Economic impact of the British Poultry Meat Industry

2015

british poultry council

OXFORD ECONOMICS

Foreword

This has been another year of success for the British Poultry Meat industry. Poultry has not only retained its position as the most popular meat – more than beef, lamb and pork combined – but UK sales have increased in value by 13% (up to £6.9bn in 2013 compared to £6.1bn in 2012).

This is good news for the country. Growing production means the number of jobs the industry supports has increased by more than 8% (up to 79,300 compared to 73,200), and tax receipts are up by 10% (from £1.1bn in 2014 to £1bn in 2013). The value of exports is also up from £286m to £305m (6.6%). All in all the UK poultry meat industry contributed £3.6bn to UK GDP, up 9% compared to the previous year (£3.3bn).

There are also significant growth opportunities for the industry in future. UK exports of poultry meat, as well as of hatching eggs and day old chicks are already increasing, but more can be done to open new markets for all poultry products. Any trade agreements must also reinforce the commitment of the UK industry to a 'farm to fork' hygiene approach and ensure a level playing field on production standards.

We will work with the new government to help open up new export markets and welcome the introduction of a Great British Food Unit to help trademark and promote local foods around the world. We are also encouraged by the government's focus on boosting British food production for the domestic market. Domestic consumption of UK produced poultry has increased from 65% (1.3m of 2m tonnes) to 74% (1.4m of 1.8m). British poultry is an affordable, sustainable and nutritious meat and we firmly believe it should be eaten in all our schools, hospitals and by our armed forces. As a first step, we welcome the government's commitment that central government departments will have to purchase food to British production standards, ensuring the topic is placed firmly on Whitehall's table!

[redacted]

John Reed
Chairman of the British Poultry Council

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Executive Summary

The poultry meat industry is estimated to support a £3.6 billion gross value added contribution to UK GDP

The poultry meat industry's contribution to the UK economy

- The UK poultry meat industry is estimated to support a £3.6 billion gross value added contribution to GDP through its direct, supply chain and wage consumption impacts. This means that £1 in every £480 of economic output in the UK is in some way dependent on the poultry industry.
- For every £1 billion in gross value added the industry itself generates, it supports another £1.25 billion in the rest of the UK economy.
- The poultry meat industry supports 79,300 jobs in the UK. This means 1 in every 380 jobs in the UK is some way dependent on the poultry industry.
- The industry supports £1.1 billion in tax receipts, equivalent to £43 for every household in the UK.

In 2014, poultry made up 47% of all meat purchased in the UK by weight

Poultry is the UK's favourite meat

- Consumers buy more poultry than any other meat. In 2014, poultry accounted for 47% of all meat purchased in the UK by weight. Chicken accounted for 91% of those sales.
- Over the period 2008 (when the recession started) to 2014, when household budgets have been under particular pressure, poultry prices in the shops have increased by 13% compared with 35% for beef, 42% for lamb and 35% for food in general.

Three quarters of the poultry consumed in the UK is reared on UK farms

The UK is the third largest poultry meat producer in Europe

- The UK is a major producer of poultry meat. In 2014, it was home to 14% of EU 28 Member States' production.
- Three quarters of the poultry consumed in the UK is reared on UK farms. By bird number, chicken dominates poultry production. In 2014, it accounted for 92% of all poultry reared for meat with turkeys and ducks comprising 3% and 2%, respectively.
- Broiler chicken dominates poultry production by weight. In 2014, it comprised 1.4 (or 84%) of the total 1.6 million tonnes. Turkey ranked second, with around 0.2 million tonnes of meat (or 11% of all poultry meat produced).

In 2014, UK poultry meat exports were valued at £305 million

The UK trade in poultry meat

- In 2014, UK poultry meat exports were valued at £305 million (up 120% since 2000). Some 69% of export earnings were from sales to other EU countries, with the remaining 31% to the rest of the world. By status, 75% of export earnings in 2014 were made from the sale of frozen meat, with the remainder fresh or chilled.
- The UK spent £1,059 million on imports of poultry meat in 2014.

The poultry meat industry is sustainable

- It has the least environmental impact in terms of energy required, acidification potential, eutrophication potential and global warming potential of all the major meat types.

1 Introduction: poultry – a consumer staple

Main points

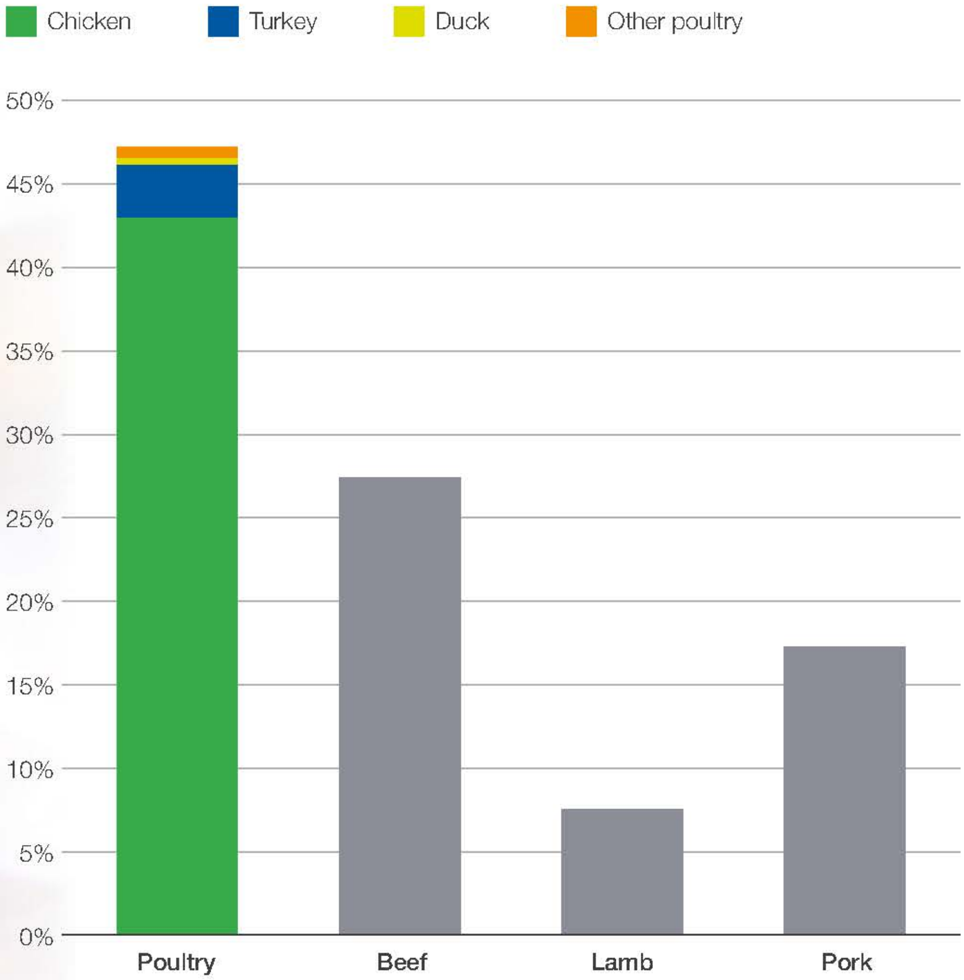
- British consumers bought more poultry than any other meat in 2014. By weight poultry was 47% of all meat purchased in the UK.
- Poultry is the most affordable meat. Between 2000 and 2014 poultry prices have increased by only 35%. This is less than food prices in general (up 54%) and much less than beef (up 64%) and lamb prices (up 93%).
- Since 2008, when household budgets have been under pressure, poultry prices rose by 13% compared with 23% for food in general, 35% for beef and 42% for lamb.
- The average household spends £2.30 per week on poultry.

1.1 A rising share of all meat purchases

British consumers bought more poultry than any other single meat type in 2014. By weight poultry was just under half of all meat purchased in the UK in 2014[1] (Chart 3.1). Within this chicken dominated, accounting for around 91%[1] of all poultry meat bought, up by 1% on last year.

British consumers bought more poultry than any other single meat type in 2014

Chart 1.1: Share of expenditure on different fresh meat types in the year to 1 February 2015



Source: Kantar (2015)

1.2 An affordable meat

Poultry is an affordable meat. By weight fresh poultry accounted for 47% of meat purchases, but only 38% of household spending on meat [1].

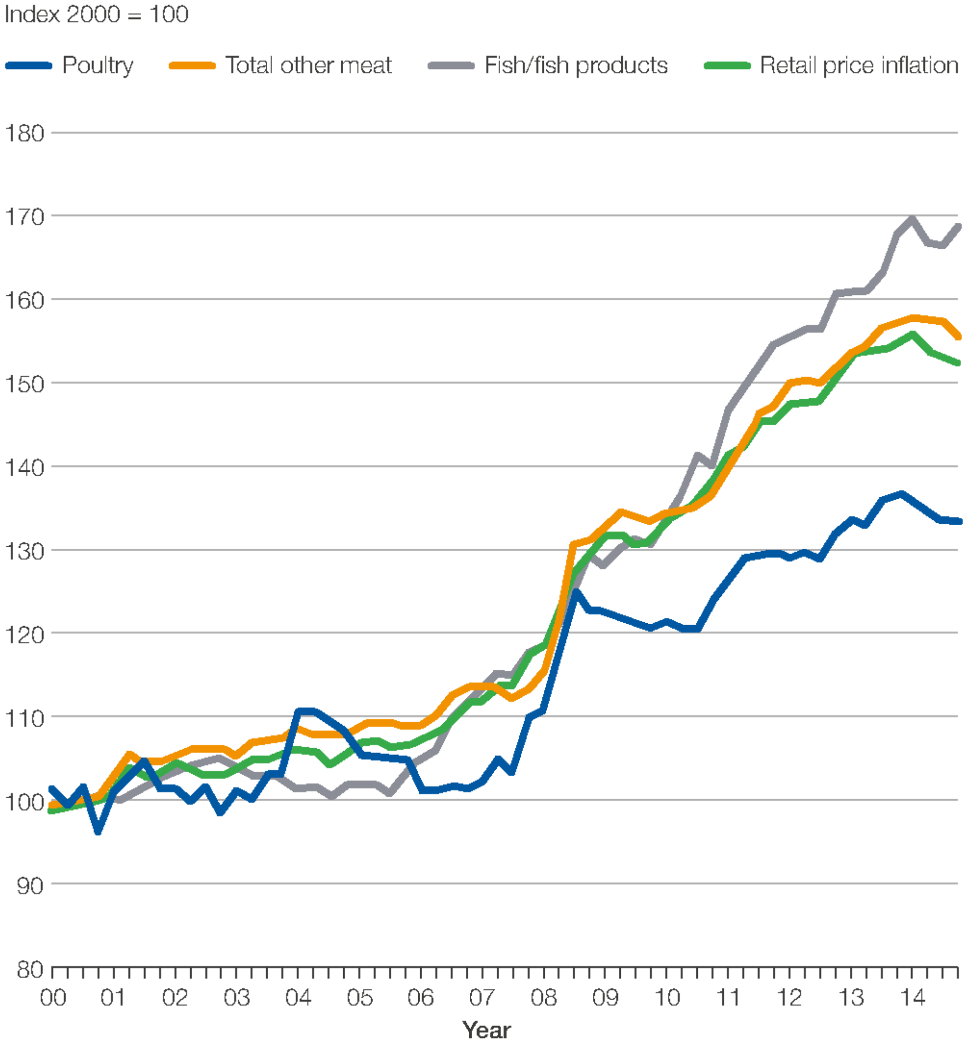
This reflects the modest price increases for poultry in comparison with other meats. Since 2000 poultry prices have increased by just 35% (Chart 1.2). This compares with price increases in excess of 60% over the same period for beef, pork and fish, and of 93% for lamb.

1 Kantar Worldpanel, March 2015.

The rate of price inflation for poultry equates to 2.1% per annum between 2000 and 2014. This compares with overall food price inflation of 3.6% and general retail price inflation of 3.1% over the same period. In the post-financial crisis period since 2008, trends in the affordability of poultry relative to other foods have continued to help stretch household budgets. Poultry prices rose by only 13% between 2008 and 2014, compared with increases of 23% for foodstuffs in general, 35% for beef and 42% for lamb.

