

Agriculture in the United Kingdom

A photograph of sheep in a field of yellow flowers. The sheep are white with black faces and ears. They are standing in a field of green grass and yellow flowers. In the background, there are trees and a fence.

2016

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 & Environment Science & Analytical Services



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Produced by:
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Preface

Legal Basis

1. Agriculture in the United Kingdom (AUK) 2016 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 2016. Some data for 2016 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.

Chapter 1 Summary¹

Key Events

- On 23rd June 2016 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.
- UK farmers will continue to receive support through the Basic Payment Scheme and Rural Development Funding until we formally leave the EU and payments will then be matched by the UK government until 2020. The Countryside Stewardship Scheme introduced in 2015 continued into its second year.
- The weather² for 2016 was fairly typical, leading to reasonable growing and harvest conditions. The majority of months were at least slightly warmer than average for the UK as a whole, most notably September and December. However, both April and November were around a degree cooler than average. Most places were within 10% of the yearly average for rainfall, with a slight tendency for eastern areas to be wetter and western areas drier. Sunshine was slightly above average generally. The best of the summer weather was experienced in late July, late August and early September.

Farm Structures

- The Utilised Agricultural Area (UAA) increased by 1.2% to 17.4 million hectares.
- The United Kingdom had a total area of 508 thousand hectares of land farmed organically, down from 521 thousand hectares in 2015.
- The cereal crops area increased by 1.0% to 3.1 million hectares. The area of oilseed crops planted decreased by 9.3% to 608 thousand hectares.
- The dairy herd remained almost unchanged at 1.9 million. Total pig numbers increased by 2.7% to 4.9 million. Sheep and lamb numbers increased by 1.8% to 33.9 million.
- The total labour force on commercial holdings has fallen by 2.1% to 466 thousand.

Incomes and productivity

- Total Income from Farming is estimated to be 7.5% lower, a fall of £292 million to £3,610 million in real terms.
- Gross value added at basic price, which identifies agriculture's contribution to the Gross Domestic Product (GDP), fell by £517 million to £8,196 million. In real terms, a 5.9% decrease.
- Total factor productivity of the agriculture industry in the United Kingdom is estimated to have fallen by 2.3%. This is driven by a fall in overall levels of production combined with static volumes of inputs.
- Farm Business Income (FBI) varies greatly with over a quarter of UK farms failing to make a positive FBI whilst 16% of UK farms had a FBI of over £50,000.

¹ All figures quoted in this summary relate to 2016 and all change is between 2015 and 2016 unless otherwise stated

² Source: The Met Office <http://www.metoffice.gov.uk/climate/uk/summaries/2016/annual>

- The weakening pound against the Euro and US dollar helped stabilise prices for both inputs and outputs. The average producer price of agricultural products fell slightly (0.5%) while the average price of agricultural inputs fell by 2.1%.

Commodities and intermediate consumption

- Harvested production of wheat was 13% lower at 14.4 million tonnes, while the value of production was 21% lower at £1.6 billion.
- The value of vegetable production increased by 20% to £1.5 billion with the majority of crops showing a year on year increase.
- The value of mutton and lamb increased by 3.0% to £1.16 billion where an increase of 5.7% in prices was offset by a decrease of 3.2% in the volume of production.
- The value of milk and milk products fell by 11% (£395 million) to £3.30 billion as the average farmgate milk price fell by 7.8%.
- The value of eggs fell by 12% to £603 million with increased production offset by a fall in price; the third consecutive annual fall in prices.
- The total cost of intermediate consumption (inputs) fell by £427 million to £14,953 million. Reduced animal feed and fertiliser costs were the main contributors to this fall.

Environment

- Between 2000 and 2015 application rates of nitrogen and phosphorus fertilisers to grassland have shown an overall decline.
- Between 2000 and 2015 the estimated soil nutrient balances for nitrogen and phosphorus have fallen by 21% and 47%, respectively. This represents a reduction in the surpluses of nutrients that can potentially be lost to the environment.
- Between 2000 and 2015 estimated agricultural emissions of nitrous oxide have fallen by 10%.
- Between 2000 and 2015 estimated agricultural emissions of methane have fallen by 11%.
- Between 2000 and 2014 estimated agricultural emissions of ammonia emissions have fallen by 12%.
- In 2015 the population of UK farmland birds was less than half of its 1970 level.

Trade

- The value of food, feed and drink exports increased by £1.6 billion (8.7%) to £20.1 billion, while the value of food, feed and drink imports increased by £2.5 billion (6.3%) to £42.6 billion.
- The trade gap in food, feed and drink widened by 4.2% to £22.5 billion.

Food chain

- In 2015, the agri-food sector in the UK accounted for a total estimated Gross Value Added (GVA) of £109 billion or 6.6% of national GVA, down from 6.7% in 2014. The non-residential catering sector increased 12%, followed by manufacturing at 6.4%.
- Total factor productivity of the UK food chain beyond the farmgate has risen by 0.5% between 2014 and 2015. Productivity in the wider economy has increased in 2015 by 1.3%. Benchmarking against a wider economy measure shows that the average annual growth in the food chain between 2006 and 2015 was 0.2% compared to 0.3% in the wider economy.
- Excluding the effect of price rises, consumers' expenditure increased 2.6% in 2016 but remains 1.3% lower than at the start of the economic downturn in 2007. Expenditure on food eaten out increased 1.9% in 2016, whilst expenditure on household food increased 3.0%.

Animal Health

Avian influenza

- There were two cases of notifiable avian influenza (AI) in Dunfermline in January (low pathogenic AI (H5N1)) and in Lincolnshire in December (highly pathogenic AI (H5N8)). Both cases were contained to single sites. Restrictions were lifted after three weeks in Dunfermline and after one month in Lincolnshire, after preliminary cleansing and disinfection of the affected premises had been completed.

Bovine Tuberculosis (bTB)

- In 2016 the government introduced new legislation requiring farmers in the Low Risk Area (LRA) of England to arrange post-movement testing of cattle brought into their herds from the rest of England and from Wales, and a stricter TB testing regime for all herds affected by TB breakdowns in the High Risk Area of England (HRA). Licensed badger culling for bTB control purposes was rolled out to seven new areas of the HRA. The LRA of England (representing more than half of the land area and almost 40% of all its cattle herds) is on track to being officially recognised as free of the disease by the end of 2018.
- In Wales in 2016 it became default practice for two clear herd tests to be required before restrictions were lifted in order to increase the likelihood of removing all disease. There were moderate decreases in incidence and prevalence of bTB in Wales in 2016, driven by falls in the high incidence counties of Pembrokeshire and Carmarthenshire in the West.
- In Scotland there were 11 new confirmed TB breakdowns in 2016, 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 also increased from 20 to 50 animals with effect from 1 January 2017.
- In Northern Ireland, a new TB Testing Contract for Private Veterinary Practices commenced in 2016. This reduces costs to government and includes more robust procedures to improve the standard of testing through mandatory training and greater accountability for underperformance. This may have contributed to the increase in disease disclosure and herd incidence during 2016. Improvements to the targeting of animals for testing by the Interferon-gamma blood test were also introduced.

Summary

In 2016 compared with 2015:

- The Utilised Agricultural Area (UAA) increased by 1.2% to 17.4 million hectares, covering 71% of land in the UK. Within the total croppable area of 6.1 million hectares, the area of total crops decreased by 0.2% (11 000 hectares), with a 22% (48 000 hectares) increase in uncropped arable land and a 2.0% (23 000 hectares) decrease in temporary grass.
- The area of oilseed crops planted decreased by 9.3% to 608 thousand hectares and was 177 thousand hectares less than the peak in 2012.
- The cereal crops area increased by 1.0% to 3.1 million hectares.
- The dairy herd remained almost unchanged at 1.9 million.
- Total pig numbers have seen an increase of 2.7% from 4.7 million to 4.9 million.
- Sheep and lamb numbers increased by 1.8% to 33.9 million, largely due to a 1.9% increase (0.3 million) in the number of lambs under one year old.
- The total labour force on commercial holdings has fallen by 2.1% to 466 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:

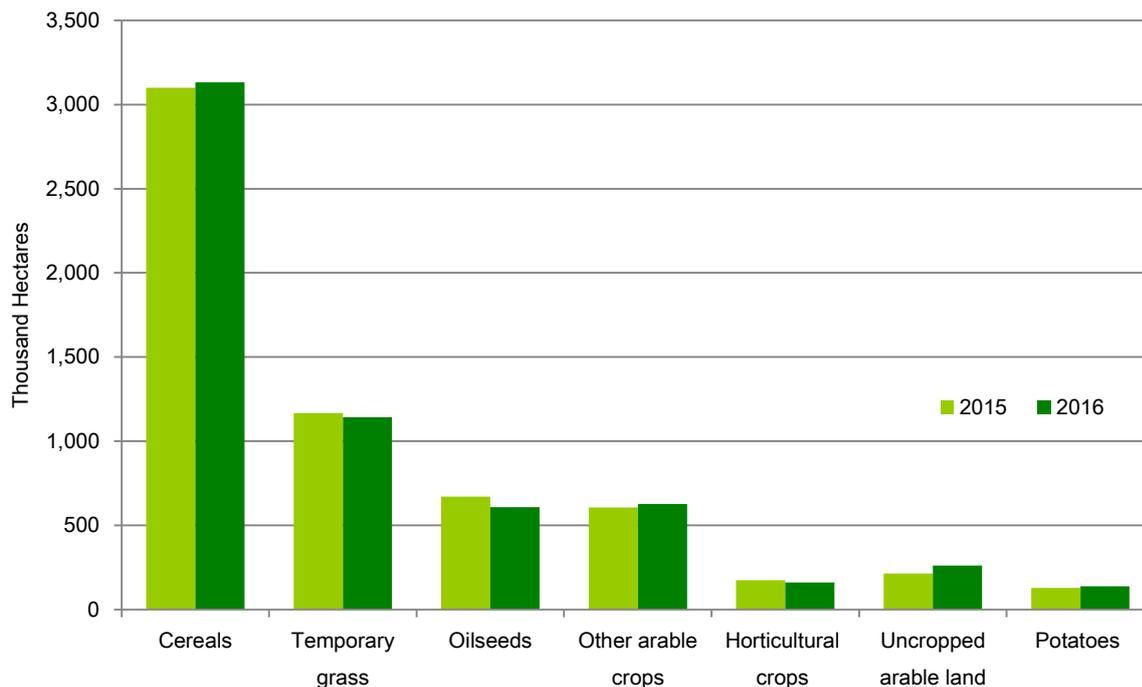
England: <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/series/structure-of-the-agricultural-industry>

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 Total croppable area on agricultural holdings June 2016



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

5. At June 2016 the UAA was 17.4 million hectares, covering 71% 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 2015 and 2016, 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 1.1 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 2016 barley increased by 2.0%.
8. The area of oilseed rape decreased for a fourth year in 2016, by 11% to 579 thousand hectares, after reaching a record high in 2012 of 756 thousand hectares.
9. The total number of cattle and calves increased between 2015 and 2016 by 114 thousand animals (1.1%) to just over 10 million. The dairy herd remained stable at almost 1.9 million cows.
10. The UK population of sheep and lambs increased by 1.8% to 33.9 million animals, largely due to a 1.9% increase in the number of lambs to 16.8 million. The female breeding flock also increased by 1.7% to 16.3 million.
11. The total number of pigs in the UK increased by 2.7%, from 4.7 million animals in 2015 to almost 4.9 million in 2016. The main reason for this was the 2.9% increase in fattening pigs, largely due to the 2.4% rise in the England figures which account for 80% of the UK fatteners.
12. The total number of poultry in the UK increased by 3.0% to almost 173 million birds in 2016 compared to almost 168 million in 2015. Laying and breeding fowl saw an increase of 2.6%, whilst there was also an increase in table chickens by 3.3% to almost 111 million birds.

Table 2.1 Agricultural land use (a)

Enquiries: Amanda Lyons on +44 (0) 20 8026 6126

email: farming-statistics@defra.gsi.gov.uk

Thousand hectares	At June of each year				
	2012	2013	2014	2015	2016
Utilised agricultural area (UAA) (b)	17 190	17 259	17 240	17 147	17 360
UAA as a proportion of total UK area	70%	71%	71%	70%	71%
Total agricultural area	18 349	18 449	18 456	18 428	18 662
Common rough grazing	1 200	1 198	1 199	1 199	1 199
Total area on agricultural holdings	17 149	17 250	17 257	17 229	17 463
Total croppable area	6 258	6 310	6 278	6 059	6 073
Total crops	4 748	4 665	4 722	4 679	4 667
Arable crops	4 576	4 502	4 559	4 505	4 505
Cereals	3 142	3 028	3 179	3 100	3 132
Oilseeds (includes linseed and borage)	785	752	691	670	608
Potatoes	149	139	141	129	139
Other crops	500	582	548	606	627
Horticultural crops	172	163	164	174	162
Uncropped arable land (c)	153	255	160	214	262
Temporary grass under 5 years old	1 357	1 390	1 396	1 167	1 144
Total permanent grassland	9 725	9 742	9 755	9 880	10 079
Grass over 5 years old	5 799	5 802	5 824	6 078	6 118
Sole right rough grazing (d)	3 926	3 940	3 930	3 801	3 961
Other land on agricultural holdings	1 166	1 198	1 224	1 290	1 312
Woodland	827	865	897	961	978
Land used for outdoor pigs	7	9	8	9	10
All other non-agricultural land	332	324	318	320	323

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.

(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: Amanda Lyons on +44 (0) 20 8026 6126

 email: farming-statistics@defra.gsi.gov.uk

At June of each year

	2012	2013	2014	2015	2016
Crop areas (thousand hectares)					
Total area of arable crops	4 576	4 502	4 559	4 505	4 505
of which:					
wheat	1 992	1 615	1 936	1 832	1 823
barley	1 002	1 213	1 080	1 101	1 122
oats	122	177	137	131	141
rye, mixed corn and triticale	26	24	26	35	45
oilseed rape	756	715	675	652	579
linseed	29	34	15	15	27
potatoes	149	139	141	129	139
sugar beet (not for stockfeeding)	120	117	116	90	86
peas for harvesting dry and field beans	120	147	139	213	228
maize	158	194	183	187	194
Total area of horticultural crops	172	163	164	174	162
of which:					
vegetables grown outdoors	123	116	116	123	113
orchard fruit (b)	24	23	23	26	25
soft fruit & wine grapes	9	10	9	10	10
outdoor plants and flowers	12	12	12	13	12
glasshouse crops	3	3	3	3	3
Livestock numbers (thousand head)					
Total cattle and calves	9 952	9 844	9 837	9 919	10 033
of which:					
cows in the dairy herd (c)	1 796	1 782	1 841	1 895	1 897
cows in the beef herd (d)	1 666	1 611	1 569	1 576	1 596
Total sheep and lambs	32 215	32 856	33 743	33 337	33 943
of which:					
ewes and shearlings	15 229	15 561	16 026	16 024	16 304
lambs under one year old	16 229	16 381	16 936	16 528	16 840
Total pigs	4 481	4 885	4 815	4 739	4 866
of which:					
sows in pig and other sows for breeding	357	355	349	352	360
gilts in pig	69	66	57	56	55
Total poultry	160 061	162 609	169 684	167 579	172 607
of which:					
table fowl	102 558	104 576	110 374	107 056	110 639
laying flock (including pullets)	36 646	35 841	37 146	36 998	38 058
breeding flock	9 987	11 184	11 258	12 511	12 740
turkeys, ducks, geese and all other poultry	10 870	11 008	10 907	11 014	11 170

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.
 (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. The number of agricultural holdings was 222 thousand in 2010 and decreased by 1.7% to 218 thousand in 2016. Within the time period the total area on holdings increased by 2.4%, therefore average area of all holdings increased by 4.2% to 80 hectares in 2016. Similarly the average croppable area of holdings also increased 4.9% between 2010 and 2016.

Table 2.3 Numbers of holdings by size group (a)

Enquiries: Amanda Lyons on +44 (0) 20 8026 6126

email: farming-statistics@defra.gsi.gov.uk

	2010		2016	
	Number of holdings (thousand)	Hectares (thousand)	Number of holdings (thousand)	Hectares (thousand)
Total area on holdings				
under 20 hectares	104	704	101	726
20 to under 50 hectares	43	1 425	43	1 428
50 to under 100 hectares	34	2 405	32	2 316
100 hectares and over	41	12 520	41	12 994
Total	222	17 054	218	17 463
Average area (hectares)		77		80
Average area on holdings with >=20 hectares		138		143
Croppable area (b)				
0.1 to under 20 hectares	52	312	49	321
20 to under 50 hectares	20	646	20	642
50 to under 100 hectares	14	1 036	14	971
100 hectares and over	18	4 021	17	4 139
Total	104	6 015	100	6 073
Average croppable area (hectares)		58		61

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.

(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 2016

Enquiries: Amanda Lyons on +44 (0) 20 8026 6126

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	40.3	344	19.2	112	32.0	164	9.8	105
20 to under 50 hectares	22.5	749	6.3	208	6.0	198	8.5	273
50 to under 100 hectares	18.4	1 317	4.9	349	5.0	359	4.2	291
100 hectares and over	25.6	6 710	4.9	1 008	8.9	4 931	2.0	345
Total	106.9	9 121	35.2	1 677	51.9	5 652	24.5	1 013
Average area (hectares)		85		48		109		41
Average area on holdings with >=20 hectares		132		98		276		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.

14. The agricultural workforce in 2016 fell by 2.1% to 466 thousand people compared to 2015. 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)

Enquiries: Amanda Lyons on +44 (0) 20 8026 6126

email: farming-statistics@defra.gsi.gov.uk

Thousands	At June of each year				
	2012	2013	2014	2015	2016
Total labour force (incl. farmers and spouses)	481	464	476	476	466
Farmers, business partners, directors and spouses	298	290	294	294	290
Full time	141	138	140	142	139
Part time (b)	158	152	155	152	151
Regular employees, salaried managers and casual workers (c)	183	173	181	183	176
Regular employees	116	112	115	115	..
Full time	73	71	72	73	..
Part time (b)	44	41	43	43	..
Seasonal, casual or gang labour	67	61	66	67	..

Source: June Surveys/Census of Agriculture

(a) 2013 figures relate to commercial holdings only for all of the UK.

(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) Not all UK countries collect separate estimates for regular employees, salaried managers and casual workers. These figures are included in this total.

Age of holders (table 2.6)

- Table 2.6 shows the proportion of holders by age group. Agriculture typically has an aging workforce. In the United Kingdom, around a third of all holders were over the typical retirement age of 65 years while the proportion of young people aged less than 35 years was around 3%.
- The proportions of holders in the central age bands of 45-54 years and 55-64 years have remained broadly unchanged over the past decade. 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. In 2013 the median age for holders in the UK was 59 years old, unchanged from 2010. The median is the middle value when all holders' ages are ranked in order.

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

Enquiries: Amanda Lyons on +44 (0) 20 8026 6126

email: farming-statistics@defra.gsi.gov.uk

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

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

Summary

- Agriculture's share of Gross Value Added remains at less than 1% and its share of employment fell slightly to 1.35%.
- Farm incomes across the EU as a whole fell slightly (0.4%) with the UK being one of 11 countries to show a fall between 2015 and 2016.
- Farm Business Income (FBI) varies greatly with just over a quarter of UK farms failing to make a positive FBI whilst 16% 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, 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.

- Table 3.1 shows summary measures from the aggregate agriculture accounts. More information on the agriculture account can be found in Chapter 4.
- The value of all outputs fell by 5.0% to £23,149 million. Overall cereal production was down, driven by a return to more typical yields following the record yields of 2015 and, despite market prices strengthening in the latter part of the year, cereal prices for the year as a whole were lower. Similarly milk production and price was lower in 2016.
- The cost of intermediate consumption fell by 4.5%, due to lower prices and a general fall in volumes used. This led to a 5.9% (£517 million) fall in gross value added at basic price to £8.2 billion.
- 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 fell by 4.0% in real terms to £7.1 billion.
- 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 fallen by 7.5 % to £3.6 billion.
- Compensation of employees which is the cost of paid labour has remained relatively stable over the last 10 years and currently stands at £2.5 billion.
- 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 2016 total Income from Farming per AWU of entrepreneurial labour was 6.9% lower than 2015 at £18,816.billion.

Chart 3.1 Long term trends in real terms at 2016 prices

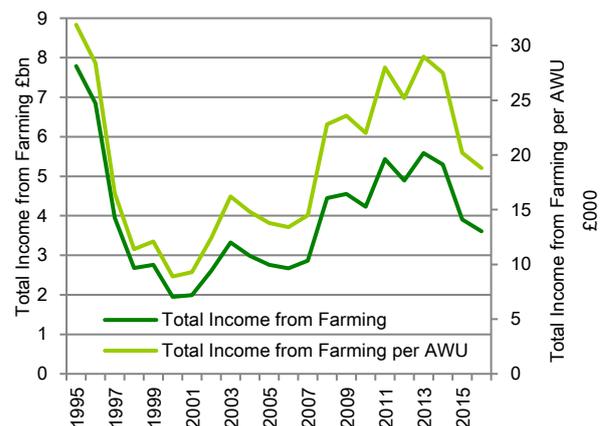


Table 3.1 Summary measures from the aggregate agriculture accounts

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£ million (unless otherwise specified)

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	(£)
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	8 163	5 048	2 341	7 389	26 000
2012	7 778	4 621	2 353	6 975	23 800
2013	8 632	5 378	2 403	7 780	27 900
2014	8 555	5 196	2 406	7 602	27 000
2015	7 318	3 835	2 502	6 337	19 900
2016	7 149	3 610	2 541	6 151	18 800
In real terms, 2016 prices		A	B	A + B	(£)
2006	6 022	2 670	2 413	5 083	13 400
2007	6 195	2 861	2 385	5 245	14 500
2008	7 710	4 446	2 389	6 835	22 800
2009	7 728	4 550	2 452	7 002	23 600
2010	7 407	4 226	2 446	6 672	22 000
2011	8 788	5 434	2 521	7 955	28 000
2012	8 240	4 895	2 493	7 388	25 200
2013	8 965	5 585	2 496	8 081	29 000
2014	8 723	5 297	2 453	7 751	27 500
2015	7 447	3 903	2 546	6 449	20 200
2016	7 149	3 610	2 541	6 151	18 800

(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)

12. 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.
13. In 2016, Total Income from Farming in the United Kingdom is £3,610 million; England is the largest contributor accounting for around 68% of this total, Scotland 21%, Northern Ireland 6.8% and Wales just under 5%.
14. In 2016 United Kingdom agriculture accounted for 1.35% of the workforce with England agriculture employing 1.02% of the workforce, Scotland, Wales and Northern Ireland employing 2.31%, 3.63% and 5.50% respectively.

Table 3.2 Summary measures by country at current price

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	2011	2012	2013	2014	2015	2016 (provisional)
Gross output at basic prices £ million						
United Kingdom	23 677	24 167	25 885	25 833	23 942	23 149
England	17 688	18 133	19 312	19 278	17 857	17 116
Wales	1 398	1 398	1 537	1 619	1 479	1 447
Scotland	2 864	2 876	3 075	3 013	2 849	2 829
Northern Ireland	1 726	1 760	1 960	1 923	1 757	1 758
Intermediate consumption £ million						
United Kingdom	14 998	15 520	16 488	16 051	15 380	14 953
England	10 804	11 060	11 849	11 550	11 176	10 824
Wales	1 107	1 159	1 207	1 201	1 074	1 092
Scotland	1 827	1 950	1 959	1 852	1 751	1 689
Northern Ireland	1 260	1 352	1 473	1 448	1 380	1 347
Gross value added at basic prices £ million						
United Kingdom	8 679	8 646	9 397	9 782	8 561	8 196
England	6 863	7 052	7 442	7 708	6 644	6 250
Wales	291	239	331	417	406	355
Scotland	1 059	947	1 138	1 182	1 134	1 181
Northern Ireland	466	408	486	475	377	410
Total Income from Farming £ million						
United Kingdom	5 048	4 621	5 378	5 196	3 835	3 610
England	3 697	3 611	3 993	3 883	2 805	2 460
Wales	220	147	214	232	178	157
Scotland	794	621	828	775	653	749
Northern Ireland	336	242	343	306	199	244
Agriculture's share of total regional gross value added at basic prices (a) %						
United Kingdom	0.60	0.58	0.61	0.60	0.51	..
England	0.56	0.55	0.56	0.55	0.46	..
Wales	0.58	0.46	0.62	0.77	0.73	..
Scotland	0.95	0.84	0.96	0.95	0.89	..
Northern Ireland	1.48	1.27	1.47	1.41	1.10	..
Agriculture's share of total regional employment %						
United Kingdom (b)	1.51	1.50	1.44	1.42	1.41	1.35
England (b)	1.13	1.13	1.08	1.06	1.06	1.02
Wales	4.25	4.27	3.84	4.16	4.02	3.63
Scotland	2.59	2.59	2.57	2.44	2.40	2.31
Northern Ireland	5.70	5.86	5.84	5.79	5.68	5.50

(a) Data on national and regional GVA for 2016 are not yet available.

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

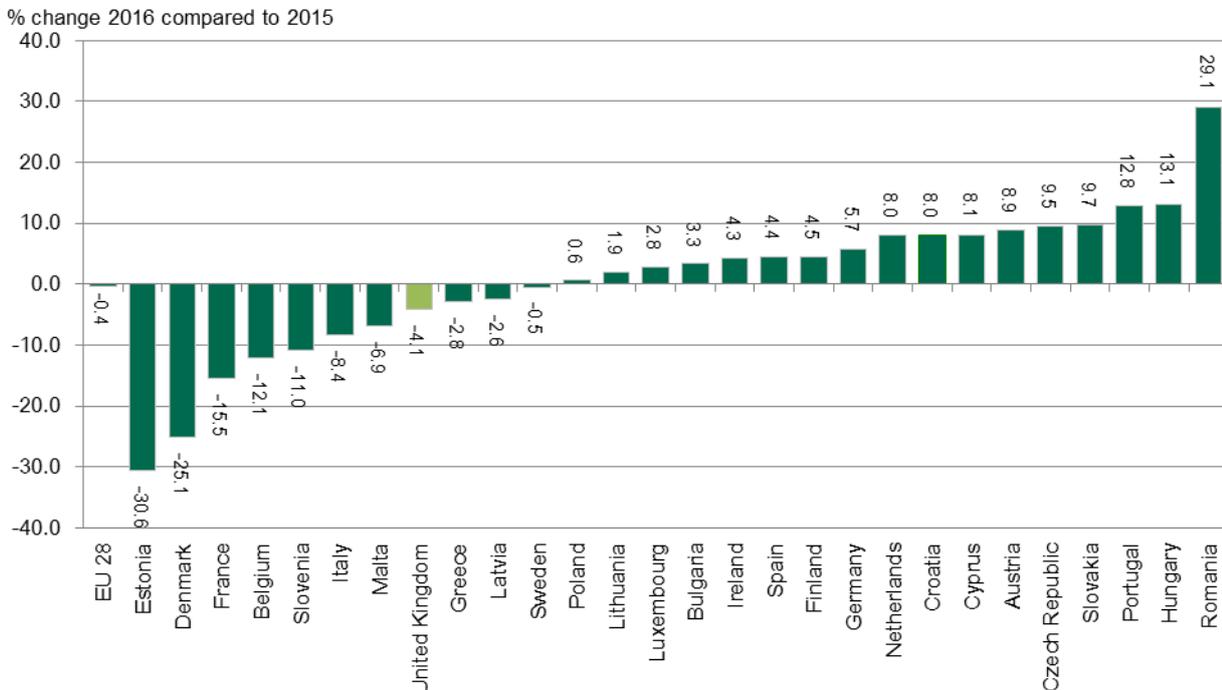
Comparison of income measures in EU member states (chart 3.2)

15. 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.

16. Eurostat's preferred measure of agricultural income is Indicator A. Chart 3.2 shows the forecast change between 2016 and 2015 for all Member States in the European Union (28 countries). The decrease of 0.4% in the European Union as a whole masks a great range of changes in Member States, from a fall of 31% for Estonia to an increase of 29% in Romania. The United Kingdom showed the eighth largest fall in incomes at 4.1%.

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



(a) 2016 forecast data for Member States as of November 2016

Source: Eurostat

Farm business incomes by farm type (table 3.3)

17. Estimates of Farm Business Income for 2016/17 (i.e. year ended February 2017 and harvest 2016) 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 2016 Basic Payment Scheme are recorded in the 2016/17 accounting year. Note that forecasts of Farm Business Income for 2016/17 are not produced in Scotland.
18. The fall in the value of the pound has been a key driver in increasing average Farm Business Income on cereal, general cropping, mixed, specialist pig, lowland grazing livestock and grazing livestock farms in the Less Favoured Area (LFA). This is due to an increase in the average Basic Payment which was around 19 % higher in 2016 than in 2015 primarily due to a change in the exchange rate (sterling weakening against the euro). Prices for key outputs such as cereals, pigs, beef and sheep have also been higher.
19. On cereal farms firmer prices should more than offset the lower yields from the 2016 harvest. In England however, total crop output is expected to fall, driven largely by a reduced output from oilseed rape. Total input costs are expected to remain similar to the previous year with savings on fertiliser being offset by small increases across a range of other inputs such as fuel and general farming costs.
20. On general cropping farms in England, total crop output is forecast to be higher than the previous year due to firmer prices and an increased crop area for potatoes. These factors, together with the higher Basic Payment and broadly unchanged input costs mean that the increase in incomes on general cropping farms is expected to be higher than on cereal farms.
21. On dairy farms, average incomes are expected to have fallen by around 50% in England and 25% in Wales. This reflects a combination of lower milk prices and reduced production over the 12 months from March 2016 to February 2017. At a UK level the average farm gate milk price was around 4% lower in the period March to February 2016 whilst production was around 5% lower compared to the previous year. In Northern Ireland incomes are expected to increase by 16% albeit from a low base.

