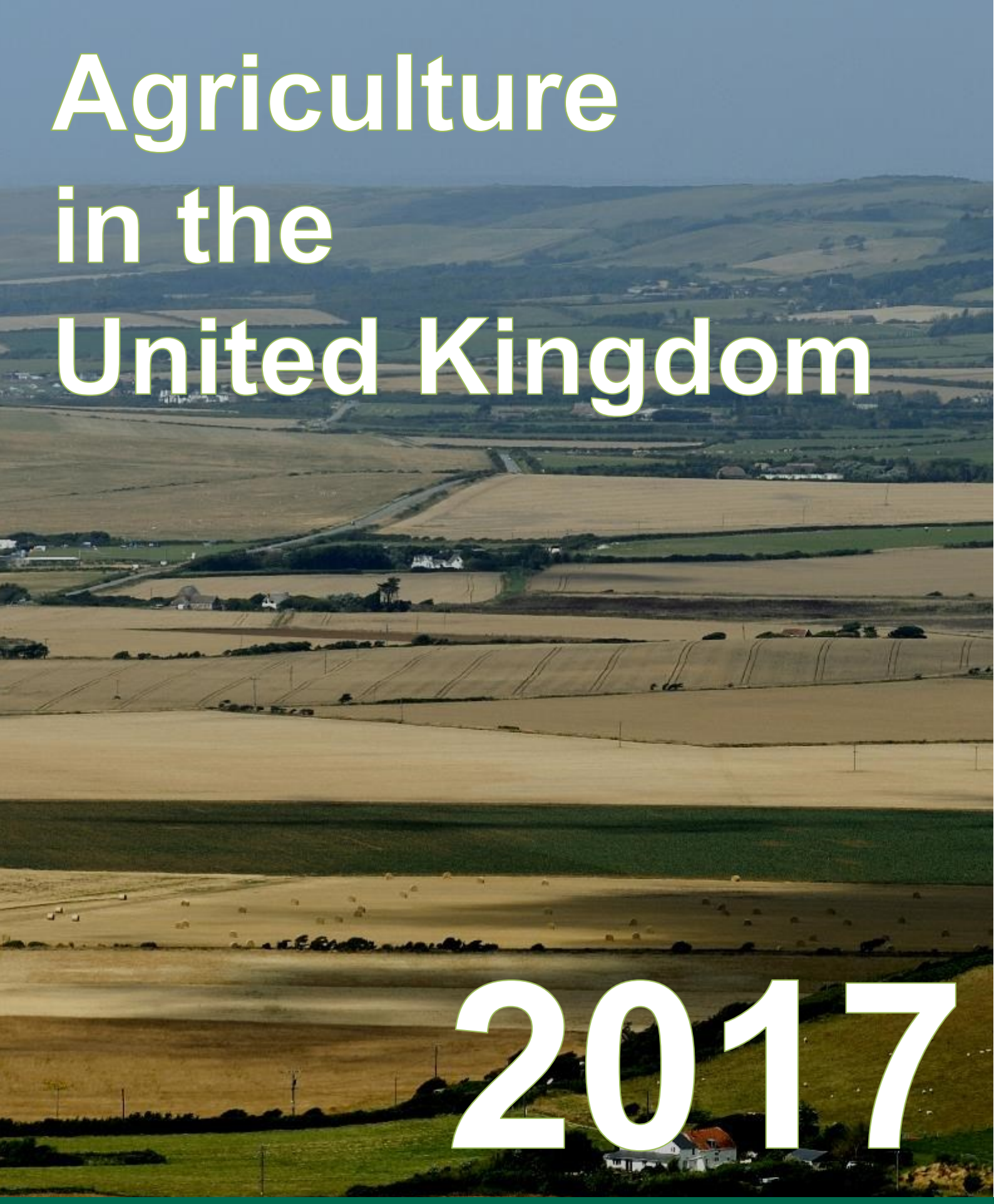
Agriculture in the United Kingdom



2017

Department for Environment, Food and Rural Affairs

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

Welsh Assembly, The Department for Rural Affairs and Heritage

The Scottish Government, Rural and Environment Science and Analytical Services

Agriculture in the United Kingdom 2017

Produced by:

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Preface

Legal Basis

1. Agriculture in the United Kingdom (AUK) 2017 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.

Changes

2. 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.

Content of document

3. The latest available data are used throughout this document. Most of the data are on calendar year basis and for 2017. Some data for 2017 are provisional and may be revised as more data becomes available.

4. 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 charts
- 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[1]

Farm Structures

- The **Utilised Agricultural Area** (UAA) increased by 0.7% to 17.5 million hectares, covering 72% of land in the UK.
- The **cereal** crops area increased by 1.6% to 3.2 million hectares.
- Total **pig** numbers have seen an increase of 2.1% from just under 4.9 million to almost 5.0 million.
- **Sheep and lamb** numbers increased by 2.6% to 34.8 million, largely due to a 3.0% increase (0.5 million) in the number of lambs under one year old to 17.3 million.
- The total **labour** force on commercial holdings increased by 1.7% to 474 thousand.

Incomes and productivity

- **Agriculture's contribution to the national economy** remained at less than 1% and its share of employment remained stable at 1.48%.
- **Farm Business Income** (FBI) varied greatly with 20% of UK farms failing to make a positive FBI in 2016/17 while just under a quarter of UK farms had a FBI of over £50,000.
- In real terms **Total Income from Farming** is estimated to have risen by £1,683 million (41%) to £5,743 million.
- **Gross output** increased by £2,478 million (10%) to £26,340 million, in real terms.
- **Gross value added** at basic price, which identifies agriculture's contribution to the Gross Domestic Product (GDP), increased by £1,698 million to £10,300 million. In real terms a 20% increase.
- The cost of **intermediate consumption** rose by 5.1% driven by higher prices, in particular for animal feed, energy and fertiliser.
- Direct Payments (Basic Payment Scheme, Greening and Young Farmer Payment) are expected to increase by 2.4% to £2.7 billion.
- Annual price index (API) for **agricultural outputs** increased by 10%.
- API for **agricultural inputs** increased by 5.0%.
- **Total factor productivity** of UK agriculture increased by 2.9%.

Commodities

- Harvested production of **wheat** increased by 3.2% to 14.8 million tonnes. The value of production was 23% higher at almost £2 billion.
- **Oilseed rape** production increased by 22% to 2.2 million tonnes due to higher yields. The value of production was 40% higher at £764 million.

[1] All figures quoted in this summary relate to 2017 and all change is between 2016 and 2017 unless otherwise stated

- **Sugar beet** production increased by 57% to 8.9 million tonnes. The value of production was 53% higher at £229 million.
- The value of **fruit** production was up 9.2% to £765 million.
- The value of **beef and veal** increased by 8.1% to £2.99 billion.
- The value of **mutton and lamb** production increased by 4.0% to £1.20 billion
- **Pig meat** value of production increased by 21% to £1.33 billion.
- **Poultry meat** value increased by 6.0% to £2.42 billion.
- The value of **milk and milk products** increased by 32% to £4.34 billion.

Environment

- Between 2000 and 2016 **application rates of nitrogen and phosphorus fertilisers** to grassland have shown an overall decline.
- Between 2000 and 2016 the estimated **soil nutrient balance** for **nitrogen** decreased by 18% and **phosphorus** decreased by 34%
- Between 2000 and 2016 estimated agricultural emissions of **nitrous oxide** fell by 13% and **methane** fell by 10%
- Between 2000 and 2015 estimated agricultural emissions of **ammonia** have fallen by 12%.
- In 2016 the UK **farmland bird index** stood at 44.1, its lowest ever and less than half of its 1970 level.

Trade

- The value of food, feed and drink **exports** increased by 8.2% to £22.0 billion.
- The value of food, feed and drink **imports** increased by 7.1% to £46.2 billion.
- As a result, the **trade gap** in food, feed and drink widened by 6.2% to £24.2 billion.

Organics

- The **UK area of land farmed organically** increased by 1.9% to 517 thousand hectares
- The **area in-conversion as a percentage of the total organic area** rose for the third consecutive year.

Food chain

- **Gross Valued Added** of the agri-food sector in the United Kingdom in 2016 was £111 billion or 6.4% of national Gross Value Added.
- **Employment** in the agri-food sector rose 1.3% over the 12 month period to the fourth quarter of 2017 to around 3.9 million.
- **Total factor productivity** of the UK food chain beyond the farmgate increased by 1.9% between 2015 and 2016. Excluding the effect of price rises, **consumers' expenditure** increased 6.5% in 2017 and was 5.1% higher than at the start of the economic downturn in 2007.
- Expenditure on food eaten out increased 11.7% in 2017, whilst expenditure on household food increased 2.3%.

Chapter 1 Key events

Government and policy

1. On 23 June 2016, the UK voted in a referendum to leave the European Union (EU). Article 50 was triggered on 29 March 2017 to start the process of leaving the EU. As a result the UK will leave the EU on 29 March 2019. Since then the UK and EU have also reached agreement on the terms of an implementation period that will last until 31 December 2020.

2. The Government is determined to get the best deal for the UK in its negotiations to leave the EU, not least for the UK's world-leading food and farming industry which is a key part of our nation's economic success. The government has pledged to maintain current levels of funding for farm support until the end of this Parliament in 2022.

3. The Government sees leaving the EU and the Common Agricultural Policy (CAP) as an opportunity to design a UK agriculture policy for the first time in 45 years. Following a public consultation, an Agriculture Bill will be brought forward later this year (2018).

4. In response to feedback, significant improvements have been made to the Countryside Stewardship Scheme for 2018 applications. Four new and improved Mid-Tier offers have been launched for wildlife, making it simpler and easier for farmers and land managers to apply.

Global factors

Exchange rates

5. The relationship between the Pound and Euro has a key bearing on the fortunes of UK farming. Direct payments 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. In 2017 Sterling weakened further, increasing the competitiveness of UK exports but also pushing up the price of imports, including inputs such as fertilisers and pesticides.

Cereal stocks

6. Commodities such as wheat are traded and the prices set globally. Global wheat production for 2017/18 is at a record high and this will be the fifth consecutive year of increased global production. Global wheat stocks are also expected to reach a new record high. It is only increasing global demand that is propping up prices. Stocks as a percentage of consumption are the highest in recent years but have been higher in the 1980's and 1990's.

Weather

7. The UK weather in 2017 was generally favourable for agriculture. Fairly typical levels of rainfall and sunshine and above average temperature were coupled with few notable periods of extreme weather. The UK mean temperature for 2017 was 9.6 °C, which is 0.7 °C above the 1981-2010 long-term average, ranking as the fifth warmest year in the Met Office's historical UK series since 1910[2]. These and similar conditions in late 2016 allowed for good crop establishment and growth. Harvest began early and whilst there was some disruption from rain, this was not exceptional.

[2] Met Office Annual 2017 https://www.metoffice.gov.uk/climate/uk/summaries/2017/annual

Animal Health

Avian influenza

8. In January to June 2017 there were a total of 12 outbreaks of highly pathogenic avian influenza (H5N8 HPAI). This comprised of: five outbreaks in Lancashire (3 commercial gamebirds, 2 domestic poultry), 2 in commercial turkeys in Lincolnshire, four further domestic poultry outbreaks in Carmarthen, Norfolk, Northumberland and Yorkshire; and one outbreak in Suffolk in commercial layers.

Bovine Tuberculosis (bTB)

9. There was continued rollout of industry-led licensed badger control in the High Risk Area (HRA) and Edge Area of England where *Mycobacterium bovis* infection is endemic in badgers. From April 2017 Defra introduced the mandatory use of the supplementary IFN-gamma blood test in new lesion or culture-positive breakdown herds recorded in the badger culling areas and lifetime movement restrictions of inconclusive TB reactors in the HRA and Edge Area that clear their re-test. In the autumn a new National bovine TB Advisory Service for farmers in the HRA and Edge Area of England began. Defra also re-launched the Badger Edge Vaccination Scheme (BEVS) – a scheme offering grants to support badger vaccination projects in designated counties bordering England's HRA.

10. In Wales the TB Eradication Programme was refreshed in 2017. This included moving to a regionalised approach, with two High TB areas, two Intermediate TB areas and a Low TB area established. Among the enhanced measures were post-movement testing for cattle moved into the Low TB area and the implementation of bespoke action plans for persistent breakdown herds, aimed at clearing up infection. There were increases in incidence and prevalence in Wales in 2017, largely attributable to increases in the Eastern counties of Gwent, Powys and Clwyd.

11. In Scotland in 2017 there were 13 new confirmed TB breakdowns, which is consistent with another year of officially TB-free status. The "herd size" selection criteria for the risk based TB testing exemption policy was increased from 20 to 50 animals with effect from 1 January 2017. Scottish Government also consulted on proposals to review and update the Tuberculosis (Scotland) Order 2007 and introduce changes to compensation arrangements which will be actioned in 2018.

12. In Northern Ireland the DAERA response to the independent TB Strategic Partnership Group's Strategy to eradicate TB from Northern Ireland was launched in November 2017 for close in February 2018. Other measures advanced during the year included a Reactor Quality Assurance pilot and an annual Biosecurity questionnaire for all herds. In addition, wildlife disease surveillance was undertaken in two specified areas to help inform future Ministerial advice. Further work on a number of measures to significantly tighten disease detection in cattle was progressed for introduction in early 2018.

13. More information on Bovine Tuberculosis can be found at the TB hub: www.tbhub.co.uk

Chapter 2 Structure of the Industry

Summary

In 2017, compared with 2016:

- The **Utilised Agricultural Area** (UAA) increased by 0.7% to 17.5 million hectares, covering 72% of land in the UK.
- The **total croppable** area rose by 1.0% to 6.1 million hectares.
- The **cereal** crops area increased by 1.6% to 3.2 million hectares.
- The area of **oilseed** crops planted decreased by 3.0% to 590 thousand hectares.
- The **dairy herd** remained almost unchanged at 1.9 million.
- Total **pig** numbers have seen an increase of 2.1% from just under 4.9 million to almost 5.0 million.
- **Sheep and lamb** numbers increased by 2.6% to 34.8 million, largely due to a 3.0% increase (0.5 million) in the number of lambs under one year old to 17.3 million.
- The total **labour** force on commercial holdings has increased by 1.7% to 474 thousand.

Introduction

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

2. 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). Also, cattle data are sourced from the Cattle Tracing System (CTS) in England, Wales and Scotland and from the equivalent Animal and Public Health Administration (APHIS) system in Northern Ireland.

3. From 2009 onwards, England data relate to “commercial” holdings only. The term “commercial” covers all English holdings which have more than 5 hectares of agricultural land, 1 hectare of orchards, 0.5 hectares of vegetables or 0.1 hectares of protected crops, or more than 10 cattle, 50 pigs, 20 sheep, 20 goats, or 1,000 poultry. These thresholds are specified in the EU Farm Structure Survey Regulation EC 1166/2008.

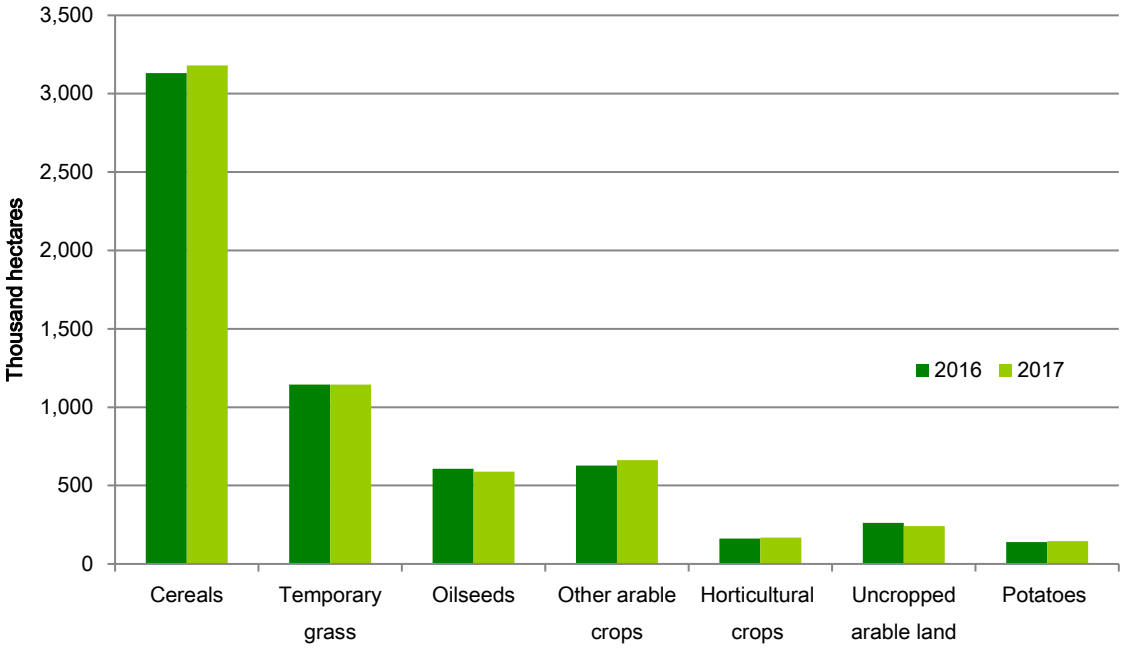
4. For more information on the June Survey and for more detailed results please see:
   England: https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/series/structure-of-the-agricultural-industry

   Scotland: http://www.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/PubFinalResultsJuneCensus

   Wales: http://gov.wales/statistics-and-research/?topic=Environment+and+countryside&lang=en

   Northern Ireland: https://www.daera-ni.gov.uk/topics/statistics

Chart 2.1 Breakdown of croppable area on agricultural holdings, June 2017 compared to 2016



Land use, crop areas and livestock numbers (chart 2.1, tables 2.1 and 2.2)

5. At June 2017 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.

6. On the whole, the proportion of croppable land used for each purpose remained similar between 2016 and 2017, however some categories did see value changes (Chart 2.1).

7. 52% of croppable area was planted as cereal crops. Wheat and barley were the predominant cereal crops at 1.8 and 1.2 million hectares respectively. The area of barley has declined considerably over the years from almost 2 million hectares in the mid 80's. However, in 2017 barley increased by 4.8%.

8. The area of oilseed rape decreased for a fifth year in 2017, by 2.9% to 562 thousand hectares.

9. The total number of cattle and calves saw little change between 2016 and 2017, remaining at just over 10.0 million. The beef and dairy herds have remained largely unchanged in recent years at approximately 1.6 and 1.9 million animals respectively.

10. The UK population of sheep and lambs increased by 2.6% to 34.8 million animals, largely due to a 3.0% increase in the number of lambs to 17.3 million. The female breeding flock also increased by 2.2% to 16.7 million.

11. The total number of pigs in the UK increased by 2.1%, from almost 4.9 million animals in 2016 to almost 5.0 million in 2017. The main reason for this was the 2.3% increase in fattening pigs, largely due to the 1.7% rise in the England figures which account for 80% of the UK fatteners.

12. The total number of poultry in the UK increased by 5.3% to almost 182 million birds in 2017 compared to almost 173 million in 2016. Table chickens account for 65% of the total and rose by 6.3% to almost 118 million birds. Laying and breeding fowl also saw an increase, rising by 4.2% between 2016 and 2017.

Table 2.1 Agricultural land use (a)

Enquiries: Serena Abbott on +44 (0) 3000 600 140 email: farming-statistics@defra.gsi.gov.uk

Thousand hectares — At June of each year

	2013	2014	2015	2016	2017
Utilised agricultural area (UAA) (b)	17 259	17 240	17 147	17 360	17 476
UAA as a proportion of total UK area	71%	71%	70%	71%	72%
Total agricultural area	18 449	18 456	18 428	18 662	18 835
Common rough grazing	1 198	1 199	1 199	1 199	1 198
Total area on agricultural holdings	17 250	17 257	17 229	17 463	17 637
Total croppable area	6 310	6 278	6 059	6 073	6 131
Total crops	4 665	4 722	4 679	4 667	4 745
Arable crops	4 502	4 559	4 505	4 505	4 577
Cereals	3 028	3 179	3 100	3 132	3 181
Oilseeds (includes linseed and borage)	752	691	670	608	590
Potatoes	139	141	129	139	145
Other crops	582	548	606	627	661
Horticultural crops	163	164	174	162	168
Uncropped arable land (c)	255	160	214	262	241
Temporary grass under 5 years old	1 390	1 396	1 167	1 144	1 144
Total permanent grassland	9 742	9 755	9 880	10 079	10 138
Grass over 5 years old	5 802	5 824	6 078	6 118	6 135
Sole right rough grazing (d)	3 940	3 930	3 801	3 961	4 003
Other land on agricultural holdings	1 198	1 224	1 290	1 312	1 368
Woodland	865	897	961	978	1 037
Land used for outdoor pigs	9	8	9	10	10
All other non-agricultural land	324	318	320	323	321

Data source: UK Agriculture departments June Survey/Census of Agriculture/ AF land data Scotland. For more details please see the introduction section of this chapter

(a) Figures for England relate to commercial holdings only, as described in point 3 of the introduction.
(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.

Table 2.2 Crop areas and livestock numbers (a)

Enquiries: Serena Abbott on +44 (0) 3000 600 140 email: farming-statistics@defra.gsi.gov.uk

At June of each year

		2013	2014	2015	2016	2017
Crop areas (thousand hectares)						
Total area of arable crops		4 502	4 559	4 505	4 505	4 577
of which:	wheat	1 615	1 936	1 832	1 823	1 792
	barley	1 213	1 080	1 101	1 122	1 177
	oats	177	137	131	141	161
	rye, mixed corn and triticale	24	26	35	45	52
	oilseed rape	715	675	652	579	562
	linseed	34	15	15	27	26
	potatoes	139	141	129	139	145
	sugar beet (not for stockfeeding)	117	116	90	86	111
	peas for harvesting dry and field beans	147	139	213	228	233
	maize	194	183	187	194	197
Total area of horticultural crops		163	164	174	162	168
of which:	vegetables grown outdoors	116	116	123	113	117
	orchard fruit (b)	23	23	26	25	24
	soft fruit & wine grapes	10	9	10	10	11
	outdoor plants and flowers	12	12	13	12	13
	glasshouse crops	3	3	3	3	3
Livestock numbers (thousand head)						
Total cattle and calves		9 844	9 837	9 919	10 033	10 004
of which:	cows in the dairy herd (c)	1 782	1 841	1 895	1 897	1 891
	cows in the beef herd (d)	1 611	1 569	1 576	1 596	1 589
Total sheep and lambs		32 856	33 743	33 337	33 943	34 832
of which:	female breeding flock	15 561	16 026	16 024	16 304	16 669
	lambs under one year old	16 381	16 936	16 528	16 840	17 340
Total pigs		4 885	4 815	4 739	4 866	4 969
of which:	sows in pig and other sows for breeding	355	349	352	360	361
	gilts in pig	66	57	56	55	55
Total poultry		162 609	169 684	167 579	172 607	181 818
of which:	table fowl	104 576	110 374	107 056	110 639	117 619
	laying flock (including pullets)	35 841	37 146	36 998	38 058	39 510
	breeding flock	11 184	11 258	12 511	12 740	13 429
	turkeys, ducks, geese and all other poultry	11 008	10 907	11 014	11 170	11 260

Source: June Surveys/Census of Agriculture/SAF land data Scotland. Also Cattle Tracing System/APHIS (for cattle data). For more details please see the introduction section of this chapter

(a) Figures for England relate to commercial holdings only, as described in point 3 of the introduction.
(b) Includes non-commercial orchards.
(c) Dairy cows are defined as female dairy cattle over 2 years old with offspring.
(d) Beef cows are defined as female beef cattle over 2 years old with offspring

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

13. Between 2012 and 2017 the number of agricultural holdings decreased by 2.4% from 222 thousand to 217 thousand. Within that time period the total area on holdings increased by 2.8%, therefore average area of all holdings increased by 5.4% to 81.4 hectares in 2017. Similarly the average croppable area of holdings increased 4.0% between 2012 and 2017.

Table 2.3 Numbers of holdings by size group (a)

Enquiries: Serena Abbott on +44 (0) 3000 600 140 email: farming-statistics@defra.gsi.gov.uk

		2012		2017	
		Number of holdings (thousand)	Hectares (thousand)	Number of holdings (thousand)	Hectares (thousand)
Total area on holdings	under 20 hectares	104	694	103	682
	20 to under 50 hectares	42	1 399	41	1 359
	50 to under 100 hectares	34	2 428	32	2 262
	100 hectares and over	42	12 628	41	13 334
	Total	**222**	**17 149**	**217**	**17 637**
	Average area (hectares)		77		81
	Average area on holdings with >=20 hectares		139		149
Croppable area (b)	0.1 to under 20 hectares	49	309	46	303
	20 to under 50 hectares	20	652	19	630
	50 to under 100 hectares	15	1 089	14	1 005
	100 hectares and over	19	4 208	17	4 193
	Total	**103**	**6 258**	**97**	**6 131**
	Average croppable area (hectares)		61		63

Source: June Surveys/Census of Agriculture/SAF land data Scotland. For more details please see the introduction section of this chapter

(a) Figures for England relate to commercial holdings only, as described in point 3 of the introduction.
(b) Croppable area is defined as land under crops, temporary grass under five years old and uncropped arable land.

Table 2.4 Numbers of holdings by size group and country at June 2017

Enquiries: Serena Abbott on +44 (0) 3000 600 140 email: farming-statistics@defra.gsi.gov.uk

	England (a)		Wales		Scotland		Northern Ireland	
	Number of holdings (thousand)	Hectares (thousand)	Number of holdings (thousand)	Hectares (thousand)	Number of holdings (thousand)	Hectares (thousand)	Number of holdings (thousand)	Hectares (thousand)
Total area on holdings								
Under 20 hectares	42	303	19	112	32	159	10	107
20 to under 50 hectares	21	692	6	206	6	188	9	273
50 to under 100 hectares	18	1 283	5	347	5	343	4	289
100 hectares and over	25	6 898	5	1 022	9	5 064	2	350
Total	**106**	**9 176**	**35**	**1 687**	**51**	**5 754**	**25**	**1 020**
Average area (hectares)		87		48		113		41
Average area on holdings with >=20 hectares		139		99		292		62

Source: June Surveys/Census of Agriculture/SAF land data Scotland. For more details please see the introduction section of this chapter

(a) Figures for England relate to commercial holdings only, as described in point 3 of the introduction.

14. Between 2016 and 2017 the agricultural workforce increased by 1.7% to 474 thousand. Farmers, business partners, directors and spouses account for the majority (62%) of the total labour force.

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

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Thousands — At June of each year

	2013	2014	2015	2016	2017
Total labour force (incl. farmers and spouses)	464	476	476	466	474
Farmers, business partners, directors and spouses	290	294	294	290	294
Full time	138	140	142	139	141
Part time (b)	152	155	152	151	153
Regular employees, salaried managers and casual workers	173	181	183	176	180
Regular employees (c)	112	115	115	. .	. .
Full time	71	72	73	. .	. .
Part time (b)	41	43	43	. .	. .
Seasonal, casual or gang labour	61	66	67	. .	. .

Source: June Surveys/Census of Agriculture

(a) Figures for England relate to commercial holdings only, as described in point 3 of the introduction.
(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 years see https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june

Age of holders (table 2.6)

15. 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%.

16. 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. Since 2005 the proportion 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.

17. 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: Serena Abbott on +44 (0) 3000 600 140 email: farming-statistics@defra.gsi.gov.uk

% of holders

	2003	2005	2007	2010 (c)	2013 (c)	2016 (c)
Holders' age						
Under 35 years	3	3	3	3	3	3
35 - 44 years	15	14	12	11	10	9
45 - 54 years	24	23	23	25	25	23
55 - 64 years	29	29	29	29	28	29
65 years and over	29	31	33	32	34	36
Median age (years)	58	58	59	59	59	60

Source: EU Farm Structure Survey

(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.

Chapter 3 Farming Income

Summary

- **Agriculture's contribution to the national economy** remained at less than 1% and its share of employment remained stable at 1.48%.
- **Total Income from Farming** in the United Kingdom was £5.7 billion; England is the largest contributor accounting for 71% of this total, Scotland 16%, Northern Ireland 8.2% and Wales 4.8%.
- **Farm incomes across the EU** as a whole rose (8.4%) with the United Kingdom being one of 20 countries to show a rise between 2016 and 2017.
- **Farm Business Income** (FBI) varied greatly with 20% of UK farms failing to make a positive FBI in 2016/17 while just under a quarter of UK farms had a FBI of over £50,000.

Introduction

1. This chapter presents Farm Business Income and Total Income from Farming data.

2. **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.
Farm Business Income equals:
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.

3. **Total Income from Farming (TIFF)** represents business profits and remuneration for work done by owners and other unpaid workers. It is used to assess United Kingdom agriculture as a whole.
Total Income from Farming *equals:*
Gross output at basic prices *plus*
Other subsidies less taxes *less*
Total intermediate consumption, rent, and paid labour *less*
Total consumption of fixed capital (depreciation) *less* Interest

4. Differences and similarities

Farm Business Income

- 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.

Total Income from Farming

- 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.

Real term trends and summary measures in farming income (table 3.1 and chart 3.1)

Real term value is where previous year's data is adjusted to take account of inflation so the values are comparable.

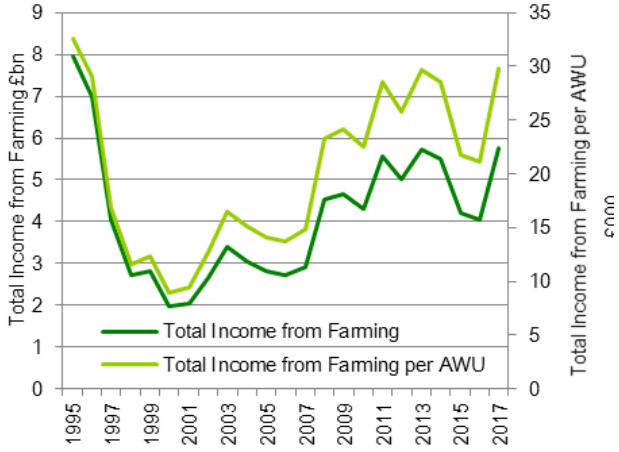
5. Table 3.1 shows summary measures from the aggregate agriculture accounts. More information on the agriculture account can be found in Chapter 4.

6. The value of all outputs rose by 10% to £26,340 million. The key contributors to this change were milk, wheat, cattle, pigs and oil seed rape. Increases were driven by improved market prices and higher productivity.

7. The cost of intermediate consumption rose by 5.1%, due to higher prices as volumes used generally remained stable. This led to a 20% (£1,698 million) rise in gross value added at basic price to £10.3 billion.

8. Net value added at factor cost is the value of outputs plus all subsidies minus intermediate consumption, consumption of fixed capital and taxes; Net value added at factor cost rose by 22% in real terms to £9.4 billion.

Chart 3.1 Long term trends in real terms at 2017 prices



9. Total Income from Farming represents the income that is left to farmers when all costs are deducted. It differs from net value added at factor cost as it deducts interest, rent and labour costs. Total Income from Farming is estimated to have risen by 41% to £5.7 billion.

10. Compensation of employees which is the cost of paid labour has remained relatively stable over the last 10 years and currently stands at £2.6 billion.

11. Total Income from Farming per AWU of entrepreneurial labour 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 over time (see chart 3.1). In 2017 total Income from Farming per AWU of entrepreneurial labour was 41% higher than 2016 at £29,800 million.

12. Incomes tend to fluctuate and following an upward trend from 2000 to 2014 income fell sharply in 2015 driven down by lower prices and a less favourable exchange rate. Despite the exchange rate strengthening in 2016, market prices did not recover enough for incomes to improve. In 2017 incomes are slightly ahead of 2013, as the euro strengthened further which helped boost market prices and added to the value of payments under the Basic Payment Scheme.

Table 3.1 Summary measures from the aggregate agriculture accounts

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

Year	Net value added at factor cost	Income from farming			
		Total Income from Farming	Compensation of employees	Income from agriculture of total labour input	Total Income from Farming per AWU of entrepreneurial labour (a)
Current prices		A	B	A + B	(£)
2004	5 000	2 304	1 894	4 198	11 400
2005	4 928	2 193	1 944	4 136	11 000
2006	4 923	2 183	1 973	4 155	11 000
2007	5 205	2 403	2 004	4 407	12 200
2008	6 667	3 844	2 065	5 910	19 700
2009	6 821	4 016	2 165	6 181	20 900
2010	6 741	3 846	2 226	6 071	20 000
2011	8 164	5 057	2 341	7 398	26 000
2012	7 779	4 628	2 353	6 982	23 800
2013	8 634	5 385	2 403	7 788	28 000
2014	8 630	5 275	2 406	7 681	27 400
2015	7 530	4 048	2 500	6 549	21 000
2016	7 516	3 985	2 535	6 521	20 700
2017	9 356	5 743	2 615	8 358	29 800
In real terms, 2017 prices		A	B	A + B	(£)
2004	6 622	3 052	2 508	5 560	15 100
2005	6 341	2 821	2 501	5 322	14 100
2006	6 151	2 728	2 465	5 192	13 700
2007	6 329	2 922	2 436	5 358	14 800
2008	7 876	4 542	2 440	6 982	23 300
2009	7 894	4 648	2 505	7 153	24 200
2010	7 567	4 317	2 499	6 815	22 500
2011	8 978	5 561	2 575	8 136	28 600
2012	8 418	5 008	2 547	7 555	25 800
2013	9 160	5 713	2 549	8 263	29 700
2014	9 009	5 506	2 512	8 018	28 600
2015	7 821	4 205	2 597	6 802	21 800
2016	7 657	4 060	2 583	6 643	21 100
2017	9 356	5 743	2 615	8 358	29 800

(a) An annual work unit (AWU) represents the equivalent of an average full-time person engaged in agriculture.

