.
e) Results for 2018 were revised in May 2019 to take account of corrections to the English data. More information on the revisions and the scale of the changes can be found in the updated statistical release at Structure of the Agricultural Industry.

Source: UK Agriculture departments June Survey/Census of Agriculture

Table 2.2 Crop areas and livestock numbers (a)

Enquiries: Emma Howat on +44 (0) 3000 600 170, email: farming-statistics@defra.gov.uk

At June of each year

	2017	2018 (e)	2019
Crop areas (thousand hectares)			
Total area of arable crops	**4,577**	**4,502**	**4,551**
of which: wheat	1,792	1,748	1,816
barley	1,177	1,138	1,162
oats	161	171	182
rye, mixed corn and triticale	52	49	51
oilseed rape	562	583	530
linseed	26	25	15
potatoes	145	140	144
sugar beet (not for stockfeeding)	111	114	108
peas for harvesting dry and field beans	233	193	178
maize	197	221	228
Total area of horticultural crops	**168**	**165**	**163**
of which: vegetables grown outdoors	117	116	115
orchard fruit (b)	24	24	24
soft fruit & wine grapes	11	11	11
outdoor plants and flowers	13	12	11
glasshouse crops	3	3	3
Livestock numbers (thousand head)			
Total cattle and calves	**10,004**	**9,891**	**9,739**
of which: cows in the dairy herd (c)	1,891	1,883	1,871
cows in the beef herd (d)	1,589	1,558	1,527
Total sheep and lambs	**34,832**	**33,781**	**33,580**
of which: female breeding flock	16,669	16,286	16,035
lambs under one year old	17,340	16,621	16,672
Total pigs	**4,969**	**5,012**	**5,078**
of which: sows in pig and other sows for breeding	361	352	356
gilts in pig	55	58	57
Total poultry	**181,818**	**188,442**	**186,982**
of which: table fowl	117,619	123,946	121,500
laying flock (including pullets)	39,510	39,852	41,535
breeding flock	13,429	13,771	13,197
turkeys, ducks, geese, all other poultry	11,260	10,872	10,750

a) Figures for England relate to commercial holdings only. More information on commercial holdings can be found in the introduction section of this chapter.
b) Includes non-commercial orchards.
c) Dairy cows are defined as female dairy cows over 2 years old with offspring.
d) Beef cows are defined as female beef cows over 2 years old with offspring.
e) Results for 2018 were revised in May 2019 to take account of corrections to the English data. More information on the revisions and the scale of the changes can be found in the updated statistical release at Farming statistics – final crop areas, yields, livestock populations and agricultural workforce.

For more details please see the introduction section of this chapter.

Source: June Surveys/Census of Agriculture/SAF land data Scotland. Cattle Tracing System/APHIS

Numbers and sizes of holdings and enterprises
(Tables 2.3 and 2.4)

The number of agricultural holdings was 212 thousand in 2014 and increased by 3.3% to 219 thousand in 2019. Within that time period, the total area on holdings increased by 2.3% and the average area of all holdings decreased by 1.0% to 80.7 hectares. The average croppable area of holdings increased 3.1% between 2014 and 2019.

Table 2.3 Numbers of holdings by size group (a) (c)

Enquiries: Emma Howat on +44 (0) 3000 600 170, email: farming-statistics@defra.gov.uk

At June of each year

	2014 (c) Number of holdings (thousand)	2014 (c) Hectares (thousand)	2019 Number of holdings (thousand)	2019 Hectares (thousand)
Total area on holdings				
Under 20 hectares	95	694	103	705
20 to under 50 hectares	41	1,364	42	1,390
50 to under 100 hectares	33	2,389	32	2,280
100 hectares and over	42	12,810	41	13,277
Total	**212**	**17,257**	**219**	**17,652**
Average area		82		81
Average area on holdings with >=20 ha		142		147
Croppable area (b)				
0.1 to under 20 hectares	47	308	46	294
20 to under 50 hectares	19	634	18	590
50 to under 100 hectares	15	1,075	14	981
100 hectares and over	19	4,262	17	4,267
Total	**100**	**6,278**	**95**	**6,132**
Average croppable area		63		64

a) Figures for England relate to commercial holdings only.
b) Croppable area is defined as land under crops, temporary grass under five years old and uncropped arable land.
c) In 2014 Wales updated their datasets resulting in a number of obsolete holdings being identified and removed.

For more details please see the introduction section of this chapter

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

Table 2.4 Numbers of holdings by size group and country at June 2019

Enquiries: Emma Howat on +44 (0) 3000 600 170, email: farming-statistics@defra.gov.uk

	England (a)	Wales	Scotland	Northern Ireland
Number of holdings (thousand)				
Total area on holdings				
Under 20 hectares	41	20	32	10
20 to under 50 hectares	21	7	6	8
50 to under 100 hectares	18	5	5	4
100 hectares and over	25	5	9	2
Total	**106**	**37**	**51**	**25**
Hectares (thousand)				
Total area on holdings				
Under 20 hectares	318	120	161	106
20 to under 50 hectares	711	221	188	270
50 to under 100 hectares	1,284	371	336	289
100 hectares and over	6,893	1,052	4,974	358
Total	**9,206**	**1,764**	**5,660**	**1,023**
Average area (hectares)	87	48	112	41
Average area on holdings with >=20 hectares	137	98	288	63

a) Figures for England relate to commercial holdings only

For more details please see the introduction section of this chapter.

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

The agricultural workforce decreased by 0.3% to 476 thousand people in 2019 compared to 2018. Farmers, business partners, directors and spouses account for the majority (63%) of the total labour force.

Table 2.5 Agricultural labour force on commercial holdings (a) (d)

Enquiries: Emma Howat on +44 (0) 3000 600 170, email: farming-statistics@defra.gov.uk

Thousands (as at June of each year)

	2017	2018	2019
Total labour force (incl. farmers and spouses)	**474**	**477**	**476**
Farmers, business partners, directors and spouses	**294**	**296**	**299**
Full time	141	145	144
Part time (b)	153	152	155
Regular employees, salaried managers & casual workers	**180**	**181**	**177**
Regular employees (c)	. .	. .	. .
Full time	. .	. .	. .
Part time (b)	. .	. .	. .
Seasonal, casual or gang labour	. .	. .	. .

a) Figures for England relate to commercial holdings only.
b) Part time is defined as less than 39 hours per week in England and Wales, less than 38 hours per week in Scotland and less than 30 hours per week in Northern Ireland.
c) Regular employees includes salaried managers as not all UK countries collect separate estimates.
d) For labour force numbers in earlier see Structure of the agricultural industry in England and the UK
. . means 'not available' or 'not applicable'.

Source: June Surveys/Census of Agriculture

Age of holders
(Table 2.6)

Table 2.6 shows the proportion of holders by age group. Agriculture typically has an aging workforce. In the United Kingdom, around a third of all holders were over the typical retirement age of 65 years while the proportion of young people aged less than 35 years was around 3%.

The proportions of holders in the central age bands of 45-54 years and 55-64 years have remained broadly unchanged over the previous decade, currently sitting at around 23% and 29% respectively. Since 2005, the proportion of holders in the 35-44 years old band has decreased by 5 percentage points whilst the proportion in the oldest band, 65 years and over, has increased by 5 percentage points.

The average age of holders is defined using the median. This is the middle value when all holders' ages are ranked in order. In 2016, the median age for holders in the UK was 60 years old, an increase of 1 year from 2013.

Table 2.6 Proportion of holders in each age group (a)(b)

Enquiries: Emma Howat on +44 (0) 3000 600 170, email: farming-statistics@defra.gov.uk

% of holders

	2005	2007	2010 (c)	2013 (c)	2016 (c)
Holders' age					
Under 35 years	3	3	3	3	3
35 - 44 years	14	12	11	10	9
45 - 54 years	23	23	25	25	23
55 - 64 years	29	29	29	28	29
65 years and over	31	33	32	34	36
Median age (years)	58	59	59	59	60

a) The holder is defined as the person in whose name the holding is operated. The data in this table relate to all holders whether or not the holder is also the manager of the holding.

b) Holdings run by an organisation (such as limited companies or institutions) do not have a holder and are therefore excluded from these figures.

c) Figures from 2010 onwards relate to commercial holdings only for all of the UK. More information on commercial holdings can be found in the introduction section.

Source: EU Farm Structure Survey

Chapter 3 Farming Income

Summary

- In 2019 **agriculture's contribution to the national economy** remained at less than 1% and its share of employment rose slightly to 1.45%.
- In 2019 **Total Income from Farming** in the United Kingdom was £5.3 billion; England was the largest contributor accounting for 75% of this total, Scotland 14%, Northern Ireland 5.5% and Wales 4.9%.
- **Farm Business Income (FBI)** varies greatly with just over a fifth of UK farms failing to make a positive FBI in 2018/19, while 28% of farms had a FBI of over £50,000.

Introduction

This chapter presents **Farm Business Income** and **Total Income from Farming (TIFF)** data.

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

Real term trends and summary measures in agricultural income
(Table 3.1 and Figure 3.1)

Real term values are adjusted to take into account inflation to allow more meaningful comparisons between years over the longer term.

The key drivers of agricultural income include the volume of production, commodity prices and the cost of inputs. These are themselves driven by a range of factors such as the weather, exchange rates, oil price and global supply and stocks of commodities. As a result, UK agricultural income tends to be volatile and fluctuates from year to year.

Table 3.1 shows Total Income from Farming (TIFF) rose by 6.2% (£309 million) to £5.3 billion between 2018 and 2019 when adjusted to take inflation into account.

Table 3.1 Trends in measures of farm incomes in the UK (in real terms at 2019 prices)
Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

Value in real terms (a)

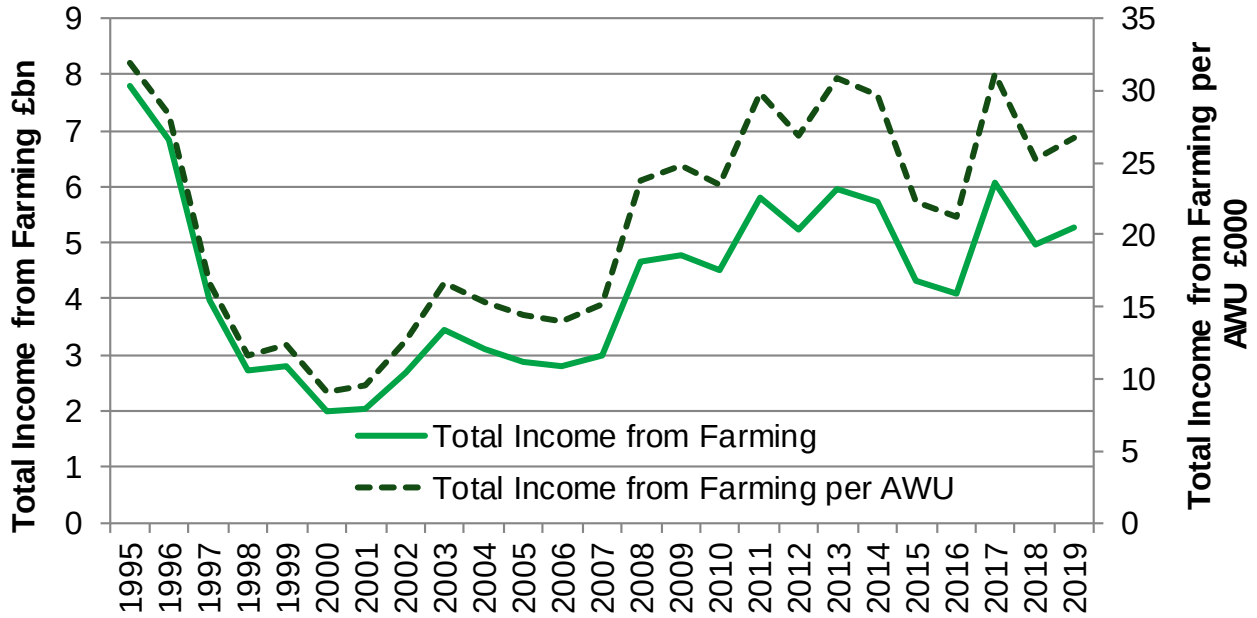
	2018	2019	Change 2018-2019	% change 2018-2019
Total Income from Farming (£ billion)	4.97	5.28	0.31	6.2%
Total Income from Farming per AWU of entrepreneurial labour (£) (b)	25,300	26,700	1,400	5.5%

a) Uses GDP deflator, Office of National Statistics.
b) An annual work unit (AWU) represents the equivalent of an average full-time person engaged in agriculture

Over the longer term, incomes have generally followed an overall upward trend since the year 2000 (see Figure 3.1). In more recent years, in spite of high levels of production, 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 increased to 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 an 18% fall in income.

Figure 3.1 Long term trends in real terms at 2019 prices



Total Income from Farming per Annual Work Unit (AWU) of entrepreneurial labour is an alternative measure of income that takes into account the labour used to produce that income and allows comparisons to be made with other countries. An annual work unit (AWU) represents the equivalent of an average full-time person engaged in agriculture. The trend is similar to that of TIFF but, owing to a decline in the number of farmers and other unpaid workers, has performed better from the year 2000 onwards.

Summary measures by country
(Table 3.2)

Table 3.2 shows main measures, at current price, for the agriculture industries in England, Wales, Scotland and Northern Ireland and for the UK as a whole. Current price is the value based on actual price during the reference year. Table 3.2 also presents the contribution that agriculture makes to the economy (at basic prices) and employment share for each country. Basic price is the market price plus directly paid subsidies linked to the production of specific products.

In 2019, TIFF in the UK is £5.3 billion; England is the largest contributor accounting for 75% of this total, Scotland 14%, Northern Ireland 5.5% and Wales 4.9%.

Table 3.2 Summary measures by country at current price

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

	2017	2018	2019 (prov.)
Gross output at basic prices £ million			
United Kingdom	26,237	26,749	27,320
England	19,388	19,688	20,246
Wales	1,592	1,685	1,602
Scotland	3,106	3,181	3,323
Northern Ireland	2,151	2,195	2,149
Intermediate consumption £ million			
United Kingdom	15,817	16,974	16,912
England	11,386	12,260	12,154
Wales	1,081	1,111	1,133
Scotland	1,881	1,997	2,008
Northern Ireland	1,469	1,607	1,616
Gross value added at basic prices £ million			
United Kingdom	10,419	9,775	10,408
England	8,002	7,428	8,091
Wales	511	574	469
Scotland	1,225	1,184	1,314
Northern Ireland	681	588	533
Total Income from Farming £ million			
United Kingdom	5,818	4,879	5,278
England	4,222	3,461	3,981
Wales	350	379	261
Scotland	740	652	746
Northern Ireland	506	386	290
Agriculture's share of total regional gross value added at basic prices (a) %			
United Kingdom	0.56	0.51	0.53
England	0.51	0.45	. .
Wales	0.81	0.88	. .
Scotland	0.85	0.80	. .
Northern Ireland	1.62	1.39	. .
Agriculture's share of total regional employment %			
United Kingdom (b)	1.48	1.47	1.45
England (b)	1.13	1.13	1.10
Wales	3.59	3.51	3.51
Scotland	2.51	2.49	2.50
Northern Ireland	5.83	5.84	5.65

a) % share of GVA available for UK only in 2019, other countries data will become available in December 2020.

b) Estimates for England are based on employment on 'commercial holdings' only.

c) Data for Scotland are best estimates (imputed) for 2019. Further details on methodology can be found at the end of this chapter.

In 2019, as a share of the national economy, agriculture contributed 0.53%. This was a 2.9% increase on 2018, largely as a result the high levels of crop production, particularly for cereals. Weather conditions were generally more favourable in 2019, with higher yielding crops boosting the value of crop output by 6.0% despite lower commodity prices. Total input costs remained stable.

Gross Value Added (GVA) data for the whole economy is only available up to 2018 for the countries of the UK. In 2018, agriculture added less than 0.5% to the economy of England, 0.9% to the economy of Wales, 0.8% to that of Scotland and 1.4% to that of Northern Ireland. On average, England produces around 80% of the UK agriculture's Gross Domestic Product, Scotland just over 10% and Wales and Northern Ireland 5% each.

In 2019, 1.5% of people in work in the UK were employed in agriculture, in England this figure drops to 1.1%. In Wales, 3.5% of the workforce were employed in agriculture, in Scotland 2.5% and in Northern Ireland 5.7%.

Comparison of income measures in EU member states
(Figure 3.2)

Eurostat, the statistical office of the European Union, produces three indicators to show income trends in agriculture based on data provided by Member States. These include:

- Indicator A - Index of the real income of factors in agriculture per annual work unit, which corresponds to the real (i.e. deflated) net value of agriculture per total annual work unit. The net value of income is calculated by subtracting intermediate consumption, depreciation and production taxes from the value of agricultural output at basic prices (includes subsidies on product) and adding the value of other subsidies (non-product related). Indicator A is obtained by deflating this value with gross domestic product and dividing by the volume of total labour in agriculture.
- Indicator B - Index of real net agricultural entrepreneurial income, per unpaid annual work unit. Net entrepreneurial income is obtained by subtracting the compensation of employees and interest and rent paid from the net value of agriculture and adding the interest received. This figure, when deflated with the same price index referred to above, is divided by the volume of non-salaried labour in agriculture
- Indicator C - Net entrepreneurial income of agriculture.

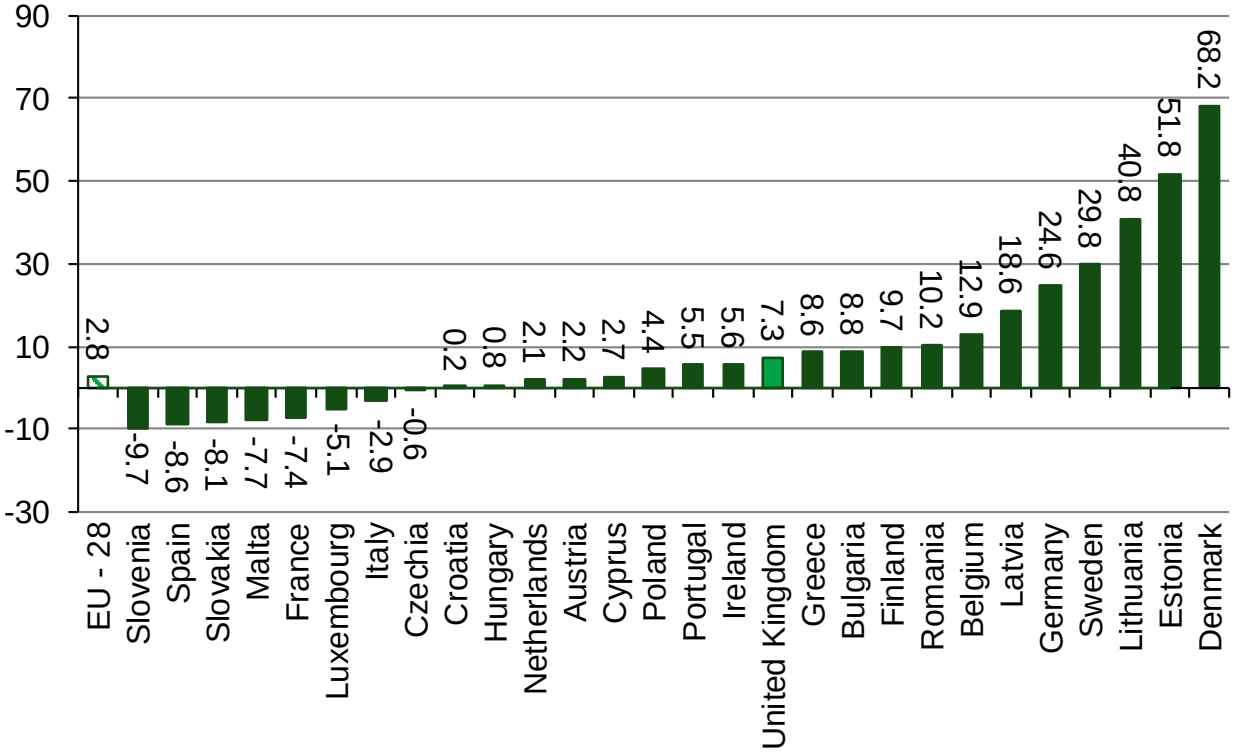
Eurostat's preferred measure of agricultural income is Indicator A. This indicator measures fixed factors (e.g. land, capital, labour) regardless of whether or not they are owned by the farmer and whether or not the labour is hired or part of the farmer's family. Figure 3.2 shows the change between 2018 and 2019 for all Member States in the EU (28 countries). These data are preliminary and are based on estimates of the Economic Accounts for Agriculture as at January 2020.

The increase in agricultural income per worker (Indicator A) in the European Union as a whole of 2.8% masks the figures for individual countries, which can show considerable variation.

There are eight countries where agricultural income per worker in 2019 is lower than in 2018, with Solvenia showing the largest fall (-9.7%). Of the remaining countries showing increases, the UK is ranked twelfth with income up 7.3%.

Of the twenty countries showing an annual increase in agricultural income per worker, Denmark showed the highest increase of 68%, with five countries showing an increase of more than 20%.

Figure 3.2 Changes in incomes from agricultural activity across the EU between 2018 and 2019: Indicator A (a)



Source: Eurostat

Farm business incomes by farm type
(Table 3.3)

Estimates of Farm Business Income for 2019/20 (i.e. year ended February 2020 and harvest 2019) at current prices are shown in Table 3.3 for England and Northern Ireland alongside outturn data for earlier years. These estimates include Basic Payment Scheme receipts which are recorded as due for the appropriate accounting year, e.g. receipts of the 2019 Basic Payment Scheme are recorded in the 2019/20 accounting year. Note that forecasts of Farm Business Income in Wales for 2019/20 have been postponed and forecasts of Farm Business Income are not produced in Scotland.

The estimates of Farm Business Income are averages. It should be noted that within the different farm types and across different regions there are a range of incomes around the averages that are published here.

The weather conditions in 2019/20 were generally more favourable for growing higher yielding crops and grass/silage crops. This contrasts to the extreme weather of 2018/19, which resulted in poorer yields and higher prices. The average 2019 Basic Payment is expected to be comparable to 2018 across all farm types, reflecting the very similar Euro/Sterling exchange rate in the September of each year when the payment rates are determined.

On cereal farms in England, average income is predicted to fall by around 15% in 2019/20. Improved yields compared to 2018 and increased areas for some crops (with the exception of oilseed rape) are forecast to be offset by lower prices, influenced by the

expectation of a successful harvest and plentiful supplies. These factors are predicted to lead to an overall fall in crop output. At the same time, input costs are expected to rise, particularly those associated with machinery.

On general cropping farms in England, average incomes are expected to fall by about 7%. Crop output is predicted to decrease slightly, with lower prices offsetting any increases in area and yields compared to 2018 when heat and drought had a severe impact. The exception is oilseed rape, where prices are expected to remain firm, but yield and crop area decrease. The wet autumn/winter may also have an impact on production for potatoes and sugar beet causing disruption to lifting. Input costs are expected to rise, in particular for machinery and crop related costs.

On dairy farms in England, average income is forecast to be virtually unchanged in 2019/20. A fall in input costs is expected, largely driven by a reduction in feed costs: the result of lower cereal and straw prices plus the superior quantity, and for some quality, of home grown grass and silage compared to 2018. This fall in input costs will be offset by a similar reduction in total farm output. In Northern Ireland, incomes on dairy farms are forecast to decrease by around 10% compared to 2018/19 due to the local farmgate milk price falling by more than the rest of the UK as a result of differences in the dairy product mix.

In Northern Ireland, average income on grazing livestock farms in Less Favoured Areas (LFAs) is expected to fall by around 27%. Although input costs are expected to be lower, it is anticipated that this will be insufficient to offset a fall in output. In contrast, income for this farm type is forecast to rise by about 40% in England. Lower feed costs are expected to drive a decrease in input costs, while higher average prices for breeding ewes and hogs and higher closing values than the previous year are predicted to have a positive influence on sheep output. For lowland grazing livestock farms in England, average income is forecast to increase by just over half. Cattle and sheep output is expected to rise, with firmer prices towards the end of the year having a positive impact on closing valuations. As for LFA farms, input costs are predicted to decrease, influenced by lower feed costs.

Forecasts for specialist pig farms are subject to a considerable degree of uncertainty, reflecting both the structure of the sector and the relatively small sample of these farms in the Farm Business Survey (FBS) in England. In England, average Farm Business Income for pig farms is forecast to nearly double in 2019/20. The impact of African swine fever is expected to help increase prices with throughput and carcase weights also slightly up for finished pigs. Price lifts are also predicted for cull sows, stores and weaners. At the same time, input costs are predicted to fall slightly.

As with pig farms, forecasts for specialist poultry farms in England are subject to a considerable degree of uncertainty, again due to the structure of the sector and the relatively small sample of these in the survey. Average incomes on poultry farms in England are forecast to fall by 10%. Input costs are predicted to be largely unchanged with decreases to feed costs offsetting rises to other costs. Output is expected to fall slightly, mainly influenced by the poultry meat sector.

Incomes on mixed farms in England are expected to increase by 5%. The changes reported previously for specialist farm types will all have influenced the incomes for this farm type.

Table 3.3 Farm business income by country and type of farm (a)
Enquiries: Alison Wray +44 (0)20 802 66119, email: fbsqueries@defra.gov.uk

Average farm business income per farm (£ farm)

Standard output (SO) Typology	2017/18(b)	2017/18(c)	2018/19	2019/20 (prov.)
At current prices				
England				
Cereals	64,000	62,000	67,500	57,000
General cropping	93,500	87,000	106,500	99,000
Dairy	119,500	118,500	79,500	80,000
Grazing livestock (lowland)	22,000	20,500	12,500	19,000
Grazing livestock (LFA)	28,500	27,000	15,500	21,500
Specialist pigs	31,500	30,000	29,500	57,500
Specialist poultry	96,000	95,000	74,500	67,500
Mixed	42,000	43,500	45,500	48,000
Wales				
Dairy	84,500	82,500	46,500	..
Grazing livestock (lowland)	24,000	24,000	17,000	..
Grazing livestock (LFA)	27,000	27,000	19,000	..
Scotland				
Cereals	35,000	34,500	64,000	..
General cropping	66,000	67,500	132,000	..
Dairy	73,000	76,500	66,000	..
Grazing livestock (lowland)	31,500	30,500	11,500	..
Grazing livestock (LFA)	24,500	24,500	14,500	..
Mixed	29,000	29,500	33,500	..
Northern Ireland				
Dairy	68,000	68,000	58,000	52,000
Grazing livestock (LFA)	17,500	17,500	14,500	10,500

a) Figures rounded to nearest £500. Accounting years ending on average in February.
b) Farm typology based on 2010 standard output coefficients.
c) 2017/18 onwards farm typology based on 2013 standard output coefficients.

Table 3.3 (continued) Farm business income by country and type of farm (a)
Enquiries: Alison Wray +44 (0)20 802 66119, email: fbsqueries@defra.gov.uk

Average farm business income per farm (£ farm)

Standard output (SO) Typology	2017/18(b)	2017/18(c)	2018/19	2019/20 (prov.)
United Kingdom (d)				
Cereals	61,500	59,500	66,500	..
General cropping	86,500	82,500	110,500	..
Dairy	99,500	98,500	69,000	..
Grazing livestock (lowland)	22,000	21,000	12,500	..
Grazing livestock (LFA)	25,000	24,500	16,000	..
Specialist pigs	36,000	34,500	32,500	..
Specialist poultry	96,000	95,000	74,500	..
Mixed	39,500	41,000	42,500	..
ALL TYPES (inc. Horticulture)	**49,000**	**47,500**	**43,500**	..
In real terms (2018/19 prices) (e)				
United Kingdom				
Cereals	63,000	61,000	66,500	..
General cropping	88,500	84,000	110,500	..
Dairy	101,500	101,000	69,000	..
Grazing livestock (lowland)	22,500	21,500	12,500	..
Grazing livestock (LFA)	25,500	25,000	16,000	..
Specialist pigs	37,000	35,000	32,500	..
Specialist poultry	98,000	97,000	74,500	..
Mixed	40,000	41,500	42,500	..
ALL TYPES (inc. Horticulture)	**50,000**	**48,500**	**43,500**	..

a) Figures rounded to nearest £500. Accounting years ending on average in February.
b) Farm typology based on 2010 standard output coefficients.
c) 2017/18 onwards farm typology based on 2013 standard output coefficients.
d) UK totals include farm types that are present though not listed individually for some member states.
e) Uses GDP deflator.

Distribution of farm incomes and performance
(Table 3.4 and Figure 3.3)

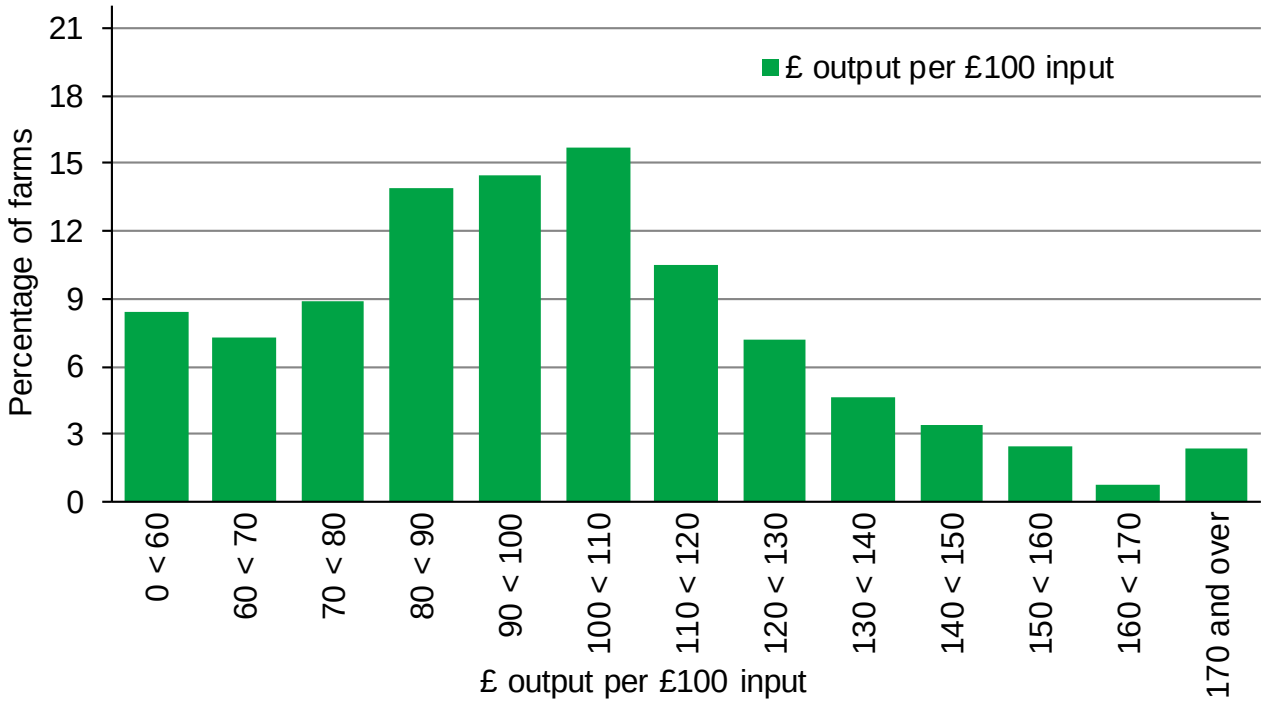
Table 3.4 shows the variation in the level of Farm Business Income, Net Farm Income and Cash Income across farms in England, Wales, Scotland and Northern Ireland for 2018/19.

Around 21% of farms in the UK failed to make a positive Farm Business Income, although there was some variation between countries. The proportion in Wales and Scotland was very slightly higher at 22% and lower in Northern Ireland at 17%. Just under half of farms in the UK fell into the lower income brackets (less than £20,000). At the top end of the scale, 28% of farms in the UK had a Farm Business Income of more than £50,000. However, there was again some variation between UK countries in this highest income category, with Wales and Northern Ireland having 15% and 22% of farms in the highest income band, while for England and Scotland the proportion of farms was 30% and 32% respectively.

A greater proportion of farms fall into the 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 34% of farms in the UK failed to make a profit.

Figure 3.3 shows the differences in performance of farms in England for 2018/19. Performance is measured as "£ of output per £100 of input". An imputed value for unpaid labour is added to the input costs. Figure 3.3 illustrates the significant variation in performance with 53% of farms failing to recover their costs in that year.

Figure 3.3 Distribution of performance (a) across farms 2018/19: England only
Enquiries: Alison Wray +44 (0)20 8026 619, email: fbs.queries@defra.gov.uk



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

Source: Farm Business Survey

Table 3.4 All farm types: distribution of farm incomes by country 2018/19
Enquiries: Alison Wray +44 (0)20 8026 6119, email: fbs.queries@defra..gov.uk

Percentage of farms

	England	Wales	Scotland	Northern Ireland	United Kingdom
Farm Business Income					
Less than zero	21	22	22	17	21
1 to less than £5,000	7	13	6	7	7
£5,000 to less than £10,001	7	7	5	10	7
£10,000 to less than £20,001	11	19	12	18	13
£20,000 to less than £30,001	10	9	11	15	10
£30,000 to less than £50,001	15	15	13	12	14
£50,000 and over	30	15	32	22	28
Average (£ thousand per farm)	50	24	39	29	44
Net Farm Income					
Less than zero	35	37	31	30	34
1 to less than £5,000	6	11	7	6	7
£5,000 to less than £10,001	6	10	6	9	7
£10,000 to less than £20,001	10	15	11	16	11
£20,000 to less than £30,001	8	8	9	12	8
£30,000 to less than £50,001	10	8	11	11	10
£50,000 and over	24	10	25	16	22
Average (£ thousand per farm)	36	12	26	22	31
Cash Income					
Less than zero	11	12	9	5	10
1 to less than £5,000	6	3	4	4	5
£5,000 to less than £10,001	6	8	4	6	6
£10,000 to less than £20,001	10	13	9	18	11
£20,000 to less than £30,001	9	16	9	15	11
£30,000 to less than £50,001	18	20	18	20	18
£50,000 and over	41	28	49	32	40
Average (£ thousand per farm)	76	42	57	48	67

Definitions and explanatory note
(Table 3.5)

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 3.5 compares the two measures in terms of definition, methodology and main similarities and differences.

Table 3.5 Main similarities and differences between Total Income from Farming (TIFF) and Farm Business Income (FBI) statistics

	Total Income from Farming	Farm Business Income
Definition	• TIFF is used to assess United Kingdom agriculture as a whole. • represents business profits and remuneration for work done by owners and other unpaid workers.	• FBI is the preferred measure for comparisons of farm type. • 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.
Method	TIFF is 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	FBI is 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 and similarities	• TIFF is the main aggregate measure of farm income used to assess United Kingdom agriculture as a whole. • Covers the calendar year. • Does not subtract imputed rent for owner occupiers. • Complete range of on-farm activities including income from diversified activities where they are included in the farm accounts. • Treatment of stocks: the physical changes in stocks valued at average calendar year prices.	• FBI is the preferred measure for comparisons of farm type. • Covers the 12 month period March to February. • Does not subtract imputed rent for owner occupiers. • Complete range of on-farm activities including income from diversified activities where they are included in the farm accounts. • Treatment of stocks: the change in the book value of stocks between the start and end of the accounting year.

Covid-19 disruption and the production of these statistics

Some data used in the estimation of the UK agricultural accounts, i.e. TIFF statistics, tables and Figures 3.1 to 3.2 are supplied by statisticians in the Devolved Administrations. Due to the unusual situation in 2020 caused by Covid-19, some data for Scotland were not available in time for publication in this edition. Three options to impute these missing data were assessed using historical data and the most accurate one was applied to estimate the required data to allow the calculation of the UK accounts. Scottish forecast data published in January 2019 have been used where appropriate. Imputation was used for some 2019 data where these are missing (e.g. for intermediate consumption).

A detailed report is available on request from the Responsible Statistician, contact details are given in table 3.1. Data for Scotland are expected to be published later this year and will be included in the second estimation of TIFF in the UK 2019 release due to be published on the gov.uk website in November 2020.

Revisions to Total Income from Farming

TIFF is sensitive to small percentage changes in the values of outputs and intermediate consumption. A combination of a revision downwards in output and revision upwards in intermediate consumption leads to more sizeable revisions in percentage terms to Gross Value Added and Total Income from Farming. Any revisions are largely planned, as more data become available and estimates are replaced with actual data.

Revisions to Farm Business Survey

Compared with the provisional 2018/19 results published in the 2018 edition of AUK, the outturns published for England were higher for general cropping, specialist pigs, specialist poultry and mixed farms while those for cereals, grazing livestock and dairy were lower. For cereals, grazing livestock lowland, specialist poultry and mixed farms the forecasts were within the confidence intervals of the final outturns. Average income for general cropping farms was higher than predicted, largely due to an under estimation of the value of output. For dairy farms, average income was lower than expected due to an under-estimation of outputs and of inputs, while the income for the Basic Payment and diversified activities were higher than anticipated. On LFA grazing livestock farms average incomes were lower than predicted, due mainly to an over estimation of agri-environment payments and output. Average income for specialist pig farms was higher than forecast where both outputs and, to a lesser extent, costs were under-estimated. Variation from the forecast was also partly due to changes in the composition of the small sample size for this farm type. In Northern Ireland, incomes on dairy farms were higher than the provisional 2018/19 results reflecting higher than predicted levels of output. For LFA grazing livestock farms the difference between the forecast and actual income was marginal (1% difference).

Chapter 4 Accounts

Summary

- **Total Income from Farming (TIFF)** rose by £398 million (8.2%) to £5.3 billion between 2018 and 2019 in current price terms.
- **Gross output** increased by £571 million (2.1%) to £27.3 billion, largely boosted by the increase in the value of arable output due to the higher crop yields, particularly cereals.
- **Crop** output increased by £562 million (6.0%) to £10 billion.
- Output of **livestock for meat** fell by £111 million (-1.3%) to £8.2 billion.
- Output of **livestock products** fell by £39 million (-0.7%) to £5.2 billion.
- The cost of **intermediate consumption** fell by £62 million (-0.4%) to £16.9 billion. In general, prices were higher and usage lower, with falls in costs of plant protection products, animal feed and seeds more than offsetting any increases seen in the other input costs.
- **Gross value added at basic price (GVA)**, which identifies agriculture's contribution to the Gross Domestic Product (GDP), increased by £633 million (6.5%) to £10.4 billion.
- Sterling remained stable against the euro and as a result the value of payments under the **Basic Payment Scheme** were little changed.
- **Total Income from Farming per annual work unit** (AWU) rose by 5.6% in real terms to £26.7 billion. AWU equals the full-time equivalent input of one person engaged in the agricultural activities of the farm for one year. TIFF per AWU is comparable to TIFF divided by labour input.