Poultry prices rose by only 13% between 2008 and 2014, compared with increases of 23% for foodstuffs in general

Chart 1.2: Price trends increase the attractiveness of poultry[2]



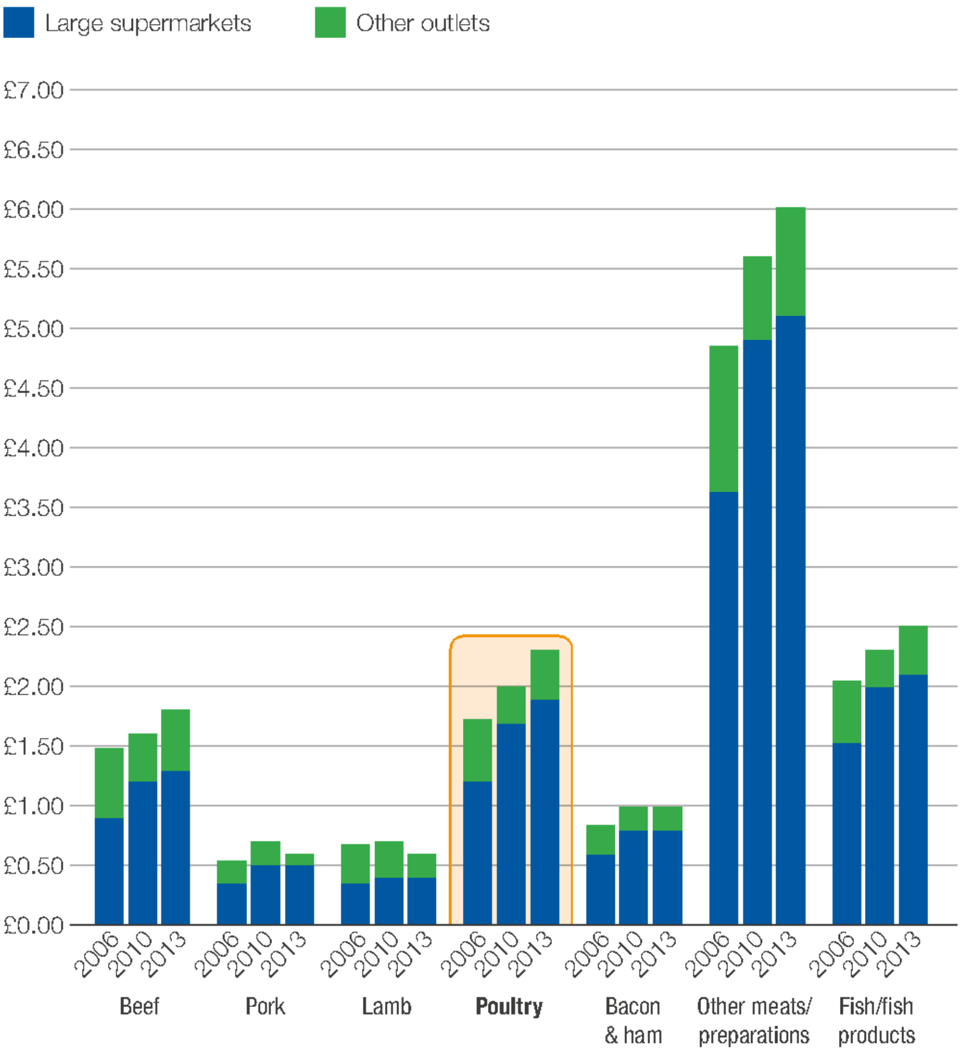
Source: Oxford Economics/ONS

2 Price data taken from the ONS' Retail Price Index.

The latest ONS (2014)[3] data shows the average household spent £2.30 each week on fresh, chilled or frozen poultry, compared with £6 on other meats and meat products[4], £2.50 on fish and fish products, £1.80 on beef and £1 on bacon and ham (Chart 1.3). Supermarket purchases dominated sales of poultry, with 83% of spending going through their tills in 2013. This is below the supermarket share of other meats and meat product sales (85%) and fish and fish product sales (84%) but well above the supermarket share of 72% for beef and 67% for lamb.

The latest ONS data from 2013[3] shows the average household spent £2.30 each week on fresh, chilled or frozen poultry

Chart 1.3: Average household weekly spend on meat



Source: ONS (2014)

3 ONS, (2014), 'Family Spending 2013'. 2 December.

4 Sausages, offal, pate, tinned/bottled meat, pies and pasties etc.

2 Poultry production

Main points

- Chickens dominated UK poultry production in 2014, accounting for 92% of all poultry meat. Turkeys and ducks were 3% and 2% of bird numbers respectively.
- In the last three years, the overall annual weight of poultry meat produced has stabilised at around 1.6 million tonnes.
- The number of chicken broilers reared for slaughter in the UK was 900 million in 2014, up from 760 million in 2000.
- In 2014, the UK produced 1.4 million tonnes of chicken meat.
- With around 0.2 million tonnes in 2014, turkey meat production remained 10% greater than its most recent low point in 2009.

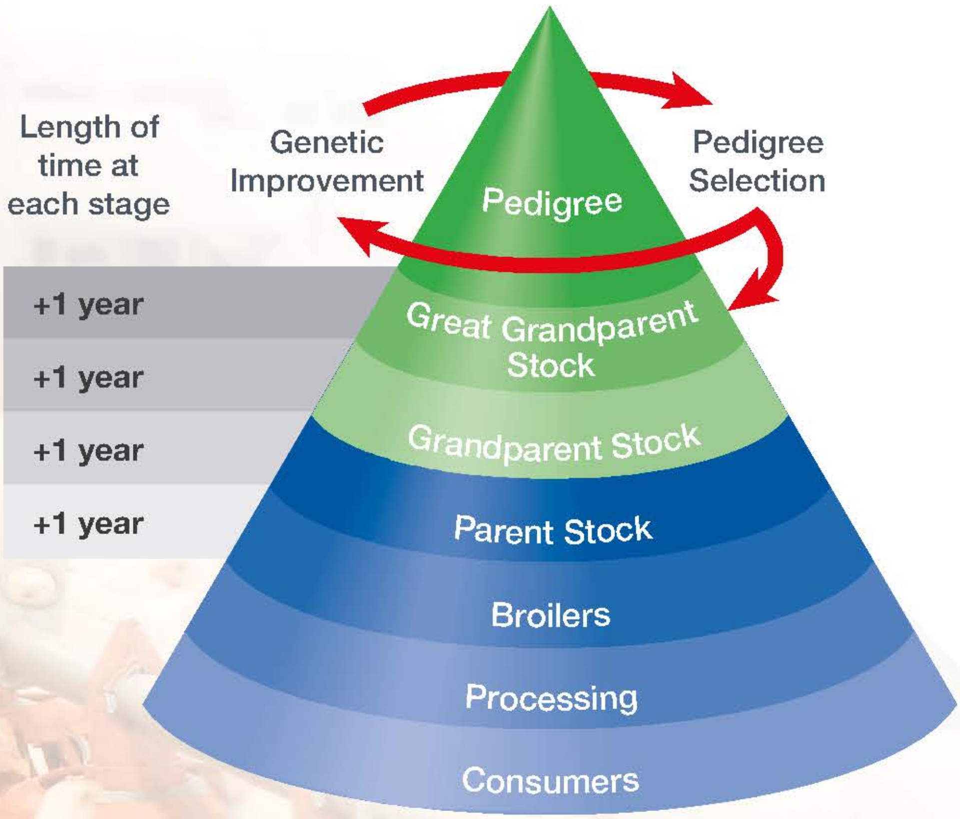
2.1 Primary breeding sector

Around one billion chicks, poults, ducklings and goslings are supplied each year from eggs produced by the primary breeding companies for placement on UK poultry farms.

One billion chicks, poults, ducklings and goslings are supplied each year

The primary breeding sector has sophisticated breeding programmes to ensure the birds produced are efficient, healthy and meet all welfare expectations. Balanced breeding goals, accompanied with large investments in research and technology, have resulted in improvements in skeletal health, metabolic health and robustness. These improvements in the pedigree stock will continue to benefit current and future generations of commercial birds. UK breeding companies are highly committed to delivering continuous progress on balanced breeding, enhancing welfare, robustness and sustainable birds.

Figure 2.1: **Poultry industry structure**[5]



Pedigree farms are the highest level biosecurity farms. Their eggs are hatched in a special pedigree hatchery and their chicks become the great grandparents and grandparents of the birds raised by the production sector. In most cases there are 3 or 4 pure lines that make up modern breeds; these are generally of different breed origins.

5 The breeding pyramid is equally applicable to ducks and turkeys.

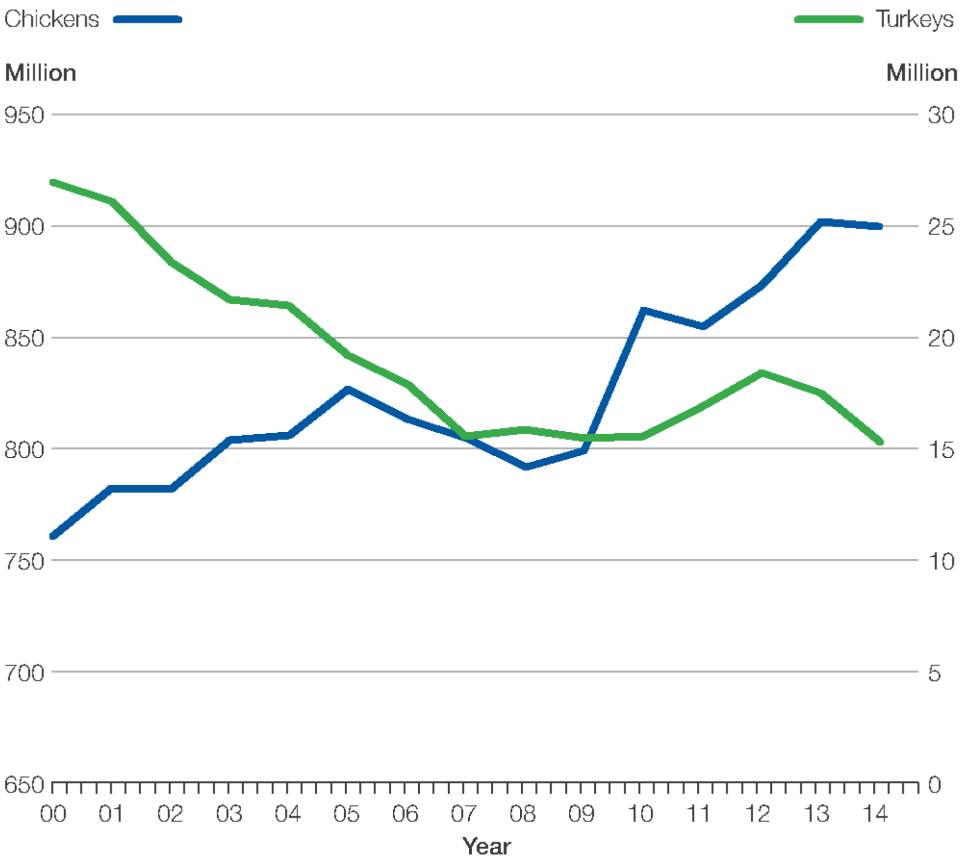
2.2 Chicken production

Chicken dominates UK poultry production. Returns for livestock numbers in the DEFRA annual census of June 2014 showed that chickens account for 92% of the total number of birds (this figure includes layers, hens and breeding flock)[6]. Turkeys account for 3% and ducks 2%, with the balance made up of other poultry such as geese, which account for 0.1% of production.

To help meet the rising UK demand, the number of chicken reared for slaughter in the UK for meat production rose to just over 900 million in 2014 from just over 760 million in 2000 (Chart 2.2.1).[7] This 15% increase in UK chicken production raised the number of birds produced annually to 14.0 per head of the UK human population in 2014 from 12.9 in 2000.