This increase can be attributed to higher subsidy receipts. Note that these income estimates also include anticipated payments under the EU Milk Reduction Fund which will be recorded as due in 2016/17.

22. In England, Wales and Northern Ireland, average incomes on grazing livestock farms in both the Lowland and Less Favoured Areas (LFA) are expected to have increased in 2016/17. This reflects the increased Basic Payment plus higher output from sheep and beef enterprises with costs broadly unchanged or only slightly higher.
23. Average Farm Business Income is forecast to increase on specialist pig farms to £57,000 in England and £25,000 in Northern Ireland. This is almost entirely due to firmer pigmeat prices driven by weaker sterling and tighter supplies. Compared to the previous year, finished pig prices have been on average around 5% higher, although throughput has been slightly lower. Forecasts for specialist poultry farms are subject to a considerable degree of uncertainty reflecting both the structure of this sector and the relatively small sample of these farms in the FBS in England. Average incomes are expected to fall by 30% driven by lower egg prices and increased input costs. Production of both egg and poultry meat are expected to increase. Feed accounts for over half of the costs on these farms and is expected to increase in both price and volume compared to the previous year. Avian Influenza is not expected to have a significant impact on incomes in 2016/17.
24. Incomes on mixed farms in England are expected to increase by more than 50% to £29,000. The changes reported above for the specialist farm types will all have influenced the incomes for these farm types.

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					
	2011/12	2012/13(b)	2013/14 (b)	Standard Output (SO) Typology 2014/15	2015/16 (c)	2016/17 Provisional
At current prices						
England						
Cereals	93 500	67 500	49 500	45 000	35 500	38 000
General cropping	100 500	89 000	67 500	52 000	62 500	77 500
Dairy	86 500	52 500	88 000	84 000	44 000	22 500
Grazing livestock (lowland)	32 000	16 000	15 000	18 500	12 000	19 000
Grazing livestock (LFA)	29 000	18 500	14 500	14 500	19 000	24 500
Specialist pigs	38 000	41 500	65 000	49 500	21 500	57 000
Specialist poultry	46 500	90 000	157 000	127 000	106 500	74 000
Mixed	74 000	37 500	29 500	21 500	18 500	29 000
Wales						
Dairy	68 000	45 000	77 000	70 000	33 000	24 500
Grazing livestock (lowland)	36 500	27 000	28 500	27 000	16 500	22 000
Grazing livestock (LFA)	34 500	21 500	19 000	22 000	22 000	27 500
Scotland						
Cereals	60 000	23 500	25 500	18 500	7 500	..
General cropping	50 500	55 000	35 500	27 000	24 000	..
Dairy	82 000	45 500	78 000	69 000	2 000	..
Grazing livestock (lowland)	33 500	18 000	24 000	26 500	12 500	..
Grazing livestock (LFA)	37 000	24 000	25 000	22 000	16 500	..
Mixed	49 000	34 500	30 000	12 000	2 500	..
Northern Ireland						
Dairy	58 000	28 000	61 500	45 500	12 000	14 000
Grazing livestock (LFA)	23 000	13 000	14 500	14 500	17 000	22 500
United Kingdom (d)						
Cereals	90 000	63 000	46 500	42 500	32 500	..
General cropping	86 500	81 500	59 000	48 000	57 500	..
Dairy	77 500	45 500	80 000	72 500	32 000	..
Grazing livestock (lowland)	31 000	16 500	16 000	19 000	12 500	..
Grazing livestock (LFA)	31 500	20 000	18 500	18 500	18 500	..
Specialist pigs	38 000	40 500	66 000	49 000	21 500	..
Specialist poultry	46 500	90 000	157 000	127 000	106 500	..
Mixed	65 500	36 500	30 000	19 500	14 500	..
ALL TYPES (Including Horticulture)	57 000	38 000	38 500	35 000	26 000	..
In real terms (at 2015/16 prices) (e)						
United Kingdom						
Cereals	95 000	65 500	47 500	42 500	32 500	..
General cropping	91 500	84 500	60 500	48 000	57 500	..
Dairy	82 000	47 500	81 500	73 000	32 000	..
Grazing livestock (lowland)	32 500	17 000	16 500	19 500	12 500	..
Grazing livestock (LFA)	33 500	20 500	19 000	19 000	18 500	..
Specialist pigs	40 000	42 500	67 500	49 500	21 500	..
Specialist poultry	49 000	93 500	160 000	127 500	106 500	..
Mixed	69 500	38 000	30 500	20 000	14 500	..
ALL TYPES (Including Horticulture)	60 000	39 500	39 000	35 000	26 000	..

(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 output coefficients

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

(e) Uses GDP deflator

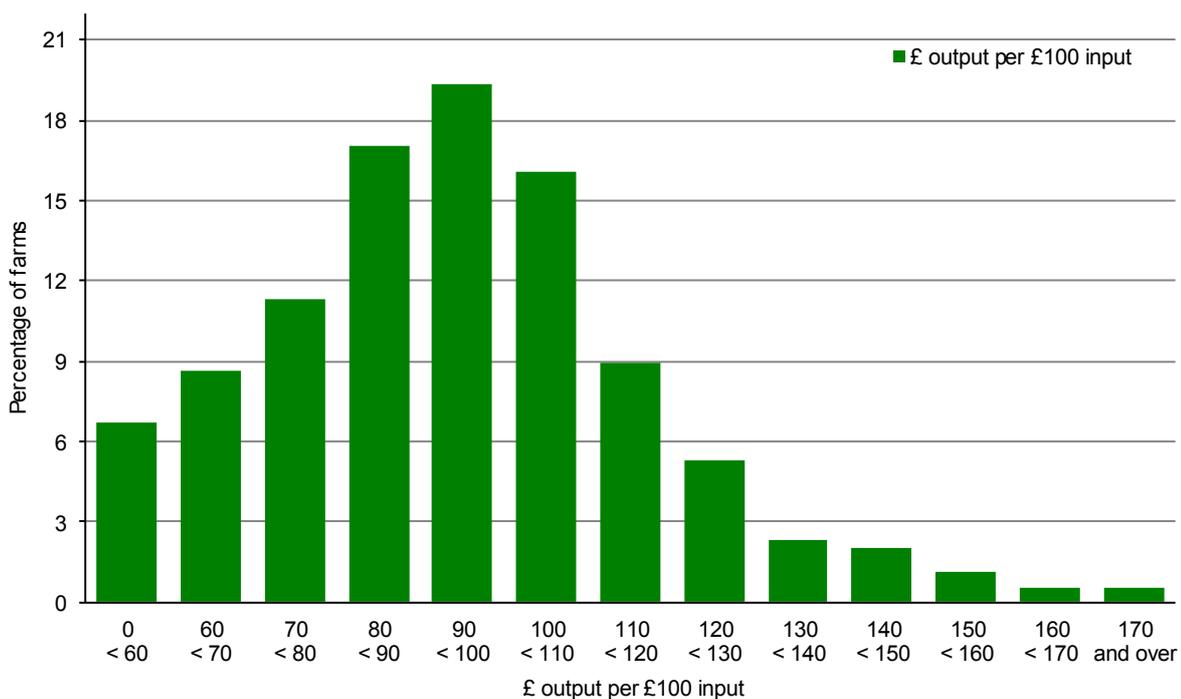
Distribution of farm incomes and performance (table 3.4 and chart 3.3)

- 25. 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 2015/16. Just over a quarter of farms in the UK failed to make a positive Farm Business Income although the proportion was even higher (36 %) in Scotland. Almost 60 % of farms in the UK fell into the lower income brackets (less than £20,000). At the top end of the scale 16 % of farms in the UK had a Farm Business Income of more than £50,000. However there was some variation between the individual countries, ranging from 20 % in England to 6 % in Northern Ireland in this higher category.
- 26. 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 over 40 % of farms in the UK failed to make a profit.
- 27. Chart 3.3 shows the differences in performance of farms in England for 2015/16. 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 over a half of farms failing to recover their costs in that year.

Chart 3.3 Distribution of performance(a) across farms 2015/16; England only

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(a) 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 2015/16

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Percentage of farms	England	Wales	Scotland	Northern Ireland	United Kingdom
Farm Business Income					
Less than zero	22	22	36	24	26
1 to less than £5,000	9	9	8	7	9
£5,000 to less than £10,001	9	10	9	13	9
£10,000 to less than £20,001	16	21	12	27	16
£20,000 to less than £30,001	12	13	13	9	12
£30,000 to less than £50,001	12	13	10	15	12
£50,000 and over	20	13	12	6	16
Average (£ thousand per farm)	32	22	13	15	25
Net Farm Income					
Less than zero	41	38	47	35	42
1 to less than £5,000	8	10	9	11	9
£5,000 to less than £10,001	8	10	8	10	8
£10,000 to less than £20,001	12	17	12	19	13
£20,000 to less than £30,001	8	8	7	8	8
£30,000 to less than £50,001	9	9	8	10	9
£50,000 and over	13	8	9	6	11
Average (£ thousand per farm)	18	11	3	10	13
Cash Income					
Less than zero	10	11	15	7	11
1 to less than £5,000	4	7	4	3	4
£5,000 to less than £10,001	7	8	6	8	7
£10,000 to less than £20,001	11	17	13	19	13
£20,000 to less than £30,001	13	17	17	24	15
£30,000 to less than £50,001	19	16	17	18	18
£50,000 and over	36	25	29	21	32
Average (£ thousand per farm)	62	37	36	34	51

Revisions

28. Compared with the provisional 2015/16 results published in the 2015 edition of AUK, the outturns published for England were lower for lowland grazing livestock, mixed and specialist poultry farms. On lowland grazing livestock farms output fell further than expected due to a fall in cattle enterprise output rather than the small increase predicted. There was also a fall in the closing value of crop by-products, forage and cultivations which had not been anticipated. On mixed farms, fixed costs increased rather than an expected fall meaning that average incomes were lower than the previous year rather than unchanged as forecast. On specialist poultry farms, egg production and poultry meat prices were considerably lower than forecast. Note that the sample size is relatively small for specialist poultry farms and to a lesser extent for specialist pigs so the results are subject to considerable variability. On general cropping farms average incomes were higher than forecast. Output from potatoes (yield and price) was underestimated meaning that the fall in crop output was less than expected.
29. In Wales, incomes on dairy and lowland grazing livestock farms were lower than expected. On dairy farms milk prices fell further than forecast; on lowland grazing livestock farms, the output from both sheep and diversified enterprises was lower than expected.
30. In Northern Ireland, incomes on dairy farms and LFA grazing livestock were higher than forecast. On dairy farms the input costs fell further than expected whereas on LFA grazing livestock farms the reduction in output value was less than expected.

Chapter 4 Accounts

Summary

- Total Income from Farming is estimated to have fallen between 2015 and 2016 by 7.5% (£292 million) in real terms, to £3,610 million. This fall was mainly driven by a fall in both volume and value for cereals and milk but partly offset by an 18% increase in payments under the Basic Payment Scheme resulting from the less favourable euro/sterling exchange rate.
- Gross value added at basic price, which identifies agriculture's contribution to the Gross Domestic Product (GDP), fell by £517 million to £8,196 million. In real terms a 5.9% decrease.

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 (2015).

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. Total Income from Farming is estimated to have fallen between 2015 and 2016 by 7.5% (£292 million) in real terms, to £3,610 million.
6. The value of all outputs fell by 5.0% to £23,149 million. Growing conditions remained good for 2016 but overall levels of production were down compared to the high levels seen in both 2014 and 2015. However a steady recovery in commodity prices throughout the year came too late to push the average annual prices above those seen in 2015.
7. The cost of intermediate consumption fell by 4.5%, due to the lower prices and to some degree a fall in volumes used, leading to a 5.9% (£517 million) fall in gross value added at basic price to £8,196 million.
8. From the second half of 2016 the pound weakened against the euro and subsequently increased the value of direct payments to UK farmers with the net value of support payments paid under the Basic Payment Scheme 18% higher in 2016 than 2015. Payments are set in Euros and converted to sterling each year using the exchange rate set by the European Central Bank every September. In 2016 €1=85.2p compared to €1=73.1p in 2015.
9. Labour, rent and interest remained virtually unchanged on the year.

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

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£ million (real terms)	2012	2013	2014	2015	2016
					(provisional)
Output at market prices (a)					
1 Output of cereals	3 391	3 506	3 527	3 024	2 435
of which: wheat	2 290	2 153	2 501	2 089	1 627
barley	975	1 180	918	843	717
oats	121	166	101	87	86
2 Output of industrial crops	1 437	1 229	1 183	1 071	859
of which: oilseed rape	1 044	772	697	724	541
protein crops	104	128	126	140	132
sugar beet	241	280	321	176	150
other industrial crops	31	23	23	23	23
3 Output of forage plants	154	225	270	274	278
4 Output of vegetables and horticultural products	2 540	2 628	2 403	2 426	2 531
of which: fresh vegetables	1 330	1 391	1 214	1 257	1 329
plants and flowers	1 210	1 236	1 189	1 169	1 202
5 Output of potatoes (including seeds)	698	983	690	587	747
6 Output of fruit	607	625	634	702	668
7 Output of other crop products including seeds	682	604	660	522	557
Total crop output (sum 1 - 7)	9 509	9 799	9 367	8 606	8 075
8 Output of livestock	9 140	9 480	9 140	8 807	8 704
primarily for meat	7 673	8 036	7 614	7 526	7 485
of which: cattle	2 960	2 997	2 662	2 804	2 763
pigs	1 199	1 324	1 289	1 099	1 099
sheep	1 088	1 077	1 144	1 139	1 153
poultry	2 201	2 414	2 295	2 259	2 246
gross fixed capital formation	1 466	1 444	1 526	1 281	1 219
of which: cattle	907	953	943	699	646
pigs	9	6	5	4	4
sheep	336	282	338	295	304
poultry	215	202	239	283	265
9 Output of livestock products	4 752	5 268	5 474	4 534	3 983
of which: milk	3 990	4 436	4 684	3 756	3 296
eggs	701	746	693	693	603
Total livestock output (8 + 9)	13 892	14 748	14 614	13 341	12 686
10 Other agricultural activities	1 075	1 093	1 144	1 110	1 089
11 Inseparable non-agricultural activities	1 103	1 221	1 193	1 270	1 257
12 Output (at market prices) (sum 1 to 11)	25 579	26 861	26 318	24 327	23 107
13 Total subsidies (less taxes) on product (b)	22	22	21	36	42
14 Gross output at basic prices (12 + 13)	25 600	26 883	26 339	24 363	23 149

continued

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

£ million (real terms)		2012	2013	2014	2015	2016
						(provisional)
Intermediate consumption						
15	Seeds	786	901	781	727	731
16	Energy	1 514	1 506	1 405	1 205	1 135
	of which: electricity and fuels for heating	409	401	382	384	367
	motor and machinery fuels	1 105	1 106	1 024	821	768
17	Fertilisers	1 613	1 569	1 491	1 418	1 144
18	Plant protection products	889	889	959	981	978
19	Veterinary expenses	445	464	466	462	457
20	Animal feed	5 186	5 772	5 152	4 814	4 527
	of which: compounds	3 047	3 417	3 057	2 895	2 769
	straights	1 539	1 630	1 440	1 315	1 200
	feed produced and used on farm or purchased from other farms	599	726	654	604	557
21	Total maintenance	1 528	1 559	1 639	1 625	1 607
	of which: materials	957	973	981	960	951
	buildings	571	585	658	665	655
22	Agricultural services	1 075	1 093	1 144	1 110	1 089
23	FISM	101	109	101	109	111
24	Other goods and services (c)	3 303	3 261	3 227	3 200	3 175
25	Total intermediate consumption (sum 15 to 24)	16 441	17 124	16 366	15 651	14 953
26	Gross value added at market prices (12 - 25)	9 138	9 738	9 952	8 676	8 154
27	Gross value added at basic prices (14 - 25)	9 159	9 759	9 973	8 712	8 196
28	Total consumption of Fixed Capital	4 246	4 139	4 147	4 020	4 058
	of which: equipment	1 705	1 738	1 752	1 788	1 824
	buildings	1 064	1 016	995	1 003	1 012
	livestock	1 477	1 384	1 400	1 229	1 222
	cattle	922	890	893	713	660
	pigs	8	7	6	4	5
	sheep	318	278	301	292	279
	poultry	229	209	201	220	279
29	Net value added at market prices (26 - 28)	4 891	5 599	5 805	4 656	4 096
30	Net value added at basic prices (27 - 28)	4 913	5 620	5 826	4 692	4 138
31	Other taxes on production	- 128	- 122	- 101	- 97	- 96
32	Other subsidies on production (b)	3 455	3 467	2 998	2 852	3 106
33	Net value added at factor cost (30 + 31 + 32)	8 240	8 965	8 723	7 447	7 149
34	Compensation of employees	2 493	2 496	2 453	2 546	2 541
35	Rent	523	540	566	572	572
36	Interest (d)	329	344	406	427	426
37	Total Income from Farming (33 - 34 - 35 - 36)	4 895	5 585	5 297	3 903	3 610

(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)

10. Current price values are based on prices in the year in question.
11. In 2016 Total Income from Farming fell by £225 million to £3,610 million, a 5.9% decrease. The key contributors to the change were the falls in the value of wheat by £426 million, milk by £395 million and oilseed rape by £170 million. In contrast these were somewhat offset by an increase in direct payments of £309 million, potatoes by £171 million combined with reductions in fertiliser costs of £250 million and animal feed costs of £204 million.

Outputs: Crops

12. Overall output of crops value fell by 4.5% to £8,075 million, with decreases in wheat, oilseed rape, sugar beet and barley more than offsetting the increases in potatoes, vegetable and horticulture.
13. Cereal harvests were down on last year as yields returned to more typical levels following the record highs of 2015 and despite strengthening prices in the latter part of the year, lower prices for the year as a whole drove values down.
14. The value of wheat fell by £426 million to £1,627 million. Planted area was little changed on the year and quality generally good however yield was much lower than the record high of 2015 resulting in volumes down by 12%. Price fell by 10%, as the higher prices seen in the second half of the year failed to offset the low prices at the beginning of the year.
15. The value of barley fell by £111 million to £717 million, driven by both price and volume. Whilst planted area was 2.0% higher, yield returned to more average levels, resulting in an 8.3% fall in volume. Low prices at the beginning of the year, despite an upturn in the second half, resulted in a 5.6% fall in price.
16. Oilseed rape saw a fall in value of £170 million to £541million, this 24% decrease was largely due to a fall in volume as lower yield and a reduction in crop area led to a 30% decrease in production.
17. In 2016, the value of sugar beet fell by £23 million to £150 million. Planted area fell for the fifth year running and led to a further 8.5% fall in volume with price down by 5.5% on the year.
18. Potatoes rose in value by £171 million to £747 million in 2016. An 8% increase in planted area and price increase of around a quarter contributed to this rise.
19. The value of vegetables increased by £93 million to £1,329 million, driven by higher prices for most vegetable types. Similar price rises were also seen in the fruit sector however these failed to offset the lower production levels, down 11% which resulted in an overall decrease in value of £22 million to £668 million.

Outputs: Livestock

20. Overall the total value of output of livestock was 3.2% lower at £12,686 million.
21. Milk decreased in value by £395 million to £3,296 million, driven by lower production and price. A combination of poorer grass quality due to variable weather conditions and dairy farmers attempting to reduce key costs such as the use of supplementary feeds left production 3.2% lower. The average price of milk in 2016 (calendar year) was 22.6 pence per litre (ppl) compared to 24.5 ppl in 2015, 8% lower.
22. The value of eggs fell by £78 million to £603 million, entirely price-driven as volume of throughput at egg packing stations rose by 4.2%, pushing price down by 15%.
23. The value of livestock primarily for meat rose by £89 million with increases seen in all sectors. Higher slaughterings and heavier calf and adult cattle weights resulted in a 2.5% increase in volumes whilst prices were 1.2% lower.
24. Pig meat rose in value by £19 million to £1,099 million. This rise is entirely due to higher production, with levels higher in the first half of the year driving the price down for the year as a whole. The value

of sheep meat increased by £33 million to £1,153 million with production 3.4% lower and price 6.5% higher on 2015.

25. The value of poultry meat rose by £26 million to £2,246 million, chiefly production-driven as prices fell by 2.3%.

Intermediate consumption

26. The total cost of intermediate consumption fell by £427 million to £14,953 million. In general most intermediate consumption costs fell with animal feed and fertiliser the main contributors.
27. The cost of fertiliser fell by £250 million to £1,144 million, entirely price-driven as the lower oil prices in the first half of the year put downward pressure on price overall.
28. The cost of animal feed fell by £204 million to £4,527 million, a combination of reduced volumes and feed price. Depressed cereal prices in the first half of the year helped keep the annual average price lower combined with reduced use as farmers strived to make efficiencies.
29. Energy costs fell by £49 million to £1,135 million, wholly price driven as lower global oil prices at the beginning of the year kept overall annual average price down. Typical weather conditions and efficiency savings kept volumes virtually unchanged on the year.

Gross Value Added

30. Gross value added at basic price, which identifies agriculture's contribution to the Gross Domestic Product (GDP), fell by 4.3% (£366 million) to £8,196 million.

Net value at factor cost

31. 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 decreased by £170 million (-2.3%) to £7.1 billion.

Compensation of employees

32. The total value of compensation to employees was £2,541 million, a £39 million increase resulting from higher rates of pay which offset the slight decline in numbers employed.

Other subsidies on production

33. Direct payments, including payments on product, rose by £309 million to £3,148 million. Overall this is an 11% increase in payments and is mainly due to the change in euro/sterling exchange rate and is a significant contributor to Total Income from Farming. In 2016 payments under the Environmental Stewardship Entry Level Scheme reduced by £70 million as 2010/211 agreement final payments were made.

Table 4.2 Production and income accounts at current prices

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£ million (current prices)					
	2012	2013	2014	2015	2016
					(provisional)
Output at market prices (a)					
1 Output of cereals	3 201	3 375	3 459	2 971	2 435
of which: wheat	2 162	2 073	2 453	2 053	1 627
barley	920	1 136	900	828	717
oats	114	160	99	85	86
2 Output of industrial crops	1 356	1 183	1 160	1 053	859
of which: oilseed rape	986	744	684	711	541
protein crops	98	123	123	137	132
sugar beet	227	270	315	173	150
other industrial crops	29	23	23	23	23
3 Output of forage plants	146	217	265	269	278
4 Output of vegetables and horticultural products	2 398	2 530	2 357	2 384	2 531
of which: fresh vegetables	1 255	1 340	1 191	1 235	1 329
plants and flowers	1 142	1 191	1 166	1 149	1 202
5 Output of potatoes (including seeds)	659	947	677	577	747
6 Output of fruit	573	602	622	690	668
7 Output of other crop products including seeds	644	581	648	513	557
Total crop output (sum 1 - 7)	8 977	9 435	9 187	8 457	8 075
8 Output of livestock	8 628	9 128	8 964	8 654	8 704
primarily for meat	7 244	7 738	7 468	7 396	7 485
of which: cattle	2 794	2 886	2 611	2 756	2 763
pigs	1 132	1 274	1 264	1 080	1 099
sheep	1 027	1 037	1 122	1 119	1 153
poultry	2 078	2 324	2 250	2 220	2 246
gross fixed capital formation	1 384	1 390	1 496	1 258	1 219
of which: cattle	856	917	925	687	646
pigs	8	6	5	4	4
sheep	317	272	332	290	304
poultry	203	195	234	278	265
9 Output of livestock products	4 486	5 072	5 369	4 455	3 983
of which: milk	3 767	4 271	4 594	3 691	3 296
eggs	662	718	679	681	603
Total livestock output (8 + 9)	13 114	14 200	14 334	13 110	12 686
10 Other agricultural activities	1 015	1 052	1 122	1 091	1 089
11 Inseparable non-agricultural activities	1 041	1 176	1 170	1 248	1 257
12 Output (at market prices) (sum 1 to 11)	24 146	25 864	25 813	23 906	23 107
13 Total subsidies (less taxes) on product (b)	20	21	21	36	42
14 Gross output at basic prices (12 + 13)	24 167	25 885	25 833	23 942	23 149

continued

Table 4.2 Production and income accounts at current prices
 Continued

£ million (current prices)

	2012	2013	2014	2015	2016 (provisional)
Intermediate consumption					
15 Seeds	742	867	766	715	731
16 Energy	1 429	1 450	1 378	1 184	1 135
of which: electricity and fuels for heating	386	386	374	377	367
motor and machinery fuels	1 043	1 065	1 004	807	768
17 Fertilisers	1 523	1 511	1 462	1 393	1 144
18 Plant protection products	839	856	941	964	978
19 Veterinary expenses	420	447	457	454	457
20 Animal feed	4 895	5 558	5 053	4 730	4 527
of which: compounds	2 876	3 290	2 999	2 845	2 769
straights	1 453	1 569	1 413	1 292	1 200
feed produced and used on farm or purchased from other farms	566	699	642	593	557
21 Total maintenance	1 442	1 501	1 607	1 597	1 607
of which: materials	903	937	962	943	951
buildings	539	563	645	654	655
22 Agricultural services	1 015	1 052	1 122	1 091	1 089
23 FISM	96	105	99	108	111
24 Other goods and services (c)	3 118	3 140	3 165	3 145	3 175
25 Total intermediate consumption (sum 15 to 24)	15 520	16 488	16 051	15 380	14 953
26 Gross value added at market prices (12 - 25)	8 626	9 376	9 761	8 526	8 154
27 Gross value added at basic prices (14 - 25)	8 646	9 397	9 782	8 561	8 196
28 Total consumption of Fixed Capital	4 008	3 985	4 067	3 950	4 058
of which: equipment	1 610	1 674	1 719	1 757	1 824
buildings	1 004	979	975	985	1 012
livestock	1 395	1 333	1 373	1 208	1 222
cattle	870	857	876	701	660
pigs	8	7	5	4	5
sheep	301	267	295	287	279
poultry	216	202	197	217	279
29 Net value added at market prices (26 - 28)	4 618	5 391	5 694	4 575	4 096
30 Net value added at basic prices (27 - 28)	4 638	5 411	5 715	4 611	4 138
31 Other taxes on production	- 121	- 118	- 99	- 96	- 96
32 Other subsidies on production (b)	3 262	3 339	2 940	2 803	3 106
33 Net value added at factor cost (30 + 31 + 32)	7 778	8 632	8 555	7 318	7 149
34 Compensation of employees	2 353	2 403	2 406	2 502	2 541
35 Rent	494	520	555	562	572
36 Interest (d)	310	332	399	419	426
37 Total Income from Farming (33 - 34 - 35 - 36)	4 621	5 378	5 196	3 835	3 610

(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.

Table 4.3 Changes in outputs and inputs at current price

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£ million

	Current price value		Changes %		
	2015	2016	value	volume	price
Output at market prices (a)					
1 Output of cereals	2 971	2 435	- 18	- 10	- 9
of which: wheat	2 053	1 627	- 21	- 12	- 10
barley	828	717	- 13	- 8	- 6
oats	85	86	1	3	- 2
2 Output of industrial crops	1 053	859	- 18	- 23	5
of which: oilseed rape	711	541	- 24	- 30	9
protein crops	137	132	- 4	- 9	5
sugar beet	173	150	- 14	- 9	- 5
other industrial crops	23	23	-	-	-
3 Output of forage plants	269	278	3	3	-
4 Output of vegetables and horticultural products	2 384	2 531	6	-	7
of which: fresh vegetables	1 235	1 329	8	- 2	10
plants and flowers	1 149	1 202	5	2	3
5 Output of potatoes (including seeds)	577	747	30	2	27
6 Output of fruit	690	668	- 3	- 11	8
7 Output of other crop products including seeds	513	557	9	3	6
Total crop output (sum 1 - 7)	8 457	8 075	- 5	- 7	3
8 Output of livestock	8 654	8 704	1	3	- 2
primarily for meat	7 396	7 485	1	2	- 1
of which: cattle	2 756	2 763	-	4	- 3
pigs	1 080	1 099	2	4	- 2
sheep	1 119	1 153	3	- 3	7
poultry	2 220	2 246	1	4	- 2
gross fixed capital formation	1 258	1 219	- 3	4	- 7
of which: cattle	687	646	- 6	4	- 9
pigs	4	4	14	2	12
sheep	290	304	5	12	- 6
poultry	278	265	- 5	- 4	- 1
9 Output of livestock products	4 455	3 983	- 11	- 2	- 9
of which: milk	3 691	3 296	- 11	- 3	- 8
eggs	681	603	- 12	4	- 15
Total livestock output (8 + 9)	13 110	12 686	- 3	- 2	- 4
10 Other agricultural activities	1 091	1 089	-	- 3	2
11 Inseparable non-agricultural activities	1 248	1 257	1	-	1
12 Output (at market prices) (sum 1 to 11)	23 906	23 107	- 3	- 2	- 1
13 Total subsidies (less taxes) on product (b)	36	42	17	..	..
14 Gross output at basic prices (12 + 13)	23 942	23 149	- 3	- 2	- 1

continued

Table 4.3 Changes in outputs and inputs at current price
continued

£ million		Current price value		Changes %		
		2015	2016	value	volume	price
Intermediate consumption						
15	Seeds	715	731	2	- 1	3
16	Energy	1 184	1 135	- 4	-	- 4
	of which: electricity and fuels for heating	377	367	- 3	- 2	- 1
	motor and machinery fuels	807	768	- 5	1	- 6
17	Fertilisers	1 393	1 144	- 18	2	- 20
18	Plant protection products	964	978	1	1	-
19	Veterinary expenses	454	457	-	-	-
20	Animal feed	4 730	4 527	- 4	- 1	- 4
	of which: compounds	2 845	2 769	- 3	2	- 4
	straights	1 292	1 200	- 7	- 5	- 2
	feed produced and used on farm or purchased from other farms	593	557	- 6	- 2	- 4
21	Total maintenance	1 597	1 607	1	-	-
	of which: materials	943	951	1	-	1
	buildings	654	655	-	1	- 1
22	Agricultural services	1 091	1 089	-	- 3	2
23	FISM	108	111	4	..	..
24	Other goods and services (c)	3 145	3 175	1	- 1	2
25	Total intermediate consumption (sum 15 to 24)	15 380	14 953	- 3	-	- 2
26	Gross value added at market prices (12 - 25)	8 526	8 154	- 4	- 5	1
27	Gross value added at basic prices (14 - 25)	8 561	8 196	- 4	- 5	1
28	Total consumption of Fixed Capital	3 950	4 058	3	4	- 1
	of which: equipment	1 757	1 824	4	2	2
	buildings	985	1 012	3	- 1	4
	livestock	1 208	1 222	1	11	- 9
	cattle	701	660	- 6	8	- 12
	pigs	4	5	30	6	24
	sheep	287	279	- 3	5	- 8
	poultry	217	279	29	29	- 1
29	Net value added at market prices (26 - 28)	4 575	4 096	- 10	- 13	3
30	Net value added at basic prices (27 - 28)	4 611	4 138	- 10	- 13	3
31	Other taxes on production	- 96	- 96	-	..	..
32	Other subsidies on production (b)	2 803	3 106	11	..	..
33	Net value added at factor cost (30 + 31 + 32)	7 318	7 149	- 2	..	..
34	Compensation of employees	2 502	2 541	2	..	..
35	Rent	562	572	2	..	..
36	Interest (d)	419	426	2	..	..
37	Total Income from Farming (33 - 34 - 35 - 36)	3835	3610	-6	..	..