Summary measures by country (table 3.2)

13. Table 3.2 shows main measures, at current price, for the agriculture industries in England, Wales, Scotland and Northern Ireland and for the United Kingdom as a whole. It also presents the contribution that agriculture makes to the economy and employment for each country.

14. Total Income from Farming in the United Kingdom is £5,743 million; England is the largest contributor accounting for 71% of this total, Scotland 16%, Northern Ireland 8.2% and Wales 4.8%.

15. United Kingdom agriculture accounted for 1.48% of the workforce with England agriculture employing 1.13% of the workforce, Scotland, Wales and Northern Ireland employing 2.53%, 3.62% and 5.84% respectively.

Table 3.2 Summary measures by country at current price

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

	2012	2013	2014	2015	2016	2017 (provisional)
Gross output at basic prices £ million						
United Kingdom	24 167	25 885	25 871	24 114	23 421	26 340
England	18 055	19 223	19 220	18 022	17 396	19 442
Wales	1 398	1 543	1 643	1 475	1 420	1 594
Scotland	2 954	3 159	3 086	2 862	2 821	3 211
Northern Ireland	1 760	1 960	1 922	1 755	1 784	2 093
Intermediate consumption £ million						
United Kingdom	15 520	16 486	15 992	15 350	14 978	16 040
England	11 049	11 838	11 504	11 161	10 903	11 643
Wales	1 159	1 209	1 185	1 057	1 044	1 138
Scotland	1 959	1 965	1 857	1 753	1 683	1 810
Northern Ireland	1 352	1 474	1 447	1 379	1 347	1 449
Gross value added at basic prices £ million						
United Kingdom	8 647	9 399	9 879	8 764	8 443	10 300
England	7 006	7 385	7 717	6 860	6 493	7 799
Wales	239	334	458	418	375	457
Scotland	995	1 195	1 228	1 109	1 138	1 401
Northern Ireland	407	485	475	377	437	644
Total Income from Farming £ million						
United Kingdom	4 628	5 385	5 275	4 048	3 985	5 743
England	3 572	3 951	3 877	3 021	2 884	4 077
Wales	147	210	273	190	176	276
Scotland	667	882	819	639	672	917
Northern Ireland	243	343	306	199	253	473
Agriculture's share of total regional gross value added at basic prices (a) %						
United Kingdom	0.57	0.60	0.60	0.52	0.48	0.57
England	0.55	0.56	0.55	0.46	0.42	. .
Wales	0.46	0.61	0.75	0.71	0.59	. .
Scotland	0.81	0.93	0.92	0.87	0.88	. .
Northern Ireland	1.22	1.42	1.34	1.03	1.08	. .
Agriculture's share of total regional employment %						
United Kingdom (b)	1.62	1.55	1.55	1.53	1.47	1.48
England (b)	1.23	1.17	1.16	1.16	1.12	1.13
Wales	4.28	3.83	4.35	4.11	3.73	3.62
Scotland	2.73	2.64	2.57	2.50	2.42	2.53
Northern Ireland	5.97	6.04	5.86	5.90	5.72	5.84

(a) Data on regional GVA for 2017 are not yet available
(b) Estimates for England are based on employment on 'commercial holdings' only

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

16. Eurostat, the statistical office of the European Union, produces measures of income from agricultural activity based on data provided by Member States. These include:

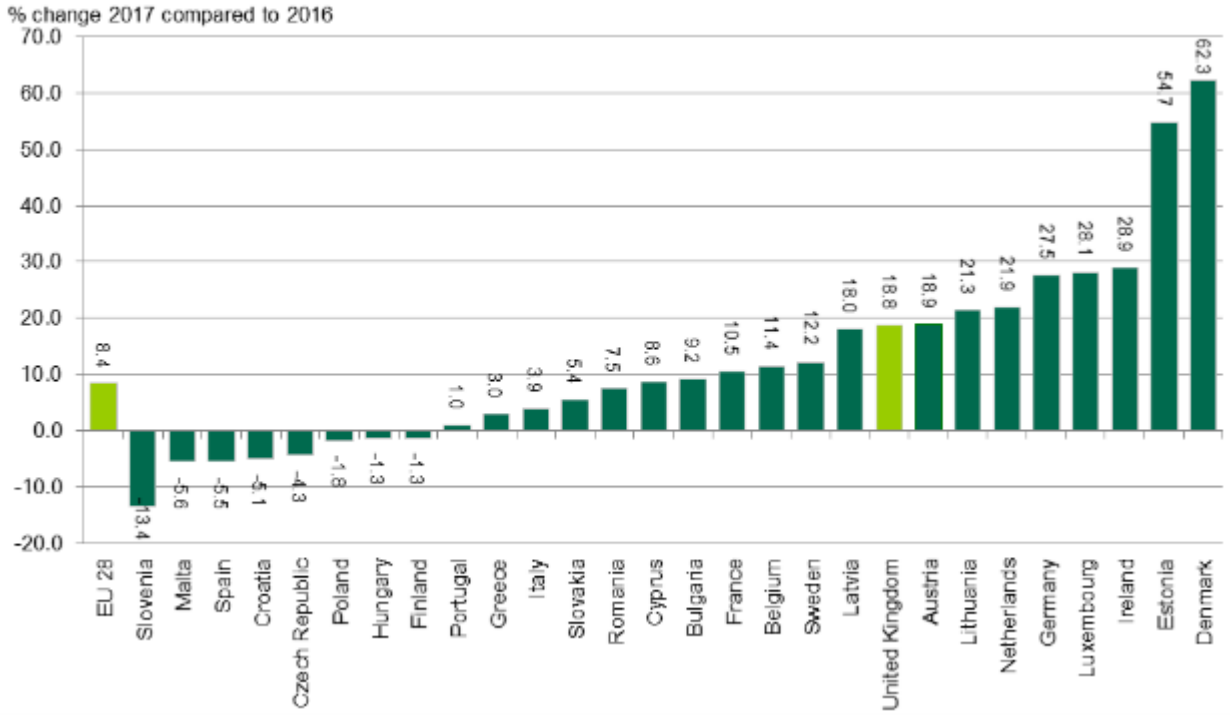
- Indicator A - Index of the real income of factors in agriculture per annual work unit, which corresponds to the real (i.e. deflated) net value added at factor cost of agriculture per total annual work unit.
- Indicator B - Indicator B: Index of real net agricultural entrepreneurial income, per unpaid annual work unit.
- Indicator C: Net entrepreneurial income of agriculture.

17. Eurostat's preferred measure of agricultural income is Indicator A. Chart 3.2 shows the change between 2017 and 2016 for all Member States in the European Union (28 countries). These data are preliminary and are based on estimates of the Economic Accounts for Agriculture as at January 2018.

18. The increase in agricultural income per worker (Indicator A) in the European Union as a whole (8.4%) masks the figures for individual countries which can show considerable variation.

19. There are eight countries where agricultural income per worker in 2017 is lower than in 2016 with Slovenia showing the largest fall (13.4%). Of the twenty countries showing higher agricultural income per worker Demark shows the highest increase of 62.3%. The United Kingdom ranked twelfth among the countries showing increases.

Chart 3.2 Changes in incomes from agricultural activity across the EU: Indicator A (a)



(a) 2017 preliminary data for EU member states (EU28) as at January 2018 Source: Eurostat

Farm business incomes by farm type (table 3.3)

20. Estimates of Farm Business Income for 2017/18 (i.e. year ended February 2018 and harvest 2017) at current prices are shown in table 3.3 for England, Wales 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 2017 Basic Payment Scheme are recorded in the 2017/18 accounting year. Note that forecasts of Farm Business Income for 2017/18 are not produced in Scotland.

21. The fall in the value of the pound has been a key driver behind increasing average Farm Business Income for a number of farm types. This resulted in increased prices for a number of commodities which had a positive impact on average incomes for cereal, general cropping, mixed, specialist pigs and specialist poultry farms and a 6% increase in the average Basic Payment across all farm types. Higher milk prices and increased production are expected to have doubled average income on dairy farms.

22. On cereal farms in England, average incomes are expected to have increased by 48% in 2017/18. Total crop output is forecast to be substantially higher than in the previous year due to price increases (driven by a further weakening of sterling) and higher average yields. These factors, together with an increase in the Basic Payment, are expected to be partially offset by higher input costs, including machinery depreciation and running costs, especially fuel.

23. Average incomes are forecast to increase by around 11% on general cropping farms in England. Total crop output is expected to be higher than the previous year, largely driven by higher prices and

yields for cereals and oilseed rape. The increase is expected to be partially offset by a fall in the value of the potato crop. Input costs are forecast to rise, particularly crop variable costs, as a result of increased potato and sugar beet areas.

24. On dairy farms in England, average incomes are expected to have almost doubled in 2017/18, driven by higher milk prices and increased output. Inputs costs are also expected to be higher, particularly feed costs due to firmer cereal prices. The picture is similar on dairy farms in Wales with incomes forecast to more than double. In Northern Ireland, average incomes are predicted to have risen by over 200% with similar drivers to England and Wales. It is important to note that these increases follow 2 years when average dairy income was particularly low. There is also a wide variation in milk prices, with some farmers receiving considerably more (or less) than the average.

25. In Northern Ireland, average income on grazing livestock farms in Less Favoured Areas (LFAs) is forecast to remain broadly similar to 2016/17. In England, average incomes are expected to have fallen for this farm type, with a small increase in output from cattle enterprises insufficient to offset higher costs. For lowland grazing livestock farms in England incomes are expected to be similar to 2016/17. In Wales, increases in Farm Business Income on both Lowland and LFA grazing livestock farms are forecast, with increases in agri-environment payments a factor in offsetting input cost rises.

26. Average Farm Business Income is forecast to increase on specialist pig farms by 5% in England. Compared to the previous year, finished pig prices have been around 17% higher, although throughput has fallen slightly. Weaner, store and cull sow prices have also increased. Input costs on these farms are also expected to have increased, particularly feed, which represents a substantial proportion of their costs.

27. Forecasts for specialist poultry farms are subject to a considerable degree of uncertainty reflecting the structure of the sector and the relatively small sample of these farms in the FBS in England. Average incomes are expected to increase by 5%, with firmer poultry meat prices plus increased production for eggs and broilers offsetting lower egg prices. Feed, which accounts for over half of the costs on these farms, is expected to have increased in price and volume compared to 2016/17.

28. Incomes on mixed farms in England are expected to increase by 14%. The changes reported above 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)

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Average farm business income per farm (£ farm) Accounting years ending on average in February

	Standard Output (SO) Typology					
	2012/13	2013/14 (b)	2014/15	2015/16 (c)	2016/17	2017/18 Provisional
At current prices						
England						
Cereals	67 500	49 500	45 000	35 500	43 000	64 000
General cropping	89 000	67 500	52 000	62 500	70 000	78 000
Dairy	52 500	88 000	84 000	44 000	50 000	99 000
Grazing livestock (lowland)	16 000	15 000	18 500	12 000	16 000	16 000
Grazing livestock (LFA)	18 500	14 500	14 500	19 000	27 000	25 000
Specialist pigs	41 500	65 000	49 500	21 500	58 000	61 000
Specialist poultry	90 000	157 000	127 000	106 500	54 000	57 000
Mixed	37 500	29 500	21 500	18 500	29 000	33 000
Wales						
Dairy	45 000	77 000	70 000	33 000	31 500	65 000
Grazing livestock (lowland)	27 000	28 500	27 000	16 500	22 500	24 500
Grazing livestock (LFA)	21 500	19 000	22 000	22 000	23 000	25 500
Scotland						
Cereals	23 500	25 500	18 500	8 000	20 500	. .
General cropping	56 500	35 500	27 000	30 500	47 000	. .
Dairy	45 500	78 000	69 000	1 500	34 500	. .
Grazing livestock (lowland)	17 500	24 000	26 500	12 000	18 500	. .
Grazing livestock (LFA)	23 500	25 000	22 000	17 500	23 500	. .
Mixed	33 500	30 000	12 000	1 500	24 000	. .
Northern Ireland						
Dairy	28 000	61 500	45 500	12 000	23 500	78 500
Grazing livestock (LFA)	13 000	14 500	14 500	17 000	21 500	21 000
United Kingdom (d)						
Cereals	63 000	46 500	42 500	32 500	41 000	. .
General cropping	81 500	59 000	48 000	58 500	65 000	. .
Dairy	45 500	80 000	72 500	32 000	40 000	. .
Grazing livestock (lowland)	16 500	16 000	19 000	12 500	17 000	. .
Grazing livestock (LFA)	20 000	18 500	18 500	19 000	24 000	. .
Specialist pigs	40 500	66 000	49 000	21 500	58 000	. .
Specialist poultry	90 000	157 000	127 000	106 500	54 000	. .
Mixed	36 500	30 000	19 500	14 500	28 000	. .
ALL TYPES (Including Horticulture)	38 000	38 500	35 000	26 000	33 000	. .
In real terms (at 2016/17 prices) (e)						
United Kingdom						
Cereals	67 000	48 500	43 500	33 500	41 000	. .
General cropping	86 500	61 500	49 000	59 500	65 000	. .
Dairy	48 500	83 000	74 000	33 000	40 000	. .
Grazing livestock (lowland)	17 500	17 000	19 500	13 000	17 000	. .
Grazing livestock (LFA)	21 000	19 500	19 000	19 500	24 000	. .
Specialist pigs	43 500	69 000	50 500	21 500	58 000	. .
Specialist poultry	96 000	164 000	130 000	109 000	54 000	. .
Mixed	39 000	31 500	20 000	14 500	28 000	. .
ALL TYPES (Including Horticulture)	40 500	40 000	35 500	27 000	33 000	. .

(a) Figures rounded to nearest £500

(b) England, Wales and Northern Ireland results from 2013/14 onwards derived from 2010 standard output coefficients. Scotland are derived from 2007 standard output coefficients.

(c) Scotland results derived from 2010 standard outputs coefficients.

(d) UK totals include farm types that are present though not listed individually for some member countries.

(e) Uses GDP deflator.

Distribution of farm incomes and performance (table 3.4 and chart 3.3)

29. 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 2016/17.

30. Around 20% of farms in the UK failed to make a positive Farm Business Income although the proportion in Northern Ireland was much lower at 12%. Just over half of farms in the UK fell into the lower income brackets (less than £20,000). At the top end of the scale, 23% of farms in the UK had a Farm Business Income of more than £50,000. However there was some variation between UK countries in this highest income category, ranging from 13% of farms in Northern Ireland to 27% in England.

31. 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.

32. Chart 3.3 shows the differences in performance of farms in England for 2016/17. Performance is measured as £ of output per £100 of input. An imputed value for unpaid labour is added to the input costs. The chart illustrates the significant variation in performance with 57% of farms failing to recover their costs in that year.

Chart 3.3 Distribution of performance (a) across farms 2016/17: England only

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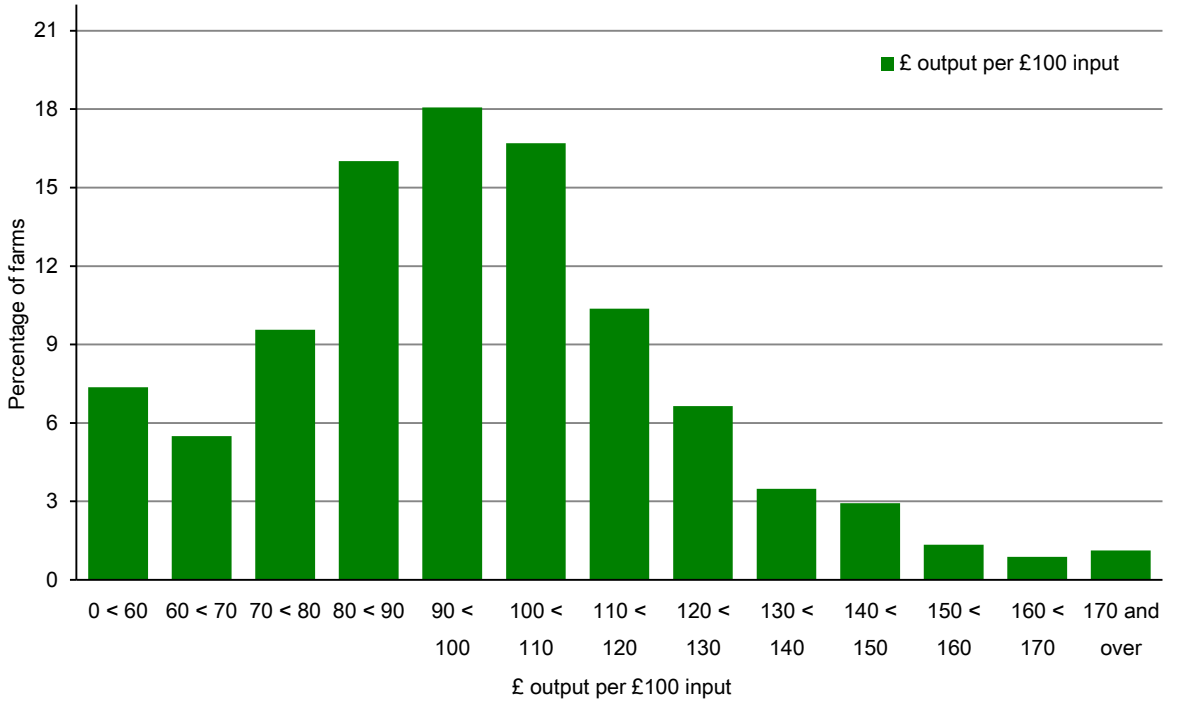

Performance based on the ratio of farm business output to farm business costs which includes an adjustment for unpaid labour.

Table 3.4 All farm types: distribution of farm incomes by country 2016/17

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Percentage of farms

	England	Wales	Scotland	Northern Ireland	United Kingdom
Farm Business Income					
Less than zero	20	20	23	12	20
1 to less than £5,000	7	9	8	8	7
£5,000 to less than £10,001	8	8	4	13	8
£10,000 to less than £20,001	14	17	19	25	16
£20,000 to less than £30,001	10	14	12	14	11
£30,000 to less than £50,001	15	17	12	15	15
£50,000 and over	27	15	21	13	23
Average (£ thousand per farm)	38	25	26	22	33
Net Farm Income					
Less than zero	36	32	34	28	34
1 to less than £5,000	8	10	9	9	9
£5,000 to less than £10,001	7	9	9	9	8
£10,000 to less than £20,001	11	18	17	21	14
£20,000 to less than £30,001	10	11	8	7	10
£30,000 to less than £50,001	11	11	10	15	11
£50,000 and over	17	10	14	10	15
Average (£ thousand per farm)	23	14	15	16	20
Cash Income					
Less than zero	9	10	14	4	10
1 to less than £5,000	5	4	6	4	5
£5,000 to less than £10,001	6	8	4	5	6
£10,000 to less than £20,001	10	14	13	23	12
£20,000 to less than £30,001	13	15	12	16	13
£30,000 to less than £50,001	18	21	18	23	19
£50,000 and over	40	27	34	24	36
Average (£ thousand per farm)	66	39	43	39	57

Revisions

33. Compared to the provisional 16/17 results published in the 2016 edition of AUK, the outturns published for England were higher for cereals, dairy, grazing livestock LFA and specialist pig farms while those for general cropping, grazing livestock lowland and specialist poultry farms were lower. Except for dairy farms, all of 16/17 provisional results were within confidence intervals of the final outturns. Average income for dairy farms was higher due to a larger than expected increase in the valuation change for other cattle and a greater reduction in costs, particularly feed. Note that the sample size for specialist poultry farms is relatively small (and to a lesser extent for specialist pigs) therefore the results are subject to considerable variability.

34. In Wales, incomes on dairy farms were higher than the provisional 16/17 results although rises in the average basic farm payment and animal disease compensation receipts were offset by higher agricultural costs. Incomes on grazing livestock farms in LFAs were less than expected, but were still marginally higher than any year since 2011/12.

35. In Northern Ireland incomes on dairy farms were higher than expected, albeit from a low base. This reflected an increase in outputs following a rise in milk prices while input costs fell, particularly for feed and fertilisers. For grazing livestock farms in the LFA the income was slightly lower than the 16/17 forecast.

Chapter 4 Accounts

Summary

In 2017, compared with 2016

- **Total Income from Farming** is estimated to have risen by £1,683million (41%), in real terms, to £5,743 million
- **Gross output** increased by £2,478 million (10%) to £26,340 million.
- **Crop** output increased by 12%, driven by increases in both prices and production for cereals and industrial crops.
- Output of **livestock for meat** increased by 6.6%, driven by price increases.
- Output of **livestock products** increased by 24%, driven by an increase in milk price.
- The cost of **intermediate consumption** rose by 5.1% driven by higher prices, in particular for animal feed, energy and fertiliser.
- **Gross value added** at basic price, which identifies agriculture's contribution to the Gross Domestic Product (GDP), increased by £1,698 million to £10,300 million. In real terms a 20% increase.
- A further weakening of the pound led to a 2.4% increase in the value of payments under the **Basic Payment Scheme**.
- **Total Income from Farming per annual work unit** (AWU)[3] of entrepreneurial labour (farmers and other unpaid labour) rose by 41% in real terms to £29,794.

Introduction

1. This chapter shows production and income accounts for agriculture in the United Kingdom. Table 4.1 shows the value in real terms and Table 4.2 shows the values in current price. Real term value is where previous year's data is adjusted to take account of inflation so the values are comparable. Current price values are based on prices in the year in question. Table 4.3 presents the year on year changes in outputs and inputs at current price. See Table 4.4 for a list of definition of terms used in Tables 4.1, 4.2 and 4.3.

2. 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.

3. Unless otherwise stated all comparisons are with the previous year (2016).

Real term value (table 4.1)

4. Real term value is where previous year's data is adjusted to take account of inflation so the values are comparable.

5. In real terms Total Income from Farming in 2017 was 41% higher than the 2016 total, a rise of £1,683 million to £5,743 million.

[3] AWU equals input of one person engaged in the agricultural activities of the farm business on a full-time basis for one year.

6. Total Income from Farming per AWU of entrepreneurial labour 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 over time. In 2017 total Income from Farming per AWU of entrepreneurial labour was 41% higher than 2016 at £29,794.

7. Incomes tend to be volatile and following an overall upward trend from the year 2000, income fell in 2015 driven down by lower prices and a less favourable exchange rate and despite the exchange rate strengthening in 2016, commodity prices did not recover enough for incomes to improve. In 2017 incomes are estimated to be slightly ahead of the 2013 figure, as the pound weakened further which helped commodity prices rise and added to the value of payments under the Basic Payment Scheme.

8. The value of all outputs, in real terms, rose by 10% to £26,340 million. A 12% rise in crop output was driven by increases in both prices and production for cereals and industrial crops. A 6.6% increase in livestock for meat was driven by price increases and a 24% increase in livestock products was driven by an increase in milk price.

9. The cost of intermediate consumption rose by 5.1%, due to higher cost prices; animal feed, fertiliser and energy were the main contributors to this increase. This led to a 20% (£1,698 million) rise in gross value added at basic price to £10,300 million.

10. In 2017 the pound further weakened against the euro and thus slightly boosted the value of Basic Payments made to UK farmers which were 2.4% higher than 2016. Payments are set in Euros and converted to sterling each year using the exchange rate set by the European Central Bank every September. In 2017 €1=89.5p compared to €1=85.2p in 2016.
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11. Labour, rent and interest were only slightly changed on the year, with labour up £32 million whereas rent and interest fell by £10 million and £6 million respectively.

Table 4.1 Production and income accounts in real terms (adjusted to take account of inflation)

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

£ million (real terms)

	2013	2014	2015	2016	2017 (provisional)
Output at market prices (a)					
1 Output of cereals	3 581	3 611	3 085	2 460	2 990
of which: wheat	2 200	2 561	2 131	1 655	1 992
barley	1 205	941	861	712	893
oats	170	103	88	88	100
2 Output of industrial crops	1 255	1 211	1 094	875	1 183
of which: oilseed rape	789	714	739	551	764
protein crops	130	129	142	134	153
sugar beet	286	329	180	152	228
other industrial crops	24	24	24	23	23
3 Output of forage plants	230	276	280	283	288
4 Output of vegetables and horticultural products	2 684	2 460	2 566	2 749	2 807
of which: fresh vegetables	1 421	1 243	1 373	1 436	1 456
plants and flowers	1 263	1 217	1 193	1 314	1 351
5 Output of potatoes (including seeds)	1 004	713	652	826	897
6 Output of fruit	639	649	716	712	759
7 Output of other crop products including seeds	617	676	533	583	585
Total crop output (sum 1 - 7)	10 010	9 596	8 925	8 487	9 508
8 Output of livestock	9 684	9 391	9 045	8 928	9 358
primarily for meat	8 209	7 796	7 722	7 662	8 164
of which: cattle	3 061	2 726	2 863	2 816	2 989
pigs	1 352	1 319	1 122	1 119	1 329
sheep	1 101	1 171	1 162	1 172	1 197
poultry	2 465	2 349	2 346	2 325	2 418
gross fixed capital formation	1 475	1 595	1 323	1 267	1 195
of which: cattle	973	1 001	730	684	676
pigs	7	6	4	5	6
sheep	289	344	300	309	256
poultry	207	244	289	270	257
9 Output of livestock products	5 381	5 605	4 669	4 070	5 054
of which: milk	4 531	4 796	3 879	3 363	4 344
eggs	762	709	707	614	624
Total livestock output (8 + 9)	15 065	14 996	13 714	12 998	14 412
10 Other agricultural activities	1 116	1 171	1 140	1 111	1 114
11 Inseparable non-agricultural activities	1 248	1 222	1 232	1 223	1 259
12 Output (at market prices) (sum 1 to 11)	27 439	26 984	25 011	23 819	26 293
13 Total subsidies (less taxes) on product (b)	22	22	37	43	47
14 Gross output at basic prices (12 + 13)	27 461	27 006	25 048	23 862	26 340

continued

Table 4.1 Production and income accounts in real terms (adjusted to take account of inflation) *continued*

£ million (real terms)

		2013	2014	2015	2016	2017 (provisional)
Intermediate consumption						
15 Seeds		920	800	739	747	792
16 Energy		1 539	1 439	1 236	1 154	1 263
of which:	electricity and fuels for heating	409	390	393	367	389
	motor and machinery fuels	1 130	1 049	843	786	875
17 Fertilisers		1 603	1 526	1 445	1 283	1 345
18 Plant protection products		908	982	1 000	971	1 006
19 Veterinary expenses		474	477	480	461	460
20 Animal feed		5 897	5 276	4 913	4 636	5 127
of which:	compounds	3 490	3 130	2 955	2 821	3 194
	straights	1 665	1 475	1 342	1 249	1 288
	feed produced and used on farm or purchased from other farms	742	671	616	566	645
21 Total maintenance		1 592	1 619	1 604	1 592	1 600
of which:	materials	994	1 003	985	974	990
	buildings	598	617	619	618	611
22 Agricultural services		1 116	1 171	1 140	1 111	1 114
23 FISM		110	100	99	107	110
24 Other goods and services (c)		3 331	3 304	3 289	3 197	3 222
25 Total intermediate consumption (sum 15 to 24)		17 490	16 694	15 945	15 260	16 040
26 Gross value added at market prices (12 - 25)		9 949	10 290	9 066	8 560	10 253
27 Gross value added at basic prices (14 - 25)		9 971	10 312	9 103	8 602	10 300
28 Total consumption of Fixed Capital		4 228	4 269	4 122	4 139	4 100
of which:	equipment	1 776	1 794	1 825	1 845	1 864
	buildings	1 038	1 011	1 008	1 014	1 019
	livestock	1 414	1 464	1 289	1 280	1 217
	cattle	909	950	762	708	694
	pigs	7	6	4	5	5
	sheep	284	303	298	283	257
	poultry	214	205	225	284	261
29 Net value added at market prices (26 - 28)		5 721	6 021	4 944	4 420	6 153
30 Net value added at basic prices (27 - 28)		5 743	6 043	4 981	4 463	6 200
31 Other taxes on production		- 125	- 104	- 98	- 95	- 94
32 Other subsidies on production (b)		3 542	3 069	2 939	3 289	3 250
33 Net value added at factor cost (30 + 31 + 32)		9 160	9 009	7 821	7 657	9 356
34 Compensation of employees		2 549	2 512	2 597	2 583	2 615
35 Rent		552	579	583	584	574
36 Interest (d)		345	411	436	430	424
37 Total Income from Farming (33 - 34 - 35 - 36)		5 713	5 506	4 205	4 060	5 743

(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, Single 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.

Current price (tables 4.2 and 4.3)

12. Current price values are based on prices in the year in question.

13. In 2017 Total Income from Farming rose by £1,758 million to £5,743 million, a 44% increase on 2016. The key contributors to the change were the rises in the value of milk by £1,044 million, wheat by £368 million, cattle and pigs by around £230 million and oil seed rape £223 million. In contrast costs were higher with animal feed and energy costs showing the largest increases, up £577 million and £131 million respectively.

14. Gross value added at basic price, which identifies agriculture's contribution to the Gross Domestic Product (GDP), rose by 22% (£1,856 million) to £10,300 million, in current price terms, the highest recorded level.

Outputs: Crops

15. Overall output of crops value rose by £1,178 million or 14% to £9,508 million, with increases seen in all crops.

16. Cereal harvests were up on last year as yields and cropped areas mostly increased. Prices continued to improve in 2017, following the price increases seen in the latter part of 2016, and for the year were higher overall.

17. The value of wheat rose by £368 million to £1,992 million. The harvest was average, quality good and a higher yield somewhat compensated for a 1.7% reduction in planted area, resulting in volumes up by 2.7%. Price rose by 19%, as the higher prices seen in the second half of 2016 continued through 2017.

18. The value of barley rose by £194 million to £893 million, driven by both price and volume. The barley planted area was 4.9% higher, yield slightly up on 2016 resulting in an 11% rise in volume. Price was 15% higher.

19. Oilseed rape saw a rise in value of £223 million to £764 million, driven by higher production and price (+15%). Yields matched the record high of 2015 and compensated for the reduction in area resulting in a 23% increase in production.

20. In 2017, the value of sugar beet rose by £78 million to £228 million driven by volume. The abolition of EU sugar quotas led to a 30% increase in cropped area and a 58% rise in production.

21. Potatoes rose in value by £86 million to £897 million in 2017. A 4.5% increase in planted area and higher yield contributing to this rise which led to year end stocks at their highest recorded level. As a consequence price fell by 4.2%.

22. The value of vegetables increased by £47 million to £1,456 million, driven by small increases in price and volume. Higher production and price resulted in the value of fruit up by £60 million to £759 million.

Outputs: Livestock

23. Overall the total value of output of livestock was 13% higher at £14,412 million.

24. The value of milk increased in value by £1,044 million to £4,344 million. Production was 4.0% higher, as increased yield offset a fall in dairy numbers. The average price of milk in 2017 (calendar year) was 28.86 pence per litre (ppl), 6.12 ppl higher than 2016 and the highest annual price since 2014.

25. The value of eggs rose by £21 million to £624 million, entirely volume driven as throughput at egg packing stations rose by 4.2% whilst price remained fairly stable.

26. The value of livestock primarily for meat rose by £643 million with increases seen in all sectors. The value of cattle meat increased by £225 million to £2,989 million, entirely price driven (+9.5%) as production was slightly down on the year.

27. Pig meat rose in value by £230 million to £1,329 million. This rise is entirely due to the 23% rise in price as tightening supplies in the EU contributed to this price increase. Production levels fell by 1.6% although carcase weights were slightly heavier.

28. The value of sheep meat rose by £46 million to £1,197 million, both price and volume driven. The weakening of sterling made exports more competitive pushing prices up. Poultry meat rose by £136 million to £2,418 million, again both price and volume driven with a fall in turkey meat production more than offset by the rise in broiler production.

Intermediate consumption

29. The total cost of intermediate consumption rose by £1,062 million to £16,040 million. All intermediate consumption costs rose with animal feed, energy and fertiliser showing the largest increases.

30. The cost of animal feed rose by £577 million to £5,127 million, a combination of increased volumes and feed price. Higher cereal prices kept the annual average feed price up on the year. Greater demand by the dairy sector on the back of higher milk prices, higher livestock numbers and variable forage quality all led to increased supplementary feed use.

31. Energy costs rose by £131 million to £1,263 million, wholly price driven as global oil prices continued to rise. Typical weather conditions and efficiency savings kept usage stable.

32. The cost of fertilisers rose by £85 million to £1,345 million, again driven by the global oil price as usage was down.

Gross Value Added

33. Gross value added at basic price, which identifies agricultures contribution to the Gross Domestic Product (GDP), rose by 22% (£1,856 million) to £10,300 million.

Net value at factor cost

34. 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 £1,840 million (24%) to £9,356 billion.

Compensation of employees

35. The total value of compensation to employees was £2,615 million, an £80 million increase resulting from the increase in the national minimum wage rate. Labour numbers were little changed on the previous year.

Other subsidies on production

36. Direct payments, including payments on product (£47 million), rose to £3,297 million. The value of the Basic Payment Scheme rose by 2.4% to £3,250 million, once again boosted by the favourable exchange rate. In 2017 agri-environment payments were slightly down on the year as scheme uptake remains slow.