The number of chickens reared for slaughter in the UK for meat production rose to just over 900 million in 2014

Chart 2.2.1: Chicken and turkey bird numbers



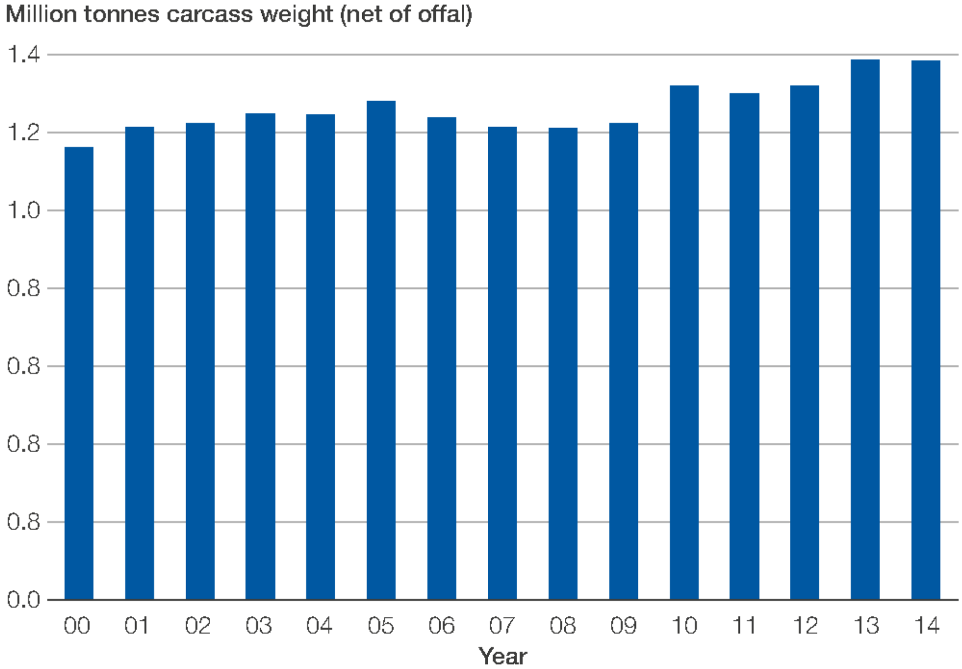
Source: DEFRA

In 2014 the UK produced 1.38 million tonnes of broiler chicken meat, in line with 2013 and nearly 10% above average production levels in the 2000-2013 period (Chart 2.2.2).

6 Poultry (broiler chickens, turkeys, ducks, geese and other poultry) on agricultural holdings on 1st June 2014, sourced from the DEFRA publication Farming Statistics, Final Crop Areas, Yields, Livestock Populations and Agricultural Workforce at 1 June 2014, United Kingdom. Due to production cycles, subgroups within the poultry population are often volatile as the ‘point-in-time’ nature of the June Survey can lead to large variations in the numbers in each category.

7 DEFRA, (2015), ‘UK poultry slaughterings, weight and poultry meat production – monthly dataset’, 26 February.

Chart 2.2.2: Chicken meat production



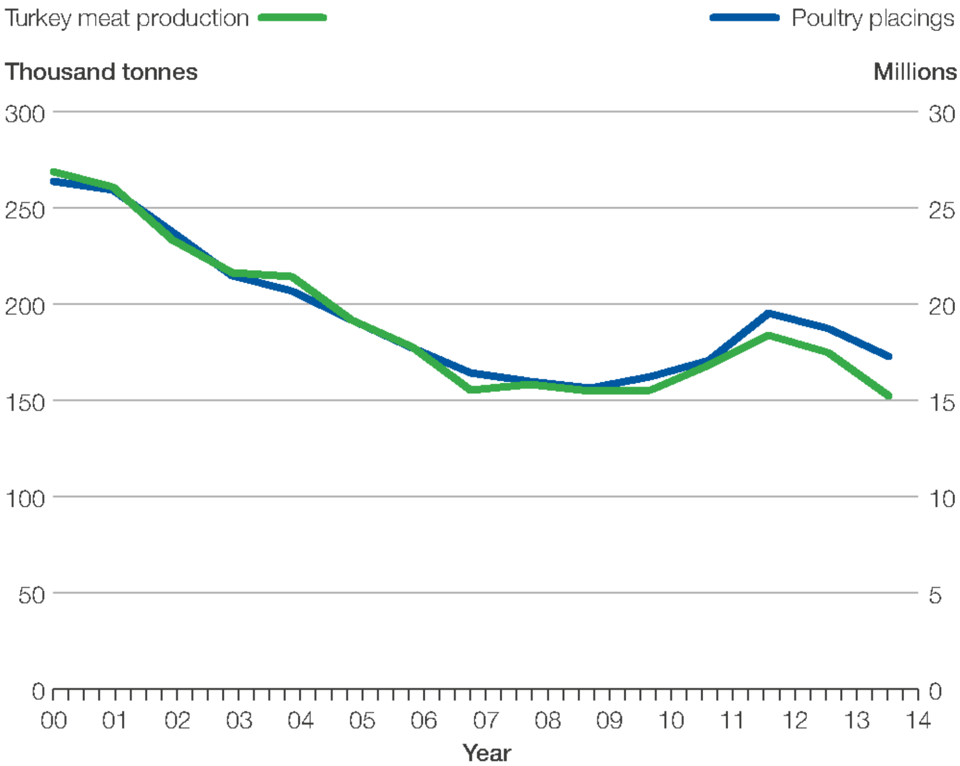
Source: DEFRA

Turkey production in 2014 was 173,000 tonnes

2.3 Turkey production

Turkey production in 2014 was 173,000 tonnes, a drop of almost 8% on 2013 levels. Nevertheless, output of turkeys by weight was over 10% above the low point of production in 2009. (Chart 2.3.1).

Chart 2.3.1: Turkey meat production



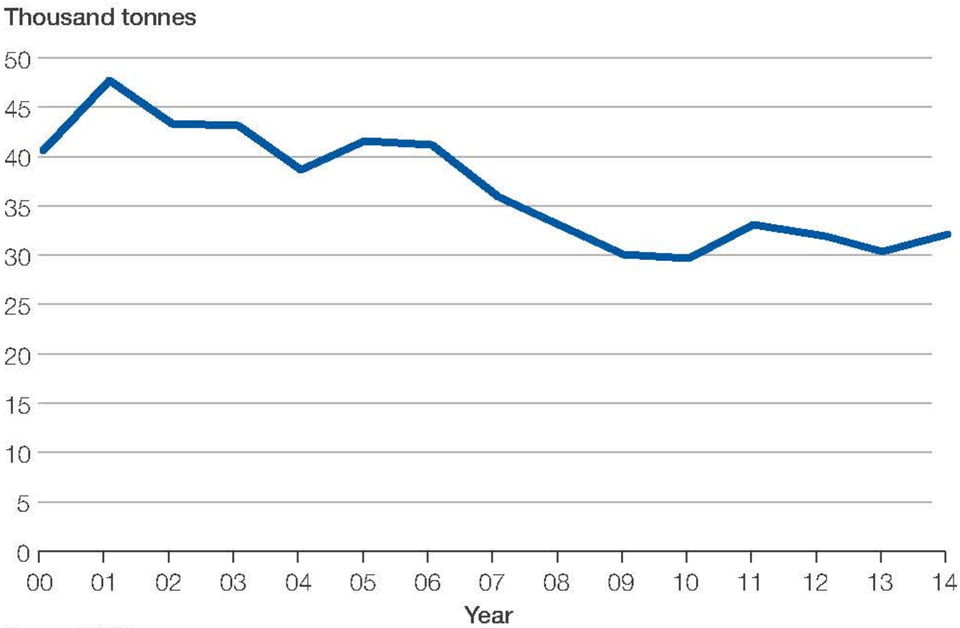
Source: DEFRA

2.4 Duck production

DEFRA's figures[8] reported a total population of 2 million ducks on commercial holdings, whilst meat production stood at 32,100 tonnes in 2014 (Chart 2.4.1).

2 million ducks were held on on commercial holdings in 2015

Chart 2.4.1: Duck meat production



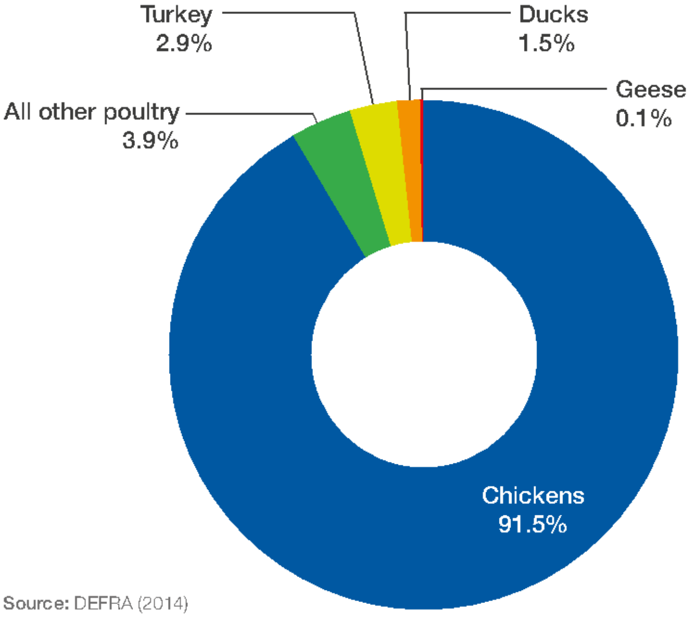
Source: DEFRA

2.5 Poultry production

Chickens account for 92% of all poultry reared for meat production. Turkeys and ducks were a further 3% and 2% of bird numbers, respectively (Chart 2.5.1). By weight of meat produced, 88% came from chickens, 11% from turkeys and 2% from ducks in 2014.[8]

8 DEFRA, (2015), UK poultry slaughterings, weights and poultry meat production – monthly dataset', 26 February.

Chart 2.5.1: Poultry meat production by number of birds in June 2014[9]

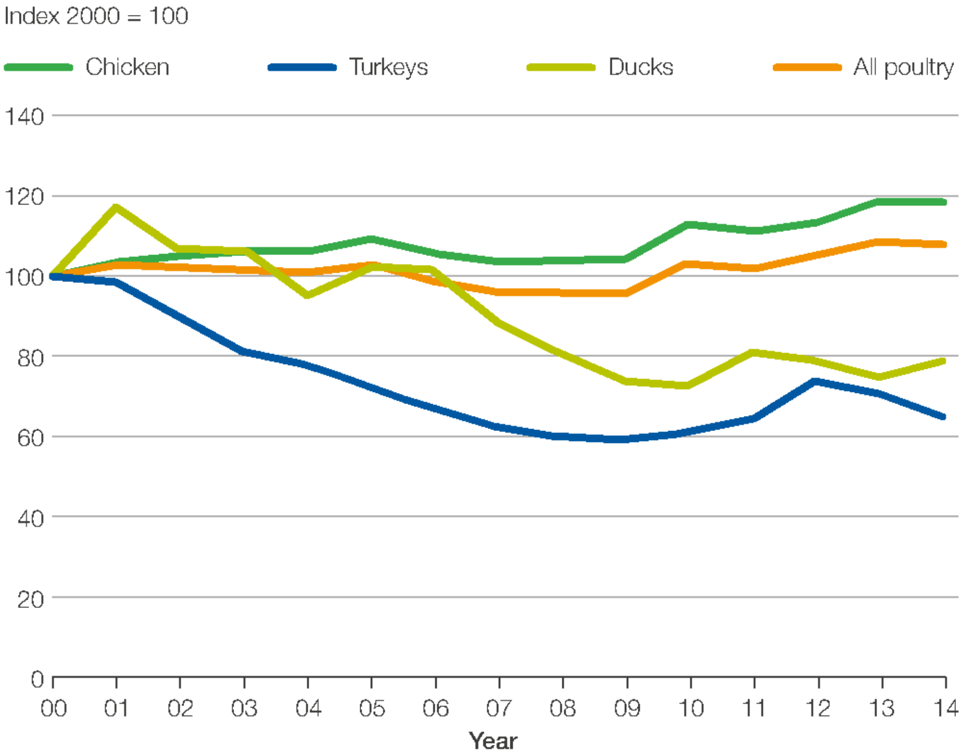


Source: DEFRA (2014)

Poultry meat production currently stands at 1.6 million tonnes

In recent years the overall weight of poultry meat production has stabilised at over 1.6 million tonnes. Taking the level of production in 2000 as a base for an index, with production levels in 2000 set at a nominal figure of 100 (Chart 2.5.2). It is clear that chicken production levels have increased, up 18% on their level in 2000.