(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)

34. The aggregate balance sheet for agriculture shown at table 4.4 values the total assets and liabilities for agriculture at the end of each calendar year and estimates the total net worth of the industry.
35. Net worth was estimated to be £265 billion in December 2015. Net worth is driven by very significant assets which are only marginally offset by relatively low liabilities. Total assets fell by £4.4 billion on 2014, largely due to the £3.8 billion decrease in the estimate of land values. Liabilities have increased for the third year in a row but remain at very low levels compared to assets.

Table 4.4 Aggregate balance sheet for the agricultural industry

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£ million	2011	2012	2013	2014	2015
At current prices					
Assets					
Fixed (a):					
Land (b)	178 284	189 638	216 347	231 897	228 085
Buildings, plant, machinery and vehicles	30 595	31 756	32 734	33 496	34 052
Breeding livestock	8 603	7 571	8 225	7 132	5 918
Total fixed	217 483	228 966	257 306	272 525	268 055
Trading livestock	4 030	3 976	4 129	4 234	4 259
Crops and stores	4 024	4 050	3 961	3 993	4 027
Debtors, cash deposits	5 293	4 839	5 497	5 755	5 726
Total current	13 347	12 865	13 587	13 982	14 011
Total Assets	230 829	241 830	270 893	286 507	282 066
Liabilities					
Long and medium term:					
AMC and SASC (c)	1 635	1 503	1 777	1 980	2 011
Building Societies and Institutions	1 255	1 153	1 146	1 317	1 283
Bank loans	5 962	5 817	6 680	7 476	7 936
Family Loans	385	405	524	536	437
Other	13	29	23	70	73
Total long and medium term	9 249	8 907	10 150	11 380	11 741
Short term:					
Leasing	37	57	82	60	52
Hire purchase	1 200	1 135	1 290	1 358	1 430
Trade Credit	1 725	1 592	2 081	1 880	1 651
Bank overdrafts	1 966	1 903	2 226	2 134	2 289
Other	72	39	45	120	44
Total short term	4 999	4 726	5 724	5 552	5 466
Total Liabilities	14 249	13 633	15 874	16 932	17 207
Net worth	216 581	228 197	255 018	269 575	264 859

In real terms (as deflated by the gdp deflator):

Indices 2012 = 100

GDP deflator	98	100	102	104	104
Total assets	97	100	110	114	112
Total liabilities	106	100	114	120	121
Net worth	96	100	110	114	111

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

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

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

Revisions

36. These estimates will be subject to revision as more data becomes available.
37. Total Income from Farming is sensitive to small percentage changes in the value of outputs and intermediate consumption. A combination of 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.

Definition of terms used in tables 4.1, 4.2 and 4.3

Terms	Tables item reference number	Definition
Agricultural industry		All agricultural activities taking place within businesses that carry out agricultural activities. These businesses include all farms and specialist agricultural contractors.
Capital formation in livestock	8	Production of animals that will be used as the means of production, e.g. breeding animals.
Other agricultural activities	10	Agricultural activities that do not result in sales of final product, e.g. quota leasing, contract work.
Inseparable non-agricultural activities	11	Non-agricultural activities which are included within the business level accounts and are inseparable, e.g. some cases of bed and breakfast and recreation facilities.
Output at market prices	12	Output excluding subsidies. The output of the agricultural industry includes some non-agricultural activities and transactions within the industry.
Basic prices		Market price plus directly paid subsidies that are linked to production of specific product.
Subsidies (less taxes) on product	13	Subsidies and taxes linked to the production of an agricultural product. All subsidies are recorded on an 'as due' basis.
FISIM	23	Financial Intermediation Services Indirectly Measured (FISIM) is an estimate of the value of services provided by financial intermediaries, such as banks, for which no explicit charges are made, and which are paid for as part of the margin between rate applied to savers and borrowers.
Intermediate consumption	25	Consumption of goods and services, e.g. feed, seeds, fertiliser, pesticides.
Gross value added	26	Gross output less intermediate consumption.
Consumption of fixed capital	28	The value (at current prices) of capital assets used in the production process, e.g. buildings, plant, machinery, vehicles and livestock.
Net value added	30	Gross value added at basic prices less consumption of fixed capital.
Other subsidies on production	32	Subsidies and taxes not linked to production of a specific product, e.g. Basic Payment Scheme, Single Payment Scheme, agri-environment payments, animal disease compensation.
Net value added at factor cost	33	Net value added at basic prices plus other subsidies (less taxes) on production.
Compensation of employees	34	The full costs of employees to the business including national insurance contributions.
Total Income from Farming	37	Income to those with an entrepreneurial interest in the agricultural industry, e.g. farmers, partners, spouses and most other family workers.

Chapter 5 Productivity

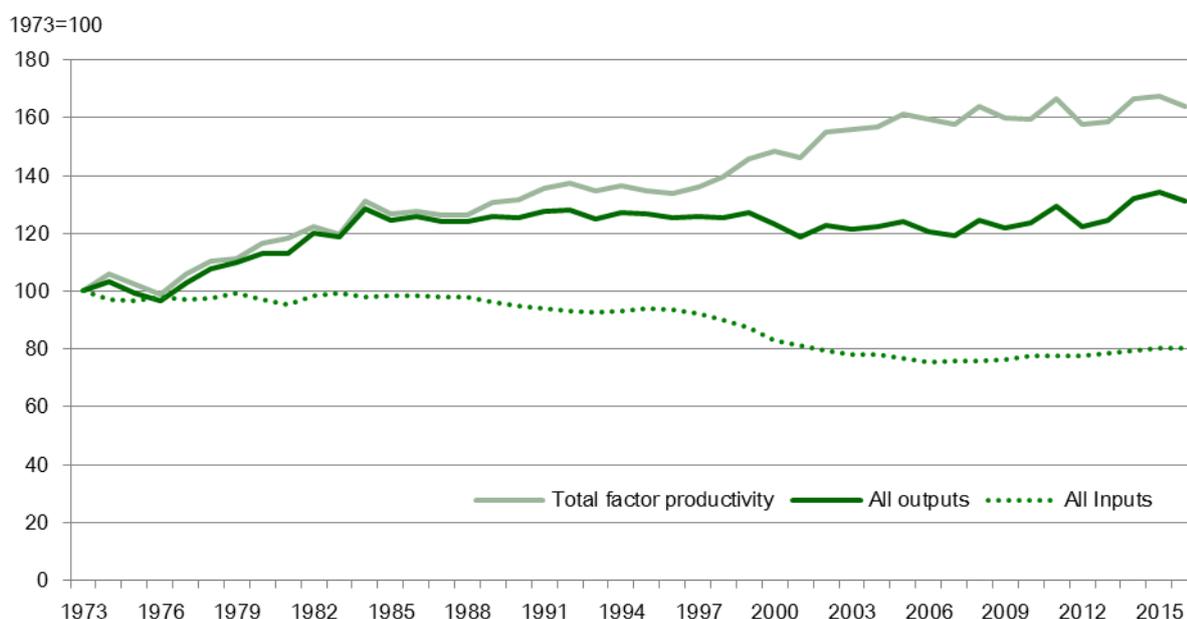
Summary

- Total factor productivity of the agriculture industry in the United Kingdom is estimated to have fallen by 2.3% between 2015 and 2016. This is driven by a fall in overall levels of production combined with static volumes of inputs.
- The volume of all outputs fell 2.5% from the high levels seen in 2015. This was driven by a fall for crops and livestock products, partially offset by an increase for livestock meat outputs.
- The volume of all inputs fell slightly (0.2%) but by less than the decrease in outputs.
- Since 1973 total factor productivity has increased by 64% driven by a 31% 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.
3. Unless otherwise stated comparisons are with the previous year (2015).

Chart 5.1 Total Factor Productivity



Total factor productivity

4. Total factor productivity of the agriculture industry in the United Kingdom is estimated to have fallen by 2.3%. This is driven by a fall in overall levels of production combined with static volumes of inputs.
5. The volume of all outputs fell 2.5% from the high levels seen in 2015. This was driven by a fall for both crops and livestock products, partially offset by an increase for livestock meat outputs.
6. The volume of all inputs fell slightly (0.2%) but by less than the decrease in outputs.
7. Since 1973 total factor productivity has increased by 64% driven by a 31% 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)

Total volume of all crops fell by 7.9%. Cereal volumes fell by 11% with oats being the only cereal crop to see an increase (1.7%). Oilseed rape saw a large decrease in the volume of outputs, down 30%.

8. There was a slight (0.8%) increase in the volume of all livestock outputs, milk volume fell by 3.2% from the high levels seen in 2015. Total volume of meat production increased 2.5%.
9. This was driven by increases of 3.7% for cattle, 4.0% for pigs, 3.5% for poultry but a fall of 3.4% for sheep. Volume of output for other animals remained level.
10. There was a slight (0.2%) reduction in the volume of all inputs. Animal feed is the largest input and showed a slight fall of 0.6% overall. This was driven by a 5.1% fall for straights, partly offset by a small (1.5%) increase in compounds.

Table 5.1 Total factor productivity volume indices

Enquiries: David Fernall on +44 (0) 20 8026 6202

 email: david.fernall@defra.gsi.gov.uk

	2011	2012	2013	2014	2015	2016
					2010=100	
						(provisional)
1 Output of cereals	105.0	92.6	92.6	118.8	120.4	107.3
wheat	104.2	88.2	75.9	109.7	109.1	98.1
rye	100.0	68.2	90.9	90.9	90.9	90.9
barley	110.7	111.3	154.3	153.5	164.5	140.8
oats and summer cereal mixtures	92.1	93.3	150.6	114.1	119.7	121.8
other cereals	99.5	93.3	106.0	105.1	89.3	77.6
2 Output of industrial crops	118.3	105.8	98.6	111.6	109.5	84.7
oil seeds	122.9	112.9	95.2	108.3	111.3	78.9
oilseed rape	123.7	114.6	95.4	110.3	114.0	79.6
other oil seeds	98.9	58.0	86.4	54.6	39.7	66.4
protein crops	76.0	55.5	68.9	81.8	124.5	113.3
sugar beet	130.3	111.7	129.2	142.6	95.3	87.1
other industrial crops	101.1	101.1	101.1	101.1	101.1	101.1
3 Output of forage plants	107.1	109.0	121.3	121.3	121.3	121.3
4 Output of vegetables and horticultural products	97.4	94.7	97.6	100.0	100.3	99.8
fresh vegetables	97.7	92.8	97.4	102.5	103.0	100.5
plants and flowers	97.2	96.7	97.7	97.3	97.4	99.0
5 Output of potatoes	116.4	90.7	112.8	109.7	94.1	95.7
6 Output of fruit	101.3	93.1	100.2	106.9	110.4	98.6
7 Output of other crop products	114.4	126.9	119.1	133.9	123.2	126.1
Total crop output (sum 1 - 7)	105.5	95.6	97.9	110.4	109.6	101.0
8 Output of livestock (meat)	106.0	102.8	102.9	102.7	105.6	108.2
cattle	111.9	102.0	98.0	96.3	100.2	103.9
pigs	106.4	108.6	111.9	115.8	119.9	124.6
sheep	105.9	101.2	103.3	108.3	110.2	106.5
poultry	99.5	102.2	105.5	102.5	104.4	108.1
other animals	100.0	100.0	100.0	100.0	100.0	100.0
9 Output of livestock products	101.3	98.9	100.2	107.3	109.9	107.7
milk	101.5	99.8	100.5	108.5	111.4	107.7
eggs	99.6	96.5	99.5	100.0	103.5	107.9
raw wool	105.3	110.4	97.4	99.8	101.2	102.2
other animal products	98.7	57.5	84.2	106.8	88.9	88.9
Total livestock output (8 + 9)	104.1	101.2	101.8	104.6	107.4	108.2
10 Inseparable non-agricultural activities	101.5	103.1	115.4	113.2	120.7	120.7
11 All outputs	104.5	99.1	100.9	107.0	108.72	106.06

continued

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

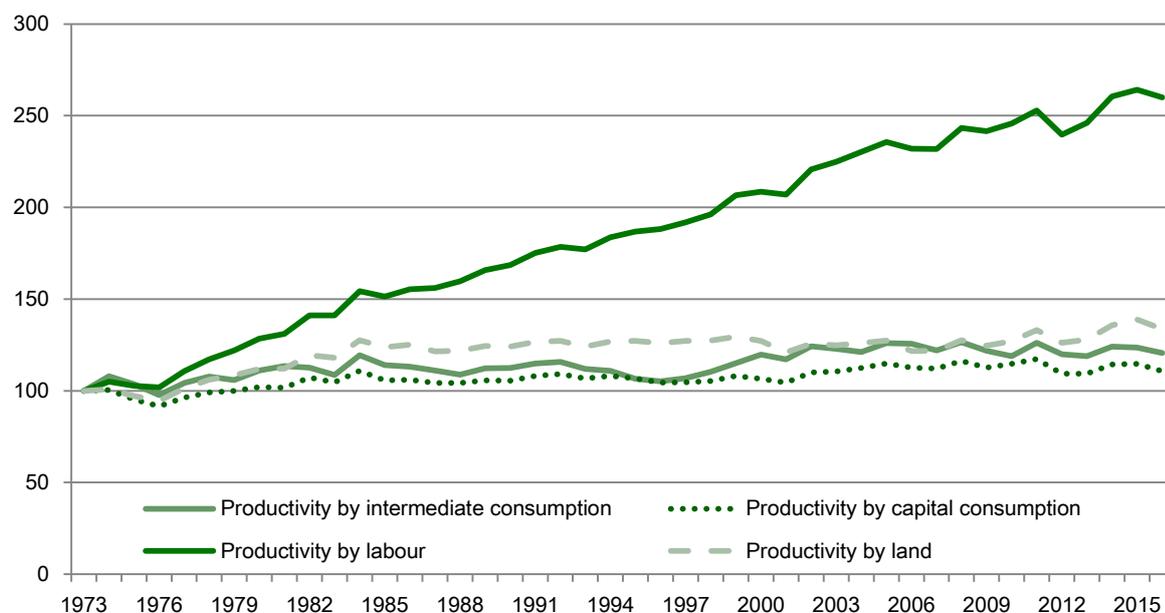
	2010=100					
	2011	2012	2013	2014	2015	2016
	(provisional)					
12 Seeds	97.6	101.6	107.0	107.0	106.2	105.5
13 Energy	96.3	96.3	97.0	95.9	98.0	98.1
electricity and fuels for heating	94.5	93.8	87.4	80.7	82.4	81.0
motor and machinery fuels	96.9	97.2	100.9	102.2	104.4	105.5
14 Fertilisers	103.2	97.9	99.2	100.5	100.9	103.1
15 Plant protection products	108.1	117.9	124.9	130.6	134.2	136.1
16 Veterinary expenses	97.2	100.3	104.1	105.6	104.1	104.4
17 Animal feed	93.0	94.8	98.9	101.3	105.4	104.9
compounds	97.7	103.0	109.3	109.9	114.5	116.3
straights	85.3	81.6	82.1	87.4	90.8	86.1
18 Total maintenance	99.8	99.3	100.5	106.9	107.0	107.2
materials	101.4	100.2	102.2	103.1	101.1	100.8
buildings	97.2	97.8	97.6	112.9	116.6	117.5
19 FISIM	100.0	100.0	100.0	100.0	100.0	100.0
20 Other goods and services	102.7	97.6	98.5	96.8	99.3	97.9
21 Intermediate consumption	98.5	98.3	101.0	102.5	104.7	104.6
22 Consumption fixed capital (excluding livestock)	102.2	104.0	105.9	107.3	108.8	110.0
equipment	103.9	107.2	110.8	113.7	116.8	119.3
buildings	99.6	99.1	98.4	97.7	96.9	96.0
23 All Labour	101.6	101.6	100.8	100.9	101.2	100.3
Compensation of employees	102.4	102.4	101.7	101.8	102.1	100.8
Entrepreneurial workers (farm and specialist contractor)	101.2	101.2	100.3	100.5	100.7	100.1
24 Land	99.6	99.7	100.1	100.0	99.5	100.7
25 All Inputs and Entrepreneurial Labour	100.1	100.1	101.4	102.3	103.6	103.4
Total factor productivity (11 divided by 25)	104.4	99.0	99.5	104.5	105.0	102.6
Partial factor productivity indicators						
Productivity by intermediate consumption (11 divided by 21)	106.1	100.8	99.9	104.4	103.8	101.4
Productivity by capital consumption (11 divided by 22)	102.2	95.3	95.3	99.7	99.9	96.5
Productivity by labour (11 divided by 23)	102.9	97.5	100.1	106.0	107.5	105.7
Productivity by land (11 divided by 24)	104.9	99.3	100.8	106.9	109.3	105.3

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 indicator

1973=100



Revisions

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

Chapter 6

Prices

Summary

In 2016 compared with 2015:

- The weakening pound against the Euro and US dollar helped stabilise prices for both inputs and outputs in 2016. The average producer price of agricultural products fell slightly (0.5%) while the average price of agricultural inputs fell by 2.1%.
- The average price of crop products rose by 4.1%. Cereal prices increased slowly throughout the year but this came too late to drive an increase for the year as a whole, with prices falling by 1.8% overall. The main driver for the overall increase for crops was the 28% increase in potato prices.
- The average price of livestock and livestock products fell by 3.6%, with falls for cattle, pigs, milk and eggs not being offset by increases for sheep and poultry.
- The average price of animal feeding stuffs is strongly influenced by the cereal price and showed a similar trend, with a steady increase in prices throughout 2016 which nevertheless failed to produce an overall increase for the year as a whole, being 3.0% down on 2015.

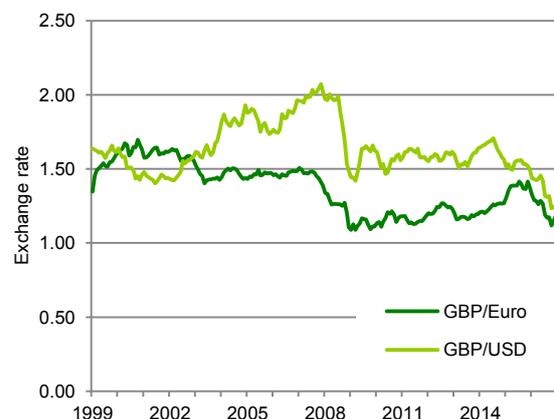
Data Sources

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.

Price Indices during 2016

3. Compared to 2015 the annual index for outputs fell by 0.5% and for inputs fell by 2.1%.
4. 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 2016 the pound weakened against the euro and the US dollar putting upward pressure on UK prices rise in the second half of 2016.
5. The annual crop product index was 4.1% higher than in 2015 mainly driven by increased prices for potatoes and oilseed rape.

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



Source: European Central Bank

6. Chart 6.2 shows that the price of cereals recovered steadily in the second half of 2016, driven by a weaker pound, lower UK harvest and falling global stocks.
7. Chart 6.3 shows animal feedingstuff prices following a similar pattern with prices recovering over the year
8. The annual potato price index was 28% higher than in 2015. Prices were high throughout the year mainly driven by limited supply, see Chart 6.4.
9. Chart 6.5 shows a sharp recovery for the pig price in 2016 driven by a tightening of supplies.

Chart 6.2 Comparison monthly cereal price index 2015 and 2016

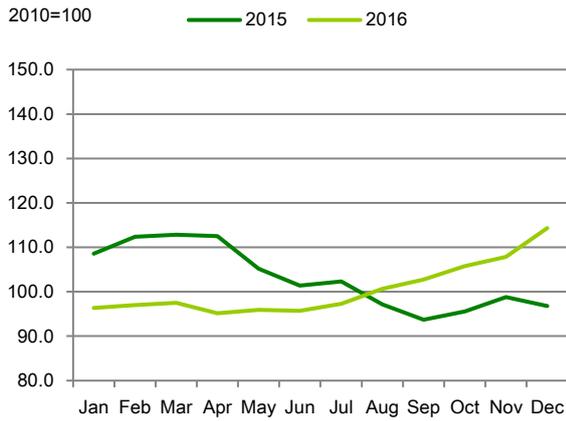


Chart 6.3 Comparison monthly animal feeding stuffs price index 2015 and 2016

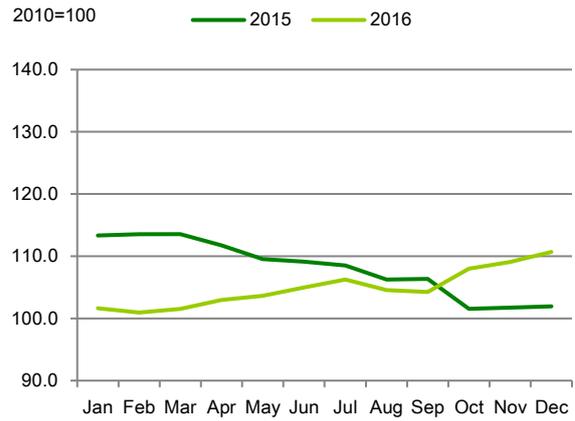


Chart 6.4 Comparison of monthly potato price index 2015 and 2016

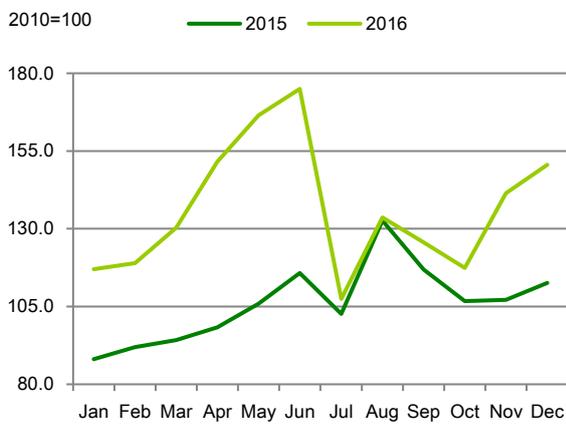


Chart 6.5 Comparison of monthly pig price index 2015 and 2016

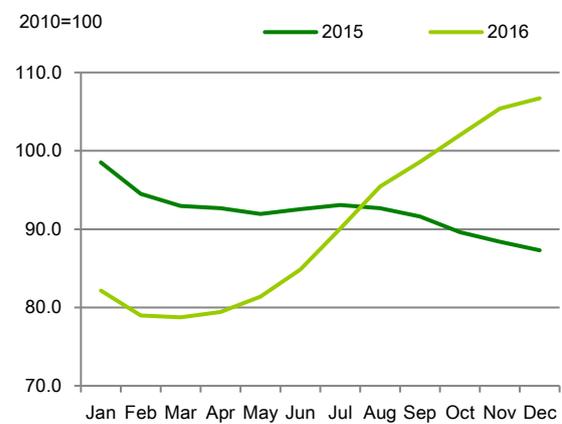


Table 6.1 Price indices for outputs and inputs

Enquiries: Jayne Brigham on +44 (0) 20802 66280

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2010=100

	2011	2012	2013	2014	2015	2016
All Outputs	113.5	118.8	125.8	114.6	105.0	104.5
Crop products	119.0	124.2	128.7	109.2	102.7	106.9
Cereals	144.8	149.7	153.1	120.6	102.8	100.9
Wheat	141.7	144.3	151.9	121.3	101.3	99.1
Barley	150.3	160.9	154.4	119.2	106.4	105.1
Oats	177.8	190.1	173.7	112.6	108.3	111.6
Potatoes	107.3	122.7	156.5	103.9	106.1	136.3
Industrial Crops	132.0	130.0	121.5	101.8	98.6	101.6
Oilseed Rape	143.3	139.1	127.0	99.7	95.1	104.8
Sugar Beet	99.9	104.3	105.7	108.9	110.1	92.0
Forage plants	112.6	106.2	114.8	107.4	94.5	94.5
Fresh Vegetables	92.8	108.6	110.2	103.1	105.9	114.7
Fresh Fruit	98.7	103.7	104.8	97.6	101.2	106.9
Flowers and plants	107.3	109.3	110.9	109.5	107.2	106.3
Other crop products	97.7	102.9	102.9	102.9	102.9	102.9
Animals and animal products	109.5	114.8	123.8	118.6	106.5	102.7
Animals (for slaughter & export)	109.6	114.8	121.0	113.5	109.6	109.0
Cattle and calves	116.4	129.3	137.7	123.2	126.0	122.4
Pigs	102.1	106.3	116.7	111.7	92.2	90.5
Sheep and lambs	111.7	105.9	104.8	106.9	99.0	104.9
All Poultry	103.0	105.1	111.1	106.0	104.5	105.1
Animal products	109.4	114.8	128.1	126.4	101.7	92.8
Milk	111.0	113.8	128.2	127.7	99.1	91.4
Eggs	99.9	124.0	130.8	122.2	118.6	101.0
All Inputs	112.3	114.2	117.0	112.1	106.8	104.5
All goods and services currently consumed in agriculture	114.0	116.6	119.7	112.8	106.2	103.4
Seeds	106.9	105.2	113.9	100.9	95.6	98.3
Energy and lubricants	118.1	122.3	123.3	119.0	101.2	97.1
Fertilisers and soil improvers	130.4	125.2	113.1	106.5	101.5	83.2
Plant protection products	100.7	102.0	97.7	102.6	102.5	102.5
Veterinary services	102.0	103.5	106.1	107.0	107.7	108.1
Animal feedingstuffs	120.7	128.5	139.4	120.7	108.1	104.9
Straight feedingstuffs	122.9	135.7	147.6	120.1	103.6	102.6
Compound feedingstuffs	119.2	123.7	134.0	121.1	111.1	106.4
Maintenance of Materials	104.9	106.5	108.3	110.3	110.8	112.3
Maintenance of Buildings	107.4	109.8	110.1	110.9	109.0	108.3
Other goods and services	106.0	106.7	109.1	109.9	109.2	111.0
Goods and services contributing to investment	103.6	101.7	102.9	108.7	110.0	110.5
Materials	103.0	99.1	100.4	108.5	110.5	111.0
Buildings	105.8	107.4	107.7	108.4	107.2	107.0
Other (Engineering and soil improvement operations)	102.5	104.5	107.2	110.7	113.4	115.1

Revisions

10. Revisions were made across all years reflecting availability of more recent data.

Chapter 7 Crops

Summary

- Harvested production of wheat was 14.4 million tonnes in 2016, 13% lower than 2015 while the value of production was 21% lower at £1.6 billion.
- Oilseed rape production decreased by 30% to almost 1.8 million tonnes due to lower yields and a 11% drop in planted area. The value of production was 24% lower at £543 million.
- The value of vegetable production increased by 20% to £1.5 billion in 2016 with the majority of crops showing a year on year increase.
- The value of fruit production was down 3.7% to £670 million in 2016, with strawberries down £30 million and raspberries down £19 million contributing much of the decrease.

Cereals (tables 7.1 to 7.4)

1. Harvested production of wheat was 13% lower in 2016 than in 2015 at 14.4 million tonnes. The value of production of wheat was £1.6 billion in 2016, 21% lower than in 2015. The value of production of barley decreased by 13% to £717 million. The value of production of oats increased by 1% to £86 million.
2. The area of wheat decreased by 0.5% whereas the area of barley increased by 1.9% and oats by 7.6% in 2016 compared to 2015. Yields for cereals were broadly in line with the five year average but less than 2015 although there were variations, generally crops on heavier soils yielded better than those on lighter soils. Some crops were affected by high weed levels, in particular black-grass and brome, poor drainage and specific diseases. Harvest 2016 started off in mid-July with winter barley and oilseed rape, similar to last year but around two weeks later than the early harvest of 2014. Despite the later start harvest progress was in line with the 5 year average for most crops. Harvest conditions were generally good until unsettled weather in the north of England and Scotland affected progress towards the end of August. Quality was good; the Agriculture and Horticulture Development Board quality survey showed the proportion of NABIM³ Group 1 varieties reaching typical high quality bread wheat specifications was the highest for 13 years. The specific weights were 76.7kg/hl, marginally lower than the three year average of 77.6kg/hl. The average nitrogen content of GB barley was 1.57%, in line with the three year average but a smaller grain size than for each of the last three years.
3. Despite a smaller wheat harvest in 2016 the high quality meant that UK millers were able to secure domestic supplies for the majority of their requirements and imported usage reduced by 10% to 897kt. Total wheat imports were 6.3% lower than 2015 at almost 1.5 million tonnes. The smaller grain size of the 2016 harvest led to a higher extraction rate for the second half of the year. Wheat usage by the biofuels sector increased in 2016 as production increased. Feed wheat usage increased at the expense of barley, maize and oats. Wheat exports totalled 2.9 million tonnes, 47% higher than 2015 and barley exports increased by 11% to almost 1.8 million tonnes. Oat exports were 56% lower at 36 thousand tonnes as most domestic supplies were required by oat millers leaving little surplus for export.
4. Wheat and barley prices were below 2015 values, largely due to abundant global supplies (especially wheat). For the UK market human and industrial demand for wheat was higher than last year (mainly due to the increased demand from the biofuels sector) and with a greater share of the UK wheat harvest been of milling quantity there was no upward pressure on prices from this sector. Demand for barley from the Brewing, malting and distilling sector was similar to 2015. In the latter half of the year

³ National Association of British and Irish Flour Millers

a weakening pound shielded the UK market from falling global prices. Lower feed wheat prices also meant lower feed barley prices whereas feed oats prices were similar to 2015.