Table 4.2 Production and income accounts at current prices

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£ million (current prices)

		2013	2014	2015	2016	2017 (provisional)
Output at market prices (a)						
1 Output of cereals		3 375	3 459	2 970	2 414	2 990
of which:	wheat	2 073	2 453	2 051	1 624	1 992
	barley	1 136	901	829	699	893
	oats	160	99	85	87	100
2 Output of industrial crops		1 183	1 160	1 053	859	1 183
of which:	oilseed rape	744	684	711	541	764
	protein crops	123	123	137	131	153
	sugar beet	270	315	173	150	228
	other industrial crops	23	23	23	23	23
3 Output of forage plants		217	265	269	278	288
4 Output of vegetables and horticultural products		2 530	2 357	2 470	2 699	2 807
of which:	fresh vegetables	1 340	1 191	1 322	1 409	1 456
	plants and flowers	1 191	1 166	1 149	1 290	1 351
5 Output of potatoes (including seeds)		947	683	628	810	897
6 Output of fruit		602	622	690	698	759
7 Output of other crop products including seeds		581	648	513	572	585
Total crop output (sum 1 - 7)		9 435	9 193	8 592	8 330	9 508
8 Output of livestock		9 128	8 997	8 708	8 764	9 358
primarily for meat		7 738	7 468	7 434	7 520	8 164
of which:	cattle	2 886	2 611	2 756	2 764	2 989
	pigs	1 274	1 264	1 080	1 099	1 329
	sheep	1 037	1 122	1 118	1 151	1 197
	poultry	2 324	2 250	2 259	2 282	2 418
gross fixed capital formation		1 390	1 528	1 274	1 243	1 195
of which:	cattle	917	959	703	671	676
	pigs	6	5	4	5	6
	sheep	272	330	289	303	256
	poultry	195	234	278	265	257
9 Output of livestock products		5 072	5 369	4 495	3 995	5 054
of which:	milk	4 271	4 594	3 734	3 301	4 344
	eggs	718	679	681	603	624
Total livestock output (8 + 9)		14 200	14 366	13 203	12 758	14 412
10 Other agricultural activities		1 052	1 122	1 097	1 091	1 114
11 Inseparable non-agricultural activities		1 176	1 170	1 186	1 200	1 259
12 Output (at market prices) (sum 1 to 11)		25 864	25 851	24 078	23 380	26 293
13 Total subsidies (less taxes) on product (b)		21	21	36	42	47
14 Gross output at basic prices (12 + 13)		25 885	25 871	24 114	23 421	26 340

continued

Table 4.2 Production and income accounts at current prices
continued

£ million (current prices)

		2013	2014	2015	2016	2017 (provisional)
Intermediate consumption						
15 Seeds		867	766	712	733	792
16 Energy		1 450	1 378	1 190	1 132	1 263
of which:	electricity and fuels for heating	386	373	378	361	389
	motor and machinery fuels	1 065	1 005	811	772	875
17 Fertilisers		1 511	1 462	1 392	1 259	1 345
18 Plant protection products		856	941	963	953	1 006
19 Veterinary expenses		447	457	462	453	460
20 Animal feed		5 558	5 054	4 730	4 551	5 127
of which:	compounds	3 290	2 999	2 845	2 769	3 194
	straights	1 569	1 413	1 292	1 226	1 288
	feed produced and used on farm or purchased from other farms	699	643	593	556	645
21 Total maintenance		1 501	1 551	1 544	1 562	1 600
of which:	materials	937	960	949	956	990
	buildings	563	591	596	607	611
22 Agricultural services		1 052	1 122	1 097	1 091	1 114
23 FISM		103	95	95	105	110
24 Other goods and services (c)		3 140	3 165	3 166	3 138	3 222
25 Total intermediate consumption (sum 15 to 24)		16 486	15 992	15 350	14 978	16 040
26 Gross value added at market prices (12 - 25)		9 378	9 858	8 728	8 402	10 253
27 Gross value added at basic prices (14 - 25)		9 399	9 879	8 764	8 443	10 300
28 Total consumption of Fixed Capital		3 985	4 090	3 969	4 063	4 100
of which:	equipment	1 674	1 719	1 757	1 811	1 864
	buildings	979	968	970	995	1 019
	livestock	1 333	1 403	1 241	1 256	1 217
	cattle	857	910	734	695	694
	pigs	7	5	4	5	5
	sheep	267	290	287	278	257
	poultry	202	197	217	279	261
29 Net value added at market prices (26 - 28)		5 393	5 768	4 760	4 339	6 153
30 Net value added at basic prices (27 - 28)		5 413	5 789	4 795	4 380	6 200
31 Other taxes on production		- 118	- 99	- 95	- 93	- 94
32 Other subsidies on production (b)		3 339	2 940	2 829	3 229	3 250
33 Net value added at factor cost (30 + 31 + 32)		8 634	8 630	7 530	7 516	9 356
34 Compensation of employees		2 403	2 406	2 500	2 535	2 615
35 Rent		520	555	562	573	574
36 Interest (d)		325	394	419	422	424
37 Total Income from Farming (33 - 34 - 35 - 36)		5 385	5 275	4 048	3 985	5 743

(a) Output is net of VAT collected on the sale of non-edible products. Figures for output at market prices exclude subsidies on
(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
(c) Includes livestock and crop costs, water costs, insurance premiums, bank charges, professional fees, rates, and other farming
(d) Interest charges on loans for current farming purposes and buildings and works less interest on money held on short term deposit.

Table 4.3 Changes in outputs and inputs at current price

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£ million

	Current price value		Changes %		
	2016	2017	value	volume	price
Output at market prices (a)					
1 Output of cereals	2 414	2 990	24	5	18
of which: wheat	1 624	1 992	23	3	19
barley	699	893	28	11	15
oats	87	100	15	1	13
2 Output of industrial crops	859	1 183	38	26	9
of which: oilseed rape	541	764	41	23	15
protein crops	131	153	17	10	6
sugar beet	150	228	52	58	- 4
other industrial crops	23	23	-	-	-
3 Output of forage plants	278	288	4	1	3
4 Output of vegetables and horticultural products	2 699	2 807	4	2	2
of which: fresh vegetables	1 409	1 456	3	2	1
plants and flowers	1 290	1 351	5	1	3
5 Output of potatoes (including seeds)	810	897	11	15	- 4
6 Output of fruit	698	759	9	5	4
7 Output of other crop products including seeds	572	585	2	2	-
Total crop output (sum 1 - 7)	8 330	9 508	14	7	7
8 Output of livestock	8 764	9 358	7	-	7
primarily for meat	7 520	8 164	9	-	8
of which: cattle	2 764	2 989	8	- 1	9
pigs	1 099	1 329	21	- 2	23
sheep	1 151	1 197	4	2	2
poultry	2 282	2 418	6	3	3
gross fixed capital formation	1 243	1 195	- 4	- 5	1
of which: cattle	671	676	1	- 2	2
pigs	5	6	14	- 11	28
sheep	303	256	- 16	- 14	- 2
poultry	265	257	- 3	- 5	2
9 Output of livestock products	3 995	5 054	27	4	22
of which: milk	3 301	4 344	32	4	27
eggs	603	624	3	4	- 1
Total livestock output (8 + 9)	12 758	14 412	13	1	12
10 Other agricultural activities	1 091	1 114	2	-	3
11 Inseparable non-agricultural activities	1 200	1 259	5	-	5
12 Output (at market prices) (sum 1 to 11)	23 380	26 293	12	3	9
13 Total subsidies (less taxes) on product (b)	42	47	13	. .	. .
14 Gross output at basic prices (12 + 13)	23 421	26 340	12	3	9

continued

Table 4.3 Changes in outputs and inputs at current price
continued

£ million

		Current price value		Changes %		
		2016	2017	value	volume	price
Intermediate consumption						
15 Seeds		733	792	8	2	6
16 Energy		1 132	1 263	12	1	11
of which:	electricity and fuels for heating	361	389	8	2	6
	motor and machinery fuels	772	875	13	1	13
17 Fertilisers		1 259	1 345	7	- 2	9
18 Plant protection products		953	1 006	6	2	3
19 Veterinary expenses		453	460	2	1	1
20 Animal feed		4 551	5 127	13	3	9
of which:	compounds	2 769	3 194	15	5	9
	straights	1 226	1 288	5	- 2	8
	feed produced and used on farm or purchased from other farms	556	645	16	5	11
21 Total maintenance		1 562	1 600	2	-	3
of which:	materials	956	990	4	2	2
	buildings	607	611	1	- 3	4
22 Agricultural services		1 091	1 114	2	-	3
23 FISM		105	110	5	. .	. .
24 Other goods and services (c)		3 138	3 222	3	-	2
25 Total intermediate consumption (sum 15 to 24)		14 978	16 040	7	1	6
26 Gross value added at market prices (12 - 25)		8 402	10 253	22	6	15
27 Gross value added at basic prices (14 - 25)		8 443	10 300	22	6	15
28 Total consumption of Fixed Capital		4 063	4 100	1	- 1	2
of which:	equipment	1 811	1 864	3	1	1
	buildings	995	1 019	2	- 1	3
	livestock	1 256	1 217	- 3	- 5	2
	cattle	695	694	-	- 3	3
	pigs	5	5	11	- 10	23
	sheep	278	257	- 8	- 6	- 2
	poultry	279	261	- 6	- 8	2
29 Net value added at market prices (26 - 28)		4 339	6 153	42	12	26
30 Net value added at basic prices (27 - 28)		4 380	6 200	42	12	26
31 Other taxes on production		- 93	- 94	1	. .	. .
32 Other subsidies on production (b)		3 229	3 250	1	. .	. .
33 Net value added at factor cost (30 + 31 + 32)		7 516	9 356	24	. .	. .
34 Compensation of employees		2 535	2 615	3	-	3
35 Rent		573	574	-	. .	. .
36 Interest (d)		422	424	-	. .	. .
37 Total Income from Farming (33 - 34 - 35 - 36)		3 985	5 743	44	. .	. .

(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 produc: 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, Single 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)

37. The aggregate balance sheet for agriculture (table 4.4) values the total assets and liabilities for agriculture at the end of each calendar year. Net worth was estimated to be £261 billion at December 2016, the latest year for which data is available, and shows a fall of 0.8% on 2015. In general regional land prices showed a slight decline on the year halting the long term increase in the value of land. Total liabilities showed an increase on 2015, as bank borrowing for agriculture increased.

Table 4.4 Aggregate balance sheet for the agricultural industry

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

£ million

		2012	2013	2014	2015	2016
At current prices						
Assets						
Fixed (a):						
	Land (b)	189 638	216 347	232 223	227 107	224 649
	Buildings, plant, machinery and vehicles	31 806	32 712	33 333	33 851	34 737
	Breeding livestock	7 571	8 225	7 232	5 781	6 608
	Total fixed	229 015	257 284	272 788	266 738	265 994
	Trading livestock	3 976	4 129	4 098	4 205	4 210
	Crops and stores	4 050	3 961	4 006	4 010	3 730
	Debtors, cash deposits	4 839	5 487	5 740	5 711	5 818
	Total current	12 865	13 577	13 844	13 925	13 759
Total Assets		241 880	270 861	286 632	280 663	279 752
Liabilities						
Long and medium term:						
	AMC and SASC (c)	1 503	1 777	1 980	1 992	2 230
	Building Societies and Institutions	1 153	1 144	1 316	1 226	1 256
	Bank loans	5 817	6 740	7 534	7 994	8 768
	Family Loans	405	524	536	444	522
	Other	29	23	70	75	66
	Total long and medium term	8 907	10 208	11 437	11 731	12 842
Short term:						
	Leasing	57	82	61	54	47
	Hire purchase	1 135	1 296	1 347	1 417	1 462
	Trade Credit	1 592	2 081	1 880	1 655	1 873
	Bank overdrafts	1 903	2 226	2 134	2 290	2 247
	Other	39	45	120	43	39
	Total short term	4 726	5 730	5 542	5 458	5 669
Total Liabilities		13 633	15 938	16 978	17 189	18 511
Net worth		**228 247**	**254 923**	**269 653**	**263 474**	**261 241**
In real terms (as deflated by the gdp deflator):						
Indices 2013 = 100						
GDP deflator		98	100	102	102	104
Total assets		91	100	104	102	99
Total liabilities		87	100	105	106	112
Net worth		91	100	104	101	99

(a) The valuations of land and breeding livestock are at average market prices; cost, net of consumption of fixed capital; those of builidngs, 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).

Revisions

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

39. In addition to the planned changes, new methodology has been introduced to calculate the volume and value of potatoes, in particular to improve figures for stock feed. Data has been revised back to 2014.

40. The values of gross fixed capital formation (GFCF) and consumption of fixed capital (CFC) of cattle have been revised back to 2014 to correct an error in the calculation of breeding cattle. This has little impact on value of TIFF as the GFCF increase is offset by an increase in CFC.

41. 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

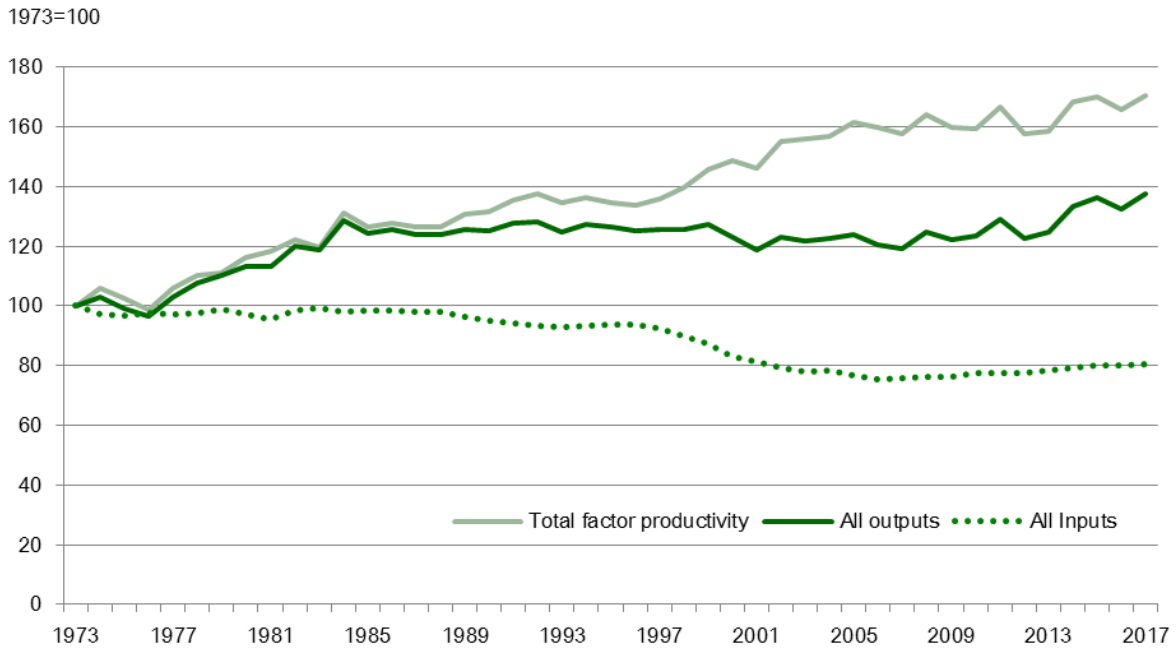
- **Total factor productivity** of UK agriculture increased by 2.9% between 2016 and 2017.
- **Increase** driven by an increase in production combined with static volumes of all inputs.
- Volume of all **outputs** increased by 3.6% driven by an increase for crops and livestock products.
- Volume of all **inputs** increased but by only 0.7%.
- **Since 1973 total factor productivity** has increased by over 70% driven by a 37% increase in the volume of outputs and a 20% fall in the volume of inputs.

Introduction (chart 5.1)

1. 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 impact on productivity, it is developments in productivity over a longer period that constitute one of the main drivers of agricultural income.

2. 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.

Chart 5.1 Total factor productivity



Total factor productivity

3. Total factor productivity of the agriculture industry in the United Kingdom is estimated to have increased by 2.9% between 2016 and 2017. This is driven by an increase in overall levels of production combined with only a slight increase in the volumes of inputs.

4. The volume of all outputs increased by 3.6% after the dip seen in 2016. This was mainly driven by an increase for crops and livestock products.

5. The volume of all inputs also increased but by only 0.7%, considerably less than the increase in outputs.

6. Since 1973 total factor productivity has increased by over 70% driven by a 37% increase in the volume of outputs and a 20% fall in the volume of inputs.

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

7. Total volume of all crops increased by 7.3% compared to 2016. Cereal volumes rose by 4.6% with oats being the only cereal crop to see a fall (-1.7%). Oilseed rape and sugar beet saw large increases of 23% and 58% respectively for 2017.

8. Compared to 2016 there was a small (1.8%) increase in the volume of all livestock outputs. This was mainly driven by a 4.0% increase for milk whilst the total volume of meat production increased slightly, by 0.5% overall.

9. The increased meat production was driven by increases for sheep (+2.0%) and poultry (+3.1%) and partly offset by falls for cattle (-1.2%) and pigs (-1.6%).

10. Compared to 2016 there was a small increase of 0.7% in the volume of all inputs including labour. Animal feed is the single largest input and showed an increase of 3.0% overall. This was driven by an increase of +5.4% for compounds, partly offset by a -2.5% fall for straights.

Table 5.1 Total factor productivity volume indices

Enquiries: David Fernall on +44 (0) 20 8026 6202 email: david.fernall@defra.gsi.gov.uk

2010=100

	2012	2013	2014	2015	2016	2017 (provisional)
1 Output of cereals	92.6	92.6	118.8	120.4	107.0	111.9
wheat	88.2	75.9	109.7	109.1	97.3	99.3
rye	68.2	90.9	90.9	90.9	90.9	90.9
barley	111.3	154.3	153.5	164.5	141.8	160.5
oats and summer cereal mixtures	93.3	150.6	114.1	119.4	122.3	120.3
other cereals	93.3	106.0	105.4	89.7	78.4	95.6
2 Output of industrial crops	105.8	98.6	111.6	109.5	84.7	106.6
oil seeds	112.9	95.2	108.3	111.3	78.9	96.5
oilseed rape	114.6	95.4	110.3	114.0	79.6	97.9
other oil seeds	58.0	86.4	54.6	39.7	66.4	64.2
protein crops	55.5	68.9	81.8	124.5	113.2	125.1
sugar beet	111.7	129.2	142.6	95.3	87.1	137.9
other industrial crops	101.1	101.1	101.1	101.1	101.1	101.1
3 Output of forage plants	109.0	121.3	121.3	121.3	121.3	121.3
4 Output of vegetables and horticultural products	94.7	97.6	100.0	100.3	100.2	102.1
fresh vegetables	92.8	97.4	102.5	103.0	101.4	103.8
plants and flowers	96.7	97.7	97.3	97.4	98.9	100.3
5 Output of potatoes	90.7	112.8	144.0	137.3	131.1	151.6
6 Output of fruit	93.1	100.2	106.9	110.4	101.7	106.7
7 Output of other crop products	126.9	119.1	133.9	123.2	126.1	129.2
Total crop output (sum 1 - 7)	95.6	97.9	113.3	113.4	104.4	112.0
8 Output of livestock (meat)	102.8	102.9	102.7	105.7	108.2	108.7
cattle	102.0	98.0	96.3	100.2	103.8	102.5
pigs	108.6	111.9	115.8	119.9	124.6	122.6
sheep	101.2	103.3	108.3	110.1	106.3	108.4
poultry	102.2	105.5	102.5	105.1	108.4	111.7
other animals	100.0	100.0	100.0	99.4	99.4	99.4
9 Output of livestock products	98.9	100.2	107.3	110.8	107.5	111.8
milk	99.8	100.5	108.5	112.4	107.5	111.8
eggs	96.5	99.5	100.0	103.4	107.9	112.4
raw wool	110.4	97.4	99.8	101.2	102.3	100.5
other animal products	57.5	84.2	107.1	89.3	87.8	92.0
Total livestock output (8 + 9)	101.2	101.8	104.6	107.8	108.2	110.1
10 Inseparable non-agricultural activities	103.1	115.4	113.2	120.7	120.8	120.7
11 All outputs	99.1	100.9	108.0	110.37	107.31	111.22

continued

Table 5.1 Total factor productivity volume indices *(continued)*

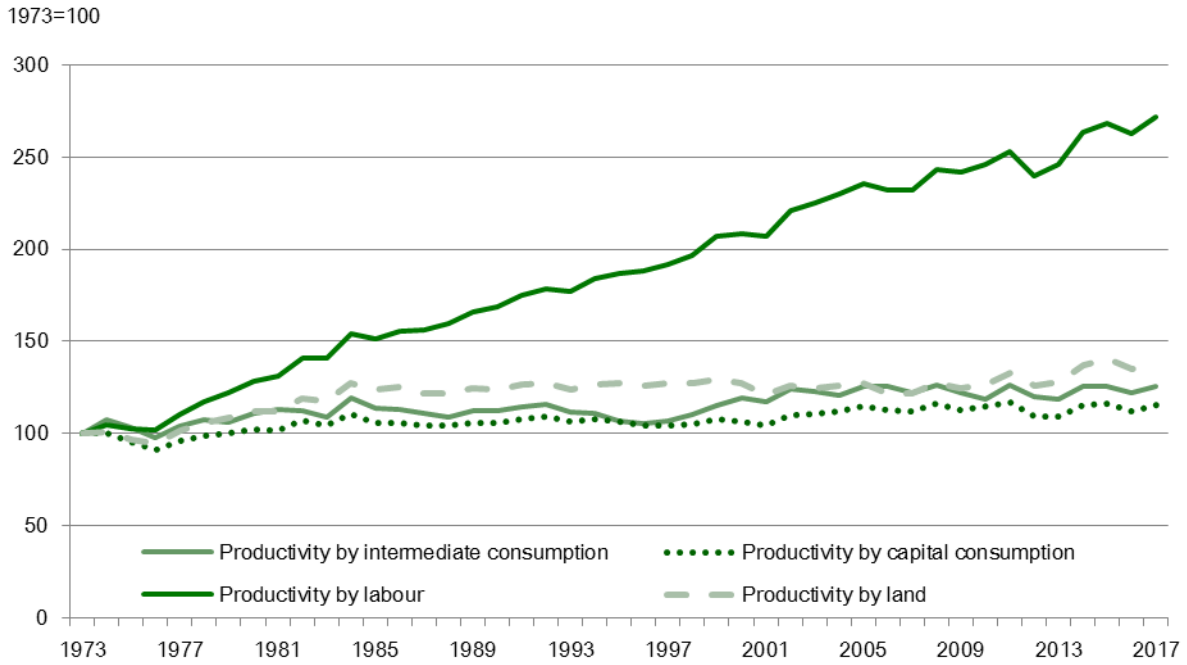
2010=100

	2012	2013	2014	2015	2016	2017 (provisional)
12 Seeds	101.6	107.0	107.0	105.8	106.0	108.2
13 Energy	96.3	97.0	95.9	98.1	97.5	98.4
electricity and fuels for heating	93.8	87.4	80.6	82.7	79.6	80.8
motor and machinery fuels	97.2	100.9	102.2	104.5	105.4	106.1
14 Fertilisers	97.9	99.2	100.5	100.7	113.6	110.9
15 Plant protection products	117.9	124.9	130.6	134.0	132.6	135.6
16 Veterinary expenses	100.3	104.1	105.6	106.0	103.5	104.5
17 Animal feed	94.8	98.9	101.3	105.4	104.9	108.1
compounds	103.0	109.3	109.9	114.5	116.3	122.6
straights	81.6	82.1	87.4	90.8	86.2	84.1
18 Total maintenance	99.3	100.5	106.6	102.3	102.6	102.5
materials	100.2	102.2	103.0	101.7	101.3	102.9
buildings	97.8	97.6	112.9	103.5	105.0	101.9
19 FISIM	100.0	100.0	100.0	100.0	100.0	100.0
20 Other goods and services	97.6	98.5	96.7	100.0	96.0	95.9
21 Intermediate consumption	98.3	101.0	102.5	104.4	104.4	105.5
22 Consumption fixed capital (excluding livestock)	104.0	105.9	107.3	108.8	109.5	110.1
equipment	107.2	110.8	113.7	116.7	118.5	120.1
buildings	99.1	98.4	97.7	96.9	96.0	95.1
23 All Labour	101.6	100.8	100.9	101.2	100.4	100.6
Compensation of employees	102.4	101.7	101.8	102.2	100.3	100.4
Entrepreneurial workers (farm and specialist contractor)	101.2	100.3	100.5	100.7	100.4	100.7
24 Land	99.7	100.1	100.0	99.5	100.7	101.4
25 All Inputs and Entrepreneurial Labour	100.1	101.4	102.3	103.4	103.2	103.9
Total factor productivity (11 divided by 25)	**99.0**	**99.5**	**105.6**	**106.7**	**104.0**	**107.0**
Partial factor productivity indicators						
Productivity by intermediate consumption (11 divided by 21)	100.8	99.9	105.4	105.8	102.8	105.4
Productivity by capital consumption (11 divided by 22)	95.3	95.3	100.7	101.4	98.0	101.0
Productivity by labour (11 divided by 23)	97.5	100.1	107.0	109.0	106.9	110.6
Productivity by land (11 divided by 24)	99.3	100.8	108.0	110.9	106.5	109.7

Partial factor productivity (chart 5.2)

11. Partial productivity shows the impact key inputs have on productivity. It measures total outputs against a part of the inputs. The figures below clearly show 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.

Chart 5.2 Partial productivity indicators



Revisions

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

13. 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 for land is the rental value. Owned land is given a notional rent value. Due to the value associated to land it has become a key component of the productivity indicator. The overall impact of land on the indicator was a slight reduction in productivity gains.

Chapter 6 Prices

Summary

In 2017, compared with 2016:

- Annual price index (API) for **agricultural outputs** increased by 10%.
- API for **agricultural inputs** increased by 5.0%.
- API for **crop products** increased by 7.0%.
- API for **cereals** increased by 18%.
- API for **livestock and livestock** products increased by 12%.
- API for **animal feeding stuffs** increased by 7.0%.

Data Sources

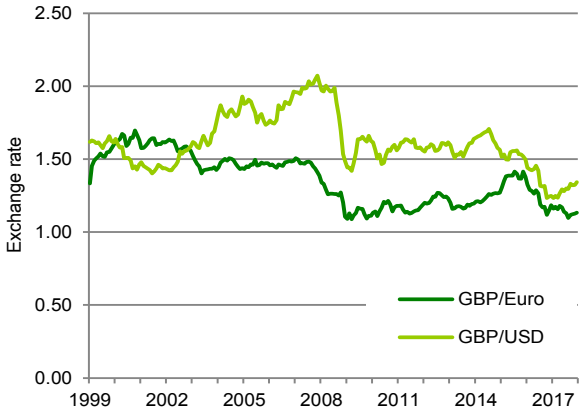
1. The Agricultural Price Index (API) measures the monthly price changes in agricultural outputs and inputs for the UK. The output series reflects the price farmers receive for their products, also referred to as farm gate price. Information is collected for all major crops (for example wheat and potatoes)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

2. The input series reflects the price farmers pay for goods and services. This 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 (chart 6.1)

3. The strength of the pound against the euro and also the US dollar has an impact on the price index as the global market impacts on UK prices, see chart 6.1. In 2017 the pound further weakened against the euro and the US dollar putting pressure on UK prices for the majority of the year.

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



Source: European Central Bank

Annual Price Indices for 2017 (table 6.1, charts 6.2 to 6.5)

4. Compared to 2016 the annual index for outputs rose by 10% and for inputs rose by 5.0%.

5. The average price of crop products rose by 7.0% mainly driven by increased prices for cereal and oilseed rape. Cereal prices continued their upturn at the start of the year (Chart 6.2) with a further rise in prices from October to December which led to an overall increase for the year as a whole, rising by 18%.

6. The annual potato price index was 3.7% lower than in 2016. An increase in 2017 harvest yields led to lower prices (Chart 6.4). This follows the same pattern historically, as years that have had higher production tend to have lower average prices.

7. The average price of livestock and livestock products rose by 12%. The main drivers for the overall increase were the 22% increase in pigs and the 27% increase in milk prices.

8. The average price of animal feeding stuffs is strongly influenced by the cereal price and showed a similar trend (Chart 6.3). A steady increase in prices throughout 2017 led to an overall increase for the year as a whole, 7.0% up on 2016.

9. Chart 6.5 shows a steady increase from March to August of the pig price in 2017 with a drop towards the end of the year driven by weak demand and rising pig numbers.

Chart 6.2 Cereal price index 2016 & 2017

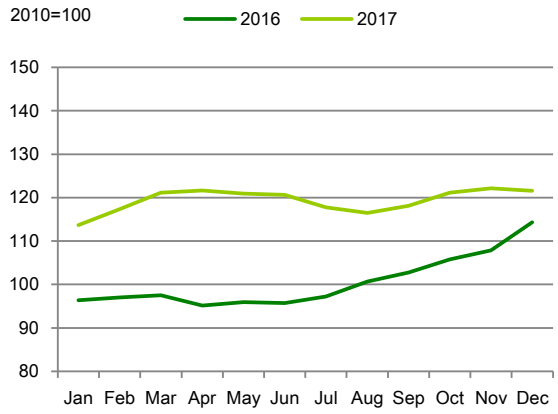


Chart 6.3 Animal feedstuffs price index 2016 & 2017

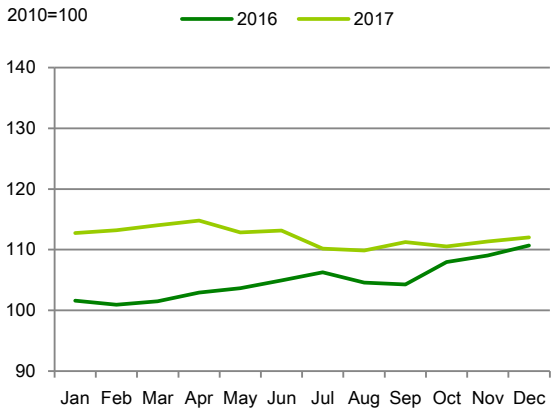


Chart 6.4 Potato price index 2016 & 2017

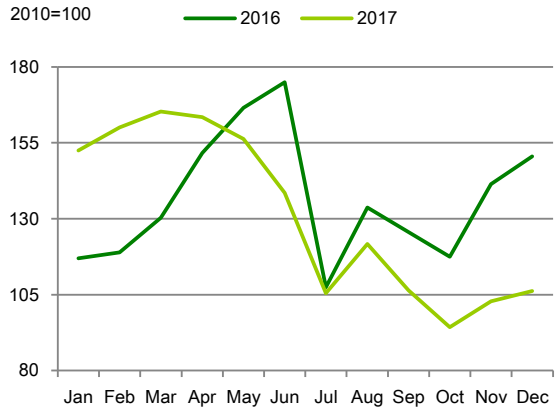


Chart 6.5 Pig price index 2016 & 2017

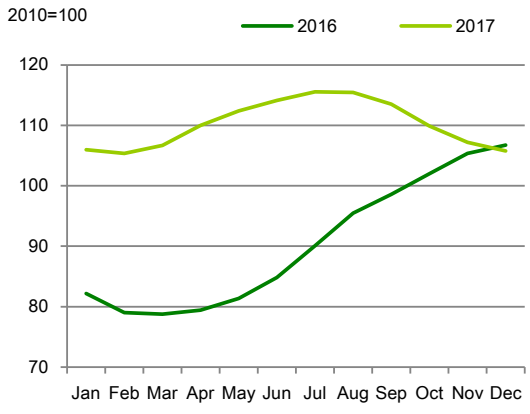


Table 6.1 Price indices for outputs and inputs

Enquiries: Jayne Brigham on +44 (0) 20802 66280 email: jayne.brigham@defra.gsi.gov.uk

2010=100

	2012	2013	2014	2015	2016	2017
All Outputs	118.8	125.8	114.6	104.9	104.5	115.1
Crop products	124.2	128.7	109.2	102.7	107.0	114.5
Cereals	149.7	153.1	120.6	102.8	100.9	119.4
Wheat	144.3	151.9	121.3	101.3	99.1	118.5
Barley	160.9	154.4	119.2	106.4	105.1	121.2
Oats	190.1	173.7	112.6	108.3	111.6	125.7
Potatoes	122.7	156.5	103.9	105.9	136.2	131.1
Industrial Crops	130.0	121.5	101.8	98.6	101.6	112.2
Oilseed Rape	139.1	127.0	99.7	95.1	104.8	120.7
Sugar Beet	104.3	105.7	108.9	110.1	92.0	87.7
Forage plants	106.2	114.8	107.4	94.5	94.5	104.1
Fresh Vegetables	108.6	110.2	103.1	105.9	114.7	112.6
Fresh Fruit	103.7	104.8	97.6	101.2	106.9	114.9
Flowers and plants	109.3	110.9	109.5	107.2	106.6	105.7
Other crop products	102.9	102.9	102.9	102.9	102.9	102.9
Animals and animal products	114.8	123.8	118.6	106.5	102.7	115.5
Animals (for slaughter & export)	114.8	121.0	113.5	109.6	109.0	116.8
Cattle and calves	129.3	137.7	123.2	126.0	122.4	131.3
Pigs	106.3	116.7	111.7	92.2	90.5	110.1
Sheep and lambs	105.9	104.8	106.9	99.0	104.9	106.6
All Poultry	105.1	111.1	106.0	104.5	105.1	107.4
Animal products	114.8	128.1	126.4	101.6	92.9	113.6
Milk	113.8	128.2	127.7	99.1	91.4	116.3
Eggs	124.0	130.8	122.2	118.6	101.0	99.0
All Inputs	114.2	117.0	112.1	106.8	104.6	109.8
All goods and services currently consumed in agriculture	116.6	119.7	112.8	106.2	103.4	109.3
Seeds	105.2	113.9	100.9	95.6	98.1	103.6
Energy and lubricants	122.3	123.3	119.0	101.2	97.1	107.1
Fertilisers and soil improvers	125.2	113.1	106.5	101.5	83.2	89.9
Plant protection products	102.0	97.7	102.6	102.5	102.5	106.2
Veterinary services	103.5	106.1	107.0	107.7	108.1	108.7
Animal feedingstuffs	128.5	139.4	120.7	108.1	104.9	112.2
Straight feedingstuffs	135.7	147.6	120.1	103.6	102.6	109.5
Compound feedingstuffs	123.7	134.0	121.1	111.1	106.4	114.0
Maintenance of Materials	106.5	108.3	110.3	110.8	112.3	114.7
Maintenance of Buildings	109.8	110.1	110.9	109.0	108.2	113.8
Other goods and services	106.7	109.1	109.9	109.2	111.1	115.5
Goods and services contributing to investment	101.7	102.9	108.7	110.0	110.6	112.5
Materials	99.1	100.4	108.5	110.5	111.0	112.1
Buildings	107.4	107.7	108.4	107.2	107.0	111.2
Other (Engineering and soil improvement operations)	104.5	107.2	110.7	113.4	115.5	117.9

Revisions

10. Revisions were made to 2015 data for potatoes and animal products, 2016 data for potatoes, flowers and plants, seeds, maintenance of buildings, other goods and services and other (engineering and soil improvement operations).