Chart 2.5.2: Poultry meat production



Source: DEFRA

9 DEFRA, (2014), 'Farming statistics final crop areas, yields, livestock populations and agricultural workforce at June 2014 - United Kingdom'. Data for all bird types other than chickens scaled down by the percentage of broiler breeders as a percentage of broilers and broiler breeders to estimate the number of birds grown for their meat.

3 Regional footprint

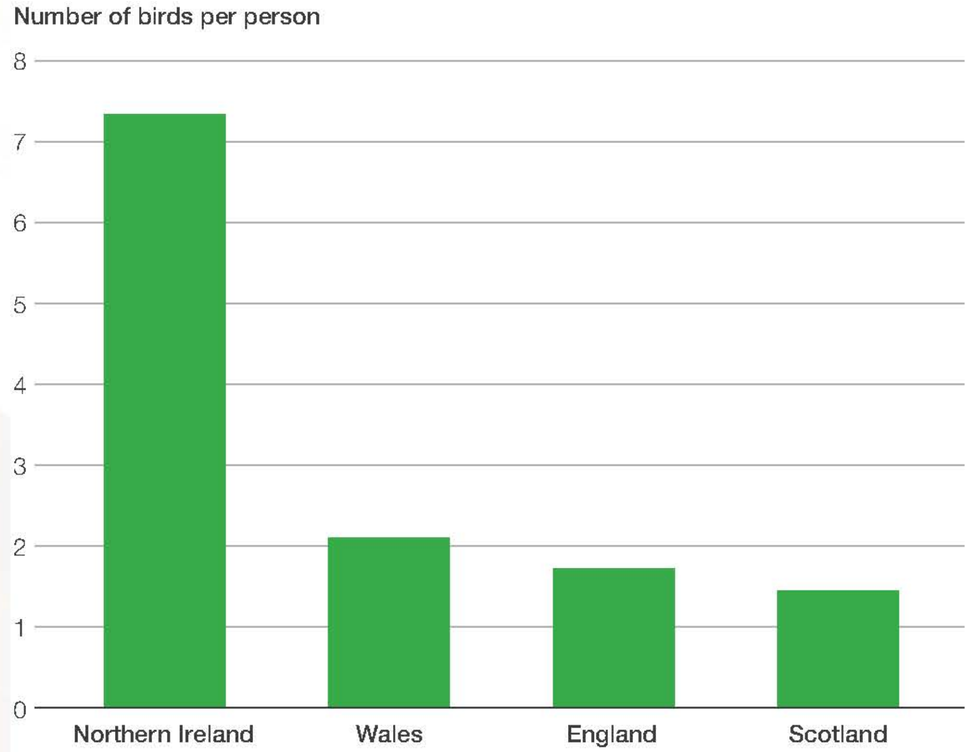
Main points

- Poultry meat production is not evenly spread across the UK. In June 2014, Northern Ireland's poultry reared for meat stood at 7.4 birds per head of population, compared with a UK average of 1.9 birds and a ratio of 1.7 birds per head of population in England.
- According to DEFRA research in each of the four nations, across the UK as whole there was an average of 493 birds reared for the table per square kilometre of the countries' land in June 2014. The population density is highest in Northern Ireland, at 991 birds per square kilometre each year.
- There is a concentration of major poultry establishments in the Midlands and East of England.

3.1 Production shares

Poultry meat production is not evenly spread across the UK. It makes a bigger contribution to the economies of some of the nations than in others. One way of looking at this relative importance is to examine the estimates of the share of the UK poultry bred for meat in a nation with its share of UK population. Such analysis highlights the relative importance of the poultry meat industry to Northern Ireland. For example, in 2014 Northern Ireland accounted for 11% of the UK's poultry stock bred for meat, compared with its 3% population share.[10] Scotland and Wales both have shares of the overall UK poultry flock that are more or less in line with their population percentage; however England only accounts for 77% of the poultry stock bred for its meat, compared with its 84% population share. In numerical terms Northern Ireland's poultry stock stood at 7.4 birds per head of population in June 2014, compared with 2.1 birds in Wales, 1.7 in England and 1.5 in Scotland (Chart 3.1).

Chart 3.1: Poultry bred for meat relative to the human population at June 2014



Source: DEFRA (2014), Department for Agriculture and Rural Development for Northern Ireland (2014, ONS (2013), Scottish Government (2014), Welsh Government (2014)

In June 2014, Northern Ireland also ranked first amongst the UK's nations for poultry bred for meat population density, with a ratio of 991 birds per square kilometre. This compares to ratios of 707 birds per square kilometre for England, 311 birds for Wales and 100 birds for Scotland.

10 Population forecasts for June 2014 sourced from ONS, (2013), '2012-based national population projections', 6 November.

3.2 Key slaughterhouses, processing and cutting plants

Of the 34 major slaughterhouses, processing and cutting plants that are members of the British Poultry Council, 27 are in England (Figure 3.1). They are concentrated in the East and West Midlands and the East of England.

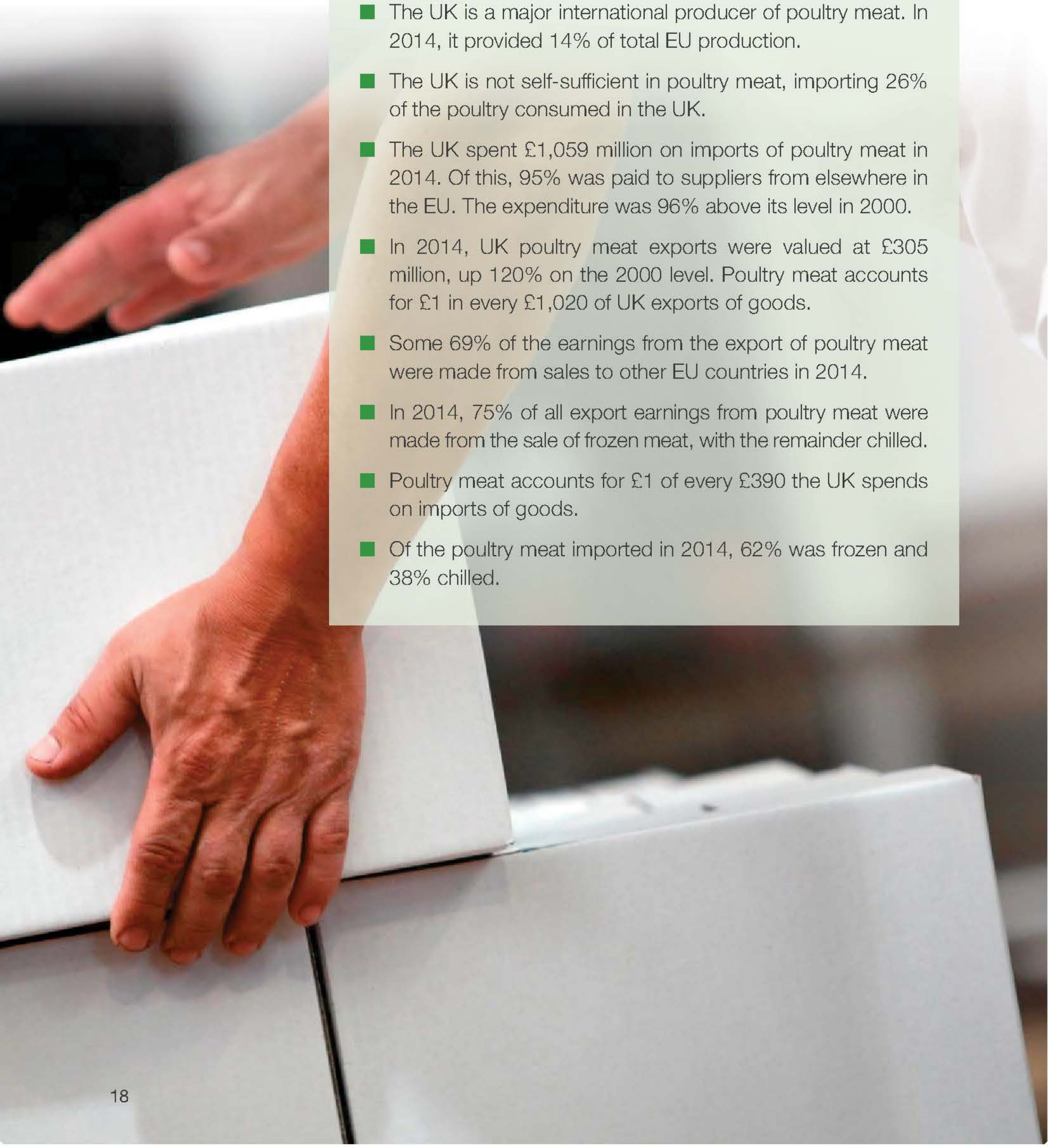
Figure 3.1: Key poultry establishments in the UK in 2014

Source: British Poultry Council

4 Trade

Main points

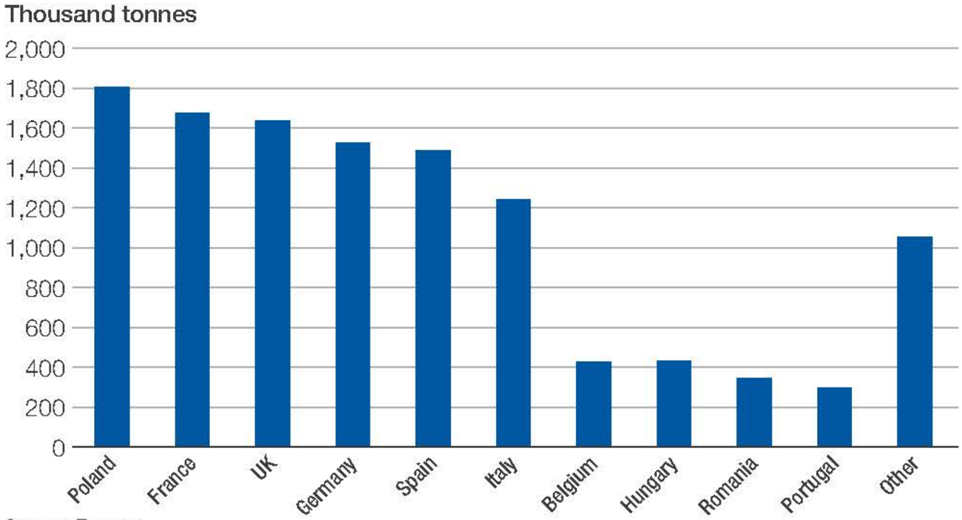
- The UK is a major international producer of poultry meat. In 2014, it provided 14% of total EU production.
- The UK is not self-sufficient in poultry meat, importing 26% of the poultry consumed in the UK.
- The UK spent £1,059 million on imports of poultry meat in 2014. Of this, 95% was paid to suppliers from elsewhere in the EU. The expenditure was 96% above its level in 2000.
- In 2014, UK poultry meat exports were valued at £305 million, up 120% on the 2000 level. Poultry meat accounts for £1 in every £1,020 of UK exports of goods.
- Some 69% of the earnings from the export of poultry meat were made from sales to other EU countries in 2014.
- In 2014, 75% of all export earnings from poultry meat were made from the sale of frozen meat, with the remainder chilled.
- Poultry meat accounts for £1 of every £390 the UK spends on imports of goods.
- Of the poultry meat imported in 2014, 62% was frozen and 38% chilled.



The UK produced 14% of the EU's total production levels

In 2014, the UK produced 14% of the poultry meat reared on farms in the European Union (Chart 4.1). In terms of scale it is ranked third, behind Poland (15%) and France (14%)[11].