Introduction

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

These accounts conform to internationally-agreed accounting principles required by both the United Kingdom's National Statistics and by Eurostat, the statistical office of the European Union.

Table 4.1 shows the value in real terms, i.e. values adjusted for inflation. Real term values provide a more meaningful comparison of how agriculture has performed over the long term. Table 4.2 shows the values in current price, i.e. based on actual prices in the year in question. Table 4.3 presents the year on year changes in outputs and inputs at current price, of value, volume and price. Table 4.4 includes the Aggregate agricultural balance sheet which presents the net worth of the industry at end December each year.

Unless otherwise stated all comparisons are with the previous year (2018).

Real term value, overall trends
(Figure 4.1 and Table 4.1)

Values in this section are expressed in real terms at 2019 prices. The figures are adjusted to take into account inflation, i.e. real term, to allow more meaningful comparisons between years over the longer term.

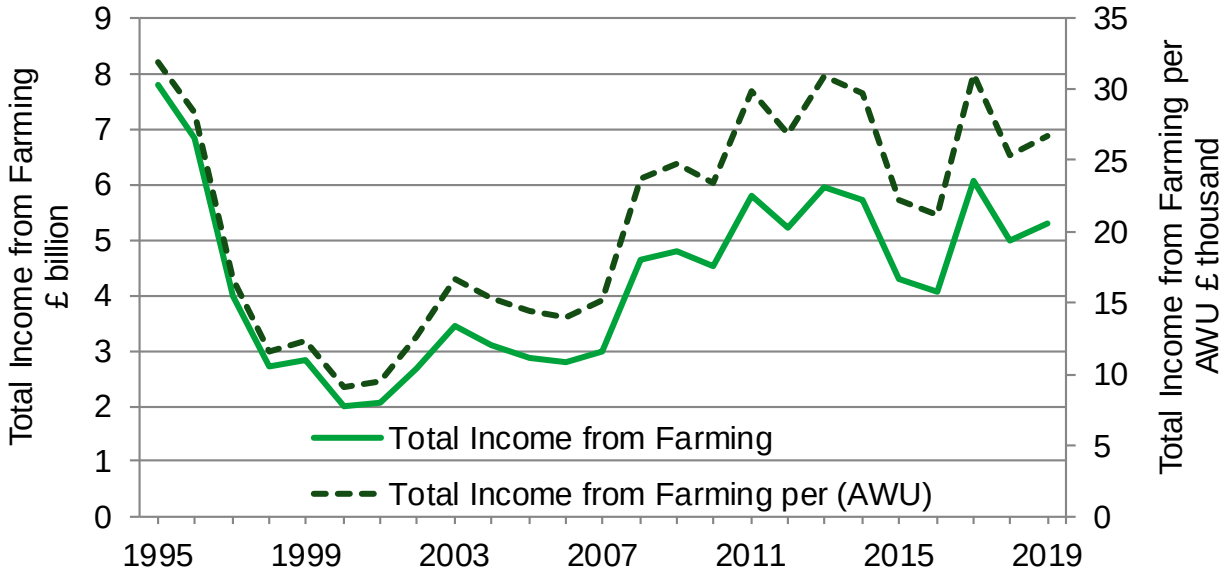
The key drivers of agricultural income include the volume of production, commodity prices and the cost of inputs. These are themselves driven by a range of factors such as the weather, exchange rates, oil price and global supply and stocks of commodities. As a result, UK agricultural income tends to be volatile and fluctuate from year to year.

Table 4.1 shows Total Income from Farming is estimated to have risen between 2018 and 2019 by 6.2% (£309 million) in real terms after adjustment for the effect of inflation, to £5.3 billion.

Over the longer term (see Figure 4.1) incomes have generally followed an overall upward trend since the year 2000. In more recent years, in spite of high levels of production, 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 increased to the highest point for twenty 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 an 18% fall in income.

Figure 4.1 Agriculture industry income trends in the United Kingdom (in real terms at 2019 prices)



"Total Income from Farming per Annual Work Unit of entrepreneurial labour" is an alternative measure of income that takes into account the labour used to produce that income and allows comparisons to be made with other countries. It follows a similar trend to Total Income from Farming, but owing to a decline in the number of farmers and other unpaid workers, has performed better from the year 2000 onwards.

An Annual Work Unit (AWU) equals the input of one person in the farm business on a full-time basis for the calendar year. The GDP deflator used to adjust prices to real terms is sourced from Office of National Statistics.

Table 4.1 Production and income accounts in real terms (adjusted for inflation)(e)
Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million

	Average 2012-2016	2017	2018	2019 (prov.)
Total crop output	**9,673**	**9,774**	**9,609**	**10,000**
Total livestock output	**14,805**	**15,006**	**15,010**	**14,700**
10 Other agricultural activities	1,176	1,190	1,262	1,262
11 Inseparable non-agricultural activities	1,262	1,274	1,309	1,311
12 Output (at market prices)(a)	**26,917**	**27,244**	**27,190**	**27,273**
13 Total subsidies (less taxes) on product (b)	31	48	47	47
14 Gross output at basic prices (12+13)	**26,948**	**27,292**	**27,237**	**27,320**
25 Total intermediate consumption	**17,108**	**16,454**	**17,284**	**16,912**
26 Gross value added at market prices (12-25)	9,809	10,791	9,906	10,361
27 Gross value added at basic prices (14-25)	9,840	10,839	9,953	10,408
28 Total consumption of Fixed Capital	4,399	4,290	4,430	4,528
29 Net value added at market prices (26-28)	**5,410**	**6,500**	**5,476**	**5,832**
30 Net value added at basic prices (27-28)	**5,441**	**6,548**	**5,523**	**5,879**
31 Other taxes on production	-115	-100	-100	-98
32 Other subsidies on production (b)	3,404	3,386	3,341	3,296
33 Net value added at factor cost (30+31+32)	**8,729**	**9,835**	**8,764**	**9,077**
34 Compensation of employees	2,668	2,733	2,751	2,775
35 Rent	591	594	572	556
36 Interest (c)	719	725	699	681
37 Total Income from Farming (33-34-35-36)	**5,060**	**6,052**	**4,968**	**5,278**
Annual Work Unit agricultural labour input (thousand head) (d)	193	194	196	198
Total Income from Farming per annual work unit (£ million) (d)	**26,198**	**31,130**	**25,285**	**26,703**

a) Output is net of VAT collected on the sale of non-edible products. Figures for output at market prices exclude subsidies on products.
b) Subsidies (less taxes) on product: payments linked to the production of agricultural products. Other subsidies on production: payments not linked to production from which agricultural producers can benefit as a consequence of engaging in agricultural activities e.g. Basic Payment Scheme, agri-environment schemes.
c) Interest charges on loans for current farming purposes and buildings and works less interest on money held on short term deposit.
d) Annual Work Unit (AWU) equals the work performed by one person who is occupied on an agricultural holding on a full-time basis in one year
e) GDP deflator used to convert current prices (table 4.2) to real term price

Current price
(Tables 4.2 and 4.3)

Current price values are based on prices in the year in question and are not adjusted for inflation.

In 2019, Total Income from Farming rose by £398 million to £5.3 billion, an 8.2% increase on 2018. The main contributors to this increase are the rise in the value of output of wheat (+£332 million), potatoes (+£192 million), vegetable, horticulture and fruit (+£182 million combined). In addition, some input costs fell including plant protection (-£108 million), animal feed (-£80 million) and seeds (-£34 million).

Gross Value Added at basic price, which measures agriculture's contribution to the Gross Domestic Product (GDP), rose by 6.5% (£633million) to £10.4 billion. In 2019, agriculture added 0.53% to the national economy.

Outputs: Crops

Overall output of crops value rose by £562 million or 6.0% to £10 billion.

A key contributor to this increase was wheat, whose value rose by £332 million (+16%) to £2.4 billion. Planted area was 3.9% higher than in 2018 and the favourable weather conditions produced much better yields that led to a good quality bumper harvest, up 20% in volume on 2018. The plentiful harvest contributed to lower prices, down 3.7%.

The value of barley rose by £58 million (+5.8%) to £1.1 billion, with higher volumes more than offsetting the 14% fall in price. The harvest was the largest for over 30 years in contrast to 2018, which saw production well below the 5 year average. The increase in production (+22%) is attributed to an increase in total area planted, a switch to higher yielding winter barley and more favourable growing conditions.

Oilseed rape output fell in value by £69 million (-11%) to £585 million, driven by lower production (-13%), the lowest since 2004. Planted area decreased by 9.2%, the lowest since 2002. Issues with pest control affected quality and along with difficulties harvesting the crop in the wet autumn, led to a 3% fall in yield. Overall, prices remained firm.

The value of sugar beet fell by £6 million (-2.9%) to £208 million. Reduced planted area, average yields and a difficult harvest due to the wet autumn contributed to a 2.0% fall in production.

The value of vegetables increased by £55 million (+3.9%) to £1.5 billion, driven by higher prices (+4.6%) as volumes slightly fell. An early start to the season meant crops were well established by early summer, however wet conditions in both June and then autumn meant some crops were left unharvested.

The value of potatoes rose by £192 million (+33%) to £776 million, mainly driven by a 28% increase in price. The prolonged drought in 2018 meant opening stocks in 2019 were low and despite far better growing conditions in 2019, production was only up by 3.8%. Although there was an increase in plantings this year, overall production was adversely impacted by the wet autumn and winter that caused disruption to lifting.

The value of fruit rose by £90 million to £887 million, driven almost entirely by a 12% increase in price, as production was little changed on the year.

Outputs: Livestock

Overall the value of total livestock output was almost unchanged (-0.3%) at £14.7 billion.

The value of milk decreased by £56 million (-1.2%) to £4.43 billion, primarily driven by price changes. Despite a further fall in dairy cow numbers, the good weather and strong grass growth boosted production levels by 1.5%. Prices were 2.7% lower, reflecting increased supplies. Milk is the largest contributor to the value of total livestock output.

The value of eggs rose by £18 million (2.9%) to £660 million. A 3.8% increase in volumes more than offset a 0.9% price drop.

The value of livestock primarily for meat fell by £111 million (-1.3%).

The value of cattle meat decreased by £195 million (-6.8%) to £2.8 billion, driven by a 6.8% drop in prices.

Pig meat rose in value by £65 million (+5.2%) to £1.32 billion, with prices rising slightly despite an increase in production. Production levels rose by 4.5%, boosted by an increase in throughput and marginally heavier carcase weights.

The value of sheep meat was almost unchanged (-0.3%) at £1.3 billion with a rise in production (+7.3%) offset by a fall in price (-7.1%). Production levels were lifted by higher carcase weights as well as increased throughput that put downward pressure on price.

Poultry meat continues its upward trend, rising in value by £17 million (+0.7%) to £2.6 billion, the highest recorded value. Whilst production fell slightly (-0.7%), price increased by 1.3%.

Intermediate consumption

The total cost of intermediate consumption fell by £62 million to £16.9 billion. In general, prices were higher and usage lower, with falls in costs of plant protection products, animal feed and seeds more than offsetting any increases seen in the other input costs.

The cost of animal feed fell by £80 million (-1.4%) to £5.5 billion. Good grass growth and lower livestock numbers led to decreased demand, coupled with lower feed and forage prices resulted in reduced feed costs.

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Plant protection product costs fell by £108 million (-11%) to £858 million, largely driven by a 10% fall in volumes applied. The dry spring led to relatively low weed pressure and dry soils that required no herbicide application on established crops. Wet autumn weather also reduced applications because it was impossible to get onto the land at the appropriate time.

The total cost of seeds fell by £34 million, as the wet weather led to difficult conditions for drilling in the autumn.

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Energy costs rose by £20 million to £1.4 billion, reflecting increases in oil price although use was down. It was a similar story for fertilisers, which are also closely linked to oil price, with costs rising by £15 million to £1.3 billion.

Gross Value Added

Gross Value Added at basic price, which measures agriculture's contribution to the Gross Domestic Product (GDP), rose by £633 million (+6.5%) to £10.4 billion. In 2019, agriculture added 0.53% to the national economy. This is higher than the 0.51% share in 2018.

Net value at factor cost

Net Value Added at factor cost, which is Gross Value Added at basic prices adjusted for consumption of fixed capital, other taxes on production and other subsidies on production, is estimated to have increased by £470 million (5.5%) to £9.1 billion.

Compensation of employees

The total value of compensation to employees was £2.8 billion, a rise of £73 million. Average labour costs were higher, consistent with the National Living Wage increase, whilst labour volume was slightly down on the previous year. In 2019, agriculture provided 1.45% of jobs in the United Kingdom.

Other subsidies on production

Direct payments were relatively stable at £3.3 billion. The value of Basic Payment Scheme (BPS) payments, including greening and young farmer, are expected to be worth £2.77 billion. This is similar to the value in 2018, reflecting the stable Euro to Sterling exchange rate. Payments are set in Euros and converted to sterling each year using the exchange rate set by the European Central Bank (ECB) every September. In 2019, the ECB rate was €1=89.1 pence compared to €1=89.3 pence in 2018. More detailed information on subsidies can be found in Chapter 3.

Table 4.2 Production and income accounts at current prices

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million — calendar year

	2018	2019 (prov.)
Output at market prices (a)		
1 Output of cereals	3,252	3,667
of which: wheat	2,111	2,442
barley	1,015	1,073
oats	120	145
2 Output of industrial crops	1,029	980
of which: oilseed rape	654	585
protein crops	113	145
sugar beet	214	208
other industrial crops	32	33
3 Output of forage plants	233	231
4 Output of vegetables and horticultural products	2,808	2,900
of which: fresh vegetables	1,426	1,481
plants and flowers	1,382	1,419
5 Output of potatoes (including seeds)	583	776
6 Output of fruit	797	887
7 Output of other crop products including seeds	735	559
Total crop output (sum 1 - 7)	**9,437**	**10,000**
8 Output of livestock	9,490	9,488
primarily for meat	8,327	8,217
of which: cattle	2,952	2,758
pigs	1,253	1,318
sheep	1,261	1,258
poultry	2,626	2,643
gross fixed capital formation	1,163	1,272
of which: cattle	677	733
pigs	5	6
sheep	193	270
poultry	288	262
9 Output of livestock products	5,251	5,212
of which: milk	4,487	4,431
eggs	641	660
Total livestock output (8 + 9)	**14,741**	**14,700**
10 Other agricultural activities	1,239	1,262
11 Inseparable non-agricultural activities	1,286	1,311
12 Output (at market prices) (sum 1 to 11)	**26,703**	**27,273**
13 Total subsidies (less taxes) on product (b)	46	47
14 Gross output at basic prices (12 + 13)	**26,749**	**27,320**

continued

Table 4.2 Production and income accounts at current prices (*continued*)

£ million	calendar year	
	2018	**2019 (prov.)**
Intermediate consumption		
15 Seeds	763	729
16 Energy	1,371	1,392
of which: electricity & fuels for heating	437	464
motor and machinery fuels	934	927
17 Fertilisers	1,254	1,269
18 Plant protection products	966	858
19 Veterinary expenses	476	499
20 Animal feed	5,585	5,505
of which: compounds	3,432	3,353
straights	1,416	1,427
feed for on farm use or purchased from other farms	737	724
21 Total maintenance	1,771	1,791
of which: materials	1,062	1,073
buildings	709	718
22 Agricultural services	1,239	1,262
23 FISM	125	148
24 Other goods and services (c)	3,425	3,461
25 Total intermediate consumption (sum 15 to 24)	**16,974**	**16,912**
26 Gross value added at market prices (12 - 25)	**9,729**	**10,361**
27 Gross value added at basic prices (14 - 25)	**9,775**	**10,408**
28 Total consumption of Fixed Capital	4,350	4,528
of which: equipment	2,019	2,076
buildings	1,044	1,071
livestock	1,287	1,382
cattle	751	806
pigs	4	6
sheep	265	278
poultry	266	292
29 Net value added at market prices (26 - 28)	**5,378**	**5,832**
30 Net value added at basic prices (27 - 28)	**5,424**	**5,879**
31 Other taxes on production	-98	-98
32 Other subsidies on production (b)	3,281	3,296
33 Net value added at factor cost (30 + 31 + 32)	**8,607**	**9,077**
34 Compensation of employees	2,702	2,775
35 Rent	562	556
36 Interest (d)	464	468
37 Total Income from Farming (33 - 34 - 35 - 36)	**4,879**	**5,278**

Table 4.3 Changes in outputs and inputs at current price

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million — Calendar year

	2018	2019	Value change (%)	Volume change (%)	Price change (%)
Output at market prices (a)					
1 Output of cereals	3,252	3,667	13	21	- 7
of which: wheat	2,111	2,442	16	20	- 4
barley	1,015	1,073	6	22	- 14
oats	120	145	21	26	- 4
2 Output of industrial crops	1,029	980	- 5	- 6	1
of which: oilseed rape	654	585	- 11	- 13	3
protein crops	113	145	29	35	- 4
sugar beet	214	208	- 3	- 2	- 1
other industrial crops	32	33	4	3	1
3 Output of forage plants	233	231	- 1	- 1	-
4 Output of vegetables and horticultural products	2,808	2,900	3	1	2
of which: fresh vegetables	1,426	1,481	4	- 1	5
plants and flowers	1,382	1,419	3	3	-
5 Output of potatoes (including seeds)	583	776	33	4	28
6 Output of fruit	797	887	11	- 1	12
7 Output of other crop products including seeds	735	559	- 24	10	- 31
Total crop output (sum 1 - 7)	**9,437**	**10,000**	**6**	**8**	**- 1**
8 Output of livestock	9,490	9,488	-	2	- 2
primarily for meat	8,327	8,217	- 1	2	- 3
of which: cattle	2,952	2,758	- 7	-	- 7
pigs	1,253	1,318	5	4	1
sheep	1,261	1,258	-	7	- 7
poultry	2,626	2,643	1	- 1	1
gross fixed capital formation	1,163	1,272	9	4	5
of which: cattle	677	733	8	-	8
pigs	5	6	35	- 7	45
sheep	193	270	40	36	3
poultry	288	262	- 9	- 10	1
9 Output of livestock products	5,251	5,212	- 1	2	- 3
of which: milk	4,487	4,431	- 1	2	- 3
eggs	641	660	3	4	- 1
Total livestock output (8 + 9)	**14,741**	**14,700**	**0**	**2**	**- 2**
10 Other agricultural activities	1,239	1,262	2	- 2	3
11 Inseparable non-agricultural activities	1,286	1,311	2	-	2
12 Output (at market prices) (sum 1 to 11)	**26,703**	**27,273**	**2**	**4**	**- 1**
13 Total subsidies (less taxes) on product (b)	46	47	2	. .	. .
14 Gross output at basic prices (12 + 13)	**26,749**	**27,320**	**2**	**4**	**- 1**

Continued

Table 4.3 Changes in outputs and inputs at current price (*Continued*)
Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million

	2018	2019	Value change (%)	Volume change (%)	Price change (%)
Intermediate consumption					
15 Seeds	763	729	- 5	- 5	-
16 Energy	1,371	1,392	1	- 1	3
of which: electricity & fuels for heating	437	464	6	-	6
motor and machinery fuels	934	927	- 1	- 2	1
17 Fertilisers	1,254	1,269	1	- 2	3
18 Plant protection products	966	858	- 11	- 10	- 1
19 Veterinary expenses	476	499	5	- 1	5
20 Animal feed	5,585	5,505	- 1	- 1	- 1
of which: compounds	3,432	3,353	- 2	- 3	1
straights	1,416	1,427	1	3	- 2
feed for on farm use or purchased from other farms	737	724	- 2	3	- 5
21 Total maintenance	1,771	1,791	1	- 1	2
of which: materials	1,062	1,073	1	- 1	2
buildings	709	718	1	-	2
22 Agricultural services	1,239	1,262	2	- 2	3
23 FISM	125	148	19	. .	. .
24 Other goods and services (c)	3,425	3,461	1	6	- 5
25 Total intermediate consumption (Sum 15 to 24)	**16,974**	**16,912**	**-**	**-**	**-**
26 Gross value added at market prices (12-25)	**9,729**	**10,361**	**6**	**. .**	**. .**
27 Gross value added at basic prices (14-25)	**9,775**	**10,408**	**6**	**. .**	**. .**
28 Total consumption of Fixed Capital	4,350	4,528	4	1	3
of which: equipment	2,019	2,076	3	2	1
buildings	1,044	1,071	3	- 1	3
livestock	1,287	1,382	7	2	5
cattle	751	806	7	- 1	8
pigs	4	6	38	- 5	45
sheep	265	278	5	4	1
poultry	266	292	10	9	1
29 Net value added at market prices (26-28)	**5,378**	**5,832**	**8**	. .	. .
30 Net value added at basic prices (27-28)	**5,424**	**5,879**	**8**	. .	. .
31 Other taxes on production	-98	-98	-	. .	. .
32 Other subsidies on production (b)	3,281	3,296	-	. .	. .
33 Net value added at factor cost (30+31+32)				. .	. .
34 Compensation of employees	2,702	2,775	3	- 1	4
35 Rent	562	556	- 1	. .	. .
36 Interest (d)	464	468	1	. .	. .
37 Total Income from Farming (33-34-35-36)	**4,879**	**5,278**	**8**	**. .**	**. .**

(a) Output is net of VAT collected on the sale of non-edible products. Figures for output at market prices exclude subsidies on products.
(b) Subsidies (less taxes) on product: payments linked to the production of agricultural products. Other subsidies on production: payments not linked to production from which agricultural producers can benefit as a consequence of engaging in agricultural activities e.g. Basic Payment Scheme, agri-environment schemes.
(c) Includes livestock and crop costs, water costs, insurance premiums, bank charges, professional fees, rates, and other farming costs.
(d) Interest charges on loans for current farming purposes and buildings and works less interest on money held on short term deposit.

Capital
(Table 4.4)

The agricultural balance sheet values the assets and liabilities for agriculture at the end of each calendar year and estimates the net worth of the industry. Latest available data is for 2018.

Table 4.4 shows overall net worth is estimated to be £255 billion at December 2018, an increase of 2.1% or £5.4 billion. The value of farmland is estimated to rise by around 2%, land area increases somewhat offsetting the variations in price across both land type and region. Total liabilities are estimated to be around 2% higher as lending to UK agriculture continues to increase.

Table 4.4 Aggregate balance sheet for the agricultural industry

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million (at current prices)

	2016	2017	2018
Fixed assets total	**265,814**	**254,778**	**260,459**
Land (b)	224,649	212,326	216,836
Buildings, plant, machinery and vehicles	34,609	36,156	37,433
Breeding livestock	6,557	6,297	6,190
Current assets total	**13,901**	**15,304**	**15,382**
Trading livestock	4,211	4,358	4,088
Crops and stores	3,730	3,931	4,244
Debtors, cash deposits	5,959	7,014	7,050
Total current	13,901	15,304	15,382
Total Assets	**279,715**	**270,082**	**275,841**
Long and medium term liabilities total	**12,773**	**13,969**	**14,361**
AMC and SASC (c)	2,230	2,182	2,456
Building Societies and Institutions	1,199	1,681	1,592
Bank loans	8,755	9,492	9,673
Family Loans	522	525	547
Other	66	88	93
Short term liabilities total	**5,654**	**6,161**	**6,173**
Leasing	47	33	20
Hire purchase	1,453	1,511	1,541
Trade Credit	1,867	2,410	2,389
Bank overdrafts	2,247	2,166	2,174
Other	39	41	49
Total Liabilities	**18,427**	**20,129**	**20,534**
Net worth	**261,288**	**249,953**	**255,307**

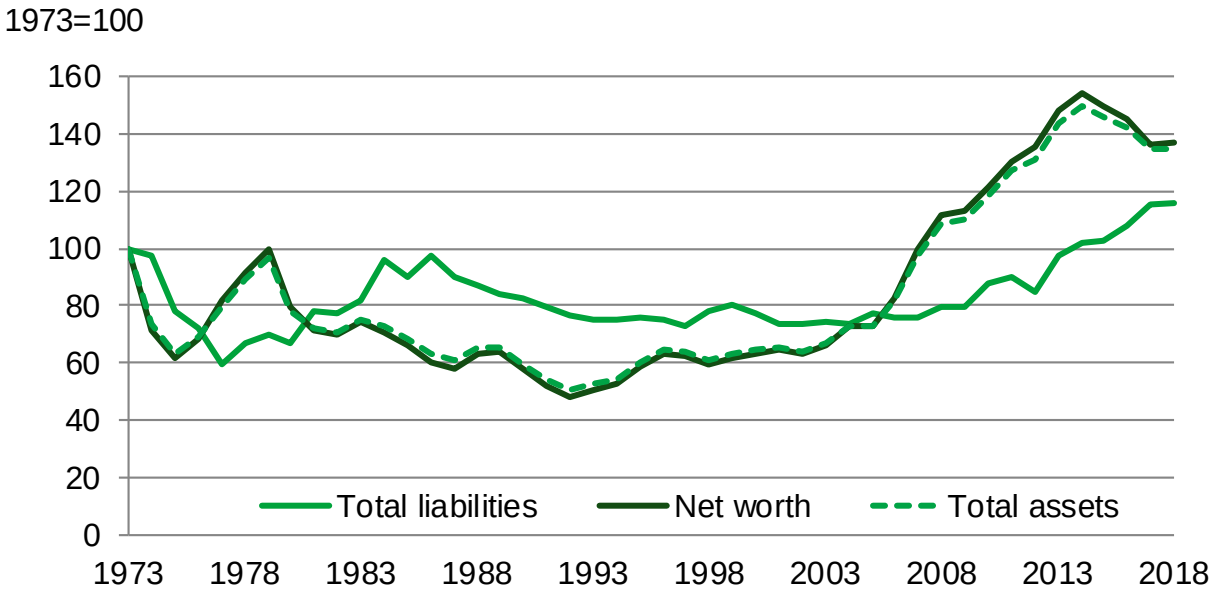
(a) The valuations of land and breeding livestock are at average market prices; cost, net of consumption of fixed capital; those of buildings, plant, machinery and vehicles are replacement

(b) Includes values for arable land and pasture in Great Britain & Northern Ireland based on land area from June Surveys.

(c) Agricultural Mortgage Company (AMC) and Scottish Agricultural Securities Corporation (SASC).

In real terms, using the GDP deflator to adjust for inflation, net worth grew by just 0.3% in 2018 compared to 2017. Agricultural Industry net worth is closely linked to the value of farmland. Over a longer period, net worth has mostly shown steady growth in line with land values (see Figure 4.2). However, since the land price market peaked at the end of 2015, there has been a modest decline in average land price, but with significant differences across both land type and regions in the United Kingdom. As a result, agriculture's net worth fell in 2016 and 2017 before steadying in 2018, demonstrating the important contribution of land value to net worth.

Figure 4.2 Assets, liabilities and net worth of the agricultural industry index; in real terms (a)



(a) Adjusted for inflation using GDP deflator

Revisions

Any revisions are largely planned as more data become available and estimates are replaced with actual data.

Total Income from Farming is sensitive to small percentage changes in the values of outputs and intermediate consumption. A combination of a revision downwards in output and revision upwards in intermediate consumption leads to more sizeable revisions in percentage terms to Gross Value Added and Total Income from Farming.

Chapter 5 Productivity

Summary

- **Total factor productivity** of UK agriculture increased by 4.0% between 2018 and 2019. This increase was driven by an increase in production volumes combined with a small decrease in volumes of inputs.
- Volume of all **outputs** increased by 3.8%. This was driven by an increase for crops, livestock and livestock products.
- Volume of all **inputs** decreased slightly by 0.2%.
- **Since 1973** total factor productivity has increased by over 59%, driven by a 39% increase in the volume of outputs and a 13% fall in the volume of inputs.

Introduction

Productivity is a measure of how well inputs are converted into outputs, giving an indication of the efficiency and competitiveness of the agriculture industry. While external factors such as weather conditions or disease outbreaks may have short term impacts on productivity, it is improvements in productivity over a longer period that drive increases in agricultural income.

The headline measure, total factor productivity, shows the change in the volume of output leaving the industry per unit of all inputs entering the industry, including fixed capital and labour. The partial factor productivity indicators show the volume of output leaving the industry per unit of one particular type of input, in this case intermediate consumption, consumption of fixed capital, labour and land.

Total factor productivity
(Figure 5.1)

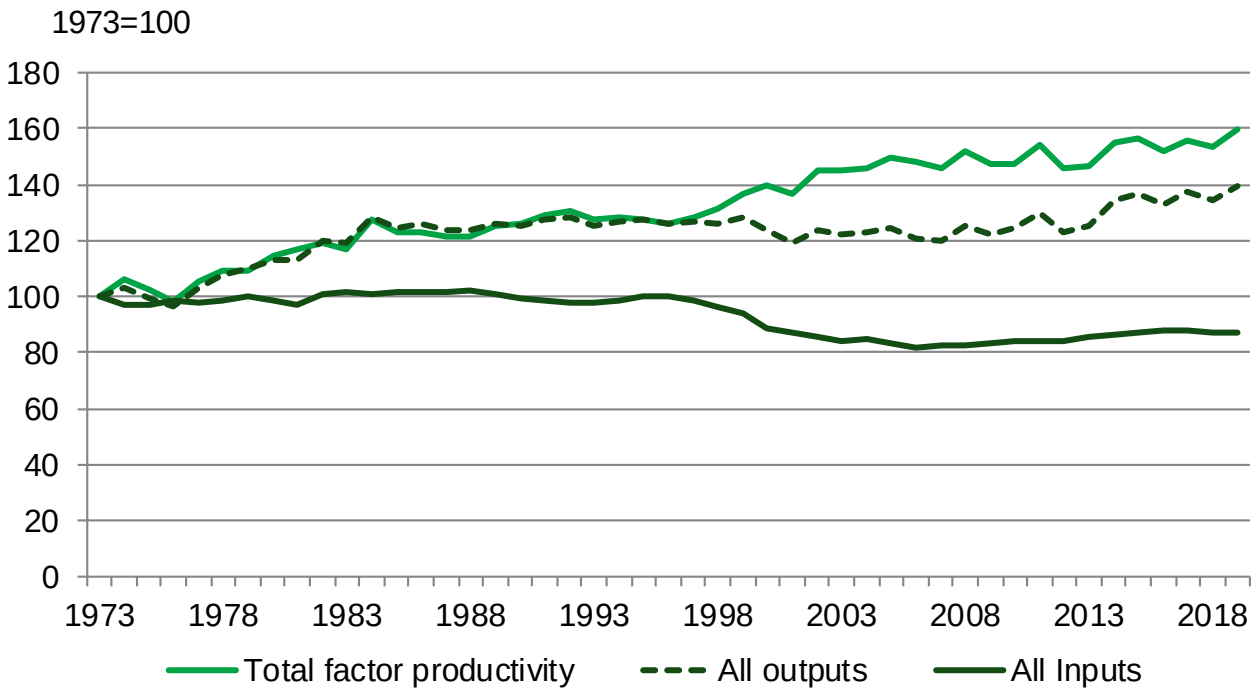
Total factor productivity of the agriculture industry in the United Kingdom is estimated to have increased by 4.0% between 2018 and 2019. This was driven by an increase in overall levels of production combined with a slight decrease in the volumes of inputs.

In 2019, the volume of all outputs increased by 3.8% to the highest level ever recorded. This was mainly driven by a 7.8% increase for crops, combined with smaller increases for livestock (1.6%) and livestock products (1.8%).

The volume of all inputs decreased by 0.2%, contributing further to the overall increase in productivity.

Since 1973, total factor productivity has increased by nearly 60%, driven by a 39% increase in the volume of outputs and a 13% fall in the volume of inputs.

Figure 5.1 Total factor productivity



Details of volume changes of outputs and inputs
(Table 5.1)

Total volume of all crops increased by 7.8% compared to 2018. Cereal volumes increased by 24% almost reaching the highest levels ever recorded for the UK. This was due to favourable growing conditions and high yields. Oilseed rape saw decreases of 13% compared to 2018, with both area and yields falling.

Compared to 2018 there was a small (1.7%) increase in the volume of all livestock outputs. This was driven by an increase of 1.6% for meat production, a 1.5% increase for milk and a 3.8% increase for eggs. The increase in meat production was driven by increases for sheep (7.3%) and pigs (4.5%), partly offset by a decrease for poultry (0.7%). Cattle and other animals both remained almost unchanged with increases of 0.2% or less.

Compared to 2018 there was a small decrease of 0.2% in the volume of all inputs, including labour. Intermediate consumption fell slightly by 0.7%, with nearly all items showing a fall. Animal feed is the single largest input and showed a decrease of 1.2% overall. This was driven by a decrease of 3.0% for compounds, partially offset by an increase of 3.3% for straights.

Table 5.1 Total factor productivity volume indices

Enquiries: Alistair Murray on +44 (0) 20 802 6121, email: alistair.murray@defra.gov.uk

2015=100

	2018	2019 (prov.)	Annual change (%)
1 Output of cereals	80.5	100.0	24.1%
wheat	79.3	97.5	22.9%
rye	100.0	100.0	0.0%
barley	81.1	103.8	27.9%
oats and summer cereal mixtures	106.4	130.8	22.9%
other cereals	136.6	155.9	14.2%
2 Output of industrial crops	83.6	78.9	-5.6%
oil seeds	80.0	69.0	-13.7%
oilseed rape	79.1	68.8	-13.0%
other oil seeds	150.7	87.2	-42.1%
protein crops	58.4	78.8	34.9%
sugar beet	122.2	119.8	-2.0%
other industrial crops	101.6	104.6	2.9%
3 Output of forage plants	100.0	100.0	0.0%
4 Output of vegetables and horticultural products	96.9	97.8	0.9%
fresh vegetables	92.1	91.5	-0.7%
plants and flowers	102.2	104.9	2.6%
5 Output of potatoes	89.2	92.9	4.2%
6 Output of fruit	103.3	102.7	-0.6%
7 Output of other crop products	103.5	110.8	7.1%
Total crop output (sum 1 - 7)	**89.7**	**96.6**	**7.8%**
8 Output of livestock (meat)	104.1	105.8	1.6%
cattle	100.5	100.7	0.2%
pigs	103.6	108.3	4.5%
sheep	95.6	102.5	7.3%
poultry	114.1	113.4	-0.7%
other animals	100.1	100.1	0.1%
9 Output of livestock products	102.8	104.6	1.8%
milk	99.9	101.5	1.5%
eggs	114.2	118.6	3.8%
raw wool	93.7	93.8	0.1%
other animal products	177.9	180.0	1.2%
Total livestock output (8 + 9)	**103.7**	**105.4**	**1.7%**
10 Inseparable non-agricultural activities	102.4	102.6	0.2%
11 All outputs	**98.3**	**102.0**	**3.8%**

continued

Table 5.1 Total factor productivity volume indices (continued)

Enquiries: Alistair Murray on +44 (0) 20 802 6121, email: alistair.murray@defra.gov.uk

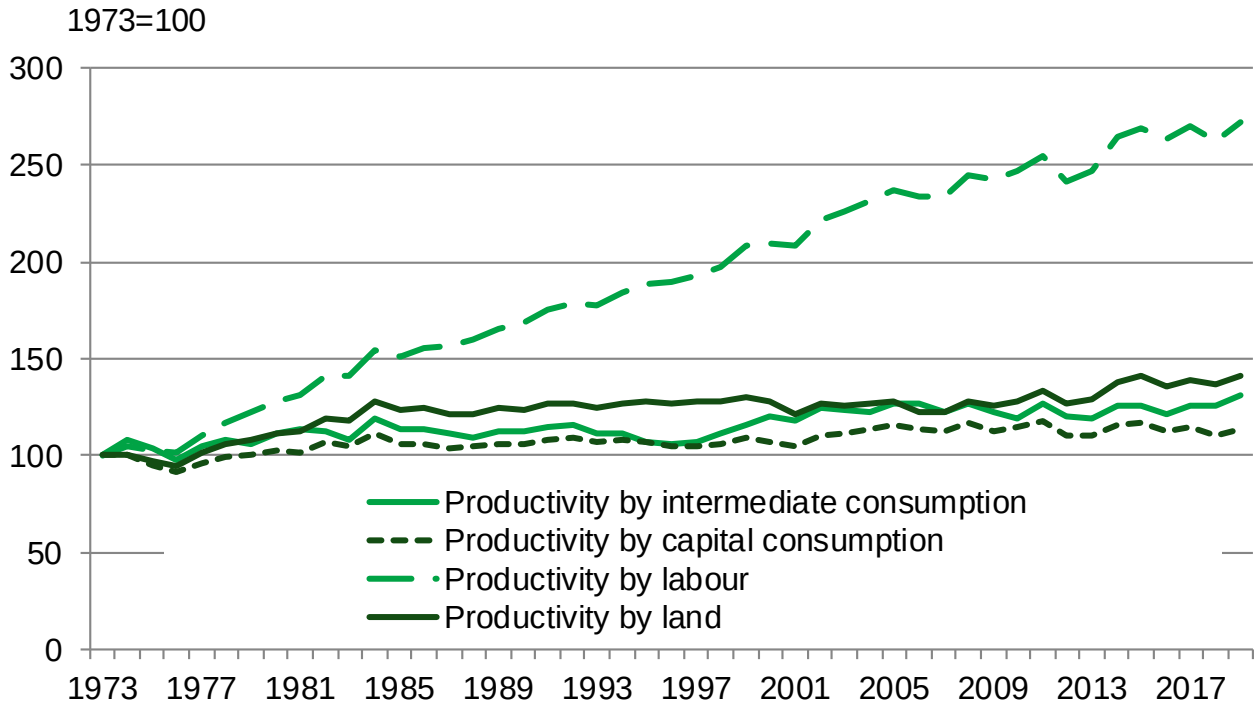
2015=100

	2018	2019 (prov.)	Annual change (%)
12 Seeds	102.3	97.4	-4.8%
13 Energy	96.9	95.5	-1.4%
electricity and fuels for heating	102.0	102.0	0.1%
motor and machinery fuels	94.6	92.6	-2.1%
14 Fertilisers	89.5	87.8	-1.9%
15 Plant protection products	85.7	77.2	-10.0%
16 Veterinary expenses	94.3	93.8	-0.6%
17 Animal feed	105.3	104.1	-1.2%
compounds	111.2	107.9	-3.0%
straights	93.0	96.1	3.3%
18 Total maintenance	103.4	102.6	-0.7%
materials	105.2	104.1	-1.0%
buildings	100.8	100.4	-0.4%
19 FISIM	100.0	100.0	0.0%
20 Other goods and services	96.2	101.0	5.0%
21 Intermediate consumption	99.0	98.2	-0.7%
22 Consumption fixed capital (exc. livestock)	103.5	104.3	0.8%
equipment	106.8	108.5	1.6%
buildings	97.6	96.9	-0.8%
23 All Labour	100.7	100.8	0.0%
Compensation of employees	99.1	98.0	-1.1%
Entrepreneurial workers (farm & specialist contractor)	101.6	102.2	0.6%
24 Land	101.2	102.2	1.0%
25 All Inputs and Entrepreneurial Labour	100.2	99.9	-0.2%
Total factor productivity (11 divided by 25)	**98.2**	**102.1**	**4.0%**
Partial factor productivity indicators			
Productivity by intermediate consumption	99.3	103.9	4.5%
Productivity by capital consumption	95.0	97.8	3.0%
Productivity by labour	97.6	101.3	3.7%
Productivity by land	97.1	99.8	2.8%

Partial factor productivity
(Figure 5.2)

Partial productivity shows the impact key inputs have on productivity. It measures total outputs against a part of the inputs. Figure 5.2 below shows that labour is the key input in driving productivity gains. Productivity by labour shows a steady increase over the whole period. Labour volumes are now approximately half of what they were in 1973. However, over the last few years growth in labour productivity is due to increased output rather than a reduction in labour number.