Chapter 7 Crops

Summary

In 2017, compared to 2016:

- Harvested production of **wheat** increased by 3.2% to 14.8 million tonnes. The value of production was 23% higher at almost £2 billion.
- **Oilseed rape** production increased by 23% to 2.2 million tonnes due to higher yields. The value of production was 41% higher at £764 million.
- **Sugar beet** production increased by 57% to 8.9 million tonnes. The value of production was 53% higher at £229 million.
- The value of **vegetable** production increased by 3.3% to £1.5 billion.
- The value of **fruit** production was up 9.2% to £765 million.

Cereals (tables 7.1 to 7.4)

Table 7.1 Total cereals

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

Thousand tonnes (unless specified otherwise)						Calendar year
		2013	2014	2015	2016	2017 (provisional)
Production						
	Area (thousand hectares)	3 029	3 179	3 099	3 128	3 181
	Volume of harvested production (a)	20 083	24 468	24 734	21 964	23 000
	Value of production (£ million) (b)	3 375	3 459	2 970	2 414	2 990
Supply and use						
	Production	20,083	24,468	24,734	21,964	23,000
	Imports from : the EU	4,076	2,728	2,770	2,216	2,489
	the rest of the world	1,217	1,440	1,032	1,164	1,708
	Exports to : the EU	1,046	1,797	2,816	3,638	1,818
	the rest of the world	420	676	1,022	1,285	65
	Total new supply	23,910	26,163	24,698	20,421	25,314
	Change in farm and other stocks	1,014	2,786	1,512	-3,238	617
	Total domestic uses	22,896	23,377	23,186	23,659	24,697
Production as % of total new supply for use in the UK		84%	94%	100%	108%	91%

(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.

1. Harvested production of wheat was 3.2% higher in 2017 than in 2016 at 14.8 million tonnes. The value of production of wheat was almost £2 billion in 2017, 23% higher than in 2016 primarily due to higher prices. The value of production of barley increased by 28% to £893 million. The value of production of oats increased by 15% to £100 million.

2. The area of wheat decreased by 1.7% whereas the area of barley increased by 4.9% and oats by 14% in 2017. For barley there was a 10% increase in the area of spring barley which offset a 3.8% fall in the winter barley area. Average yields for wheat were higher than for 2016 and the 5 year average, 2017 barley yields were higher than 2016 but in line with the 5 year average and 2017 oat yields lower than 2016 and the 5 year average. Harvest 2017 began in the first week of July with small areas of early maturing winter barley. Prolonged hot dry weather late June/July hastened grain ripening and harvest began around two weeks earlier than 2016. Harvest was largely completed by the end of September with the exception of some Scottish spring and winter barley and small areas in Yorkshire, West Midlands and Wales.

3. Wheat demand was 1% higher than 2016 for flour milling (including starch and bio-ethanol) at 6.9 million tonnes with imports increasing by 7.2% to 961 thousand tonnes. Total wheat imports were 28% higher than 2016 at almost 1.9 million tonnes, the highest annual quantity of imports since the poor 2013 harvest (below average production and quality). Wheat usage by the biofuels sector increased in 2017 despite a shutdown of one plant in December (since re-opened April 2018). Monthly wheat exports have fallen since December 2016. Exports in 2017 were 646 thousand tonnes compared to 2.9 million tonnes in 2016 and the lowest annual total since 2013. Exports to non EU countries have decreased from 772 thousand tonnes in 2016 to 11 thousand tonnes in 2017. In 2016 there was a large carry over of stock from the 2015 harvest available for export which had been largely used up by June 2017. In addition the 2016 French wheat harvest was poor (significantly lower production and reduced quality) which afforded more export opportunities to the UK. In 2017 lower available stocks and competition from other wheat exporting countries contributed to the drop in exports. Barley exports decreased by 42% to just over 1.0 million tonnes, the pace of exports was slow in the first half of the year but picked up from July due to exports to Spain. Oat exports were 28% lower at 26 thousand tonnes as most domestic supplies were required by oat millers leaving little surplus for export.

4. Wheat and barley prices for 2017 were above 2016 values, UK prices have been supported by Sterling's weakness against both the US Dollar and Euro. For the UK market human and industrial demand for wheat was higher than last year (mainly due to strong demand biofuels sector for most of the year). UK supplies of wheat were tighter than last year. Demand for barley from the Brewing, malting and distilling sector was similar to 2016. Demand for barley from the animal feed sector increased in 2017.

5. 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 at: https://cereals.ahdb.org.uk/markets/supply-and-demand/uk-supply-and-demand.aspx

Table 7.2 Wheat

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

Thousand tonnes (unless specified otherwise) Calendar year

		2013	2014	2015	2016	2017 (provisional)
Production						
Area (thousand hectares)		1 615	1 936	1 832	1 823	1 792
Yield (tonnes per hectare)		7.4	8.6	9.0	7.9	8.3
Volume of harvested production (a)		11 921	16 606	16 444	14 383	14 837
Value of production (£ million) (b)		2 073	2 453	2 051	1 624	1 992
of which : sales		1 937	1 900	1 759	1 823	1 779
on farm use		188	159	144	100	137
change in stocks		- 51	394	149	- 299	76
Prices (£ per tonne)						
Milling wheat		193	159	138	120	140
Feed wheat		174	146	121	112	134
Supply and use						
Production		11 921	16 606	16 444	14 383	14 837
Imports from :	the EU	2 490	1 369	1 131	918	1 283
	the rest of the world	475	455	451	564	610
Exports to :	the EU	413	804	1 519	2 163	635
	the rest of the world	35	339	483	772	11
Total new supply		14 438	17 287	16 024	12 930	16 084
Change in farm and other stocks		296	3 155	1 118	- 2 476	474
Total domestic uses		14 142	14 132	14 906	15 405	15 610
of which :	flour milling	6 506	6 725	6 591	6 876	6 947
	animal feed	6 719	6 565	7 075	7 300	7 384
	seed	293	291	281	284	278
	other uses and waste	624	551	959	945	1 001
Production as % of total new supply for use in the UK		83%	96%	103%	111%	92%
% of home grown wheat in milling grist		69%	82%	85%	87%	87%

(a) Excludes farm saved seed

Table 7.3 Barley

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

Thousand tonnes (unless specified otherwise)					Calendar year
	2013	2014	2015	2016	2017 (provisional)
Production					
Area (thousand hectares)	1 213	1 080	1 101	1 122	1 177
Yield (tonnes per hectare)	5.8	6.4	6.7	5.9	6.1
Volume of harvested production	7 092	6 911	7 370	6 655	7 169
Value of production (£ million) (a)	1 136	900	829	699	893
of which : sales	691	687	598	567	636
on farm use	290	220	190	187	223
change in stocks	155	- 6	41	- 54	34
Prices (£ per tonne)					
Malting barley	177	146	127	120	136
Feed barley	149	121	107	100	115
Supply and use					
Production	7 092	6 911	7 370	6 655	7 169
Imports from : the EU	193	100	179	123	112
the rest of the world	2	-	5	2	4
Exports to : the EU	478	796	1 079	1 288	991
the rest of the world	385	335	535	509	53
Total new supply	6 424	5 880	5 940	4 983	6 241
Change in farm and other stocks	1 011	202	448	- 768	137
Total domestic uses	5 405	5 670	5 482	5 745	6 095
of which : brewing/distilling	1 868	1 925	1 831	1 831	1 882
animal feed	3 336	3 440	3 430	3 686	3 985
seed	162	177	182	188	189
other uses and waste	47	135	49	45	48
Production as % of total new supply for use in the UK	110%	118%	124%	134%	115%

(a) Excludes farm saved seed

Table 7.4 Oats

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

Thousand tonnes (unless specified otherwise)					Calendar year	
		2013	2014	2015	2016	2017 (provisional)
Production						
Area (thousand hectares)		177	137	131	141	161
Yield (tonnes per hectare)		5.5	6.0	6.1	5.8	5.4
Volume of harvested production		964	820	799	816	875
Value of production (£ million) (a)		160	99	85	86	100
of which : sales		87	81	69	67	74
on farm use		35	28	20	21	27
change in stocks		38	- 9	- 4	- 2	- 1
Prices (£ per tonne)						
Milling oats		174	128	112	111	125
Feed oats		151	111	99	97	112
Supply and use						
Production		964	820	799	816	875
Imports from :	the EU	66	34	48	30	53
	the rest of the world	-	-	0	0	0
Exports to :	the EU	17	66	77	32	25
	the rest of the world	-	1	4	4	1
Total new supply		1 013	787	766	810	902
Change in farm and other stocks		165	- 83	- 53	6	32
Total domestic uses		848	870	819	804	870
of which : milling		507	499	513	519	539
animal feed		316	348	283	261	300
seed		19	18	19	20	26
other uses and waste		5	4	4	4	4
Production as % of total new supply for use in the UK		95%	104%	104%	101%	97%

(a) Excludes farm saved seed

Straw

6. Cereal straw production in 2017 was estimated at 6.5 million tonnes a decrease of nearly 15% on 2016 (7.6 million tonnes). The dry spring and wet harvest were factors in the low yields and the areas that could be bailed. As a result UK straw production is lower than in recent years, although not quite as low as in 2011, when straw volumes were estimated at 6.0 million tonnes. The quality of the early cut straw was good but deteriorated as the harvest progressed, with straw becoming discoloured and often being left for a number of days prior to baling.

Oilseed rape and linseed (tables 7.5 and 7.6)

7. The value of oilseed rape production was £758 million, up 40% on 2016 (£543 million). The area planted decreased by 2.9% to 562 thousand hectares (579 thousand hectares in 2016) and yields were up by 26% at 3.9 tonnes per hectare (3.1t/ha in 2016) with an average oil content of 45%. The volume of harvested production at 2,167 thousand tonnes was up 22% on 2016 (1,775 thousand tonnes). Oilseed rape yields were better than expected in a harvest that started nearly two weeks early. Many oilseed rape growers outside East Anglia fared better than expected with fewer cabbage stem flea beetle problems and better rainfall levels. The average oilseed rape price was £350 (average prices weighted by volumes of sales (£ per tonne)) up 14% on the 2016 price of £306.

Table 7.5 Oilseed rape

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

Thousand tonnes (unless specified otherwise)					Calendar year	
		2013	2014	2015	2016	2017 (provisional)
Production						
Area (thousand hectares)		715	675	652	579	562
Yield (tonnes per hectare)		3.0	3.6	3.9	3.1	3.9
Volume of harvested production		2 128	2 460	2 542	1 775	2 167
Value of production (£ million)		741	684	711	543	758
of which : sales		801	647	702	637	703
change in stocks		- 60	37	9	- 94	55
Prices (£ per tonne)		348	278	280	306	350
Supply and use						
Production		2 128	2 460	2 542	1 775	2 167
Imports from :	the EU	148	77	87	63	224
	the rest of the world	29	10	-	-	122
Exports to :	the EU	437	333	283	274	143
	the rest of the world	2	38	24	25	0
Total new supply		1 867	2 176	2 322	1 539	2 369
Production as % of total new supply for use in the UK		114	113	109	115	91

Table 7.6 Linseed

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

Thousand tonnes (unless specified otherwise)					Calendar year	
		2013	2014	2015	2016	2017 (provisional)
Production						
Area (thousand hectares)		34	15	15	27	26
Yield (tonnes per hectare)		1.8	2.7	1.9	1.8	1.8
Volume of harvested production		62	39	29	48	46
Value of production (£ million)		24	15	9	14	15
of which : sales		23	16	9	13	15
change in stocks		1	- 1	0	1	0
Supply and use						
Production		62	39	29	48	46
Imports from :	the EU	11	13	13	14	15
	the rest of the world	2	2	1	1	1
Exports to :	the EU	37	33	16	15	15
	the rest of the world	-	-	0	0	0
Total new supply		38	21	27	47	47
Production as % of total new supply for use in the UK		163	186	106	101	98

Sugar beet (table 7.7)

8. The farm gate value of sugar beet was £229 million in 2017, up from £150 million in 2016. This was mainly as a result of the harvested production rising from 5.7 to 8.9 million tonnes. Yields were at a record level of 83.4t/ha (up from 71.2t/ha the previous year), and the 2017 sugar beet contract area also increased back up to more normal levels after two small crops to reduce stocks. With the end of the old sugar regime, area contracted for 2018 is expected to continue to increase slightly.

Table 7.7 Sugar

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

Thousand tonnes (unless specified otherwise) Calendar year

		2013	2014	2015	2016	2017 (provisional)
Sugar Beet						
Area (thousand hectares)		121	117	84	80	107
Yield (tonnes per hectare)		70	80	74	71	83
Volume of harvested production		8 432	9 310	6 218	5 687	8 918
Value of production (£ million)		270	315	173	150	229
Sugar content (%)		17.5	17.2	17.3	17.3	17.8
Prices (average market price (£ per adjusted tonne)) (a)		32.0	33.9	27.8	26.3	25.7
All Sugar (refined basis)						
Production (b)		1 324	1 446	978	897	1364
Imports from :	the EU	423	476	586	402	530
	the rest of the world	691	699	546	601	458
Exports to :	the EU	135	232	258	224	157
	the rest of the world	98	94	75	46	46
Total new supply		2 204	2 296	1 776	1 632	2 147
Production as % of total new supply for use in the UK		60	63	55	55	64

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

(b) Sugar coming out of the factory in the early part of the new year is regarded as being part of production in the previous calendar year.

Protein crops (Peas and Beans) (table 7.8)

9. The area of pulses in 2017 showed a further increase from those seen in 2016 with an increase in the bean area offsetting a decreased pea area. Pulses remain a popular crop option to on-going greening requirements of the Common Agricultural Policy. Pulses are a good source of energy and protein and can be used in the diets of poultry, cattle and pigs as well as aquaculture and pet food. This table excludes vining peas.

10. The total area of field peas decreased by 21% in 2017 to 40 thousand hectares. The proportion of this area utilised for animal feed increased to 53% from 35% in 2016. Total production for animal feed increased by 30% to an estimated 85 thousand tonnes. Subsequently the area used for human consumption decreased to 47% with production decreasing by 38% to an estimated 75 thousand tonnes.

11. The area of field beans was 8.9% higher than last year at 193 thousand hectares and production increased by 18% to an estimated 771 thousand tonnes.

Table 7.8 Protein crops

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

Thousand tonnes (unless specified otherwise)	Calendar year				
	2013	2014	2015	2016	2017 (provisional)
Peas for harvesting dry					
Area (thousand hectares)	29	32	44	51	40
Yield (tonnes per hectare) (a)	3.7	4.0	4.1	3. 7	4.0
For animal feed (b)					
Volume of harvested production	48	70	100	65	85
Value of production (£ million)	10	13	12	9	12
For human consumption					
Volume of harvested production	58	68	95	121	75
Value of production (£ million)	9	13	14	18	11
Field beans					
Area (thousand hectares)	118	107	170	177	193
Yield (tonnes per hectare) (a)	3.2	4.2	4.4	3.7	4.0
Volume of harvested production	378	448	738	651	771
Value of production (£ million)	90	84	97	91	117

(a) 2016 and 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 stock feed 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%

Fresh vegetables (table 7.9)

12. The value of vegetable production increased by 3.3% to nearly £1.5 billion in 2017 with the majority of crops showing a small year on year increase.

13. Good soil conditions at the start of 2017, especially in the East and South of the UK allowed growers to start drilling very early. By April the weather was warm but also very dry. This weather trend continued through May hampering the progress of planting and crop development in spring established crops, especially in directly drilled crops.

14. Production as a percentage of total new supply to the United Kingdom for all fresh vegetables was 57% compared to 54% in 2016.

15. Further information on Horticulture statistics can be found at: https://www.gov.uk/government/collections/horticultural-statistics

Table 7.9 Fresh vegetables

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

Thousand tonnes (unless specified otherwise)						Calendar year
		2013	2014	2015	2016	2017 (provisional)
Production						
Area (thousand hectares):		117	117	124	113	118
of which:	grown in the open (a)	116	116	123	113	117
	protected (b)	1	1	1	1	1
Value of production (£ million):		1 335	1 204	1 250	1 409	1 456
of which:	grown in the open	1 000	857	884	1 056	1 100
	protected	335	348	366	353	356
Selected crops:	cabbages	71	65	72	82	103
	carrots	136	102	124	141	151
	cauliflowers	41	42	43	49	42
	calabrese	56	30	31	69	62
	lettuces	156	145	143	171	184
	mushrooms	125	142	154	148	148
	onions	97	104	106	126	134
	tomatoes	109	118	120	102	105
Prices (farm gate price (£ per tonne))						
Selected crops:	cauliflowers	455	452	473	593	471
	tomatoes	1 165	1 196	1 226	1 053	1 158
Supply and use				0		
Total production		2 656	2 758	2 780	2 583	2 711
Imports from:	the EU	1 977	1 940	2 032	2 093	1 928
	the rest of the world	410	408	389	276	260
Exports to:	the EU	97	116	133	94	89
	the rest of the world	20	51	41	61	41
Total new supply		4 926	4 940	5 027	4 797	4 769
Production as % of total new supply for use in the UK		54%	56%	55%	54%	57%

(a) June survey area for vegetables and salad crops

(b) Excludes area of mushrooms

Plants and flowers (table 7.10)

16. The value of production in the ornamental sector was up 4.8% to £1.4 billion in 2017. The hardy nursery stock production area again remained largely static, although with a slight increase in market demand and sales turnover across both the retail and amenity sectors there was a slight uplift in plant unit values, reflecting rising costs. There appears to be a small shift from field to containerised nursery stock for fruit trees, hardy ornamentals and herbaceous production. Overall, trade was good across both amenity and landscape and garden retail sector and overall hardy nursery stock showed a 4.7% increase in value at an estimated 933 million (892 million in 2016).

17. The flower and bloom sector showed a 30% increase in value at an estimated 121 million (93 million in 2016). This was largely due to production area and value estimates for 'other' outdoor cut flowers been heavily revised, predominately due to the inclusion of estimates from additional growers and an intensive review of the sector.

18. The pot plant sector has seen a 2.5% decrease in value to 297 million (304 million in 2016), overall production increased in 2017, while unit values decreased. The exceptions to this were hydrangea (larger plants are being produced in tubs), and primula / polyanthus (more double varieties), where estimated unit values increased.

Table 7.10 Plants and flowers

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

Thousand tonnes (unless specified otherwise)	Calendar year				
	2013	2014	2015	2016	2017 (provisional)
Production					
Area (thousand hectares) (a):	12	12	13	12	13
Value of production (£ million)	1 191	1 166	1 149	1 290	1 351
of which: flowers and bulbs in the open (b)	45	42	45	..	..
hardy plants and flowers nursery stock	809	796	783	..	..
protected crops	336	328	321	..	..
flowers and bloom	. .	. .	..	93	121
pot plants	. .	. .	..	304	297
hardy ornamental nursery stock	. .	. .	..	892	933
Trade (£ million)					
Imports					
Bulbs	85	82	71	75	77
Cut flowers	663	692	665	748	748
Foliage	36	37	42	38	39
Indoor plants	127	136	127	136	128
Outdoor plants	58	66	62	74	81
Trees	62	55	56	52	67
Other	46	44	290	317	339
Total Imports (exc. Channel Islands)	1 079	1 111	1 067	1 178	1 203
Exports					
Bulbs	9	7	5	5	6
Cut flowers	26	24	23	29	40
Foliage	1	1	1	6	1
Indoor plants	4	5	5	5	6
Outdoor plants	5	4	3	3	4
Trees	4	4	4	2	3
Other	12	12	26	26	36
Total Exports	61	56	55	66	83

(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) Including forced flower bulbs.

Potatoes (table 7.11)

19. Harvest figures were strong in 2017, with volume increasing to 6,218 thousand tonnes from 5,395 thousand tonnes in 2016. This was driven by increases in both area and yield.

20. The value of potatoes was £897 million, an increase of 11% from 2016 (£810million). The price for potatoes for human consumption were lower at £177/t, compared to £187/t in 2016.

21. However, the value of sales for human consumption in 2017 was £694 million, 7.8% less than the £753 million sold in 2016. The fall in value was due to the 5.1% fall in prices and a 2.8% decrease in sales for human consumption in 2017.

22. The increase in production and fall in sales led to stocks increasing by 0.6 million tonnes to 2.9 million tonnes at the end of 2017. The increased volume of stocks led to a £103 million increase in the value of stocks.

Table 7.11 Potatoes (a)

Enquiries: Robin Karfoot on +44 (0)20 802 66449 email: robin.karfoot@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)						Calendar year
		2013	2014	2015	2016	2017 (provisional)
Production						
Area sown (thousand hectares)		139	141	129	139	145
Area harvested (thousand hectares)		126	125	115	120	127
Yield (tonnes per hectare harvested)		46	47	49	45	49
Volume of harvested production		5 754	5 923	5 644	5 395	6 218
of which:	for human consumption	4 001	4 011	3 729	3 833	4 496
	seed	384	377	364	360	391
	stockfeed and waste	1 368	1 535	1 550	1 201	1 330
Sales		5 268	5 621	5 827	5 518	5 567
of which:	for human consumption	3 602	3 795	3 992	4 032	3 919
	seed	384	377	364	360	391
	sold for stockfeed	1 282	1 449	1 471	1 126	1 257
End year stocks		2 597	2 812	2 550	2 351	2 928
Change in stocks		399	216	- 262	- 199	577
Value of production (£ million)		965	683	628	810	897
of which:	sold for human consumption	772	541	566	753	694
	sold for seed (including farm saved seed)	95	97	84	84	87
	sold for stockfeed	13	15	15	11	13
	change in stocks	86	31	- 37	- 37	103
Prices (average price paid to registered producers (£ per tonne)						
	early/maincrop (for HC)	214	142	142	187	177
	seed	246	256	230	232	223
	stockfeed	10	10	10	10	10
Supply and use						
Total production		4 385	4 388	4 093	4 193	4 887
Imports		2 702	2 163	2 217	2 165	2 320
Exports		481	472	524	529	589
Net trade (negative means net export)		2 221	1 692	1 693	1 636	1 731
of which:	early/maincrop	417	72	55	49	24
	seed	- 79	- 94	- 93	- 90	- 90
	processed (raw equivalent)	1 884	1 713	1 731	1 678	1 797
Total new supply	(raw equivalent)	6 607	6 079	5 786	5 830	6 619
Production as % of total new supply for use in the UK		66%	72%	71%	72%	74%

(a) Following a review of methodology in 2017, all figures shown here have been revised

Fresh Fruit (table 7.12)

Table 7.12 Fresh fruit

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

Thousand tonnes (unless otherwise specified)						Calendar year
		2013	2014	2015	2016	2017 (provisional)
Production						
Area (thousand hectares):		33	33	36	35	35
of which:	orchard fruit (a)	23	23	26	25	24
	soft fruit	10	9	10	10	11
End year stocks (b)		80	71	71	68	57
Value of production (£ million) (c):		593	629	695	700	765
of which:	orchard fruit	184	180	185	205	224
	soft fruit	409	449	510	495	541
of which:	sales	575	634	695	704	776
	change in stocks (b)	18	- 6	0	- 4	- 11
Selected crops:	dessert apples	73	75	77	99	105
	culinary apples	47	43	40	40	36
	pears	13	12	13	11	15
	raspberries (c)	101	116	131	120	136
	strawberries (c)	262	291	328	305	328
Prices (farm gate price (£ per tonne))						
Selected crops:	dessert apples	554	507	480	549	615
	culinary apples	550	441	450	500	509
	pears	593	482	488	477	546
	raspberries	6 501	6 119	7 188	7 445	8 195
	strawberries	2 283	2 338	2 460	2 578	2 602
Supply and use						
Total production		544	752	796	782	743
Imports from:	the EU	1 556	1 451	1 497	1 556	1 637
	the rest of the world	2 311	2 159	2 208	2 311	2 375
Exports to:	the EU	140	101	129	140	174
	the rest of the world	2	2	2	2	3
Total new supply		4 269	4 260	4 370	4 507	4 578
Change in stocks		22	- 9	1	- 4	- 11
Total domestic uses		4 247	4 269	4 370	4 510	4 589
Production as % of total new supply for use in the UK		13%	18%	18%	17%	16%

(a) Includes field area of commercial and non commercial orchards only.

(b) Stocks relate to apples and pears.

(c) Includes glasshouse fruit.

23. After a relatively mild autumn followed by a cold January and February the mild warm weather in March encouraged rapid bud development so that by early April the season was about ten days earlier than average. This trend remained throughout the season to give one of the earliest harvests on record. However, late April frost and cold May adversely affected the early blossom. The degree of damage varied between regions and had the largest effect on those varieties that were in flower. Production was 5.1% lower at 743 thousand tonnes. Braeburn apples showed the largest decrease of 46% to 14 thousand tonnes. Although some Cherry orchards were affected by frost overall the yield was unexpectedly high, a big contrast to the small crop in 2016 (1.7 thousand tonnes) resulting in a near fourfold increase to 6.5 thousand tonnes.

24. The value of fruit production was up 9.2% to £765 million, with strawberries up £23 million and raspberries up £15 million the main contributors. Strawberries benefited from a long growing season, good yields, strong domestic demand and a good separation of harvest dates from the different methods of production; thus avoiding over supply. The value of dessert apples increased by 5.8% to £5.7 million. Meanwhile the value of culinary apples continued to decline, down 8.6% to £36 million.

25. Production as a percentage of total new supply for use marginally decreased to 16% in 2017.

26. Further information on Horticulture statistics can be found at: https://www.gov.uk/government/collections/horticultural-statistics

Revisions

27. There have been revisions to the data for wheat and oats back to 2015 and barley back to 2014 due to changes in stocks data and methodology.

28. The fruit import and export data from 2010 onwards has been amended to remove dried fruit wherever distinguishable.

29. Following a review of potatoes in 2017, the methodology was updated. Figures are revised back to 2011 to be on a consistent basis. The most significant change is the inclusion of estimates for potatoes assumed to be sold as stock feed. This accounts for the difference between main crop production and potatoes sold for human consumption, which was previously not reported. The result is a large increase in the volume of sales, but only a small increase in value, given the low price received for stock feed potatoes.

Chapter 8 Livestock

Summary

In 2017, compared with 2016:

- The value of **beef and veal** increased by 8.1% to £2.99 billion.
- **Pig meat** value of production increased by 21% to £1.33 billion.
- The value of **mutton and lamb** production increased by 4.0% to £1.20 billion.
- **Poultry meat** value increased by 6.0% to £2.42 billion.
- The value of **milk and milk products** increased by 32% to £4.34 billion.
- The value of **eggs** increased by 3.5% to £624 million.

Meat production (table 8.1)

1. Total meat production remained constant at 3.9 million tonnes. There were slight falls in cattle and pigs offset by small increases in sheep and poultry meat. Total value of meat increased by 8.7% to £7.9 billion. Most notable are pigs whose value increased by 21%. Higher prices were responsible for the increased value of meat across the board.

Table 8.1 Meat production

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

	2013	2014	2015	2016	2017 (provisional)
Home-fed production ('000 tonnes)					
Cattle	840	871	880	913	901
Pigs	787	822	861	887	868
Sheep	300	306	309	300	307
Poultry	1 663	1 648	1 733	1 795	1 813
Total production	3 590	3 647	3 783	3 895	3 889
Value of production (£ million)					
Cattle	2 886	2 611	2 756	2 764	2 989
Pigs	1 274	1 264	1 080	1 099	1 329
Sheep	1 037	1 122	1 118	1 151	1 197
Poultry	2 324	2 250	2 259	2 282	2 418
Total value	7 521	7 247	7 213	7 295	7 933

Cattle and calves: beef and veal (table 8.2)

2. The value of beef and veal increased by 8.1% to £2.99 billion. The increase in value was price led with the price of finished cattle increasing by 7.3%. The volume of home fed production decreased by 1.3% to 901 thousand tonnes. However, the volume of production is still above the 5 year average.

Table 8.2 Cattle and calves; beef and veal

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

Thousand tonnes (unless otherwise stated)

		2013	2014	2015	2016	2017 (provisional)
Population						
Total cattle and calves (thousand head at June)		9 844	9 837	9 919	10 033	10 004
of which:	dairy cows	1 782	1 841	1 895	1 897	1 891
	beef cows	1 611	1 569	1 576	1 596	1 589
Production (a)						
Total home-fed marketings (thousand head)		2 594	2 678	2 655	2 803	2 761
of which:	steers, heifers and young bulls	1 892	1 934	1 906	1 968	1 964
	calves	93	142	122	147	135
	cows and adult bulls	609	603	627	688	662
Average dressed carcase weight (kg):						
	steers, heifers and young bulls	342	349	355	351	349
	calves	43	47	54	63	62
	cows and adult bulls	307	316	314	310	312
Production (dressed carcase weight):						
	home-fed production	840	871	880	913	901
Value of production (£ million)		2 886	2 611	2 756	2 764	2 989
of which:	value of home-fed production (a)	2 841	2 691	2 765	2 756	2 986
	change in work-in-progress (b)	59	- 62	13	18	11
	less imported livestock	14	19	22	10	8
	plus breeding animals exported	0	1	0	0	1
Subsidies (c)		21	21	30	35	40
Value of production at basic price (£ million) (d)		2 906	2 632	2 786	2 800	3 030
Prices						
Finished cattle (pence per kg deadweight): All prime cattle		386.3	348.6	346.4	334.6	359.2
Supply and use (thousand tonnes, dressed carcase weight) (e)						
Home-fed production (a)		840	871	880	913	901
Imports from:	the EU (f)	268	290	310	304	325
	the rest of the world	41	36	32	28	20
Exports to:	the EU	121	127	119	126	118
	the rest of the world	5	9	9	14	16
Total new supply		1 023	1 061	1 094	1 104	1 112
Home-fed production as % of total new supply for use in the UK		82%	82%	80%	83%	81%

(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 unitl 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.

(f) Includes meat from imports of live finished animals.

Pigs and pig meat (table 8.3)

3. After three years of decreases, clean pig prices increased by 21% (28 pence per kilo) leading to a 21% (£230 million) increase in the value of production to £1.33 billion. Pig meat production fell by 2.2% (19 thousand tonnes) in 2017 to 868 thousand tonnes, driven by a 3.1% decrease in slaughter throughput of clean pigs, offset by a 1.4% increase in their carcase weight. The total pig population increased by 2.1% to almost 5 million head, an increase of 103 thousand head.

Table 8.3 Pigs and pig meat

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

Thousand tonnes (unless otherwise specified)

		2013	2014	2015	2016	2017 (provisional)
Population						
Total pigs (thousand head at June)		4 885	4 815	4 739	4 866	4 969
of which:	sows in pig and other sows for breeding	355	349	352	360	361
	gilts in pig	66	57	56	55	55
Production (a)						
Total home-fed marketings (thousand head)		9 743	9 953	10 376	10 583	10 238
of which:	clean pigs	9 479	9 698	10 117	10 311	9 994
	sows and boars	265	255	259	272	243
Average dressed carcase weight (kg):						
	clean pigs	79	81	81	82	83
	sows and boars	147	146	146	146	145
Production (dressed carcase weight):						
	home-fed production (a)	787	822	861	887	868
Value of production (£ million)		1 274	1 264	1 080	1 099	1 329
of which:	value of home-fed production	1 265	1 256	1 084	1 094	1 320
	change in work in progress (b)	8	6	- 4	4	9
	less imported livestock	..	..	..	..	..
	plus breeding animals exported	2	1	0	0	0
Prices (pence per kg deadweight)						
Clean pigs		165.3	159.0	131.7	129.1	156.8
Supply and use of pigmeat (carcase weight equivalent) (c)						
Home-fed production (a)		787	822	861	887	868
Imports from:	the EU (d)	724	733	738	798	801
	the rest of the world	2	1	1	1	1
Exports to:	the EU	154	156	160	160	171
	the rest of the world	54	55	57	76	78
Total new supply		1 305	1 345	1 383	1 450	1 420
Home-fed production as % of total new supply for use in the UK		60%	61%	62%	61%	61%

(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.

(d) Includes meat from imports of live finished animals.

Sheep and lambs: mutton and lamb (table 8.4)

4. The value of production rose by 4.0% (£47 million) to £1.20 billion. An increase in price of 3.2% (13 pence per kilo) for clean sheep plus the increased production and carcase weights led to this increase. Home fed mutton and lamb production increased by 2.6% (8 thousand tonnes) to 307 thousand tonnes, reversing the decrease seen in 2016. There was an overall increase in slaughter throughput of 1.7% to 15.3 million head, due to an increase of 381 thousand head of clean sheep offset by a decrease of 133 thousand head of rams and ewes. Carcase weights changed little at around 19 kilos for clean sheep and lambs and 26 kilos for rams and ewes.