Straw

5. Cereal straw production in 2016 was estimated at 8.7 million tonnes. This is an increase of 3.9% on 2015 (8.4 million tonnes) this represents a 6.7% increase on the 5 year average (8.2 million tonnes).

Oilseed rape and linseed (tables 7.5 and 7.6)

6. The value of oilseed rape for the 2016 calendar year account was £543 million, down 24% on 2015 (£711 million) The area planted decreased by 11% to 579 thousand hectares (652 thousand hectares in 2015) and yields were down at 3.1 tonnes per hectare (3.9 in 2015) with an average oil content of 43%. The volume of harvested production at almost 1.8 million tonnes is a 10 year low (1.7 million tonnes in 2006) The low yields were attributed to poor weather conditions in key parts of the growing season along with high disease and pest pressure (cabbage stem flea beetle, light leaf spot and phoma). The average oilseed rape price was £306 (average prices weighted by volumes of sales (£ per tonne) up 9.3% on the 2015 price of £280.

Sugar beet (table 7.7)

7. The farm gate value of sugar beet was £150 million in 2016, down from £173m in 2015. This was due to a combination of the price dropping by £1.52 per tonne and the harvested production falling from 6.2m to 5.7 million tonnes. Yields were below the trend at 66t/Ha (down from 69t/Ha the previous year), and the 2016 sugar beet contract area saw a further decrease of 5% in order to reduce stocks. With the end of the old sugar regime, area contracted for 2017 is increasing back to more normal levels.

Protein crops (Peas and Beans) (table 7.8)

8. The area of pulses in 2016 showed a further increase from those seen in 2015 due 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.
9. The total area of field peas increased by 17% in 2016 to 52 thousand hectares. The proportion of this area utilised for animal feed fell to 35% from 52% in 2015. Total production for animal feed fell by 35% to 66 thousand tonnes. Subsequently the area used for human consumption increased to 65% with production increasing by 29% to 123 thousand tonnes.
10. The area of field beans was 4% higher than last year at 177 thousand hectares. Due to an estimated fall in yield to 3.7 tonnes the overall production fell 12% to 649 thousand tonnes.

Fresh vegetables (table 7.9)

11. The value of vegetable production increased by 20% to £1.5 billion in 2016 with the majority of crops showing a year on year increase.
12. The cool spring led to a delayed start to the harvest of early crops. As a result of carrot and parsnip losses to virus in 2015 increased areas were planted in 2016. However, these losses were not experienced in 2016 and crop qualities were good leading to a 10% increase in the value of carrots. Lettuces continue to be popular with good demand across the board especially during the key summer months. Bulb onions is a competitive sector, but good yields for the early harvested crop and increased yield for the main crop saw the value of bulb onions increase in 2016.
13. Production as a %age of total new supply to the United Kingdom for all fresh vegetables was 55%, little change on 2015.

Plants and flowers (table 7.10)

14. The value of production in the ornamental sector was up 4.7% to £1.2 billion in 2016.
15. The flowers and bloom sector held up well in 2016 with some sectors increasing their market share. Demand for narcissi increased both in the UK and Europe.

16. The hardy nursery stock production area has remained largely static, with modest increases in container production and prices remaining broadly level with slight increases to reflect rising costs.
17. Within the pot plant sector, production estimates and unit values for most crops have remained stable. Production in poinsettia, New Guinea Impatiens, begonia and chrysanthemum showed slight reductions, though pot rose production rose as demand has increased. The value of pot plant production in 2016 was £892 million.

Potatoes (table 7.11)

18. The value of potatoes increased to £747 million in 2016, up 37% on 2015 figures. This was mainly due to a price increase of 32% to £187.6 per tonne (maincrop/early potatoes, average price paid to registered producers).
19. Imperfect weather conditions in key parts of the season affected the 2016 crop, resulting in higher than average field waste for many as well as lower yields. Cases of potato blight were reported across the country and in many regions the weather delayed early season planting. April and June showing higher than average rainfall, lower than average sunshine hours in June and July led growers to report slow progress for crop development.

Fresh Fruit (table 7.12)

20. The volume of fruit production was down 2.3% to 777 thousand tonnes. The cool spring had an adverse effect on yields across a range of fruit crops and they were generally below last year levels, with the blackcurrant and cherry crops particularly effected.
21. The value of fruit production was down 3.7% to £670 million, with strawberries down £30 million and raspberries down £19 million contributing most to the decrease. The value of dessert apples increased by £22 million, a 28% increase on 2015. Meanwhile the value of culinary apples continued there decline with a fall of 1.9% to 40 million
22. Production as a %age of total new supply for use in the United Kingdom decreased to 17% in 2016 from 18% in 2015.

Revisions

23. There have been revisions to the data for wheat, barley and oats back to 2014 due to changes in stocks data and methodology.
24. Revisions have been made to import and export figures for linseed from 2014 onwards.
25. The value of fruit and vegetable production has been revised since publication of the Agricultural Accounts in April 2017. The values shown in Tables 7.9 and 7.12 reflect this updated information.

Table 7.1 Total cereals

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

email: allan.howsam@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares)	2 884	3 274	3 075	3 013	3 076
Volume of harvested production	19 130	24 283	21 618	20 946	21 484
Value of production (£ million) (a)	1 949	3 147	2 338	2 267	3 230
Supply and use					
Production	19 515	20 083	24 468	24 734	21 964
Imports from: the EU	2 479	4 076	2 728	2 770	2 219
the rest of the world	825	1 217	1 440	1 032	1 164
Exports to: the EU	1 827	1 046	1 797	2 816	3 640
the rest of the world	317	420	676	1 022	1 285
Total new supply	20 675	23 910	26 163	24 698	20 422
Change in farm and other stocks	- 798	1 473	3 275	2 232	- 2 308
Total domestic uses	21 473	22 438	22 888	22 466	22 730
Production as % of total new supply for use in the UK	94%	84%	94%	100%	108%

(a) Includes arable area payments, but excludes set-aside payments and farm saved seed.

Taxes, where applicable, are deducted.

Table 7.2 Wheat

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

email: allan.howsam@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares)	1 992	1 615	1 936	1 832	1 823
Yield (tonnes per hectare)	6.7	7.4	8.6	9.0	7.9
Volume of harvested production	13 261	11 921	16 606	16 444	14 383
Value of production (£ million) (a)	2 162	2 073	2 453	2 053	1 627
of which: sales	2 230	1 937	1 900	1 759	1 825
on farm use	139	188	159	144	91
change in stocks	- 207	- 51	394	150	- 288
Prices (£ per tonne)					
Milling wheat	173	193	159	138	120
Feed wheat	163	174	146	121	112
Supply and use					
Production	13 261	11 921	16 606	16 444	14 383
Imports from: the EU	1 358	2 490	1 369	1 131	918
the rest of the world	427	475	455	451	564
Exports to: the EU	1 282	413	804	1 519	2 164
the rest of the world	221	35	339	483	772
Total new supply	13 543	14 438	17 287	16 024	12 929
Change in farm and other stocks	- 849	296	3 155	1 703	- 1 904
Total domestic uses	14 392	14 142	14 132	14 321	14 833
of which: flour milling	6 306	6 506	6 725	6 522	6 848
animal feed	6 807	6 719	6 565	7 076	7 271
seed	304	293	291	282	283
other uses and waste	975	624	551	441	431
Production as % of total new supply for use in the UK	98%	83%	96%	103%	111%
% of home grown wheat in milling grist	84%	69%	82%	85%	87%

(a) Excludes farm saved seed

Table 7.3 Barley

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

 email: allan.howsam@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares)	1 002	1 213	1 080	1 101	1 122
Yield (tonnes per hectare)	5.5	5.8	6.4	6.7	5.9
Volume of harvested production	5 522	7 092	6 911	7 370	6 655
Value of production (£ million) (a)	920	1 136	900	828	717
of which : sales	637	691	687	598	582
on farm use	282	290	220	190	197
change in stocks	1	155	- 6	41	- 62
Prices (£ per tonne)					
Malting barley	185	177	146	127	122
Feed barley	161	149	121	107	99
Supply and use					
Production	5 522	7 092	6 911	7 370	6 655
Imports from : the EU	162	193	100	179	124
the rest of the world	-	2	-	5	2
Exports to : the EU	494	478	796	1 079	1 289
the rest of the world	96	385	335	535	509
Total new supply	5 094	6 424	5 880	5 940	4 983
Change in farm and other stocks	38	1 011	202	561	- 391
Total domestic uses	5 055	5 405	5 670	5 369	5 368
of which : brewing/distilling	1 837	1 868	1 925	1 831	1 831
animal feed	2 997	3 336	3 440	3 317	3 317
seed	182	162	177	182	181
other uses and waste	40	47	135	49	45
Production as % of total new supply for use in the UK	108%	110%	118%	124%	134%

(a) Excludes farm saved seed

Table 7.4 Oats

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

email: allan.howsam@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares)	122	177	137	131	141
Yield (tonnes per hectare)	5.1	5.5	6.0	6.1	5.8
Volume of harvested production	627	964	820	799	816
Value of production (£ million) (a)	114	160	99	85	86
of which : sales	78	87	81	69	67
on farm use	31	35	28	20	21
change in stocks	5	38	- 9	- 4	- 2
Prices (£ per tonne)					
Milling oats	180	174	128	112	111
Feed oats	188	151	111	99	99
Supply and use					
Production	627	964	820	799	816
Imports from: the EU	64	66	34	48	30
the rest of the world	-	-	-	-	-
Exports to: the EU	11	17	66	77	32
the rest of the world	-	-	1	4	4
Total new supply	680	1 013	787	766	810
Change in farm and other stocks	13	165	- 83	- 31	- 12
Total domestic uses	667	848	870	797	822
of which : milling	474	507	499	513	524
animal feed	166	316	348	261	273
seed	25	19	18	19	21
other uses and waste	3	5	4	4	4
Production as % of total new supply for use in the UK	92%	95%	104%	104%	101%

(a) Excludes farm saved seed

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				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares)	756	715	675	652	579
Yield (tonnes per hectare)	3.4	3.0	3.6	3.9	3.1
Volume of harvested production	2 557	2 128	2 460	2 542	1 775
Value of production (£ million)	986	741	684	711	543
of which : sales	1 017	801	647	702	637
change in stocks	- 31	- 60	37	9	- 94
Prices (average weighted by volume of sales (£ per tonne))					
	386	348	278	280	306
Supply and use					
Production	2 557	2 128	2 460	2 542	1 775
Imports from: the EU	18	148	77	87	63
the rest of the world	-	29	10	-	-
Exports to: the EU	1 057	437	333	283	274
the rest of the world	-	2	38	24	25
Total new supply	1 518	1 867	2 176	2 322	1 539
Production as % of total new supply for use in the UK	168	114	113	109	115

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				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares)	28	34	15	15	27
Yield (tonnes per hectare)	1.5	1.8	2.7	1.9	1.8
Volume of harvested production	42	62	39	29	48
Value of production (£ million)	16	24	15	9	14
of which : sales	17	23	16	9	13
change in stocks	- 1	1	- 1	0	1
Supply and use					
Production	42	62	39	29	48
Imports from: the EU	12	11	13	13	14
the rest of the world	2	2	2	1	1
Exports to: the EU	52	37	33	16	15
the rest of the world	-	-	-	-	-
Total new supply	4	38	21	27	47
Production as % of total new supply for use in the UK	1 145	163	186	106	101

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				
	2012	2013	2014	2015	2016 (provisional)
Sugar Beet					
Area (thousand hectares)	120	117	116	90	86
Yield (tonnes per hectare)	61	72	80	69	66
Volume of harvested production	7 291	8 432	9 310	6 218	5 687
Value of production (£ million)	227	270	315	173	150
Sugar content (%)	17.0	17.5	17.2	17.3	17.3
Prices (average market price (£ per adjusted tonne)) (a)	31.2	32.0	33.9	27.8	26.3
All Sugar (refined basis)					
Production (b)	1 144	1 324	1 446	978	897
Imports from: the EU	406	423	476	586	402
the rest of the world	648	691	699	546	601
Exports to: the EU	163	135	232	258	224
the rest of the world	93	98	94	75	46
Total new supply	1 943	2 204	2 296	1 776	1 632
Production as % of total new supply for use in the UK	59	60	63	55	55

(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.

Table 7.8 Protein crops

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

email: allan.howsam@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)	Calendar year				
	2012	2013	2014	2015	2016 (provisional)
Peas for harvesting dry					
Area (thousand hectares)	24	29	32	44	52
Yield (tonnes per hectare) (a)	2.4	3.7	4.0	4.1	3.7
For animal feed (b)					
Volume of harvested production	26	48	70	101	66
Value of production (£ million)	6	10	13	13	9
For human consumption					
Volume of harvested production	31	58	68	95	123
Value of production (£ million)	5	9	13	14	18
Field beans					
Area (thousand hectares)	96	118	107	170	177
Yield (tonnes per hectare) (a)	3.3	3.2	4.2	4.4	3.7
Volume of harvested production	317	378	448	740	649
Value of production (£ million)	74	90	84	97	91

(a) 2016 yields based on 5 year average for both peas and beans

(b) The figures presented here cover only that part of the crop which is assumed to be used for stockfeed including for pets and specialist bird food. It also includes an estimate for those varieties originally grown for human consumption but did not meet the required grade. The percentage utilised for animal feed is variable with typical estimates ranging from 30-60%

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)		2012	2013	2014	Calendar year	
					2015	2016 (provisional)
Production						
Area (thousand hectares):		124	117	117	124	113
of which:	grown in the open (a)	123	116	116	123	113
	protected (b)	1	1	1	1	1
Value of production (£ million):		1 263	1 335	1 204	1 250	1 495
of which:	grown in the open	943	1 000	857	884	1 130
	protected	320	335	348	366	365
Selected crops:	cabbages	57	71	65	72	83
	carrots	128	136	102	124	137
	cauliflowers	47	41	42	43	49
	calabrese	86	56	30	31	37
	lettuces	157	156	145	143	171
	mushrooms	124	125	142	154	148
	onions	60	97	104	106	126
	tomatoes	97	109	118	120	102
Prices (farm gate price (£ per tonne))						
Selected crops:	cauliflowers	529	455	452	473	593
	tomatoes	1 165	1 165	1 196	1 226	1 053
Supply and use						
Total production		2 519	2 656	2 758	2 780	2 737
Imports from:	the EU	1 824	1 977	1 940	2 032	2 092
	the rest of the world	390	410	408	389	276
Exports to:	the EU	102	97	116	133	95
	the rest of the world	16	20	51	41	61
Total new supply		4 615	4 926	4 940	5 027	4 950
Production as % of total new supply for use in the UK		55%	54%	56%	55%	55%

(a) June survey area for vegetables and salad crops

(b) Excludes area of mushrooms

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				
	2012	2013	2014	2015	2016 (provisional)
Production					
Area (thousand hectares) (a):	13	12	12	13	12
Value of production (£ million)	1 142	1 191	1 166	1 149	1 202
of which: flowers and bulbs in the open (b)	38	45	42	45	..
hardy plants and flowers nursery stock	791	809	796	783	..
protected crops	313	336	328	321	..
flowers and bloom	..	..	..	..	93
pot plants	..	..	..	..	892
hardy ornamental nursery stock	..	..	..	..	217
Trade (£ million)					
Imports					
Bulbs	90	85	82	71	75
Cut flowers	653	663	692	665	749
Foliage	38	36	37	42	38
Indoor plants	107	127	136	127	136
Outdoor plants	55	58	66	62	74
Trees	63	62	55	56	52
Other	47	46	44	41	52
Total Imports (exc. Channel Islands)	1 053	1 079	1 111	1 064	1 176
Exports					
Bulbs	11	9	7	5	5
Cut flowers	14	26	24	23	29
Foliage	1	1	1	1	6
Indoor plants	5	4	5	5	5
Outdoor plants	4	5	4	3	3
Trees	3	4	4	4	2
Other	10	12	12	12	15
Total Exports	47	61	56	53	65

(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.

Table 7.11 Potatoes

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

 email: lisa.brown@defra.gsi.gov.uk

Thousand tonnes (unless specified otherwise)		Calendar year				
		2012	2013	2014	2015	2016 (provisional)
Production						
Area sown (thousand hectares)		149	139	141	129	139
Area (thousand hectares)		126	127	125	115	120
Yield (tonnes per hectare)		37	45	47	49	45
Volume of harvested production		4 658	5 902	5 911	5 588	5 373
of which :	early/maincrop	4 155	5 165	5 355	5 074	4 846
	seed	503	738	556	514	526
Sales		4 295	3 925	4 136	3 915	4 130
of which :	early/maincrop	3 940	3 403	3 790	3 578	3 785
	seed	355	522	346	337	345
End of year stocks		2 214	2 606	2 934	2 617	2 358
Change in stocks		- 532	392	328	- 317	- 233
Value of production (£ million)		659	947	677	547	747
of which :	early/maincrop	646	737	542	509	710
	seed	100	131	90	83	81
	change in stocks	- 86	78	45	- 45	- 44
Prices (average price paid to registered producers (£ per tonne))						
	early/maincrop potatoes	164	217	143	142	188
	seed	281	250	260	245	234
Supply and use						
Total production		4 658	5 902	5 911	5 588	5 373
Imports		2 162	2 702	2 163	2 218	2 170
Exports		483	481	472	528	530
Net Trade		1 679	2 221	1 692	1 691	1 640
of which :	early/maincrop	266	417	72	54	48
	seed	- 92	- 79	- 94	- 93	- 90
	processed (raw equivalent)	1 504	1 884	1 713	1 730	1 682
Total new supply		6 337	8 124	7 603	7 279	7 013
Production as % of total new supply for use in the UK		74	73	78	77	77

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				
		2012	2013	2014	2015	2016 (provisional)
Production						
Area (thousand hectares):		34	33	33	36	35
of which:	orchard fruit (a)	24	23	23	26	25
	soft fruit	9	10	9	10	10
End year stocks (b)		58	80	71	71	68
Value of production (£ million) (c):		570	593	629	695	670
of which:	orchard fruit	154	184	180	185	205
	soft fruit	416	409	449	510	465
of which:	sales	574	575	634	695	672
	change in stocks (b)	- 4	18	- 6	-	- 2
Selected crops:	dessert apples	70	73	75	77	99
	culinary apples	46	47	43	40	40
	pears	15	13	12	13	11
	raspberries (c)	103	101	116	131	111
	strawberries (c)	267	262	291	328	298
Prices (farm gate price (£ per tonne))						
Selected crops:	dessert apples	604	554	507	480	548
	culinary apples	530	550	441	450	500
	pears	580	593	482	488	477
	raspberries	6 198	6 501	6 119	7 188	7 440
	strawberries	2 356	2 283	2 338	2 460	2 557
Supply and use						
Total production		521	544	752	796	777
Imports from:	the EU	1 332	1 371	1 453	1 501	1 557
	the rest of the world	2 091	2 193	2 162	2 211	2 359
Exports to:	the EU	108	142	101	129	141
	the rest of the world	2	2	2	2	2
Total new supply		3 833	3 965	4 264	4 376	4 549
Change in stocks		- 5	22	- 9	1	- 4
Total domestic uses		3 839	3 943	4 273	4 376	4 553
Production as % of total new supply for use in the		14%	14%	18%	18%	17%

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

(b) Stocks relate to apples and pears.

(c) Includes glasshouse fruit.

Chapter 8 Livestock

Summary

In 2016, compared with 2015:

- The value of beef and veal increased by 0.3% to £2.76 billion; the volume of production increased by 3.8% whilst prices fell by 3.4%.
- Pig meat value of production increased by 1.8% to £1.10 billion; the volume of home-fed production increased 3.0% but was offset by a 2.0% (3 pence per kilo) fall in prices. The fall in prices in 2016 follows a 17% fall (27 pence per kilo) reduction in 2015.
- The value of mutton and lamb increased by 3.0% to £1.15 billion where an increase of 5.7% in prices was offset by a decrease of 3.2% in the volume of production.
- Poultry meat value increased by 1.2% to £2.25 billion. Increased production, except turkeys, was offset by falling prices across most categories.
- The value of milk and milk products fell by 11% (£395 million) to £3.30 billion as the average farmgate milk price fell by 7.8%.
- The value of eggs fell by 12% to £603 million with increased production offset by a fall in price; the third consecutive annual fall in prices.

Cattle and calves: beef and veal (table 8.1)

1. The number of adult cattle slaughtered increased 9.8%, in part due to the challenges in the dairy sector as some producers reduce their breeding stock levels. Overall, the dairy herd increased 0.1% to just under 1.9 million head, whilst the beef herd increased by 1.2% to 1.6 million head. Home fed production increased 3.8% to 913 thousand tonnes; driven predominantly by a 20% increase in calf slaughterings (bovines less than one year old) and a 17% increase in calf carcass weights. The value of production increased by 0.3% (£7 million) to £2.76 billion.

Pigs and pig meat (table 8.2)

2. Home fed pig meat production rose by 3.0% in 2016 to 887 thousand tonnes, driven by an increase in slaughter throughput of sows and boars (4.9%) and a small increase in carcass weights. The total pig population increased by 2.7% to 4.9 million head, an increase of 126 thousand head. Pig prices decreased by another 2.0% following the 17% fall in 2015. The increase in production volume led to an increase in the value of production by 1.8% (£19 million) to £1.10 billion.

Sheep and lambs: mutton and lamb (table 8.3)

3. Home fed mutton and lamb production decreased by 3.2% in 2016 to 300 thousand tonnes. An increase in slaughter throughput of rams and ewes of 127 thousand head (7.8%) was offset by a decrease of 298 thousand (2.2%) in clean sheep, along with a small decrease in carcass weights. Prices increased by 5.7% in 2016 resulting in an overall increase of 3.0% in the value of production to £1.15 billion.

Poultry and poultry meat (table 8.4)

4. Total production of poultry increased by 3.4% in 2016 to 1.79 million tonnes, with table chickens accounting for 85% of the total. Turkey meat production decreased 9.1% to 164 thousand tonnes, to

the lowest level since 2010. There has been downward movement on prices across the major proportion of the sector; table chickens have fallen by 2.6% and turkeys by 2.9%, but the increased volume of production has led to an overall increase of 1.2% in the value of the poultry meat sector to £2.25 billion.

Milk (table 8.5)

5. After a series of annual increases, milk production peaked in 2015 at the highest levels seen since the 1980s. Milk production in 2016 decreased by 3.3% to 14.5 billion litres. The dairy herd remain steady at 1.9 million, resulting in a decrease in the average yield per cow of 3.3% to 7636 litres per annum. The average milk price (across the 2016 calendar year, including bonus payments) was 22.7 pence per litre (ppl), a fall of 7.8% on the 2015 average of 24.7 ppl. Month on month reductions between January and June 2016 saw the average milk price fall to its lowest level in ten years. Monthly increases over the second half of the year took the average price back to the levels at the start of 2015.
6. The fall in the farmgate price and reduced volumes has resulted in an 11% reduction, £395 million, in the value of production to £3.30 billion.

Hen eggs (table 8.6)

7. The value of egg production decreased 12% in 2016 to £603 million. An increase of 3.8% in the volume of production for human consumption (not including eggs for hatching) was offset by a 15% reduction in the average price per dozen from 78.6 pence to 67.1 pence.
8. Free range egg production regained a little more of the market share it had previously lost to enriched cage production. It now accounts for 46% of throughput; up from 44% in 2015 while organic and barn production continue at relatively low levels, around 2% each.

Revisions

9. Figures in these tables for 2016 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. The scale of revision is not significant. Table 8.5 contains revisions to 2014 data due to amended methodology and the re-instatement of the comparison between the farmgate average price including and excluding any bonuses paid.

Table 8.1 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)

	2012	2013	2014	2015	2016 (provisional)
Population					
Total cattle and calves (thousand head at June)	9 952	9 844	9 837	9 919	10 033
of which: dairy cows	1 796	1 782	1 841	1 895	1 897
beef cows	1 666	1 611	1 569	1 576	1 596
Production (a)					
Total home-fed marketings (thousand head)	2 652	2 594	2 678	2 655	2 805
of which: steers, heifers and young bulls	1 930	1 892	1 934	1 906	1 969
calves	80	93	142	122	147
cows and adult bulls	641	609	603	627	688
Average dressed carcass weight (kg):					
steers, heifers and young bulls	347	342	349	355	351
calves	45	43	47	54	63
cows and adult bulls	311	307	316	314	310
Production (dressed carcass weight):					
home-fed production	877	840	871	880	913
Value of production (£ million)	2 814	2 906	2 632	2 786	2 799
of which: value of home-fed production (a)	2 763	2 841	2 691	2 765	2 755
subsidies (b)	20	21	21	30	35
change in work-in-progress (c)	38	59	- 62	13	18
less imported livestock	8	14	19	22	10
plus breeding animals exported	nd	nd	nd	nd	nd
Value of production at market prices (£ million) (d)	2 794	2 886	2 611	2 756	2 763
Prices					
Finished cattle (pence per kg deadweight): All prime cattle	341.4	386.3	348.6	346.4	334.6
Supply and use (thousand tonnes, dressed carcass weight) (e)					
Home-fed production (a)	877	840	871	880	913
Imports from:					
the EU (f)	275	268	290	310	303
the rest of the world	30	41	36	32	28
Exports to:					
the EU	135	121	127	119	127
the rest of the world	7	5	9	9	14
Total new supply	1 040	1 023	1 061	1 094	1 104
Home-fed production as % of total new supply for use in the UK	84%	82%	82%	80%	83%

(a) Measures of home-fed marketings, dressed carcass weights, production and value include animals raised and slaughtered in the UK, excluding any animals removed from the food chain.

(b) Comprising Scottish Beef Calf Scheme until 2014. From 2015 Scottish Sucker Beef Support Scheme.

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

(d) Excluding 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.

Table 8.2 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)

	2012	2013	2014	2015	2016 (provisional)
Population					
Total pigs (thousand head at June)	4 481	4 885	4 815	4 739	4 866
of which: sows in pig and other sows for breeding	357	355	349	352	360
gilts in pig	69	66	57	56	55
Production (a)					
Total home-fed marketings (thousand head)	9 702	9 743	9 953	10 376	10 583
of which: clean pigs	9 426	9 479	9 698	10 117	10 311
sows and boars	276	265	255	259	272
Average dressed carcass weight (kg):					
clean pigs	78	79	81	81	82
sows and boars	150	147	146	146	146
Production (dressed carcass weight):					
home-fed production (a)	776	787	822	861	887
Value of production (£ million)	1 132	1 274	1 264	1 080	1 099
of which: value of home-fed production	1 134	1 265	1 256	1 084	1 094
change in work in progress (b)	- 4	8	6	- 4	4
less imported livestock	nd	nd	nd	nd	nd
plus breeding animals exported	2	2	1	0	0
Prices (pence per kg deadweight)					
Clean pigs	150.2	165.3	159.0	131.7	129.1
Supply and use of pigmeat (carcass weight equivalent) (c)					
Home-fed production (a)	776	787	822	861	887
Imports from:					
the EU (d)	731	724	733	738	798
the rest of the world	3	2	1	1	1
Exports to:					
the EU	139	154	156	160	160
the rest of the world	43	54	55	57	76
Total new supply	1 327	1 305	1 345	1 383	1 450
Home-fed production as % of total new supply for use in the UK	58%	60%	61%	62%	61%

(a) Measures of home-fed marketings, dressed carcass weights, production and value include animals raised and slaughtered in the UK, excluding any animals removed from the food chain.

(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.

Table 8.3 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)

	2012	2013	2014	2015	2016
					(provisional)
Population					
Total sheep and lambs (thousand head at June)	32 215	32 856	33 743	33 337	33 943
of which: breeding flock 1 year and over	15 229	15 561	16 026	16 024	16 304
lambs under one year old	16 229	16 381	16 936	16 528	16 840
Production (a)					
Total home-fed marketings (thousand head)	14 221	15 024	15 061	15 195	15 023
of which: clean sheep and lambs	12 347	12 906	13 222	13 561	13 263
ewes and rams	1 874	2 118	1 838	1 633	1 760
Average dressed carcass weight (kg):					
clean sheep and lambs	19	19	19	20	19
ewes and rams	26	26	27	27	26
Production (dressed carcass weight):					
home-fed production (a)	286	300	306	309	300
Value of production (£ million)	1 027	1 037	1 122	1 125	1 159
of which: value of home-fed production	1 018	1 049	1 114	1 113	1 144
subsidies(b)	nd	nd	nd	5	6
change in work in progress (c)	9	- 12	8	6	9
less imported livestock	0	0	0	0	0
plus breeding animals exported	0	0	0	0	0
Value of production at market prices (£ million) (d)	1 027	1 037	1 122	1 119	1 153
Prices					
Finished sheep (pence per kg dressed carcass weight) (e):					
Great Britain	411.3	415.1	420.6	381.1	402.8
Supply and use (dressed carcass weight) (f)					
Home-fed production (a)	286	300	306	309	300
Imports from:					
the EU (g)	15	16	15	12	13
the rest of the world	91	104	97	102	102
Exports to:					
the EU	95	101	100	86	88
the rest of the world	13	19	16	4	4
Total new supply	283	301	302	334	323
Home-fed production as % of total new supply for use in the UK	101%	100%	101%	93%	93%

(a) Measures of home-fed marketings, dressed carcass weights, production and value include animals raised and slaughtered in the UK, excluding any animals removed from the food chain.