Figure 5.2 Partial productivity indicators



Revisions

Revisions are generally made owing to the availability of more up-to-date data or as a result of methodology reviews.

The main change in recent years has been the introduction of land in the productivity indicator, introduced for the 2014 estimates. The volume of land is based on the utilised agricultural area. The price associated with land is the rental value and owned land is given a notional rent value. Due to the value associated with land it has become a key component of the productivity indicator. Including land in the indicator led to a slight reduction in measured productivity gains.

Chapter 6 Prices

Summary

In 2019 compared with 2018;

- The annual **Agricultural Price Index (API)** for agricultural outputs decreased by 1.5%, while for agricultural inputs it increased by 1.7%.
- The average price of **crop products** showed no change, with decreases in cereal and forage crop prices offset by increasing prices for potatoes, industrial crops and fresh fruit and vegetables.
- The average price of **livestock and animal products** decreased by 2.5%. Most significant declines were seen across cattle, sheep and poultry sectors, with these partially offset by increasing pig prices.
- The average price of **agricultural inputs** was driven by price rises across the majority of sectors. In particular, increased costs for veterinary services and energy had the greatest impact on total input price, with the cost of fertiliser and building and material maintenance also increasing in this time.

Data sources

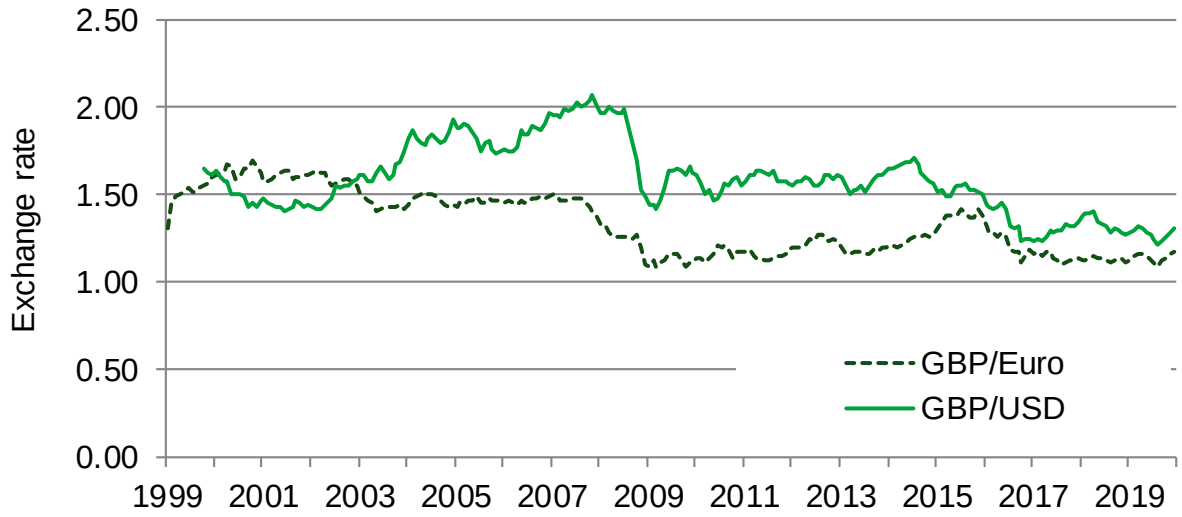
The Agricultural Price Index (API) measures the monthly price changes in agricultural outputs and inputs for the UK. The output series reflects the prices farmers receive for their products, also referred to as farmgate price. Information is collected for all major crops (for example wheat and potatoes) and on livestock and livestock products (for example sheep, milk, and eggs).

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 buildings.

Exchange Rates
(Figure 6.1)

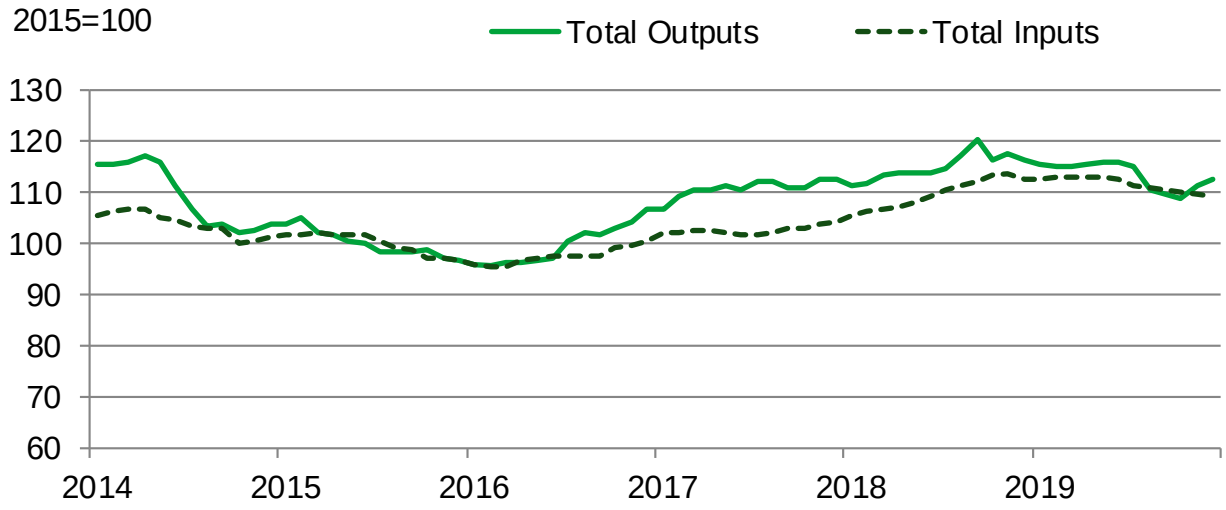
Fluctuating global currency prices can have significant effects on the prices of both agricultural inputs and outputs (see Figure 6.1). The price of the pound against the euro remained generally stable but weak in 2019 and in August reached the lowest point since 2017. This weak pound benefitted farmers with augmented Basic Payment Scheme payments (payments are set in Euros) and export prices, while also increasing the cost of commonly imported farming inputs such as fertilisers and pesticides. The trend was similar for the pound against the dollar, with limited movement during the year and a notable low in August.

Figure 6.1 Exchange rate of sterling against the euro and US dollar



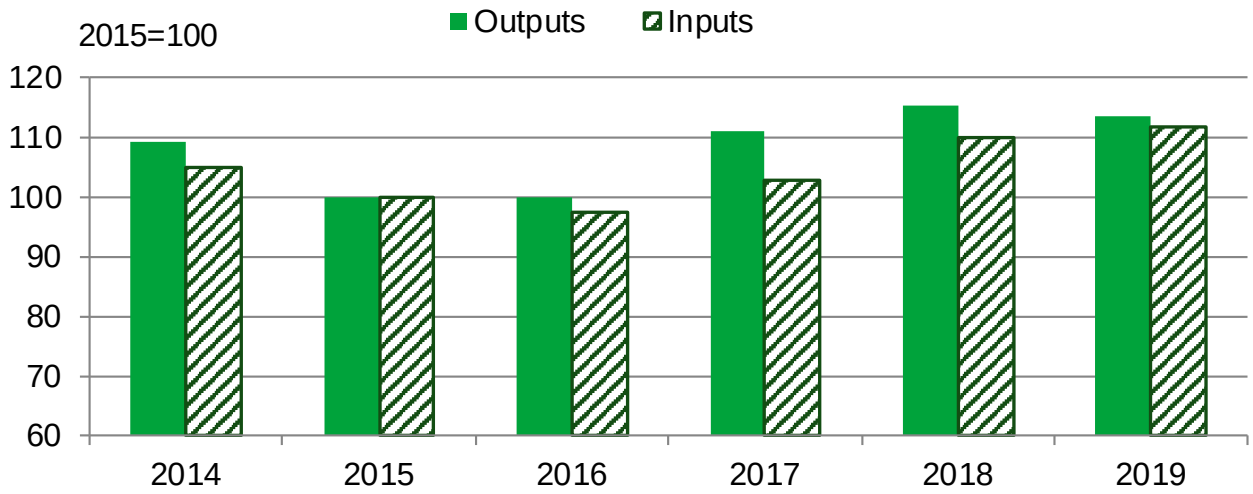
Annual Price Indices for 2019
(Figures 6.2 to 6.9, table 6.1)

Figure 6.2 Monthly price index for all inputs and outputs from 2014 to 2019



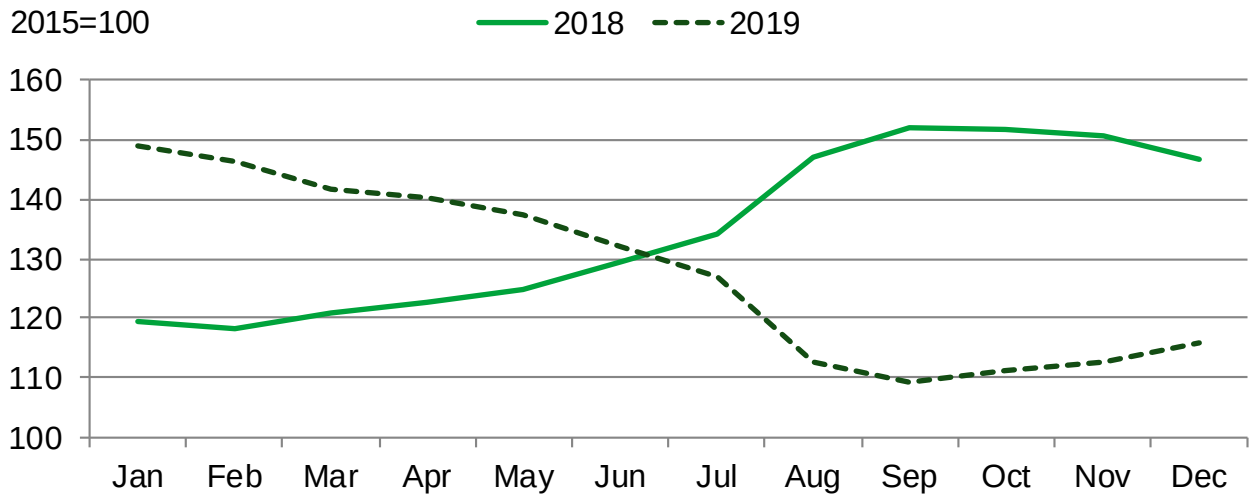
Compared to 2018, the annual agricultural index decreased by 1.5% for outputs and increased by 1.7% for inputs (see Figures 6.2 and 6.3). This represents a slowing of the trend of increases for input prices and the first decrease in output prices since 2016.

Figure 6.3 Annual price index for total inputs and outputs from 2014 to 2019



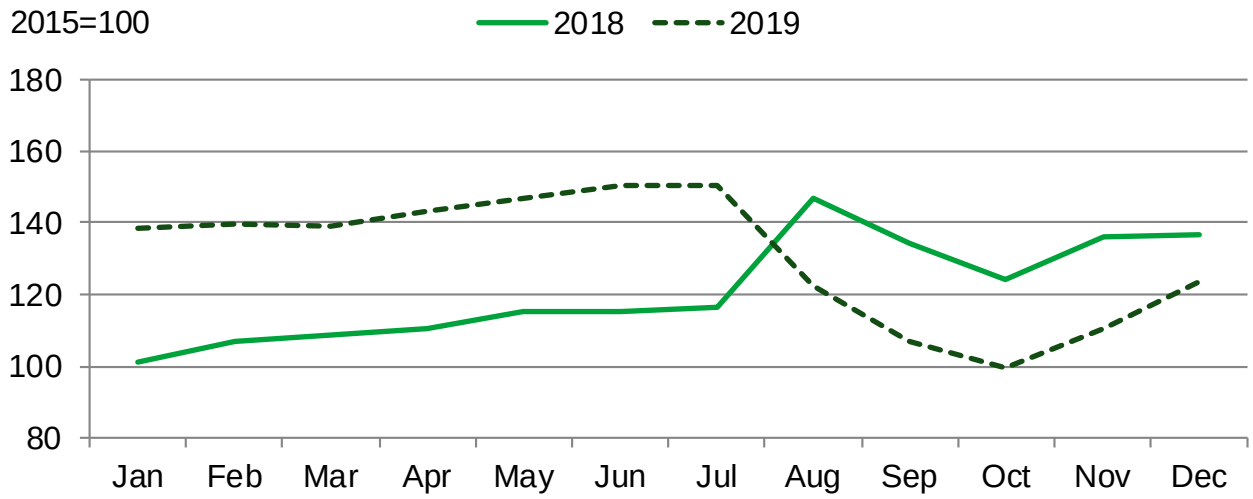
In comparison to 2018, the ratio of outputs to inputs has continued to decline. This is unsurprising given the weak condition of the pound against global currencies and is reflected in the reduced incomes recorded across many farming sectors for 2018/19.

Figure 6.4 Monthly cereal price index 2018 and 2019



The average price of crop products in 2019 remained unchanged in comparison to 2018, however cereal prices declined sharply in this time (down 6.2%). As can be seen from Figure 6.4, cereal prices continued the decline observed in the fourth quarter of 2018, dropping sharply until September 2019 before experiencing a small recovery in the fourth quarter of 2019. This price decline was unsurprising given the extremely high prices achieved in the third quarter of 2018, combined with a general oversupply in global grain markets and limited export interest due to ongoing EU Exit uncertainty.

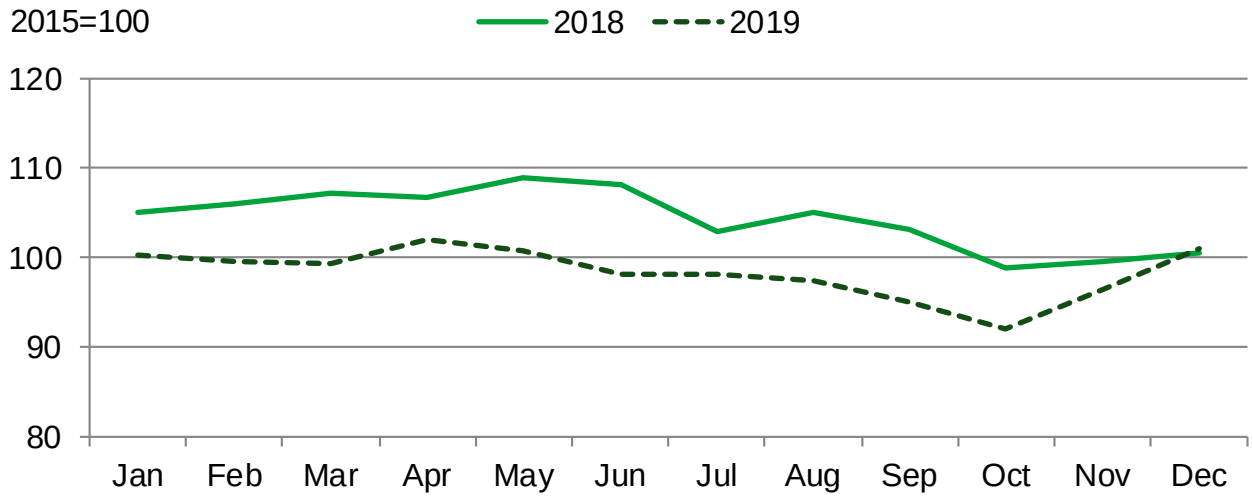
Figure 6.5 Monthly potato price index 2018 and 2019



Potatoes saw a significant price increase over 2018 (up 8.2%) and volatile pricing across the year. Following the hot, dry summer of 2018, potato supplies were low and prices were high and increasing across the first half of 2018. Prices dropped sharply with the start of lifting of new season crops in the third quarter of 2019 and rebounded in the fourth quarter as the wet weather made lifting difficult and supplies increasingly scarce.

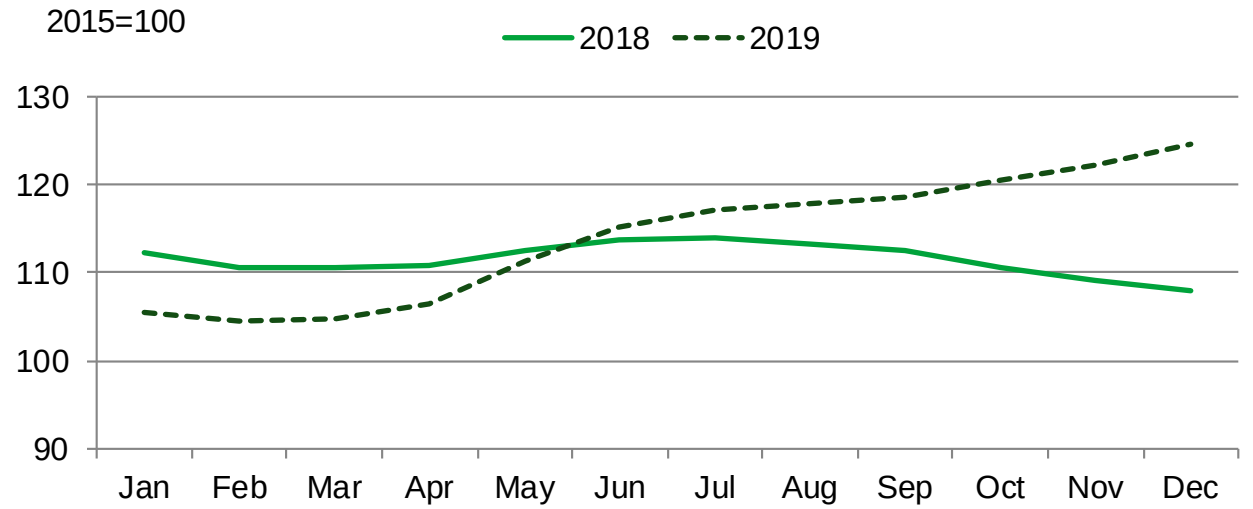
The average price of livestock and animal products decreased 2.5% in comparison to 2018, with declines across all sectors with the exception of pigs. In contrast to the extremes seen in 2018, sheep and lamb prices remained relatively stable in 2019, showing the normal seasonal variations throughout the year.

Figure 6.6 Monthly cattle price index 2018 and 2019



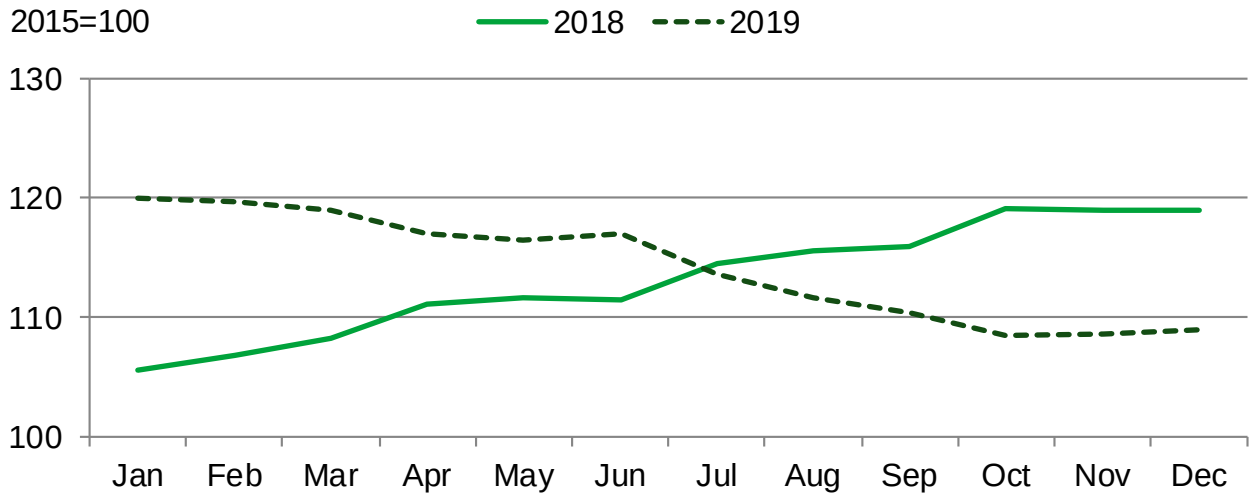
Cattle prices showed a significant decrease, dropping 5.6% in comparison to 2018. Cattle prices throughout the majority of 2019 were lower than the 2018 equivalents, hitting a low in October 2019 before making a recovery in the final quarter. Generally, the low prices can be attributed to reduced prices paid for prime cattle with declining consumer interest in beef and rising production leading to an oversupply in the market.

Figure 6.7 Monthly pig price index 2018 and 2019



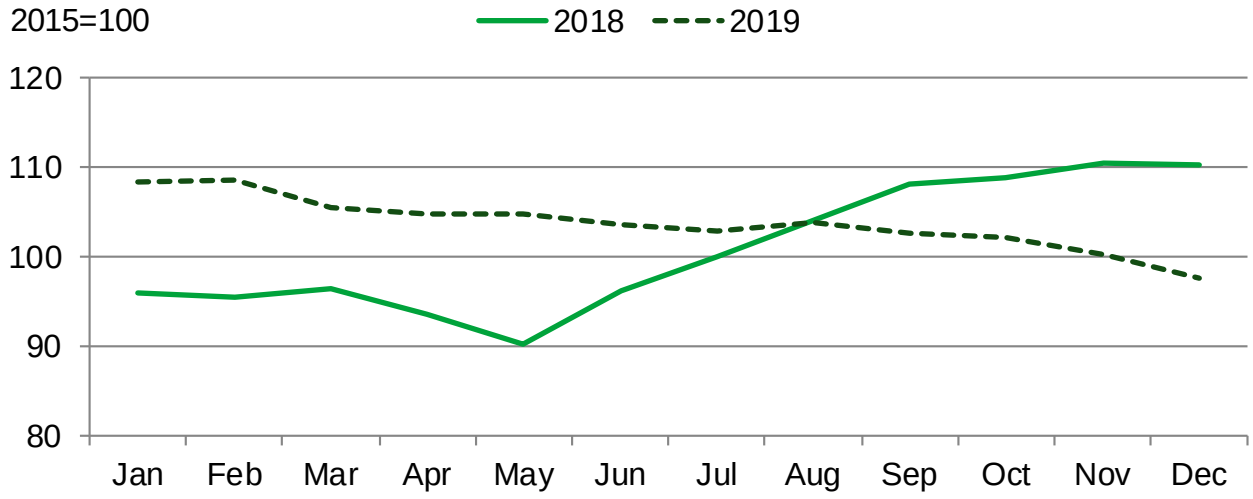
Pig prices showed a significant departure from the generally poor performance in 2018 (see Figure 6.7). Prices showed steady increases from the second quarter of 2019 onwards, eventually reaching highs not seen since 2017. This increase in prices was as a result of the ongoing effects of African Swine Fever, with continuing growth in the export pork market combined with pig culls across Asia driving up prices across Europe.

Figure 6.8 Monthly feedstuff price index 2018 to 2019



In contrast to 2018, animal feedstuff prices (see Figure 6.8) showed a very modest annual increase of just 1.0% on 2018 prices. While initially remaining high in the first quarter of 2019, feedstuff costs mirrored the trend of falling cereal costs, decreasing 9.1% from January to December 2019.

Figure 6.9 Monthly fertiliser price index 2018 to 2019



Fertiliser and soil improver prices (see Figure 6.9) showed an annual increase of 2.9% in 2019. Prices in the first half of the year remained relatively high from the peak seen in 2018, boosted by growing global demand and the impact of the weak pound on the traditionally more affordable imported fertilisers. The significant drop in the fourth quarter of 2019 was caused by the prolonged period of wet weather during autumn and winter, with farmers reluctant to buy and the domestic and import markets sluggish as a result.

Table 6.1 Price indices for outputs and inputs

Enquiries: Si Maxwell on +44 (0)20 8026 4098, email: simon.maxwell2@defra.gov.uk

2015=100

	2017	2018	2019
All Outputs	**110.9**	**115.1**	**113.4**
Crop products	**114.1**	**122.5**	**122.5**
Cereals	118.1	135.6	127.2
Wheat	118.8	132.4	128.1
Barley	116.1	145.0	123.2
Oats	118.1	134.3	137.5
Potatoes	125.1	121.1	130.9
Industrial Crops	115.9	113.6	119.5
Oilseed Rape	127.2	118.6	124.5
Sugar Beet	92.4	101.4	100.4
Forage plants	142.0	206.6	134.3
Fresh Vegetables	106.9	119.7	125.2
Fresh Fruit	115.3	119.5	130.2
Flowers and plants	105.1	105.3	105.3
Other crop products	100.0	100.0	100.0
Animals and animal products	**108.9**	**110.6**	**107.7**
Animals (for slaughter & export)	106.8	108.3	104.7
Cattle and calves	104.1	104.1	98.3
Pigs	119.8	111.5	114.1
Sheep and lambs	108.0	117.5	109.1
All Poultry	102.8	107.2	105.6
Animal products	112.4	114.2	112.7
Milk	117.4	119.7	118.0
Eggs	83.6	82.2	82.3
All Inputs	**102.6**	**109.7**	**111.5**
All goods & services consumed in agriculture	**102.7**	**110.4**	**112.2**
Seeds	100.0	104.8	104.7
Energy and lubricants	106.8	119.2	122.8
Fertilisers and soil improvers	89.6	100.8	103.7
Plant protection products	106.8	117.1	115.6
Veterinary services	101.0	109.2	115.1
Animal feedingstuffs	104.6	113.2	114.3
Straight feedingstuffs	109.3	121.1	121.0
Compound feedingstuffs	102.4	109.6	111.2
Maintenance of Materials	103.2	106.6	108.9
Maintenance of Buildings	104.5	109.6	112.1
Other goods and services	104.0	106.9	109.6
Goods and services contributing to investment	**102.1**	**106.8**	**108.4**
Materials	101.5	106.3	107.5
Buildings	103.4	107.9	110.5

Farmers' share of food items
(Table 6.2)

While farmers are the primary producers of food goods, these are rarely sold directly to the consumer. More usually, goods are processed to a greater or lesser extent before they reach the retail market. As a result, the retail price paid is shared between farmers and various other processors, distributors and retailers (see chapter 14 for more details on the food chain). By comparing the farmgate price and the retail price, it is possible to estimate the farmer's share of the individual items, as well as the overall farmgate share of a weighted basket of common food items.

In 2017, the farmgate share of the retail price of a basket of items covering staples of agricultural production was 41%, increasing slightly from 2016. The absolute level of the farmgate share is sensitive to which retail products are chosen for the basket; some have a greater amount of added value beyond the farmgate and it would therefore be expected that the share accounted for by the farmer would be lower.

Table 6.2 Farmers' share of the value of a basket of food items 2015 - 2017
Enquiries: Si Maxwell on +44 (0)20 8026 4098, email: simon.maxwell2@defra.gov.uk

Farmgate share by year (%)

		Weight in 2017 basket	2015	2016	2017
All items			**36**	**37**	**41**
Farmgate product	**Retail product**				
Apples	Dessert apples per kg	0.8%	32	34	38
Beef	Untrimmed beef(1) per kg	17.7%	49	49	51
Carrots	Carrots per kg	1.1%	48	60	54
Cabbages	Cabbage, hearts, per kg	0.7%	51	47	45
Chicken	Oven ready roasting chicken, fresh or chilled per kg	13.7%	41	44	47
Eggs	Size 2 eggs per dozen	4.5%	30	27	38
Lamb	Untrimmed lamb(1) per kg	7.9%	48	51	51
Onions	Onions per kg	1.0%	39	48	47
Pork	Untrimmed pork(1) per kg	9.3%	35	35	42
Potatoes	Old loose white potatoes per kg	5.6%	18	26	25
Tomatoes	Tomatoes per kg	0.8%	45	50	53
Milk	Whole milk per litre	30.8%	32	30	38
Iceberg lettuce	Iceberg lettuce each	-	59	75	61
Dessert pears	Dessert pears p per kg	0.1%	27	32	33
Cucumber	Cucumber each	0.3%	31	35	31
Cauliflower	Cauliflower each	0.3%	54	70	53
Processed goods					
Farmgate product	**Retail product**				
Wheat	White loaf sliced, 800g	3.8%	8	8	8
Sugar beet	Sugar per kg	1.6%	23	25	23
Milk	Cheddar cheese per kg	0.1%	26	25	32
Pork	Pork sausages	-	21	21	24

1) Farmgate prices from Defra, retail prices from the Office for National Statistics and the Agriculture & Horticulture development board (AHDB).

Table 6.2 shows the items in the basket and how the farmers' share has changed for each. Items are weighted according to their value to farmers in the United Kingdom. Items which do not have a recorded value are not weighted in the final basket. Meat and dairy products are influenced by the underlying feed costs required in production – crops are likewise affected by weather conditions. International trade and changes to currency exchange rates also have an impact and the farmgate share will reflect the relative influences of these factors in any given year.

Revisions

Revisions were made to years 2015 onwards for potatoes, cereals and fertilisers. The entire data series was rescaled to reflect the change to base year 2015 = 100.

Chapter 7 Crops

Summary

In 2019 compared to 2018;

- Harvested production of **wheat** increased by 20% to 16.2 million tonnes. The value of production was 16% higher at just over £2.4 billion.
- Harvested production of **barley** increased by 24% to 8.0 million tonnes. The value of production was 5.8% higher at £1.1 billion.
- **Oilseed rape** production decreased by 13% to just under 1.8 million tonnes, mainly due the lowest planted area since 2002. The value of production was down just over 10% at £586 million.
- **Sugar beet** production decreased by 2.0% to 7.5 million tonnes. The value of production was 2.9% lower at £208 million.
- The value of **vegetable** production increased by 3.9% to just under £1.5 billion.
- The value of **fruit** production increased by 9.7% to £875 million.

Cereals

Table 7.1 Total cereals; production, value, supply and use; United Kingdom
Enquiries: Allan Howsam on +44 (0)20 802 66123, email: allan.howsam@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares)	3,181	3,106	3,211
Volume of harvested production (a)	23,000	21,085	25,517
Value of production (£ million) (b)	**3,090**	**3,252**	**3,667**
Supply and use			
Production	23,000	21,085	25,517
EU Imports	2,487	3,350	1,745
Non-EU imports	1,708	1,908	2,404
EU exports	1,821	1,343	2,793
Non-EU exports	65	82	377
Total new supply	25,309	24,918	26,496
Change in farm and other stocks	629	68	2,445
Total domestic uses	24,680	24,849	24,051
Production as % of total new supply for use in the UK	**91%**	**85%**	**96%**

a) All cereal production estimates have been standardised to 14.5% moisture content
b) Includes arable area payments, but excludes set-aside payments and farm saved seed. Taxes, where applicable, are deducted.

Total cereal production of wheat, barley, oats and minor cereals (rye, triticale and mixed grain) in the UK was 25.5 million tonnes, a 21% increase compared to 2018. This increase was due a combination of increased area and higher yields. The value of production increased by 13% to just under £3.7 billion, primarily due to higher domestic production.

Average yields for wheat, barley and oats were higher than 2018 and above the 5 year average. Crops grown on heavier soils yielded better than those grown on lighter soils as they were able to retain more moisture during the critical grain fill period. Crop quality was generally good, meeting end user requirements. Harvest 2019 was relatively straight forward for the majority of winter wheat and barley except for a bout of heavy rain in mid-August. Spring barley and particularly spring oats were more affected by lodging. Harvest 2019 was effectively complete by 24 September with just small pockets of spring barley and oats to harvest in Scotland.

Wheat and barley prices for 2019 were below 2018 values with prices generally falling as the year progressed. UK supplies of both cereals increased on the back of greater production.

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 here.

Wheat

Table 7.2 Wheat; production, value, supply and use; United Kingdom
Enquiries: Allan Howsam on +44 (0)20 802 66123, email: allan.howsam@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares)	1,792	1,748	1,816
Yield (tonnes per hectare)	8.0	7.8	9.0
Volume of harvested production (a)	14,837	13,555	16,225
Value of production (£ million) (b)	**2,068**	**2,111**	**2,442**
sales	1,850	2,012	1,977
on farm use	170	212	195
change in stocks	48	-113	270
Prices (£ per tonne)			
Milling wheat	146	163	162
Feed wheat	139	157	147
Supply and use			
Production	14,837	13,555	16,225
EU imports	1,283	1,823	668
Non-EU imports	610	668	552
EU exports	635	356	959
Non-EU exports	11	2	152
Total new supply	16,084	15,688	16,334
Change in farm and other stocks	356	209	1,917
Total domestic uses	**15,728**	**15,479**	**14,417**
flour milling	7,138	6,589	5,814
animal feed	7,347	7,667	7,359
seed	278	271	281
other uses and waste	964	952	963
Production as % of total new supply for use in UK	**92%**	**86%**	**99%**
% of home grown wheat in milling grist	87%	81%	87%

a) All cereal production estimates have been standardised to 14.5% moisture content.
b) Excludes farm saved seed.

Harvested production of wheat was 20% higher in 2019 than 2018 at just over 16.2 million tonnes. The value of production of wheat was 16% higher in 2019 at £2.4 billion whilst the area of wheat increased by 3.9%.

Domestic Human and Industrial wheat demand was 12% lower than 2018 for flour milling (including starch and bio-ethanol) at 5.8 million tonnes with imports decreasing by 37% to 771 thousand tonnes. With the flour milling sector using a similar total of wheat as 2018 (and less imports required due to the quality of domestic wheat) it was the biofuels sector that caused the most change in overall usage. The two UK biofuels plants were either closed (Vivergo) or running at reduced capacity (Ensus) in 2019 and used quantities of

imported maize as an alternative to domestic wheat when market conditions were favourable.

Total wheat imports were 51% lower than 2018 at 1.2 million tonnes due to a combination of increased availability and the good quality of domestic supplies together with reduced demand from both the human & industrial and animal feed sectors. Exports in 2019 were 1.1 million tonnes compared to 358 thousand tonnes in 2018, with the biggest monthly exports seen in September and October where Brexit influenced markets. Exports to both EU and non EU countries have shown an increase. Exports were supported by greater available supplies and a weak pound.

Barley

Table 7.3 Barley; production, value, supply and use; United Kingdom

Enquiries: Allan Howsam on +44 (0)20 802 66123, email: allan.howsam@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares)	1,177	1,138	1,162
Yield (tonnes per hectare)	6.0	5.7	7.0
Volume of harvested production (a)	7,169	6,510	8,048
Value of production (£ million) (b)	**909**	**1,015**	**1,073**
sales	664	758	700
on farm use	245	294	292
change in stocks	0	-37	81
Prices (£ per tonne)			
Malting barley	145	179	147
Feed barley	119	148	125
Supply and use			
Production	7,169	6,510	8,048
EU imports	112	102	66
Non-EU imports	4	0	0
EU exports	996	773	1,580
Non-EU exports	53	78	211
Total new supply	6,236	5,761	6,323
Change in farm and other stocks	203	-132	386
Total domestic uses	**6,033**	**5,893**	**5,937**
brewing/distilling	1,880	1,853	1,910
animal feed	3,922	3,807	3,787
seed	183	188	187
other uses and waste	48	45	52
Production as % of total new supply for use in UK	**115%**	**113%**	**127%**

a) All cereal production estimates have been standardised to 14.5% moisture content.
b) Excludes farm saved seed.

With an increase of 2.1% in area, the barley harvest increased by 24% compared to 2018 to a total volume of 8.0 million tonnes. In terms of value, barley increased by 5.8% to £1.1 billion. The area change was driven by an increase for winter barley of 17% to 453

thousand hectares which offset a 5.6% decrease in spring barley area to 710 thousand hectares. This represented a reversal from recent years when there has been decreased winter barley area and an increased spring barley area.
Barley exports more than doubled to just under 1.8 million tonnes in 2018, the UK had a surplus barley to export.

Demand for barley from the brewing, malting and distilling sector was 3.1% higher than 2018 at 1.9 million tonnes. Demand for barley from the animal feed sector decreased by 0.5% to 3.8 million tonnes in 2019, despite barley increasing its share of the cereal feed ration. Demand for animal feed was weak for cattle and sheep compared to 2018 due to increased forage availability reducing the need for supplementary feeding of these livestock.

Oats

Table 7.4 Oats production, value, supply and use; United Kingdom
Enquiries: Allan Howsam on +44 (0)20 802 66123, email: allan.howsam@defra.gov.uk

Thousand tonnes (unless specified otherwise)

	2017	2018	2019 (prov.)
Production			
Area (thousand hectares)	161	171	182
Yield (tonnes per hectare)	5.4	5.0	5.8
Volume of harvested production (a)	875	850	1076
Value of production (£ million) (b)	**109**	**120**	**145**
sales	75	100	90
on farm use	26	27	36
change in stocks	7	-7	19
Prices (£ per tonne)			
Milling oats	130	150	148
Feed oats	113	128	112
Supply and use			
Production	875	850	1076
EU imports	52	36	23
Non-EU imports	0	0	0
EU exports	25	31	93
Non-EU exports	1	1	2
Total new supply	901	854	1004
Change in farm and other stocks	70	-9	142
Total domestic uses	**831**	**863**	**862**
milling	539	544	522
animal feed	265	290	310
seed	23	24	25
other uses and waste	4	4	5
Production as % of total new supply for use in UK	**97%**	**100%**	**107%**

a) All cereal production estimates have been standardised to 14.5% moisture content.
b) Excludes farm saved seed.

The harvested production of oats increased by 27% driven by increases in both the planted area (up 6.4%) and yield (up 19%). Similarly, the value of production increased to £145 million (up 21%).

UK oats usage is dominated by the oat milling sector and despite a 4.2% reduction to 522 thousand tonnes in 2019, it still represented the fifth successive year when milling production exceeded 500 thousand tonnes. Oat exports almost tripled to 95 thousand tonnes - the majority of UK exports is to EU countries.

Straw

Cereal straw production in 2019 was estimated at 9.9 million tonnes; an increase of 11% on 2018 (8.9 million tonnes). The value of production was around £81 million, a 5.1% decrease on the 2018 value of £85.5 million.