Table 8.4 Sheep and lambs; mutton and lamb

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

Thousand tonnes (unless otherwise specified)

		2013	2014	2015	2016	2017 (provisional)
Population						
Total sheep and lambs (thousand head at June)		32 856	33 743	33 337	33 943	34 832
of which:	breeding flock 1 year and over	15 561	16 026	16 024	16 304	16 669
	lambs under one year old	16 381	16 936	16 528	16 840	17 340
Production (a)						
Total home-fed marketings (thousand head)		15 024	15 061	15 195	15 023	15 271
of which:	clean sheep and lambs	12 906	13 222	13 561	13 263	13 644
	ewes and rams	2 118	1 838	1 633	1 760	1 627
Average dressed carcase weight (kg):						
	clean sheep and lambs	19	19	20	19	19
	ewes and rams	26	27	27	26	26
Production (dressed carcase weight):						
	home-fed production (a)	300	306	309	300	307
Value of production (£ million)		1 037	1 122	1 118	1 151	1 197
of which:	value of home-fed production	1 049	1 114	1 113	1 144	1 201
	change in work in progress (b)	- 12	8	5	7	- 4
	less imported livestock	0	0	0	0	0
	plus breeding animals exported	0	0	0	0	0
Subsidies(c)		nd	nd	5	6	7
Value of production at basic prices (£ million) (d)		1 037	1 122	1 124	1 157	1 204
Prices						
Finished sheep (pence per kg dressed carcase weight) (e):						
	Great Britain	415.1	420.6	381.1	402.8	415.8
Supply and use (dressed carcase weight) (f)						
Home-fed production (a)		300	306	309	300	307
Imports from:	the EU (g)	16	15	12	13	21
	the rest of the world	104	97	102	102	80
Exports to:	the EU	101	100	86	87	98
	the rest of the world	19	16	4	4	6
Total new supply		301	302	334	324	304
Home-fed production as % of total new supply for use in the UK		100%	101%	93%	92%	101%

(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.

(g) Includes meat from imports of live finished animals.

Poultry and poultry meat (table 8.5)

5. Higher prices and increased production of table chickens were the major influence behind an overall increase of 6.0% (£136 million) in the value of the poultry meat sector to £2.42 billion. Total production of poultry increased by 1.0% to 1.81 million tonnes, with table chickens accounting for 86% of the total. After a fall of 8.9% in 2016, turkey meat production decreased a further 8.0% (13 thousand tonnes) in 2017 to 151 thousand tonnes, the lowest level since 2009. There has been some upward movement on prices across the sector other than for geese; table chickens increased by 5.4% (6 pence per kilo), with other items showing much smaller changes.

Table 8.5 Poultry and poultry meat

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

Thousand tonnes (unless otherwise specified)

		2013	2014	2015	2016	2017 (provisional)
Population						
Number (thousand head at June):		162 609	169 684	167 579	172 607	181 818
of which:	table chickens	104 576	110 374	107 056	110 639	117 619
	laying and breeding fowl (a)	47 024	48 404	49 509	50 798	52 939
	turkeys, ducks, geese and all other poultry	11 008	10 907	11 014	11 170	11 260
Production						
Slaughterings (millions):		976	972	1 029	1 079	1 119
of which:	table chickens	945	942	998	1 050	1 089
	turkeys	18	15	17	16	14
	ducks & geese	14	15	14	14	15
Production (carcase weight) (b):		1 663	1 648	1 733	1 795	1 813
of which:	chickens and other table fowls	1 388	1 383	1 456	1 518	1 552
	boiling fowls (culled hens)	55	58	65	82	77
	turkeys	187	172	181	165	151
	ducks & geese	32	34	31	31	33
Value of production (£ million):		2 324	2 250	2 259	2 282	2 418
of which:	table chickens	1 777	1 741	1 739	1 769	1 908
	change in work in progress in fowls (c)	11	3	6	3	14
	turkeys, ducks, geese	421	393	401	371	347
	exports of live poultry	87	77	93	134	129
	hatching eggs for export	71	82	85	51	68
	less live poultry imported	9	20	40	33	36
	less hatching eggs imported	33	25	25	14	12
Prices (average producer prices (pence per kg carcase weight)):						
Chickens and other table fowls		127.7	125.5	119.0	116.1	122.3
Boiling fowls (culled hens)		9.0	9.7	9.6	9.4	9.4
Turkeys		170.9	165.3	167.2	163.8	164.8
Ducks		290.3	300.6	295.7	296.8	302.2
Geese		616.8	641.3	641.3	713.5	685.0
Supply and use (carcase weight) (b)						
Production (a)		1 663	1 648	1 733	1 796	1 813
Imports from:	the EU	452	479	512	558	537
	the rest of the world	30	30	29	22	25
Exports to:	the EU	223	245	233	209	274
	the rest of the world	91	94	59	90	79
Total new supply		1 832	1 818	1 983	2 077	2 023
Production as % of total new supply for use in the UK		91%	91%	87%	86%	90%

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

(b) Excludes offal.

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

Milk (table 8.6)

6. Increased production and a rise in average price led to an increase of 32% (£1.04 billion) in the value of production to £4.34 billion. Milk production increased 4.1% (582 million litres) to 14.95 billion litres, just 57 million litres behind the peak of production seen in 2015. A fall of around 4 thousand in the dairy herd to just below 1.9 million head, alongside the increased production indicates a rise in the average yield per cow of 325 litres (4.3%) to 7,883 litres per annum. The average milk price (across the 2017 calendar year, including bonus payments) was 28.9 pence per litre (ppl), a 27% increase on the 2016 average of 22.7 ppl.

Table 8.6 Milk

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

Million litres (unless otherwise specified)

		2013	2014	2015 (h)	2016	2017 (provisional)
Population and yield						
Dairy herd (annual average, thousand head) (a)		1 794	1 851	1 901	1 901	1 897
Average yield per dairy cow (litres per annum)		7 543	7 897	7 897	7 559	7 883
Production						
Milk from the dairy herd (b)		13 534	14 616	15 011	14 372	14 954
of which:	raw milk leaving farm			14 753	14 123	14 705
	milk processed on farm			129	117	112
	on farm use (c)	114	119	129	133	138
Volume for human consumption		13 426	14 504	14 882	14 239	14 816
Value of production (£ million)		4 271	4 594	3 734	3 301	4 344
of which:	raw milk leaving farm (d)	4 215	4 540	3 638	3 212	4 244
	processed milk products from farm (e)	56	54	65	59	61
	on farm use (c)			32	30	40
Prices (average price received by milk producers, net of delivery charges (pence per litre))						
Farmgate price of milk excluding bonus payments		31.6	31.6	24.5	22.6	28.7
Farmgate price of milk including bonus payments		31.7	31.7	24.7	22.7	28.9
Supply and use						
Production (excludes on farm use 2015 onwards)		13 541	14 623	14 882	14 239	14 816
Imports		187	185	158	82	98
Exports		501	586	677	725	861
Total new supply		13 226	14 221	14 363	13 596	14 053
of which:						
for liquid consumption		6 856	6 903	6 671	6 514	6 725
for manufacture		6 223	7 093	7 468	6 918	7 224
of which:	butter	293	295	307	293	294
	cheese	3 513	3 858	4 050	4 126	4 349
	cream	305	302	312	283	299
	yoghurt			291	309	371
	condensed milk (f)	290	265	265	260	268
	milk powders	1 138	1 633	1 654	1 089	1 102
	other products	685	740	589	558	542
dairy wastage and stock change		10	82	225	164	104
other uses (g)		137	142	119	122	127
Production as a % of new supply		102%	103%	104%	105%	105%

(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.
(h) Methodology changes in 2017 have been applied retrospectively to 2015 and 2016 data.

Hen eggs (table 8.7)

7. The number of laying fowl increased by 3.8% (1.45 million birds) to 39.51 million. The value of egg production for human consumption increased 3.5% to £624 million, £21 million higher than in 2016. An increase of 3.6% in the volume of production for human consumption (not including eggs for hatching) with no change in the average price of 67.1 pence per dozen.

8. Free range egg production increased its market share to 48% of production, having increased by 2 percentage points on 2016. It now has an equal share to Enriched cage systems which reduced by 2 percentage points from its 50% share in 2016. Organic and barn production continue at relatively low levels, at between 1% and 2% each.

Table 8.6 Hen eggs

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

Million dozen (unless otherwise specified)		Calendar years				
		2013	2014	2015	2016	2017 (provisional)
Population						
Number of laying fowl (thousands)		35 841	37 146	36 998	38 058	39 510
Production						
Volume of production of eggs		960	971	997	1 031	1 074
of which:	eggs for human consumption	829	839	866	899	931
	eggs for hatching	107	108	111	115	119
	other (a)	23	23	20	17	24
Value of production of eggs for human consumption (£ million) (b)		718	679	681	603	624
Prices (pence per dozen)						
Weighted average of eggs graded in the UK (c)		86.6	80.9	78.6	67.1	67.1
Supply and use						
UK production of eggs for human consumption		829	839	866	899	931
of which:	eggs sold in shell	695	695	729	758	802
	eggs processed	134	144	137	140	129
Imports from (d):	the EU	152	157	174	170	165
	the rest of the world	1	1	1	1	1
Exports to (d):	the EU	23	11	9	11	12
	the rest of the world	0.3	0.4	0.3	0.4	0.3
Total new supply		959	986	1 032	1 058	1 084
Production as % of total new supply for use in the UK		86%	85%	84%	85%	86%

(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

9. Figures in these tables for 2017 are provisional and may be subject to revision.

10. 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. Table 8.6 contains revisions to 2015 and 2016 data due to revised.

Chapter 9 Intermediate Consumption

Summary

In 2017, compared to 2016:

- **Total cost of intermediate consumption** (inputs) rose by 5.1% to £16,040 million.
- The majority of intermediate consumption costs rose with animal feed, energy and fertiliser showing the largest increases.
- The total cost of all **animal feed** increased by 11% to £5.0 billion.
- **Energy costs** rose by £131 million to £1,263 million.
- **Fertiliser costs** rose by £85 million to £1,345 million.

Inputs

1. The cost of intermediate consumption rose by 5.1% to £16,040 million, driven by higher prices, in particular rising animal feed, energy and fertiliser prices.

Animal Feed (table 9.1)

2. The cost of animal feed is the largest item of expenditure recorded in the production and income account. Usage remained broadly level from 1993 to 2009 (around 21 million tonnes) before rising steadily since then to reach nearly 32 million tonnes in 2017. Despite this increased usage the value of animal feed used within the agricultural industry has closely followed trends in commodity prices, shaped by exchange rates and world prices.

3. The total value of all animal feed increased by 11% between 2016 and 2017 to £5.0 billion and the total volume of all 'purchased' animal feed increased by 2.8% to nearly 32 million tonnes. Total compound feed production increased by 4.6% with increases across all livestock sectors and poultry with the largest percentage increases seen in calves (11%) and cattle (7%) with the dairy sector particularly strong due to the increased milk prices. The poultry sector continues to grow and the pig sector staged a recovery from mid-year due to a combination of short supplies, strong domestic demand and uncompetitive imports. Sheep compounds usage increased – according to June Survey data the total number of sheep and lambs was up 2.6% with a large carryover of lambs from the previous year together with variable quality of forage. Besides compound feed usage, there was an increase of 0.7% in purchased straight concentrates and a 2.1% increase in inter/intra farm sales.

Table 9.1 Animal Feed (a)

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

Thousand tonnes (unless specified otherwise) Calendar years

	2013	2014	2015	2016	2017 (provisional)
Compounds (b)					
cattle	5 240	5 064	4 879	4 738	5 073
calves	253	250	264	256	285
pigs	1 807	1 963	2 040	1 991	2 014
poultry (c)	4 019	4 109	4 340	4 742	4 892
sheep	966	765	769	834	862
Total compounds plus imports less exports	12 119	12 137	12 632	12 907	13 504
Straight concentrates (d)	6 745	6 971	7 208	6 745	6 755
Non-concentrates (e)	525	525	525	525	525
Inter/intra farm transfer	8 941	10 439	10 607	10 720	11 006
Total all purchased animal feed	28 329	30 072	30 972	30 897	31 790
Value of purchased animal feed (£ million) (f)	5 558	5 054	4 730	4 551	5 127

(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.

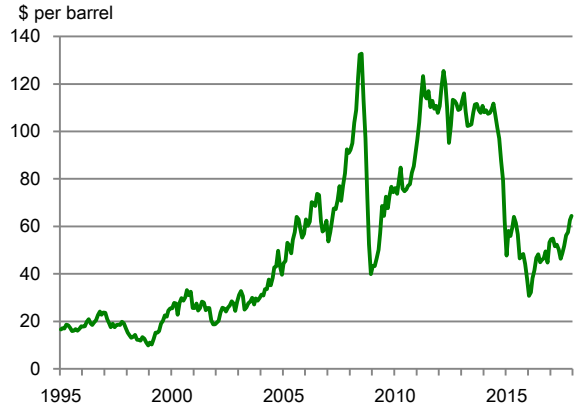
(f) See table 4.1 for a breakdown of this total.

Oil prices (chart 9.1)

4. Some inputs, such as fuels, electricity and fertilisers are closely linked to the oil price.

5. Chart 9.1 shows the trend in Europe Brent crude oil prices since 1985. Oil prices peaked in July 2008 at just over $130 per barrel but fell sharply by the end of 2008 as the 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. On average prices traded between $100 and $115 per barrel. From July 2014, as strong global production exceeded demand, prices fell rapidly to around $60 per barrel by December 2014.

Chart 9.1 Europe Brent Spot Price FOB



Source: US Energy Information Administration

6. In 2015 prices fell further and ended the year at just under $40 per barrel, over $70 per barrel lower than the highest price seen in 2014 and the lowest price for almost 10 years. As an annual average 2015 prices were almost 50% lower than 2014.

7. Prices recovered throughout 2016 and 2017 but remained low compared to the high prices seen since 2014. However increases in 2017 led to rises in the price of those inputs (costs) linked to oil price compared to 2016.

Energy and fertiliser (charts 9.2 and 9.3)

8. Energy costs rose by £131 million to £1,263 million, wholly price-driven as global oil prices continued to rise. Typical weather conditions and efficiency savings kept usage stable. Energy costs, particularly

motor and machinery fuels are heavily influenced by oil prices and the cost increase mirrors the rise in the global oil price during 2016 and 2017.

9. Chart 9.2 shows that while the value of energy follows a similar pattern to that of the crude oil price volumes have remained relatively stable over the last ten years.

10. The price of oil directly affects the price of energy but also affects the cost of other inputs such as fertiliser, which has an energy intensive manufacturing process. The price of natural gas, used to synthesise atmospheric nitrogen, is a significant driver of the cost and is linked to the oil price.

11. Chart 9.3 shows that although fertiliser usage has significantly decreased since the mid-90s, the value of fertiliser used increased, driven by price. Following a similar trend to oil prices, fertiliser costs fell in recent years and in 2016 the value of fertiliser had decreased to its lowest level since 2007. 2017 saw an increase of fertiliser costs to £1.35 million, an £85 million increase on 2016 where the value of fertiliser had decreased to its lowest level since 2007.

Chart 9.2 Energy index for value and volume

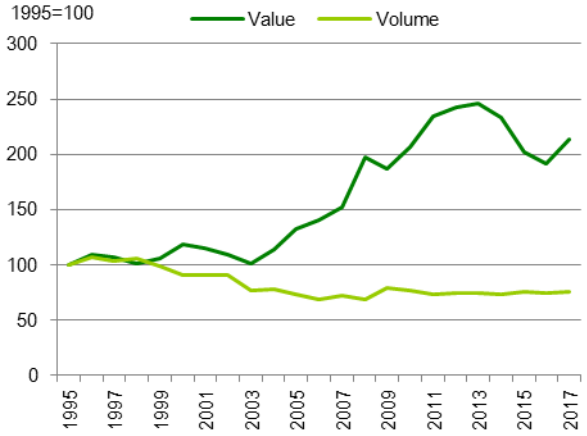
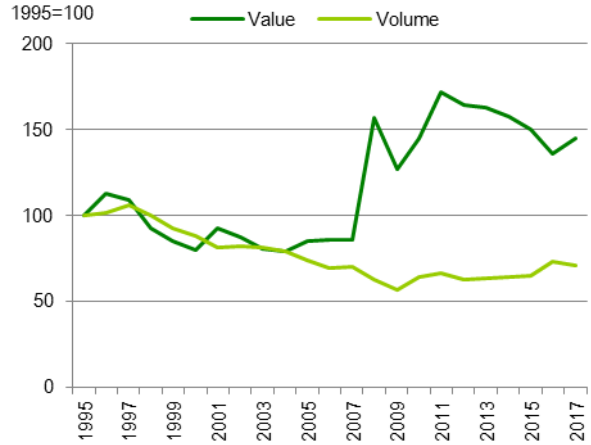


Chart 9.3 Fertiliser



Other input costs

12. The majority of input costs rose in 2017 when compared to 2016.

13. The value of pesticides increased by 5.6% to £1,006 million.

14. For the fourth year running the value of veterinary expenses was virtually unchanged, with no major disease outbreaks and reliance on veterinary input remains relatively constant year on year.

15. There was a 2.1% increase in the value of agricultural services to £1,114 million. Other goods and services, the second largest cost behind animal feed, rose only slightly to £3.2 billion, a cost increase as usage remained unchanged. Other goods and services incorporate costs not included elsewhere such as: rates; telecoms; water rates; insurance; bank charges; etc.

Chapter 10 Public Payments

Summary

In 2017, compared to 2016:

- **Direct Payments** (Basic Payment Scheme, Greening and Young Farmer Payment) are expected to increase by 2.4% to £2.7 billion.
- Payments linked to **agri-environment schemes** are expected to be 2.9% lower at £423 million.
- Payments under the **Less Favoured Area Support Scheme** (LFASS) are expected to be virtually unchanged at £85 million.

Introduction

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

2. Unless otherwise stated data is for 2017 and comparisons are based on 2017 compared to 2016.

Payments (tables 10.1 to 10.3, chart 10.1)

3. 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 in September. In 2017 the rate was €1 = £0.8947, as shown in table 10.1.

4. The favourable exchange rate again boosted the value of direct payments to UK farmers with the net value of support payments paid under the Basic Payment Scheme 2.4% higher than the previous year. Direct payments include Core Basic Payment Scheme, Greening and Young Farmer Payment and financial modulation reductions and adjustments.

Table 10.1 Basic payment scheme and exchange rate

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

	2011	2012	2013	2014	2015	2016	2017 provisonal
			(a)	(a)	(a)(b)	(a)(b)	(a)(b)
Basic/Single Farm Payment Scheme (£ million)n (a)(b)	2 805	2 600	2 734	2 380	2 203	2 654	2 719
Exchange rate (€/£) (c)	0.87	0.80	0.84	0.78	0.73	0.85	0.89
Financial discipline (%)	. .	. .	2.45	1.30	1.39	1.35	1.39

(a) Includes financial modulation reductions and adjustments where applicable
(b) In 2015 Basic Payment Scheme (BPS) replaced the Single Farm Payment Scheme (SPS)
(c) Exchange rate set by the European Central Bank (ECB). Up to and including 2014 rate on the last day of September, from 2015 for month of September

5. Chart 10.1 details the value of overall direct payments to farmers and shows the breakdown between coupled and decoupled payments.

Chart 10.1 Direct Payments made to farmers

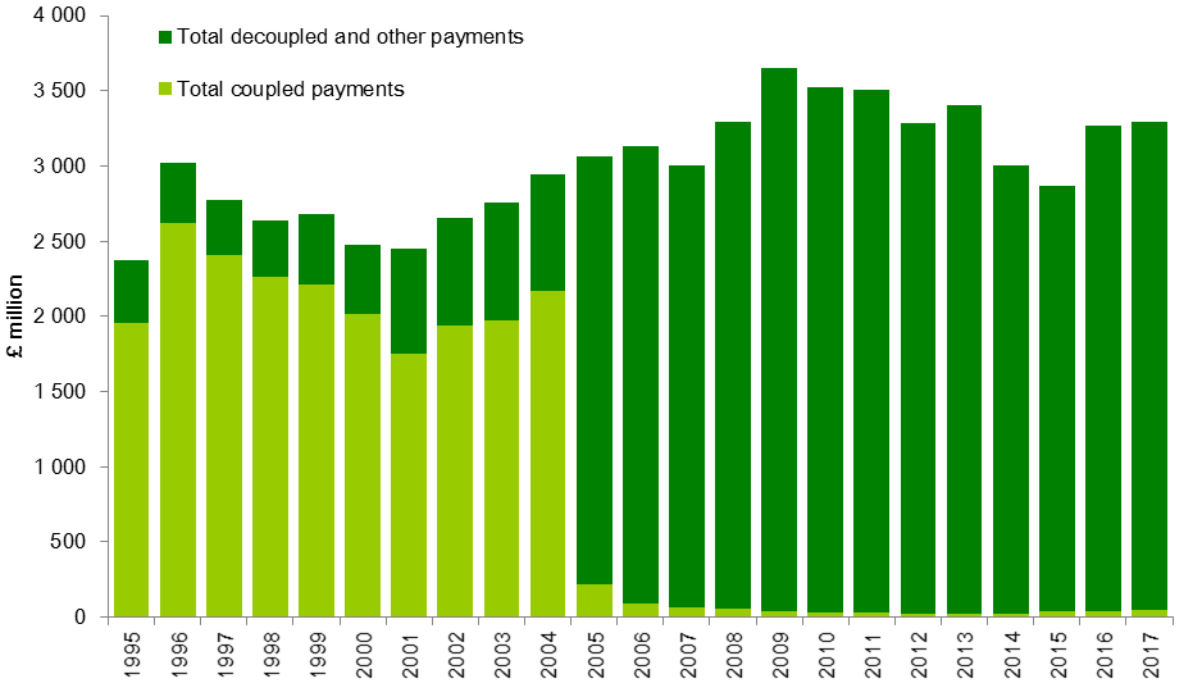


Table 10.2 Direct payments to farmers

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

£ million

	2013	2014	2015	2016	2017 (provisional)
Coupled payments (linked to production)					
Crop subsidies					
Other crop subsidies	. .	. .	. .	. .	. .
Livestock subsidies					
Scottish Beef Calf scheme	21	21	. .	. .	. .
Scottish Upland Sheep support scheme	. .	. .	5	6	7
Scottish Suckler Beef support scheme	. .	. .	30	35	40
Total coupled payments	21	21	36	42	47
Decoupled and other payments (not linked to production)					
Basic/Single Payments Scheme (a)	2 734	2 380	2 203	2 654	2 719
Agri-environment schemes (b)	525	489	487	435	423
Less Favoured Areas support schemes	92	89	91	84	85
Animal disease compensation (c)	20	20	21	21	24
Other (d) (e)	10	5	26	33	-
Total decoupled and other payments	3 382	2 984	2 829	3 227	3 250
Total direct payments less levies	3 403	3 004	2 864	3 269	3 297
Capital transfers and other payments not included in the production and income account (c)	33	32	30	30	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 livestock are recorded here while compensation paid for capital livestock are recorded as capital transfers.

(d) Includes one off payments

(e) 2016 value includes EU Exceptional Aid package payments to Small Dairy Farmers in England, Northern Ireland and Welsh EU Conditional Aid Scheme

6. Coupled support payments to farmers in Scotland, i.e. the Scottish Suckler Beef Support scheme and the Scottish Upland Sheep Support scheme increased by £6 million to £47 million.

7. Payments under the agri-environment schemes fell by £12 million to £423 million whilst Less Favoured Area Support Scheme payments were virtually unchanged at £85 million.

8. Overall total payments to farmers rose by £28 million to £3,297 million.

Table 10.3 Direct payment to farmers by country 2017

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

£ million

	England	Wales	Scotland	Northern Ireland	United Kingdom
Livestock subsidies					
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	1 768	235	425	292	2 719
Less Favoured Areas support schemes (a)	. .	. .	66	19	85
Agri-environment schemes					
Environmetnal Stewardship Scheme/ new Country Stewardship Scheme (b)	348	. .	. .	. .	348
Rural Priorities / Land Manager Options	. .	. .	15	. .	15
Glastir	. .	56	. .	. .	56
Countryside Management Scheme	. .	. .	. .	3	3
Organic Farming Scheme	. .	. .	. .	-	-
Environmentally Sensitive Areas Schemes	. .	. .	. .	-	-
Sites and Areas of Special Scientific Interest	. .	1	-	-	1
Other (c)	-	-	-	-	-
Animal disease compensation (income)	13	4	-	6	24
Total decoupled payments	2 129	296	505	320	3 250
Total direct payments	2 129	296	552	320	3 297

(a) Areas of Natural Constraint (ANC) in Northern Ireland, Less Favoured Areas Support Scheme (LFASS) in Scotland.

(b) ESA includes Entry Level Pilot Scheme, OELS, Uplands ELS & linked HLS . New Countrystewardship Scheme opened in 2015 with first agreements going live in 2016

(c) Includes one off payments.

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

9. There are four rural development programmes in the United Kingdom, covering England, Wales, Scotland and Northern Ireland.

10. 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 to earlier years.

11. The Environmental Stewardship Scheme is currently the main agri-environment scheme for England funded by the Rural Development Program for England (RDPE). Although it closed to new applicants in 2014 existing agreements continue to be managed until they reach their agreed end date. This scheme is being replaced by the new Countryside Stewardship (CS) Scheme. In 2017 the Environmental Stewardship and new Countryside Stewardship scheme payments totalled almost £350 million.

12. 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 £15 million.

13. The principal Welsh agri-environment scheme is Glastir funded by the Welsh Government Rural Communities Rural Development Programme and payments totalled £56 million.

14. Under the new Rural Development Programme for Northern Ireland Countryside Management Scheme payments totalled £3 million.

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.gsi.gov.uk

£ Million

		2013	2014	2015	2016	2017 (provisional)
Less Favoured Areas and Areas with Environmental Restrictions measure						
England:	Uplands Transitional Payment (a)	3	1	..	..	..
Wales:	Tir Mynydd (b)	-	..	..	..	..
Scotland:	Less Favoured Areas Support Scheme	65	65	66	66	66
Northern Ireland:	Less Favoured Areas Compensatory Allowance/Areas of Natural Constraint	24	24	25	19	19
Agri. Environment and Animal Welfare measure						
England:	Organic Farming Scheme	..	..	..	..	..
	Countryside Stewardship Scheme (c)	21	8	-	..	..
	Environmentally Sensitive Areas Scheme (c)	19	7	-	..	..
	Environmental Stewardship Scheme (ESA)/new Countryside Stewardship (CS) Scheme (d)	373	360	394	370	348
Wales:	Organic Farming/Organic Farming Conversion Scheme (e)	4	4	1	..	..
	Tir Cymen/Tir Gofal (f)	27	18	-	..	..
	Environmentally Sensitive Areas Scheme	2	2	2	2	1
	Tir Cynnal (f)	7	-	-	..	..
	Glastir (f)	7	28	38	36	56
Scotland:	Organic Aid Scheme (g)	-	-	-	..	..
	Countryside Premium Scheme/Rural Stewardship Scheme (g)	-	-	-	..	..
	Environmentally Sensitive Areas Scheme (g)	-	-	..	..	..
	Land Management Contract Scheme (g)	-	-	-	-	..
	Land Managers Options (h)	7	7	5	2	2
	Rural Priorities (i)	33	36	28	14	13
Northern Ireland:	Organic Farming Scheme	-	-	-	-	-
	Countryside Management Scheme (j)	19	16	14	7	3
	Environmentally Sensitive Areas Scheme (k)	5	5	5	4	..

(a) Transitional payments made to those on historical/classic agreements ended in 2014
(b) Tir Mynydd closed in 2014 and replaced by Glastir
(c) Agreements expired in 2014 renewed into Environmental Stewardship Scheme
(d) ESA includes Entry Level Pilot Scheme, OELS, Uplands ELS & linked HLS . CS opened in 2015 with first agreements going live in 2016
(e) Organic Farming Scheme replaced by Organic Farming Conversion Scheme
(f) Tir Gofal, Tir Cymen and Tir Cynall now closed; Tir Glastir introduced in 2012
(g) Gradually replaced by Land Managers Options & Rural Priorities
(h) Closed to new applicants from 2014
(i) Scheme ended in December 2013, exisitng agreements continued to be honoured
(j) Includes agreements which commenced under NIRDP 2000-2006 & 2007-2013; agreements continue to be honoured
(k) All agreements expired in 2016

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

15. 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: Elizabeth Finch on +44 (0)20 802 66226 email: elizabeth.finch@defra.gsi.gov.uk

thousand hectares as at 31 December

	2013	2014	2015	2016	2017
England					
Organic Farming Scheme	-	-	-	-	-
Countryside Stewardship Scheme (a)	36	-	-	-	-
Environmentally Sensitive Areas Scheme (a)	92	-	-	-	-
Environmental Stewardship Scheme					
Entry Level Scheme (b)	6 514	6 389	5 132	3 661	2 809
Higher Level Scheme (c)	1 276	1 348	1 344	1 278	1 209
new Countryside Stewardship Scheme (d)				76	221
Wales					
Organic Farming/Organic Farming Conversion Scheme (e)	51	97	-	-	-
Tir Cymen/Tir Gofal (f)	358	12	-	-	-
Environmentally Sensitive Areas Scheme	-	-	-	-	-
Tir Cynnal (f)	297	-	-	-	-
Glastir (g)					
Glastir Entry (h)	203	508	546	546	458
Glastir Advanced (on Entry)	29	184	251	251	261
Glastir Commons (i)	34	111	117	119	120
Glastir Organic	. .	. .	64	65	68
Decoupled Advanced (j)	. .	. .	. .	34	90
Scotland					
Organic Aid Scheme (k)	2	-	-	-	-
Countryside Premium Scheme/Rural Stewardship Scheme (k)	-	-	-	-	-
Environmentally Sensitive Areas Scheme (k)	1	-	-	-	-
Land Management Contracts (k)	-	-	-	-	-
Land Managers Options (l)	387	338	136	63	32
Rural Priorities (m)	1 158	1 212	980	623	430
Agri-environment Climate Scheme (n)				67	565
Northern Ireland					
Organic Farming Scheme (o)	1	-	-	-	-
Countryside Management Scheme (p)	295	280	221	46	46
Environmentally Sensitive Areas Scheme (q)	91	84	84	-	-
Environmental Farming Scheme (r)					3

(a) Remaining agreements expired during 2014. Majority renewed into Environmental Stewardship.
(b) Includes Entry Level Pilot Scheme, OELS, Uplands ELS (from 2010) and HLS linked to ELS. Scheme ended in December 2014.
(c) Includes Freestanding HLS and HLS linked to ELS. Scheme ended in December 2014.
(d) Scheme opened in 2015 with first agreements going live in 2016. Area is for Mid and Higher Tier strands only.
(e) Organic Farming Scheme replaced by Organic Farming Conversion Scheme.
(f) Now closed; majority of agreements ended on 31 December 2013.
(g) Introduced in 2012; all existing scheme agreements will gradually move across to this scheme.
(h) Includes Glastir Advanced (on Entry).
(i) Includes Glastir Advanced (on Commons).
(j) First agreements started in 2016.
(k) Land has gradually moved into Rural Priorities and Land Managers Options.
(l) Closed to new applicants from 2014.
(m) Scheme ended in December 2013.
(n) Scheme opened in 2015. First agreements went live in 2016.
(o) Commenced under 2007-2013 NIRDP and agreements continue to be honoured.
(p) Includes agreements which commenced under NIRDP 2000-2006 and 2007-2013; agreements continue to be honoured.
(q) Commenced under 2000-2006 NIRDP; all agreements expired in 2016.
(r) Scheme began in July 2017.

Table 10.6 Agri-environment schemes - number of agreements

Enquiries: Elizabeth Finch on +44 (0)20 802 66226 email: elizabeth.finch@defra.gsi.gov.uk

Rounded to nearest hundred agreements — as at 31 December

	2013	2014	2015	2016	2017
England					
Organic Farming Scheme	-	-	-	-	-
Countryside Stewardship Scheme (a)	1 300	-	-	-	-
Environmentally Sensitive Areas Scheme (a)	1 400	-	-	-	-
Environmental Stewardship Scheme:					
Entry Level Scheme (b)	48 200	47 400	36 100	23 900	17 000
Higher Level Scheme (c)	13 300	14 100	14 200	13 200	12 500
new Countryside Stewardship Scheme (d)				2 100	6 000
Wales					
Organic Farming/Organic Farming Conversion Scheme (e)	600	1 000	-	-	-
Tir Cymen/Tir Gofal (f)	2 800	100	-	-	-
Environmentally Sensitive Areas Scheme	-	-	-	-	-
Tir Cynnal (f)	3 700	-	-	-	-
Glastir (g)					
Glastir Entry (h)	1 900	4 200	4 600	4 600	5 300
Glastir Advanced (on Entry)	300	1 000	1 400	1 400	1 500
Glastir Commons (i)	100	200	200	200	200
Glastir Organic	. .	. .	500	500	600
Decoupled Advanced (j)	. .	. .	. .	500	900
Scotland					
Organic Aid Scheme (k)	-	-	-	-	-
Countryside Premium Scheme/Rural Stewardship Scheme (k)	-	-	-	-	-
Environmentally Sensitive Areas Scheme (k)	-	-	-	-	-
Land Management Contracts (k)	-	-	-	-	-
Land Managers Options (l)	5 000	4 600	2 300	1 300	800
Rural Priorities (m)	5 900	6 400	5 000	3 700	2 800
Agri-environment Climate Scheme (n)				200	1 400
Northern Ireland					
Organic Farming Scheme (o)	-	-	-	-	-
Countryside Management Scheme (p)	7 500	7 100	6 200	600	600
Environmentally Sensitive Areas Scheme (q)	2 500	2 300	1 600	0	-
Environmental Farming Scheme (r)					1 200

(a) Remaining agreements expired during 2014. Majority renewed into Environmental Stewardship.
(b) Includes Entry Level Pilot Scheme, OELS, Uplands ELS (from 2010) and HLS linked to ELS. Scheme ended in December 2014.
(c) Includes Freestanding HLS and HLS linked to ELS. Scheme ended in December 2014.
(d) Scheme opened in 2015 with first agreements going live in 2016. Only Mid and Higher Tier strands are reported here.
(e) Organic Farming Scheme replaced by Organic Farming Conversion Scheme.
(f) Now closed; majority of agreements ended on 31 December 2013.
(g) Introduced in 2012; all existing scheme agreements will gradually move across to this scheme.
(h) Includes Glastir Advanced (on Entry).
(i) Includes Glastir Advanced (on Commons).
(j) First agreements started in 2016.
(k) Land has gradually moved into Rural Priorities and Land Managers Options.
(l) Closed to new applicants from 2014.
(m) Scheme ended in December 2013.
(n) Scheme opened in 2015. First agreements went live in 2016.
(o) Commenced under 2007-2013 NIRDP and agreements continue to be honoured.
(p) Includes agreements which commenced under NIRDP 2000-2006 and 2007-2013; agreements continue to be honoured.
(q) Commenced under 2000-2006 NIRDP; all agreements expired in 2016.
(r) Scheme began in July 2017.