(b) Scottish Upland Sheep Support Scheme

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

(d) Excluding 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.

Table 8.4 Poultry and poultry meat

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Thousand tonnes (unless otherwise specified)

	2012	2013	2014	2015	2016 (provisional)
Population					
Number (thousand head at June):	160 061	162 609	169 684	167 579	172 607
of which: table chickens	102 558	104 576	110 374	107 056	110 639
laying and breeding fowl	46 633	47 024	48 404	49 509	50 798
turkeys, ducks, geese and all other poultry	10 870	11 008	10 907	11 014	11 170
Production					
Slaughterings (millions):	952	976	972	1 029	1 079
of which: fowls	919	945	942	998	1 050
turkeys	18	18	15	17	15
ducks & geese	15	14	15	14	14
Production (carcase weight) (a):	1 609	1 663	1 648	1 733	1 792
of which: chickens and other table fowls	1 322	1 388	1 383	1 456	1 515
boiling fowls (culled hens)	58	55	58	65	82
turkeys	196	187	172	181	164
ducks & geese	34	32	34	31	31
Value of production (£ million):	2 078	2 324	2 250	2 220	2 246
of which: table chickens	1 564	1 777	1 741	1 739	1 763
change in work in progress in fowls (b)	- 4	11	3	6	3
turkeys, ducks, geese	417	421	393	401	368
exports of live poultry	103	87	77	93	134
hatching eggs for export	40	71	82	85	51
less live poultry imported	15	9	20	79	60
less hatching eggs imported	26	33	25	25	14
Prices (average producer prices (pence per kg carcase weight)):					
Chickens and other table fowls	117.9	127.7	125.5	119.0	115.9
Boiling fowls (culled hens)	9.2	9.0	9.7	9.6	9.4
Turkeys	161.9	170.9	165.3	167.2	162.4
Ducks	274.0	290.3	300.6	295.7	296.8
Geese	616.1	616.8	641.3	641.3	713.5
Supply and use (carcase weight) (a)					
Production (a)	1 609	1 663	1 648	1 733	1 792
Imports from:					
the EU	454	452	479	512	558
the rest of the world	26	30	30	29	22
Exports to:					
the EU	203	223	245	233	209
the rest of the world	80	91	94	59	90
Total new supply	1 807	1 832	1 818	1 983	2 073
Production as % of total new supply for use in the UK	89%	91%	91%	87%	86%

(a) Excludes offal.

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

Table 8.5 Milk

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Million litres (unless otherwise specified)					
	2012	2013	2014 (g)	2015 (provisional)	2016
Population and yield					
Dairy herd (annual average, thousand head) (a)	1 798	1 794	1 851	1 901	1 901
Average yield per dairy cow (litres per annum)	7 477	7 542	7 897	7 894	7 636
Production					
Milk from the dairy herd (b)	13 443	13 533	14 616	15 005	14 515
Milk from the beef herd (b)	7	7	7	7	7
less on farm waste and milk fed to stock	111	114	119	123	118
Volume for human consumption	13 339	13 426	14 504	14 888	14 404
Value of production (£ million)	3 767	4 271	4 594	3 691	3 296
of which: raw milk leaving farm (c)	3 712	4 215	4 540	3 643	3 249
raw milk processed on farm (d)	55	56	54	47	47
Prices (average price received by milk producers, net of delivery charges (pence per litre))					
Farmgate price of milk excluding bonus payments	28.0	31.6	31.6	24.5	22.6
Farmgate price of milk including bonus payments	28.1	31.7	31.7	24.7	22.7
Supply and use					
Production	13 450	13 541	14 623	15 012	14 522
Imports	157	187	185	158	158
Exports	497	501	586	673	673
Total new supply	13 110	13 226	14 221	14 497	14 007
of which:					
for liquid consumption	6 785	6 856	6 903	6 727	6 640
for manufacture	6 015	6 223	7 093	7 464	7 130
of which: butter	293	293	295	297	310
cheese	3 673	3 513	3 858	4 066	4 085
cream	252	305	302	319	282
condensed milk (e)	289	290	265	249	247
milk powder	893	1 138	1 633	1 629	1 305
other	614	685	740	904	901
dairy wastage and stock change	178	10	82	160	96
other uses (f)	133	137	142	147	141
Production as a % of new supply	103%	102%	103%	104%	104%

(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.

(c) Value of raw milk sold to other businesses (dairies) for processing.

(d) Value of milk and milk products processed on farm and sold direct to the consumer.

(e) Includes condensed milk used in the production of chocolate crumb and in the production of machine skimmed milk.

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

(g) Revisions have been made to 2014 production, supply and use data; The farmgate average price has re-instated the including and excluding bonus comparison.

Table 8.6 Hen eggs

Enquiries: Julie Rumsey on +44 (0)20 802 66306

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Million dozen (unless otherwise specified)	Calendar years				
	2012	2013	2014	2015	2016 (provisional)
Population					
Number of laying fowl (thousands)	36 646	35 841	37 146	36 998	38 058
Production					
Volume of production of eggs	918	960	971	997	1 031
of which:					
eggs for human consumption	797	829	839	866	899
eggs for hatching	105	107	108	111	115
other (a)	16	23	23	20	17
Value of production of eggs for human consumption (£ million) (b)	662	718	679	681	603
Prices (pence per dozen)					
Weighted average of eggs graded in the UK (c)	83.1	86.6	80.9	78.6	67.1
Supply and use					
UK production of eggs for human consumption	797	829	839	866	899
of which:					
eggs sold in shell	654	695	695	729	758
eggs processed	143	134	144	137	140
Imports from (d):					
the EU	162	152	157	174	170
the rest of the world	1	1	1	1	1
Exports to (d):					
the EU	19	23	11	9	11
the rest of the world	0	0	0	0	0
Total new supply	941	959	986	1 032	1 059
Production as % of total new supply for use in the UK	85%	86%	85%	84%	85%

(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 8.4

(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.

Chapter 9 Intermediate Consumption

Summary

- In 2016 the total cost of intermediate consumption (inputs) fell by £427 million to £14,953 million compared to 2015. Reduced animal feed and fertiliser costs were the main contributors to this fall.
- The cost of animal feed, the largest item of expenditure recorded in the production and income account, fell by 4.4% to £4.5 billion between 2015 and 2016.
- In 2016, oil prices, which influence the cost of some inputs such as fuels, electricity and fertilisers, averaged \$44 per barrel compared to \$52 per barrel in 2015.
- In 2016, the value of the energy used by the agriculture industry is estimated to be just under £1.14 billion, a decrease of 4.1% compared to 2015.

Introduction

1. Unless otherwise stated all comparisons are the previous year (2015).

Inputs

2. The total cost of intermediate consumption fell by £427 million to £14,953 million. Reduced animal feed and fertiliser costs were the main contributors to this fall of 2.8%, a result of lower prices and a general fall in volumes used.

Animal Feed (table 9.1)

3. 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 2008 (around 21 million tonnes) before rising steadily since then to reach nearly 31 million tonnes in 2016. 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.
4. The total value of all animal feed decreased by 4.4% between 2015 and 2016 to £4.52 billion, mainly due to the fall in feed prices. The total volume of all 'purchased' animal feed decreased by 0.3% to 31 million tonnes. Total compound feed production increased by 2.2% with significant increases for poultry and sheep compound feed offsetting decreases in cattle and pig feed production. These increases was due to strong growth in the broiler and layer sector and in the case of sheep a larger 2016 lamb crop and poorer pasture conditions led to higher compound feed requirement. The cattle sector suffered from the effects of lower milk prices in the early part of the year and pig sector was weak which together with increased performance and stabilising weights led to decreased feed demand. Besides compound feed usage, there was a decrease of 7.0% in purchased straight concentrates and a 1.3% increase in inter/intra farm sales.

Table 9.1 Animal Feed (a)

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Thousand tonnes (unless specified otherwise)	Calendar years				
	2012	2013	2014	2015	2016 (provisional)
Compounds (b)					
cattle	4 895	5 240	5 064	4 879	4 730
calves	248	253	250	264	263
pigs	1 829	1 807	1 963	2 040	1 991
poultry (c)	3 861	4 019	4 109	4 340	4 742
sheep	836	966	765	769	834
Total compounds plus imports less exports	11 377	12 119	12 137	12 632	12 906
Straight concentrates (d)	6 725	6 768	6 993	7 238	6 735
Non-concentrates (e)	525	525	525	525	525
Inter/intra farm transfer	6 560	8 941	10 432	10 608	10 742
Total all purchased animal feed	25 187	28 352	30 087	31 004	30 907
Value of purchased animal feed (£ million) (f)	4 891	5 564	5 058	4 735	4 527

- (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)

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

6. 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 and had reached around \$60 per barrel by December 2014.

Chart 9.1 Europe Brent Spot Price FOB



Source: US Energy Information Administration

7. In 2015 prices continued to fall 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.

8. Prices recovered throughout 2016 but remained low compared to the high prices seen since 2008, continuing to keep down the price of those inputs linked to oil prices.

Energy and fertiliser (charts 9.2 and 9.3)

9. The total value of energy used within the agricultural industry is estimated to be just over £1.14 billion, a fall of around -4.1%, whilst usage slightly increased, the average price was around 6% lower than 2015. Energy costs, particularly motor and machinery fuels are heavily influenced by oil prices and this reduction mirrors the fall in the global oil price.
10. 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 in recent years.
11. 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.
12. Chart 9.3 shows that although fertiliser usage has been stable in recent years and is significantly lower than the volumes used in the mid-90s, the value of fertiliser used has increased, driven by price. The value of fertiliser decreased to just over £1.14 billion, its lowest level since 2007 and a fall of 18% on 2015. The decrease in value was entirely price-driven, with prices overall 20% lower than 2015.

Chart 9.2 Energy index for value and volume

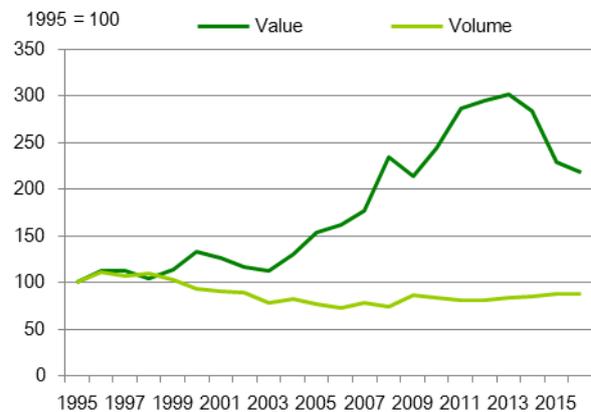
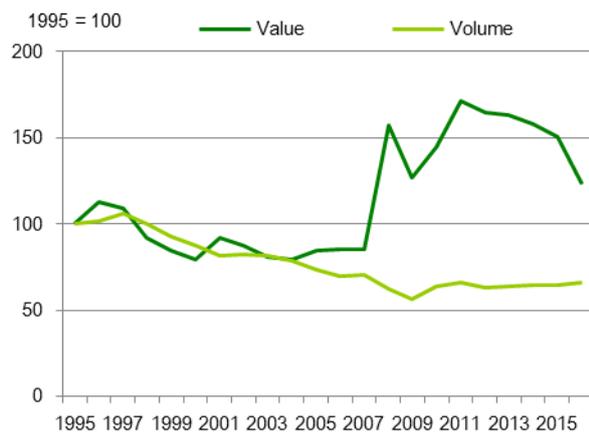


Chart 9.3 Fertiliser



Other input costs

13. In general most input costs fell in 2016 when compared to 2015.
14. The value of pesticides fell by 1.4% to £978 million driven by fall in usage as prices remained stable.
15. For the third 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.
16. There was also little change in the value of agricultural services at £1,09 million. Other goods and services which is the second largest cost behind animal feed rose only slightly to £3.17 billion, a cost increase as usage remained virtually 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 2016:

- Total direct payments to farmers are expected to have increased by 11% to £3.1 billion
- The Basic Payment Scheme contributed £2.6 billion, a rise of 18%.
- Payments linked to agri-environment schemes are expected to be 17% lower at £403 million.
- Payments under the Less Favoured Area Support Scheme (LFASS) fell slightly to £84 million.

Introduction

1. Values shown for a particular year refer to schemes operating in that year.
2. Unless otherwise stated comparisons are based on 2016 compared to 2015

Payments

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 2016 the rate was €1 = £0.85228, as shown in table 10.1.
4. In 2016 the pound weakened against the euro and subsequently increased the value of direct payments to UK farmers with the net value of support payments paid under the Basic Payment Scheme 18% higher in 2016 than 2015 at £2.6 bn.

Table 10.1 Single payment scheme and exchange rate

Enquiries: Helen Mason on +44 (0)20 802 66256

email: farmaccounts@defra.gsi.gov.uk

	2009	2010	2011	2012	2013	2014	2015	2016
					(a)	(a)	(a)(b)	provisional (a)(b)
Basic/Single Farm Payment Scheme (£ million) ⁿ (a)(b)	2 980	2 798	2 805	2 600	2 691	2 337	2 176	2 568
Exchange rate (€/£) (c)	0.91	0.86	0.87	0.80	0.84	0.78	0.73	0.85
Financial discipline (%)	..	..	..	..	2.45	1.30	1.39	1.35

(a) Includes Financial Discipline reimbursements where applicable.

(b) In 2015 Basic Payment Scheme (BPS) replaced the Single Farm Payment Scheme (SPS)

(c) From 2015 Exchange rate set by the European Central Bank (ECB) for month of September. Up to and including 2014 exchange rate set by the ECB on the last day 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

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£ million	2012	2013	2014	2015	2016
					(provisional)
Coupled payments (linked to production)					
Crop subsidies					
Other crop subsidies	..	..	..	..	..
Livestock subsidies					
Scottish Beef Calf scheme	20	21	21	..	..
Scottish Upland Sheep support scheme	..	..	..	5	6
Scottish Suckler Beef support scheme	..	..	..	30	35
Total coupled payments	20	21	21	36	42
Decoupled and other payments (not linked to production)					
Basic/Single Payments Scheme (a)	2 600	2 691	2 337	2 176	2 568
Agri-environment schemes (b)	520	525	502	487	403
Less Favoured Areas support schemes	121	92	89	91	84
Animal disease compensation (d)	20	20	20	21	20
Other (d)	-	10	5	26	31
Total decoupled and other payments	3 261	3 338	2 953	2 801	3 106
Total direct payments less levies	3 282	3 359	2 974	2 837	3 148
Capital transfers and other payments not included in the production and income account	32	33	32	30	30

(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

6. In 2015 the Scottish Beef Calf Scheme ended and was replaced by the Scottish Suckler Beef Support mainland and islands schemes and the Scottish Upland Sheep Support scheme commenced operation. In 2016, coupled payments increased from £36 million to £42 million.

7. Payments under the agri-environment schemes fell by £84 million to £403 million whilst Less Favoured Area Support Scheme payments fell slightly to £84 million.
8. In 2016, UK dairy farmers received a one-off support payment. The EU Milk Reduction Fund provided money to milk producers who volunteered to reduce their cows' milk deliveries. This direct aid package payment totalled £31 million.
9. Overall total direct payments to farmers rose by £311 million to £3,148 million.

Table 10.3 Direct payment to farmers by country 2016

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email: farmaccounts@defra.gsi.gov.uk

£ million	England	Wales	Scotland	Northern Ireland	United Kingdom
Livestock subsidies					
Scottish Upland Sheep support scheme	..	..	6	..	6
Scottish Suckler Beef support scheme	..	..	35	..	35
Total coupled payments	..	..	42	..	42
Decoupled payments (not linked to production)					
Basic Payment Scheme	1 663	221	405	279	2 568
Less Favoured Areas support schemes (a)	-	-	66	19	84
Agri-environment schemes					-
Environmental Stewardship Scheme	324	-	-	-	324
Rural Priorities / Land Manager Options	..	..	16	..	16
Glastir	..	40	..	..	40
Countryside Management Scheme	..	..	..	16	16
Organic Farming Scheme	-	..	-	-	-
Environmentally Sensitive Areas Schemes	-	-	-	5	5
Sites and Areas of Special Scientific Interest	-	2	-	-	2
Other (b)	25	3	2	-	31
Animal disease compensation	11	4	-	5	20
Total decoupled payments	2 024	269	490	323	3 106
Total direct payments	2 024	269	532	323	3 148

(a) Less Favoured Area Compensatory Allowance (LFACA) in Northern Ireland, Less Favoured Areas Support Scheme (LFASS) in Scotland.

(b) Includes one off payments.

Direct Payments made through key measures of the Rural Development Programmes

10. There are four rural development programmes in the United Kingdom, covering England, Wales, Scotland and Northern Ireland.
11. 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.
12. 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 continued to be managed until reaching their agreed end date. It is expected payments under this scheme will total £324 million in 2016. This scheme will be replaced by the new Countryside Stewardship (CS) Scheme.
13. The Scottish Rural Development Programme (SRDP) is the main source of funding for land management in Scotland. In 2016 the Rural Priority and Land Manager option scheme payments totalled £16 million.
14. The principal Welsh agri-environment scheme is Glastir funded by the Welsh Government Rural Communities Rural Development Programme and payments totalled £40 million in 2016.

15. Under the new Rural Development Programme for Northern Ireland Countryside Management Scheme and Environmentally Sensitive Area Scheme payments totalled £21 million.

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

Enquiries: Helen Mason on +44 (0)20 802 66256)

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£ Million

		2012	2013	2014	2015	2016
						(provisional)
Less Favoured Areas and Areas with Environmental Restrictions measure						
England:	Uplands Transitional Payment	6	3	1	..	..
Wales:	Tir Mynydd (a)	24	..	..	..	..
Scotland:	Less Favoured Areas Support Scheme	67	66	65	65	66
Northern Ireland:	Less Favoured Areas Compensatory Allowance	19	19	16	16	16
Agri. Environment and Animal Welfare measure						
England:	Organic Farming Scheme	..	..	..	..	..
	Countryside Stewardship Scheme (b)	37	21	8	..	..
	Environmentally Sensitive Areas Scheme (b)	31	19	7	..	..
	Environmental Stewardship Scheme (c)	342	373	360	394	324
Wales:	Organic Farming Scheme	4	3	3	3	4
	Tir Cymen	..	..	..	..	..
	Tir Gofal	24	27	18	..	..
	Environmentally Sensitive Areas Scheme	-	-	-	-	-
	Tir Cynnal	7	7	-	-	-
	Glastir	7	7	28	38	40
Scotland:	Organic Aid Scheme	-	-	-	-	-
	Countryside Premium Scheme	-	-	-	-	-
	Rural Stewardship Scheme	1	-	-	-	-
	Environmentally Sensitive Areas Scheme	-	-	-	-	-
	Land Management Contract Scheme	-	-	-	-	-
	Land Managers Options	6	7	7	5	2
	Rural Priorities (d)	33	33	36	28	14
Northern Ireland:	Organic Farming Scheme	-	-	-	-	-
	Countryside Management Scheme (f)	19	19	16	16	16
	Environmentally Sensitive Areas Scheme (g)	6	5	5	5	5

(a) Tir Mynydd closed to be replaced by Glastir. No longer able to identify less favoured areas and environmental restriction measure payments.

(b) Remaining agreements expired during 2014 with the majority renewed into Environmental Stewardship from May 2014.

(c) Environmental Stewardship Scheme closed to new applicants in December 2014

(d) Scheme ended in December 2013, existing agreements continued to be honoured.

(f) Includes agreements which commenced under NIRDP 2000-2006 and 2007-2013; agreements continue to be honoured.

(g) Commenced under 2000-2006 NIRDP; existing agreements continue to be honoured.

Take-up of Agri-Environment Schemes

16. 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 agreement 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	31 December				
	2012	2013	2014	2015	2016
England					
Organic Farming Scheme	-	-	-	-	-
Countryside Stewardship Scheme (a)	100	36	-	-	-
Environmentally Sensitive Areas Scheme (a)	269	92	-	-	-
Environmental Stewardship Scheme					
Entry Level Scheme (b)	6 094	6 514	6 389	5 132	3 661
Higher Level Scheme (c)	1 047	1 276	1 348	1 344	1 278
new Countryside Stewardship Scheme (d)					75
Wales					
Organic Farming/Organic Farming Conversion Scheme (e)	132	51	97	-	-
Tir Cymen/Tir Gofal (f)	372	358	12	-	-
Environmentally Sensitive Areas Scheme	-	-	-	-	-
Tir Cynnal (f)	253	297	-	-	-
Glastir (g)					
Glastir Entry (h)	155*	203	508	546	546
Glastir Advanced (on Entry)		29	184	251	251
Glastir Commons (i)	23	34	111	117	119
Glastir Organic	..	..	..	64	65
Decoupled Advanced (j)	..	..	..	..	34
Scotland					
Organic Aid Scheme (k)	4	2	-	-	-
Countryside Premium Scheme/Rural Stewardship Scheme (k)	-	-	-	-	-
Environmentally Sensitive Areas Scheme (k)	9	1	-	-	-
Land Management Contracts (k)	-	-	-	-	-
Land Managers Options (l)	405	387	338	136	63
Rural Priorities (m)	1 122	1 158	1 212	980	623
Agri-environment Climate Scheme (n)					67
Northern Ireland					
Organic Farming Scheme (o)	2	1	-	-	-
Countryside Management Scheme (p)	350	295	280	221	46
Environmentally Sensitive Areas Scheme (q)	103	91	84	84	0

(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.

(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 Payments 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.

*Glastir figures presented as a total figure rather than separated by scheme.

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	31 December				
	2012	2013	2014	2015	2016
England					
Organic Farming Scheme	-	-	-	-	-
Countryside Stewardship Scheme (a)	3 700	1 300	-	-	-
Environmentally Sensitive Areas Scheme (a)	3 600	1 400	-	-	-
Environmental Stewardship Scheme:					
Entry Level Scheme (b)	44 700	48 200	47 400	36 100	23 900
Higher Level Scheme (c)	10 900	13 300	14 100	14 200	13 200
new Countryside Stewardship Scheme (d)					3 000
Wales					
Organic Farming/Organic Farming Conversion Scheme (e)	1 000	600	1 000	-	-
Tir Cymen/Tir Gofal (f)	3 000	2 800	100	-	-
Environmentally Sensitive Areas Scheme	-	-	-	-	-
Tir Cynnal (f)	3 800	3 700	-	-	-
Glastir (g)					
Glastir Entry (h)	1700*	1 900	4 200	4 600	4 600
Glastir Advanced (on Entry)		300	1 000	1 400	1 400
Glastir Commons (i)	100	100	200	200	200
Glastir Organic	..	..	..	500	500
Decoupled Advanced (j)	..	..	..	..	500
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)	4 900	5 000	4 600	2 300	1 300
Rural Priorities (m)	5 800	5 900	6 400	5 000	3 700
Agri-environment Climate Scheme (n)					200
Northern Ireland					
Organic Farming Scheme (o)	-	-	-	-	-
Countryside Management Scheme (p)	9 300	7 500	7 100	6 200	600
Environmentally Sensitive Areas Scheme (q)	2 900	2 500	2 300	1 600	0

(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. This is the total number of agreements for all strands of CS.

(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 Payments 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 NIRD and agreements continue to be honoured.

(p) Includes agreements which commenced under NIRD 2000-2006 and 2007-2013; agreements continue to be honoured.

(q) Commenced under 2000-2006 NIRD; all agreements expired in 2016.

*Glastir figures presented as a total figure rather than separated by scheme.

All Common Agricultural Policy payments by funding stream

17. Table 10.7 shows all agricultural market support under the Common Agricultural Policy. This is different to the other tables in chapter 10, 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 they are in euros.

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

Enquiries: Michael Redfern

email: michael.redfern@ukcb.qsi.gov.uk

Euros million	EU financial years (a)				
	2012	2013	2014	2015	2016
UK CAP payments					
Pillar 1	3,348	3,326	3,234	3,150	3,121
of which: Direct Aids	3,290	3,285	3,195	3,112	3035
Market price support (b)	58	41	39	38	86
Pillar 2 (c)	1,085	1,091	1,065	959	806
of which: EAFRD (d)	742	752	798	709	641
Co-financing	343	339	267	250	165
Total UK CAP payments	4,433	4,417	4,299	4,109	3,927
England CAP payments					
Pillar 1	2,146	2,126	2,048	2,026	2,018
of which: Direct Aids	2,088	2,085	2,009	1,988	1932
Market price support (b)	58	41	39	38	86
Pillar 2 (c)	631	666	666	507	608
of which: EAFRD (d)	470	532	563	460	529
Co-financing	161	134	103	47	79
Total England CAP payments	2,777	2,792	2,714	2,533	2,626
Wales CAP payments					
Pillar 1 Direct Aids	309	309	301	269	260
Pillar 2 (c)	117	97	112	98	78
of which: EAFRD (d)	54	48	54	49	52
Co-financing	63	49	58	49	26
Total Wales CAP payments	426	406	413	367	338
Scotland CAP payments					
Pillar 1 Direct Aids	584	583	566	534	522
Pillar 2 (c)	256	236	191	265	62
of which: EAFRD (d)	167	113	119	150	26
Co-financing	89	123	72	115	36
Total Scotland CAP payments	840	819	757	799	584
Northern Ireland CAP payments					
Pillar 1 Direct Aids	309	308	319	321	321
Pillar 2 (c)	81	92	96	89	58
of which: EAFRD (d)	51	59	62	50	34
Co-financing	30	33	34	39	24
Total Northern Ireland CAP payments	390	400	415	410	379

(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

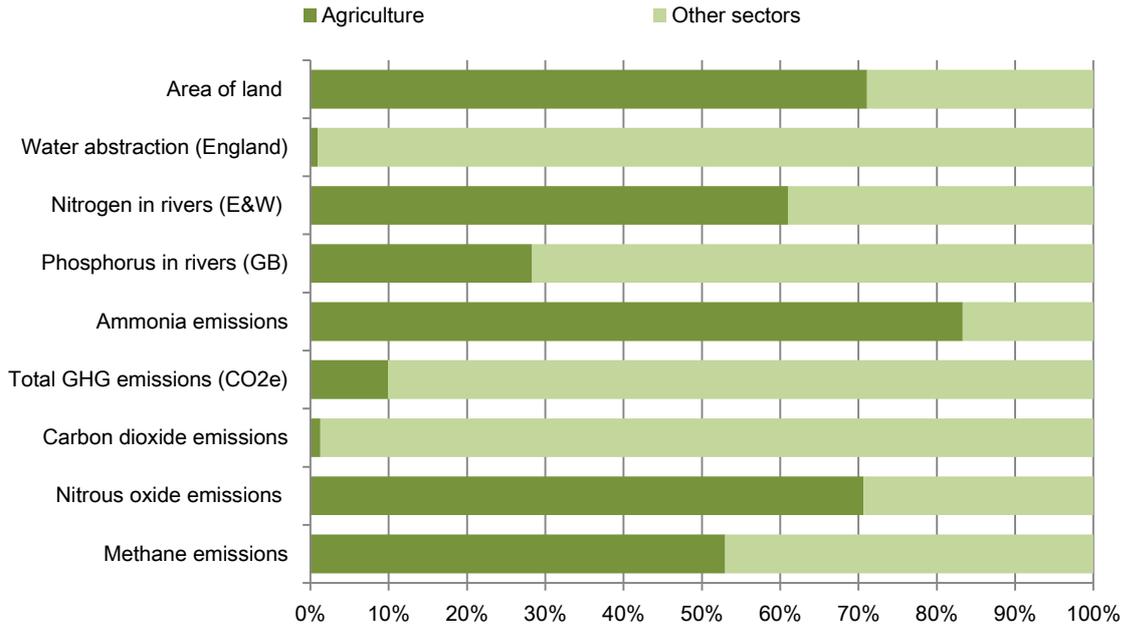
Summary

- Accounting for approximately 70% of land use in the United Kingdom, agriculture and the associated land use and management are key drivers of both the positive and negative environmental impacts from the sector.
- Between 2000 and 2016 application rates of nitrogen and phosphorus fertilisers to grassland have shown an overall decline.
- Between 2000 and 2015 the estimated soil nutrient balances for nitrogen and phosphorus have fallen by 21% and 47%, respectively. This represents a reduction in the surpluses of nutrients that can potentially be lost to the environment.
- Between 2000 and 2015 estimated agricultural emissions:
 - Of nitrous oxide have fallen by 10%
 - Of methane have fallen by 11%
- Between 2000 and 2014 estimated agricultural emissions of ammonia have fallen by 12%
- In 2015 the population of UK farmland birds was less than half of its 1970 level.

Introduction

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 and the monitoring of environmental impacts to which agriculture contributes.