Around 75% of the cereal area was baled, which is below the 2018 figure (88%). This is a rebalancing back to slightly more 'normal' levels of baling following the high levels seen in 2018, although this is still slightly higher than the previous four years. Wheat straw yields were on average 4.6 tonnes per hectare, winter barley 4.2 tonnes per hectare, spring barley 3.5 tonnes per hectare and oats yielding 3.5 tonnes per hectare. Winter oilseed rape yields (1.9 tonnes per hectare) were lower as a result of pest damage.

Oilseed rape and linseed

Table 7.5 Oilseed rape production; value, supply and use; United Kingdom
Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares)	562	583	530
Yield (tonnes per hectare)	3.9	3.4	3.3
Volume of harvested production	2,167	2,012	1,752
Value of production (£ million)	**761**	**654**	**586**
sales	706	674	620
change in stocks	55	-20	-35
Prices (£ per tonne)	**351**	**325**	**334**
Supply and use			
Production	2,167	2,012	1,752
EU imports	223	206	258
Non-EU imports	122	0	96
EU exports	143	135	74
Non-EU exports	0	0.2	0
Total new supply	2,368	2,083	2,032
Production as % of total new supply for use in UK	**91%**	**97%**	**86%**

Farmers have been discouraged from growing oilseed rape (OSR) in favour of wheat and oats due to the continued damaging effects of the cabbage stem flea beetle. Poor establishment in the dry autumn, followed by the pest damage, saw a reduction in planted area of OSR of 9.2% to 530 thousand hectares, the lowest planted area since 2002.

Where the crop could establish and less pest damage occurred, for example Northern England and Scotland, good yields were achieved. However with the generally poor growing conditions average yields fell slightly to 3.3 tonnes per hectare.

The total harvested production fell by 13% to 1.75 million tonnes. The value of production was down just over 10% at £586 million. The average price was £334 per tonne, up 2.9% on the 2018 price of £325.

Table 7.6 Linseed production; value, supply and use; United Kingdom

Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares)	26	25	15
Yield (tonnes per hectare)	1.8	1.8	1.8
Volume of harvested production	46	43	27
Value of production (£ million)	**15**	**16**	**10**
sales	15	16	11
change in stocks	0	0	- 1
Supply and use			
Production	46	43	27
EU imports	15	13	19
Non-EU imports	1.1	0.9	1.0
EU exports	22	22	10
non-EU exports	0	0	0
Total new supply	40	35	37
Production as % of total new supply for use in UK	**116%**	**121%**	**73%**

Sugar beet

Table 7.7 Sugar Beet production and value; Refined Sugar production and supply
Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Sugar Beet			
Area (thousand hectares)	107	110	100
Yield (tonnes per hectare)	83	69	75
Volume of harvested production	8,919	7,600	7,450
Value of production (£ million)	**229**	**214**	**208**
Sugar content (%)	18	18	18
Price (average market price (£ per adjusted tonne)) (a)	**26**	**28**	**28**
All Sugar (refined basis)			
Production (b)	1,364	1,080	1,081
EU imports	530	526	511
Non-EU imports	458	422	430
EU exports	157	236	197
Non-EU exports	46	125	68
Total new supply	2,147	1,666	1,758
Production as % of total new supply for UK use	**64%**	**65%**	**61%**

a) Average price for all sugar, including transport allowance and bonus
b) 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.

The farm gate value of sugar beet was £208 million in 2019, down from £214 million in 2018. This was the first beet crop grown for many decades without the use of neonicotinoid seed treatment to control aphids and the spread of virus yellow diseases in the crop. After a mild 2018 winter and concerns about high aphid infestation, an emergency authorisation was given for the use of two sprays of Biscaya. This combined with good spring weather allowed the crop to establish well. Summer growth was fairly average followed by a wet 2019/20 winter which made harvesting very difficult and protracted. The overall yield was in line with the 5 year average and the price of beet was similar to the previous year, but due to a 9.1% reduction in planted area to match market requirements the total income was down. Prices which showed a decrease of 1.0% were at £27.90 tonnes per hectare. Planted area showed a decrease of 9.1% at 100 thousand hectares, harvested production fell by 2.0% to 7.5 million tonnes. Yields were 74.5 tonnes per hectare, up 7.9% from 69 tonnes per hectare the previous year.

Protein crops (Field Peas and Field Beans)

Table 7.8 Protein crops (Field Peas and Field Beans); United Kingdom
Enquiries: Allan Howsam on +44 (0)20 802 66123, email: allan.howsam@defra.gov.uk

Thousand tonnes (unless specified otherwise) — Calendar year

	2017	2018	2019 (prov.)
Peas for harvesting dry			
Area (thousand hectares)	40	38	41
Yield (tonnes per hectare) (a)	4.0	2.8	3.9
For animal feed (b)			
Volume of harvested production	85	90	147
Value of production (£ million)	**12**	**17**	**26**
For human consumption			
Volume of harvested production	75	17	13
Value of production (£ million)	**11**	**2**	**2**
Field beans			
Area (thousand hectares)	193	155	137
Yield (tonnes per hectare) (a)	4.0	2.6	4.0
Volume of harvested production	771	402	548
Value of production (£ million)	**117**	**80**	**104**

a) 2017 yields based on 5 year average for both peas and beans
b) The figures presented here cover only that part of the crop which is assumed to be used for stockfeed including for pets and specialist bird food. It also includes an 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%

The overall area of pulses in 2019 showed a decrease from those seen in 2018 with a decrease in the bean area offsetting an increase in the pea area. Pulses remain a popular crop option to meet on-going greening requirements of the Common Agricultural Policy, although restrictions on the use of plant protection products on crops grown on Ecological Focus Areas (EFA) may reduce the area planted. Pulses are a good source of energy and protein in the diets of poultry, cattle and pigs as well as aquaculture and pet food. This table excludes vining peas.

The total area of field peas increased by 7.6% in 2019 to 41 thousand hectares. The proportion of this area utilised for animal feed increased to 92% from 84% in 2018. Total production for animal feed increased by 64% to an estimated 147 thousand tonnes. Subsequently, the area used for human consumption decreased to around 8% with production decreasing by 25% to an estimated 13 thousand tonnes. Field peas yields averaged at 3.9 tonnes per hectare compared to 2.8 tonnes per hectare in 2018 due to favourable growing conditions and quality was generally good with the exception of some staining where harvest was delayed by heavy rain in August.

The area of field beans was 11% lower than last year at 137 thousand hectares, but production increased by 36% to an estimated 548 thousand tonnes due to a higher estimated yield of 4.0 tonnes per hectare compared to 2.6 tonnes per hectare in 2018.

Winter beans benefited from good sowing conditions and a dry spring. Spring beans were also sown in good dry conditions and established well, but some areas were affected by Bruchid beetle activity which reduced yields and quality.

Fresh vegetables

Table 7.9 Fresh vegetables production, value, supply and use; United Kingdom
Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares):	118	117	115
grown in the open (a)	117	116	115
protected (b)	0.8	0.8	0.8
Value of production (£ million):	**1,413**	**1,426**	**1,481**
grown in the open	1,094	1,107	1,146
protected	318	319	335
Selected crops:			
cabbages	86	73	75
carrots	155	178	163
cauliflowers	41	50	57
calabrese	62	53	69
lettuces	201	190	196
mushrooms	134	134	140
onions	134	138	142
tomatoes	83	73	84
Prices (farm gate price (£ per tonne))			
Selected crops: cauliflowers	478	561	634
tomatoes	967	1,089	1,378
Supply and use			
Total production	**2,699**	**2,468**	**2,423**
EU imports	1,923	1,985	1,960
Non-EU imports	260	283	349
EU exports	89	111	120
Non-EU exports	41	35	21
Total new supply	4,753	4,591	4,590
Production as % of total new supply for use in UK	57%	54%	53%

a) June survey area for vegetables and salad crops
b) Excludes area of mushrooms

The value of vegetable production increased by 3.9% to almost £1.5 billion in 2019, with total production falling by 1.8% at 2.4 million tonnes.

There was an early start to the year following a mild winter. Good soil conditions on light land meant that drilling and planting of seed-grown vegetable crops (onions, salad onions, carrots, parsnips, spinach and baby leaf salad) started early in January and February. Soil temperatures were sufficient to support germination and early growth of drilled crops, with record temperatures for the time of year in the last week of February. Because of

favourable soil temperatures, sweetcorn drilling was underway by the end of March for early crops grown under plastic. By May and early June, growers were fearing another drought but from June onwards the weather became wetter, especially in the eastern counties, making planting and machine harvesting difficult and crops were left unharvested and proved difficult to return to. There was a warmer, dry spell in July which allowed crops to recover and good early onion harvesting conditions, but the wet weather returned in September and continued into autumn and through winter.

Domestic production as a percentage of total new supply to the UK for all fresh vegetables was 53% compared to 54% in 2018.

Further detailed information on vegetable statistics can be found in the annual publication Horticultural Statistics

Plants and flowers
(Table 7.10)

Table 7.10 Plants and flowers area, value of production and trade; United Kingdom
Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares) (a):	13	12	12
Value of production (£ million)	**1,368**	**1,382**	**1,419**
flowers and bloom	130	122	119
pot plants	299	307	317
hardy ornamental nursery stock	939	954	982
Trade (£ million)			
Imports			
Bulbs	77	71	72
Cut flowers	745	696	660
Foliage	39	54	49
Indoor plants	127	130	132
Outdoor plants	80	85	86
Trees	67	82	93
Other	62	76	78
Total Imports (exc. Channel Islands)	**1,199**	**1,194**	**1,171**
Exports			
Bulbs	6	7	8
Cut flowers	40	39	33
Foliage	1	2	1
Indoor plants	5	8	10
Outdoor plants	4	3	4
Trees	3	4	4
Other	24	18	17
Total Exports (b)	**83**	**80**	**76**

a) Areas relate to field areas multiplied by the number of crops in the year and hence differ from those shown in table 2.2.
b) Total may differ to components due to rounding.

The value of production in the ornamental sector increased by 2.7% to £1.4 billion in 2019. 2019 was a strong year for the hardy nursery stock sector, with less winter cold and summer heat than 2018, although the extreme wet weather of the autumn (2019) delayed both lifting, planting and marketing of field grown stock. However, the immediate impact of the wet conditions has been offset by increased demand for home grown product, which resulted in overall increased production and unit value.

Hardy nursery stock showed a 3.0% increase in value at an estimated £982 million (£954 million in 2018). Flowers in bloom showed a 1.7% decrease in value at an estimated £119 million (£122 million in 2018). The pot plant sector saw a 3.2% increase in value at £317 million (£307 million in 2018).

Further detailed information on plants and flower statistics can be found in the annual publication Horticultural Statistics

Potatoes

Table 7.11 Potatoes production, value, supply and use; United Kingdom (a)
Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area sown (thousand hectares)	145	140	144
Area harvested (thousand hectares)	127	122	116
Yield (tonnes per hectare harvested)	49	42	45
Volume of harvested production	6,218	5,060	5,252
for human consumption	4,305	3,182	3,440
seed	374	357	366
stockfeed and waste	1,539	1,520	1,445
Sales	5,549	5,482	5,261
for human consumption	3,721	3,689	3,527
seed	374	357	366
sold for stockfeed	1,454	1,435	1,368
End year stocks	2,936	2,429	2,342
Change in stocks	584	-507	-86
Value of production (£ million)	863	652	771
sold for human consumption	658	635	658
sold for seed (including farm saved seed)	86	89	116
sold for stockfeed	15	14	14
change in stocks	104	-87	-16
Prices (paid to registered producers (£ per tonne))			
early/maincrop (for HC)	177	172	186
seed	230	250	316
stockfeed	10	10	10
Supply and use			
Total production	4,679	3,540	3,807
Imports	2,327	2,361	2,510
Exports	588	641	685
Net trade (negative means net export)	1,739	1,720	1,825
early/maincrop	23	-8	-49
seed	-90	-91	-100
processed (raw equivalent)	1,806	1,819	1,974
Total new supply (raw equivalent)	6,418	5,260	5,632
Production as % of total new supply for use in UK	**73%**	**67%**	**68%**

a) Following a review of methodology in 2017, all figures shown here have been revised
b) Average price paid to registered producers
c) Negative means net export

The season started well and planting conditions were largely good with growers finishing ahead of schedule. With a mild winter and cool spring some crops developed slowly. Little rainfall led to the need for irrigation to help development but yields proved to be good in early crop lifting. Warm summer weather brought increased disease issues, particularly blight and some reports of quality issues arose. Heavy rain in September/October at the time when growers were preparing to lift the crop into store made harvesting difficult.

The value of potatoes was £771 million, an increase of 18% (£652 million) from 2018. The annual average price for potatoes for human consumption was 8.3% higher at £186 per tonne, compared to £172 per tonne in 2018. The value of sales for human consumption in 2019 was £658 million, 3.5% higher than the £635 million sold in 2018. Harvested production increased by 3.8% to 5.3 million tonnes with the production used for human consumption rising by 8.1% to 3.4 million tonnes.

Fresh Fruit

Table 7.12 Fresh fruit production, value, supply and use; United Kingdom

Enquiries: Lisa Brown on +44 (0)20 802 66340, email: lisa.brown@defra.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year		
	2017	**2018**	**2019 (prov.)**
Production			
Area (thousand hectares):	35	34	35
orchard fruit (a)	24	24	24
soft fruit	11	11	11
End year stocks (b)	57	84	65
Value of production (£ million) (c) (e):	**746**	**798**	**875**
Selected crops:			
orchard fruit	211	232	251
soft fruit	535	566	624
sales	752	781	889
change in stocks (b)	-6	17	-14
dessert apples	89	126	141
culinary apples	39	49	42
pears	15	16	23
raspberries (c)	136	137	153
strawberries (c)	328	348	394
Prices for selected crops (farm gate price (£/tonne))			
dessert apples	543	607	682
culinary apples	455	517	526
pears	548	590	833
raspberries	8,217	8,686	9,166
strawberries	2,573	2,471	2,785
Supply and use			
Total production	750	731	683
EU imports (d)	1,628	1,300	1,357
Non-EU imports	2,355	2,361	2,279
EU exports (d)	171	154	158
Non-EU exports	3	2	3
Total new supply	4,559	4,235	4,158
Change in stocks	-6	17	-14
Total domestic uses	4,565	4,218	4,172
Production as % of total new supply for use in UK	**16%**	**17%**	**16%**

a) Includes field area of commercial and non-commercial orchards only.
b) Stocks relate to apples and pears.
c) Includes glasshouse fruit.
d) From 2010 data no longer includes dried fruit.
e) Excludes change in stocks for apples and pears

After another relatively mild winter the weather, the end of February was unusually hot which encouraged rapid early bud development. The summer weather was very changeable but did not seriously affect fruit crops.

The value of fruit production rose by 9.7% to £875 million, with orchard fruit increasing by 8.5% to £251 million and soft fruit increased by 10% to £624 million. The value of dessert apples increased by £15 million to £141 million, a 12% increase on 2018. Meanwhile, the value of culinary apples decreased by 13% to £42 million. The value of pears showed a 46% increase to £23 million.

Domestic production of fresh fruit as a percentage of total new supply for use in the UK fell to 16% in 2019 from 17% in 2018.

Further detailed information on fruit statistics can be found in the annual publication Horticultural Statistics

Revisions

There have been revisions to the data for wheat back to 2013, and for barley, oats and fruit, vegetable, potato and ornamental data back to 2016 due to revised data.

Chapter 8 Livestock

Summary

In 2019, compared with 2018:

- The value of **beef and veal** decreased by 6.5% to £2.80 billion
- The value of **pig meat** increased by 5.2% to £1.32 billion
- The value of **mutton and lamb** production decreased by 0.3% to £1.26 billion
- **Poultry meat** value increased by 1.0% to £2.65 billion
- The value of **milk and milk products** decreased by 1.2% to £4.43 billion
- The value of **eggs** increased by 2.9% to £660 million

Meat production
(Table 8.1)

Total meat production increased by 0.7% to 4.06 million tonnes. There were increases in cattle, sheep and pigs production. There was a decrease in poultry production.

Total value of meat decreased by 1.3% to £7.99 billion. Most notable are cattle whose value decreased by 6.6% due to a fall in prices despite a 1.8% increase in production; and pigs whose value increased by 5.2%, due to a rise in prices and production.

Table 8.1 Meat production

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk

	2017	2018	2019 (prov.)
Home-fed production ('000 tonnes)			
Cattle	904	901	917
Pigs	867	891	922
Sheep	309	299	318
Poultry	1,840	1,939	1,901
Total production	**3,920**	**4,029**	**4,058**
Value of production (£ million)			
Cattle	2,988	2,952	2,758
Pigs	1,326	1,253	1,318
Sheep	1,202	1,261	1,258
Poultry	2,418	2,626	2,653
Total value	**7,934**	**8,093**	**7,987**

Cattle and calves: beef and veal
(Table 8.2)

The value of production of beef and veal decreased by 6.5% to £2.80 billion. The decrease in value was price led with the finished cattle price decreasing by 7.5% to 334.2 pence per kilo. This reversed the price increase seen in 2017 and returned it to pre-2017 levels. The home-fed production increased by 1.8%.

In January 2019, Japan opened its market to British Beef and Lamb in a deal believed to be worth £75m in the first 5 years. In October, details finalised and the Chinese market was to become open to British beef for the first time in 20 years (since the outbreak of BSE in 1996).

Table 8.2 Cattle and calves; beef and veal

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk

Thousand tonnes (unless otherwise stated)

	2017	2018	2019 (prov.)
Population			
Total cattle and calves (thousand head at June)	10,004	9,891	9,739
dairy cows	1,891	1,883	1,871
beef cows	1,589	1,558	1,527
Production (a)			
Total home-fed marketings (thousand head)	2,772	2,835	2,855
steers, heifers and young bulls	1,970	1,991	2,008
calves	136	143	156
cows and adult bulls	666	701	691
Average dressed carcase weight (kg):			
steers, heifers and young bulls	349	341	346
calves	63	68	61
cows and adult bulls	312	301	309
Production (dressed carcase weight):			
home-fed production	904	901	917
Value of production (£ million)	2,988	2,952	2,758
value of home-fed production (a)	2,985	2,974	2,828
change in work-in-progress (b)	11	-12	-64
less imported livestock	7	9	6
plus breeding animals exported	1	-	-
Subsidies (c)	39	40	40
Value of production at basic price (£ million) (d)	3,027	2,993	2,798
Prices			
Finished cattle (pence per kg deadweight): All prime cattle	359.2	361.4	334.2
Supply & use (dressed carcase weight equivalent) (e)			
Home-fed production (a)	904	901	917
Imports from EU (f)	325	343	303
Imports from the rest of the world	20	22	14
Exports to EU	117	125	140
Exports to the rest of the world	16	15	27
Total new supply	1,116	1,125	1,067
Home-fed production as % of total new supply for use in UK	83%	80%	86%

Footnotes for Table 8.2

a) 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.
b) A valuation of the change in work-in-progress of animals to be slaughtered.
c) Comprising Scottish Beef Calf Scheme until 2014. From 2015 Scottish Sucker Beef Support Scheme.
d) Including subsidies and taxes.
e) 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.
f) Includes meat from imports of live finished animals.

Pigs and pig meat

(Table 8.3)

Pig meat production rose by 3.5% (31 thousand tonnes) to 922 thousand tonnes in 2019; a 5 year high. The increase was driven by a 2.1% rise in slaughter throughput of clean pigs, despite a 5.5% decrease in slaughter of sows and boars. The increased slaughter throughput was backed-up by an increase in carcase weight of 1.7% for clean pigs (2 kg) and an increase of 1.7% for sows and boars (2 kg). After a decrease in 2018, clean pig prices have slightly increased by 1.1% (1.7 pence per kg) to 148 pence per kg. This slight increase in price and increase in production has led to an increase in the value of production by 5.2% (£65 million) to £1.32 billion.

Outbreak of African Swine Fever (ASF) in China has had a negative impact on the country's pig meat production and led to export opportunities for the UK and EU. There was a price uplift in the EU but this has just brought their price up to the UK price which is perhaps why the increase was not seen in the UK.

Table 8.3 Pigs and pig meat

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk

Thousand tonnes (unless otherwise stated)

	2017	2018	2019 (prov.)
Population			
Total pigs (thousand head at June)	4,969	5,012	5,078
sows in pig and other sows for breeding	361	352	356
gilts in pig	55	58	57
Production (a)			
Total home-fed marketings (thousand head)	10,222	10,476	10,674
clean pigs	9,970	10,202	10,414
sows and boars	252	274	260
Average dressed carcase weight (kg):			
clean pigs	83	83	85
sows and boars	146	144	146
Production (dressed carcase weight):			
home-fed production (a)	867	891	922
Value of production (£ million)	1,326	1,253	1,318
value of home-fed production	1,317	1,256	1,314
change in work in progress (b)	9	-3	4
less imported livestock	. .	. .	. .
plus breeding animals exported	-	-	1
Prices (pence per kg deadweight)			
Clean pigs	157	147	148
Supply and use of pigmeat (dressed carcase weight equivalent) (c)			
Home-fed production (a)	867	891	922
Imports from EU (d)	803	792	756
Imports from rest of the world	1	1	1
Exports to EU	171	173	158
Exports to rest of the world	78	81	118
Total new supply	1,422	1,430	1,404
Home-fed production as % of total new supply for use in the UK	61%	62%	66%

a) 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.
b) A valuation of the change in work in progress of animals to be slaughtered.
c) 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.
d) Includes meat from imports of live finished animals.

Sheep and lambs: mutton and lamb
(Table 8.4)

The value of production decreased by 0.3% (£3.7 million) to £1.26 billion. A decrease in price of 6.4% (28 pence per kg) for clean sheep offset a 6.3% increase in home fed production. Continued uncertainty regarding the potential effects of Brexit have impacted on this sector more heavily than cattle or pigs. There was an overall increase in slaughter throughput of 2.9% to 15.3 million head; an increase of 2.6% (338 thousand head) of clean sheep and a 5.8% (97 thousand head) increase of rams and ewes. Carcase weights for rams and ewes rose by 1.3 kg to 26.8 kg, and for clean pigs rose by 0.6kg to 19.9 kg.

Table 8.4 Sheep and lambs; mutton and lamb

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk
Thousand tonnes (unless otherwise stated)

	2017	2018	2019 (prov.)
Population			
Total sheep and lambs (thousand head at June)	34,832	33,781	33,580
breeding flock 1 year and over	16,669	16,286	16,035
lambs under one year old	17,340	16,621	16,672
Production (a)			
Total home-fed marketings (thousand head)	15,338	14,908	15,343
clean sheep and lambs	13,704	13,240	13,578
ewes and rams	1,634	1,668	1,765
Average dressed carcase weight (kg):			
clean sheep and lambs	19	19	20
ewes and rams	26	25	27
Production (dressed carcase weight):			
home-fed production (a)	309	299	318
Value of production (£ million)	1,202	1,261	1,258
value of home-fed production	1,207	1,271	1,255
change in work in progress (b)	-5	-9	3
less imported livestock	-	-	0
plus breeding animals exported	-	-	-
Subsidies(c)	7	7	7
Value of production at basic prices (£ million) (d)	1,209	1,266	1,265
Prices			
Finished sheep (pence per kg dressed carcase weight) (e):			
Great Britain	416	444	416
Supply and use (dressed carcase weight equivalent) (f)			
Home-fed production (a)	309	299	318
Imports from the EU (g)	21	21	21
Imports from the rest of the world	80	76	59
Exports to the EU	97	92	101
Exports to the rest of the world	6	4	6
Total new supply	306	299	290
Home-fed production as % of total new supply for use in the UK	101%	100%	109%

a) 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.
b) A valuation of the change in work in progress of animals to be slaughtered.
c) Scottish Upland Sheep Support Scheme
d) Including subsidies and taxes.
e) Unweighted average of weekly prices at representative markets.
f) 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.
g) Includes meat from imports of live finished animals.

Poultry and poultry meat
(Table 8.5)

Increased prices of table chickens drove an overall increase of 1.0% (£27 million) in the value of the poultry meat sector to £2.65 billion. This was despite a fall in the production of table chickens by 2.6%. Overall production of poultry decreased by 2.0% to 1.90 million tonnes, with table chickens accounting for 86% of the total.

Turkey meat production increased by 3.9% in 2018. This trend was not followed in 2019 where there was a decrease of 2.7%, almost falling to the lowest ever production level as seen in 2017.

As well as an increase in table chickens, up by 3.1% (3 pence per kg), and turkey prices up by 10% (18 pence per kg), geese price also increased by 17% to 646 pence per kg. The price of duck decreased by 2.8% to 280 pence per kg.

Table 8.5 Poultry and poultry meat

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk

Thousand tonnes (unless otherwise specified)

	2017	2018	2019 (prov.)
Population			
Number (thousand head at June):	181,818	188,442	186,982
table chickens	117,619	123,946	121,500
laying and breeding fowl (a)	52,939	53,623	54,732
turkeys, ducks, geese and all other poultry	11,260	10,872	10,750
Production			
Slaughterings (millions):	1,119	1,166	1,136
table chickens	1,090	1,137	1,108
turkeys	14	15	14
ducks & geese	15	15	14
Production (carcase weight) (b):	1,840	1,939	1,901
chickens and other table fowls	1,584	1,674	1,638
boiling fowls (culled hens)	77	76	84
turkeys	147	157	148
ducks & geese	33	32	30
Value of production (£ million):	2,418	2,626	2,653
table chickens	1,905	2,076	2,094
change in work in progress in fowls (c)	14	10	0
turkeys, ducks, geese	348	369	373
exports of live poultry	129	141	147
hatching eggs for export	68	78	81
less live poultry imported	34	39	25
less hatching eggs imported	12	10	16
Prices (average producer prices (pence per kg carcase weight)):			
Chickens and other table fowls	120	124	127
Boiling fowls (culled hens)	9	9	9
Turkeys	165	172	190
Ducks	302	288	280
Geese	685	550	646
Supply and use (dressed carcase weight equivalent) (b)			
Production (a)	1,840	1,939	1,901
Imports from the EU	537	549	538
Imports to the rest of the world	25	36	25
Exports to the EU	273	271	254
Exports to the rest of the world	79	82	109
Total new supply	2 051	2 170	2 100
Production as % of total new supply for use in the UK	90%	89%	91%

(a) Hens and pullets kept mainly for producing eggs for eating.

(b) 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.

(c) A valuation of the change in work-in-progress of fowls to be slaughtered.

Milk
(Table 8.6)

Milk production increased by 1.6% to 15.2 billion litres, surpassing the peak seen in 2015. A fall of around 0.5% in the dairy herd to 1,877 (thousand head), alongside the increased production, indicates a rise in the average yield per cow of 162 litres to 8122 per annum. The average milk price across the 2019 calendar year (excluding bonus payments) was 28.9 pence per litre (ppl), a 1.4% (0.4ppl) decrease on 2018. The total value of production decreased by 1.2% to £4.43 billion.

Table 8.6 Milk

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk

Million litres (unless otherwise specified)

	2017	2018	2019 (prov.)
Population and yield			
Dairy herd (annual average, thousand head) (a)	1,896	1,885	1,877
Average yield per dairy cow (litres per annum)	7,893	7,960	8,122
Production			
Milk from the dairy herd (b)	14,964	15,009	15,244
raw milk leaving farm	14,708	14,751	14,984
milk processed on farm	118	120	120
on farm use (c)	138	138	141
Volume for human consumption	14,826	14,870	15,103
Value of production (£ million)	4,351	4,489	4,433
raw milk leaving farm (d)	4,247	4,381	4,326
processed milk products from farm (e)	64	67	67
on farm use (c)	40	41	41
Prices (average price received by milk producers, net of delivery charges (pence per litre))			
Farmgate price of milk excluding bonus payments	29	29	29
Farmgate price of milk including bonus payments	29	30	29
Supply and use			
Production (excludes on farm use 2015 onwards)	14,826	14,870	15,103
Imports	129	151	151
Exports	912	1,005	1,005
Total new supply	14,043	14,016	14,249
for liquid consumption	6,786	6,663	6,326
for manufacture	7,279	7,082	7,674
butter	330	317	385
cheese	4,325	4,408	4,373
cream	300	279	307
yoghurt	374	385	470
condensed milk (f)	269	323	354
milk powders	1,144	882	1,036
other products	537	488	748
dairy wastage and stock change	-22	271	249
other uses (g)	127	128	130
Production as a % of new supply	106%	106%	106%

a) Average size of the dairy herd across the whole year, rather than the size at a particular time of year. Dairy herd is defined as dairy cows over two years of age with offspring.
b) 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.
c) Farmhouse consumption and milk fed to livestock.
d) Value of raw milk sold to other businesses (dairies) for processing.
e) Value of milk and milk products processed on farm and sold direct to the consumer.
f) Includes condensed milk used in the production of chocolate crumb and in the production of machine skimmed milk.

g) Includes farmhouse consumption, milk fed to stock and on farm waste. Excludes suckled milk.

Hen eggs
(Table 8.7)

The number of laying fowl increased by 4.2% (1,683 thousand birds) to 41.54 million; this is the largest increase compared to the previous three years and results in the highest numbers since 2005. The value of egg production for human consumption increased 2.9% to £660 million, £18 million higher than in 2018. Overall production of eggs increased by 2.6% on 2018, with the production of eggs for human consumption (as opposed to hatching) being up by 2.4% on 2018. Production of eggs for hatching fell by 5.3% on 2018. The average price of eggs increased by 0.4% (0.3 pence per dozen) to 67.2 pence per dozen.

Exports of eggs/egg product to the EU show an increase of 126% based on HMRC data and exports of eggs/egg product to the rest of the world show an increase of 245% based on HMRC data. Imports of egg/egg products to the EU fell by 6.7%, whereas imports of egg/egg products to the rest of the world increased by 24.3%.

Table 8.7 Hen eggs

Enquiries: Julie Rumsey on +44 (0)20 802 66306, email: julie.rumsey@defra.gov.uk

Million dozen (unless otherwise specified)

	2017	2018	2019 (prov.)
Population			
Number of laying fowl (thousands)	39,510	39,852	41,535
Production			
Volume of production of eggs	1,074	1,109	1,137
eggs for human consumption	931	959	982
eggs for hatching	119	124	117
other (a)	24	25	37
Value of production of eggs for human consumption (£ million) (b)	624	641	660
Prices (pence per dozen)			
Weighted average of eggs graded in the UK (c)	67.1	66.9	67.2
Supply and use			
UK production of eggs for human consumption	931	959	982
eggs sold in shell	800	820	856
eggs processed	131	139	127
Imports from the EU	165	157	147
Imports to the rest of the world	1	1	1
Exports to the EU (d)	12	35	79
Exports to the rest of the world	0.3	0.1	0.5
Total new supply	1,084	1,082	1,051
Production as % of total new supply for use in the UK	86%	89%	93%

a) Includes hatching eggs for export and waste
b) Eggs for hatching and hatching egg exports are not valued as they are included in the final value for poultry in table 8.5
c) Represents the price paid by packers to producers in the United Kingdom and takes accounts of all egg systems - intensive, free range, barn and organic. Bonus payments are included
d) Includes shell egg equivalent of whole (dried, frozen and liquid) egg, egg yolk and albumen.

Revisions

Figures in these tables for 2019 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 2019:

- **Total cost of intermediate consumption** (inputs) fell by £62 million to £16.9 billion, in current price terms, compared with 2018. In general, prices were higher and usage lower, with falls in costs of plant protection products, animal feed and seeds more than offsetting any increases seen in the other input costs.
- The total cost of all **animal feed** decreased by £80 million (-1.4%) to £5.5 billion.
- **Energy** costs rose by £20 million (1.5%) to £1.4 billion.
- **Fertiliser** costs rose by £15 million (1.2%) to £1.3 billion.

Introduction

Chapter 4 provides more detailed information on input costs and gives a full breakdown of the value, volume and prices referred to in this chapter.

Inputs

The cost of intermediate consumption fell by 0.4% or £62 million to £16.9 billion in 2019. In general, prices were higher and usage lower, with falls in costs of plant protection products, animal feed and seeds more than offsetting any increases seen in the other input costs.

Animal Feed
(Table 9.1)

The cost of animal feed is the largest item of expenditure recorded in the production and income account (see chapter 4). Usage remained broadly level from 1993 to 2008 (around 25 million tonnes) before rising steadily to reach nearly 30.8 million tonnes in 2018. Usage then fell to 30.6 million tonnes in 2019. Despite this increase in 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.

Table 9.1 Animal Feed (a)

Enquiries: Allan Howsam on +44 (0)020 802 66123, email: allan.howsam@defra.gov.uk

Thousand tonnes (unless specified otherwise)

	2017	2018	2019 (prov.)
Compounds			
cattle	5,069	5,319	4,983
calves	283	284	249
pigs	2,014	2,055	2,118
poultry (c)	4,892	5,101	5,106
sheep	861	986	783
Total compounds plus imports less exports	**13,095**	**13,643**	**13,179**
Straight concentrates (d)	6,779	6,830	6,946
Non-concentrates (e)	525	525	525
Inter/intra farm transfer (f)	8,776	9,785	9,922
Total all purchased animal feed	**29,175**	**30,782**	**30,571**
Value of purchased animal feed (£ million) (g)	**5,011**	**5,585**	**5,505**

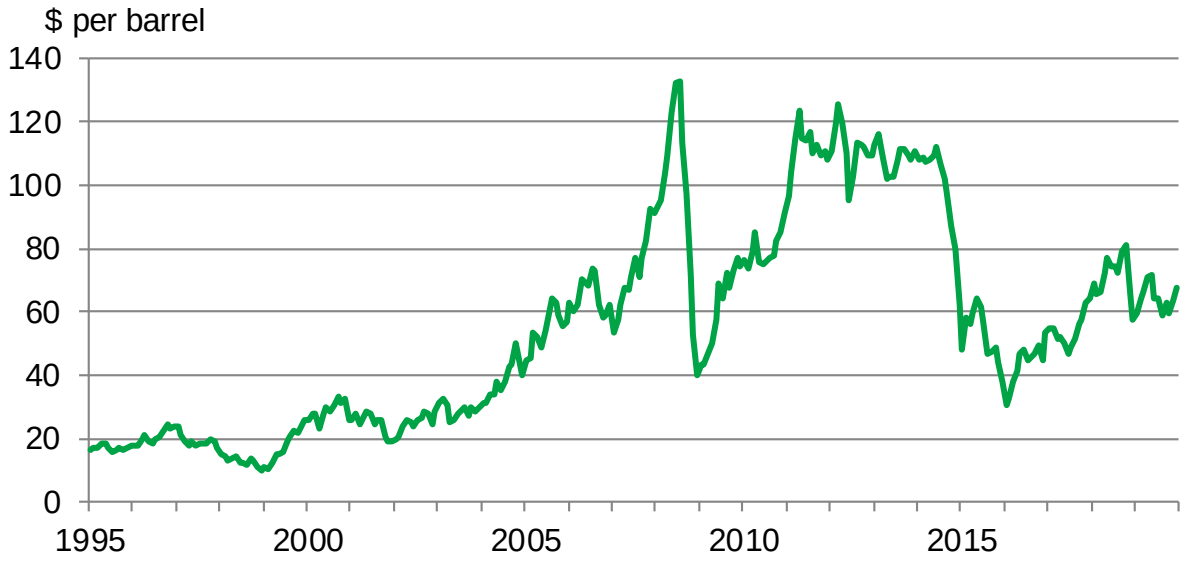
a) Including direct inter-farm and intra-farm transfer and Maize for stockfeed.
b) UK produced compounds, excludes imports and exports.
c) Includes poultry feed produced by 'retail' compounders but excludes production from integrated poultry units which are included within the straight concentrates data.
d) These are cereals, cereal offals, proteins and other high energy feeds.
e) Low energy bulk feeds expressed as concentrate equivalent. Brewers and distillers grains, hay, milk by-products and other low-energy bulk feeds expressed in terms of equivalent tonnage of high energy feeds.
f) See table 4.2 for a breakdown of this total.

The total value of all animal feed decreased by 1.4% to £5.5 million between 2018 and 2019 and the total volume of all 'purchased' animal feed decreased by 0.7% to 30.6 million tonnes. Total compound feed production decreased by 3.4% with decreases in sheep (-21%), calves (-12%) and cattle (-6.3%) offsetting a small increase in pigs (3.1%). Poultry feed was largely unchanged. Populations on farm were largely down on the year, with Defra June 2019 survey results showing a decline in cattle, calf and sheep numbers, however pigs increased and poultry flock remained fairly stable.

Unlike 2018, 2019 was a better year for forage growth, with improved volumes and quality which reduced the need for supplementary compound feed. A shift to heavier carcase weights for slaughtering in the pig sector increased feed intake, whilst poultry intake was fairly flat following a period of sustained sector growth. Besides compound feed usage there was an increase of 1.7% in purchased straight concentrates and a 1.4% increase in inter/intra farm sales.

Oil prices
(Figure 9.1)

Figure 9.1 Europe Brent Spot Price



Source: US Energy Information Administration

Some inputs, such as fuels, 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.

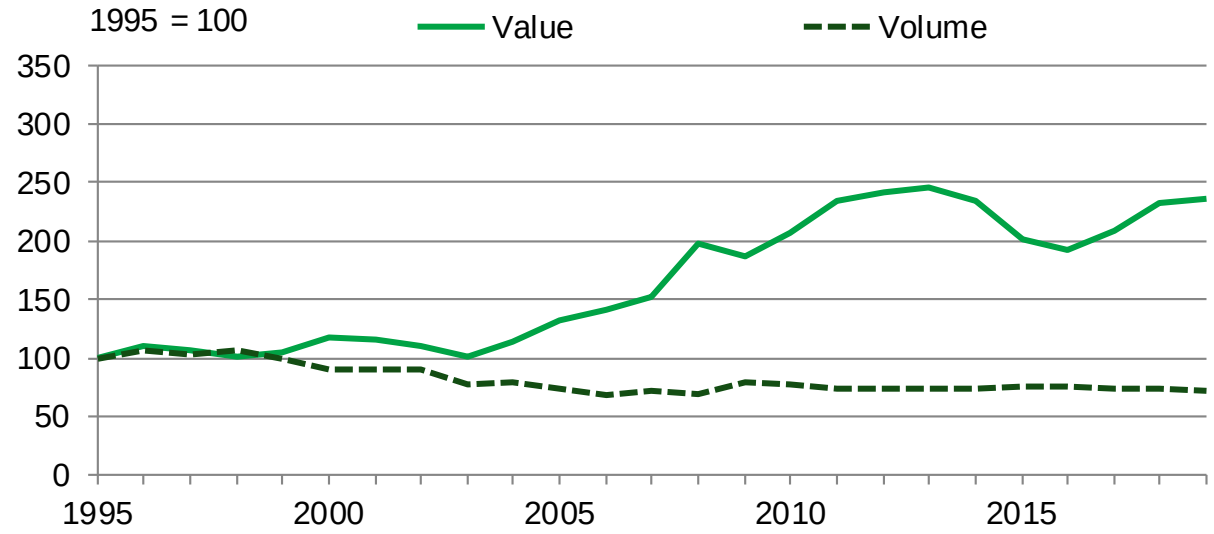
Figure 9.1 shows the trend in Europe Brent crude oil prices since 1995. Oil prices peaked in July 2008 at just over $130 per barrel, but by the end of 2008 fell sharply as a global crisis hit. Between 2010 to mid-2014, oil prices were high but relatively stable due to a weak global economy and tension in the Middle East.