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

16. 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@ukcb.gsi.gov.uk

Euros million EU financial years (a)

	2013	2014	2015	2016	2017
UK CAP payments					
Pillar 1	3,326	3,234	3,150	3,121	3,171
of which: Direct Aids	3,285	3,195	3,112	3035	3080
Market price support (b)	41	39	38	86	91
Pillar 2 (c)	1,091	1,065	959	806	803
of which: EAFRD (d)	752	798	709	641	542
Co-financing	339	267	250	165	261
Total UK CAP payments	4,417	4,299	4,109	3,927	3,974
England CAP payments					
Pillar 1	2,126	2,048	2,026	2,018	2,069
of which: Direct Aids	2,085	2,009	1,988	1932	1988
Market price support (b)	41	39	38	86	81
Pillar 2 (c)	666	666	507	608	456
of which: EAFRD (d)	532	563	460	529	374
Co-financing	134	103	47	79	82
Total England CAP payments	2,792	2,714	2,533	2,626	2,525
Wales CAP payments					
Pillar 1 Direct Aids	309	301	269	260	268
Pillar 2 (c)	97	112	98	78	88
of which: EAFRD (d)	48	54	49	52	63
Co-financing	49	58	49	26	25
Total Wales CAP payments	406	413	367	338	356
Scotland CAP payments					
Pillar 1 Direct Aids	583	566	534	522	507
Pillar 2 (c)	236	191	265	62	225
of which: EAFRD (d)	113	119	150	26	89
Co-financing	123	72	115	36	136
Total Scotland CAP payments	819	757	799	584	732
Northern Ireland CAP payments					
Pillar 1 Direct Aids	308	319	321	321	327
Pillar 2 (c)	92	96	89	58	34
of which: EAFRD (d)	59	62	50	34	16
Co-financing	33	34	39	24	18
Total Northern Ireland CAP payments	400	415	410	379	361

(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. Payments are made by RPA in England 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

- Agriculture accounted for 72% of **land use** in the United Kingdom in 2017.
- Between 2000 and 2016 **application rates of nitrogen and phosphorus fertilisers** to grassland have shown an overall decline.
- Between 2000 and 2016 the estimated **soil nutrient balance** for **nitrogen** decreased by 18% and **phosphorus** decreased by 34%.
- Between 2000 and 2016 estimated agricultural emissions of **nitrous oxide** fell by 13% and **methane** fell by 10%.
- Between 2000 and 2015 estimated agricultural emissions of **ammonia** have fallen by 12%.
- In 2016 the UK **farmland bird index** stood at 44.1, its lowest ever and less than half of its 1970 level.

Introduction[4] (tables 3.2, 14.1 and chart 11.1)

1. Whilst agriculture contributes less than 1% to the United Kingdom's economy (Table 3.2), it provides around three-quarters of the indigenous food we eat (Table 14.1) and at around 70% is the predominant form of land use (Chart 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.

2. Agricultural production and the associated land use and management are key drivers of the environmental impacts from the sector. A key challenge is to de-couple production from environmental impact so that production can be increased whilst reducing the overall environmental footprint. This is sometimes referred to as sustainable intensification.

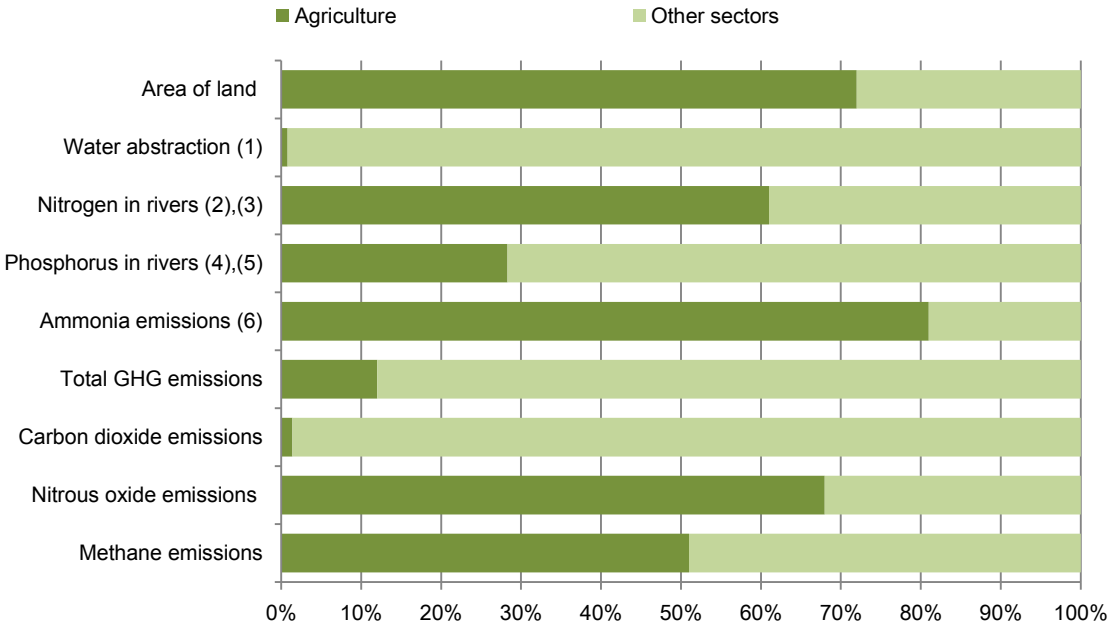
3. Farm practices and the use of inputs (particularly fertilisers and pesticides) directly influence the environmental pressures from farming including the quality, composition and availability of habitats and impact on air, water and soils.

4. 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.

5. 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.

[4] This publication cites the most recent data available. In most cases this is 2017 but some data sources, particularly environmental monitoring, require a longer lead time until results can be published.

Chart 11.1 Agriculture's environmental footprint

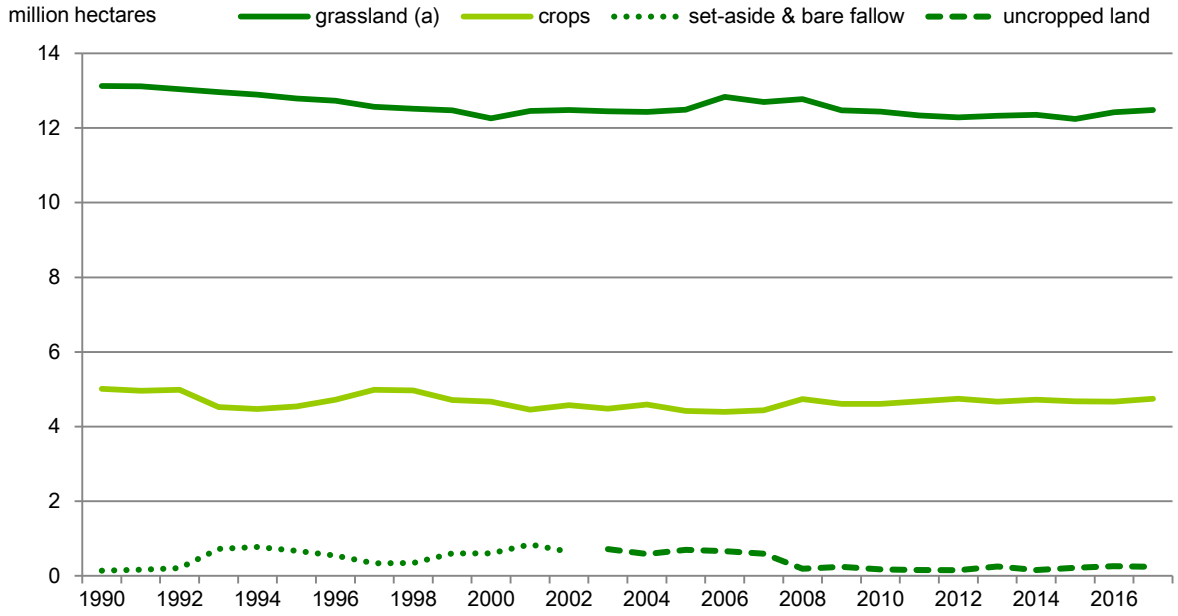


Source: Collated by Defra. All data are UK and for 2016 unless stated otherwise
(1) England (2) England & Wales (3) 2004 (4) Great Britain (5) 2006 (6) 2015

Land use (chart 11.2)

6. Between 1990 and 2017 agricultural land use has remained relatively stable (Chart 11.2) with little change in the proportion of land used for grassland and crops. The area of uncropped land fell sharply in 2008 due to the abolition of set-aside. Since then the area has fluctuated around that level, influenced by factors such as commodity prices and weather conditions.

Chart 11.2 Agricultural land use



Source: June Survey of Agriculture, Defra

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

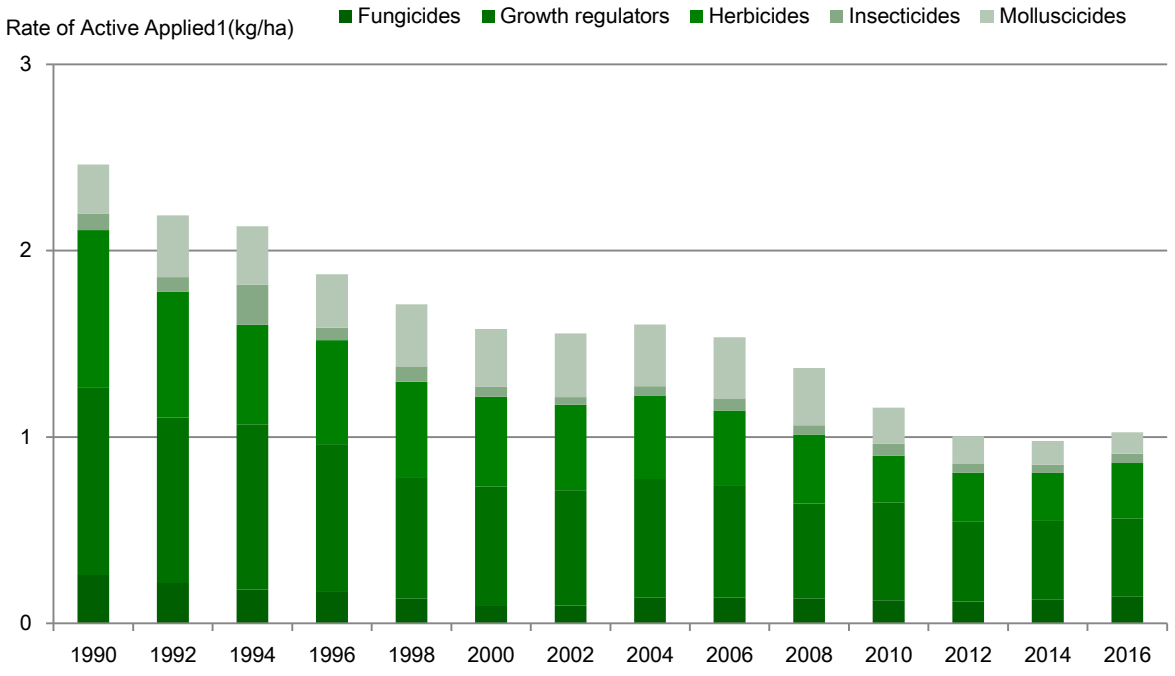
Pesticide usage (chart 11.3)

7. Plant protection products are used to manage pests and diseases in crops and to regulate growth. 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.

8. 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. Further information on pesticide usage in the UK can be found at: https://secure.fera.defra.gov.uk/pusstats

9. In the UK in recent years cereals account for the majority of both treated area and the weight of pesticides applied to arable crops. The majority of cereals (more than 80%) are grown in England. Chart 11.3 shows the different types of pesticides used on cereal crops in Great Britain and how these have fluctuated over time.

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



Source: Pesticides Usage Survey

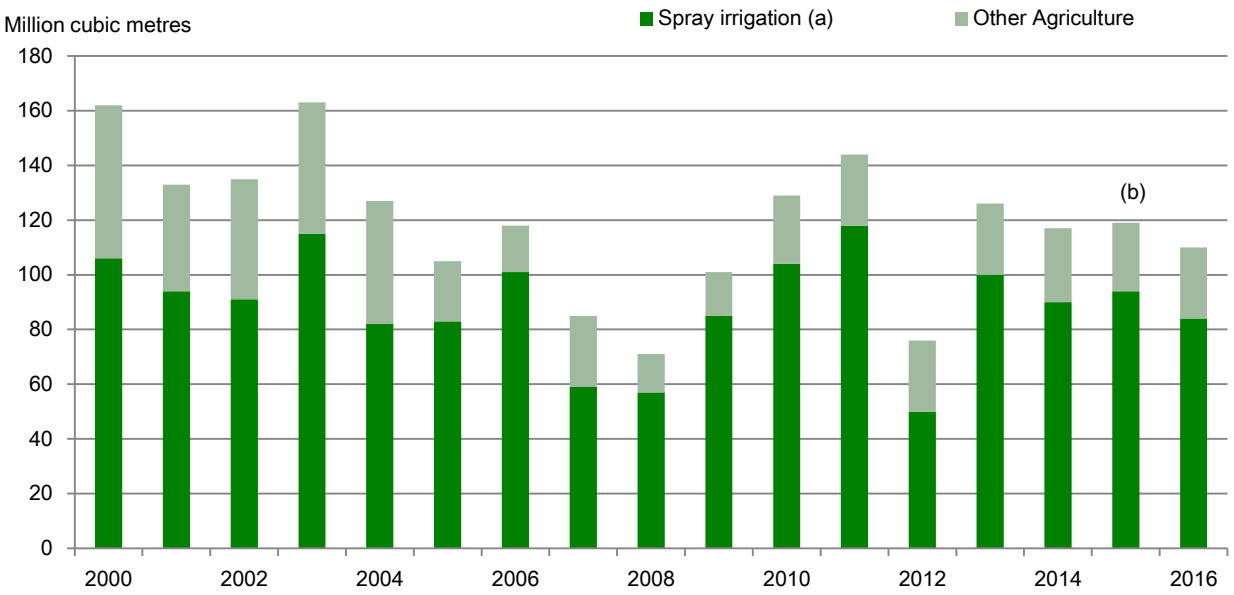
(a) All pesticides include seed treatments

Water use (chart 11.4)

10. Water may be abstracted from surface waters and groundwater for irrigation purposes, particularly in areas where there is low rainfall, and for certain crops in order to achieve good crop quality and high yields. Whilst abstracted water draining from farmland may have positive impacts by helping to recharge aquifers it can also contribute to soil erosion and flooding. Over-abstraction may also damage sensitive aquatic habitats. In England agriculture accounts for less than 1% of recorded water abstractions by volume; the majority of which took place in the south and east of the country.

11. Levels of water abstraction are highly variable from year to year being greatly influenced by annual rainfall, particularly during the growing season. In 2016 the recorded agricultural abstraction rate in England was 110 million cubic metres per year, 7.5% lower than 2015.

Chart 11.4 Water abstraction, England



Source: Environment Agency

(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 (formerly the Wales regional charge area) has been amalgamated into the North West and Midlands regional charge areas respectively.

12. Further information on water abstraction can be found at: https://www.gov.uk/government/statistics/water-abstraction-estimates

Fertiliser use (charts 11.5 and 11.6)

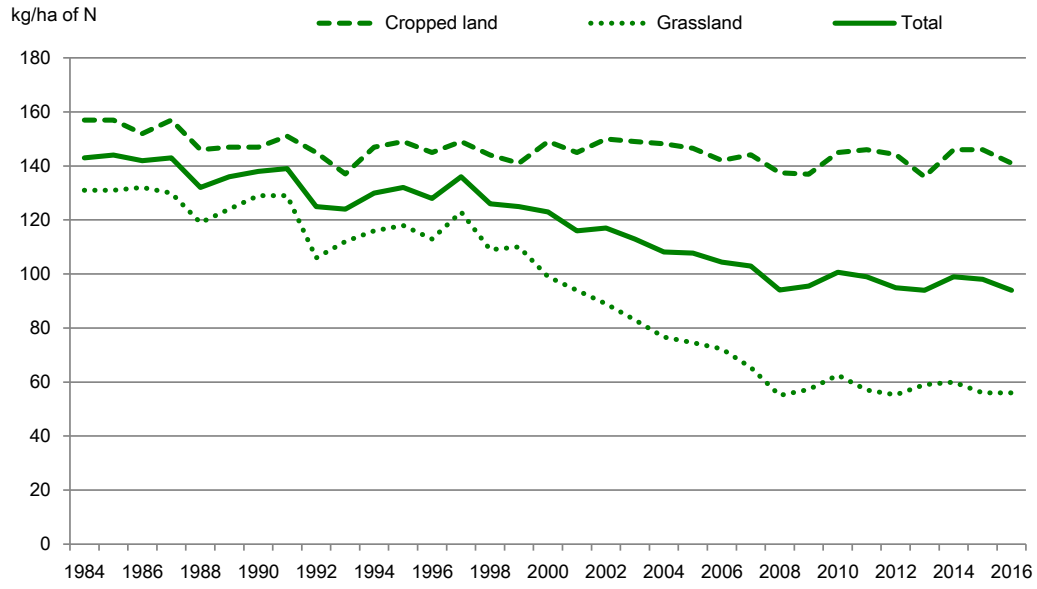
13. Nitrogen and phosphorus are two of the key nutrients required for crop growth. A deficit of these nutrients impacts on crop yields and therefore on levels of production. The main sources of these nutrients are mineral fertilisers and organic fertilisers (e.g. manures and slurries from livestock). Losses of these nutrients to the environment from soils and manures can impact on water quality (nitrogen and phosphorus levels in water bodies), air quality (ammonia emissions) and contribute to climate change (nitrous oxide emissions).

14. 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.

15. 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.

16. For Great Britain between 1990 and 2016 the overall mineral nitrogen application rate on cropped land has largely been in the range of 140 -150 kg/ha. 2013 saw a fall to 136 kg/ha due to more spring cropping as a result of adverse weather during autumn 2012. Subsequent years have seen a return to more typical levels, in 2016 the nitrogen application rate was 141 kg/ha. For grassland, nutrient application rates have always been lower than for cropped land. Between 1990 and 2016 there has been a downward trend in the overall mineral nitrogen application rate on grassland and in 2016 this was 56 kg/ha (Chart 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.

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

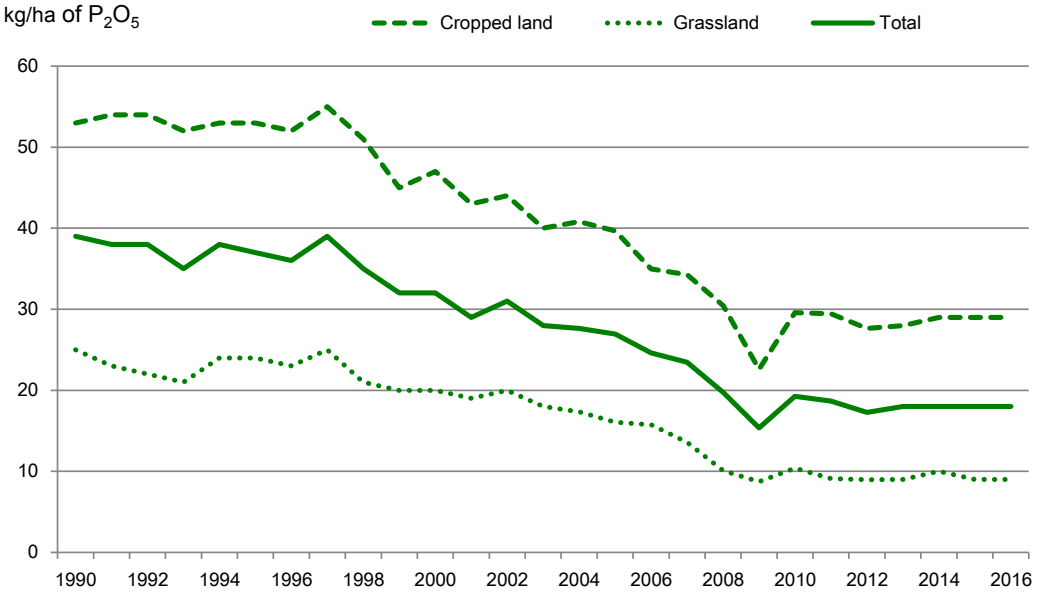


Source: British Survey of Fertiliser Practice

17. 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.

18. Overall mineral phosphate application rates have declined between 1990 and 2016 to now stand at 18 kg/ha in 2016 (Chart 11.6). This decline has levelled off in recent years.

Chart 11.6 Phosphate (P_2O_5) use (kg/ha) on all crops and grass, Great Britain



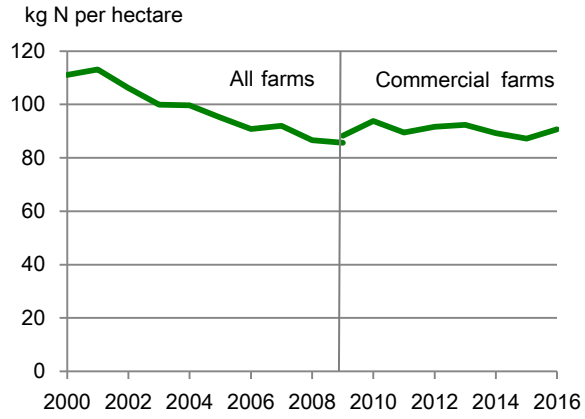
Source: British Survey of Fertiliser Practice

19. Further information is available in the annual report of the British Survey of Fertiliser Practice and the accompanying Statistical Notice which can be found at: https://www.gov.uk/government/collections/fertiliser-usage

Soil nutrient balances (charts 11.7 and 11.8)

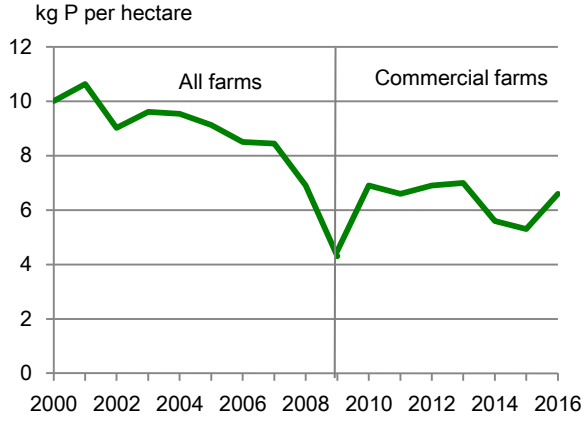
20. Soil nutrient balances provide an indication of the overall environmental pressure from nitrogen and phosphorus in agricultural soils. They measure the difference between nutrients applied to soils (largely as fertilisers and manures) and those removed from soils by the growth of crops, including 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.

Chart 11.7 Nitrogen (N) soil nutrient balance



Source: Defra

Chart 11.8 Phosphorus (P) soil nutrient balance



Source: Defra

21. Provisional estimates for 2016 show that the nitrogen balance for the UK was a surplus of 90.7 kg/ha of managed agricultural land (Chart 11.7). This is an increase of 3.5 kg/ha (+4%) compared to 2015. In spite of this increase, in the longer term this represents a reduction of 20.4 kg/ha (-18%) compared to 2000. The increase between 2015 and 2016 has been driven by a decrease in overall offtake (mainly via harvested crops) while inputs remained virtually unchanged. The decrease in offtake reflects a reduction in overall production compared to the high levels seen in 2015. 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.

22. The UK phosphorus balance was estimated to be a surplus of 6.6 kg/ha of managed agricultural land in 2016 (Chart 11.8). This is an increase of 1.3 kg/ha (+25%) compared to 2015. However since 2000 there has been an overall reduction of 3.4 kg/ha (-34%). The increase between 2015 and 2016 reflects a reduction in offtake while inputs increased slightly. In the longer term the trend is downward, again with similar drivers to nitrogen.

23. Further information concerning soil nutrient balances can be found at: https://www.gov.uk/government/statistics/uk-and-england-soil-nutrient-balances-2016

Water quality

24. 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 and can also enter groundwater via soil infiltration. Erosion can also wash topsoil into water bodies and these soils can carry large amounts of phosphates and agri-chemicals bonded to clay particles.

25. High nutrient concentrations, particularly phosphorus, can cause nutrient enrichment (eutrophication) resulting in poor water quality from excessive growth of macrophytes and algae and low dissolved oxygen levels at night. 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[5] and around 28% of the total phosphorus load in river water in Great Britain[6] although this estimate may also include phosphorus from septic tanks[7].

26. 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 and these 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'.

27. There was a small decrease in the overall number of water bodies awarded high or good surface water status between 2011 and 2016. In 2016, 35% of surface water bodies assessed under WFD in the UK were in high or good status. This reflects a small decline from 37% of surface water bodies assessed in 2011. Diffuse water pollution from agriculture and rural land use has been directly attributed to 28% of failures to meet the WFD standards in England[8].

28. Further information on the status of water bodies in the United Kingdom can be found at: http://jncc.defra.gov.uk/page-4250

Greenhouse gas emissions (charts 11.9 and 11.10)

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

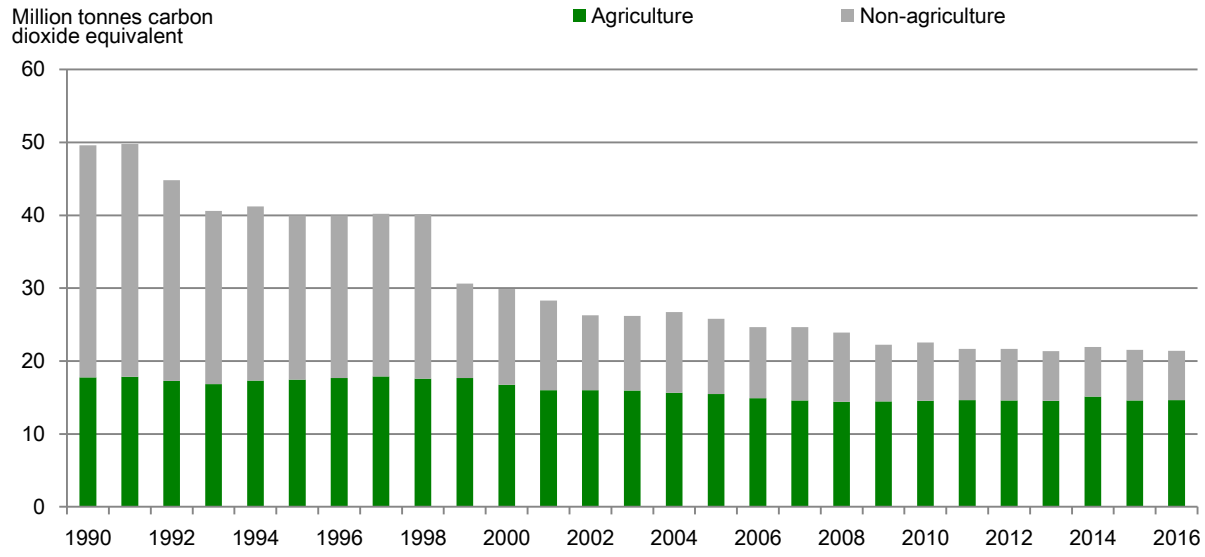
30. Agriculture is the major source of both nitrous oxide and methane emissions in the UK, accounting for nearly 70% of total nitrous oxide emissions and half of all methane emissions in 2016. In contrast, agriculture only accounted for about 1% of total carbon dioxide emissions in the UK.

31. 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 2016 nitrous oxide emissions from agriculture are estimated to have fallen by 18% since 1990 and 13% since 2000 (Chart 11.9). This is consistent with trends in fertiliser usage over the same period.

32. 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 2016, methane emissions from agriculture are estimated to have fallen by 15% since 1990 and 10% since 2000, mainly as a result of decreasing livestock numbers, particularly cattle (Chart 11.10). 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.

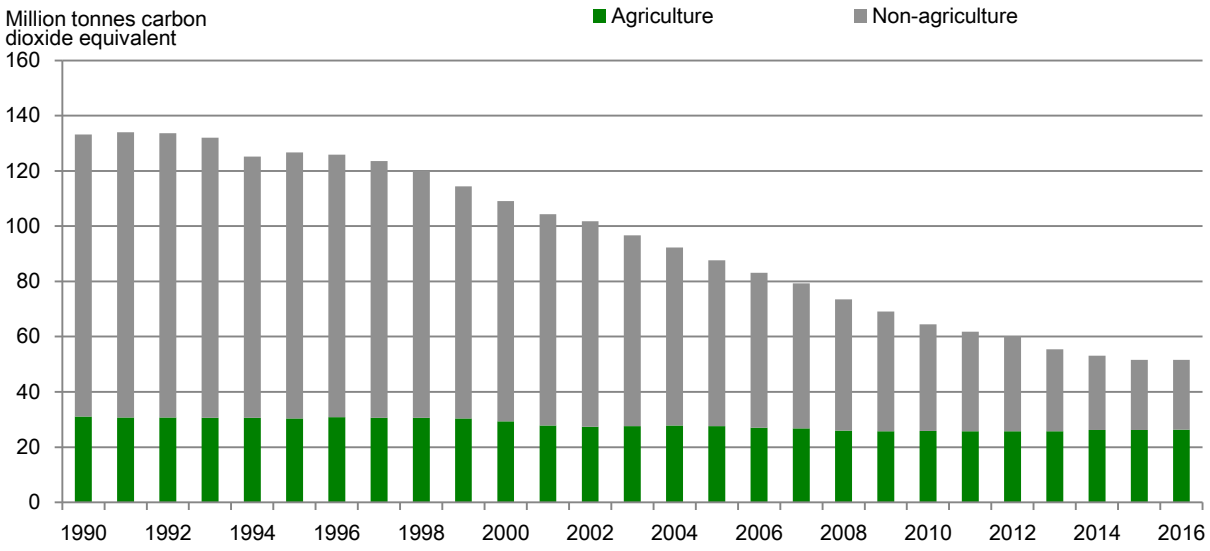
[5] Hunt, D.T.E., *et al*, 2004, Updating an estimate of the sources of nitrogen to waters in England and Wales. Defra project WT03016.
[6] White, P.J. and Hammond, J.P., 2006, Updating the estimate of the sources of phosphorus in UK waters. Defra project WT0701CSF.
[7] May, L., *et al*, 2011, The impact of phosphorus inputs form small discharges on designated freshwater sites. Report to Natural England and Broads Authority, SWR/CONTRACTS/08-09/112.
[8] POSTnote 478 October 2014 Diffuse Pollution of Water by Agriculture,

Chart 11.9 Nitrous oxide emissions



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

Chart 11.10 Methane emissions



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

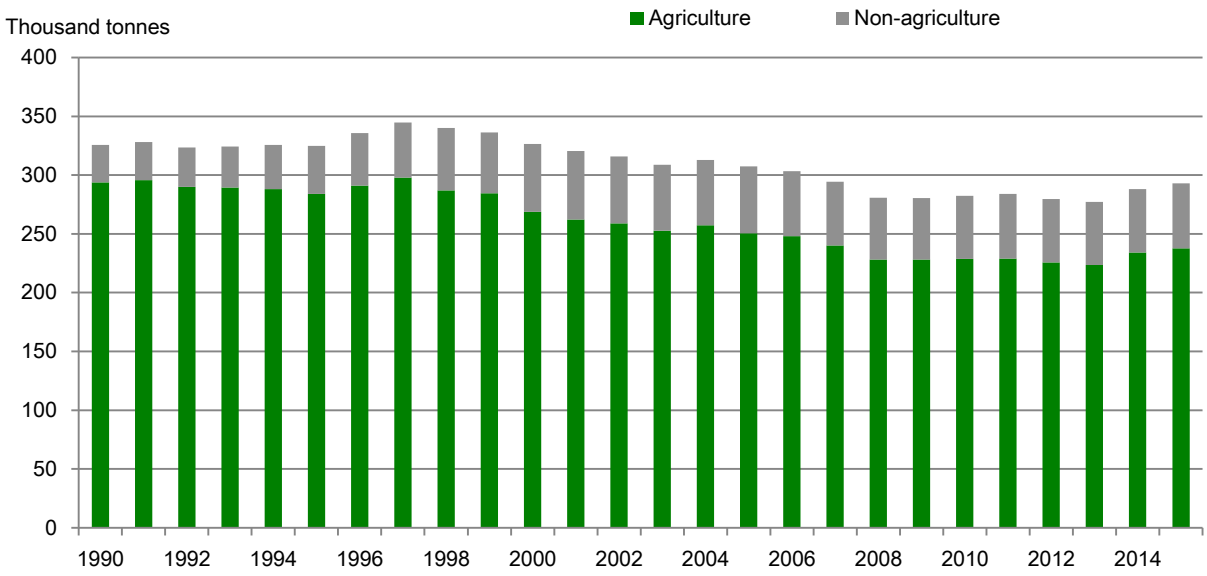
33. Further information on greenhouse gas emissions from agriculture can be found on the National Atmospheric Emissions Inventory website: http://naei.beis.gov.uk/

Air quality (chart 11.11)

34. 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 2015 agriculture accounted for 81% of the UK's ammonia emissions.