Chart 11.1 Agriculture's environmental footprint

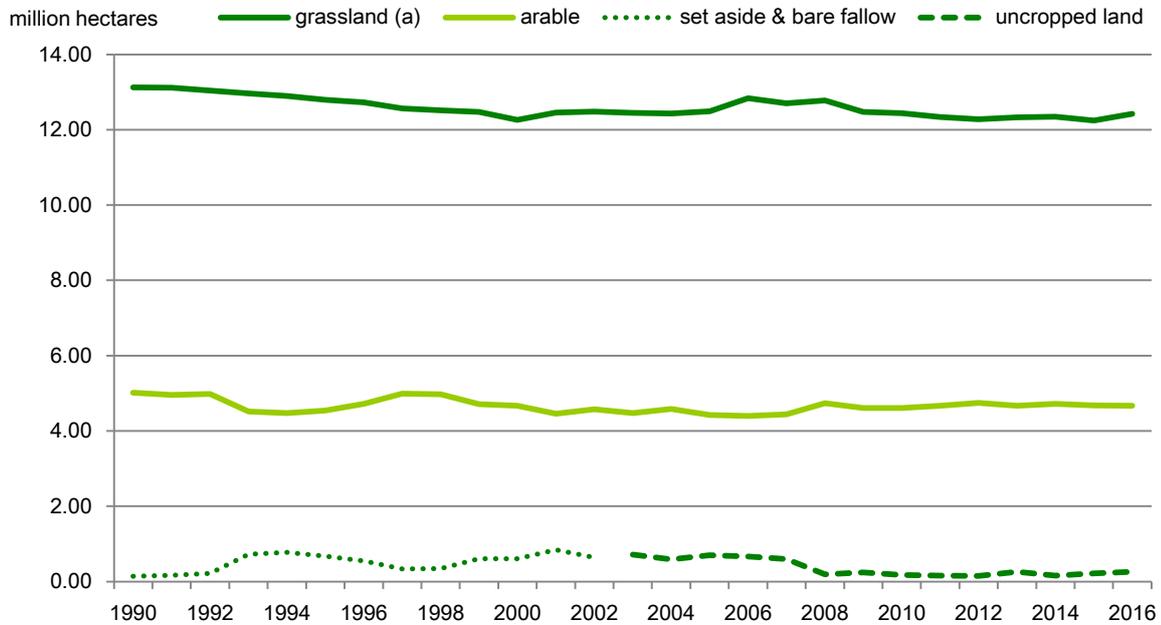


Source: Collated by Defra

Land use

6. Between 1990 and 2016 agricultural land use has remained relatively stable (Chart 11.2) with little change in the proportion of land used for grassland (67%) and crops (25%). 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



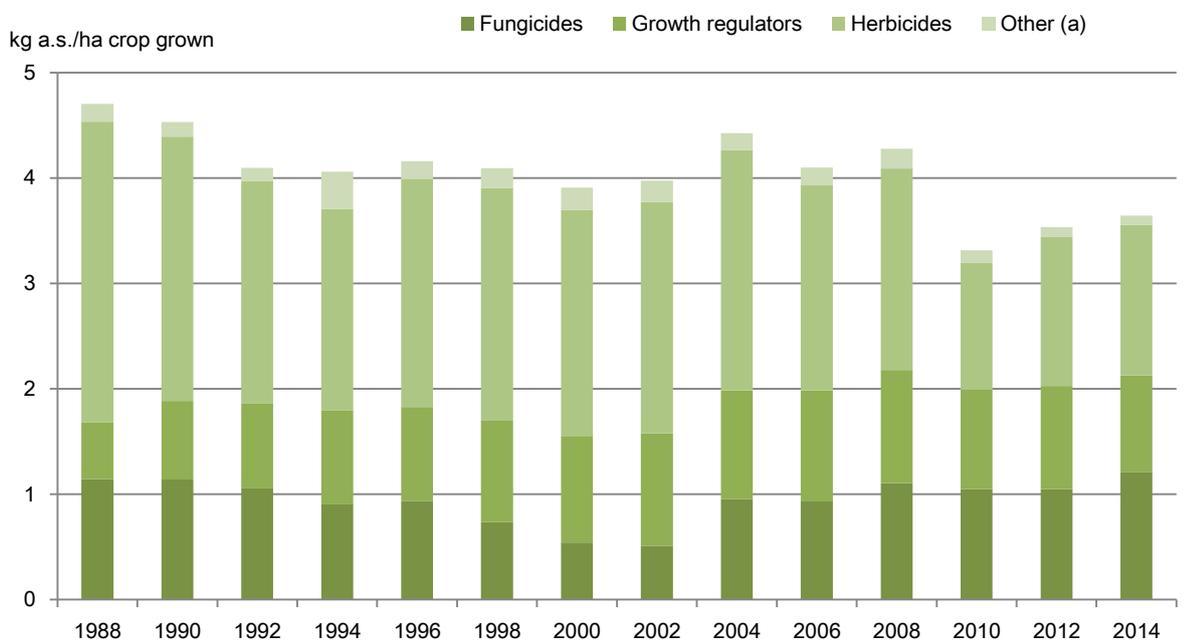
Source: Defra, June Survey of Agriculture

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

Pesticide usage

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 2014, cereals accounted for more than 70% of the treated area of arable crops and 70% of 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 England and how these have fluctuated over time.

Chart 11.3 Pesticide use on cereals, England



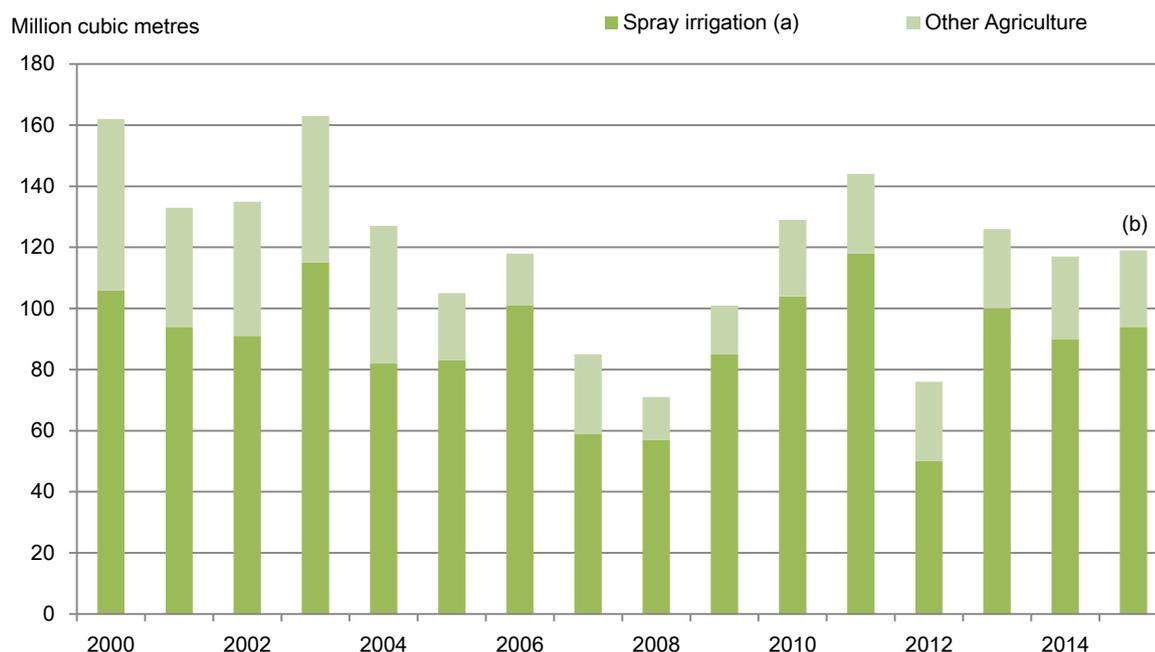
Source: Pesticides Usage Survey

(a) Insecticides, molluscicides, seed treatments

Water use

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 water from agriculture may have positive impacts by helping to recharge aquifers it may 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 was used 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 2015 the recorded agricultural abstraction rate in England was 119 million cubic metres per year, 1.7% higher than 2014.

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.

Further information on water abstraction can be found at:

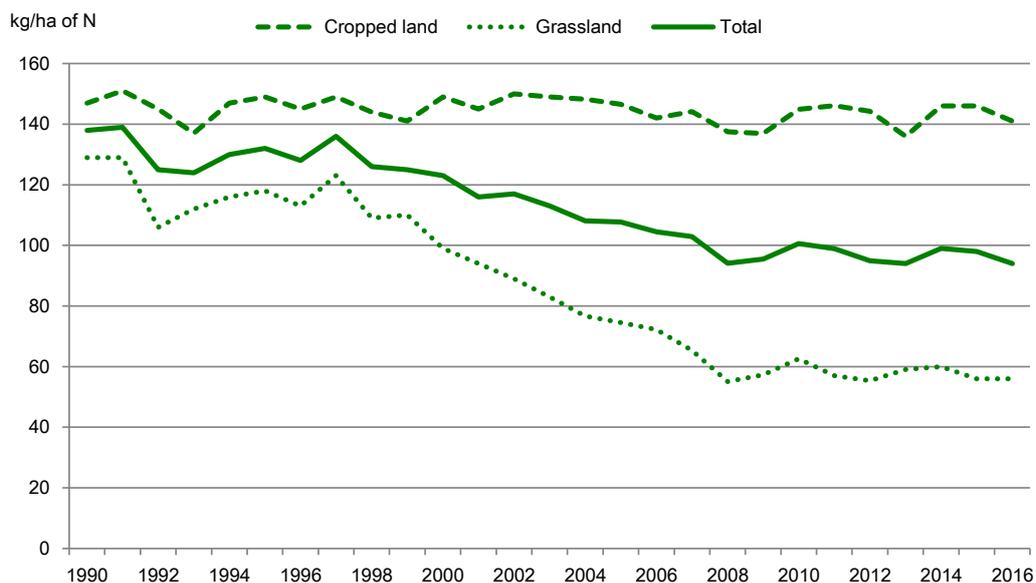
<https://www.gov.uk/government/statistics/water-abstraction-estimates>

Fertiliser use

12. 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).
13. 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.
14. Annual levels of use of nitrogen and phosphate 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.
15. 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 and 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.
16. 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.

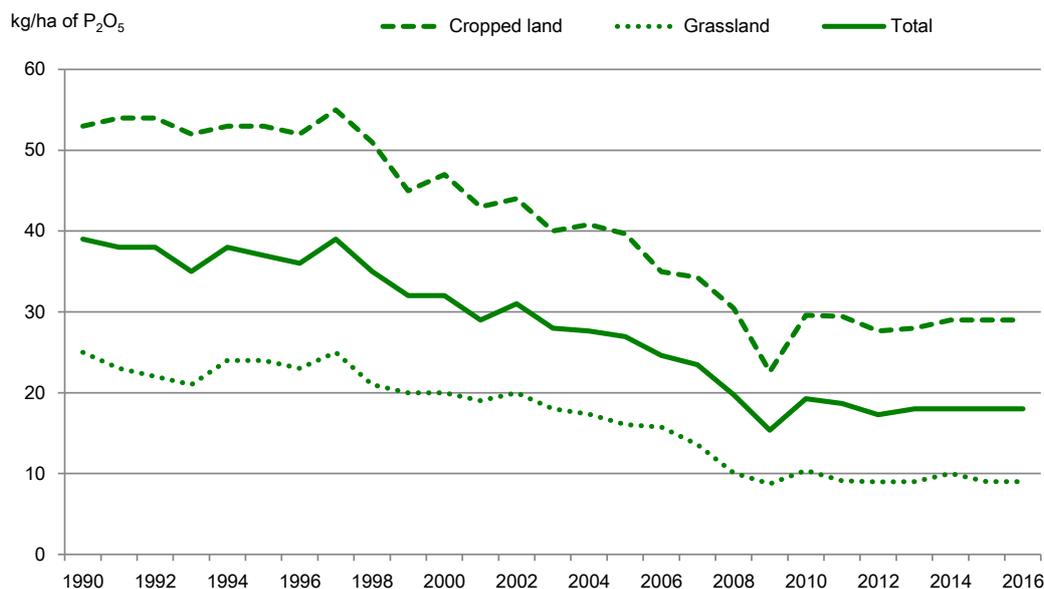
17. Overall mineral phosphate application rates have declined between 1990 and 2016 to now stand at 18 kg/ha on all crops and grass (Chart 11.6). This decline has levelled off in recent years.

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



Source: British Survey of Fertiliser Practice

Chart 11.6 Phosphate (P₂O₅) use (kg/ha) on all crops and grass, Great Britain



Source: British Survey of Fertiliser Practice

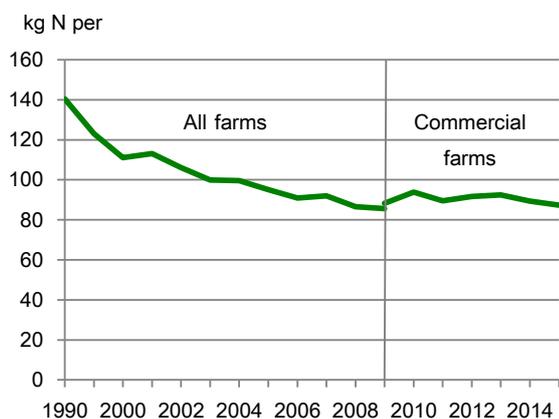
Further information is available in the annual report of the British Survey of Fertiliser Practice and the accompanying Statistical Notice which can be found at:

<https://www.gov.uk/government/collections/fertiliser-usage>

Soil nutrient balances

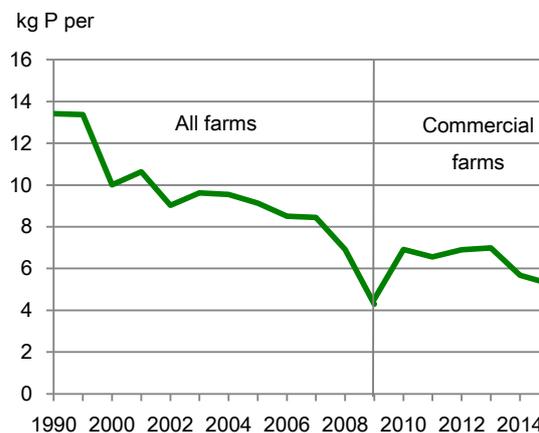
18. Soil nutrient balances provide an indication of the overall environmental pressure from nitrogen and phosphorus in agricultural soils. They measure the difference between nutrients applied to soils (largely as fertilisers and manures) and those removed from soils by the growth of crops, including grass for fodder, and grazing. An increase in the balance per hectare indicates a greater environmental risk whereas a decrease in the balance per hectare broadly indicates a reduced environmental risk from nutrient losses and their associated emissions. There is a theoretical 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

19. Provisional estimates for 2015 show that the nitrogen balance for the UK was a surplus of 87 kg/ha of managed agricultural land (Chart 11.7). This is a decrease of 2 kg/ha (-2%) compared to 2014, and a reduction of 24 kg/ha (-21%) compared to 2000, continuing the long-term downward trend.
20. The reduction between 2014 and 2015 has been mainly driven by a small increase in overall offtake (mainly via harvested crops) while inputs remained virtually unchanged.
21. 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 5 kg/ha of managed agricultural land in 2015 (Chart 11.8). This is a decrease of less than 1 kg/ha (-7%) compared to 2014 and a reduction of 5 kg/ha (-47%) compared to 2000.
23. The small reduction between 2014 and 2015 reflects the minimal change in both inputs and offtake between the two years. In the longer term the trend is downward, again with similar drivers to nitrogen.

Further information concerning soil nutrient balances can be found at:

<https://www.gov.uk/government/statistics/uk-and-england-soil-nutrient-balances-2015>

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 spraying close to water and can also enter groundwater via soil infiltration. Erosion washes topsoil into water bodies. In addition, soils can carry large amounts of phosphates and agri-chemicals that bond 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 is estimated that agriculture accounts for around 61% of the total nitrogen in river water in England and Wales⁴ and around 28% of the total phosphorus load in river water in Great Britain⁵ although this estimate may also include phosphorus from septic tanks⁶.

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). 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 2010 and 2015. In 2015, 35% of surface water bodies assessed under WFD in the UK were in high or good status. This reflects very little change from 36% of surface water bodies assessed in 2010. Diffuse water pollution from agriculture and rural land use is directly attributed to 28% of failures to meet the WFD standards in England⁷.

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

28. 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.
29. Agriculture is the major source of both nitrous oxide and methane emissions in the UK accounting for approximately three quarters of total nitrous oxide emissions and half of all methane emissions in 2015. In contrast agriculture only accounted for about 1% of total carbon dioxide emissions in the UK.
30. 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 2015 nitrous oxide emissions from agriculture are estimated to have fallen by 15% since 1990 and 10% since 2000 (Chart 11.9). This is consistent with trends in fertiliser usage over the same period.
31. 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 2015 methane emissions from agriculture are estimated to have fallen by 15% since 1990 and 11% since 2000, mainly as a result of decreasing livestock numbers, particularly cattle (Chart 11.10).

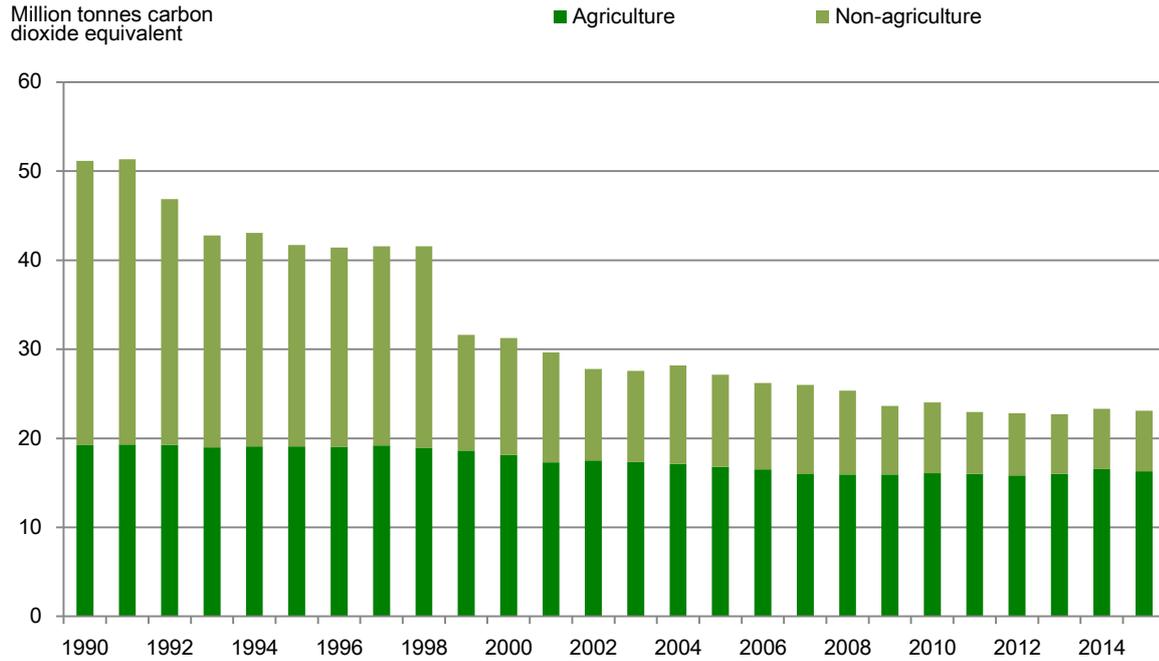
⁴ Hunt, D.T.E., *et al*, 2004, Updating an estimate of the sources of nitrogen to waters in England and Wales. Defra project WT03016.

⁵ White, P.J. and Hammond, J.P., 2006, Updating the estimate of the sources of phosphorus in UK waters. Defra project WT0701CSF.

⁶ May, L., *et al*, 2011, The impact of phosphorus inputs from small discharges on designated freshwater sites. Report to Natural England and Broads Authority, SWR/CONTRACTS/08-09/112.

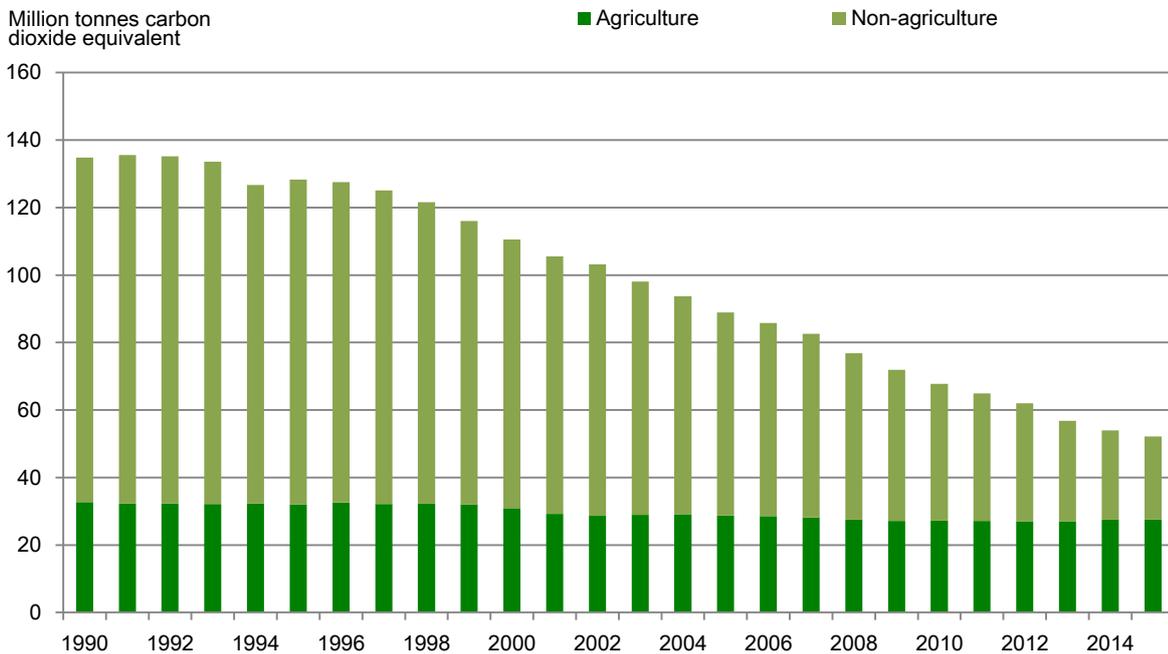
⁷ POSTnote 478 October 2014 Diffuse Pollution of Water by Agriculture,

Chart 11.9 Nitrous oxide emissions



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

Chart 11.10 Methane emissions



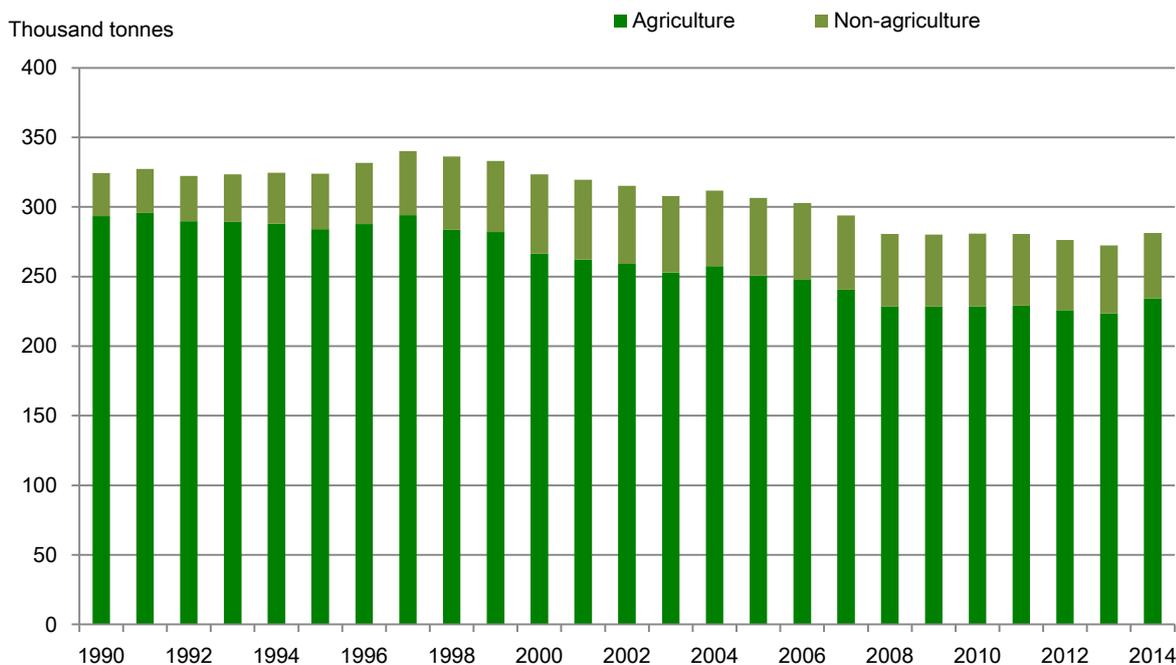
Source: Department for Business, Energy and Industrial Strategy (BEIS, formerly DECC)

Further information on greenhouse gas emissions from agriculture can be found at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>.

Air quality

32. 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 2014 agriculture accounted for about 83% of the UK's ammonia emissions.
33. The primary source of ammonia emissions in the UK is agricultural livestock and in particular cattle. In 2014 ammonia emissions from agriculture are estimated to have fallen by 20% since 1990 and 12% since 2000 due to reductions in cattle numbers and more efficient fertiliser use (Chart 11.11).

Chart 11.11 Ammonia emissions



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

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

Soils

34. The success of agriculture in the UK 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 year⁸. In the face of a changing climate and increase in food demand, it is important to mitigate the risks to long-term productive capacity and encourage farmers to manage their soils in a sustainable way. While rates of soil erosion in England are not excessively high, it is estimated to affect around 17% of land in England and Wales with impacts in the form of loss of productive capacity and nutrients, but also off site costs to the environment. Around 3.9 million hectares of our soils are at risk of soil compaction which could lead to a total yield penalty of around £163 million per year.⁹ The total yield penalty attributable to compaction in England and Wales was estimated in 2011 to be around £163 million per year¹⁰.
35. 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 months¹¹ which can also increase winter cereal yields¹².

⁸ [SP1606](#) Total costs of soil degradation project 2011 Defra.

⁹ [SP1606](#) Total costs of soil degradation project 2011 Defra.

¹⁰ SP1606

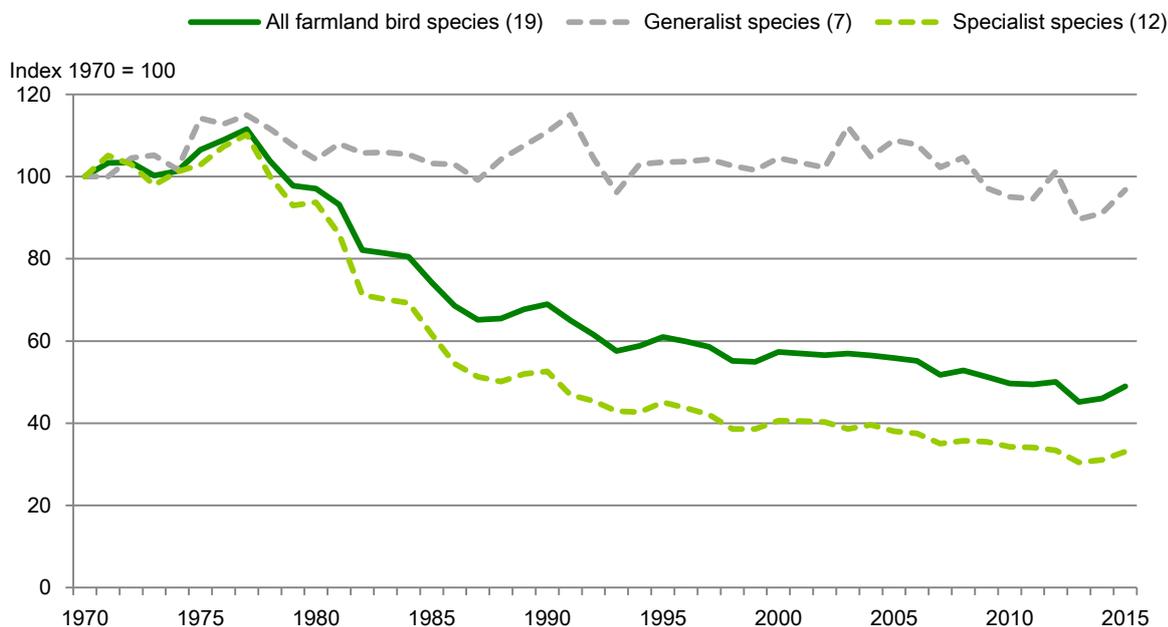
¹¹ (Chambers et al. 2000; Evans 1990)

¹² 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

36. 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.
37. The farmland bird index comprises 19 species of bird. The long-term decline of farmland birds in the UK has been mainly driven by the decline of the 12 species known as the 'specialists' that are restricted to, or highly dependent on, farmland habitats (Chart 11.12). Between 1970 and 2015, populations of farmland specialists declined by about 70% whereas farmland generalists have declined by 3%. In spite of a slight recovery in the last three years the 2015 index remains at less than half (49%) of its 1970 level.