From July 2014, as strong global production exceeded demand, prices fell rapidly and reached below $40 per barrel by December 2015. In comparison, prices in 2016 began to steadily rise and by October 2018 had reached just over $80 a barrel amid fears of US sanctions and global shortages. However, this was still much lower compared to the high prices seen at the start of the decade.

In 2019, Brent crude oil prices averaged $64 per barrel, around $7 a barrel lower than 2018. Throughout the year prices were relatively stable. A significant increase in US shale production of crude oil dampened price and also helped protect markets following the September attack on Saudi Arabia oil facilities, which reduced global supply and caused a spike in oil prices, with the highest daily price increase recorded in over ten years.

Energy and fertiliser
(Figures 9.2 and 9.3)

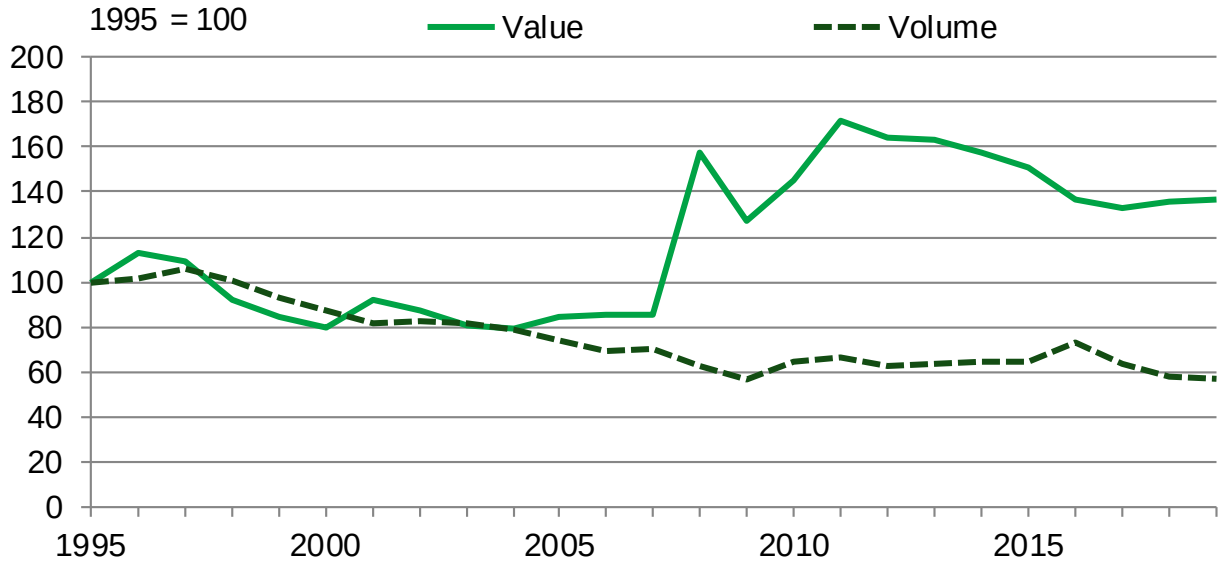
Figure 9.2 Energy index for value and volume



Energy costs rose by £20 million to £1.4 billion, entirely price driven owing to the dry spring and favourable summer conditions reducing energy use. Consumption was further reduced in the autumn, as the wet weather decreased vehicle use since it was impossible to get on the land at the appropriate time in some regions

In the long term, Figure 9.2 shows that while the value of energy follows a similar pattern to that of the crude oil price (see Figure 9.1), volumes have remained relatively stable in recent years.

Figure 9.3 Fertiliser index for value and volumes



As the price of oil directly influences the price of energy it also affects the cost of fertiliser, which has an energy intensive manufacturing process. The major source of energy for the production of fertilisers, principally nitrogen, is natural gas which is interlinked to oil price. Consequently if the price of oil rises, so does the cost of producing fertiliser. Figure 9.3 shows that although fertiliser usage has almost halved since the mid-90s, the cost of fertiliser used has significantly increased, being driven by price. In 2019, fertiliser costs rose by just £15 million to £1.3 billion, reflecting the stability of oil prices in 2019.

Other input costs

Pesticide costs fell by £108 million to £858 million, largely driven by a 10% fall in volumes applied. The dry spring led to relatively low weed pressure and dry soils that required no herbicide application on established crops. Wet autumn weather also reduced applications because it was not possible to get onto the land at the appropriate time.

The total cost of seeds fell by £34 million to £729 million, as the wet weather led to difficult conditions for drilling in the autumn and a reduction in volumes used.

Other goods and service costs, which is the second largest cost behind animal feed, was almost unchanged at £3.4 billion reflecting moderate increases in the cost of some services. Other goods and services incorporate costs not included elsewhere such as: rates, telecoms, water rates, insurance, bank charges, etc.

Chapter 10 Public Payments

Summary

For 2019 compared to 2018:

- Total **direct payments** to farmers are expected to increase by 0.5% to £3.34 billion.
- **Basic Payment Scheme (BPS)** payments**,** including greening and young farmer, are expected to increase by 0.9% to £2.77 billion.
- Payments linked to **Agri-environment schemes** are expected to be increased by 1.7% to £449 million.
- Payments under the **Less Favoured Area Support Scheme** (LFASS) are expected to decrease by 27% to £52 million.

Introduction

Values shown for a particular year refer to schemes operating in that year.

Unless otherwise stated, data is for 2019 and comparisons are based on 2019 compared with 2018. Values are shown in current price, i.e. not adjusted for inflation and are expressed as amounts expected to be paid.

Payments

(Tables 10.1 to 10.3, Figure 10.1)

Payments made to UK farmers under the Basic Payment Scheme are 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. In 2019 the rate was €1 = £0.891.

Table 10.1 shows that the exchange rate used to calculate the value of payments made to farmers under the 2019 Basic Payment Scheme 2019 (BPS) was almost unchanged and the value of direct payments to farmers is expected to be only slightly higher than in 2018.

Table 10.1 Single payment scheme and exchange rate

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

	2016	2017	2018	2019 (prov.)
Basic Payment Scheme (BPS) (£ million)	2,593	2,745	2,743	2,766
Exchange rate (€/£)	0.852	0.895	0.893	0.891
Financial discipline (%)	1.35	1.39	1.41	1.43

Basic Scheme payments include Core Basic Payment Scheme, Greening and Young Farmer Payment as well as financial discipline adjustments and redistributive payments. The European Commission sets the rate of financial discipline annually, details of which can be found in table 10.1. Financial discipline is a mechanism that allows for a reduction in direct payments to farmers when the European Commission forecasts that annual expenditure under pillar 1 of the Common Agricultural Policy (CAP) may exceed the financial ceiling agreed by the European Council. Redistributive payments are voluntary and are designed to help smaller holdings; in the UK only Wales introduced redistributive payments.

Figure 10.1 details the value of overall direct payments to UK farmers and shows the breakdown between coupled and decoupled payments. Since 2013 Scotland is the only UK nation to operate coupled payments, i.e. a form of financial support linked to production. These include the Suckler Beef Scheme and the Scottish Upland Sheep Scheme. Decoupled payments are those not linked to production and include the Basic Payment Scheme and Agri-environment Schemes.

Figure 10.1 Direct Payments to farmers

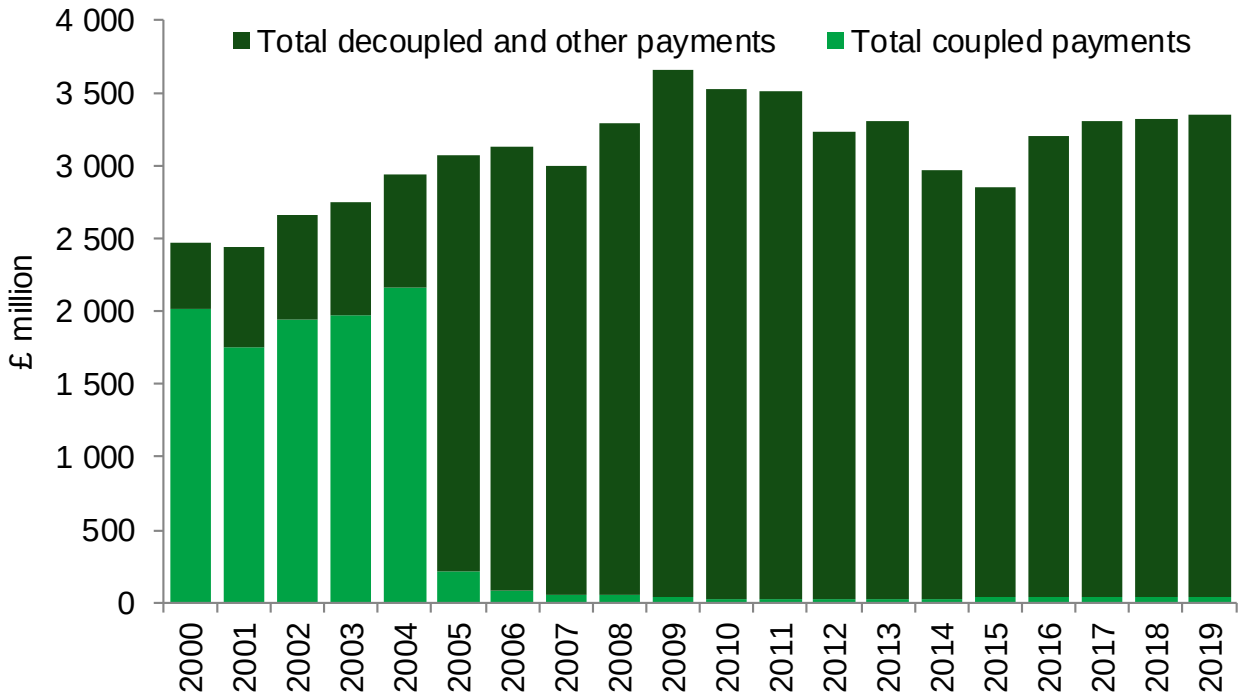


Table 10.2 shows coupled support payments to farmers in Scotland are virtually unchanged at £47 million.

Payments under the Agri-environment schemes in the United Kingdom rose by £8 million (1.7%) to £449 million whilst Less Favoured Area Support Scheme payments fell by £20 million (-27%) to £52 million.

Overall total payments to farmers rose by £16 million (0.5%) to £3.3 billion, reflecting the stable Euro to Sterling exchange rate.

Table 10.3 gives details of payments for 2019 broken down by country and scheme.

Table 10.2 Direct payments to farmers

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million

	2016	2017	2018	2019 (prov.)
Coupled payments (linked to production)				
Scottish Upland Sheep support scheme	7	7	7	7
Scottish Suckler Beef support scheme	38	39	39	40
Total coupled payments	**44**	**46**	**46**	**47**
Decoupled and other payments (not linked to production)				
Basic/Single Payments Scheme (a)	2,593	2,745	2,743	2,766
Agri-environment schemes (b)	435	399	441	449
Less Favoured Areas support schemes	83	83	72	52
Animal disease compensation (c)	21	24	25	24
Other (d)	31	4	-	4
Total decoupled and other payments	**3,163**	**3,255**	**3,281**	**3,296**
Total direct payments less levies	**3,208**	**3,302**	**3,327**	**3,343**
Capital transfers and other payments (c)	29	34	34	34

a) Basic Payment Scheme introduced in 2015, prior to this Single Payment Scheme operated.
b) For information on the various schemes please see table 10.3
c) Compensation paid for livestock compulsorily slaughtered under disease control measures. Compensation paid for work-in-progress. . These payments are not included in Total Income from Farming
d) Includes one off payments or emergency fund payments

Table 10.3 Direct payment to farmers by country in 2019

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million

	England	Wales	Scotland	NI	UK
Coupled payments (linked to product)					
Scottish Upland Sheep support scheme	. .	. .	7	. .	7
Scottish Suckler Beef support scheme	. .	. .	40	. .	40
Total coupled payments	. .	. .	47	. .	47
Decoupled payments (not linked to production)					
Basic Payment Scheme	1,819	236	426	286	2,766
Less Favoured Areas support schemes(a)	. .	. .	52	. .	52
Agri-environment schemes					
Environmental Stewardship Scheme	386	. .	. .	. .	386
New Country Stewardship Scheme (b)					
Rural Priorities / Land Manager Options (c)	. .	. .	4	. .	4
Glastir (d)	. .	52	. .	. .	52
Countryside Management Scheme	. .	. .	. .	1	1
Environmental Farming Scheme(e)	. .	. .	. .	3	3
Sites and Areas of Special Scientific Interest	. .	3	. .	. .	3
Other - Farming Recovery Fund(f)	4	. .	. .	. .	4
Animal disease compensation (income)	**13**	**5**	**-**	**6**	**24**
Total decoupled payments	**2,222**	**296**	**482**	**296**	**3,295**
TOTAL PAYMENTS	**2,222**	**296**	**529**	**296**	**3,342**

a) Areas of Natural Constraint (ANC) in Northern Ireland, Less Favoured Areas Support Scheme (LFASS) in Scotland
b) Environmental Stewardship (ES) now closed but payments continue to be honoured, new Countryside Stewardship (CS) – first agreements started 1st Jan 2016
c) Land Managers Options closed to new applicants from 2014; Rural Priorities closed end of 2013. Payments continue to be honoured
d) Introduced in 2013
e) Scheme began in July 2017
f) One-off emergency payment, part paid in 2019, extended to 2020

Direct Payments made through key measures of the Rural Development Programmes
(Table 10.4)

Rural Development in the United Kingdom is managed on a decentralised basis by the main administrative regions of the country through four Rural Development Programmes (RDPs): one for each England, Northern Ireland, Scotland, and Wales.

Table 10.4 shows details of payments made through two key measures of these programmes: Less Favoured Areas and Agri-Environment. . Due to changes in the management and implementation of the Rural Development Programme in 2015, care should be taken when making comparisons with data provided in table 10.4 and earlier years.

Table 10.4 Direct Payments made through key measures of the Rural Development Programmes

Enquiries: Helen Mason on +44 (0)20 802 66256, email: farmaccounts@defra.gov.uk

£ million

	2016	2017	2018	2019 (prov.)
England				
New Countryside Stewardship Scheme/Environmental Stewardship Scheme (a)(b)	369	324	366	386
Wales				
Environmentally Sensitive Areas Scheme	2	1	2	3
Glastir (b)	36	56	57	52
Scotland				
Less Favoured Areas support schemes (LFA)	65	64	63	52
Land Managers Options (c)	14	13	9	4
Rural Priorities (d)	2	2	1	-
Northern Ireland				
Area of Natural Constraints (LFA)	19	19	9	. .
Countryside Management Scheme (e)	7	3	3	1
Environmentally Sensitive Areas Scheme (f)	4	-	. .	. .
Environmental Farming Scheme (g)	. .	. .	3	3

a) Environment Stewardship Scheme includes Entry Level Pilot Scheme, OELS, ELS and HLS. Scheme ended in December 2014 but payments continue to be made
b) Countryside Stewardship Scheme opened in 2015 with first agreements going live in 2016
c) Closed to new applicants from 2014, payment continue to be paid.
d) Scheme ended in December 2013, existing agreements continue to be honoured
e) Includes agreements which commenced under prior to 2013
f) All agreements expired in 2016
g) Scheme began in July 2017

England's agri-environment schemes (AES) receive funding from the Rural Development Programme for England (RDPE). The new Countryside Stewardship Scheme is the current AES for England and consists of two tiers, a Mid-Tier and a Higher Tier. The Environmental Stewardship Scheme closed to new applicants in 2014 but existing

agreements continue to be managed until they reach their agreed end date and it remains the main scheme on which payments are made. In 2019, AES payments in England totalled £386 million.

The Scottish Rural Development Programme (SRDP) is the main source of funding for land management in Scotland. The Rural Priority and Land Manager option scheme payments totalled £4 million. Payments made under the Less Favoured Area Support Scheme totalled £52 million.

The principal Welsh agri-environment scheme is Glastir, funded by the Welsh Government Rural Communities Rural Development Programme and payments totalled £52 million.

Under the Rural Development Programme for Northern Ireland, agri-environment payments under the Countryside Management Scheme and the Environmental Farming Scheme totalled £4 million. The Area of Natural Constraints (LFA) Scheme ended in 2017.

Take-up of Agri-Environment Schemes
(Tables 10.5 and 10.6)

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 area of land under each type of scheme currently in existence in the United Kingdom (Table 10.5) and by the number of agreements (Table 10.6). 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.

Table 10.5 Agri-environment schemes – area under schemes
Enquiries: Joe Warriner on +44 (0)20 822 57416, email: joseph.warriner@defra.gov.uk

Area under scheme (thousand hectares)

	2016	2017	2018	2019
England				
Environmental Stewardship Entry Level Scheme (a)	3,661	2,809	2,167	1,981
Environmental Stewardship Higher Level Scheme (b)	1,278	1,209	1,106	1,050
new Countryside Stewardship Scheme (c)	76	221	502	746
Wales				
Glastir Entry (d)	546	458	451	209
Glastir Advanced (on Entry)	251	261	327	397
Glastir Commons (e)	119	120	120	119
Glastir Organic	65	68	61	67
Decoupled Advanced (f)	34	90	54	34
Scotland				
Land Managers Options (g)	63	32	-	-
Rural Priorities (h)	623	430	214	167
Agri-environment Climate Scheme (i)	67	565	847	1,002
Northern Ireland				
Countryside Management Scheme (j)	46	46	46	8
Environmentally Sensitive Areas Scheme (k)	-	-	-	-
Environmental Farming Scheme (l)	. .	3	20	38

Table 10.6 Agri-environment schemes – number of agreements

Enquiries: Joe Warriner on +44 (0)20 822 57416, email: joseph.warriner@defra.gov.uk

Agreements (rounded to nearest hundred)

	2016	2017	2018	2019
England				
Environmental Stewardship - Entry Level Scheme (a)	23,900	17,000	11,200	9,700
Environmental Stewardship - Higher Level Scheme (b)	13,200	12,500	11,600	11,000
new Countryside Stewardship Scheme (c)	2,100	6,000	9,700	13,800
Wales				
Glastir Entry (d)	4,600	3,500	2,900	1,700
Glastir Advanced (on Entry)	1,400	1,500	1,800	1,900
Glastir Commons (e)	200	200	200	200
Glastir Organic	500	600	600	600
Decoupled Advanced (f)	500	900	500	500
Scotland				
Land Managers Options (g)	1,300	800	-	-
Rural Priorities (h)	3,700	2,800	2,000	1,700
Agri-environment Climate Scheme (i)	200	1,400	2,000	2,500
Northern Ireland				
Countryside Management Scheme (j)	600	600	600	100
Environmentally Sensitive Areas Scheme (k)	-	-	-	-
Environmental Farming Scheme (l)	. .	1,200	1,300	2,900

Explanatory notes for tables 10.5 and 10.6

a) Includes Entry Level Pilot Scheme, OELS, Uplands ELS (from 2010) and HLS linked to ELS. Scheme ended in December 2014.
b) Includes Freestanding HLS and HLS linked to ELS. Scheme ended in December 2014.
c) Scheme opened in 2015 with first agreements going live in 2016. Area is for Mid and Higher Tier strands only.
d) Glastir Entry expired in 2019. Figures for Glastir Entry include all Glastir Advanced (on entry) contracts up to and including 2018. From 2019, Glastir Advanced (on entry) contracts are not necessarily linked to Glastir Entry contracts.
e) Includes Glastir Advanced (on Commons).
f) First agreements started in 2016.
g) Closed to new applicants from 2014.
h) Scheme ended in December 2013. As contracts may have multiple options, the area may be repeated
i) First agreements started in 2016. As contracts may have multiple options, the area may be repeated.
j) Includes agreements which commenced under NIRDP 2000-2006 and 2007-2013; agreements continue to be honoured. The NI Countryside Management scheme ended in December 2019
k) Commenced under 2000-2006 NIRDP; all agreements expired in 2016.
l) Scheme began in July 2017. Organic hectares are included in the total scheme area.

Data Revision: A rounding error was identified with the Glastir Organic figure for 2018. This has now been corrected

All Common Agricultural Policy payments by funding stream
(Table 10.7)

Table 10.7 shows all agricultural market support under the Common Agricultural Policy. This is different to the other tables in this chapter, which show expenditure feeding into the agricultural account only, i.e. only those payments received by units as a consequence of engaging in agricultural activity. The market price support element of this table can be paid to non-agricultural units. In addition, readers should note the difference in timings as the data is for European Union agricultural financial years (see table footnote) and shown in Euros.

Table 10.7 All Common Agricultural Policy (CAP) payments by funding stream

Enquiries: Michael Redfern, email: michael.redfern@ukcoordinatingbody.gov.uk

Euros million (EU financial years) (a)

	2016	2017	2018	2019
Total UK CAP payments	**3,927**	**3,974**	**3,934**	**4,229**
Total Pillar 1	**3,121**	**3,171**	**3,174**	**3,228**
Direct Aids	3,035	3,080	3,126	3,186
Market price support (b)	86	91	48	42
Total Pillar 2 (c)	**806**	**803**	**760**	**1,001**
EAFRD (d)	641	542	581	776
Co-financing	165	261	179	225
Total England CAP payments	**2,626**	**2,525**	**2,474**	**2,672**
Total Pillar 1	**2,018**	**2,069**	**2,084**	**2,100**
Direct Aids	1,932	1,988	2,036	2,058
Market price support (b)	86	81	48	42
Total Pillar 2 (c)	**608**	**456**	**390**	**572**
EAFRD (d)	529	374	341	502
Co-financing	79	82	49	70
Total Wales CAP payments	**338**	**356**	**397**	**397**
Total Pillar 1	260	268	263	265
Direct Aids	321	324	324	324
Market price support	-	-	-	-
Total Pillar 2 (c)	78	88	134	132
EAFRD (d)	52	63	95	93
Co-financing	26	25	39	39
Total Scotland CAP payments	**584**	**732**	**698**	**784**
Total Pillar 1	**522**	**507**	**503**	**539**
Direct Aids	522	504	503	539
Market price support	-	-	-	-
Total Pillar 2 (c)	62	225	195	245
EAFRD (d)	26	89	127	159
Co-financing	36	136	68	86
Total Northern Ireland CAP payments	**379**	**361**	**365**	**376**
Total Pillar 1	321	327	324	324
Direct Aids	321	324	324	324
Market price support	-	-	-	-
Total Pillar 2 (c)	58	34	41	52
EAFRD (d)	34	16	18	22
Co-financing	24	18	23	30

a) Information based on EU financial year 16th October – 15th October. Figures exclude financial corrections/penalties.

b) Market price support covers interventions in agricultural markets, e.g. public intervention and private storage aid. Most of these schemes are administered by the Rural Payments Agency on behalf of the UK.

c) Pillar 2 funds rural development, e.g. for agri-environment schemes, competitiveness of agriculture and economic diversification and quality of life in rural areas.

d) EAFRD is the European Agricultural Fund for Rural Development. Member states are required to co-finance these receipts with a contribution from their exchequer. Figures are based on in-year quarterly returns, rather than the annual account (in order to provide the split between EAFRD and co-financing)

Chapter 11 Environment

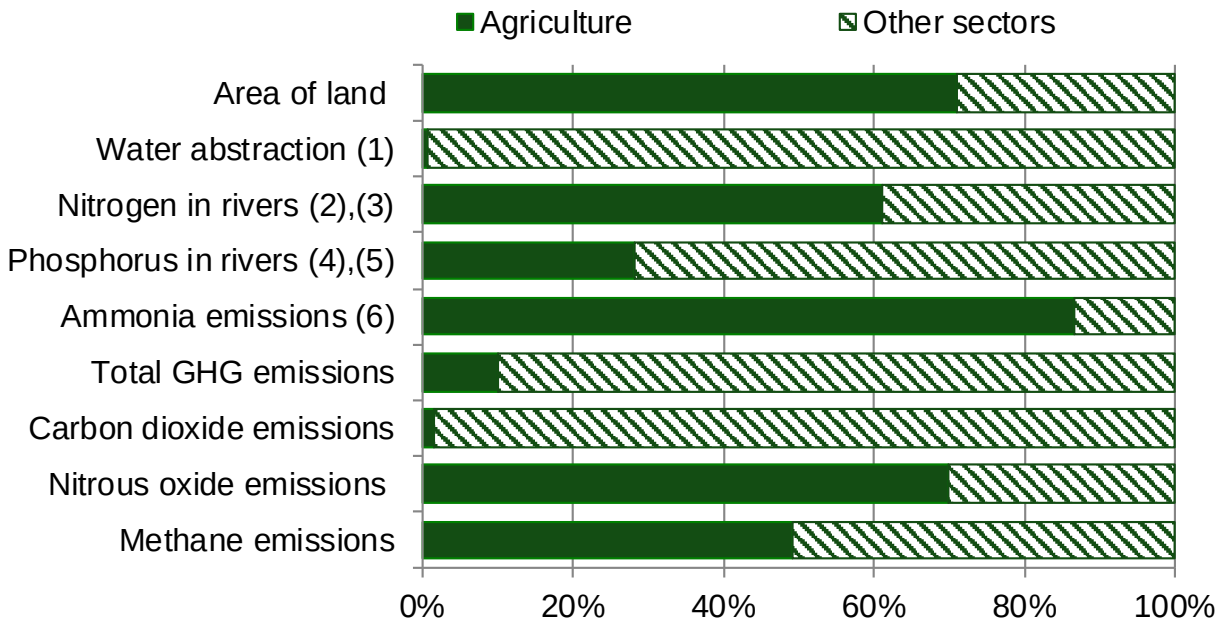
Summary

- In 2019 utilised agricultural **land use** stood at 72% of the total area of the United Kingdom
- Since the late 1990's **nitrogen and phosphate application rates** have fallen
- A comparison of **soil nutrient balances** (in kg per hectare) from the year 2000 to 2018 show a 17% decrease for **nitrogen** and a 32% decrease for **phosphate**.
- Estimated greenhouse gas and air pollution emissions from agriculture have fallen between the year 2000 and most recent data available:
    - In 2018 **nitrous oxide emissions** have fallen by 12%
    - **Methane** emissions in 2018 have decreased by 11%
    - 2017 data for **ammonia** show a decrease of 2.9%
- The **farmland bird index** has decreased significantly since 1970 with the index for all farmland species in 2018 less than half of 1970 levels

Introduction
(Figure 11.1)

This chapter provides an overview of the change in inputs (fertiliser, pesticide and water usage) and environmental management over time as well as the monitoring of environmental impacts to which agriculture contributes.

Figure 11.1 Agriculture's environmental foot print



(1) England (2) England & Wales (3) 2004 estimate (4) Great Britain (5) 2006 estimate (6) 2016 estimate

Source: Collated by Defra. All data are UK and for 2017 unless otherwise stated:

Whilst agriculture contributes less than 1% to the United Kingdom's economy (see Table 3.2), it provides around three-quarters of the indigenous food we eat (see Table 14.1) and at around 70% is the predominant form of land use (see Figure 11.1). 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 environmental impact so that production can be increased whilst reducing the overall environmental footprint. This is sometimes referred to as sustainable intensification.

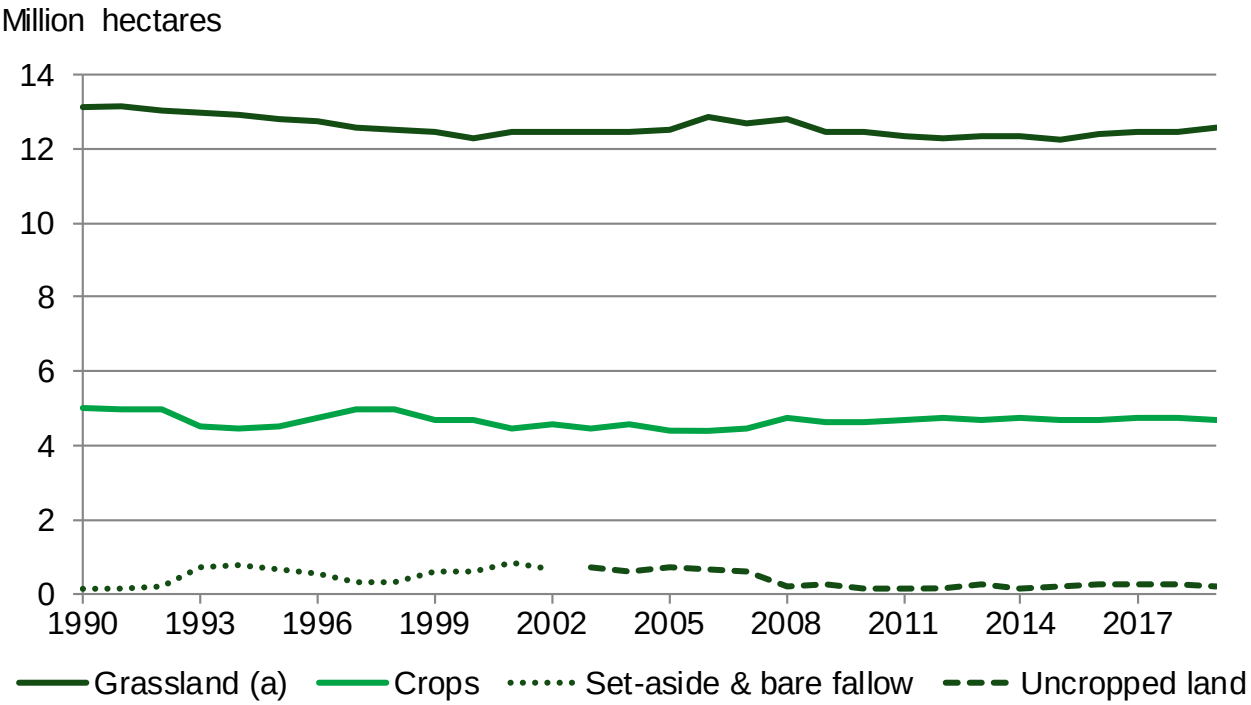
Farm practices and the use of inputs (particularly fertilisers and pesticides) directly influence the environmental pressures from farming including the quality, composition and availability of habitats and impact on air, water and soils.

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.

Land use

Figure 11.2 Agricultural land use



a) Grassland includes temporary and permanent grasslands, sole rights rough grazing and common rough grazing areas

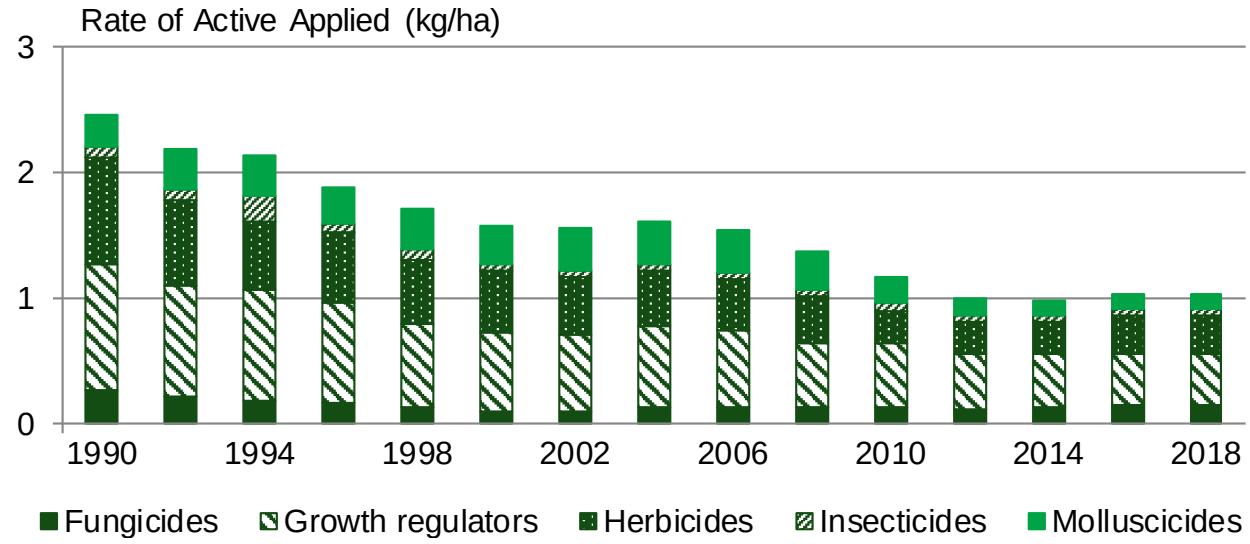
In 2019, the proportion of utilised agricultural land used for grassland was 72% with 27% used for crops. Grassland and crop land use have remained relatively stable from 1990 to 2019. The ending of set aside in 2008 meant that the area of uncropped land fell sharply that year. From 2008 onwards, the area of uncropped land has fluctuated around that level, mainly influenced by commodity prices and weather conditions.

Pesticide usage

Plant protection products 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 weight of pesticide applied has shown an overall decline highlighting the complexities.

Figure 11.3 Pesticide use on cereals, Great Britain (a)



(a) All pesticides include seed treatments

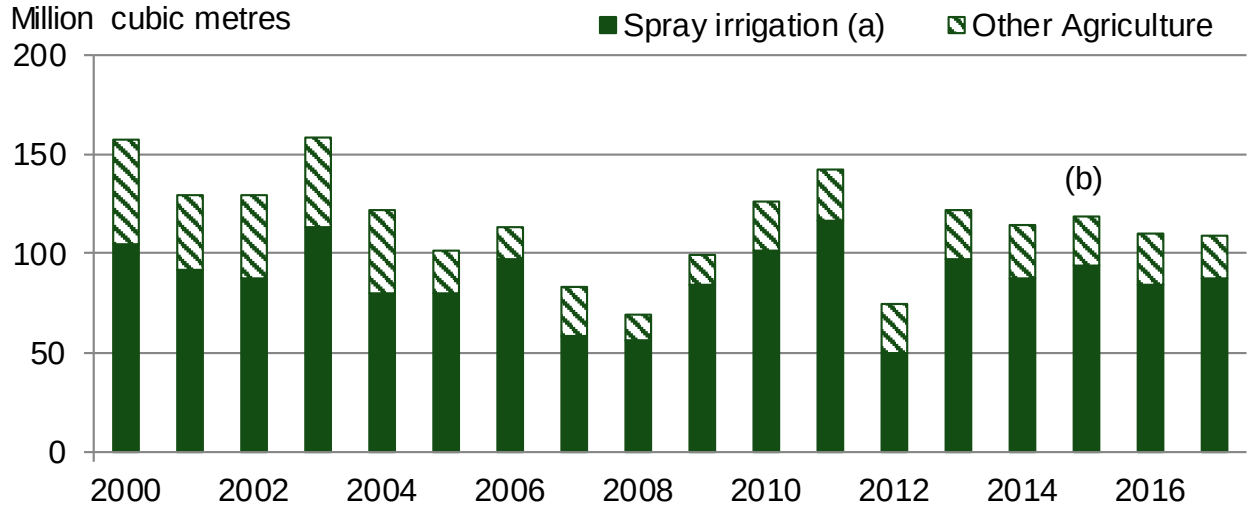
Source: Pesticide Usage Survey

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. The majority of cereals (more than 80%) are grown in England. Figure 11.3 shows the different types of pesticides used on cereal crops in Great Britain and how these have fluctuated over time.

Click here for further information on pesticide usage in the UK

Water use
(Figure 11.4)

Figure 11.4 Water abstraction, England



(a) Includes small amounts of non-agricultural irrigation
(b) Indicates 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: Environment Agency

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. In 2017, less than 1% of the total water abstracted in England was attributed to agriculture, most of which took place in the south and east of the country.

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 2017, the recorded abstraction rate in England was 109 million cubic litres which was a slight decrease from 110 million cubic litres in 2016.

Click here for further information on water abstraction

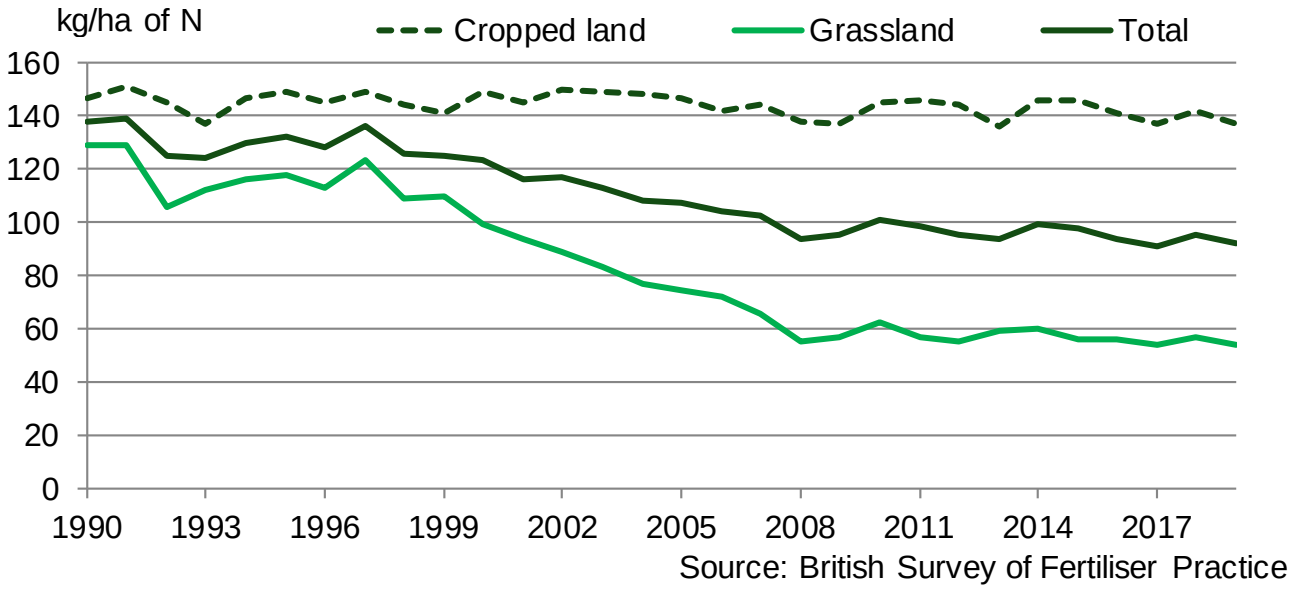
Fertiliser use

(Figures 11.5 and 11.6)

Nitrogen and phosphorous are key nutrients needed for crop growth. A deficit in 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. Various factors such as application method, over application and natural losses from soils and manures can have an adverse impact on the environment. 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. 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 drop in nutrient application rates in 2009 was related to high fertiliser prices.