35. The main sources of ammonia emissions in the UK are agricultural soils and livestock, in particular cattle. In 2015 ammonia emissions from agriculture are estimated to have fallen by 19% since 1990 and 12% since 2000 due to long-term reductions in cattle numbers and more efficient fertiliser use (Chart 11.11). However, this represents a slight increase since emissions reached their lowest point in 2013. 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.

Chart 11.11 Ammonia emissions



Source: National Atmospheric Emissions Inventory (http://naei.beis.gov.uk/)

Further information on total ammonia emissions can be found at:
https://www.gov.uk/government/statistics/emissions-of-air-pollutants

Soils

36. 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[9]. 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].

37. 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[10] and can also increase winter cereal yields[11].

[9] SP1606 Total costs of soil degradation project 2011 Defra.
[10] (Chambers et al. 2000; Evans 1990)
[11] 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.

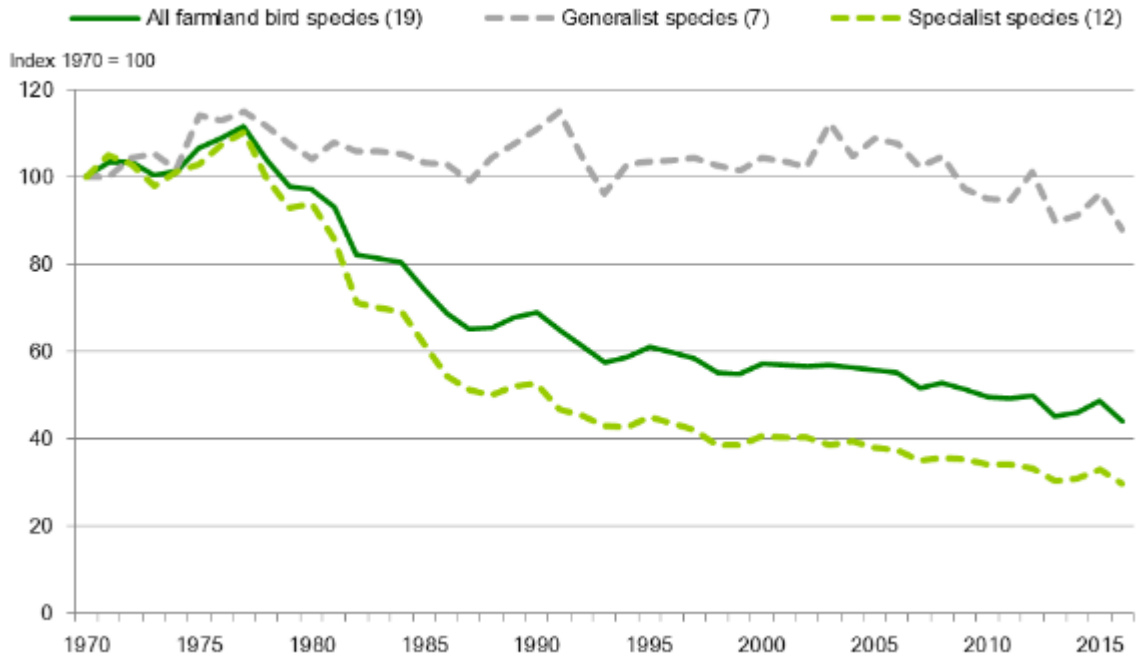
Biodiversity (chart 11.12)

38. 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.

39. 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 the12 species known as the 'specialists' that are restricted to, or highly dependent on, farmland habitats (Chart 11.12). Between 1970 and 2016, populations of farmland specialists declined by about 70% whereas farmland generalists have declined by about 12%. In spite of a slight recovery in 2015 the index has fallen in 2016 to its lowest ever point which, at 44.1, is less than half of its 1970 level.

40. Further information on the farmland bird index can be found at: https://www.gov.uk/government/statistics/wild-bird-populations-in-the-uk.

Chart 11.12 Farmland Bird Index



Source: BTO/RSPB

Chapter 12 Organic Farming

Summary

In 2017:

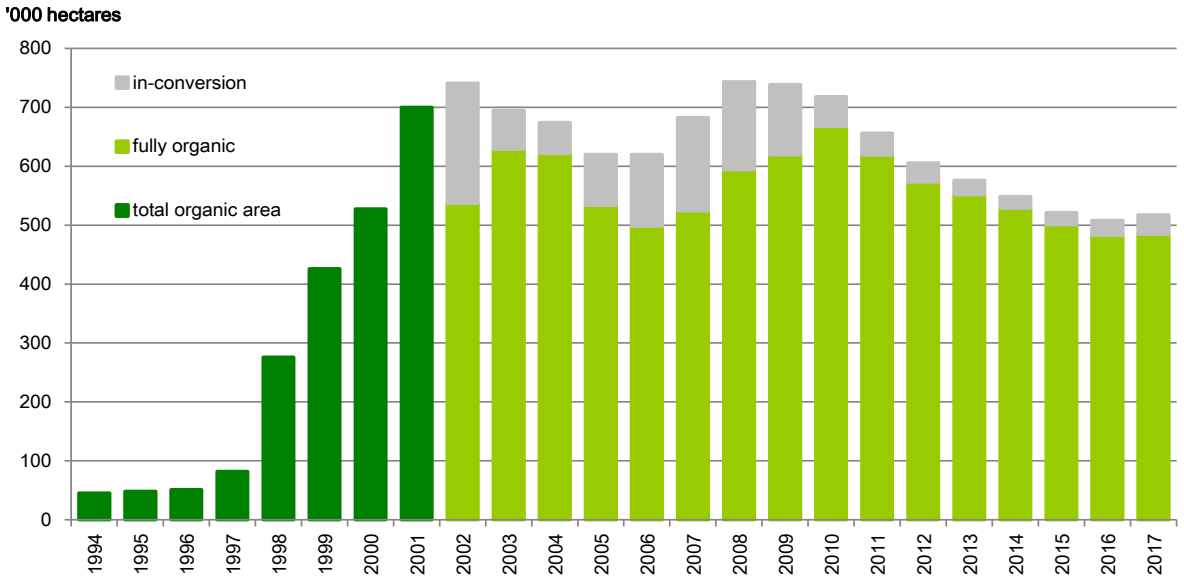
- The UK **area of land farmed organically** increased by 1.9% to 517 thousand hectares compared to 2016.
- The **area in-conversion** as a percentage of the total organic area rose for the third consecutive year.
- **England has 58%** of the organically managed land in the UK, **Scotland 24%**, **Wales 17%** and **Northern Ireland the remainder**.
- Within England nearly **half of all organic land** falls within the South West region.
- **Number of organic operators** rose by 3.5% compared to 2016.

Introduction

1. Organic farming is a method of farming that requires farmers to operate to a system based on ecological principles and which imposes 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.

2. 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 do not give an exact snapshot of organic farming at any specific time of year and should be considered when interpreting the results.

Chart 12.1 Area of land in-conversion and fully organic



Area of land farmed organically (chart 12.1, table 12.1)

3. In 2017, the United Kingdom had a total area of 517 thousand hectares farmed organically (i.e. the fully converted area and area under conversion), up from 508 thousand hectares in 2016. Although small, this is the first increase seen since 2008 when the area of land farmed organically peaked.

4. The organically farmed area represents 2.9% of the total farmed area on agricultural holdings in the United Kingdom. Organic production comes from fully converted land. Before an area can be considered as fully organic, it must undergo a conversion process. The area in-conversion showed a small increase in 2017, the third consecutive increase 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.gsi.gov.uk

Thousand hectares

	2013	2014	2015	2016	2017
Land, in-conversion					
North East	1.0	0.8	0.3	0.4	0.8
North West	0.9	0.6	0.3	1.1	1.0
Yorkshire & Humberside	0.5	0.6	0.5	0.6	0.8
East Midlands	0.7	0.9	0.7	0.9	0.8
West Midlands	0.8	1.2	1.0	2.0	5.1
Eastern	0.7	0.5	1.0	1.3	1.2
South East (inc. London)	3.0	1.9	0.7	1.4	1.7
South West	6.3	6.1	5.5	7.2	8.4
England	14.0	12.5	10.0	14.7	19.8
Wales	1.9	4.1	9.4	7.8	7.3
Scotland	8.4	3.0	1.0	2.3	5.1
Northern Ireland	0.1	0.2	0.3	0.3	0.4
United Kingdom	24.4	19.7	20.6	25.2	32.6
Land, fully organic					
North East	26.9	26.3	27.6	24.9	22.6
North West	14.0	13.6	13.8	11.4	13.9
Yorkshire & Humberside	10.2	10.1	10.2	10.0	10.2
East Midlands	14.1	13.7	13.5	13.6	12.6
West Midlands	30.8	29.3	28.3	28.0	27.6
Eastern	14.1	13.8	13.7	13.5	13.9
South East (inc. London)	48.1	45.6	45.0	42.4	42.5
South West	144.2	143.1	141.6	138.0	137.2
England	302.4	295.7	293.7	281.8	280.5
Wales	100.0	91.6	73.5	73.7	78.8
Scotland	140.0	132.9	125.3	119.3	117.6
Northern Ireland	9.3	8.8	8.2	8.0	7.9
United Kingdom	551.7	529.0	500.8	482.7	484.8
Total UK organic land (in-conversion & fully organic)	576.0	548.6	521.4	507.9	517.4

Source: Organic certification bodies collated by Defra statistics

Land use and livestock numbers (tables 12.2 and 12.3)

5. Permanent pasture accounts for the biggest share of the organic area (64%) followed by temporary pasture (18%) and cereals (7.2%). The three main crop types grown organically are cereals, vegetables including potatoes and other arable crops. Cereals and vegetables including potatoes have both shown a decline since the late 2000s, mirroring the fall in the land area farmed organically since 2008, however both the land area and other arable crops saw a small increase in 2017.

6. The number of poultry farmed organically in the United Kingdom increased by 8.5% between 2016 and 2017, rising to just over 3 million birds. However, this equates to 1.7% of the total UK poultry population. In the red meat sector sheep reared organically increased by 5.5% to 887 thousand

animals in 2017. Organically reared cattle saw a decrease of 7.4%, whilst the number of pigs reared organically saw the largest proportional increase, rising from 31 thousand animals in 2016 to almost 59 thousand animals in 2017.

Table 12.2 Organic and in-conversion land use

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

Thousand hectares

	2013	2014	2015	2016	2017
Land, in-conversion					
Cereals	1.4	1.0	1.0	1.6	1.9
Other crops	0.2	0.3	0.4	0.6	0.8
Fruit & nuts	0.1	0.1	0.0	0.1	0.1
Vegetables (including potatoes)	0.2	0.1	0.1	0.5	0.4
Herbs & ornamentals	0.7	0.6	0.1	0.1	0.0
Temporary pasture	3.8	3.2	3.1	6.2	7.4
Permanent pasture (a)	16.6	13.5	15.1	15.3	17.4
Woodland	0.6	0.6	0.4	0.2	0.3
Unutilised land	0.8	0.2	0.2	0.3	0.2
Unknown (b)	..	0.1	0.2	0.4	4.1
Total	24.4	19.7	20.6	25.2	32.6
Land, fully organic					
Cereals	42.4	41.2	38.6	36.8	35.4
Other crops	7.4	7.0	6.6	6.7	6.6
Fruit & nuts	2.0	2.0	1.9	1.9	1.7
Vegetables (including potatoes)	11.2	9.3	10.2	9.8	9.2
Herbs & ornamentals	6.1	7.9	6.2	5.7	5.9
Temporary pasture	95.1	90.5	89.1	85.9	84.9
Permanent pasture (a)	371.1	356.1	332.0	319.7	316.0
Woodland	6.9	6.4	6.6	7.1	8.6
Unutilised land	9.6	4.1	5.5	5.2	5.4
Unknown (b)	..	4.3	4.2	4.1	11.1
Total	551.7	529.0	500.8	482.7	484.8

Source: Organic certification bodies collated by Defra statistics

(a) Includes rough grazing.

(b) In 2017 some land areas are provided without a crop category or land use description. These areas are classified as unknown.

Table 12.3 Estimates of organic livestock numbers (a) (b)

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

Thousand head

	2013	2014	2015	2016	2017
Cattle	283	304	292	296	274
Sheep	999	955	845	841	887
Pigs	30	28	30	31	59
Poultry	2 488	2 399	2 560	2 821	3 060
Other livestock (c)	4	6	4	3	3

Source: Organic certification bodies collated by Defra statistics

(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.

Organic operators (tables 12.4 and 12.5)

7. There were 6,586 certified organic operators in the United Kingdom in 2017, an increase from 6,363 in 2016. The majority were either producers only (3,465) or processors only (2,977), with just 144 producer/processors. The number of crop producers and livestock producers both saw a slight decline in 2017.

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

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

Number of operators

	2013	2014	2015	2016	2017
North East	127	130	137	130	132
North West	253	246	277	301	308
Yorkshire & Humberside	240	238	257	273	275
East Midlands	351	346	329	371	388
West Midlands	426	424	438	446	514
Eastern	449	445	457	508	543
South East (inc. London)	957	1 020	1 083	1 192	1 254
South West	1 616	1 605	1 601	1 627	1 623
England	4 419	4 454	4 579	4 848	5 037
Wales	913	779	741	751	751
Scotland	551	576	539	560	578
Northern Ireland	189	193	197	204	220
United Kingdom	6 072	6 002	6 056	6 363	6 586

Source: Organic certification bodies collated by Defra statistics

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

Table 12.5 Numbers of organic crop and livestock producers and processors 2017 (a) – by region

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

Number of operators

	No. crop producers	No. crop producers and processors	No. livestock producers	No. livestock producers and processors
North East	76	2	63	2
North West	113	7	78	5
Yorkshire & Humberside	90	6	63	4
East Midlands	133	7	101	6
West Midlands	240	13	166	12
Eastern	145	11	68	9
South East (inc. London)	306	19	179	15
South West	1021	56	754	52
England	2 124	121	1 472	105
Wales	595	15	488	13
Scotland	318	5	248	5
Northern Ireland	127	0	102	0
United Kingdom	3 164	141	2 310	123

Source: Organic certification bodies collated by Defra statistics

(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 2017:

- The value of food, feed and drink (FFD) **exports** increased by 8.2% to £22.0 billion.
- The value of food, feed and drink **imports** increased by 7.1% to £46.2 billion.
- As a result, the **trade gap** in food, feed and drink widened by 6.2% to £24.2 billion.
- Whisky had the highest **export** value, totalling £4.5 billion.
- Fresh fruit and vegetables together remain the highest value categories for **imports**, totalling £6.2 billion.

Introduction

1. 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.

2. 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, and not of processed and packaged milk and cream as shown here.

Value of trade in food, feed and drink (chart 13.1, table 13.1).

3. The value of exports of food, feed and drink was £22.0 billion in 2017. To compare 2017 exports with previous years, it is necessary to adjust for the effects of economic inflation. The real terms value of exports was £1.7 billion or 8.2% higher in 2017 than 2016. The longer trend is of rising real terms export values. Since 2005 the real terms value of exports has risen by £9.6 billion or 77%. 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.

4. The value of imports of food, feed and drink was £46.2 billion in 2017. To compare 2017 imports with previous years it is necessary to adjust for the effects of economic inflation. The real terms value of imports was £3.1 billion or 7.1% higher in 2017 than 2016. The longer trend is of rising real terms import values. Since 2005 the real terms value of imports has risen by £17 billion or 58%.

5. The trade gap widened by 6.2% between 2016 and 2017, and has widened by 35% from £16.9 billion in 2005 to £24.2 billion in 2017 in real terms.

6. All the main categories showed an increase in exports in real terms. The largest increase occurring in the dairy & eggs category which showed a rise of 28% to £1.8bn, followed by animal feed exports which increased by 20% to £1.4bn. Exports of both meat and fish increased by 14% and exports of fruit & vegetables increased by 7.7% to £1.2bn.

7. The picture for imports was similar. In real terms, imports of dairy & eggs increased by 16% to £3.2bn, and imports of cereals increased by 15% to £3.9bn between 2016 and 2017. Imports of meat increased by 6.3% to £6.7bn, and imports of fruit & vegetables increased by 5.7% to £11.1bn. Only imports of miscellaneous edible products fell by 3.2% to £3.2bn.

Chart 13.1 Value of trade in food, feed and drink at 2017 prices

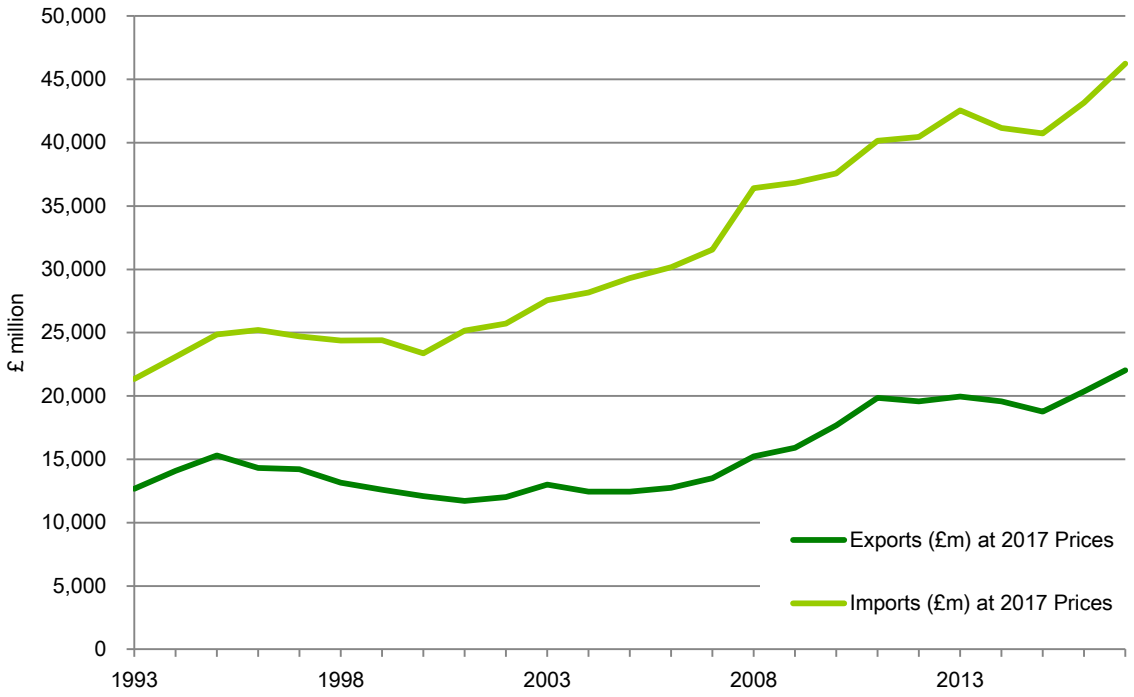


Table 13.1 Value of trade in food, feed and drink at 2017 prices

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

£ million											Calendar year
SITC Division		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Code	Type										(provisional)
Exports											
01	Meat & Meat Preps	1 336	1 399	1 563	1 831	1 705	1 760	1 732	1 503	1 595	1 811
02	Dairy & Eggs	1 009	948	1 156	1 362	1 258	1 453	1 559	1 328	1 397	1 783
03	Fish & Fish Preps	1 162	1 322	1 502	1 601	1 449	1 545	1 623	1 383	1 662	1 890
04	Cereals & Cereal Preps	2 019	2 010	2 157	2 219	2 090	1 969	2 017	2 177	2 325	2 109
05	Fruit and Veg & Preps	794	859	904	964	916	1 008	943	1 000	1 133	1 220
06	Sugar & Sugar Preps	511	512	491	416	410	395	424	389	392	400
07	Coffee, tea, etc.	999	1 003	1 126	1 193	1 236	1 301	1 276	1 278	1 385	1 486
08	Animal feed	606	663	722	770	880	985	935	939	1 136	1 361
09	Misc. edible preps	1 028	1 129	1 219	1 287	1 308	1 478	1 666	1 688	1 848	1 990
11	Beverages	5 260	5 584	6 249	7 424	7 331	7 333	6 754	6 530	6 924	7 365
22 + S4	Oils/fats & Oilseeds	512	471	591	792	992	735	650	555	561	608
	Total	**15 236**	**15 898**	**17 680**	**19 860**	**19 575**	**19 961**	**19 579**	**18 768**	**20 357**	**22 023**
Imports											
01	Meat & Meat Preps	5 399	5 637	5 669	6 268	6 095	6 212	6 229	6 080	6 301	6 698
02	Dairy & Eggs	2 649	2 661	2 758	2 824	2 885	3 112	2 993	2 720	2 798	3 232
03	Fish & Fish Preps	2 544	2 467	2 517	2 799	2 770	2 914	2 846	2 764	3 112	3 201
04	Cereals & Cereal Preps	2 838	2 796	2 630	2 784	3 211	3 771	3 387	3 275	3 335	3 851
05	Fruit and Veg & Preps	8 289	8 170	8 508	8 843	8 850	9 506	9 100	9 445	10 464	11 065
06	Sugar & Sugar Preps	1 341	1 363	1 304	1 394	1 379	1 500	1 379	1 219	1 174	1 313
07	Coffee, tea, etc.	2 250	2 624	2 792	3 062	2 926	2 870	3 007	3 232	3 468	3 757
08	Animal feed	1 645	1 756	1 906	1 852	1 921	2 205	2 117	1 977	2 021	2 165
09	Misc. edible preps	2 241	2 480	2 391	2 658	2 724	2 870	2 893	3 090	3 255	3 150
11	Beverages	5 035	5 040	5 252	5 433	5 558	5 546	5 423	5 310	5 553	5 659
22+S4	Oils/fats & Oilseeds	2 189	1 853	1 845	2 237	2 146	2 052	1 800	1 629	1 672	2 145
	Total	**36 421**	**36 846**	**37 571**	**40 153**	**40 463**	**42 557**	**41 173**	**40 741**	**43 154**	**46 238**

source: HMRC

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.

Trading partners (charts 13.2 and 13.3)

8. In 2017, 60% of UK food, feed and drink 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 only 30% of FFD imports into the UK were from non-EU countries.

9. Principal UK export destinations of food, feed and drink to the European Union in 2017 were the Irish Republic (£3.7 billion), France (£2.3 billion), Netherlands (£1.5 billion) and Germany (£1.4 billion). The principal European Union countries from which FFD items were imported into the United Kingdom in 2017 were the Netherlands (£5.5 billion), France (£4.5 billion), Germany (£4.4 billion) and the Irish Republic (£4.3 billion).

10. Principal non-EU destinations of UK food, feed and drink exports in 2017 were the USA (£2.3 billion), China (£564 million) and Hong Kong (£460 million), while the main non-EU country from which food, feed and drink items were imported into the United Kingdom was the USA (£1.4 billion).

Chart 13.2 Exports of food, feed and drink by country of destination 2017

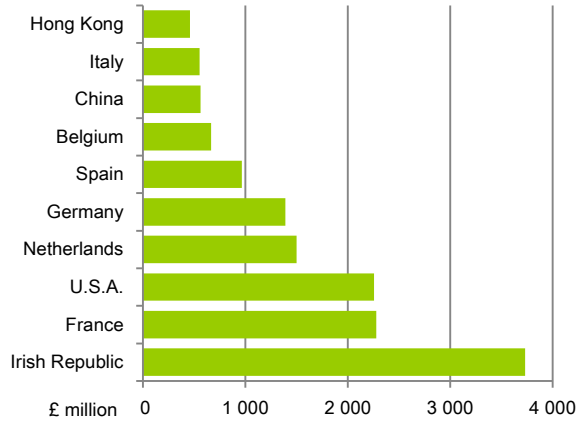
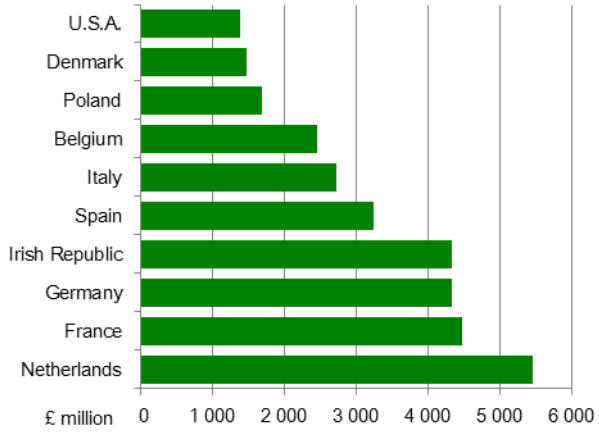


Chart 13.3 Imports of food, feed and drink by country of dispatch 2017



Exports and imports by degree of processing (charts 13.4 and 13.5)

11. 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.

12. Exports of highly processed foods such as confectionery, canned meats, jams, alcoholic drinks and ice cream, increased by 52% in value between 2008 and 2017.

13. Exports of lightly processed food and drink, i.e. goods that retain their raw recognisable form, such as meat, cheese, butter and oils & fats rose by 36% in value between 2008 and 2017.

14. Exports of unprocessed commodities, such as fresh fruit & vegetables, nuts, unmilled cereal and eggs increased by 30% in value between 2008 and 2017.

15. Imports of highly processed foods increased by 36% in value between 2008 and 2017.

16. Imports of lightly processed food and drink increased by 19% in value between 2008 and 2017.

17. Imports of unprocessed commodities increased by 31% in value between 2008 and 2017.

Chart 13.4 Exports in food, feed and drink by degree of processing at 2017 prices

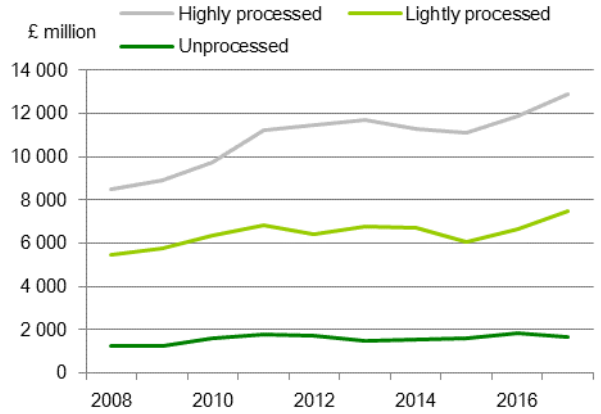
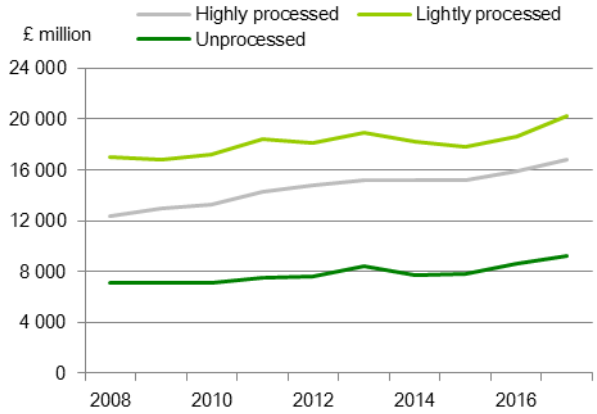


Chart 13.5 Imports in food, feed and drink by degree of processing at 2017 prices



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

18. 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.

19. The value of exports of whisky, which represents the highest valued individual food, feed and drink item, increased by 7.6% to £4.5 billion. It is 14% higher than in 2010. Exports of salmon also increased by 23% to £721 million as global demand for high quality UK food items continues to grow. The value of exports of unmilled wheat fell by 73% to £103 million in 2017, as a result of consecutive years of average domestic harvests and subsequent low national grain stocks. Exports of pork grew by 15% to £293 million as the UK looks to open new export markets, particularly in Asia.

20. Imports of fresh fruit and fresh vegetables grew by 4.6% to £3.8 billion and 2.5% to £2.4 billion respectively, as the range, quality and consumer awareness of healthy eating options increases. The value of imports across a range of different commodities was broadly similar to 2016. Imports of unmilled wheat increased by 39% to £341 million in reaction to tight domestic supplies. Whisky imports for 2017 went up by 30% to £226 million.

21. The value of wine imports, a high value commodity, increased by 3.7% on 2016, to £3.2 billion, whereas the value of wine exported from the UK increased by 14% to £561 million.

22. The overall volume of exports of food, feed and drink in 2017 has fallen by 17% to 13.5 billion tonnes mainly as a result of lower cereal crop exports. There is a gradual long term trend for the volume of exports to increase, and in 2017 it was 4% higher than in 2013. Import volumes have also been increasing over recent years, and the volume of imports of 41.8 billion tonnes in 2017 was 23% higher than 2010.

Table 13.2 Trade in key commodities in real terms at 2017 prices

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

£ million Calendar year

Commodity	Flow	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 (provisional)
Whisky	Imports	124	136	140	142	141	173	205	231	173	226
	Exports	3 600	3 637	3 929	4 718	4 702	4 616	4 213	4 078	4 154	4 470
Wine	Imports	3 282	3 121	3 287	3 323	3 466	3 379	3 219	3 113	3 103	3 217
	Exports	272	368	478	595	479	472	477	462	493	561
Cheese	Imports	1 375	1 345	1 365	1 387	1 416	1 532	1 514	1 346	1 375	1 573
	Exports	324	321	380	442	439	468	487	464	507	623
Poultry meat	Imports	905	969	1 063	1 180	1 046	1 052	1 102	1 106	1 174	1 165
	Exports	250	262	291	335	308	362	318	252	254	281
Poultry meat products	Imports	694	711	766	872	865	897	924	945	982	1 057
	Exports	156	138	141	157	148	133	141	120	110	122
Beef and veal	Imports	852	814	859	938	934	1 007	1 021	1 067	1 031	1 068
	Exports	245	292	370	478	419	394	390	354	374	409
Wheat, unmilled	Imports	368	291	224	248	433	698	360	272	246	341
	Exports	465	345	507	451	291	91	171	274	388	103
Lamb and mutton	Imports	361	432	427	450	397	405	424	405	350	369
	Exports	302	358	357	409	380	405	395	312	332	384
Pork	Imports	774	721	732	792	743	782	727	634	789	933
	Exports	152	131	166	187	204	230	218	204	256	293
Breakfast cereals	Imports	168	205	192	202	202	195	202	236	259	273
	Exports	406	469	409	417	388	396	377	382	391	421
Milk and cream	Imports	91	86	114	131	126	150	140	120	106	147
	Exports	230	221	275	325	272	273	273	200	200	325
Bacon and ham	Imports	791	868	802	740	699	681	625	555	560	561
	Exports	83	58	50	65	40	41	40	39	42	54
Butter	Imports	269	271	319	350	324	337	280	271	282	367
	Exports	63	65	90	140	110	154	155	119	159	244
Eggs and egg products	Imports	152	174	155	143	204	190	182	197	175	175
	Exports	44	52	52	53	64	95	101	100	65	82
Fresh vegetables	Imports	2 001	1 945	2 112	2 047	2 011	2 203	2 098	2 165	2 346	2 404
	Exports	62	74	83	79	77	75	83	100	110	110
Fresh fruit	Imports	2 753	2 763	2 804	2 899	2 914	3 097	3 000	3 179	3 669	3 839
	Exports	98	108	113	109	87	115	81	100	114	151
Salmon (inc. smoked)	Imports	173	223	250	276	272	365	383	340	484	495
	Exports	242	329	436	529	476	606	642	506	585	721

Source: HMRC

Whisky	includes bourbon, scotch (malted and blended) and other w hiskies.
Wine	includes grape must, vermouth and w ine of fresh grapes (sparkling and still).
Cheese	includes grated or pow dered, processed, blue-veined and fresh (e.g. curd).
Poultrymeat (inc. poultry offal)	includes carcase meat, cuts and offal (inc. liver).
Beef and veal	includes carcase meat and cuts, both bone-in and boneless.
Wheat, unmilled	includes durum, other w heat (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 w orked or prepared for breakfast cereals
Milk and cream	includes milk (inc. skimmed milk) and cream, not concentrated or sw eetened.
Fresh vegetables	excludes potatoes.
Salmon (inc. smoked)	includes fresh, chilled, frozen or smoked, but not canned

Table 13.3 Trade in key commodities by volume

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

Thousand tonnes (unless otherwise specified) Calendar year

Commodity	Flow	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 (provisional)
Whisky	Imports	16	16	16	16	15	23	29	23	16	21
(million litres pure alcohol)	Exports	308	311	305	361	345	353	344	333	352	363
Wine	Imports	1 289	1 295	1 365	1 371	1 326	1 318	1 425	1 444	1 427	1 388
(million litres)	Exports	44	58	90	88	80	95	104	97	81	99
Cheese	Imports	422	419	436	414	444	468	469	494	490	497
	Exports	88	105	113	124	126	125	134	152	164	174
Poultry meat	Imports	335	340	381	412	394	398	423	453	492	469
	Exports	278	258	270	295	297	350	356	305	304	352
Poultry meat products	Imports	249	241	255	279	292	291	306	337	363	372
	Exports	46	38	38	46	46	42	49	45	39	48
Beef and veal	Imports	247	231	238	235	236	241	255	269	264	273
	Exports	81	83	110	144	120	105	112	100	110	107
Wheat, unmilled	Imports	1 248	1 390	1 111	902	1 785	2 965	1 824	1 582	1 482	1 889
	Exports	2 766	2 533	3 335	2 287	1 503	448	1 143	2 002	2 935	646
Lamb and mutton	Imports	112	116	101	88	86	98	93	93	90	80
	Exports	87	96	89	96	95	104	102	79	78	89
Pork	Imports	393	360	363	373	349	352	358	371	439	460
	Exports	118	104	131	144	154	181	182	187	206	216
Breakfast cereals	Imports	103	110	105	108	102	98	108	135	139	135
	Exports	160	171	158	161	150	146	147	156	152	162
Milk and cream	Imports	193	158	193	215	194	245	221	206	150	269
	Exports	532	539	561	648	617	574	654	665	646	854
Bacon and ham	Imports	293	323	313	280	258	250	256	251	243	220
	Exports	31	21	24	34	15	13	14	16	16	19
Butter	Imports	81	96	102	100	104	106	95	106	99	91
	Exports	24	27	27	36	38	45	51	50	65	60
Eggs and egg products	Imports	95	90	75	68	100	95	99	107	100	97
	Exports	14	23	24	17	18	28	21	18	17	23
Fresh vegetables	Imports	1 957	1 823	1 871	1 975	2 049	2 225	2 179	2 256	2 369	2 187
	Exports	80	78	95	89	85	80	119	153	155	129
Fresh fruit	Imports	3 326	3 175	3 229	3 347	3 408	3 544	3 590	3 685	3 847	3 986
	Exports	128	153	142	149	109	143	102	128	140	174
Salmon (inc. smoked)	Imports	47	53	50	57	63	69	74	68	81	74
	Exports	57	71	83	96	100	111	123	112	105	116
Food, feed and drink	Imports	107	104	104	107	110	117	115	118	122	126
Index, 2005=100	Exports	106	112	121	121	117	122	123	126	132	125

Source: HMRC

Whisky	includes bourbon, scotch (malted and blended) and other w hiskies.
Wine	includes grape must, vermouth and w ine of fresh grapes (sparkling and still).
Cheese	includes grated or pow dered, processed, blue-veined and fresh (e.g. curd).
Poultrymeat (inc. poultry offal)	includes carcase meat, cuts and offal (inc. liver).
Beef and veal	includes carcase meat and cuts, both bone-in and boneless.
Wheat, unmilled	includes durum, other w heat (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 w orked or prepared for breakfast cereals
Milk and cream	includes milk (inc. skimmed milk) and cream, not concentrated or sw eetened.
Fresh vegetables	excludes potatoes.
Salmon (inc. smoked)	includes fresh, chilled, frozen or smoked, but not canned

Chapter 14 The Food Chain

Summary

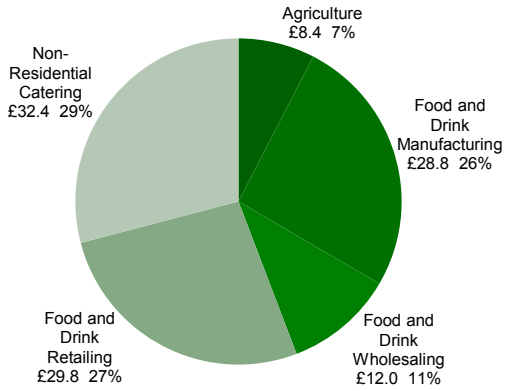
- **Gross Valued Added** of the agri-food sector in the United Kingdom in 2016 was £111 billion or 6.4% of national GVA.
- **Employment** in the agri-food sector rose 1.3% over the 12 month period to the fourth quarter of 2017 to around 3.9 million.
- **Total factor productivity** of the UK food chain beyond the farmgate increased by 1.9% between 2015 and 2016.
- Excluding the effect of price rises, **consumers' expenditure** increased 6.5% in 2017 and was 5.1% higher than at the start of the economic downturn in 2007.
- Expenditure on **food eaten out** increased 11.7% in 2017, whilst expenditure on **household food** increased 2.3%.