Chart 4.1: UK a major producer in an EU context in 2014

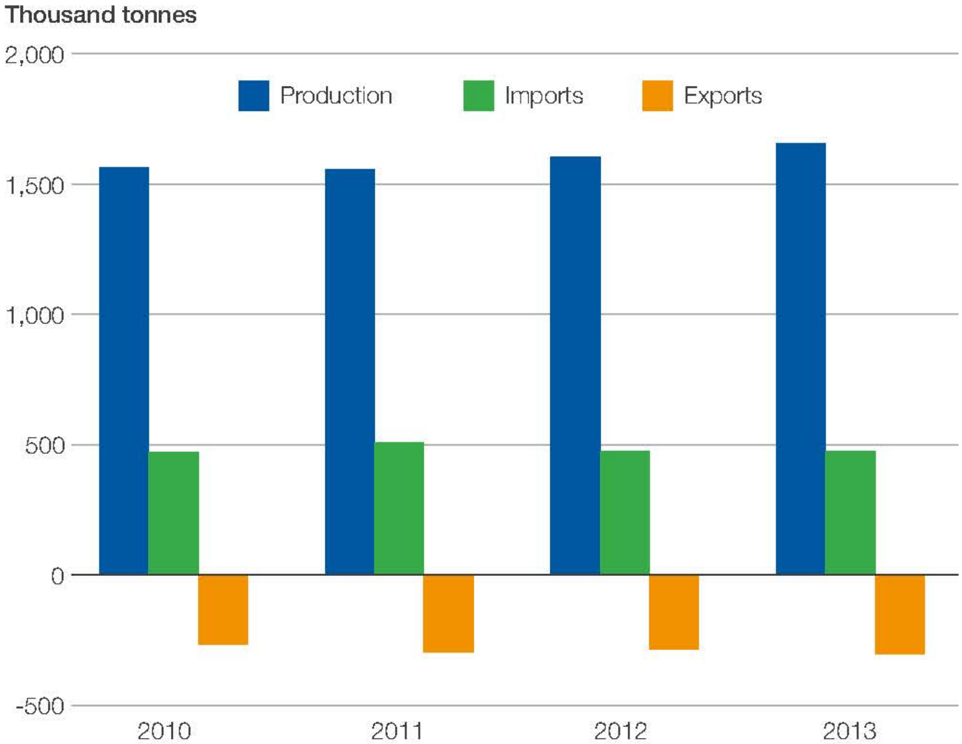


Source: Eurostat

The UK imports 26% of poultry consumed in Britain

Despite its role as a major producer, the UK is not self-sufficient in poultry. Of the total 1.8 million tonnes of poultry meat consumed in 2013, 74% (1.4 million tonnes) was sourced from domestic production, while the balance of 26% (0.5 million tonnes) was supplied by imports. The UK exported 0.3 million tonnes of its production (Chart 4.2).

Chart 4.2: Supplying the UK's poultry meat demand[12]



Source: DEFRA (2014)

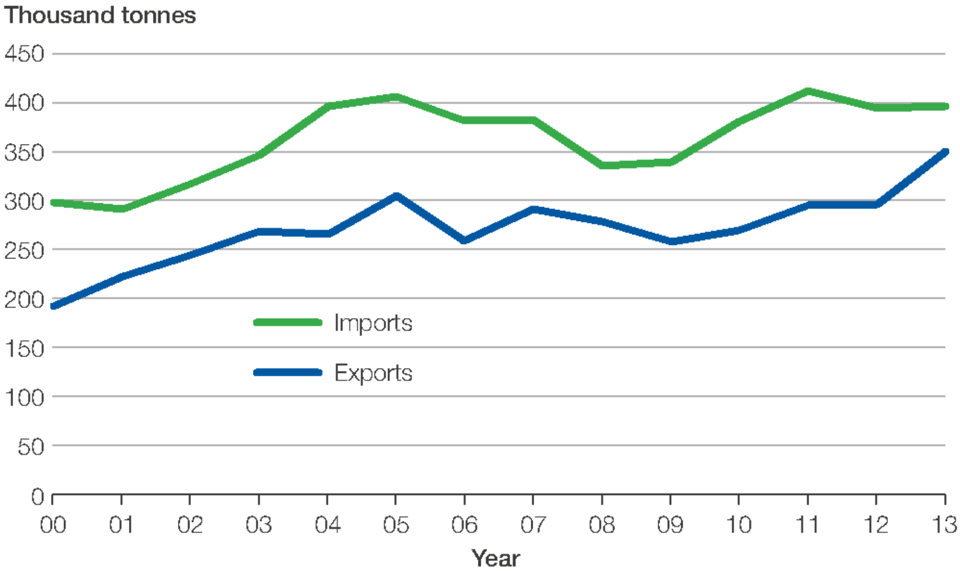
11 Data sourced from Eurostats' website accessed on 18 March 2015. Figures sourced from 'Production of meat: poultry' table as part of the suite of data on agricultural production.

12 DEFRA, (2014), 'Agriculture in the United Kingdom 2013', 29 May.

Exports and imports of poultry meat have grown over time. In terms of tonnage, imports of poultry meat[13] increased at an annual average rate of 2.5% between 2000 and 2013, rising from 299 thousand tonnes in to 397 thousand tonnes (Chart 4.3). Exports have grown even faster, rising from 191 thousand tonnes to 350 thousand tonnes, an annual average growth rate of 6.4%.

UK poultry meat exports grow an average of 6.4% every year

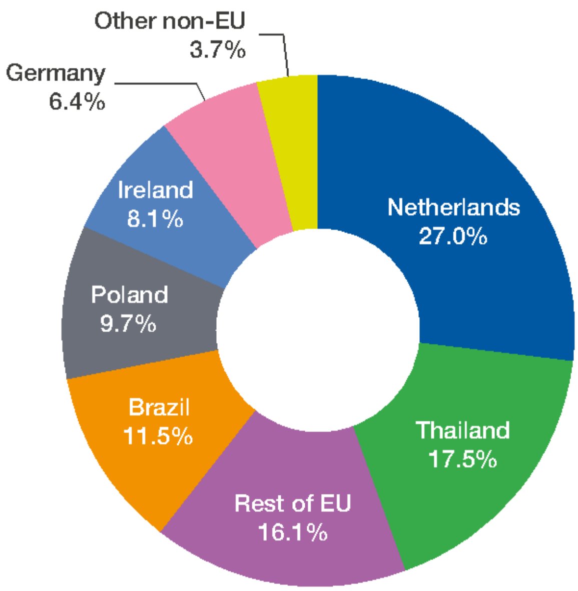
Chart 4.3: UK poultry meat industry's growing participation in international trade in poultry meat[14]



Source: DEFRA (2014)

Trade data on the volume of poultry meat imported into the UK show the Netherlands as the largest source of imports, supplying 27% of the total (Chart 4.4). Of the remaining EU suppliers, Poland contributes 9.7% of UK poultry meat imports, Ireland 8.5% and Germany 6.4%. Of non-EU suppliers, Thailand accounts for 17.5% of imported poultry meat and Brazilian imports amount to a further 11.5% of imported poultry meat.

Chart 4.4: Which countries supplies the UK's poultry meat imports



Source: IMTA 2014

13 Poultry meat: includes fresh, chilled or frozen carcase meat, cuts and offal (inc. liver).

14 DEFRA, (2014), 'Agriculture In the United Kingdom 2013', 29 May

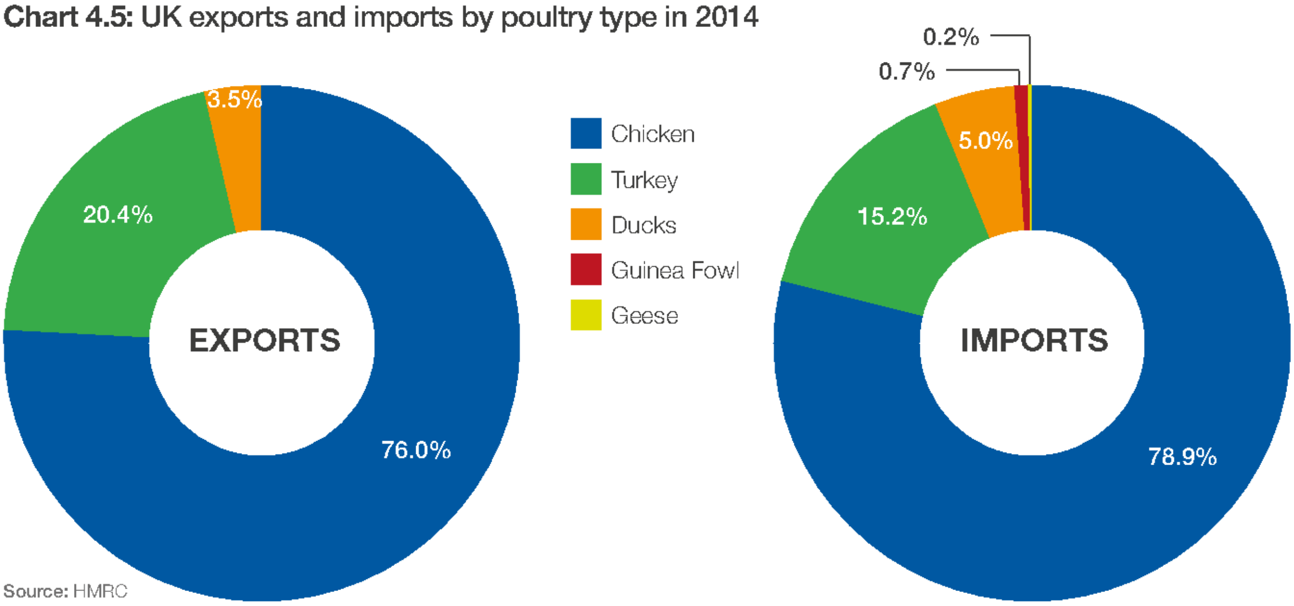
In 2014, the UK's export earnings from poultry[15] meat were valued at £305 million. Of this, 69% was earned from customers in the rest of the EU and 31% from customers located elsewhere in the world. The level of export earnings in 2014 was 120% above the level in 2000 in nominal terms. It exceeds the growth in the value of the UK's exports of goods over the same period which rose by 66%. Poultry meat represents £1 in every £1,020 of total UK goods exported.

Poultry meat represents £1 in every £1,020 of total UK goods exported

The UK has a trade deficit in poultry meat. In 2014, imports were valued at £1,058 million. Of this expenditure, 95% was spent with suppliers in the rest of the EU. The level of expenditure on imports in 2014 was 96% greater than in 2000. This is a similar rate of growth compared to all goods imports into the UK which rose 86%. Poultry meat represents £1 in every £390 of UK goods imports.

As is the case for production and consumption, chicken has dominated the UK's export and import of poultry meat by value, accounting for around 76% of exports and 79% of imports (Chart 4.5). Turkey meat makes up 20% of exports and 15% of imports, with ducks contributing 4% of exports and 2% of imports.

Chart 4.5: UK exports and imports by poultry type in 2014



Source: HMRC

For those poultry meat products for which a breakdown is available, 75% of all exports are transported frozen, with the remainder travelling chilled.[15] This varies by bird, with 82% of the UK's chicken meat exports frozen, compared to 47% and 84% for turkeys and ducks, respectively. A lower proportion of imports are frozen. In total 62% of all imports are frozen, with 68% of chicken meat, 33% of turkey meat and 55% of duck meat being brought into the UK in this state.

15 Data from HMRC's www.uktradeinfo.com.

5 Economic impact of the poultry meat industry

Main points

- The British poultry meat industry made a £3.6 billion gross value added contribution to UK GDP in 2013, up 9% compared to 2012.
- For every £1 billion it contributes in gross value added itself, the industry generates another £1.25 billion in the rest of the UK economy.
- The poultry meat industry supports 79,300 jobs in the UK, consisting of 34,800 directly in the industry and 44,500 indirectly.
- The industry supports £1.1 billion in total tax payable to the Exchequer, equivalent to £43 for every household in the UK.