Figure 11.5 Nitrogen (N) use (kg/ha) on all crops and grass, Great Britain

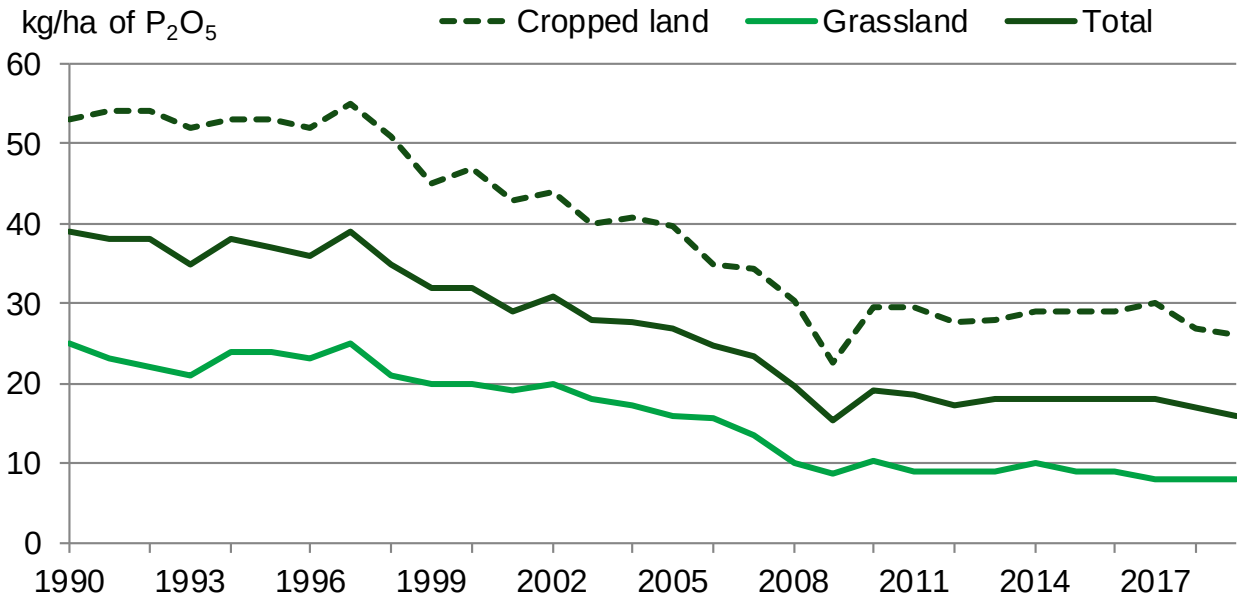


Source: British Survey of Fertiliser Practice

For Great Britain, between 1990 and 2019, the overall mineral nitrogen application rate on tillage crops has largely been in the range of 140 -150 kg/ha. In 2019, nitrogen use on tillage crops decreased by 5kg/ha to 137kg/ha. For grassland, nutrient application rates have always been lower than for cropped land. Between 1990 and 2019, there has been a downward trend in the overall mineral nitrogen application rate on grassland. In 2019, the rate was 54 kg/ha (see Figure 11.5). A reduction in total cattle numbers is thought to have contributed to this, possibly in conjunction with some improvement in manure use efficiency.

Phosphate is applied in fertilisers and manures, particularly to replace the quantities removed in harvested crops. Most British soils are able to 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 11.6 Phosphate (P_2O_5) use (kg/ha) on all crops and grass, Great Britain



Source: British Survey of Fertiliser Practice

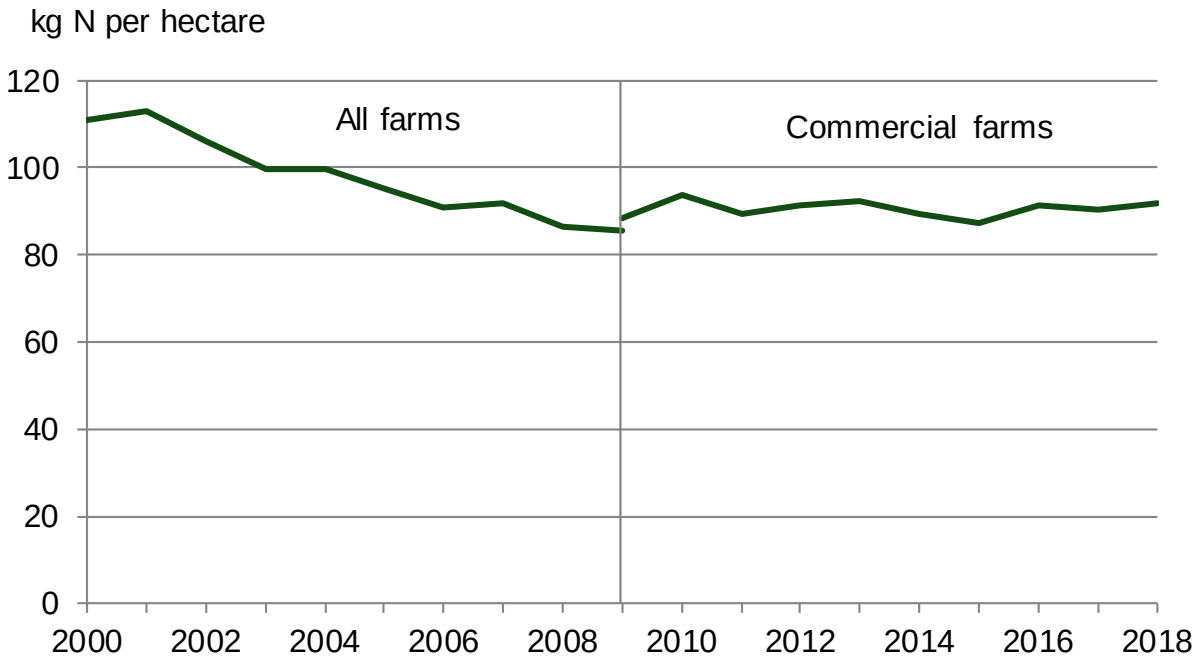
From 1990 to 2019, total mineral phosphate application rates have declined to a rate of 16 kg/ha in 2019 (see Figure 11.6). More recently the decline has levelled off with a similar rate seen since 2012.

Click here for further information found in the British Survey of Fertiliser Practice annual report

Soil nutrient balances

Soil nutrient balances provide an indication of the overall environmental pressure from nitrogen and phosphorus in agricultural soils. They measure the difference between 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. There is a risk that nutrient deficits lead to poor soil fertility and subsequent loss of yields.

Figure 11.7 Nitrogen (N) soil nutrient balance

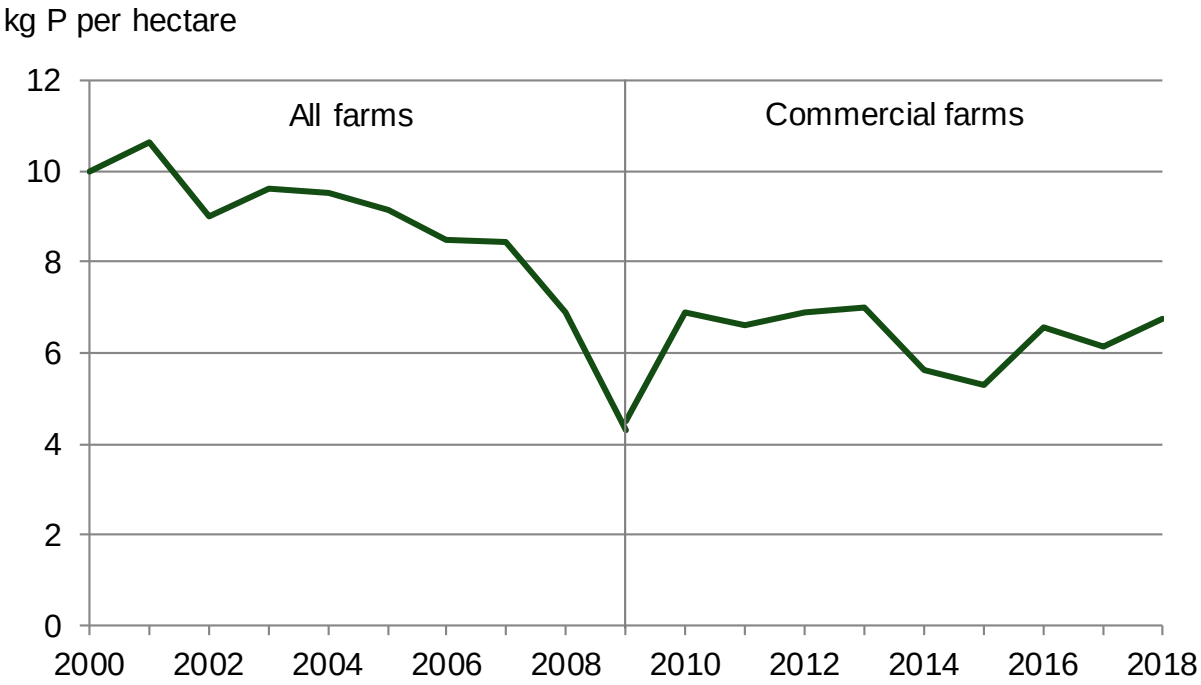


Source: Defra, Soil Nutrient Balances

Provisional estimates for 2018 show that the nitrogen balance for the UK was a surplus of 91.8 kg/ha on managed agricultural land (see Figure 11.7). This is an increase of 1.3 kg/ha (+1.5%) compared to 2017. Even with the slight increase in 2018 estimates, the longer term trend represents a reduction of 19.3 kg/ha (-17%) compared to 2000.

Between 2017 and 2018 inputs decreased by 2% however this was more than offset by a 5% decrease in offtake. Lower yields and production for both cereals and oil crops were the main driving force behind the decrease in offtake found in 2018. The main drivers for the overall reduction in the surplus since 2000 have been reductions in the application of inorganic (manufactured) fertilisers and manure production (due to lower livestock numbers), although this has been partially offset by a reduction in the nitrogen offtake (particularly forage) over the same period.

Figure 11.8 Phosphorous (P) soil nutrient balance



Source: Defra

The UK phosphorus balance was estimated to be a surplus of 6.8 kg/ha of managed agricultural land in 2018 (see Figure 11.8). This is an increase of 0.6 kg/ha (+10%) compared to 2017. Since 2000, there has been an overall reduction of 3.2 kg/ha (-32%). The decrease between 2017 and 2018 reflects a 5% decrease in offtake which more than offset a 1% decrease in inputs. In the longer term the trend is downward, again with similar drivers as nitrogen.

Click here for further information concerning soil nutrient balances

Water quality

Agriculture contributes to the pollution of water bodies through fertilisers and manure (nutrients), pesticides, sediments and faecal bacteria. 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 sprayed close to water. Pesticides can also enter groundwater via soil infiltration. In addition, erosion can wash topsoil into water bodies and these soils can carry large amounts of phosphates and agri-chemicals bonded to clay particles.

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 total nitrogen in river water in England and Wales(1) and around 28% of the total phosphorus load in river water in Great Britain(2), although this estimate may also include phosphorus from septic tanks(3).

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 are 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'.

In 2018, 36% of surface water bodies assessed under WFD in the UK were in high or good status. This reflects a small increase from 35% of surface water bodies assessed in 2017. Diffuse water pollution from agriculture and rural land use has been directly attributed to 28% of failures to meet the WFD standards in England(4).

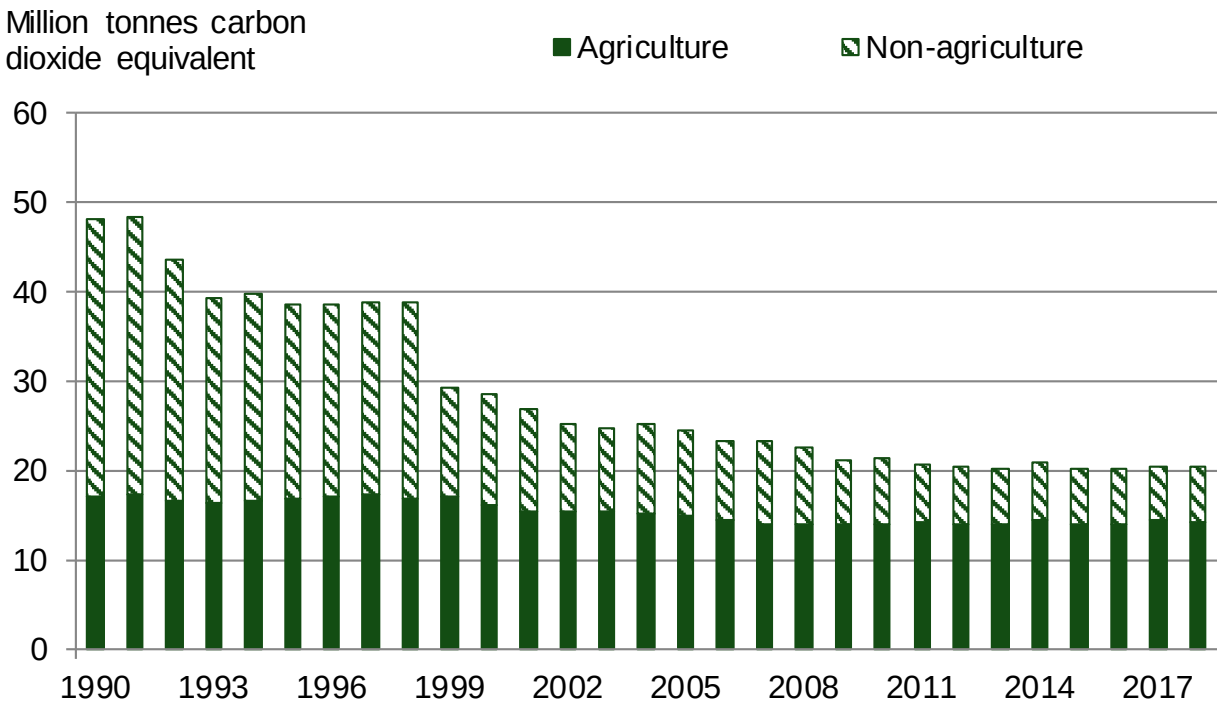
Click here for further information on the status of water bodies in the United Kingdom

Greenhouse gas emissions

Agriculture accounts for approximately 10% of total greenhouse gas emissions in the UK. Three greenhouse gasses emitted by agriculture are nitrous oxide, methane and carbon dioxide.

Agriculture is the major source of both nitrous oxide and methane emissions in the UK, accounting for nearly 70% of total nitrous oxide emissions and 49% of all methane emissions in 2018. In contrast, agriculture only accounted for about 2% of total carbon dioxide emissions in the UK.

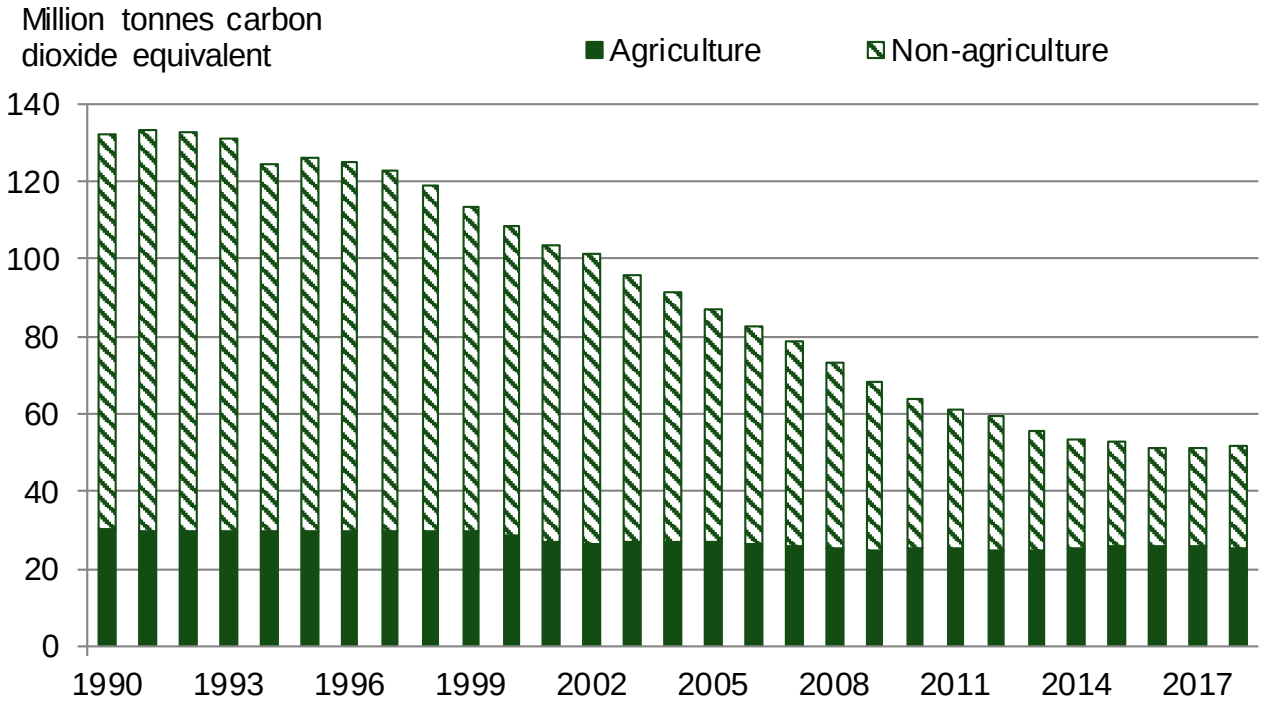
Figure 11.9 Nitrous oxide emissions



Source: Department for Business, Energy and Industrial Strategy (BEIS, formerly DECC)

Nearly 90% of agricultural nitrous oxide emissions come from soils, particularly as a result of nitrogen fertiliser application, manure (both applied and excreted on pasture) and leaching/run-off. In 2018, nitrous oxide emissions from agriculture are estimated to have fallen by 17% since 1990 and 12% since 2000 (see Figure 11.9). This is consistent with trends in fertiliser usage over the same period.

Figure 11.10 Methane emissions



Source: Department for Business, Energy and Industrial Strategy (BEIS, formerly DECC)

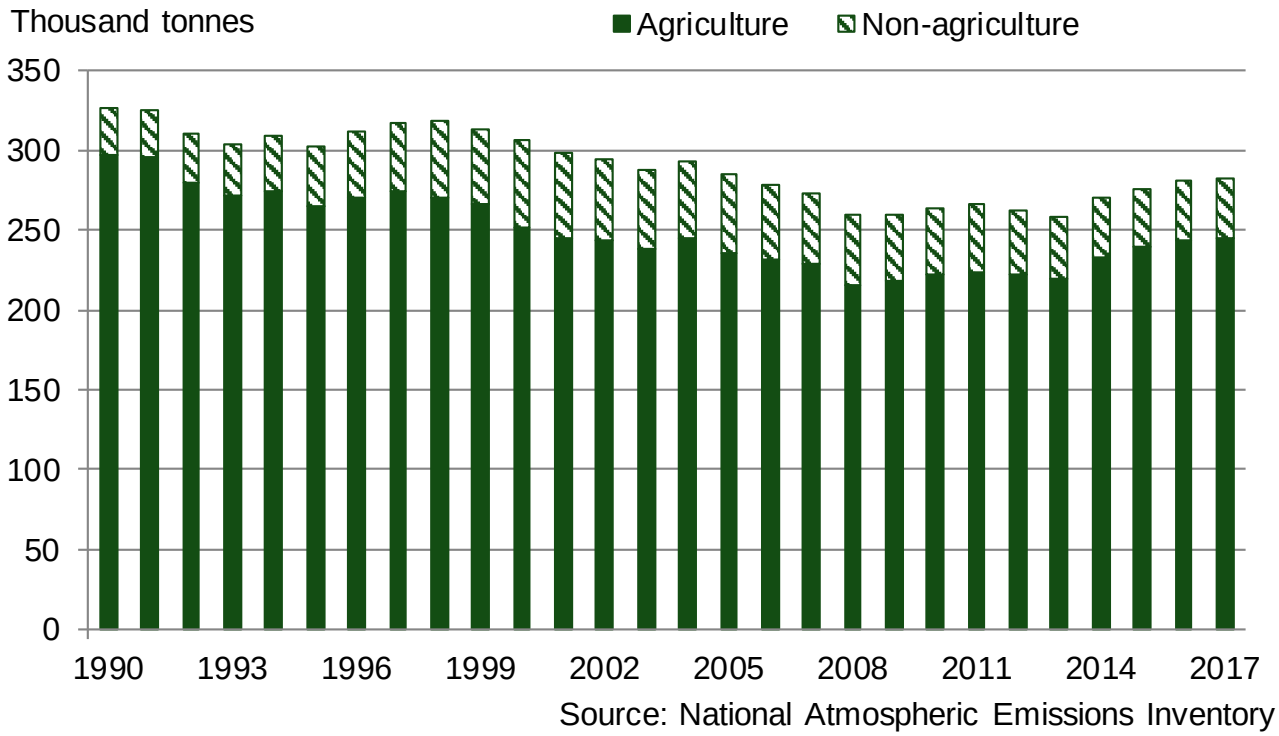
The majority (nearly 90%) of methane emissions from agriculture arise from enteric fermentation (digestive processes) in ruminating animals, with manure management practices accounting for the remainder. In 2018, methane emissions from agriculture are estimated to have fallen by 16% since 1990 and 11% since 2000 (see Figure 11.10), mainly as a result of decreasing livestock numbers, particularly cattle. However, since 2009 the long-term fall has stalled and in recent years there has been a slight reverse in this trend, driven mainly by increases in livestock numbers.

Click here for further information on greenhouse gas emissions from agriculture

Air quality

Ammonia emissions impact on air quality and subsequently human and animal health. In addition, deposition of ammonia can damage sensitive habitats due to eutrophication and the acidification of soils. In 2017, agriculture accounted for 87% of the UK's ammonia emissions.

Figure 11.11 Ammonia Emissions



Source: National Atmospheric Emissions Inventory

The main sources of ammonia emissions in the UK are agricultural soils and livestock, in particular cattle. In 2017, ammonia emissions from agriculture are estimated to have fallen by 17% since 1990 and 2.9% since 2000 (see Figure 11.11) due to long-term reductions in cattle numbers and more efficient fertiliser use. However, this represents a slight increase since emissions from agriculture reached their lowest point in 2008. This recent increase is largely due to an increase in the use of urea fertilisers and the manure management associated with increased housing of dairy cattle.

Click here for further information on total ammonia emissions

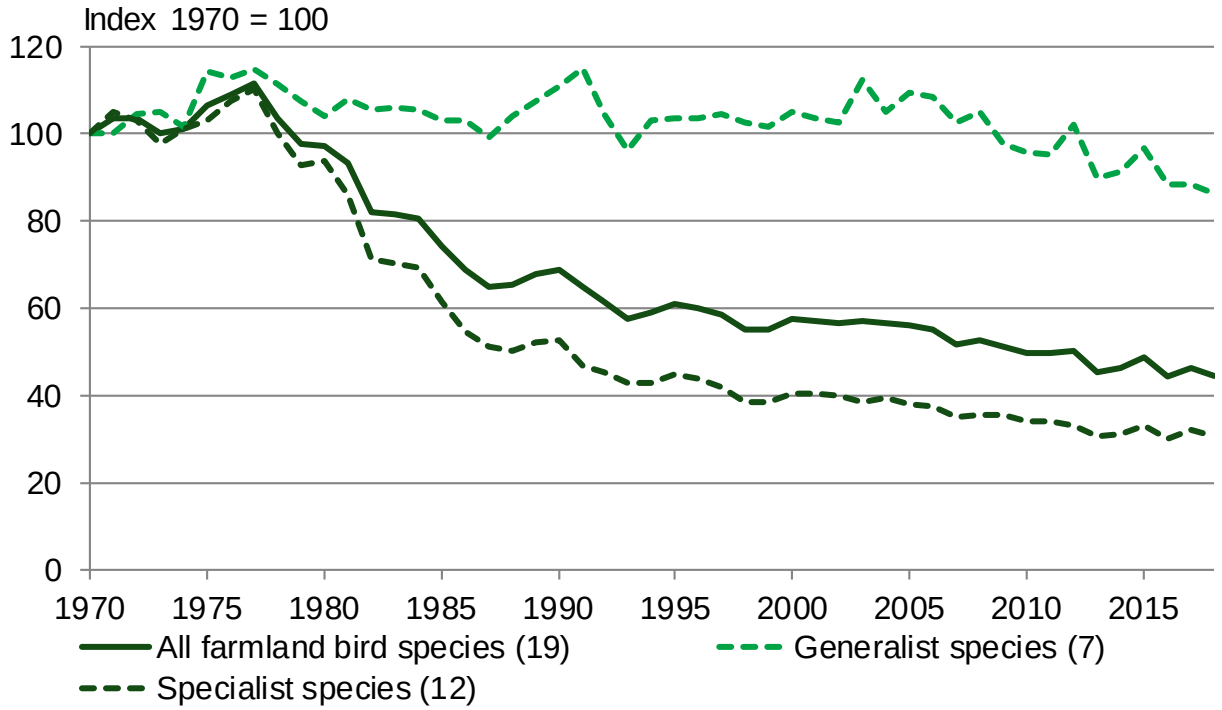
Soils

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[5]. 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 famers 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[6]. 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 and can also increase winter cereal yields[7].

Biodiversity

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

Figure 11.12 Farmland Bird Index



Source: BTO/RSPB

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 2018, populations of farmland specialists declined by about 70% whereas farmland generalists have declined by about 14%. The 2018 index for all farmland bird species at 44.5 was a decrease compared to 2017 and is less than half of its level in 1970.

Click here for further information on the farmland bird index

References

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

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

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

(4) POSTnote 478 October 2014 Diffuse Pollution of Water by Agriculture

(5) SP1606 Total costs of soil degradation project 2011 Defra.

(6) (Chambers et al. 2000; Evans 1990)

(7) Green *et al.* (1985) found a 0.35% reduction in wheat yield and a 0.43% reduction in barley yield for every day of sowing later than mid-September.

Chapter 12 Organic Farming

Summary

In 2019 compared to 2018:

- The **area of land farmed organically** increased by 2.4% to 485 thousand hectares.
- The **area in-conversion** showed a 15% decrease in 2019, the first decrease since 2014.
- **England has 62%** of the organically managed land, **Scotland has 19%**, **Wales 17%** and **Northern Ireland the remainder**.
- Within England nearly **half of all organic land** falls within the South West region.
- **The number of organic operators** in the UK fell by 1%.

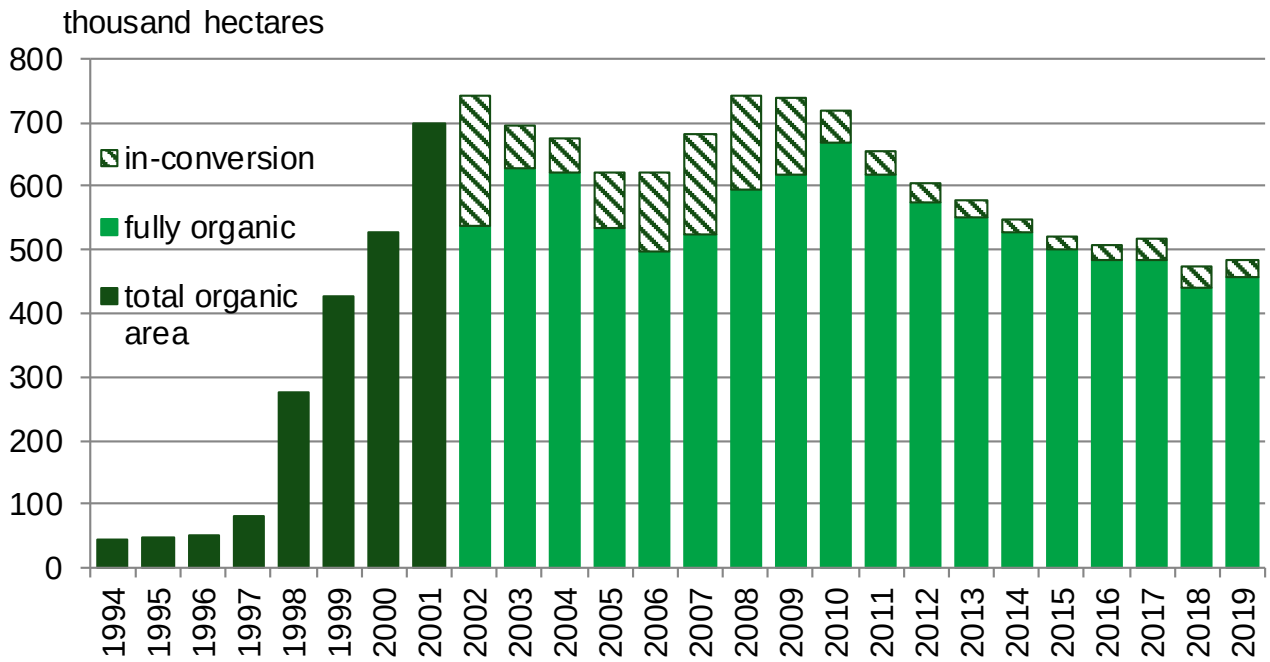
Introduction

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 in order 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 is collected at varying times through the year. The data presented in this chapter therefore does not give an exact snapshot of organic farming at any specific time of year and this should be considered when interpreting the results.

Area of land farmed organically
(Figure 12.1, Table 12.1)

Figure 12.1 Area of land in-conversion and fully organic



Source: Organic certification bodies collated by Defra statistics

In 2019 the United Kingdom had a total area of 485 thousand hectares farmed organically, up from 474 thousand hectares in 2018. Organically farmed area includes both the fully converted area (where organic production comes from) and area under conversion. The organically farmed area represents 2.7% of the total farmed area on agricultural holdings in the United Kingdom. Before an area can be considered as fully organic, it must undergo a conversion process. The area in-conversion showed a 15% decrease in 2019, the first decrease since 2014.

Table 12.1 Organic and in-conversion land by region

Enquiries: Sarah Thompson on +44(0)20 802 66462, email:sarah.thompson@defra.gov.uk

Thousand hectares

	2016	2017	2018	2019
Land, in-conversion				
North East	0.4	0.8	1.6	1.7
North West	1.1	1.0	0.6	0.5
Yorkshire & Humberside	0.6	0.8	0.6	0.7
East Midlands	0.9	0.8	1.1	1.6
West Midlands	2.0	5.1	4.4	2.0
Eastern	1.3	1.2	1.2	2.1
South East (inc. London)	1.4	1.7	2.0	2.3
South West	7.2	8.4	8.7	8.0
England	14.7	19.8	20.3	19.0
Wales	7.8	7.3	3.6	1.8
Scotland	2.3	5.1	8.5	6.8
Northern Ireland	0.3	0.4	0.5	0.5
United Kingdom	**25.2**	**32.6**	**32.9**	**28.1**
Land, fully organic				
North East	24.9	22.6	21.6	22.3
North West	11.4	13.9	11.6	11.5
Yorkshire & Humberside	10.0	10.2	9.7	10.3
East Midlands	13.6	12.6	12.6	13.7
West Midlands	28.0	27.6	28.7	30.3
Eastern	13.5	13.9	12.1	16.4
South East (inc. London)	42.4	42.5	39.4	42.8
South West	138.0	137.2	133.3	134.3
England	281.8	280.5	269.0	281.6
Wales	73.7	78.8	81.4	82.6
Scotland	119.3	117.6	83.1	85.3
Northern Ireland	8.0	7.9	7.6	7.6
United Kingdom	**482.7**	**484.8**	**441.1**	**457.1**
Total UK organic land (in-conversion & fully organic)	**507.9**	**517.4**	**474.0**	**485.2**

Source: Organic certification bodies collated by Defra statistics

Land use and livestock numbers

(Tables 12.2 and 12.3)

Permanent pasture accounted for the biggest share of the organic area (63%), followed by temporary pasture (20%) and cereals (8%). The three main crop types grown organically are cereals, vegetables including potatoes and other arable crops.

The number of poultry farmed organically in the United Kingdom increased by 2.5% between 2018 and 2019, rising to almost 3.5 million birds. However, this equates to only 1.9% of the total UK poultry population. In the red meat sector, sheep reared organically decreased by 5.4% to 782 thousand animals in 2019. Pigs reared organically also saw a decrease in 2019 of 9.3%, falling from 37 thousand animals to 34 thousand animals.

Organically reared cattle fell from 324 thousand animals in 2018 to 301 thousand in 2019, a decrease of 7.2%.

Table 12.2 Organic and in-conversion land use; United Kingdom
Enquiries: Sarah Thompson on +44(0)20 802 66462, email:sarah.thompson@defra.gov.uk

Thousand hectares

	2016	2017(c)	2018(c)	2019
Land, in-conversion				
Cereals	1.6	1.9	2.2	3.0
Other crops	0.6	0.8	0.9	0.9
Fruit & nuts	0.1	0.1	0.1	0.1
Vegetables (including potatoes)	0.5	0.4	0.8	1.1
Herbs & ornamentals	0.1	-	0.1	-
Temporary pasture	6.2	7.4	7.3	6.1
Permanent pasture (a)	15.3	17.4	20.3	15.4
Woodland	0.2	0.3	0.5	0.8
Unutilised land	0.3	0.2	0.4	0.4
Unknown (b)	0.4	4.1	0.3	0.2
Total	**25.2**	**32.6**	**32.9**	**28.1**
Land, fully organic				
Cereals	36.8	35.4	34.8	36.8
Other crops	6.7	6.6	6.5	8.0
Fruit & nuts	1.9	1.7	1.6	1.9
Vegetables (including potatoes)	9.8	9.2	8.5	8.3
Herbs & ornamentals	5.7	5.9	6.6	0.4
Temporary pasture	85.9	84.9	54.5	89.0
Permanent pasture (a)	319.7	316.0	309.9	290.0
Woodland	7.1	8.6	7.1	14.4
Unutilised land	5.2	5.4	3.5	4.2
Unknown (b)	4.1	11.1	8.1	4.2
Total	**482.7**	**484.8**	**441.1**	**457.1**

a) Includes rough grazing.
b) Some land areas are provided without a crop category or land use description. These areas are classified as unknown.
c) In 2019 data issues have been identified with the detailed split of crops provided for 2017 and 2018. The overall totals for 2017 and 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

Table 12.3 Estimates of organic livestock numbers (a) (b); United Kingdom

Enquiries: Sarah Thompson on +44(0)20 802 66462, email:sarah.thompson@defra.gov.uk

Thousand head

	2016	2017	2018	2019
Cattle	296	294	324	301
Sheep	841	887	827	782
Pigs	31	39	37	34
Poultry	2,821	3,060	3,381	3,464
Other livestock (c)	3	3	6	6

a) Certification bodies record production data at various times of the year, so figures should be treated with care as they will not represent an exact snapshot of organic livestock farming.
b) Data relates to fully organic only.
c) "Other Livestock" includes goats, farmed deer, horses, camelids and any livestock not recorded elsewhere.

Source: Organic certification bodies collated by Defra statistics

Organic operators
(Tables 12.4 and 12.5)

There were 6,129 certified organic operators in the United Kingdom in 2019, a decrease from 6,188 in 2018.

Table 12.4 Number of organic operators (a) (b) – by region

Enquiries: Sarah Thompson on +44(0)20 802 66462, email:sarah.thompson@defra.gov.uk

Number of operators

	2016	2017	2018	2019
North East	130	132	113	116
North West	301	308	263	274
Yorkshire & Humberside	273	275	240	246
East Midlands	371	388	350	353
West Midlands	446	514	475	460
Eastern	508	543	477	457
South East (inc. London)	1,192	1,254	1,196	1,217
South West	1,627	1,623	1,522	1,504
England	**4,848**	**5,037**	**4,636**	**4,627**
Wales	751	751	759	737
Scotland	560	578	577	559
Northern Ireland	204	220	216	206
United Kingdom	**6,363**	**6,586**	**6,188**	**6,129**

a) Includes producers, processors and producer/processors. Processors can include abattoirs, bakers, stores and wholesalers. The recorded location depends on the address registered with the certifier bodies and so larger businesses may be recorded at their headquarters.

b) 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 is not directly comparable.

Source: Organic certification bodies collated by Defra statistics

Table 12.5 Numbers of organic crop and livestock producers and processors 2019 (a) – by region

Enquiries: Sarah Thompson on +44(0)20 802 66462, email:sarah.thompson@defra.gov.uk

Number of operators

	No. crop producers	No. crop producers and processors	No. livestock producers	No. livestock producers and processors
North East	75	1	56	1
North West	110	4	75	3
Yorkshire & Humberside	93	1	67	1
East Midlands	159	3	115	1
West Midlands	290	5	168	5
Eastern	155	5	76	3
South East (inc. London)	332	4	184	3
South West	1,010	15	756	12
England	**2,224**	**38**	**1,497**	**29**
Wales	596	5	511	2
Scotland	340	1	265	1
Northern Ireland	134	2	117	0
United Kingdom	**3,294**	**46**	**2,390**	**32**

a) Mixed organic holdings will be recorded under both the crop and livestock headings above, so the above numbers cannot be added together to get total producers/processors by region as this will lead to double counting. For totals please see table 12.4.

Chapter 13 Overseas Trade

Summary

In 2019:

- The **value** of food, feed and drink (FFD) **exports** was £23.6 billion, an increase of £0.7billion (2.9%) in real terms on 2018.
- The **value** of food, feed and drink **imports** increased by £0.2 billion (0.3%) in real terms to £47.9 billion.
- The resultant **trade gap** in food, feed and drink narrowed by £0.5 billion (2.0%) to £24.3 billion in 2019.
- Principal **destinations for exports** were the Irish Republic (17%), USA (10%), France (9.7%) and the Netherlands (7.3%) in 2019.
- The main **countries of despatch for imports** into the UK in 2019 were the Netherlands (12%), Irish Republic (9.5%), Germany (9.5%) and France (9.4%).
- **Whisky** had the **highest export value**, totalling £5.0 billion in 2019. This was a 2.5% increase on the 2018 value in real terms. In 2019, UK whisky imports fell by 13.5% from the 2018 total to £191million.
- Together, **fresh fruit and vegetables** remain the **highest value categories for imports** totalling £6.4 billion in 2019, which was a 0.8% increase on 2018 in real terms. Exports of fresh vegetables fell by 3.0% in real terms to £128 million and exports of fresh fruit also fell by 2.3% in real terms to £155m in 2019.
- **Exports of un-milled wheat** in 2019 totalled £183m, an increase in real terms of 185% on the 2018 total. Imports of un-milled wheat fell by 46% in real terms to £250m as a result of a high volume and good quality domestic harvest.