Contribution of the agri-food sector to the national economy (chart 14.1, table 14.1)

1. In 2016, the agri-food sector contributed £111 billion to the economy, around 6.4% of the national GVA. Within this, manufacturing, retailing and non-residential catering accounted for over one quarter each. Food wholesaling covers 11% of the sector and agriculture made the smallest contribution at 7%.

2. Comparing 2016 with 2015, retailing had the largest drop in productivity (4.1%); followed by agriculture (3.7%). Wholesaling increased by 9.4%, manufacturing by 3.5% and non-residential catering showed a 0.9% increase. Between 2006 and 2016, the average annual growth rate of the food chain was 0.4% whereas the wider economy's average annual growth rate was 0.3%.

Chart 14.1 Gross Value Added of the agri-food sector 2016 (£ billion)



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

Table 14.1 Agri-food sector contribution to the national economy

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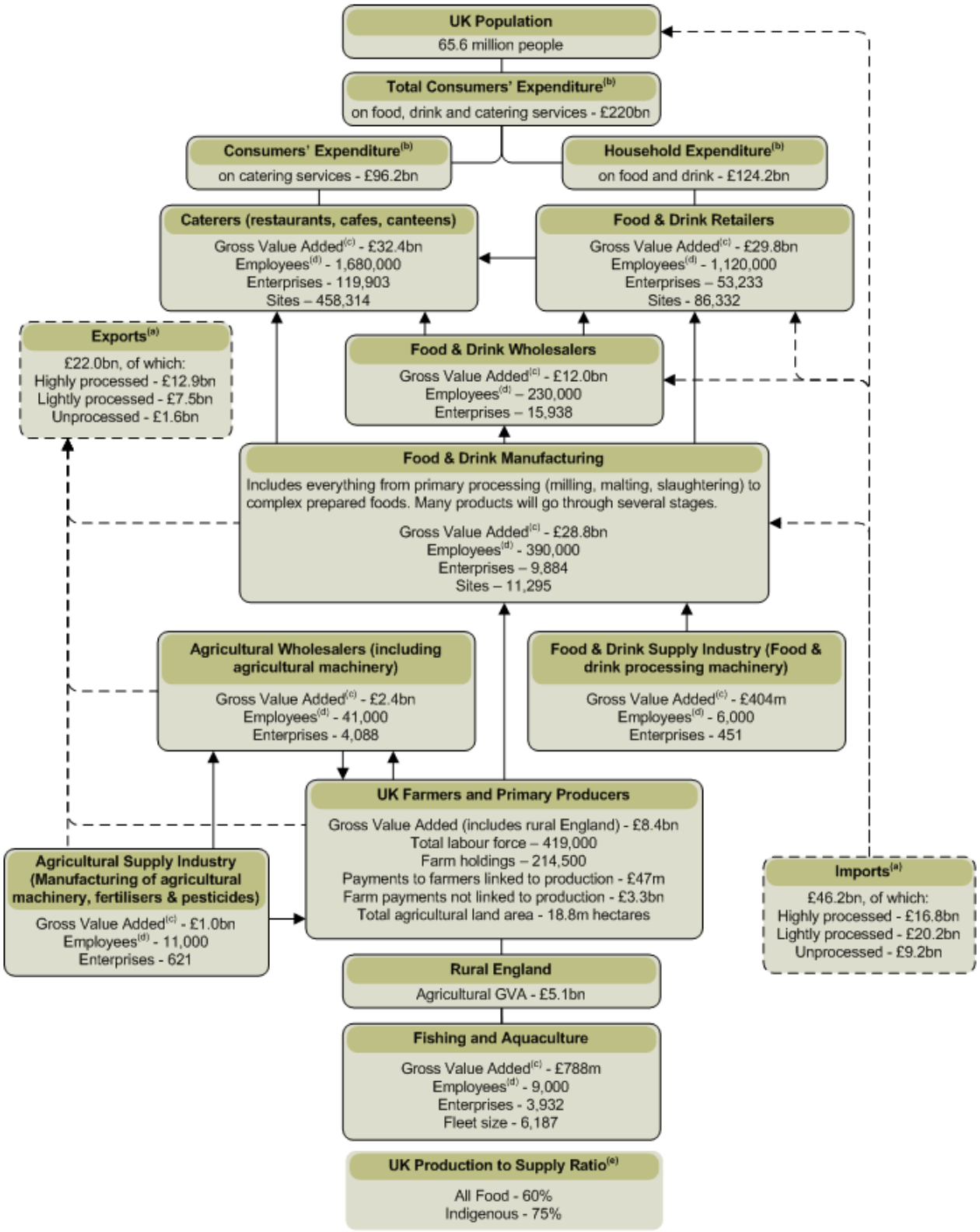
£ million (unless otherwise specified)

		2013	2014	2015	2016	2017 (provisional)
Agri-food sector's contribution to total economy gross value added						
at current prices	Agriculture	9 399	9 879	8 764	8 443	10 300
	Food Manufacturing	26 266	26 416	27 819	28 797	..
	Food Wholesaling	9 957	11 885	10 991	12 029	..
	Food Retailing	31 857	30 257	31 031	29 773	..
	Food Non-Residential Catering	27 003	28 878	32 123	32 425	..
% of national gross value added (current prices)		6.7	6.5	6.6	6.4	..
Workforce in the food sector (thousand persons)						
	Agriculture	420	425	428	421	419
	Food Manufacturing	372	382	393	399	394
	Food Wholesaling	221	227	217	236	236
	Food Retailing	1 159	1 178	1 169	1 121	1 114
	Food Non-Residential Catering	1 498	1 581	1 622	1 684	1 749
% of total workforce in employment		13.5	13.6	13.4	13.2	13.2
Trade in food, feed and drink (in real terms at 2017 prices)						
Imports of food, feed and drink		40 271	39 597	39 378	42 545	46 238
% of total UK imports		9.7%	9.7%	8.5%	8.7%	9.4%
Exports of food, feed and drink		18 889	18 829	18 141	20 070	22 023
% of total UK exports		6.1%	6.2%	6.0%	5.8%	6.4%
UK Food Production to Supply Ratio ('Self-Sufficiency')						
% of all food		60	62	61	60	60
% of indigenous type food		73	76	76	76	75
Household final consumption expenditure on food and alcoholic drinks						
at current prices		193 927	197 769	198 725	202 932	220 353
of which:	household food	96 534	97 515	95 819	96 060	103 666
	food eaten out	51 009	52 315	53 599	55 610	60 844
	alcoholic drinks	46 384	47 939	49 307	51 262	55 843
at constant 2010 prices (£ million)		193 927	195 488	196 853	202 062	215 247
of which:	household food	96 534	97 754	98 489	101 444	103 758
	food eaten out	51 009	50 847	50 939	51 928	58 008
	alcoholic drinks	46 384	46 887	47 425	48 690	53 481
% of total household final consumption expenditure		17.9	17.6	17.2	16.9	17.2
of which:	household food	8.9	8.7	8.3	8.0	8.1
	food eaten out	4.7	4.6	4.6	4.6	4.7
	alcoholic drinks	4.3	4.3	4.3	4.3	4.4
Producer prices for agricultural products (2010 = 100)		125.8	114.6	104.9	104.5	115.1
Consumer price index (2010 = 100):						
	food	103.0	102.6	100.0	97.7	99.4
	alcoholic drinks	102.3	102.4	100.0	97.0	99.4
	all items	98.7	100.0	100.0	100.7	103.1

Chart 14.2: Economic summary of the Food Chain



(a) Overseas trade data is provisional for full year 2017 from HM Revenue and Customs. (Data may not equal total due to rounding). Dashed lines indicate main trade flows.
(b) Consumers' expenditure, properly known as household final consumption expenditure, is provisional from the Office for National Statistics for full year 2017 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 up in production. GVA figures are from the Annual Business Survey and are provisional data for full year 2016, which is calculated at basic prices (market prices less taxes plus subsidies.
(d) Data is the annual average taken from quarterly 2017 figures provided by the Office for National Statistics. Agricultural wholesaling includes an estimate of employment of wholesalers of agricultural machinery from the Annual Business Survey. (Employee data is rounded.)
(e) UK Production to Supply Ratio (formerly known as the "Self-Sufficiency" Ratio). The UK sources food from diverse stable countries and imports can make up for domestic supply shortages.

The food chain (chart 14.2)

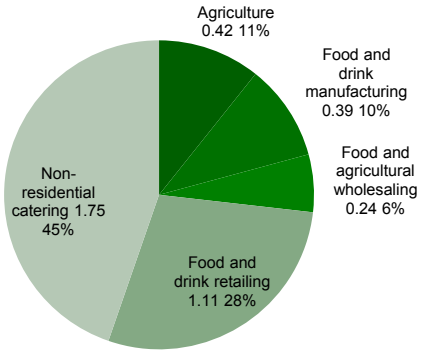
3. In 2017, the food supply chain in the United Kingdom as a whole received £196 billion, which came from spending by consumers in the United Kingdom, plus exports, less imports of agricultural commodities and processed food and drink products (assuming that imports and exports directly to and from consumers are negligible). Chart 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 (chart 14.3)

4. In the fourth quarter of 2017, the agri-food sector employed 3.91 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 (chart 14.3).

5. In the twelve months to December 2017, employment in the agri-food sector increased by 1.3%. Wholesaling fell by just 0.1%, manufacturing 1.3%, retailing 0.6% and agriculture 0.6%. Non-residential catering rose 3.8%. Employment across the whole economy increased 1.6% over the same period.

Chart 14.3 Employment in the agri-food sector Q4 2017 (millions); Great Britain



Source: Labour Market Trends (ONS) and June Survey of Agricultural and Horticultural Holdings (Defra).

6. Employment in the agri-food sector has risen 8.5% since 2000. Changes in the proportions of each of the sectors since that time show that employment in agriculture and manufacturing reduced by 25% and 18% respectively, while non-residential catering, retailing, and wholesaling increased by 39%, 2.3% and 6.8% respectively.

Food manufacturing

7. GVA in the food manufacturing sector increased 3.5% in 2016. Food manufacturing productivity increased by 3.3% and in the last 10 years has shown an average annual increase of 0.5%.

Food wholesaling

8. GVA in the food wholesaling sector rose by 9.4% in 2016. At £12 billion in 2016, it is 116% higher than in 2000. Food and drink wholesale productivity increased by 3.4% in 2016 and in the last 10 years has shown an average annual increase of 0.7%. Both inputs and outputs have increased between 2015 and 2016, but outputs have increased more resulting in the increase in productivity.

Food retailing

9. Food retailing GVA was £29.7 billion in 2016, 4.1% down on 2015. Food retail productivity in 2016 increased by 2.2% and in the last 10 years has shown an average annual increase of 0.4%.

Non-residential catering

10. In 2016 GVA increased 0.9% to £32.4 billion. Non-residential catering (NRC) showed a fall in productivity of 2.7% in 2016. 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 with labour being a relatively high component. Consumers find it easier to cut on this form of 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)

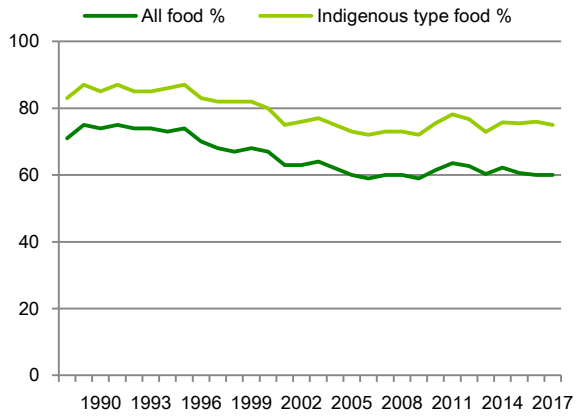
11. In 2017, the value of food, feed and drink exports was £22 billion, an increase of 9.7% on 2016. In 2017 the value of food, feed and drink imports increased by 8.7% to £46.2 billion in real terms, resulting in the trade gap in food, feed and drink of 7.7%, £24.2 billion in real terms. See Chapter 13 for more detail on overseas trade.

Food production to supply ratio (chart 14.4)

12. Food Production to Supply Ratio (commonly referred to as the "Self Sufficiency Ratio"), is calculated as the farm-gate value of raw food production divided by the value of raw food for human consumption, and is estimated to be 60% for all food in 2017 and 75% for indigenous type food. This compares with 60% and 76% respectively in 2016.

13. The overall farm gate value of United Kingdom food production was unchanged when compared to 2016. For oilseed rape there was a 32% increase of £173 million in the farm gate value of home production. For milk there was a 22% rise worth £711 million to the farm gate value of milk.

Chart 14.4 Food production to supply ratio



Distinction between competitiveness and food security

14. 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.

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

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

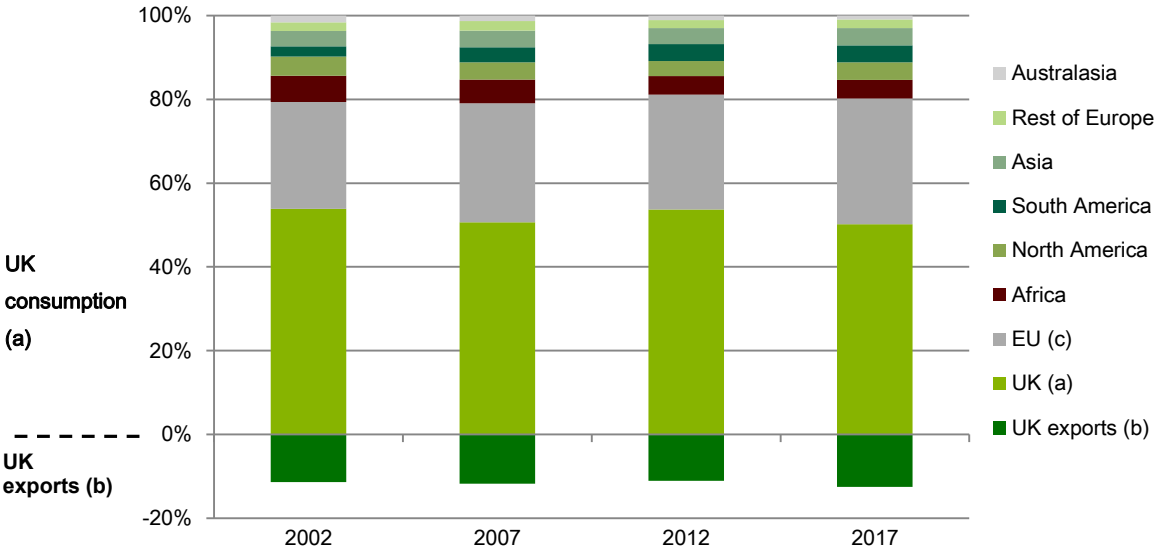
- Diversity enhances security. The United Kingdom sources foods from diverse stable countries, mainly European countries, and imports can make up for domestic supply shortages (see Chart 14.5).
- A high food production to supply ratio fails to insulate a country against many possible disruptions to its 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 (chart 14.5)

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

18. The Food Production to Supply Ratio (Chart 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.

Chart 14.5 Origins of food consumed in the United Kingdom: 2002, 2007, 2012, 2017

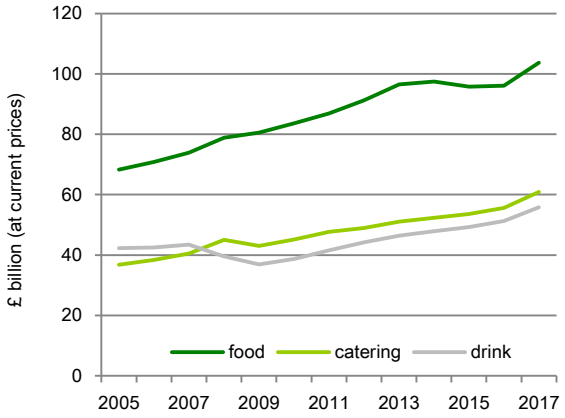


Based on the farm-gate value of raw food.
(a) Consumption of UK origin consists of UK domestic production minus UK exports.
(b) UK exports are given as a percentage of total UKconsumption.
(c) Membership of the EU increased between 2002 and 2013, from 15 to 28 countries.

Consumers' expenditure

19. Consumer expenditure on food, drink and catering increased by 8.6% in 2017 to £220 billion. Household food expenditure rose 7.9%, food eaten out rose 9.4% and expenditure on alcoholic drinks rose 8.9% in 2017. At current prices, which incorporate inflation (see chart 14.6), consumers spent 40% more overall in 2017 than in 2007 (the last year before the recession started); 'catering' saw the biggest increase at 50%. Excluding the effects of inflation, consumers spent 5.1% more overall in 2017 than in 2007, 4.8% more on food and 14% more on alcoholic drinks but 1.3% less on catering.

Chart 14.6 Consumers' expenditure on food, drink and catering



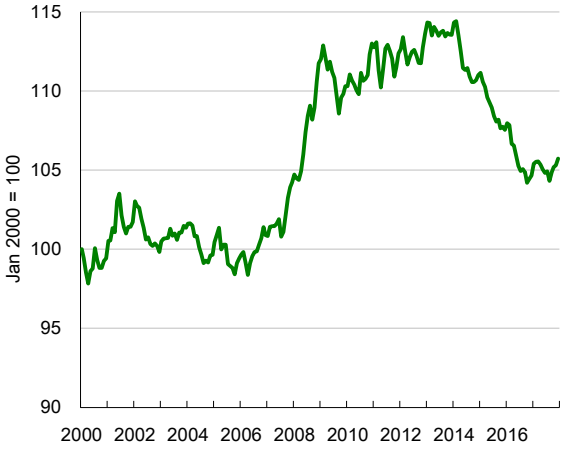
Source: Consumer Trends, (ONS).
Food includes non-alcoholic drinks; Drink is alcoholic drinks.

Changes in consumers' price indices (chart 14.7)

20. 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% and then returning to real terms stability from 2009 onwards.

21. From a peak in February 2014, food prices fell steadily to October 2016 to a level not seen since March 2008. Prices began to increase from November 2016 and this rise continued into the early part of 2017 but prices then fluctuated across the rest of the year.

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



Source: Consumer Price Index (ONS).

Chapter 15 Key Statistics for EU Member States

Summary

For the EU-28 Member States in 2017:

- The United Kingdom was the largest producer of **sheep and goat meat**, accounting for around 39% of EU production.
- UK was the third largest producer of **wheat, milk and beef and veal** behind France and Germany.
- Almost a quarter of all pig meat was produced in Germany.

Introduction

1. This chapter presents simple analyses of agriculture in the European Union to enable comparison of the United Kingdom with other Member States and with the European Union. The source of the data is the Eurostat website at http://ec.europa.eu/eurostat/en where a range of data is available. Eurostat is the statistical office of the European Union. Its task is to provide the European Union with statistics at a European level that enables comparisons between countries and regions.

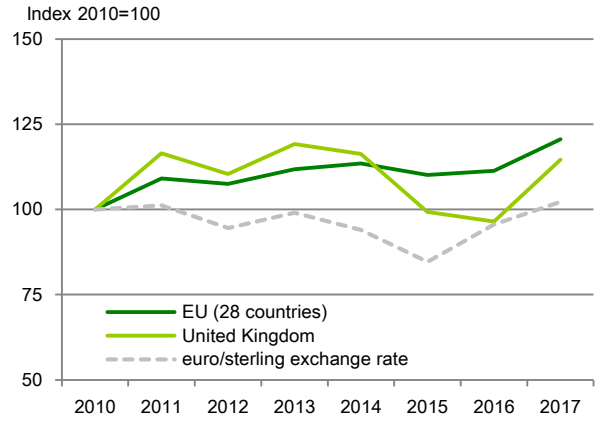
Agricultural Income (chart 15.1)

2. Eurostat's favoured measure of agricultural income is Indicator A: Index of the real income of factors in agriculture, per annual work unit.

3. This indicator corresponds to the real (i.e. deflated) net value added at factor cost of agriculture, per total annual work unit. Net value added at factor cost is calculated by subtracting from the value of agricultural output at basic prices the value of intermediate consumption, the consumption of fixed capital, and adding the value of the (other) subsidies less taxes on production. The detailed data can be found at the Eurostat website.

4. Chart 15.1 shows indices for Indicator A for the United Kingdom and the European Union (28 countries), including the euro/sterling exchange rate which influences agricultural income in the United Kingdom. Indicator A for the United Kingdom rose by 15% between 2010 and 2017 compared to a rise of 21% for the European Union as a whole.

Chart 15.1 Indicator A of the income from agricultural activity (a)



Source: Eurostat

(a)2017 forecast data for Member States whereas 1st estimate for United Kingdom

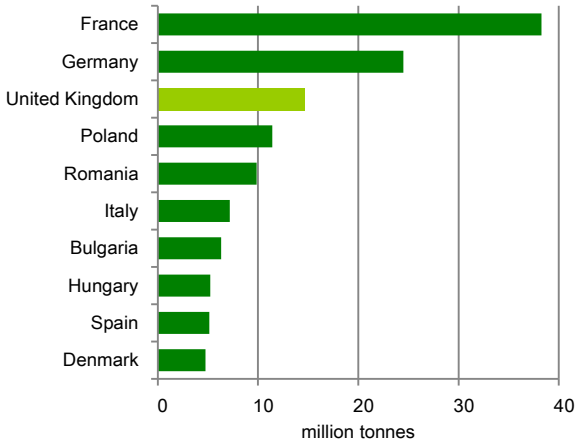
Agricultural production (charts 15.2 to 15.6)

Wheat

5. Chart 15.2 shows the quantity of common wheat & spelt and durum wheat produced by the top 10 producing Member States in 2017.

6. France was the largest producer of wheat in the European Union, producing just over 38.2 million tonnes in 2017, followed by Germany (24.5 million tonnes) and the United Kingdom (14.7 million tonnes). These three countries produced over half of wheat output in the European Union in 2017.

Chart 15.2 Production of wheat

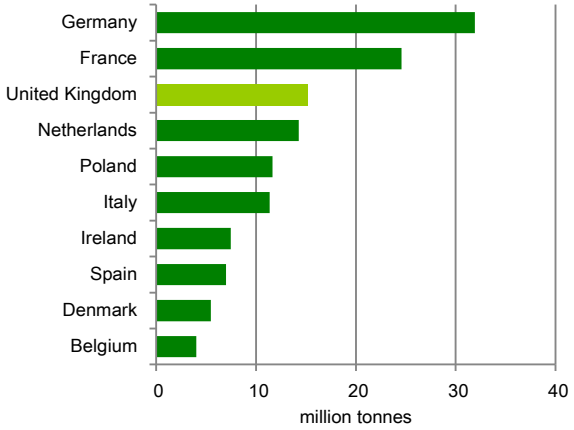


Cows' milk

7. Chart 15.3 shows the quantity of cows' milk produced by the top 10 producing Member States in 2017.

8. Germany was the largest producer of cows' milk in the European Union, producing 31.9 million tonnes in 2017, followed by France (24.6 million tonnes). The United Kingdom produced 15.1 million tonnes.

Chart 15.3 Production of cows' milk

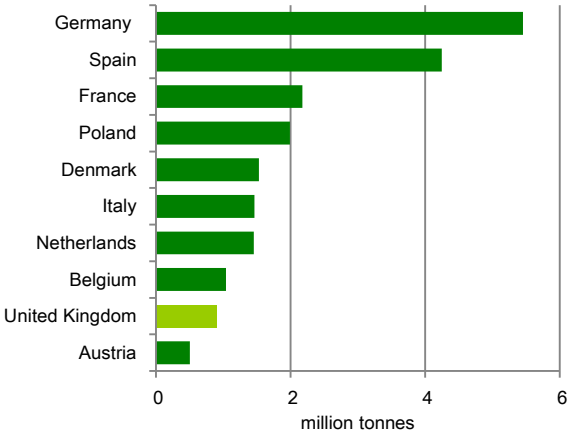


Pig meat

9. Chart 15.4 shows the quantity of pig meat produced by the top 10 producing Member States in 2017.

10. Germany was also the largest producer of pig meat in the European Union, producing 5.5 million tonnes in 2017 followed by Spain (4.2 million tonnes). Germany and Spain produced around 42% of pig meat in the European Union in 2017. The United Kingdom produced 0.9 million tonnes.

Chart 15.4 Production of pig meat

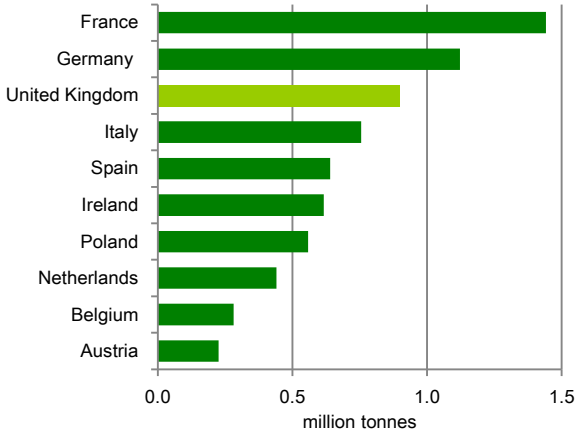


Beef and veal

11. Chart 15.5 shows the quantity of beef and veal produced by the top 10 producing Member States in 2017.

12. France was the largest producer of beef and veal in the European Union, producing 1.4 million tonnes in 2017, followed by Germany (1.1 million tonnes) and the United Kingdom (0.9 million tonnes). These three countries produced nearly half of all beef and veal in the European Union in 2017.

Chart 15.5 Production of beef and veal

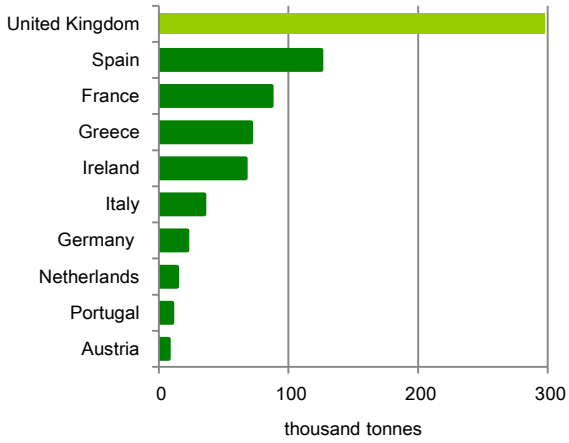


Sheep and goat meat

13. Chart 15.6 shows the production of sheep meat and goat meat by the top 10 producing Member States in 2017.

14. The United Kingdom was the largest producer of sheep meat and goat meat in the European Union in 2017, producing 298 thousand tonnes or 39% of all the sheep and goat meat in the European Union in 2017. Spain (125 thousand tonnes), France (87 thousand tonnes) and Greece (71 thousand tonnes) produced a further 38% of the sheep and goat meat in the European Union in 2017.

Chart 15.6 Production of sheep and goat Meat

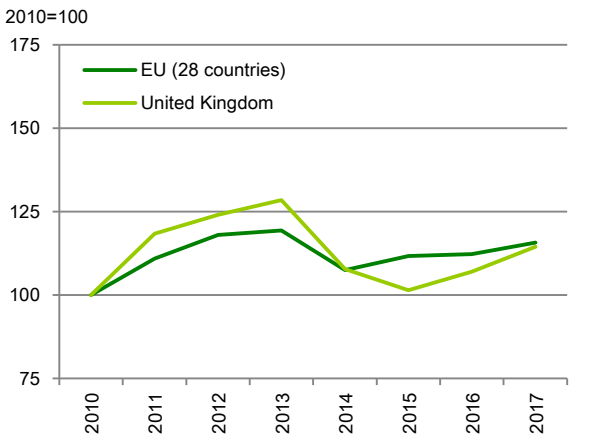


Price Indices (charts 15.7 and 15.8)

15. Chart 15.7 shows producer price indices for total agricultural production for the United Kingdom and the European Union (28 countries). These indices give information on the trends in the producer price of agricultural production as a whole. The sub-indices were weighted by the values of sales in 2010.

16. The index for the United Kingdom has risen by 15% between 2010 and 2017, compared to 16% for the European Union as a whole.

Chart 15.7 Producer price indices, total agricultural production

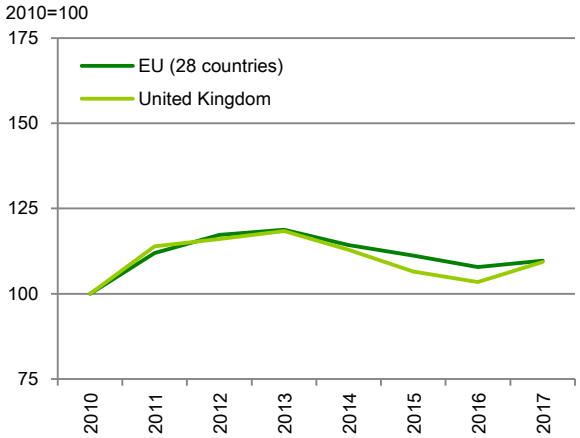


Source: Eurostat

17. Chart 15.8 shows purchase price indices for the total means of agricultural production for the United Kingdom and the European Union (28 countries). The indices in this table give information on the trends in the purchase price of the means of agricultural production as a whole. The sub-indices were weighted by the values of purchases in 2010.

18. The index for the United Kingdom has risen by 9.3% between 2010 and 2017, compared to 9.7% for the European Union as a whole.

Chart 15.8 Purchase price indices, total means of agricultural production



Source: Eurostat

Revisions

19. There are minor amendments to the Agricultural Income index following updates to data obtained from Eurostat. Chart 15.2 'Production of wheat' now includes common wheat & spelt and durum wheat (it was previously common wheat and durum wheat). The Producer Price Indices and Purchase Price Indices have been updated to include 2010=100 data.