5.1 Introduction to impact analysis

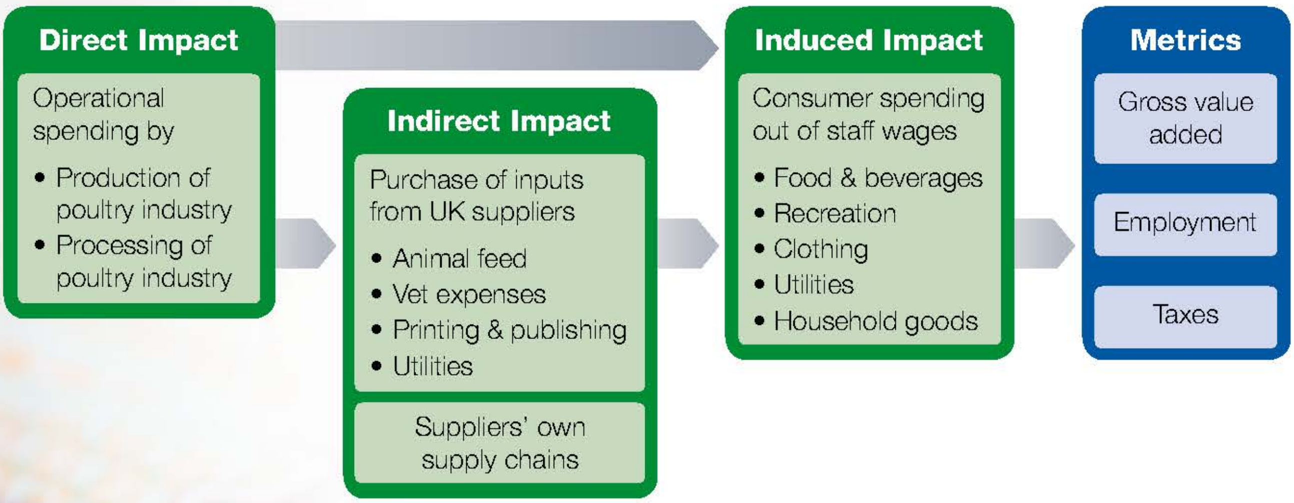
To assess the economic contribution of the poultry meat industry[16] to the UK economy, this Chapter examines three channels of economic impact:

- **Direct impacts** – economic activity that occurs at the hatcheries, farms and meat processing plants in the poultry meat industry itself.
- **Indirect (or supply chain) impacts** – these are the impacts which occur as a result of the poultry meat industry's expenditure on inputs of goods and services from its UK supply chain.
- **Induced (or wage consumption) impacts** – these are the impacts that arise from the poultry meat industry's employees, and those employed in its direct supply chain, spending their wage income on consumer goods and services. The impacts are first felt at the retail and leisure outlets close to where poultry meat industry and its suppliers' staff live, but also ripple out through the supply chains of the businesses selling consumer goods and services.

The economic impacts are quantified using three metrics. These are:

- **Gross value added contribution to GDP** – measures the contribution to the economy of each individual producer, industry or sector in the UK. It is a measure of net output. It is aggregated to form the basis of Gross Domestic Product (GDP) which is the main measure of the total level of economic activity in the UK economy[17].
- **Employment** – measured on a headcount rather than a full-time equivalent basis. This is to facilitate comparison with employment data for other businesses and industry sectors and regions sourced from the Office for National Statistics (ONS)[18].
- **Tax revenues** – this is the amount of tax flowing to the Exchequer.

Figure 5.1: The economic impact of the poultry industry



16 The poultry meat industry consists of the farming and processing of poultry. The farming or production of poultry includes the raising and breeding of poultry, but excludes the production of eggs from poultry. The processing of poultry meat is defined using SIC code 10.14, which include the operation of slaughterhouses engaged in killing, dressing or packing poultry, production of fresh, chilled or frozen meat in individual portions, and rendering of edible poultry fats.

17 GDP is equal to the sum of gross value added plus taxes on production minus subsidies on production

18 Employment excludes unpaid workers.

5.2 Direct economic impact

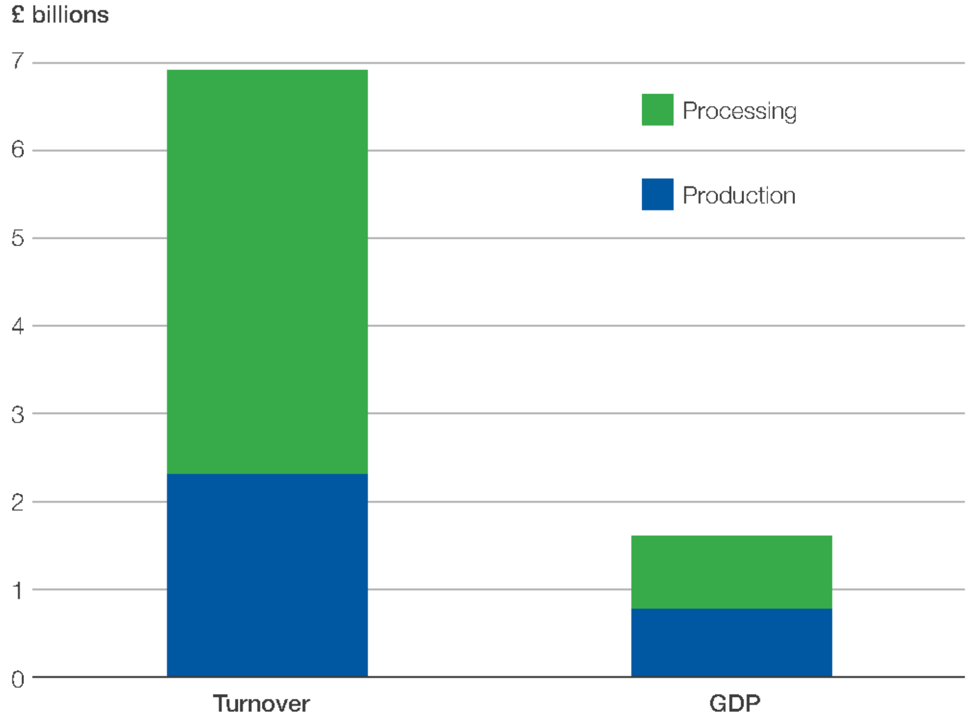
5.2.1 Gross Value Added contribution to UK GDP

In 2013, the poultry meat industry generated sales of £6.9 billion. Around two-thirds (£4.6 billion) of the total was generated by poultry processing. The farming of poultry contributed the remaining £2.3 billion.

The UK poultry industry contributed £3.6 billion to UK GDP in 2013, up by 9% on 2012 levels

On these £6.9 billion of earnings, the poultry meat industry is estimated to have made a £1.6 billion gross value added contribution to UK GDP, split equally between poultry processing and farming of poultry (Chart 5.2.1).[19]

Chart 5.2.1: Sales and gross value added contribution to GDP in poultry meat industry in 2013



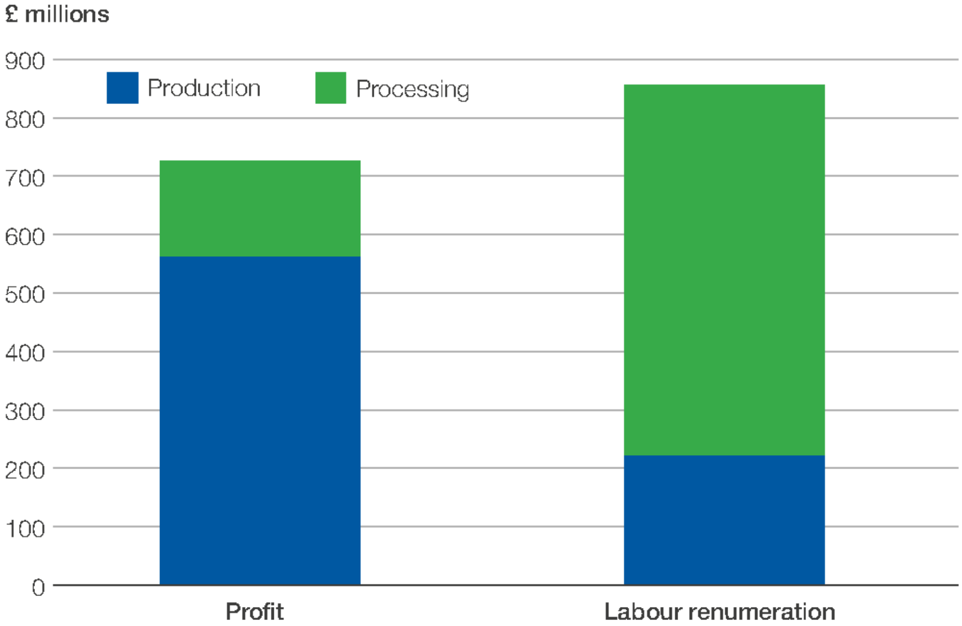
Source: ONS/Oxford Economics

As well as a measure of output, gross value added is equivalent to gross profits (as measured using earnings before interest, taxes, depreciation and amortisation) and labour costs (e.g. gross wages and salaries paid by firms, employers' pension and national insurance contributions).

Firms operating in poultry farming or production contribute more to gross value added through their profits than through the wages they pay their staff (71% versus 29%, respectively). The opposite is true for the processing of poultry industry where their gross value added contribution to UK GDP is driven more by labour remuneration (79% versus 21%) than profits (Chart 5.2.2). For the poultry meat industry as a whole the composition of gross value added is split 46% profits and 54% staff remuneration.

19 This estimate is made using the income approach to national income accounting. This measures the income generated by the industry, so, for example, the wages paid to its employees and the profits generated by firms.

Chart 5.2.2: Profit and labour remuneration in the poultry meat industry in 2013



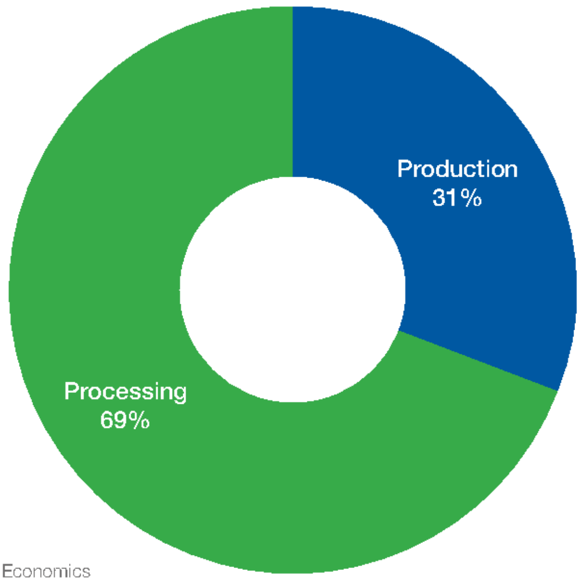
Source: ONS/Oxford Economics

The poultry industry and its supply chain support 79,300 jobs

5.2.2 Employment

In 2013, the industry employed 34,800 people (including regular and temporary labour) in the UK. Around 10,800 people (31%) work in the farming of poultry for meat (Chart 5.2.3). The remaining 24,000 (69%) work in the processing of poultry meat industry.

Chart 5.2.3: Employment in the poultry meat industry in 2013



Source: ONS/Oxford Economics

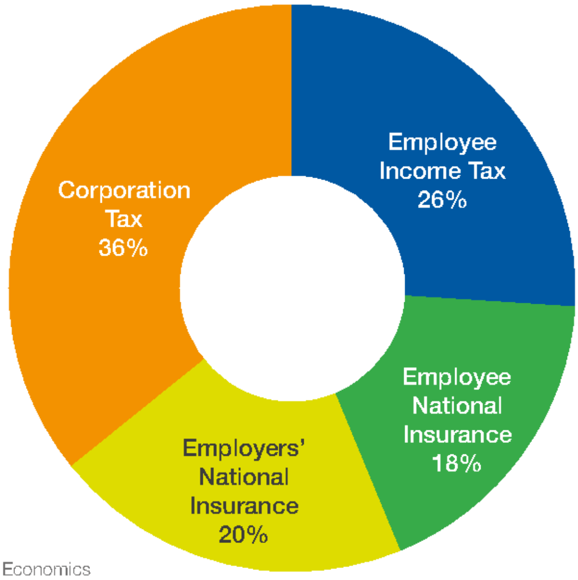
On average, each job in the poultry meat industry contributes £41,000 in gross value added to UK GDP. This level of labour productivity is 16% lower than the average for the UK economy as a whole (£49,000)[20]. Productivity, measured as output per person, is much higher in the farming of poultry (£77,000) than in processing (£26,000).

20 Figures calculated from the ONS, (2014), 'Annual Business Survey 2013' and DEFRA, (2014), 'Agriculture in the United Kingdom 2013'.

5.2.3 Direct tax contribution

In 2013, the industry generated a total of £327 million in tax receipts for the Exchequer (Chart 5.2.4). Total tax payable includes corporation tax, employee and employer' national insurance contributions and PAYE, while VAT paid and collected by the industry is excluded.