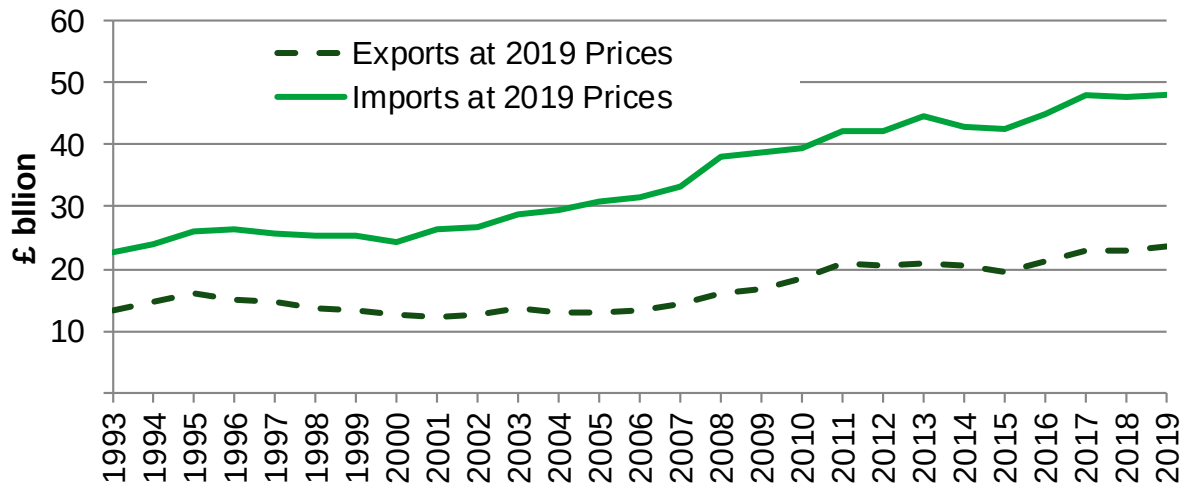
Introduction

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. Since the beginning of 1993, the collection of trade statistics has been 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). Extra-EU trade statistics are compiled, as before, from Customs declarations by importers, exporters and their agents, while intra-EU trade statistics are compiled using a system linked to traders' VAT returns, known as Intrastat.

The trade statistics shown here may not match those shown in the commodities tables in Chapter 7 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, not of processed and packaged milk and cream as shown here.

Total value of trade in food, feed and drink
(Figure 13.1 and Table 13.1).

Figure 13.1 Value of trade in food, feed and drink at 2019 prices; United Kingdom



The value of exports of food, feed and drink was £23.6 billion in 2019. To compare exports with previous years, it is necessary to adjust for inflation. The real terms value of exports was £0.7 billion or 2.9% higher in 2019 than 2018. The longer trend is of rising real terms export values. Since 2005, the real terms value of exports has risen by £10.6 billion or 81%. This 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 £47.9 billion in 2019. To compare 2019 imports with previous years it is necessary to adjust for the effects of economic inflation. The real terms value of imports was £0.2 billion or 0.3% higher in 2019 than 2018. The

longer trend is of rising real terms import values. Since 2005, the real terms value of imports has risen by £17 billion or 56%. The trade gap narrowed by 2.0% between 2018 and 2019, but has widened by 38% from £17.7 billion in 2005 to £24.3 billion in 2019 in real terms.

Looking at exports of specific food types, the largest percentage increase in real terms occurred in the cereals category which showed a rise of 12% to £2.4 billion, followed by exports of fish which increased by 10% to £2.0 billion. Exports of meat increased by 8.3% to £2.1 billion and exports of dairy and eggs increased by 3.5% to £2.0 billion.

In real terms, imports of dairy & eggs fell by 4.4% to £3.3 billion, and imports of cereals increased by 1.8% to £4.2 billion between 2018 and 2019. Imports of meat fell by 4.1% to £6.6 billion and imports of fruit and vegetables increased by 1.6% to £11.5 billion. Imports of animal feed increased by 0.9% in real terms to £2.4 billion.

Value of trade in food, feed and drink by types of commodity
(Tables 13.1a, 13.1b, 13.1c and Figures 13.2, 13.3)

Table 13.1a Value of trade in food, feed and drink at 2019 prices; United Kingdom
Enquiries: Leigh Riley on +44 (0)2080 266332, email: leigh.riley@defra.gsi.gov.uk
£ million

SITC Division Code	Type	2016	2017	2018	2019 (prov.)
Exports					
01	Meat & Meat Preps	1,667	1,880	1,911	2,070
02	Dairy & Eggs	1,460	1,819	1,925	1,993
03	Fish & Fish Preps	1,737	1,981	1,822	2,005
04	Cereals & Cereal Preps	2,430	2,205	2,182	2,448
05	Fruit and Veg & Preps	1,184	1,268	1,288	1,273
06	Sugar & Sugar Preps	409	413	459	443
07	Coffee, tea, etc.	1,447	1,546	1,575	1,549
08	Animal feed	1,187	1,415	1,207	1,128
09	Misc. edible preps	1,931	2,081	2,156	2,204
11	Beverages	7,235	7,579	7,792	7,911
21+S4	Oils/fats & Oilseeds	579	624	633	583
	Total	**21,268**	**22,813**	**22,951**	**23,607**
Imports					
01	Meat & Meat Preps	6,585	6,991	6,921	6,636
02	Dairy & Eggs	2,924	3,344	3,488	3,333
03	Fish & Fish Preps	3,253	3,326	3,252	3,458
04	Cereals & Cereal Preps	3,485	4,012	4,168	4,242
05	Fruit and Veg & Preps	10,935	11,514	11,305	11,481
06	Sugar & Sugar Preps	1,227	1,371	1,198	1,196
07	Coffee, tea, etc.	3,624	3,911	3,809	3,799
08	Animal feed	2,112	2,250	2,408	2,430
09	Misc. edible preps	3,402	3,285	3,331	3,443
11	Beverages	5,804	5,879	5,965	5,984
22+S3	Oils/fats & Oilseeds	1,665	2,093	1,906	1,915
	Total	**45,015**	**47,976**	**47,752**	**47,917**

Source: HMRC

Table 13.1b Value of trade in food, feed and drink with EU countries at 2019 prices; UK
Enquiries: Leigh Riley on +44 (0)2080 266332, email: leigh.riley@defra.gsi.gov.uk

£ Million

SITC Division Code	Type	2016	2017	2018	2019 (prov.)
Exports					
01	Meat & Meat Preps	1,342	1,517	1,546	1,538
02	Dairy & Eggs	1,048	1,363	1,504	1,505
03	Fish & Fish Preps	1,233	1,388	1,297	1,345
04	Cereals & Cereal Preps	1,671	1,520	1,551	1,742
05	Fruit and Veg & Preps	875	981	1,009	982
06	Sugar & Sugar Preps	313	314	337	313
07	Coffee, tea, etc.	1,051	1,120	1,144	1,112
08	Animal feed	703	770	844	741
09	Misc. edible preps	1,304	1,398	1,420	1,388
11	Beverages	2,728	2,898	2,936	2,983
22 + S4	Oils/fats & Oilseeds	468	531	549	505
	Total	**12,736**	**13,799**	**14,138**	**14,155**
Imports					
01	Meat & Meat Preps	5,318	5,767	5,694	5,494
02	Dairy & Eggs	2,881	3,316	3,443	3,292
03	Fish & Fish Preps	1,102	1,131	1,112	1,210
04	Cereals & Cereal Preps	2,867	3,174	3,359	3,302
05	Fruit and Veg & Preps	6,848	7,182	7,139	7,340
06	Sugar & Sugar Preps	788	928	826	805
07	Coffee, tea, etc.	2,360	2,659	2,605	2,646
08	Animal feed	1,226	1,317	1,350	1,371
09	Misc. edible preps	2,846	2,692	2,711	2,771
11	Beverages	4,360	4,285	4,320	4,380
22+S4	Oils/fats & Oilseeds	918	1,158	1,074	1,062
	Total	**31,515**	**33,608**	**33,633**	**33,673**

Source: HMRC

Table 13.1c Value of trade in food, feed and drink with non-EU countries at 2019 prices; UK

Enquiries: Leigh Riley on +44 (0)2080 266332, email: leigh.riley@defra.gsi.gov.uk

£ million — Calendar year

SITC Division Code	Type	2016	2017	2018	2019 (prov.)
Exports					
01	Meat & Meat Preps	325	363	365	531
02	Dairy & Eggs	413	456	421	488
03	Fish & Fish Preps	504	593	526	660
04	Cereals & Cereal Preps	758	685	630	706
05	Fruit and Veg & Preps	309	287	279	291
06	Sugar & Sugar Preps	96	99	123	130
07	Coffee, tea, etc.	397	426	430	437
08	Animal feed	484	645	363	387
09	Misc. edible preps	628	683	736	817
11	Beverages	4,507	4,681	4,856	4,928
22+S4	Oils/fats & Oilseeds	111	94	84	78
	Total	**8,531**	**9,014**	**8,813**	**9,452**
Imports					
01	Meat & Meat Preps	1,268	1,223	1,227	1,142
02	Dairy & Eggs	43	29	45	41
03	Fish & Fish Preps	2,151	2,195	2,140	2,248
04	Cereals & Cereal Preps	618	838	810	940
05	Fruit and Veg & Preps	4,087	4,332	4,166	4,141
06	Sugar & Sugar Preps	439	443	372	391
07	Coffee, tea, etc.	1,264	1,253	1,204	1,153
08	Animal feed	886	933	1,058	1,059
09	Misc. edible preps	555	593	619	673
11	Beverages	1,443	1,594	1,646	1,604
22+S4	Oils/fats & Oilseeds	746	935	832	853
	Total	**13,500**	**14,368**	**14,119**	**14,244**

Source: HMRC

Explanatory notes for 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:

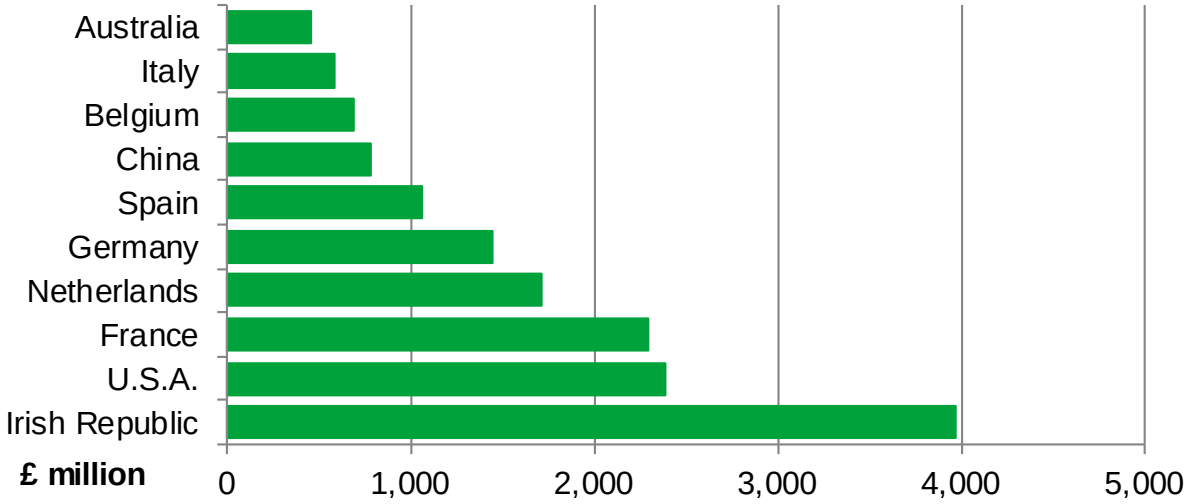
1. Meat: meat from cattle, sheep, pigs, goats, poultry, horses etc.; preparations including blood, juices, sausages, livers, offal.
2. Dairy: includes milk (skimmed or otherwise), butter, buttermilk, cream, yoghurt, ice cream, whey, cheese and curd, all types of eggs both in and out of shell.
3. Fish: All types of edible marine life excluding mammals, fresh, frozen, processed, prepared or preserved.
4. Cereals: includes rice, wheat, barley, oats, maize, grain sorghum and preparations including sweet biscuits, waffles, gingerbread, and uncooked/unstuffed pasta.
5. Fruit and vegetables: 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.
6. Sugar: includes both natural sugar and sugar confectionery (but not chocolate or cocoa), both natural and artificial honey, and liquorice.
7. Coffee, tea, etc.: includes all types of tea, coffee (e.g. green, decaffeinated), extracts and substitutes thereof; cocoa and chocolate (of all kinds): all kinds of spices.
8. Animal feed: 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.
9. Miscellaneous: includes margarine, shortening, homogenised products or preparations not elsewhere specified, sauces, vinegar, soups, yeasts, cooked/stuffed pasta, food preparations for infant use.
11. Drink: includes alcoholic drinks of all kinds; also natural or artificial mineral and aerated waters sweetened or otherwise.
22. 22+S4 Oils: 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.

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.

Total value of trade in food, feed and drink by trading partner
(Figures 13.2 and 13.3)

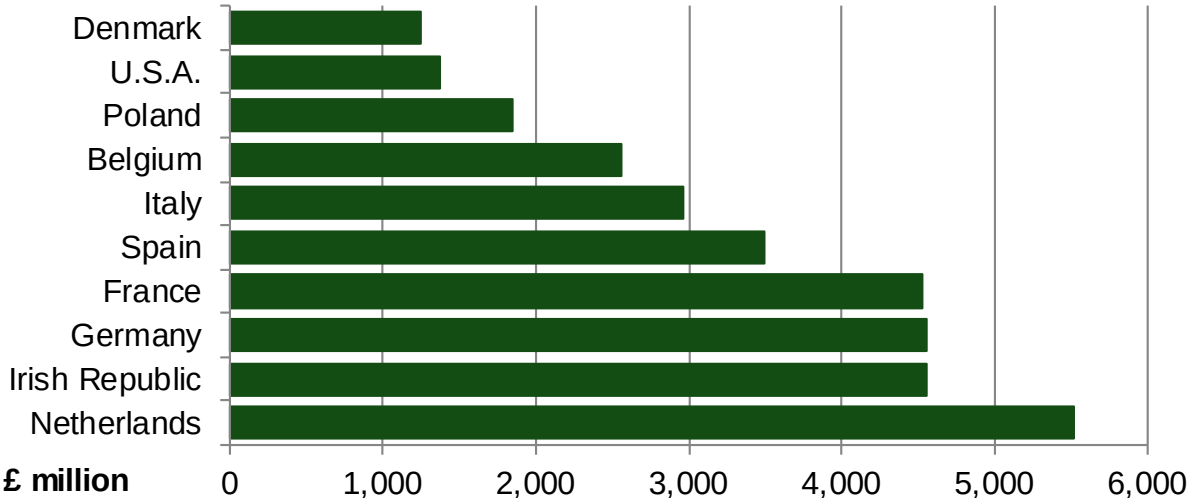
In 2019, 60% of UK food, feed and drink (FFD) exports were to countries in the European Union (EU). In comparison, 40% of UK FFD exports were to non-EU countries. 70% of UK FFD imports during the same period were from the EU, while 30% of FFD imports into the UK were from non-EU countries.

Figure 13.2 Exports of food, feed and drink by country of destination 2019; United Kingdom



Principal UK export destinations of food, feed and drink are shown in Figure 13.2. Seven of the top ten countries are EU Member States with U.S.A., China and Australia the main destinations outside the EU.

Figure 13.3 Imports of food, feed and drink by country of dispatch 2019; United Kingdom

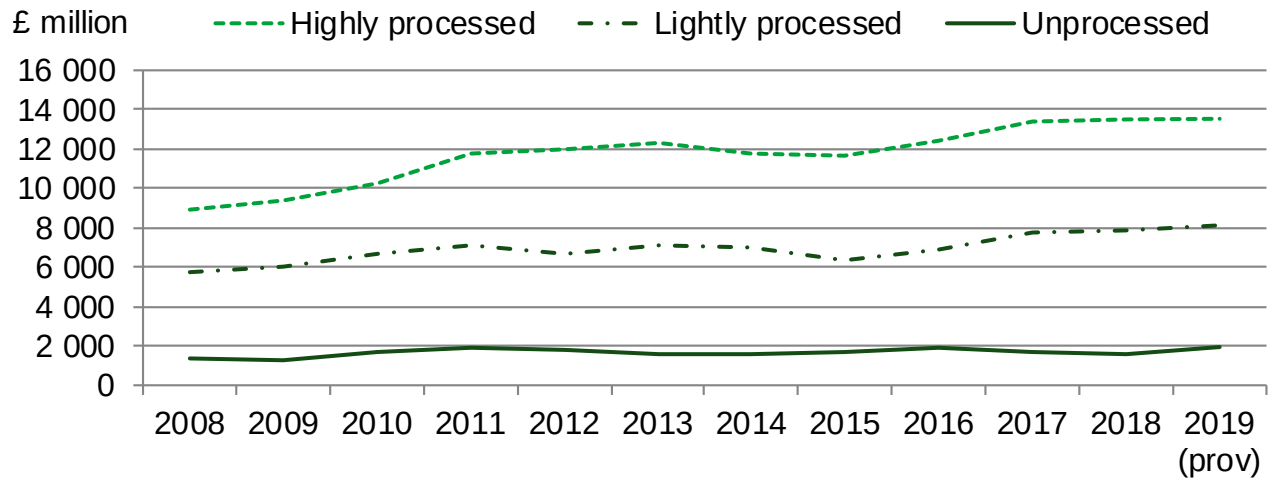


The countries which exported the greatest value of food, feed and drink to the United Kingdom in 2019 are shown in Figure 13.3. With the exception of the U.S.A. all these countries are members of the EU.

Value of exports and imports of food, feed and drink by degree of processing (Figures 13.4 and 13.5)

Trade in food, feed and drink covers a wide range of products from raw agricultural commodities through 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 2019 prices; UK

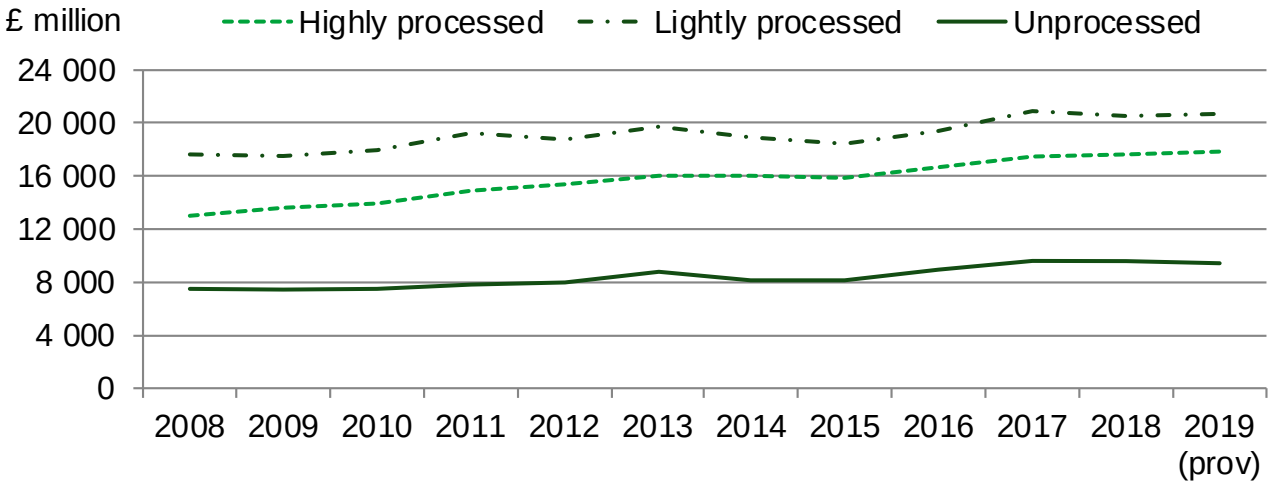


Exports of highly processed foods such as confectionery, canned meats, jams, alcoholic drinks and ice cream increased by 32% in real term value between 2010 and 2019.

Exports of lightly processed food and drink, i.e. goods that retain their raw recognisable form, such as meat, cheese, butter and oils and fats rose by 22% in real term value between 2010 and 2019.

Exports of unprocessed commodities, such as fresh fruit & vegetables, nuts, un-milled cereal and eggs increased by 17% in real term value between 2010 and 2019.

Figure 13.5 Imports in food, feed and drink by degree of processing at 2019 prices; UK



Imports of highly processed foods increased by 28% in real term value between 2010 and 2019.

Imports of lightly processed food and drink increased by 15% in real term value between 2010 and 2019.

Imports of unprocessed commodities increased by 26% in real term value between 2010 and 2019.

Value and volume of trade in key commodities
(Tables 13.2 and 13.3)

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 have seen a return to export growth in most of the main product groups.

The value of exports of whisky, which represents the highest valued individual food, feed and drink item, increased by 2.5% in real terms to £5.0 billion in 2019. It is 22% higher than in 2010 in real terms. Exports of salmon increased by 27% to £822 million as a result of a return to strong global demand for UK salmon following a challenging year for the sector in 2018. The value of exports of un-milled wheat increased by 185% in real terms to £183 million in 2019, as a result of improved domestic supply and limited UK demand. Exports of cheese grew by 3.0% in real terms to £708 million as a result of strong global demand for UK dairy products.

Imports of fresh fruit and fresh vegetables increased by 0.8% in real terms to £6.4 billion. Despite the slight increase, the range, quality and consumer awareness of healthy eating options remains high. The value of imports across a range of different commodities was broadly similar to 2018. Imports of un-milled wheat fell by 46% in real terms to £250 million in reaction to good domestic supplies.

The value of wine imports in 2019, a high value commodity, increased by 3.4% in real terms on 2018 to £3.5 billion, whereas the value of wine exported from the UK increased by 4.2% in real terms to £656 million.

The overall volume of exports of food, feed and drink in 2019 increased by 12% to 15.3 billion tonnes, which is in line with usual export volumes. There is a gradual long term trend for the volume of exports to increase and in 2019 it was 5.9% higher than in 2010. Import volumes have also been increasing over recent years, and the volume of imports of 41.0 billion tonnes in 2019 was 21% higher than 2010.

The Food, Feed and Drink Index provides a single measure of total volume of trade for all food groups, weighted by the value of each group. Using this approach, high value exports (e.g. whisky) are given more weight in the index than low value exports (e.g. wheat). According to the index, food, feed and drink exports in 2019 increased by 2.2% on the previous year, while imports increased by 0.2%.

Table 13.2 Trade in key commodities by value in real terms at 2019 prices; United Kingdom

Enquiries: Leigh Riley on +44 (0)2080 266332, email: leigh.riley@defra.gsi.gov.uk

£ million — Calendar year

Commodity	Flow	2016	2017	2018	2019 (prov.)
Whisky	Imports	181	235	220	191
	Exports	4341	4650	4908	5033
Wine	Imports	3243	3346	3367	3482
	Exports	515	584	630	656
Cheese	Imports	1437	1627	1731	1726
	Exports	529	640	688	708
Poultry meat	Imports	1227	1222	1304	1213
	Exports	265	292	305	302
Poultry meat products	Imports	1026	1099	1100	1156
	Exports	115	129	141	122
Beef and veal	Imports	1077	1115	1189	997
	Exports	391	421	443	464
Wheat, unmilled	Imports	258	356	462	250
	Exports	405	107	64	183
Lamb and mutton	Imports	366	384	380	312
	Exports	347	400	374	399
Pork	Imports	824	981	869	951
	Exports	267	305	297	392
Breakfast cereals	Imports	270	285	304	319
	Exports	409	446	491	483
Milk and cream	Imports	111	153	183	140
	Exports	209	336	351	333
Bacon and ham	Imports	585	583	554	564
	Exports	44	56	63	66
Butter	Imports	295	379	367	290
	Exports	166	232	280	257
Eggs and egg products	Imports	183	182	175	152
	Exports	68	86	100	112
Fresh vegetables	Imports	2452	2501	2513	2538
	Exports	115	115	132	128
Fresh fruit	Imports	3834	3994	3855	3882
	Exports	119	157	159	155
Salmon (inc. smoked)	Imports	506	515	524	604
	Exports	611	749	647	822

Source: HMRC

Table 13.3 Trade in key commodities by volume; United Kingdom

Enquiries: Leigh Riley on +44 (0)2080 266332, email: leigh.riley@defra.gsi.gov.uk

Thousand tonnes (unless otherwise specified) Calendar year

Commodity	Flow	2016	2017	2018	2019 (prov.)
Whisky	Imports	16	21	20	19
(million litres pure alcohol)	Exports	352	363	374	382
Wine	Imports	1427	1388	1416	1419
(million litres)	Exports	81	99	121	101
Cheese	Imports	490	494	523	536
	Exports	164	171	190	208
Poultry meat	Imports	492	474	488	470
	Exports	304	352	373	392
Poultry meat products	Imports	363	372	375	381
	Exports	39	49	54	37
Beef and veal	Imports	264	274	290	253
	Exports	110	106	110	136
Wheat, unmilled	Imports	1482	1893	2486	1221
	Exports	2935	646	358	1111
Lamb and mutton	Imports	90	80	78	63
	Exports	78	90	83	95
Pork	Imports	439	466	457	448
	Exports	206	216	218	244
Breakfast cereals	Imports	139	136	147	150
	Exports	152	164	186	191
Milk and cream	Imports	150	267	314	228
	Exports	646	850	881	862
Bacon and ham	Imports	243	220	215	193
	Exports	16	19	21	19
Butter	Imports	99	91	84	79
	Exports	65	55	62	69
Eggs and egg products	Imports	100	97	89	84
	Exports	17	23	54	92
Fresh vegetables	Imports	2369	2184	2268	2310
	Exports	155	129	145	142
Fresh fruit	Imports	3847	3984	3661	3636
	Exports	140	174	156	161
Salmon (inc. smoked)	Imports	81	74	76	92
	Exports	105	116	100	124
Food, feed and drink	**Imports**	**118**	**120**	**121**	**121**
Index, 2009=100	**Exports**	**120**	**123**	**128**	**131**

Source: HMRC

Explanatory notes for tables 13.2 and 13.3

- Whisky includes bourbon, scotch (malted and blended) and other whiskies.
- Wine includes grape must, vermouth and wine of fresh grapes (sparkling and still).
- Cheese includes grated or powdered, processed, blue-veined and fresh (e.g. curd).
- Poultry-meat (inc. poultry offal) includes carcase meat, cuts and offal (inc. liver).
- Poultry meat products includes prepared, preserved, salted or cooked poultry-meat and offal (inc. liver).
- Beef and veal includes carcase meat and cuts, both bone-in and boneless.
- Wheat, un-milled includes durum, other wheat (inc. spelt) and meslin.
- Lamb and mutton includes carcase meat and cuts, both bone-in and boneless.
- Pork includes carcase meat and cuts, both bone-in and boneless.
- Breakfast cereals includes cereal grains worked or prepared for breakfast cereals
- Milk and cream includes milk (inc. skimmed milk) and cream, not concentrated or sweetened.
- Fresh vegetables excludes potatoes, dried legumes and processed vegetables.
- Fresh fruit excludes jams, juices, dried and processed fruit.
- Salmon (inc. smoked) includes fresh, chilled, frozen or smoked, but not canned
- Note: Definitions of 'fresh vegetables' and 'fresh fruit' used have been revised in 2009 to be consistent with those used for AUK Chapter 5.

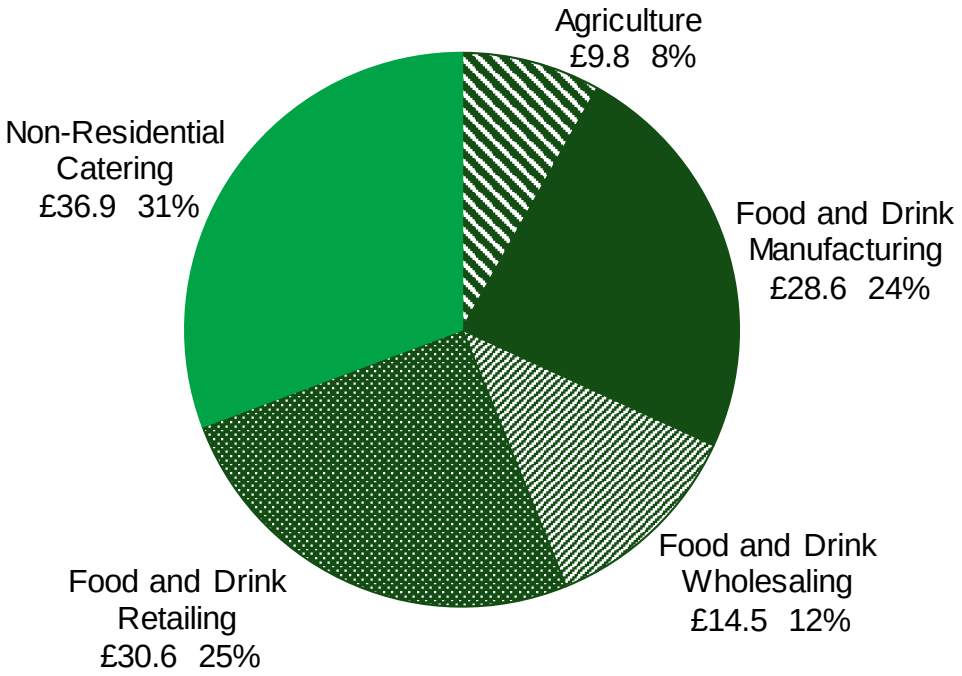
Chapter 14 The Food Chain

Summary

- In 2018 the agri-food sector in the United Kingdom accounted for a total estimated **Gross Value Added (GVA)** of £120 billion or 6.3% of national GVA, up from 6.2% in 2017. The wholesaling sector increased 10%, followed by catering at 6.7%.
- **Employment** in the agri-food sector rose 0.7% over the 12 month period to the fourth quarter of 2019 to just under 4 million. The largest increase was in catering, rising by 29,000 employees (1.6%).
- **Total factor productivity** of the UK food chain beyond the farmgate rose by 0.8% between 2017 and 2018. Productivity in the wider economy fell by 0.2% in 2018. Benchmarking against a wider economy measure shows that the average annual growth in the food chain between 2008 and 2018 was 0.3% compared to 0.2% in the wider economy. For more information on productivity please see the Total Factor Productivity of the United Kingdom Food Chain publication.
- Excluding the effect of price rises, **consumers' expenditure** increased 1.8% in 2019 and was 16% higher than in 2009. Expenditure on food eaten out increased 6.1% in 2019, whilst expenditure on household food decreased by 2.1%.

Contribution of the agri-food sector to the national economy
(Figure 14.1 and Table 14.1)

Figure 14.1 Gross Value Added of the agri-food sector, 2018 (£ billion)



Source: Annual Business Survey (ONS) and Aggregate Agricultural Accounts (Defra).

In 2018, the agri-food sector contributed £120 billion to the economy, 6.3% of the national GVA. Within this, retailing and non-residential catering accounted for over one quarter each. Food manufacturing covered just under one quarter and wholesaling covered 12% of the sector. Agriculture made the smallest contribution at 8.1%.

In 2018 all sectors increased their productivity except agriculture which fell 6.2% from 2017. Wholesaling saw the highest increase of 10% while manufacturing saw the lowest increase of 2.3%.

Between 2008 and 2018, the average annual growth rate of the food chain was 0.3% whereas 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 14.1 Agri-food sector contribution to the national economy

Enquiries: David Lee on +44 (0)20 802 63006, email: david.lee@defra.gov.uk

£million unless otherwise specified

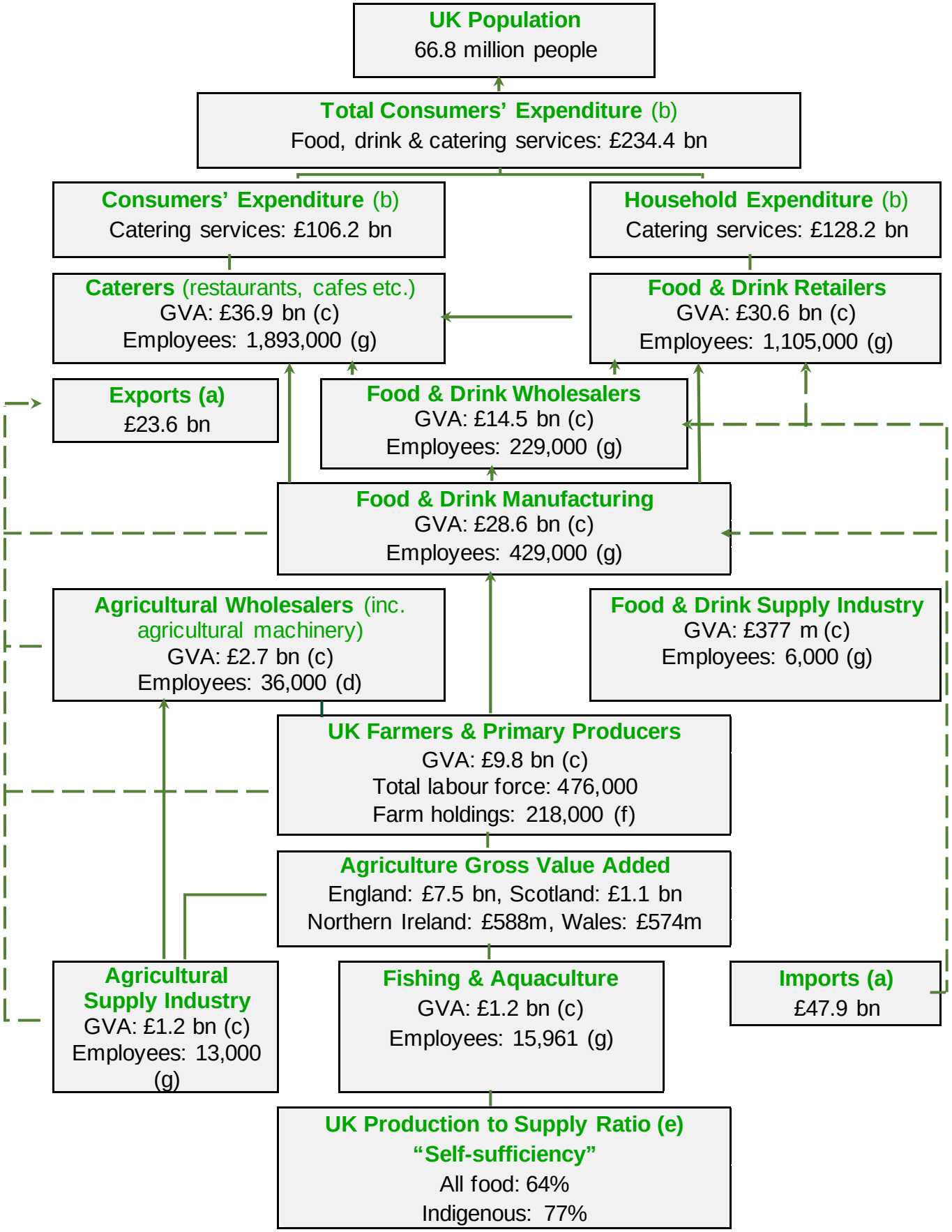
	2017	2018	2019 (prov.)
Agri-food sector's contribution to total economy gross value added			
at current prices			
Agriculture	10,419	9,775	10,408
Food Manufacturing	27,931	28,575	..
Food Wholesaling	13,112	14,476	..
Food Retailing	29,112	30,608	..
Food Non-Residential Catering	34,626	36,945	..
% of national gross value added (current prices)	6.20%	6.30%	..
Workforce in the food sector (thousand persons)			
Agriculture	424	426	428
Food Manufacturing	407	404	412
Food Wholesaling	239	237	246
Food Retailing	1,116	1,112	1,092
Food Non-Residential Catering	1,738	1,790	1,819
% of total workforce in employment	13%	13%	13%
Trade in food, feed and drink (in real terms at 2019 prices)			
Imports of food, feed and drink	46,121	46,896	47,917
% of total UK imports	9.30%	9.30%	8.80%
Exports of food, feed and drink	21,930	22,539	23,607
% of total UK exports	6.40%	6.20%	6.40%
UK Food Production to Supply Ratio ('Self-Sufficiency')			
% of all food	64%	62%	64%
% of indigenous type food	78%	75%	77%
Household final consumption expenditure on food and alcoholic drinks			
at current prices	220,697	228,295	234,368
household food	100,538	104,378	106,583
food eaten out	63,343	64,757	66,969
alcoholic drinks	56,816	59,160	60,816
at constant 2010 prices (£ million)	213,775	215,009	218,982
household food	101,624	103,068	100,922
food eaten out	58,841	58,340	61,877
alcoholic drinks	53,310	53,601	56,183
% of total household final consumption expenditure	17%	17%	17%
household food	7.70%	7.70%	7.70%
food eaten out	4.90%	4.80%	4.80%
alcoholic drinks	4.40%	4.40%	4.40%
Producer prices for agricultural products (2015 = 100)	110.8	115.1	113.4
Consumer price index (2015 = 100):			
food	100.1	101.9	103.3
alcoholic drinks	99.3	100	100.9
all items	103.6	106.1	107.9

. . means 'not available' or 'not applicable'.

Sources: Annual Business Survey (ONS), Aggregate Agricultural Accounts (Defra), Labour Force Survey GB (ONS), Overseas Trade Statistics (HMRC),

Consumer Price Indices (ONS).

Figure 14.2: Economic summary of the Food Chain



Footnotes for Figure 14.2

Dashed lines indicate main trade flows.

a) Overseas trade data is provisional for full year 2019 from HM Revenue and Customs. (Data may not equal total due to rounding).
b) Consumers' expenditure, properly known as household final consumption expenditure, is provisional from the Office for National Statistics (ONS) for full year 2019 and is calculated at current prices. (Data may not equal total due to rounding).
c) Gross value added (GVA) is the difference between the value of goods and services produced and the cost of raw materials and other inputs used in production. GVA figures are from the Annual Business Survey (ONS) and are provisional data for full year 2018, which is calculated at basic prices (market prices less taxes plus subsidies). GVA for agriculture is 2018 data from Defra.
d) Includes an estimate of employment of wholesalers of agricultural machinery from the Annual Business Survey (ONS).
e) The UK sources food from diverse stable countries and imports can make up for domestic supply shortages.
f) 2018 data from Defra's June Survey of Agriculture.
g) Employee data for the main food chain sectors is provisional for Q4 2019 from the ONS. Fishing and aquaculture figures are a combination of ONS and MMO (Marine Management Organisation) data.