Chart 11.12 Farmland Bird Index



Source: BTO/RSPB

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

Chapter 12 Organic Farming

Summary

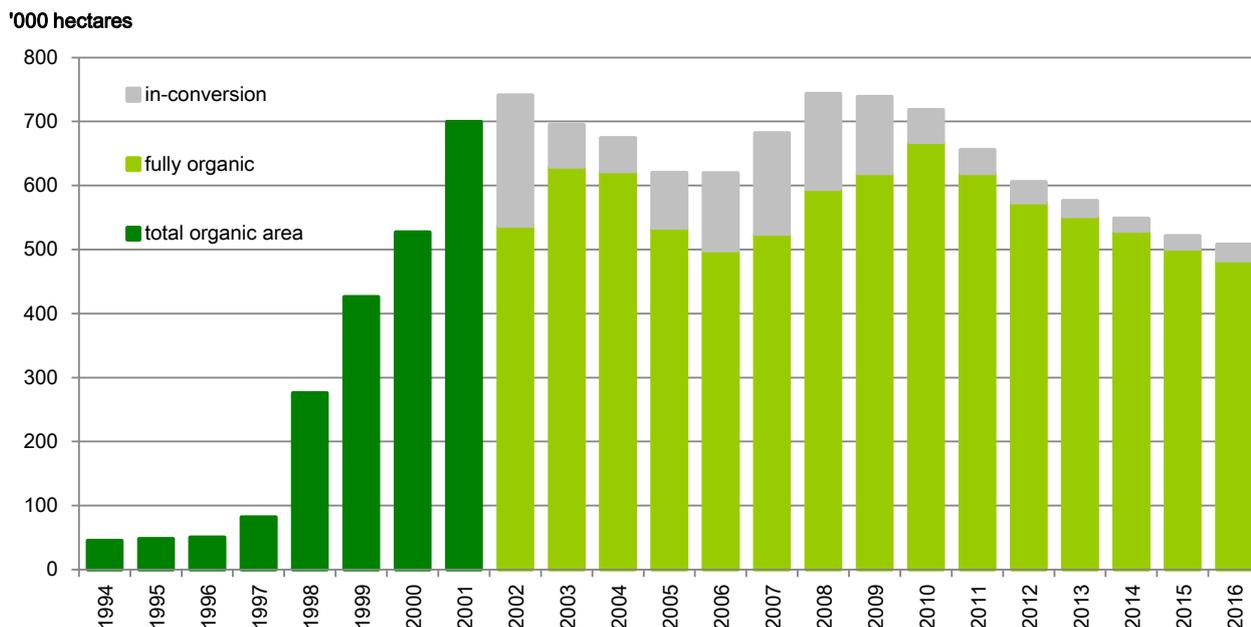
In 2016:

- The United Kingdom had a total area of 508 thousand hectares of land farmed organically, down from 521 thousand hectares in 2015.
- The area in-conversion expressed as a %age of the total organic area rose for the second consecutive year.
- England has the majority of organically managed land in the UK with 58% of the total area, followed by Scotland with 25%, Wales with 15% and Northern Ireland with 2.0%. Within England nearly half of all organic land falls within the South West region with 49% of the area for England, followed by the South East (including London) with 15%.
- The total number of organic producers and processors rose by 5.1% to 6,363. The number of producers only and producer/processors continued to decline. The number of processors only, rose for the third year running and now stands at 2,804, the highest number since 2008.
- Poultry and sheep remain the most popular livestock types farmed organically in the United Kingdom.

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 (table 12.1)

3. In 2016, the United Kingdom had a total area of 508 thousand hectares of land farmed organically (i.e. the fully converted area and area under conversion), down from 521 thousand hectares in 2015. Since 2008 when the area of land farmed organically peaked, the organically farmed area has declined by 32%.
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 2016, the second consecutive increase since 2007.

Land use and livestock numbers (tables 12.2 and 12.5)

5. Permanent pasture accounts for the biggest share of the organic area (66%) followed by temporary pasture (18%) and cereals (7.6%). The three main crop types grown organically are cereals, vegetables including potatoes and other arable crops. All have shown a decline since the late 2000s, mirroring the fall in the land area farmed organically since 2008. Poultry continues to be the most popular livestock type farmed organically in the United Kingdom, rising by 10% in 2016 to 2.8 million birds. In the red meat sector despite a small decrease, sheep remained the most popular species with around 841 thousand animals in 2016. Cattle numbers increased in 2016 to 296 thousand animals compared to 292 thousand in 2015 with the number of pigs also increasing by 5.0% to 31 thousand animals.

Processors (tables 12.3 and 12.4)

There were 6,363 certified organic processors (including agricultural producers who are also processors) in the United Kingdom in 2016, an increase from 6,056 in 2015. The majority (76%) of them were in England. The number of crop producers and livestock producers both saw a drop in 2016, falling by 3.1% and 3.7% respectively.

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

	2012	2013	2014	2015	2016
Land, in-conversion					
North East	2.7	1.0	0.8	0.3	0.4
North West	1.1	0.9	0.6	0.3	1.1
Yorkshire & Humberside	0.6	0.5	0.6	0.5	0.6
East Midlands	0.6	0.7	0.9	0.7	0.9
West Midlands	1.4	0.8	1.2	1.0	2.0
Eastern	0.7	0.7	0.5	1.0	1.3
South East (inc. London)	3.1	3.0	1.9	0.7	1.4
South West	8.9	6.3	6.1	5.5	7.2
England	19.2	14.0	12.5	10.0	14.7
Wales	1.5	1.9	4.1	9.4	7.8
Scotland	8.0	8.4	3.0	1.0	2.3
Northern Ireland	3.6	0.1	0.2	0.3	0.3
United Kingdom	32.2	24.4	19.7	20.6	25.2
Land, fully organic					
North East	27.3	26.9	26.3	27.6	24.9
North West	15.5	14.0	13.6	13.8	11.4
Yorkshire & Humberside	9.9	10.2	10.1	10.2	10.0
East Midlands	15.5	14.1	13.7	13.5	13.6
West Midlands	30.6	30.8	29.3	28.3	28.0
Eastern	14.1	14.1	13.8	13.7	13.5
South East (inc. London)	46.5	48.1	45.6	45.0	42.4
South West	145.5	144.2	143.1	141.6	138.0
England	304.8	302.4	295.7	293.7	281.8
Wales	118.4	100.0	91.6	73.5	73.7
Scotland	143.7	140.0	132.9	125.3	119.3
Northern Ireland	6.6	9.3	8.8	8.2	8.0
United Kingdom	573.4	551.7	529.0	500.8	482.7
Total UK organic land (in-conversion & fully organic)	605.7	576.0	548.6	521.4	507.9

Source: Organic certification bodies collated by Defra statistics

Table 12.2 Organic and in-conversion land use; United Kingdom

Enquiries: Sarah Thompson on +44 (0)20 802 66462

email: sarah.thompson@defra.gsi.gov.uk

Thousand hectares

	2012	2013	2014	2015	2016
Land, in-conversion					
Cereals	1.5	1.4	1.0	1.0	1.6
Other crops	0.3	0.2	0.3	0.4	0.6
Fruit & nuts	0.1	0.1	0.1	0.0	0.1
Vegetables (including potatoes)	0.3	0.2	0.1	0.1	0.5
Herbs & ornamentals	0.3	0.7	0.6	0.1	0.1
Temporary pasture	5.5	3.8	3.2	3.1	6.2
Permanent pasture (a)	22.0	16.6	13.5	15.1	15.3
Woodland	1.0	0.6	0.6	0.4	0.2
Unutilised land	1.3	0.8	0.3	0.3	0.7
Total	32.2	24.4	19.7	20.6	25.2
Land, fully organic					
Cereals	46.4	42.4	41.2	38.6	36.8
Other crops	8.1	7.4	7.0	6.6	6.7
Fruit & nuts	2.0	2.0	2.0	1.9	1.9
Vegetables (including potatoes)	12.0	11.2	9.3	10.2	9.8
Herbs & ornamentals	5.5	6.1	7.9	6.2	5.7
Temporary pasture	100.6	95.1	90.5	89.1	85.9
Permanent pasture (a)	383.6	371.1	356.1	332.0	319.7
Woodland	6.4	6.9	6.4	6.6	7.1
Unutilised land	8.8	9.6	8.4	9.7	9.2
Total	573.4	551.7	529.0	500.8	482.7

Source: Organic certification bodies collated by Defra statistics

(a) Includes rough grazing.

Table 12.3 Organic producers and/or processors (a) – by region

Enquiries: Sarah Thompson on +44 (0)20 802 66462

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Number of businesses

	2012	2013	2014	2015	2016
North East	137	127	130	137	130
North West	273	253	246	277	301
Yorkshire & Humberside	262	240	238	257	273
East Midlands	366	351	346	329	371
West Midlands	442	426	424	438	446
Eastern	456	449	445	457	508
South East (inc. London)	950	957	1 020	1 083	1 192
South West	1 706	1 616	1 605	1 601	1 627
England	4 592	4 419	4 454	4 579	4 848
Wales	1 080	913	779	741	751
Scotland	611	551	576	539	560
Northern Ireland	204	189	193	197	204
United Kingdom	6 487	6 072	6 002	6 056	6 363

Source: Organic certification bodies collated by Defra statistics

(a) 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 12.4 Numbers of crop/livestock organic producers and processors 2016 (a) – by region

Enquiries: Sarah Thompson on +44 (0)20 802 66462

 email: sarah.thompson@defra.gsi.gov.uk

Number of businesses	No. crop producers	No. crop producers and processors	No. livestock producers	No. livestock producers and processors
North East	82	1	70	1
North West	113	6	78	4
Yorkshire & Humberside	92	6	74	4
East Midlands	134	7	105	6
West Midlands	229	13	157	11
Eastern	142	11	70	7
South East (inc. London)	319	20	190	14
South West	1048	59	782	54
England	2 159	123	1 526	101
Wales	579	23	465	19
Scotland	310	6	252	6
Northern Ireland	120	0	105	0
United Kingdom	3 168	152	2 348	126

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 12.3.

Table 12.5 Estimates of organic livestock numbers (a); United Kingdom

Enquiries: Sarah Thompson on +44 (0)20 802 66462

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Thousand head	2012	2013	2014	2015	2016
Cattle	281	283	304	292	296
Sheep	1 133	999	955	845	841
Pigs	35	30	28	30	31
Poultry	2 452	2 488	2 399	2 560	2 821
Other livestock (c)	4	4	6	4	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 for 2003 to 2010 includes in-conversion animals, from 2011 onwards the data refers to fully organic animals only.

(c) "Other Livestock" includes goats, farmed deer, horses, camelids and any livestock not recorded elsewhere.

Summary

In 2016:

- Compared to 2015 the value of food, feed and drink (FFD) exports increased by £1.6 billion (8.7%) to £20.1 billion.
- Compared to 2015 the value of food, feed and drink imports increased by £2.5 billion (6.3%) to £42.6 billion.
- The trade gap in food, feed and drink widened by 4.2% to £22.5 billion.
- Principal destinations for exports were the Irish Republic (17%), USA (11%), France (11%) and the Netherlands (6.5%).
- The most important countries of despatch for imports into the UK were the Netherlands (12%), Irish Republic (10%), France (10%), Germany (9.3%) and Spain (7.1%).
- Whisky had the highest export value, totalling £4.1 billion. This was a 2.1% increase on 2015's value in real terms.
- Fresh fruit and vegetables together remain the highest value categories for imports, totalling £5.9 billion, a 13% increase on 2015 at current prices. Exports of fresh vegetables increased by 11% to £109 million from 2015's total of £98 million. Exports of fresh fruit rose by 15% between 2015 and 2016.
- Exports of unmilled wheat totalled £383 million, a rise of 42% on 2015's total of £270 million as domestic production continued to recover from 2012's challenging planting conditions. Imports of unmilled wheat decreased by 9.3% to £243 million.

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 carcass 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 and table 13.1)

3. The value of exports of food, feed and drink was £20.1 billion in 2016. To allow a direct comparison with previous years, these values are adjusted to account for inflation. The real terms value of exports was £1.6 billion or 8.7% higher in 2016 than 2015. The longer-term trend is of rising real terms export values. Since 2005 the real terms value of exports has risen by £7.9 billion or 64%. 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 £42.6 billion in 2016. The real terms value of imports was £2.5 billion or 6.3% higher in 2016 than 2015. The longer-term trend is of rising real terms import values. Since 2005 the real terms value of imports has risen by £14 billion or 48%.
5. The trade gap widened by £904 million (4.2%) between 2015 and 2016, and has widened by £5 billion (36%) from £16.6 billion in 2005 to £22.5 billion in 2016 in real terms.
6. All the main categories showed an increase in exports in real terms. The largest increase occurring in the animal feed category which showed a rise of 21% to £1.1 billion, closely followed by exports of fish which increased by 20% to £1.6 billion. Exports of coffee & tea increased by 8.6% and exports of alcoholic and non-alcoholic beverages increased by 6.2%. Exports of meat increased by 6.4%, and exports of dairy increased by 5.0%.
7. The picture for imports was similar. In real terms, imports of fish increased by 13% to £3.1 billion, and imports of fruit & vegetables increased by 11% to £10 billion between 2015 and 2016. Imports of meat increased by 3.9% to £6.2 billion and imports of dairy increased by 3.2% to £2.8 billion. Only imports of sugar fell by 3.3% to £1.2 billion.

Chart 13.1 Value of trade in food, feed and drink at 2016 prices; United Kingdom

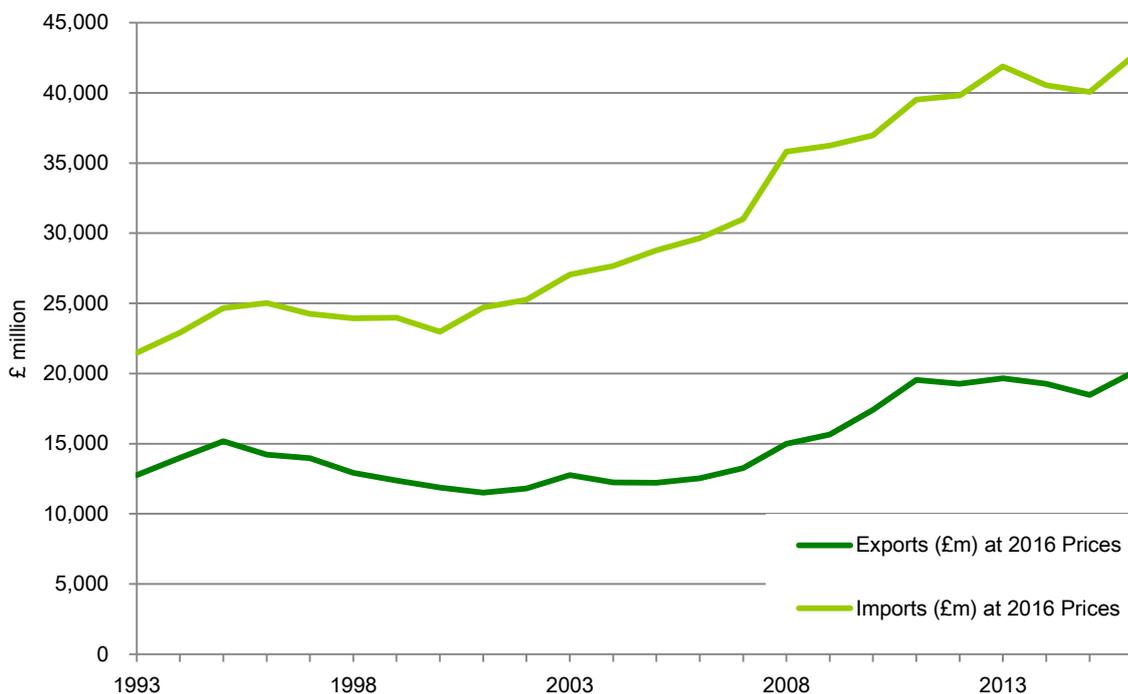


Table 13.1 Value of trade in food, feed and drink at 2016 prices; United Kingdom

Enquiries: Leigh Riley on +44 (0)2080 266332

email: leigh.riley@defra.gsi.gov.uk

£ million		Calendar year									
SITC Division Code	Type	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 (provisional)
Exports											
01	Meat & Meat Preps	971	1 314	1 377	1 538	1 803	1 678	1 732	1 705	1 478	1 573
02	Dairy & Eggs	939	992	933	1 138	1 341	1 238	1 430	1 535	1 306	1 371
03	Fish & Fish Preps	1 143	1 142	1 300	1 478	1 576	1 425	1 520	1 598	1 361	1 639
04	Cereals & Cereal Preps	1 580	1 985	1 977	2 122	2 184	2 056	1 938	1 985	2 141	2 293
05	Fruit and Veg & Preps	697	781	845	889	949	901	992	929	983	1 119
06	Sugar & Sugar Preps	454	502	504	483	410	404	389	417	382	386
07	Coffee, tea, etc.	852	982	986	1 108	1 174	1 216	1 280	1 256	1 257	1 366
08	Animal feed	496	596	652	710	758	866	969	920	923	1 121
09	Misc. edible preps	907	1 011	1 110	1 200	1 267	1 286	1 454	1 640	1 660	1 823
11	Beverages	4 766	5 172	5 493	6 149	7 308	7 211	7 217	6 649	6 423	6 824
22 + S4	Oils/fats & Oilseeds	459	503	463	581	780	976	723	640	545	553
Total		13 265	14 982	15 639	17 397	19 550	19 256	19 644	19 274	18 460	20 069
Imports											
01	Meat & Meat Preps	4 751	5 309	5 545	5 578	6 170	5 995	6 113	6 132	5 980	6 215
02	Dairy & Eggs	2 178	2 605	2 617	2 713	2 780	2 838	3 062	2 946	2 676	2 762
03	Fish & Fish Preps	2 320	2 502	2 427	2 477	2 755	2 725	2 868	2 802	2 718	3 078
04	Cereals & Cereal Preps	2 238	2 791	2 750	2 588	2 740	3 158	3 712	3 334	3 222	3 304
05	Fruit and Veg & Preps	7 411	8 151	8 037	8 372	8 705	8 705	9 355	8 958	9 290	10 318
06	Sugar & Sugar Preps	1 131	1 319	1 340	1 283	1 373	1 356	1 476	1 357	1 199	1 159
07	Coffee, tea, etc.	1 869	2 213	2 581	2 748	3 014	2 878	2 824	2 960	3 179	3 419
08	Animal feed	1 248	1 618	1 727	1 875	1 823	1 890	2 170	2 084	1 945	1 993
09	Misc. edible preps	1 787	2 204	2 439	2 353	2 617	2 680	2 824	2 848	3 039	3 207
11	Beverages	4 670	4 952	4 958	5 168	5 348	5 467	5 458	5 339	5 223	5 479
22+S4	Oils/fats & Oilseeds	1 412	2 153	1 822	1 815	2 202	2 111	2 020	1 772	1 602	1 650
Total		31 015	35 815	36 245	36 970	39 528	39 804	41 881	40 533	40 072	42 584

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 2016, 60% of UK food, feed and drink exports were to countries in the European Union (EU). In comparison, exports to Asia and North America were 16% and 14% respectively. 70% of UK imports of food, feed and drink during the same period were from the EU, while the next two largest importers were the same as seen with the exports, with Asia and North America accounting for 8% and 6% respectively.
9. Principal UK export destinations of food, feed and drink to the European Union in 2016 were the Irish Republic (£3.3 billion), France (£2.1 billion), Netherlands (£1.3 billion) and Germany (£1.3 billion). The principal European Union countries from which FFD items were imported into the United Kingdom in 2016 were the Netherlands (£5.1 billion), the Irish Republic (£4.0 billion), France (£4.0 billion), and Germany (£4.0 billion).
10. Principal non-EU destinations of UK food, feed and drink exports in 2016 were the USA (£2.1 billion), China (£438 million) and Hong Kong (£376 million), while the main non-EU country from which food, feed and drink items were imported into the United Kingdom was the USA (£1.3 billion).

Chart 13.2 Exports of food, feed and drink by country of destination 2016; United Kingdom

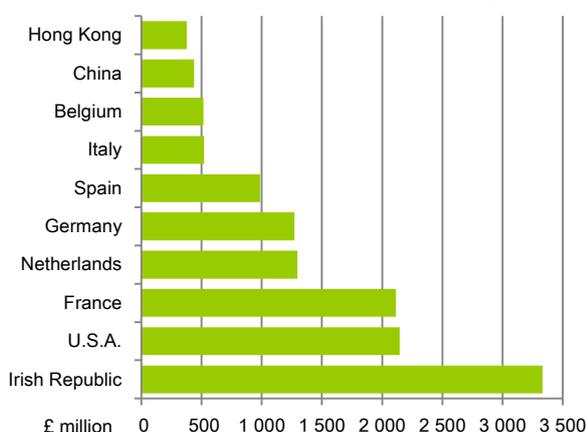
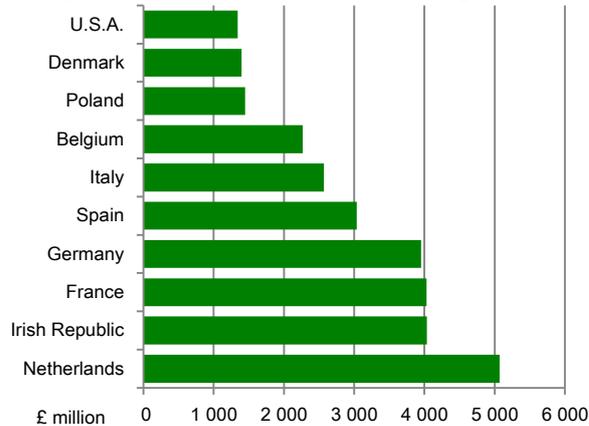


Chart 13.3 Imports of food, feed and drink by country of dispatch 2016; United Kingdom



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.
 - Exports of highly processed foods such as confectionery, canned meats, jams, alcoholic drinks and ice cream, increased by 54% in value between 2007 and 2016.
 - 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 39% in value between 2007 and 2016.
 - Exports of unprocessed commodities, such as fresh fruit & vegetables, nuts, unmilled cereal and eggs increased by 93% in value between 2007 and 2016.
 - Imports of highly processed foods increased by 47% in value between 2007 and 2016.
 - Imports of lightly processed food and drink increased by 31% in value between 2007 and 2016.
 - Imports of unprocessed commodities increased by 36% in value between 2007 and 2016.

Chart 13.4 Exports in food, feed and drink by degree of processing at 2016 prices; United Kingdom

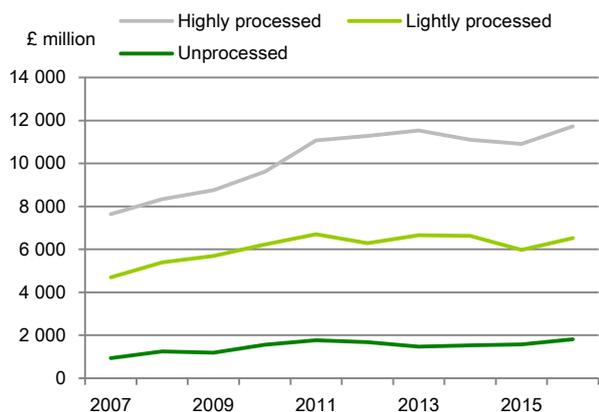
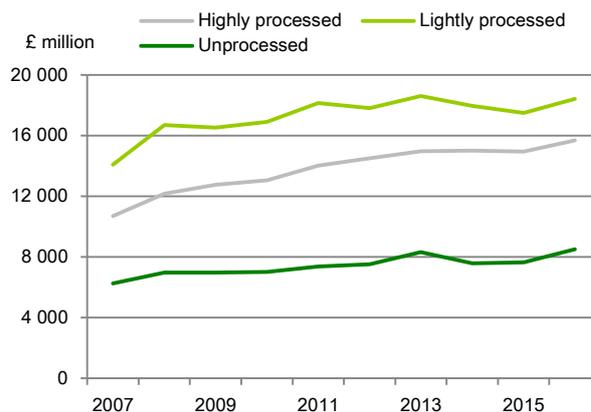


Chart 13.5 Imports in food, feed and drink by degree of processing at 2016 prices; United Kingdom



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

12. The value of exports across a range of different commodities has broadly increased year on year in recent times. However, in 2015, commodity prices for many sectors fell, due to a slowdown of global economic markets and the effect of exchange rates. 2016 saw a return to export growth in most of the main product groups.
13. The value of exports of whisky, which represents the highest valued individual food, feed and drink item, increased by 2.1% to £4.1 billion. It is 22% higher than in 2007. Exports of salmon also increased by 16% to £577 million as the demand for high quality UK food items grows. The value of exports of unmilled wheat increased by 42% to £383 million in 2016, as a result of a return to good domestic harvests. Exports of pork grew by 26% to £252 million as a result of the opening of new markets in Asia.
14. Imports of fresh fruit and fresh vegetables grew by 16% to £3.6 billion and 8.5% to £2.3 billion respectively, as the range, quality and awareness of healthy eating options increases. The value of imports across a range of different commodities was broadly similar to 2014. Imports of unmilled wheat fell by 9.3% to £243 million in reaction to good domestic supply. Imports of milk & cream also fell by 11% to £105 million as a result of strong domestic production.
15. The value of wine imports, a high value commodity, remained broadly similar to last year at £3.1 billion.
16. The overall volume of exports of food, feed and drink increased by 23% to 5.1 billion tonnes. Over the longer term, the volume of exports is rising and in 2016 was 43% higher than in 2007. Since 2007 the volume of imports has increased by 15%, less than half as much as the rise in exports.

Table 13.2 Trade in key commodities in real terms at 2016 prices; United Kingdom

Enquiries: Leigh Riley on +44 (0)2080 266332

 email: leigh.riley@defra.gsi.gov.uk

£ million		Calendar year									
Commodity	Flow	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 (provisional)
Whisky	Imports	114	122	134	138	140	139	170	202	227	171
	Exports	3 347	3 540	3 578	3 867	4 644	4 625	4 542	4 147	4 011	4 096
Wine	Imports	2 987	3 227	3 070	3 234	3 272	3 409	3 326	3 169	3 062	3 062
	Exports	243	268	362	470	585	471	465	470	454	486
Cheese	Imports	1 082	1 353	1 323	1 344	1 366	1 393	1 507	1 490	1 324	1 356
	Exports	281	318	316	374	435	432	461	480	457	499
Poultry meat	Imports	903	890	953	1 046	1 162	1 029	1 035	1 084	1 088	1 157
	Exports	233	246	258	286	330	303	356	313	248	250
Poultry meat products	Imports	555	683	700	754	859	850	882	910	930	968
	Exports	145	154	136	139	155	145	131	139	118	109
Beef and veal	Imports	713	838	801	846	924	919	991	1 005	1 049	1 017
	Exports	146	241	287	364	471	412	388	384	348	369
Wheat, unmilled	Imports	242	362	286	220	244	426	687	354	268	243
	Exports	269	457	340	499	444	287	90	169	270	383
Lamb and mutton	Imports	325	355	425	420	443	391	398	417	399	345
	Exports	213	297	352	352	403	373	399	389	307	327
Pork	Imports	780	762	709	721	779	731	769	716	623	778
	Exports	103	150	129	164	184	200	227	214	201	252
Breakfast cereals	Imports	134	165	202	189	199	198	191	199	232	255
	Exports	365	399	461	403	410	382	390	371	375	386
Milk and cream	Imports	61	89	85	112	129	124	147	138	118	105
	Exports	213	226	218	271	319	268	269	269	197	197
Bacon and ham	Imports	655	778	854	789	729	687	671	616	545	552
	Exports	35	81	57	49	64	39	41	39	39	41
Butter	Imports	266	264	267	314	345	319	331	275	267	279
	Exports	77	62	64	88	138	108	151	152	117	157
Eggs and egg products	Imports	124	150	171	153	140	201	187	179	194	173
	Exports	29	43	51	51	52	63	93	99	99	64
Fresh vegetables	Imports	1 914	1 968	1 913	2 078	2 015	1 978	2 168	2 066	2 129	2 310
	Exports	57	61	73	82	78	76	73	81	98	109
Fresh fruit	Imports	2 501	2 707	2 718	2 759	2 854	2 866	3 048	2 953	3 127	3 618
	Exports	93	97	106	111	108	86	114	80	98	113
Salmon (inc. smoked)	Imports	168	170	220	246	271	268	359	377	334	480
	Exports	226	238	324	429	521	468	597	632	497	577

Source: HMRC

Whisky	includes bourbon, scotch (malted and blended) and other whiskies.
Wine	includes grape must, vermouth and wine of fresh grapes (sparkling and still).
Cheese	includes grated or powdered, processed, blue-veined and fresh (e.g. curd).
Poultrymeat (inc. poultry offal)	includes carcass meat, cuts and offal (inc. liver).
Beef and veal	includes carcass meat and cuts, both bone-in and boneless.
Wheat, unmilled	includes durum, other wheat (inc. spelt) and meslin.
Lamb and mutton	includes carcass meat and cuts, both bone-in and boneless.
Pork	includes carcass meat and cuts, both bone-in and boneless.
Breakfast cereals	includes cereal grains worked or prepared for breakfast cereals
Milk and cream	includes milk (inc. skimmed milk) and cream, not concentrated or sweetened.
Fresh vegetables	excludes potatoes.
Salmon (inc. smoked)	includes fresh, chilled, frozen or smoked, but not canned

Table 13.3 Trade in key commodities by volume; United Kingdom

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Thousand tonnes (unless otherwise specified)		Calendar year									
Commodity	Flow	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 (provisional)
Whisky (million litres pure alcohol)	Imports	14	16	16	16	16	15	23	29	23	16
	Exports	326	308	311	305	361	345	353	344	333	352
Wine (million litres)	Imports	1 309	1 289	1 295	1 365	1 371	1 326	1 318	1 425	1 444	1 427
	Exports	48	44	58	90	88	80	95	104	97	81
Cheese	Imports	403	422	419	436	414	444	468	469	494	490
	Exports	97	88	105	113	124	126	125	134	152	164
Poultry meat	Imports	383	335	340	381	412	394	398	423	453	492
	Exports	292	278	258	270	295	297	350	356	305	304
Poultry meat products	Imports	230	249	241	255	279	292	291	306	337	364
	Exports	46	46	38	38	46	46	42	49	45	39
Beef and veal	Imports	240	247	231	238	235	236	241	255	269	264
	Exports	59	81	83	110	144	120	105	112	100	110
Wheat, unmilled	Imports	1 238	1 248	1 390	1 111	902	1 785	2 965	1 824	1 582	1 482
	Exports	1 911	2 766	2 533	3 335	2 287	1 503	448	1 143	2 002	2 936
Lamb and mutton	Imports	114	112	116	101	88	86	98	93	93	90
	Exports	69	87	96	89	96	95	104	102	79	78
Pork	Imports	463	393	360	363	373	349	352	358	371	440
	Exports	99	118	104	131	144	154	181	182	187	206
Breakfast cereals	Imports	92	103	110	105	108	102	98	108	135	139
	Exports	165	160	171	158	161	150	146	147	156	152
Milk and cream	Imports	133	193	158	193	215	194	245	221	206	150
	Exports	513	532	539	561	648	617	574	654	665	646
Bacon and ham	Imports	277	293	323	313	280	258	250	256	251	243
	Exports	12	31	21	24	34	15	13	14	16	16
Butter	Imports	103	81	96	102	100	104	106	95	106	99
	Exports	32	24	27	27	36	38	45	51	50	65
Eggs and egg products	Imports	93	95	90	75	68	100	95	99	107	100
	Exports	12	14	23	24	17	18	28	21	18	17
Fresh vegetables	Imports	1 947	1 957	1 823	1 871	1 975	2 049	2 225	2 179	2 256	2 370
	Exports	88	80	78	95	89	85	80	119	153	156
Fresh fruit	Imports	3 510	3 326	3 175	3 229	3 347	3 408	3 544	3 590	3 685	3 891
	Exports	147	128	153	142	149	109	143	102	128	140
Salmon (inc. smoked)	Imports	48	47	53	50	57	63	69	74	68	81
	Exports	60	57	71	83	96	100	111	123	112	105
Food, feed and drink Index, 2005=100	Imports	105	107	103	104	107	110	114	115	119	122
	Exports	107	106	109	116	123	122	128	127	127	131

Source: HMRC

Whisky	includes bourbon, scotch (malted and blended) and other whiskies.
Wine	includes grape must, vermouth and wine of fresh grapes (sparkling and still).
Cheese	includes grated or powdered, processed, blue-veined and fresh (e.g. curd).
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 wheat (inc. spelt) and meslin.
Lamb and mutton	includes carcase meat and cuts, both bone-in and boneless.
Pork	includes carcase meat and cuts, both bone-in and boneless.
Breakfast cereals	includes cereal grains worked or prepared for breakfast cereals
Milk and cream	includes milk (inc. skimmed milk) and cream, not concentrated or sweetened.
Fresh vegetables	excludes potatoes.
Salmon (inc. smoked)	includes fresh, chilled, frozen or smoked, but not canned

Chapter 14 The Food Chain

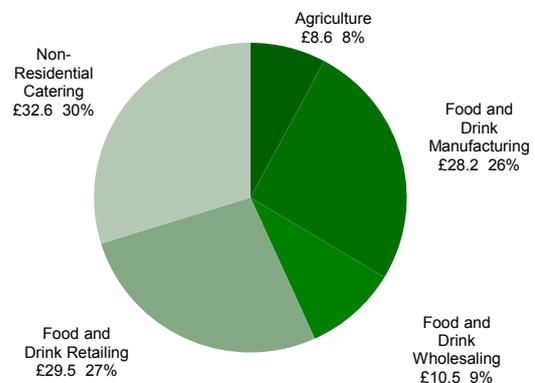
Summary

- In 2015, the agri-food sector in the United Kingdom accounted for a total estimated Gross Value Added (GVA) of £109 billion or 6.6% of national GVA, down from 6.7% in 2014. The non-residential catering sector increased 12%, followed by manufacturing at 6.4%.
- Employment in the agri-food sector rose 0.1% over the 12 month period to the fourth quarter of 2016 to around 3.8 million. The largest decrease was in retailing, falling by 31,000 employees (2.7%).
- Total factor productivity of the UK food chain beyond the farmgate has risen by 0.5% between 2014 and 2015. Productivity in the wider economy has increased in 2015 by 1.3%. Benchmarking against a wider economy measure shows that the average annual growth in the food chain between 2006 and 2015 was 0.2% compared to 0.3% in the wider economy.
- Excluding the effect of price rises, consumers' expenditure increased 2.6% in 2016 but remains 1.3% lower than at the start of the economic downturn in 2007. Expenditure on food eaten out increased 1.9% in 2016, whilst expenditure on household food increased 3.0%.