Chart 5.2.4: Direct tax contribution by the poultry meat industry in 2013



Source: ONS/Oxford Economics

5.3 Impact on the UK supply chain

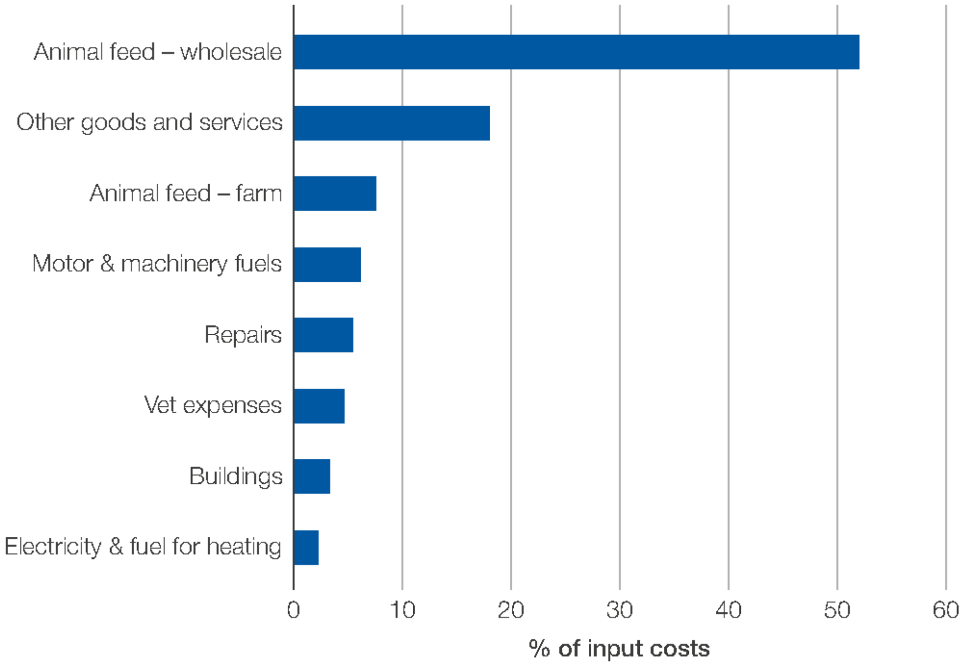
In 2013, the industry purchased inputs of goods and services worth £1.8 billion from UK businesses[1]

In 2013, the industry purchased inputs of goods and services worth £1.8 billion from UK businesses[21]. The poultry meat farming industry spent £1 billion on inputs (55% of the total), with the remaining £820 million (45%) spent by the processing industry.

The profile of input costs varies markedly between the farming and processing industries. Animal feed constitutes 60% of the input costs in the farming of poultry industry (Chart 5.3.1), while other goods and services, which includes livestock, professional fees, water costs and rates accounted for a further 18% of input costs. By contrast, input costs in the processing industry are more evenly spread (Chart 5.3.2) with expenditure from industries including wholesale and retail, other food products and industries that provide the packaging for the final poultry product (plastic, paper, printing and publishing).

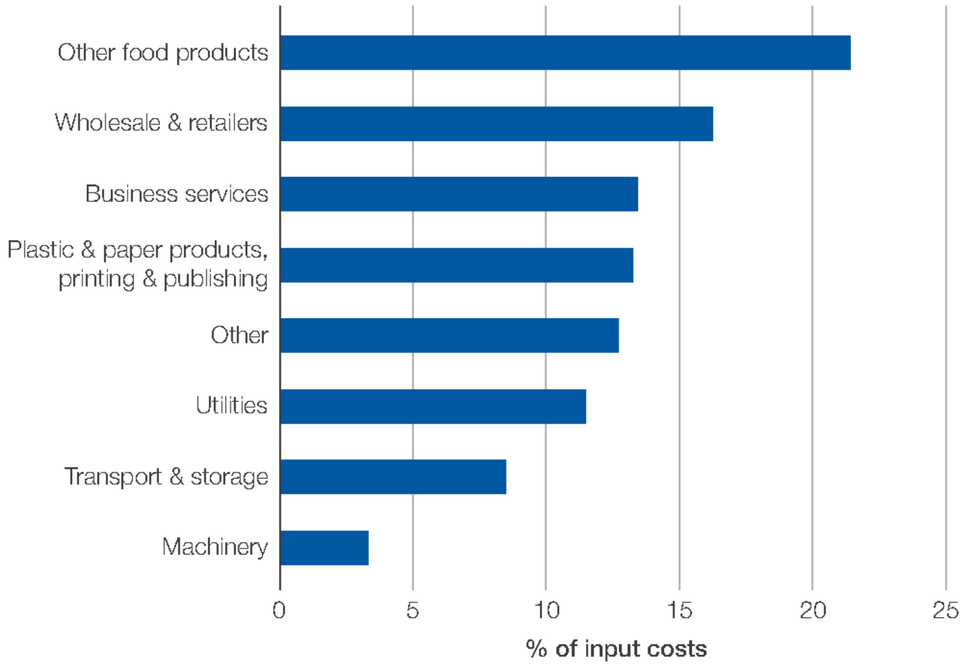
21 To avoid double counting, the £1.6 billion figure excludes purchases made by firms in the processing of poultry meat from UK poultry meat producers.

Chart 5.3.1: Profile of input costs in the poultry farming industry[22]



Source: DEFRA (2014)/Oxford Economics

Chart 5.3.2: Profile of input costs in the processing of poultry[23]



Source: DEFRA (2014)/Oxford Economics. Calculations based on ONS data.

As a result of its procurement of inputs of goods and services, the industry is estimated to support a £1.4 billion gross value added contribution to UK GDP in its supply chain. Using labour productivity estimates in each of the industries impacted, this activity is likely to keep 29,400 people in employment. Assuming those people and firms earned average wages and profits for their industry sector, the poultry meat industry's purchases of inputs supported tax payments of £311 million in 2013.

22 DEFRA, (2014), 'Agriculture in the United Kingdom 2013', 29 May.

23 ONS, (2014), 'Input-output analytical tables 2010', 12 February

5.4 Wage consumption impact

In 2013, the poultry meat industry paid its staff £754 million in wages and salaries. The 29,400 people supported in employment in the industry's supply chain are estimated to have earned £767 million in wages.[24] Using consumption multipliers calculated from ONS data[25], the spending of wages and salaries by people employed in the poultry meat industry and those in its supply chain are estimated to support a further £618 million gross value added contribution to UK GDP at retail and leisure outlets and in their domestic supply chain. This spending supported a further 15,100 people in employment in the UK. Assuming those people and firms earned average wages and profits for their industrial sector, the wage consumption impacts of the poultry meat industry in 2013 supported £495 million in tax receipts payable to the Exchequer.

In 2013 the poultry meat industry generated £1.1 billion in total payable to the Exchequer

5.5 Total economic impact

Adding the direct impact of the poultry meat industry itself to its supply chain and wage consumption impacts show that, in total in 2013, the poultry meat industry supported a £3.6 billion gross value added contribution to UK GDP (Chart 5.7). For every £1 billion it contributes to GDP itself, the poultry meat industry generates another £1.25 billion in the rest of the UK economy through the supply chain and wage consumption multiplier impacts.

In total, the poultry meat industry is estimated to support 79,300 people in employment in the UK. Of these, the industry employs 34,800 itself and supports 29,400 in its supply chain and a further 15,100 due to wage consumption impacts.

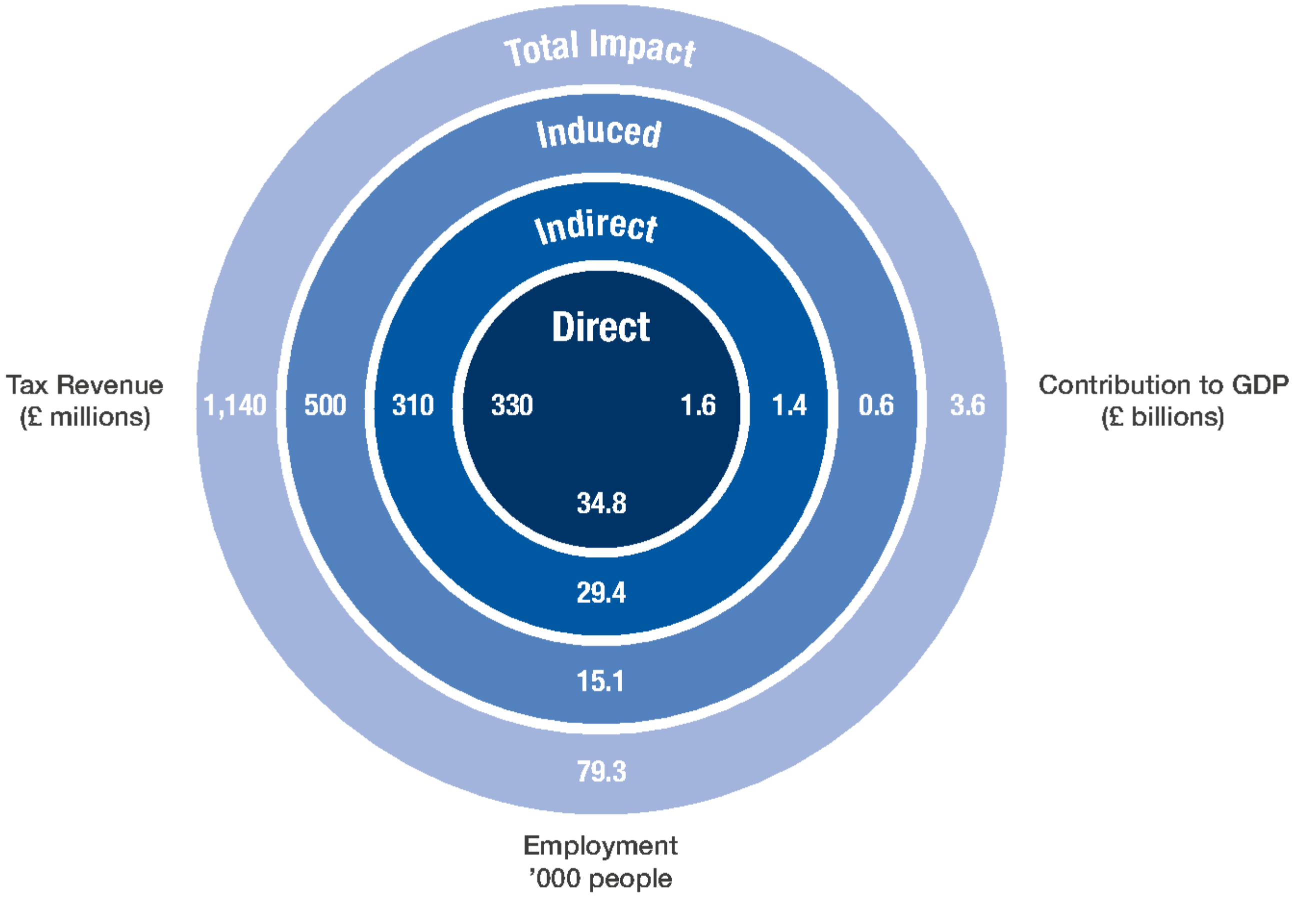
In 2013, the poultry meat industry generated £1.1 billion in total tax payable to the Exchequer, equivalent to £43 for every household in the UK, or 0.2% of total Government tax receipts for 2013.[26]

24 Calculations assume people are paid the mean wage for their industrial sector using data from ONS, (2013), 'Annual survey of hours and earnings 2013', 12 December.

25 A consumption (also known as a Type II) multiplier shows the impacts of the UK expenditure by those who derive their comes from the direct and supply linkage impacts of the poultry meat industry.

26 Total tax receipts figures from HM Treasury, (2014), The Budget 2014', 19 March.

Chart 5.5: The poultry meat industry's contribution to UK GDP and employment in 2013



6 The environmental sustainability of different meats

The word sustainability has its roots in fisheries and forestry management to refer to the practice of harvesting fish or trees at a level that does not deplete the resource in the long run. The Brundtland Report entitled, *Our Common Future*[27] described it as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability can be seen therefore as a management practice that maintains the level of desired activities in a defined time frame.