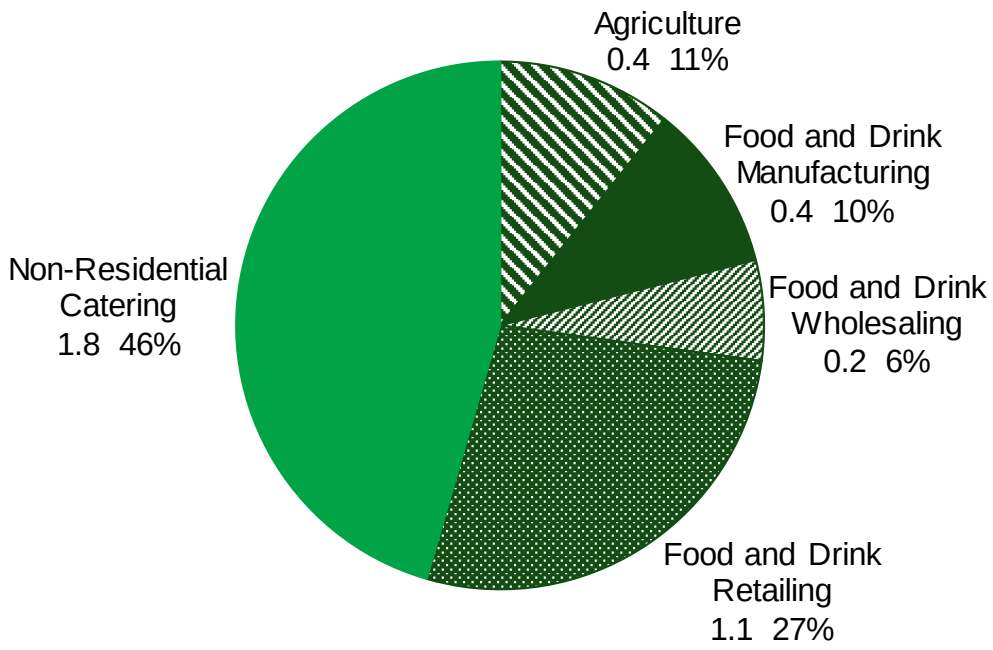
The food chain

(Figure 14.2)

In 2018, the food supply chain in the United Kingdom as a whole received £226 billion, which came from spending by consumers in the United Kingdom, plus exports, less imports of agricultural commodities and processed food and drink products (assuming that imports and exports directly to and from consumers are negligible). Figure 14.2 shows the largest elements of the food chain from agriculture as a primary producer through food manufacturing and retail trade to consumers' expenditure.

Agri-food sector employees and self-employed farmers
(Figure 14.3)

Figure 14.3 Agri-food sector employees and self-employed farmers (millions)



Source: Labour Market Trends (ONS), June Survey of Agriculture and Horticulture (Defra)

In the fourth quarter of 2019, the agri-food sector employed 4 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 11% of the agri-food sector (Figure 14.3).

In the twelve months to December 2019, employment in the agri-food sector increased by 0.7%. Employment in all sectors rose in 2019 except retailing which fell 1.8%. Agriculture rose by just 0.5%, manufacturing rose by 2.0%, catering by 1.6% and wholesaling by 3.8%. Employment across the whole economy increased 1.5% over the same period.

Employment in the agri-food sector has risen 11% since 2000. Changes in the proportions of each of the sectors since that time show that employment in agriculture and manufacturing reduced by 23% and 14% respectively, while non-residential catering, wholesaling and retailing increased by 45%, 11% and 0.3% respectively.

Food manufacturing

GVA in the food manufacturing sector increased 2.3% in 2018. Food manufacturing productivity decreased by 0.5 per cent and has shown no significant change over the last 10 years. For more information on productivity please see the Total Factor Productivity of the United Kingdom Food Chain publication.

Food wholesaling

GVA in the food wholesaling sector rose by 10% in 2018. At £14.5 billion in 2018, it is 160% higher than in 2000. Food and drink wholesale productivity increased by 2.0% in 2018 and in the last 10 years has shown an average annual increase of 0.7%.

Food retailing

Food retailing GVA was £30.6 billion in 2018, 5.1% up on 2017. Food retail productivity in 2018 increased by 0.7% and in the last 10 years has shown an average annual increase of 0.2%.

Non-residential catering

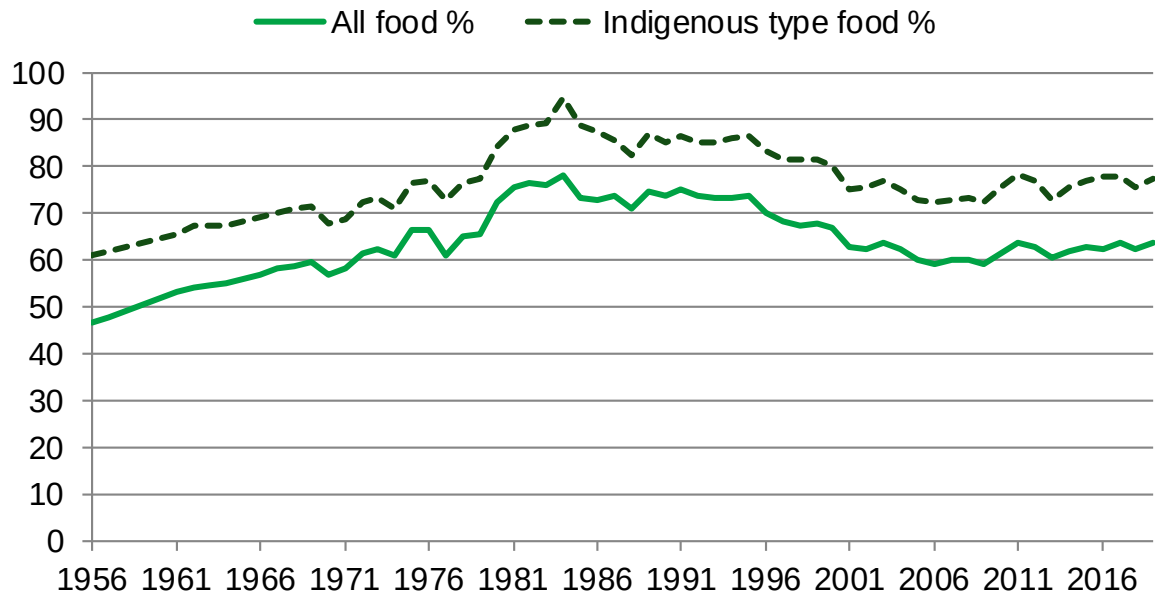
In 2018, GVA in non-residential catering (NRC) increased 6.7% to £37 billion. NRC showed an increase in productivity of 1.6% in 2018. Productivity of NRC was at its strongest prior to the recession, then dipped to its lowest level in 2009, but since the recession has seen an increase. This sector would have been affected strongly by the recession that started in 2008 and lasted through most of 2009. Challenging economic conditions make it difficult for companies to make proportionate savings across all inputs, especially as labour is a relatively high component. Conversely, consumers find it easier to make these types of savings by reducing spending on food; during periods of economic downturn it is likely that consumers will make savings through eating out less and switching to home cooking.

Trade in food, feed and drink
(Table 14.1)

In 2019, the value of food, feed and drink exports was £23.6 billion, an increase of 4.7% on 2018. In 2019 the value of food, feed and drink imports increased by 2.2% to £47.9 billion in real terms, resulting in the trade gap in food, feed and drink of £24.3 billion in real terms, a reduction of 0.2% since 2018. See Chapter 13 for more detail on overseas trade.

Food production to supply ratio
(Figure 14.4)

Figure 14.4 Food production to supply ratio



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. It is estimated to be 64% for all food and 77% for indigenous type

food in 2019. This compares with 62% and 75% respectively in 2018. The overall farmgate value of United Kingdom food production was 2% higher when compared to 2018.

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 detailed analysis is given in the Defra publication 'UK Food Security Assessment'.

The key points on food production to supply ratio and food security from this paper are:

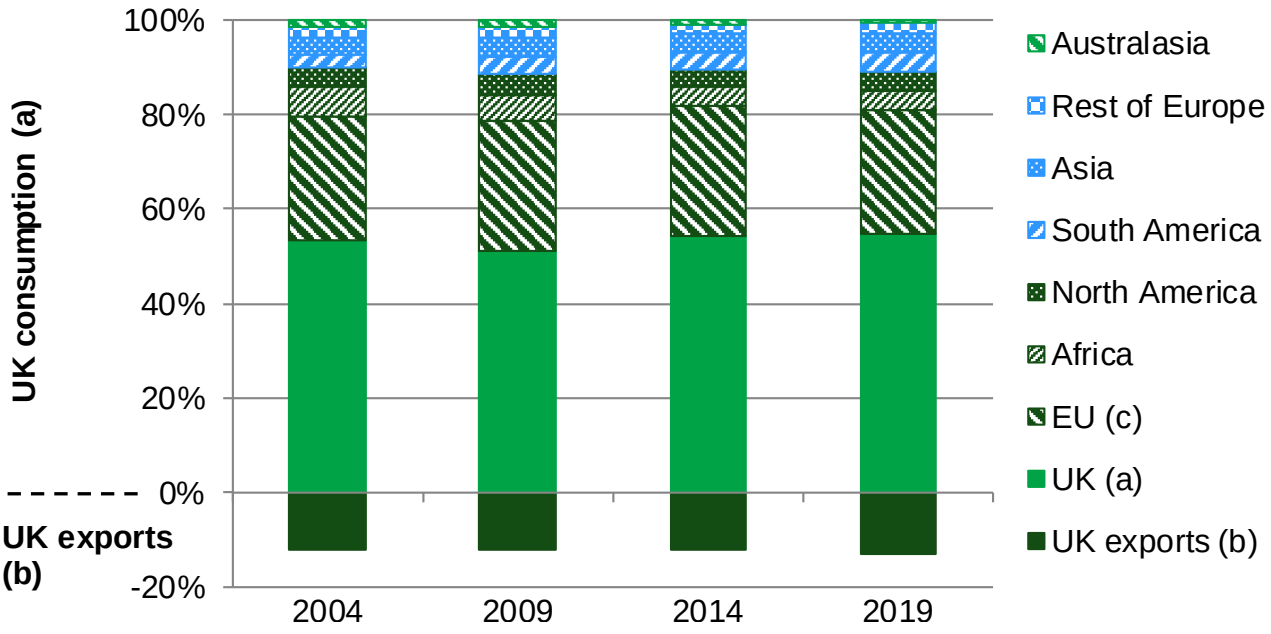
- Diversity enhances security. The United Kingdom sources foods from diverse stable countries, mainly European countries, and imports can make up for domestic supply shortages (see Figure 14.5).
- A high food production to supply ratio fails to insulate a country against many possible disruptions to its supply chain.
- Production potential is more relevant at European Union level than United Kingdom level and the European Union as a whole has a food production to supply ratio of around 90%.
- Further trade liberalisation is unlikely to affect food security within the European Union.

Origins of food consumed in the United Kingdom
(Figure 14.5)

Figure 14.5 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 14.4. Figure 14.5 looks purely at the breakdown of food that the United Kingdom actually consumes.

The Food Production to Supply Ratio (see Figure 14.4) 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 14.5 Origins of food consumed in the United Kingdom: 2004, 2009, 2014, 2019

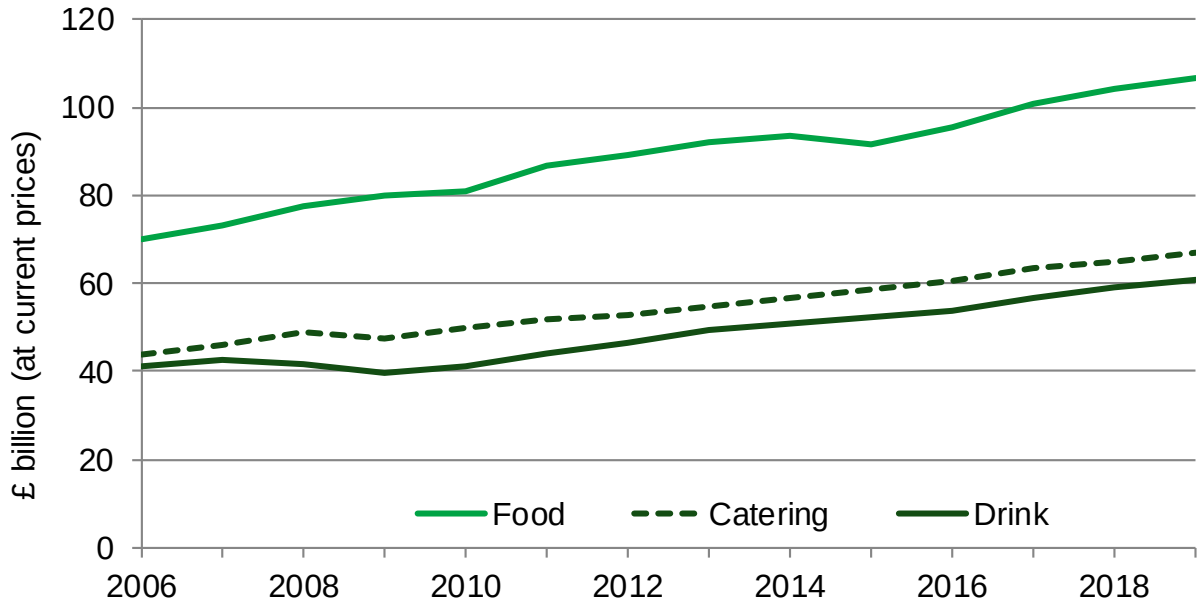


Based on the farm-gate value of raw food.
a) Consumption of UK origin consists of UK domestic production minus UK exports.
b) UK exports are given as a percentage of total UK consumption.
c) Membership of the EU increased between 2002 and 2013, from 15 to 28 countries.

Source: HMRC and Defra 2019

Consumers' expenditure
(Figure 14.6)

Figure 14.6 Consumers' expenditure on food, drink and catering



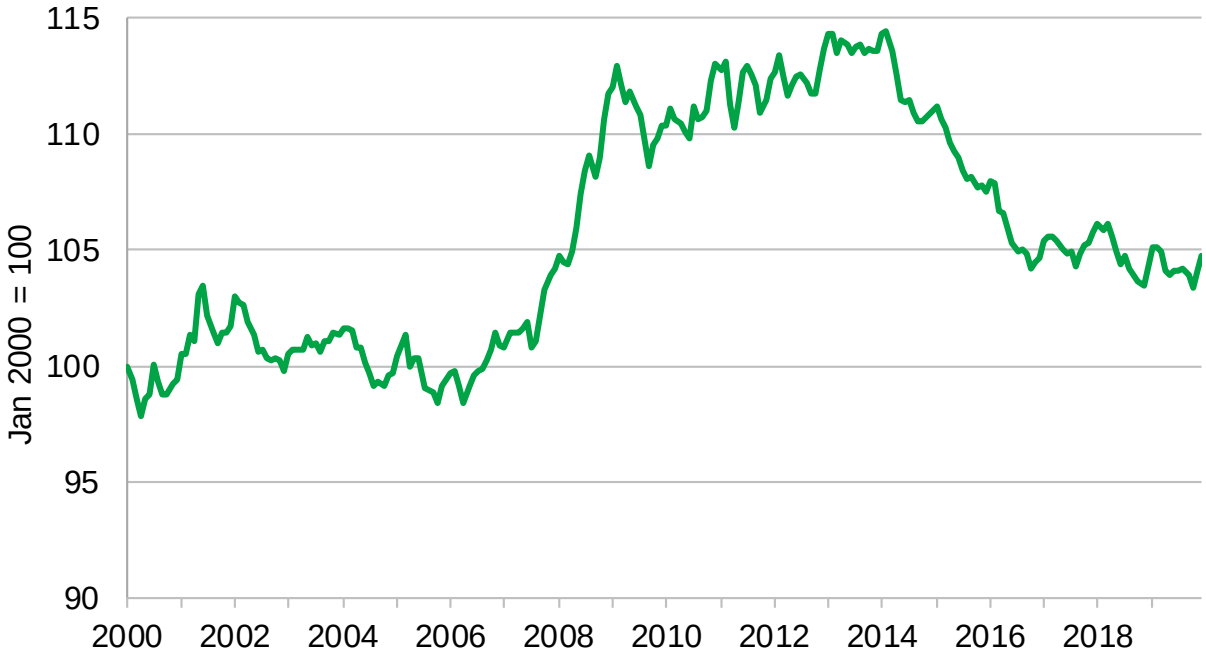
Food includes non-alcoholic drinks; Drink represents alcoholic drinks only.

Source: Consumer trends, ONS.

Consumer expenditure on food, drink and catering increased by 2.7% to £234 billion in 2019. Household food expenditure increased 2.1%, food eaten out rose 3.4% and expenditure on alcoholic drinks rose 2.8% in 2019. At current prices, which incorporate inflation (see chart 14.6), consumers spent 39% more overall in 2019 than in 2008 (the year the recession started); alcoholic drinks saw the biggest increase at 46%. Excluding the effects of inflation, consumers spent 9.1% more overall in 2019 than in 2008, 9.8% more on household food, 9.2% more on alcoholic drinks and 7.9% more on catering.

Changes in consumers' price indices
(Figure 14.7)

Figure 14.7 Changes in the food price index (in constant prices)



Source: Consumer Price Index (ONS)

Historically (1975 to 2000) food prices tended to rise more slowly than general inflation, as measured by the Retail Price Index (RPI). Food 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 to a level not seen since before the recession in 2008. Food prices fluctuated in 2019 falling to another new low in October 2019 before rallying at the end of the year.

Chapter 15 Key Statistics for the EU

Summary

For the EU-28 Member States in 2019:

- The United Kingdom was the largest producer of **sheep and goat meat**, accounting for two fifths of EU production.
- UK was the third largest producer of **wheat, milk and beef and veal** behind France and Germany.
- Germany was the largest producer of **pig meat** followed by Spain and France, together accounting for half of EU production. The UK was the ninth largest producer.

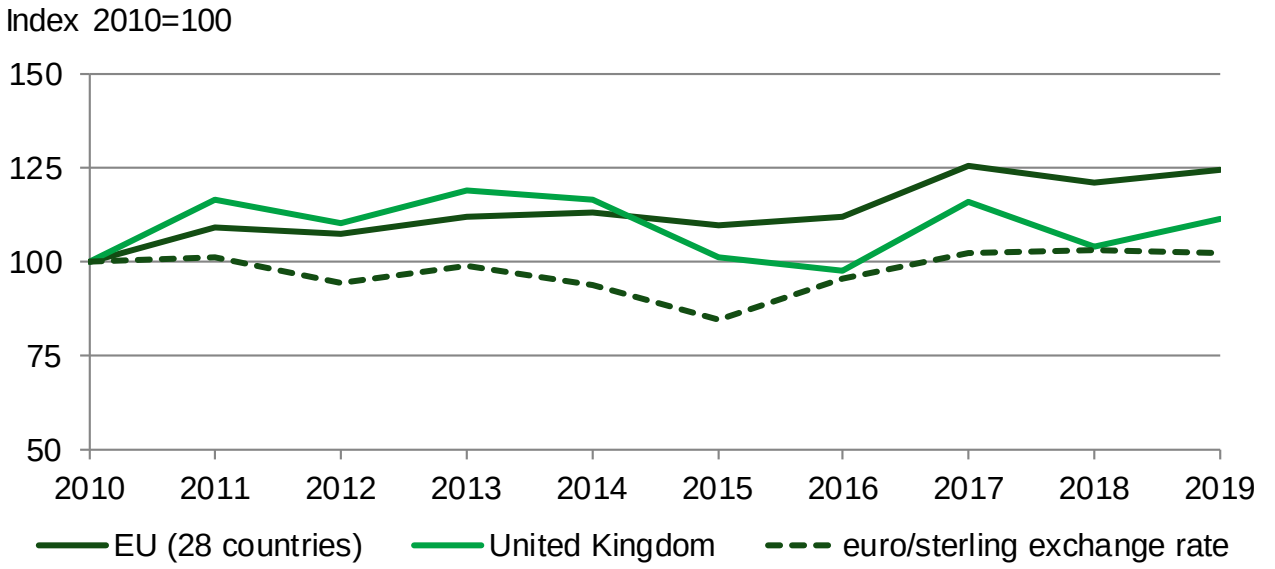
Introduction

This chapter presents simple analyses of agriculture in the European Union (EU) to enable the UK to be compared with other Member States. The source of the data is the Eurostat website where a range of data is available, including statistics from the agricultural accounts found in Chapter 4 which were provided by the UK. Eurostat is the statistical office of the European Union. Its task is to provide the EU with statistics at a European level that enable comparisons between countries and regions.

Agricultural Income
(Figure 15.1)

Eurostat's favoured measure of agricultural income is 'Indicator A: Index of the real income of factors in agriculture, per annual work unit'. This indicator provides important insights into the financial sustainability of agriculture.

Figure 15.1 Indicator A: Index of the income from agricultural activity



Source: Eurostat/Defra

Indicator A corresponds to the real (i.e. adjusted for inflation) net income of agriculture per annual work unit. It is a partial labour productivity measure of the agricultural sector and a consistent measure of profitability which enables comparisons to be made between different countries or regions.

Net income of agriculture is calculated by deducting from the value of agricultural output (production) the value of intermediate consumption (purchases of goods and services used in production), the consumption of fixed capital and adjusting for subsidies and indirect taxes. An annual work unit (AWU) indicates labour used on farm adjusted to full time equivalent. Real income per AWU (Indicator A) represents the income gained per unit of labour. Further information and detailed data can be found on the Eurostat website.

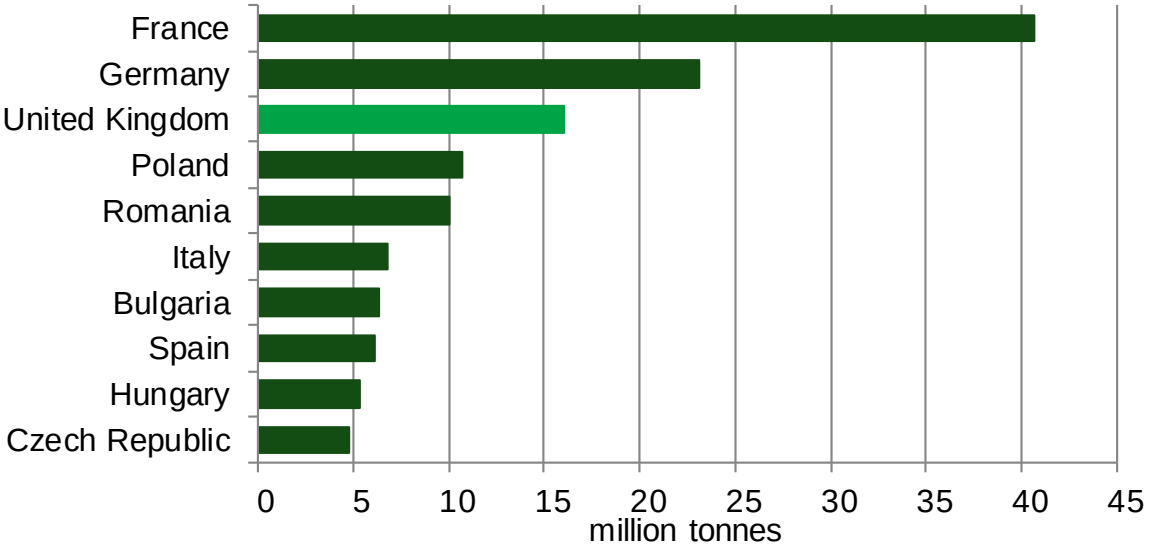
Figure 15.1 shows indices for Indicator A for the UK and the EU (28 countries) since 2010 (2010 = 100) and includes the euro/sterling exchange rate, which influences agricultural income in the UK. In recent years agricultural labour on farm has remained relatively stable, so any variance since 2010 largely reflects changes in net agricultural income.

Indicator A for the UK rose by 7.3% between 2018 and 2019, compared with a rise of 2.8% for the EU as a whole. In comparison, Indicator A for the UK rose by 12% between 2010 and 2019 compared with a rise of 24% for the EU.

Agricultural production
(Figures 15.2 to 15.6)

Wheat

Figure 15.2 EU production of wheat in 2019, top ten countries

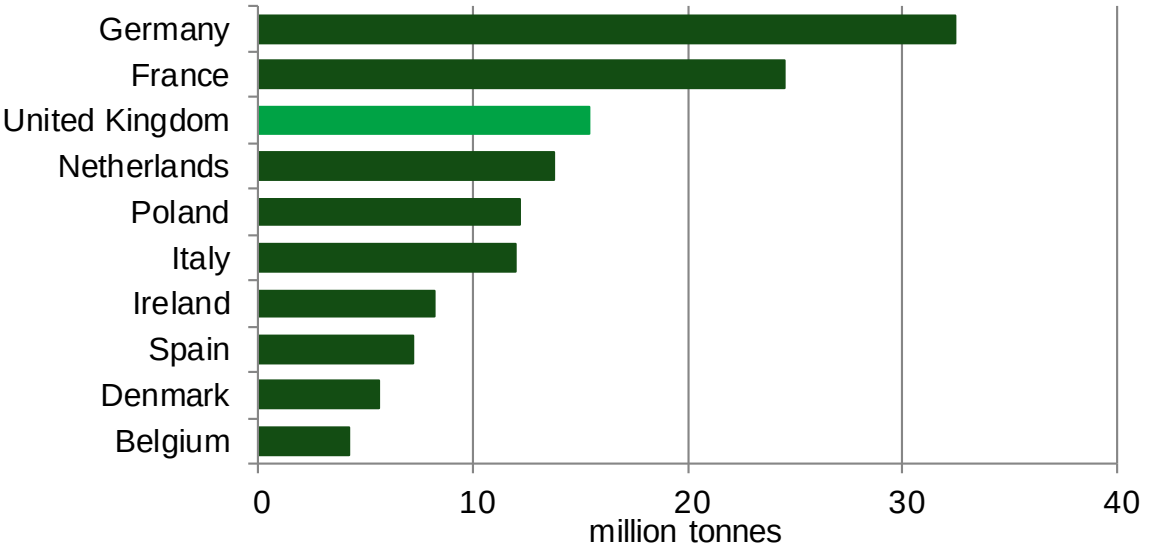


Source: Eurostat

Figure 15.2 shows the quantity of common wheat and spelt and durum wheat produced by the top ten producing Member States in 2019. France continues to be the largest producer of wheat in the EU, producing over 40 million tonnes or 26% of production, followed by Germany (23 million tonnes) and the UK (16 million tonnes). In 2019, these three countries produced half of the total wheat output in the EU.

Cows' milk

Figure 15.3 EU production cows' milk in 2019, top ten countries

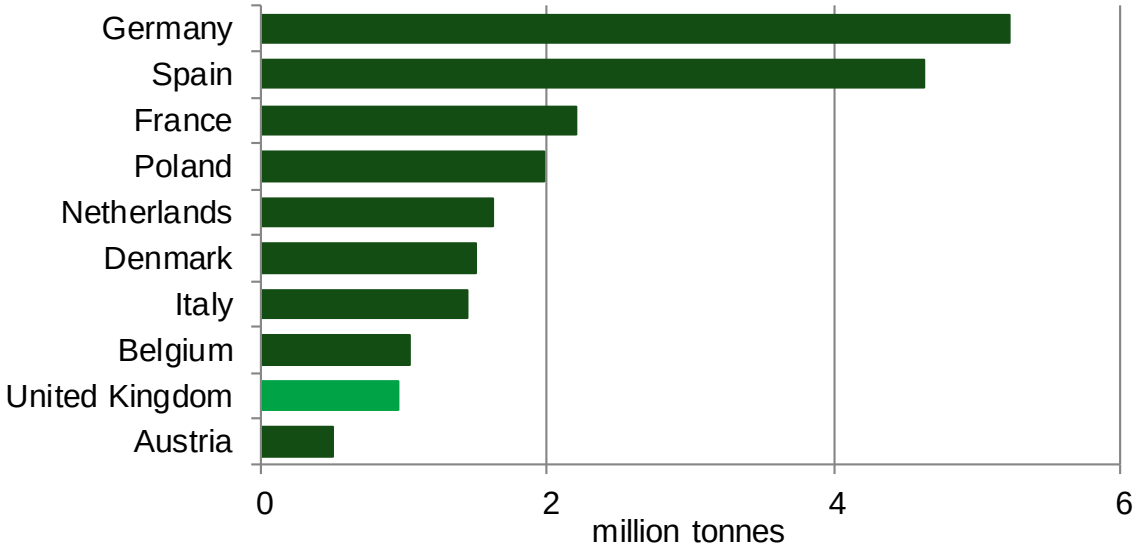


Source: Eurostat

Figure 15.3 shows the quantity of cows' milk produced by the top ten producing Member States in 2019. Germany was the largest producer of cows' milk in the EU, producing 32 million tonnes in 2019, followed by France (25 million tonnes) and the UK (15 million tonnes). Just under half of the EU's milk production came from these three countries.

Pig meat

Figure 15.4 EU production of pig meat in 2019, top ten countries

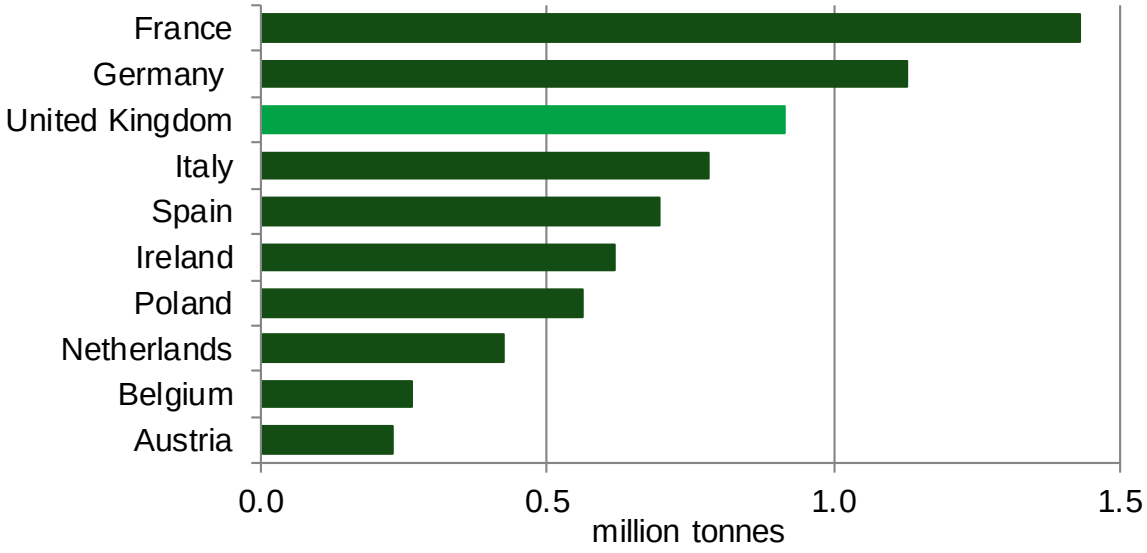


Source: Eurostat

Figure 15.4 shows the quantity of pig meat produced by the top ten producing Member States in 2019. Germany was the largest producer of pig meat in the EU, producing 5.2 million tonnes in 2019 followed by Spain (4.6 million tonnes) and France (2.2 million tonnes). Together, these three countries produced half of the total pig meat in the EU in 2019. The UK produced just under 1 million tonnes.

Beef and veal

Figure 15.5 EU production of beef and veal in 2019, top ten countries



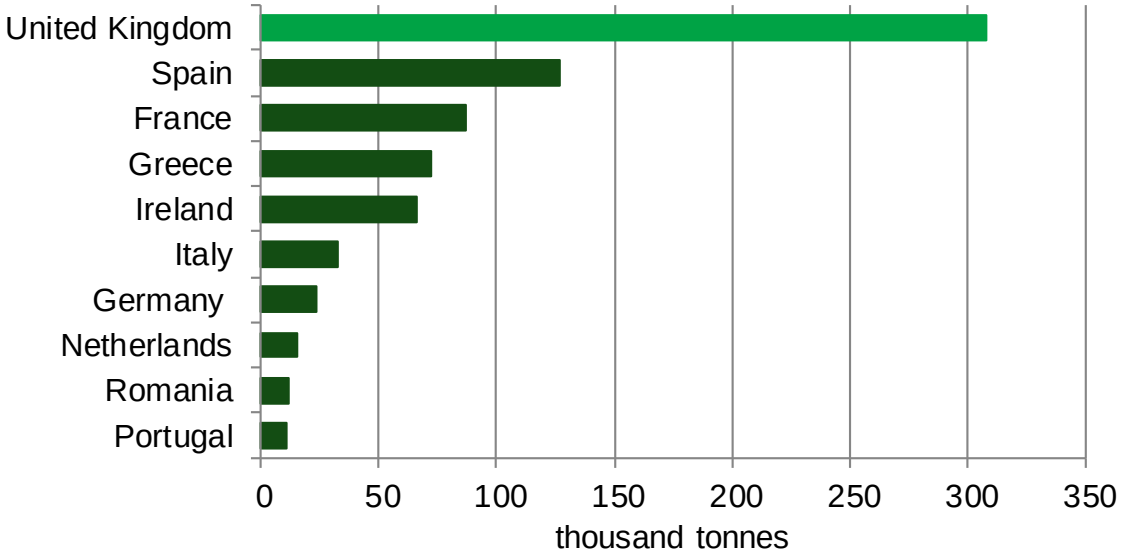
Source: Eurostat

Figure 15.5 shows the quantity of beef and veal produced by the top ten producing Member States in 2019. France was the largest producer of beef and veal in the EU,

producing 1.4 million tonnes in 2019, followed by Germany (1.1 million tonnes) and the UK (0.9 million tonnes). These three countries produced 44% of all beef and veal in the EU in 2019.

Sheep and goat meat

Figure 15.6 EU production of sheep and goat meat in 2019, top ten countries



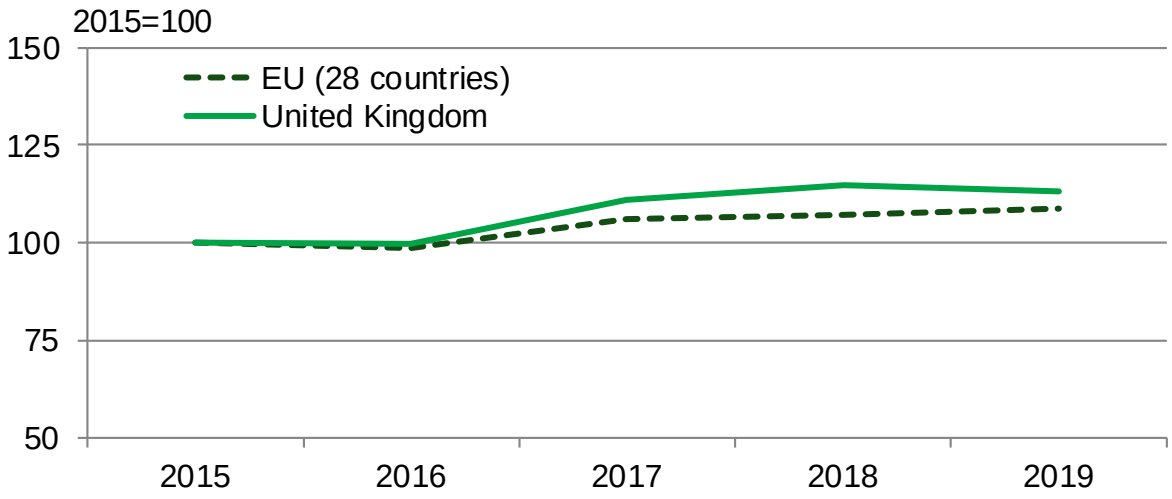
Source: Eurostat

Figure 15.6 shows the production of sheep meat and goat meat by the top ten producing Member States in 2019. The UK was the largest producer of sheep meat and goat meat in the EU in 2019, producing 308 thousand tonnes or 39% of production followed by Spain (127 thousand tonnes) and France (87 thousand tonnes). Combined, these countries accounted for two thirds of all production in the EU.

Price Indices

(Figures 15.7 and 15.8)

Figure 15.7 Producer price indices, total agricultural production



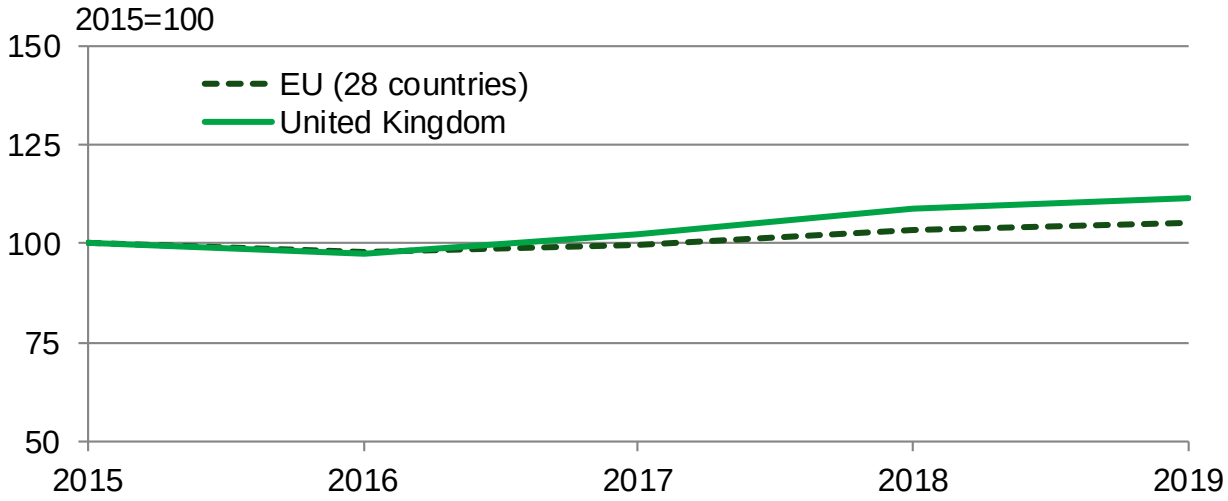
Source: Eurostat/Defra

Figure 15.7 shows producer price indices for total agricultural production for the UK and the EU (28 countries). These indices give information on the trends in the price paid to the

producer for agricultural production as a whole. The sub-indices are weighted by the values of sales in 2015.

When 2019 is compared with the base year of 2015, the index for the UK rose by 13% whereas the EU in total rose by 8.8%. The Figure shows that the index is similar over this period for both the UK and EU28.

Figure 15.8 Purchase price indices, total means of agricultural production



Source: Eurostat

Figure 15.8 shows purchase price indices for the total means of agricultural production for the UK and the EU (28 countries). This is a measure of transaction prices reflecting the expenditure incurred by farmers in purchasing the means of production as a whole. The sub-indices are weighted by the values of purchases in 2015.

When 2019 is compared with the base year of 2015, the index for the UK rose by 12% whereas the EU28 rose by 5.3%.

Data Revisions

There are minor amendments to the Agricultural Income data series (see Figure 15.1) following updates to data sourced from Eurostat. The price indices Figures 15.7 and 15.8 have been changed with the base year revised from 2010 to 2015. These indices are rebased every five years and now reflect the weighting pattern of sales in 2015.