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

1. In 2015, the agri-food sector contributed £109 billion to the economy, around 6.6% of the national GVA. Within this, manufacturing, retailing and non-residential catering accounted for over one quarter each. Food wholesaling covers 9% of the sector and agriculture made the smallest contribution at 8%.
2. Comparing 2015 with 2014, agriculture had the largest drop in productivity (13%); followed by wholesaling (4.6%) and retailing (2.8%). Manufacturing increased by 6.4%, and non-residential catering showed a 12% increase. Between 2006 and 2015, the average annual growth rate of the food chain was 0.2% whereas the wider economy's average annual growth rate was 0.3%.

Chart 14.1 Gross Value Added of the agri-food sector, 2015 (£ billion)



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

Table 14.1 Agri-food sector contribution to the national economy

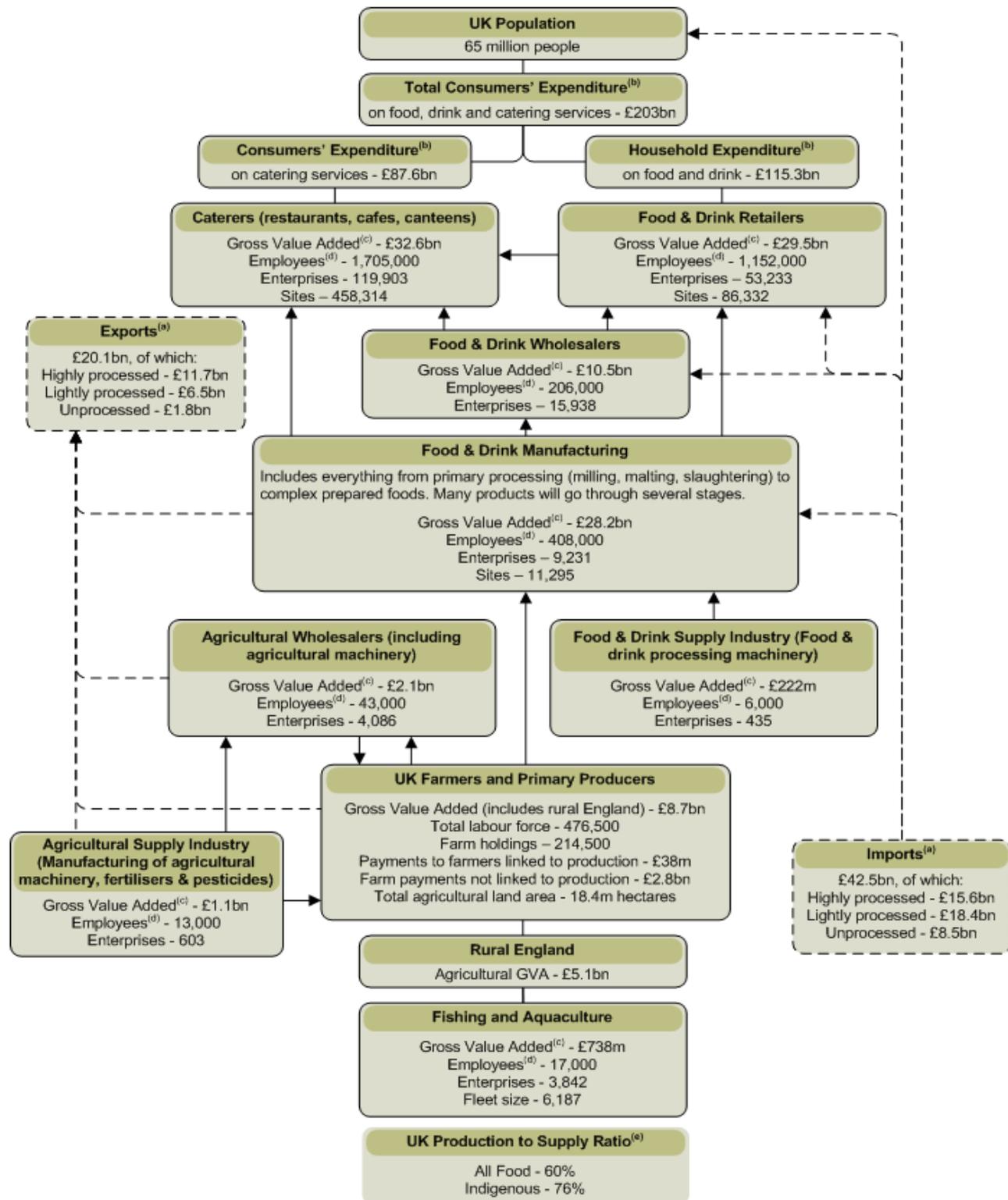
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£ million (unless otherwise specified)

	2012	2013	2014	2015	2016 (provisional)
Agri-food sector's contribution to total economy gross value added					
at current prices					
Agriculture	8 646	9 397	9 782	8 561	8 196
Food Manufacturing	24 543	26 246	26 524	28 233	..
Food Wholesaling	10 184	9 957	11 045	10 538	..
Food Retailing	27 159	31 857	30 377	29 512	..
Food Non-Residential Catering	26 615	27 003	29 012	32 619	..
% of national gross value added (current prices)	6.7	6.9	6.7	6.6	..
Workforce in the food sector (thousand persons)					
Agriculture	439	420	425	428	421
Food Manufacturing	369	372	381	393	397
Food Wholesaling	228	221	227	217	224
Food Retailing	1 145	1 159	1 178	1 171	1 140
Food Non-Residential Catering	1 419	1 498	1 581	1 619	1 649
% of total workforce in employment	13.4	13.5	13.5	13.4	13.2
Trade in food, feed and drink (in real terms at 2013 prices)					
Imports of food, feed and drink	39 804	41 881	40 533	40 072	42 584
% of total UK imports	8.5%	9.5%	9.4%	9.6%	9.0%
Exports of food, feed and drink	19 256	19 644	19 274	18 460	20 069
% of total UK exports	6.0%	5.4%	6.1%	5.9%	6.6%
UK Food Production to Supply Ratio ('Self-Sufficiency')					
% of all food	63	60	62	61	60
% of indigenous type food	77	73	76	76	76
Household final consumption expenditure on food and alcoholic drinks					
at current prices	184 351	193 927	197 769	198 725	202 932
of which:					
household food	91 263	96 534	97 515	95 819	96 060
food eaten out	48 924	51 009	52 315	53 599	55 610
alcoholic drinks	44 164	46 384	47 939	49 307	51 262
at constant 2010 prices (£ million)	190 337	193 927	195 488	196 853	202 062
of which:					
household food	94 625	96 534	97 754	98 489	101 444
food eaten out	50 114	51 009	50 847	50 939	51 928
alcoholic drinks	45 598	46 384	46 887	47 425	48 690
% of total household final consumption expenditure	17.7	17.9	17.6	17.2	16.9
of which:					
household food	8.8	8.9	8.7	8.3	8.0
food eaten out	4.7	4.7	4.6	4.6	4.6
alcoholic drinks	4.2	4.3	4.3	4.3	4.3
Producer prices for agricultural products (2010 = 100)					
	118.8	125.8	114.6	105.0	104.7
Consumer price index (2010 = 100):					
food	99.5	103.0	102.6	100.0	97.7
alcoholic drinks	99.3	102.3	102.4	100.0	97.0
all items	96.3	98.7	100.0	100.0	100.7

Chart 14.2: Economic summary of the Food Chain



(a) Overseas trade data is provisional for full year 2016 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 2016 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 2015, which is calculated at basic prices (market prices less taxes plus subsidies).

(d) Data is the annual average taken from quarterly 2016 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 (with 29% of food coming from the European Free Trade Area), and imports can make up for domestic supply shortages.

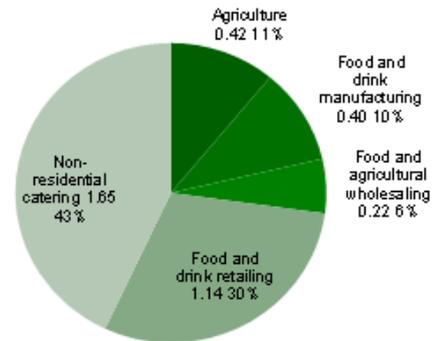
The food chain (chart 14.2)

- In 2016, the food supply chain in the United Kingdom as a whole received £181 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)

- In the fourth quarter of 2016, the agri-food sector employed 3.83 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).

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



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

- In the twelve months to December 2016, employment in the agri-food sector increased by just 0.1%. Wholesaling increased 3.3%, manufacturing 1.1% and non-residential catering 1.9%. Agriculture fell 1.7% and retailing fell by 2.7%. Employment across the whole economy increased 1.6% over the same period.
- Employment in the agri-food sector has risen by 6.2% since 2000. Changes in the proportions of each of the sectors since that time show that employment in agriculture and manufacturing reduced by 24% and 18% respectively, while non-residential catering, retailing, and wholesaling increased by 31%, 4.6% and 1.4% respectively.

Food manufacturing

- GVA in the food manufacturing sector increased 6.4% in 2015. Food manufacturing productivity has increased by 0.7% and in the last 10 years has shown an average annual increase of 0.3%.

Food wholesaling

- GVA in the food wholesaling sector fell by 4.6% in 2015. At £10.5 billion in 2015, it is 90% higher than in 2000. Food and drink wholesale productivity decreased by 0.5% in 2015 and in the last 10 years has shown an average annual increase of 0.4%. Both inputs and outputs have decreased between 2014 and 2015, but outputs have gone down more resulting in the decrease in productivity.

Food retailing

- Food retailing GVA was £29.5 billion in 2015, 2.8% down on 2014. Food retail productivity in 2015 remained at the same level as 2014 and in the last 10 years has also remained unchanged.

Non-residential catering

- In 2015 GVA increased 12.4% to £32.6 billion. Non-residential catering (NRC) showed a rise in productivity of 3.0% in 2015. The decrease in productivity in 2014 was due to the increase in inputs being higher than the increase of outputs. 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.

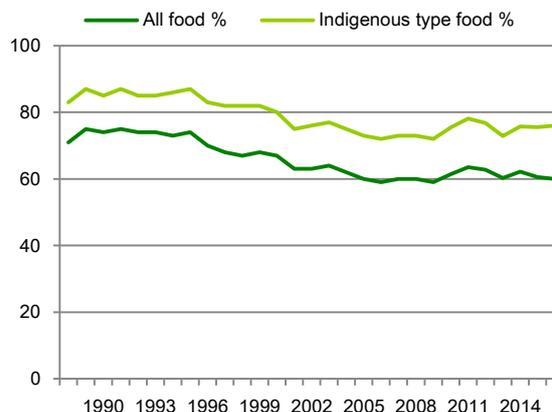
Trade in food, feed and drink (table 14.1)

11. In 2016, the value of food, feed and drink exports was £20 billion, an increase of 8.7% on 2015. In 2016 the value of food, feed and drink imports increased by 6.3% to £42.6 billion in real terms, resulting in the trade gap in food, feed and drink of 4.2%, £22.5 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 2016 and 76% for indigenous type food. This compares with 61% and 76% respectively in 2015.
13. The overall farm gate value of United Kingdom food production was down 1% compared to 2015. For wheat there was a 28% decrease of £207 million in the farm gate value of home production. For potatoes there was a 30% rise worth £171 million to the farm gate value of potatoes.

Chart 14.4 Food production to supply ratio



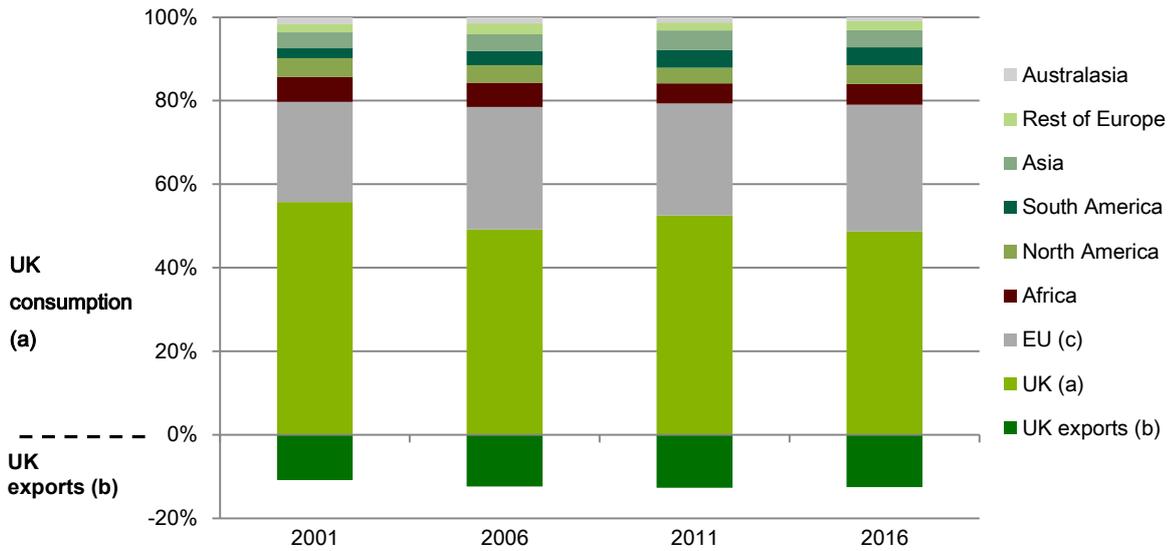
Distinction between competitiveness and food security

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: 2001, 2006, 2011, 2016

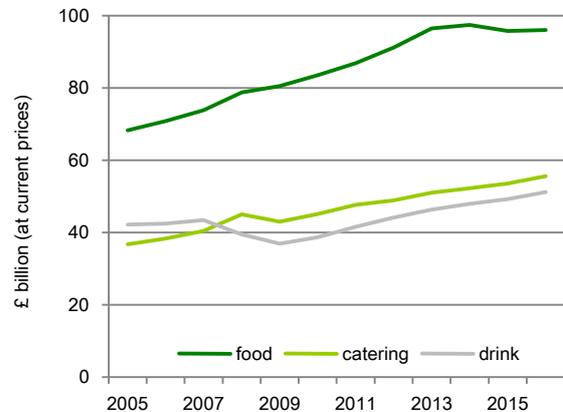


Based on the farm-gate value of raw food.
 (a) Consumption of UK origin consists of UK domestic production minus UK exports.
 (b) UK exports are given as a percentage of total UK consumption.
 (c) Membership of the EU increased between 2002 and 2013, from 15 to 28 countries.

Consumers' expenditure

19. Consumer expenditure on food, drink and catering increased by 2.1% in 2016 to £203 billion. Household food expenditure rose 0.3% and expenditure on alcoholic drinks rose 4.0% in 2016. At current prices, which incorporate inflation (see chart 14.6), consumers spent 29% more overall in 2016 than in 2007 (the last year before the recession started); 'catering' saw the biggest increase at 37%. Excluding the effects of inflation, consumers spent 1.3% less overall in 2016 than in 2007, 2.5% more on food and 3.5% more on alcoholic drinks but 12% less catering.

Chart 14.6 Consumers' expenditure on food, drink and catering

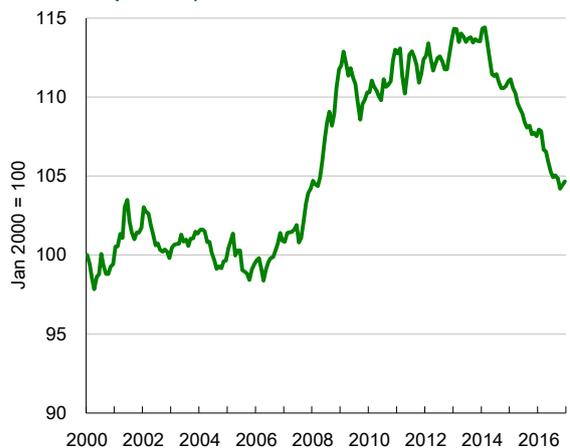


Source: Consumer Trends, (ONS).
 Food includes non-alcoholic drinks; Drink is alcoholic drinks.

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 up to November 2016 to a level not seen since March 2008. Prices began to increase from December 2016 and this rise has continued into 2017.

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 2016:

- The United Kingdom was the largest producer of sheep meat 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.

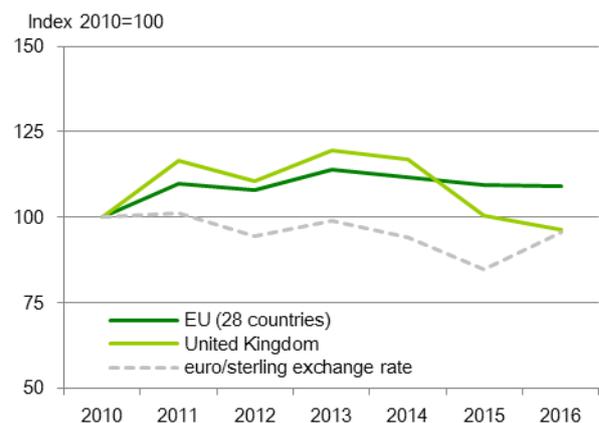
Introduction

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 fell by 4.1% between 2010 and 2016 compared to a rise of 0.4% for the European Union as a whole.

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



Source: Eurostat

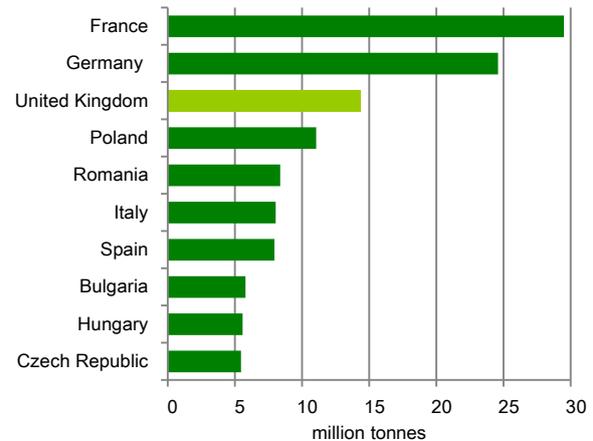
(a) 2016 forecast data for Member States whereas 1st estimate for United Kingdom

Agricultural production

Wheat

5. Chart 15.2 shows the quantity of common wheat and durum wheat produced by the top 10 producing Member States in 2016.
6. France was the largest producer of wheat in the European Union, producing just over 29.4 million tonnes in 2016, followed by Germany (24.5 million tonnes) and the United Kingdom (14.3 million tonnes). These three countries produced under half of wheat output in the European Union in 2016.

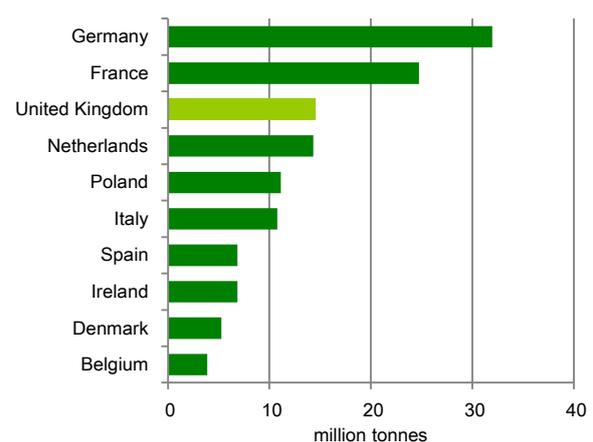
Chart 15.2 Production of wheat



Cows' milk

7. Chart 15.3 shows the quantity of cows' milk produced by the top 10 producing Member States in 2016.
8. Germany was the largest producer of cows' milk in the European Union, producing 31.9 million tonnes in 2016, followed by France (24.7 million tonnes). The United Kingdom produced 14.5 million tonnes.

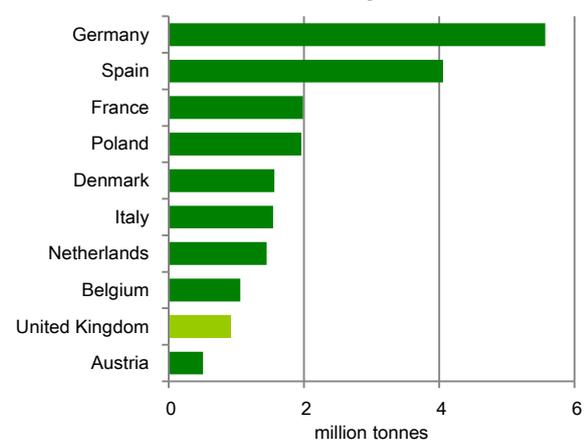
Chart 15.3 Production of cows' milk



Pig meat

9. Chart 15.4 shows the quantity of pig meat produced by the top 10 producing Member States in 2016.
10. Germany was also the largest producer of pig meat in the European Union, producing 5.6 million tonnes in 2016 followed by Spain (4.0 million tonnes). Germany and Spain produced around 41% of pig meat in the European Union in 2016. The United Kingdom produced 0.9 million tonnes.

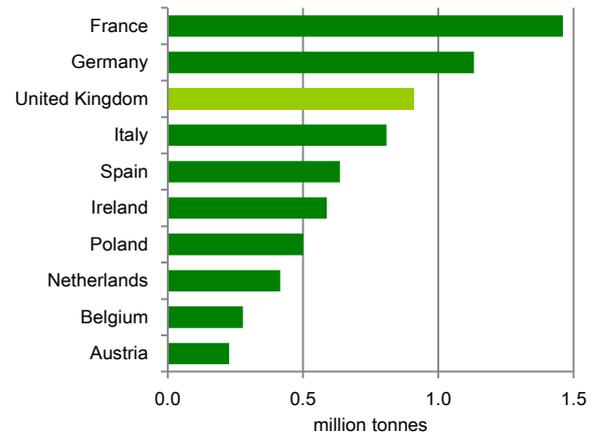
Chart 15.4 Production of pig meat



Beef and veal

11. Chart 15.5 shows the quantity of beef and veal produced by the top 10 producing Member States in 2016.
12. France was the largest producer of beef and veal in the European Union, producing 1.5 million tonnes in 2016, 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 2016.

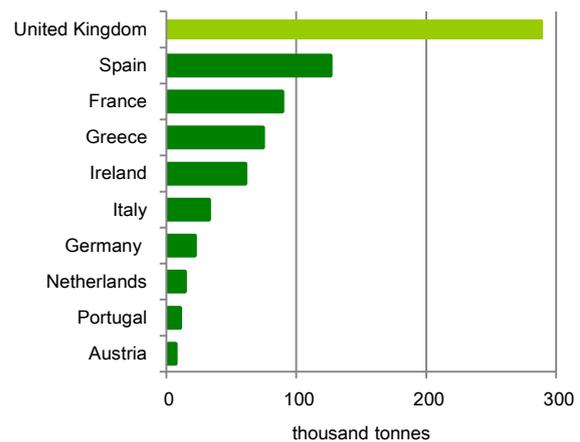
Chart 15.5 Production of beef and veal



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 2016.
14. The United Kingdom was the largest producer of sheep meat and goat meat in the European Union in 2016, producing 290 thousand tonnes or 39% of all the sheep and goat meat in the European Union in 2016. Spain (126 thousand tonnes), France (89 thousand tonnes) and Greece (75 thousand tonnes) produced a further 39% of the sheep and goat meat in the European Union in 2016.

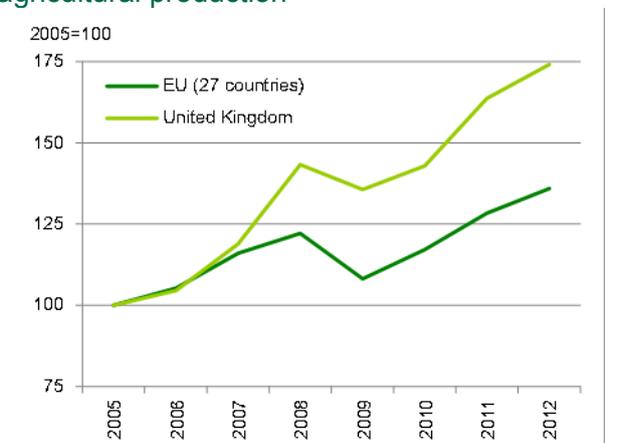
Chart 15.6 Production of sheep and goat Meat



Price Indices

15. The data shown in Chart's 15.7 and 15.8 show data to 2012, the latest year for which data is published by the European Statistical Office.
16. Chart 15.7 shows producer price indices for total agricultural production for the United Kingdom and the European Union (27 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 2005.
17. The index for the United Kingdom has risen by 74 per cent between 2005 and 2012, the latest year for which data are available, compared to 36% for the European Union as a whole.

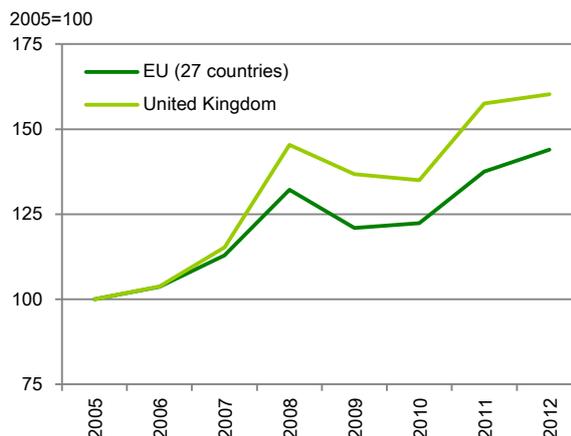
Chart 15.7 Producer price indices, total agricultural production



Source: Eurostat

18. Chart 15.8 shows purchase price indices for the total means of agricultural production for the United Kingdom and the European Union (27 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 2005.
19. The index for the United Kingdom has risen by 60% between 2005 and 2012, the latest year for which data are available, compared to 44% for the European Union as a whole.

Chart 15.8 Purchase price indices, total means of agricultural production



Source: Eurostat

Revisions

20. There are minor amendments to the Agricultural Income index following updates to data obtained from Eurostat.