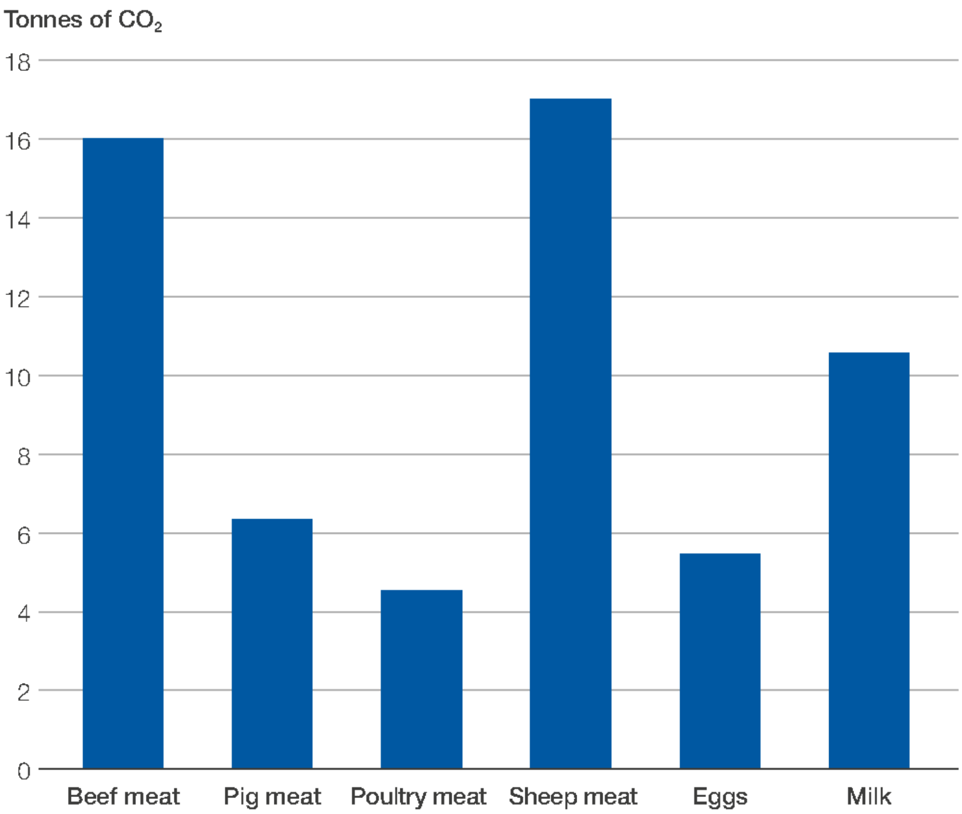
27 Our Common Future: Report of the World Commission on Environment and Development

There are various different methods used for calculating the environmental sustainability of different meat production systems. There has already been a substantial amount of work in this area, such as Cranfield University and DEFRA's report[28] into the environmental burdens of agricultural commodities. The report gives a comparison of the emissions for each meat product. However, due to the use of different methods within different studies there is yet no currently agree standardised form of assessing environmental sustainability of meat products. That is why the Livestock Environmental Assessment Performance (LEAP) has been set up by the UN Food and Agriculture Organisation in 2012, and is due to produce a number of reports in 2015. This is a partnership developing recognised sector specific guidelines for monitoring the environmental impact of the livestock sector.

Poultry is the lowest contributor to greenhouse gas emissions compared to beef pig and lamb production

Despite this, the current information available gives a reflection of the different emission levels for different meat types. Chart 6.1[29] identifies the level of CO_2 produced by each meat product. CO_2 is the second biggest in terms of volume of greenhouse gas produced by human activity. The highest volume contributor was the production of sheep meat at 17 tonnes of CO_2 (tCO_2) and beef at 16 tCO_2 for every 1 tonne of carcass meat produced. Whilst poultry meat was the lowest contributor at 4.6 tonnes of CO_2 (tCO_2) and egg production was the second lowest contributor at 5.5 tCO_2 for every 20,000 of eggs produced.

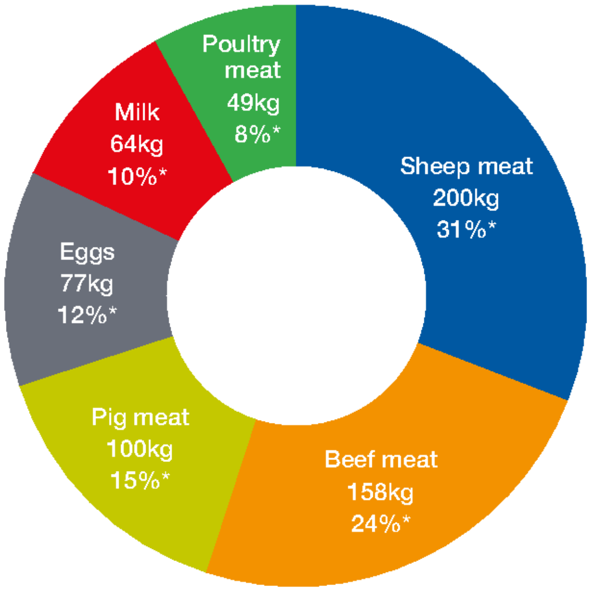
Chart 6.1: Global Warming Potential for meat products per tonne of carcass or 20,000 eggs



28 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities 2006. Defra project report IS0205, Williams, A.G., Audsley, E. and Sandars, D.L Bedford: Cranfield University and Defra.

29 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities 2006. Defra project report IS0205, Williams, A.G., Audsley, E. and Sandars, D.L Bedford: Cranfield University and Defra.

Chart 6.2[30]: Eutrophication potential of meat products kg PO_4^{3-} per tonne of carcass or 20,000 eggs



* The percentage indicates the share of the total kg PO_4^{3-} produced.

Poultry produces the lowest level of phosphates compared to beef, lamb, and pig production

Eutrophication is an environmental response to the addition of artificial or natural substances, mainly phosphates into an aquatic system. The response can have the following effects such as a decreased biodiversity, changes in species composition, species dominance and toxicity effects. Chart 6.2 illustrates the individual phosphate (PO_4^{3-}) percentage level of each meat product when compared to the total level of all the meat product phosphate production. Overall, the highest contributor was sheep meat produced 200 kg PO_4^{3-} and beef meat the second with 158 kg PO_4^{3-} for every tonne of carcass. Poultry meat and milk produced the lowest level of phosphates with 49 PO_4^{3-} and 64 PO_4^{3-} respectively.

The acidification potential is described as the ability of certain substances to build and release H+ ions. Acidification has direct and indirect damaging effects such as nutrients being washed out of soils or an increased solubility of metals into soils, but can have damaging effects such as leading to acid rain with damage to forests, habitats, buildings and building materials. Chart 6.3 identifies the acidification potential of different meat products by the level of SO_2 produced in each production method. Beef production has the highest acidification potential at 471 kg SO_2 per tone of carcass followed by Pig production at 394 kg SO_2 per tonne of carcass. Milk was the lowest kg SO_2 producer at 163 closely followed by poultry meat production at 173 kg SO_2.

Finally, the primary energy used was lowest in poultry meat and second lowest in egg production at 12 and 14 gigajoules (gj) per tonne of carcass respectively. Beef meat requires the highest energy to produce one tonne of carcass meat at 28gj with milk production requiring 25 gj to produce 10,000 litres (Chart 6.4).

30 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities 2006. Defra project report IS0205, Williams, A.G., Audsley, E. and Sandars, D.L Bedford: Cranfield University and Defra.

Chart 6.3[31]: Acidification potential of different meat product types against tonne of carcass or 20,000 eggs

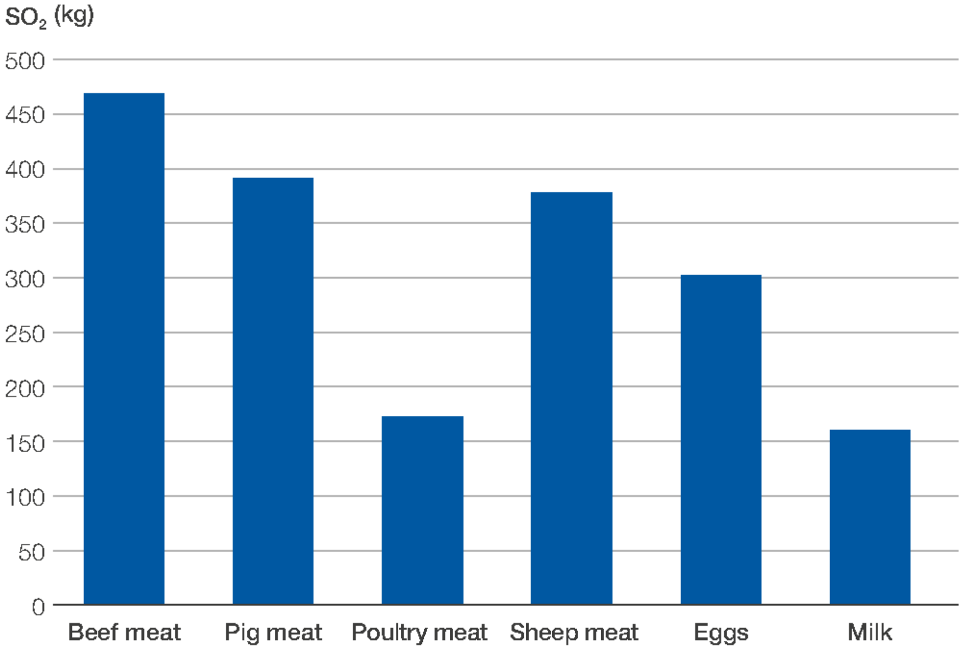
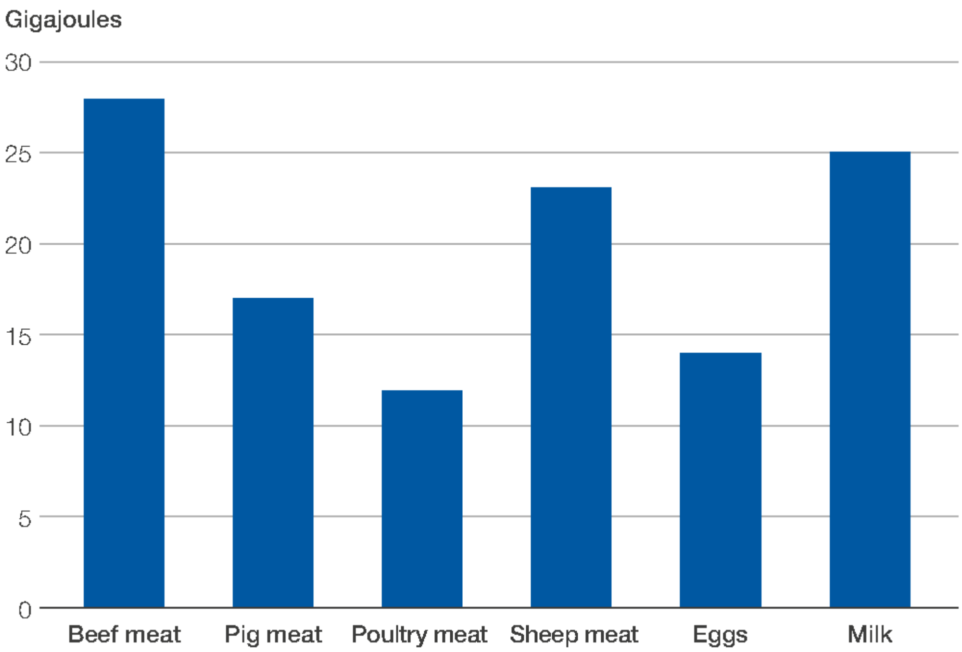


Chart 6.4[32]: Energy used in production of different meat products against tonne of carcass or 20,000 eggs



In conclusion, with regards to energy usage, acidification & eutrophication potential and GWP poultry meat has the lowest environmental impact of all the major meat production types.

31 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities 2006. Defra project report IS0205, Williams, A.G., Audsley, E. and Sandars, D.L Bedford: Cranfield University and Defra.

32 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities 2006. Defra project report IS0205, Williams, A.G., Audsley, E. and Sandars, D.L Bedford: Cranfield University and Defra.

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