

Circulation: NFU staff and members

Date: 12/08/2019

Ref: Self-sufficiency

Contact: Priya Punj, NFU Economist

priya.punj@nfu.org.uk

Tel: 024 7685 8548

Self-sufficiency

UK Self Sufficiency

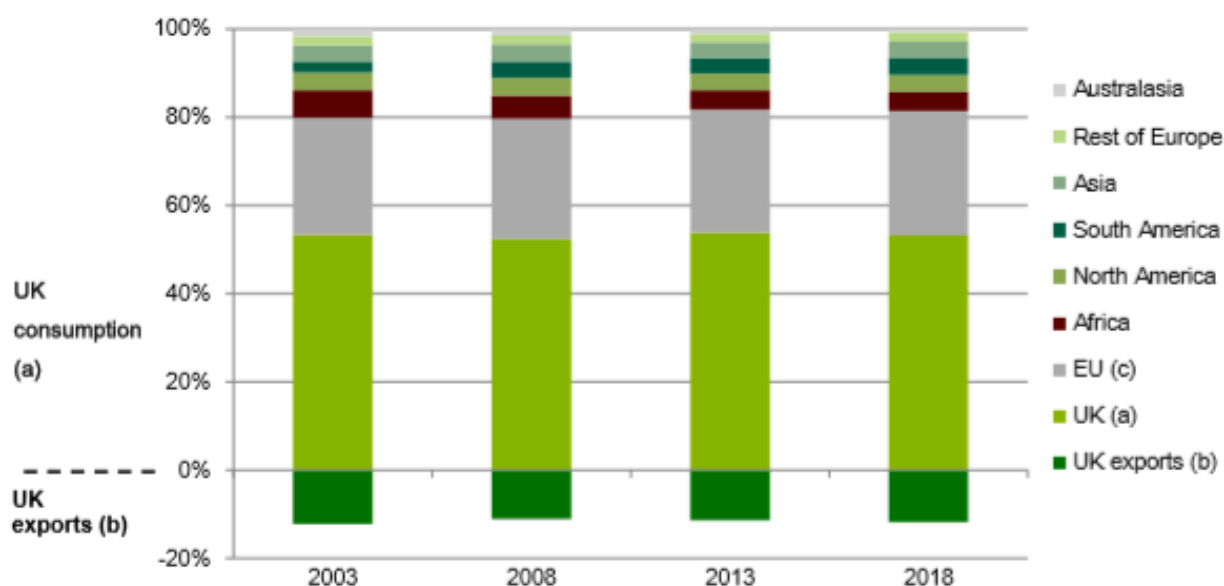
The Self Sufficiency Ratio (also referred to as Food Production to Supply Ratio) for the UK is calculated as the **farmgate value of raw food production divided by the value of raw food for human consumption**. This is estimated to be 61% for all food in 2018.

As noted in the latest [Agriculture in the UK](#) publication, the food production to supply ratio provides a very broad indicator of the **ability of British farming to meet consumer demand** - also described as competitiveness.

However, detailed analysis in the Defra publication '[UK Food Security Assessment](#)' highlights that the ratio is not an appropriate measure of "food security" since it fails to account for many dimensions of this complex issue.

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

- Diversity enhances security. The UK sources foods from diverse stable countries, mainly European countries, and imports can make up for domestic supply shortages (see Figure 1).
- 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%.



Based on the farm-gate value of raw food.

(a) Consumption of UK origin consists of UK domestic production minus UK exports.

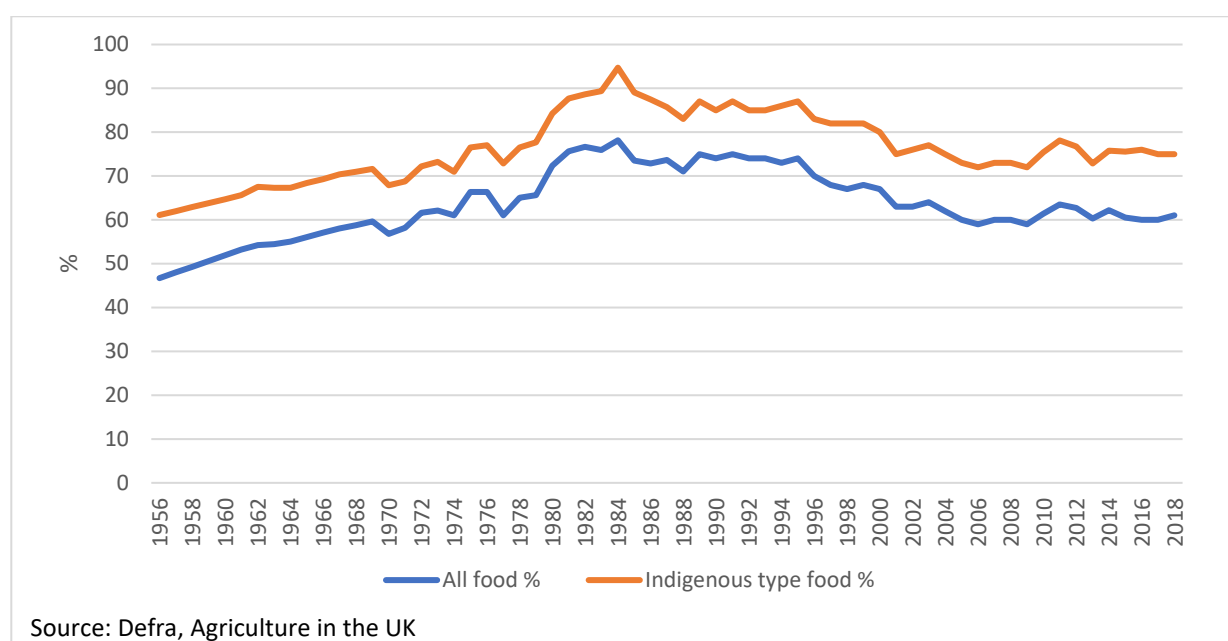
(b) UK exports are given as a percentage of total UK consumption.

(c) Membership of the EU increased between 2002 and 2013, from 15 to 28 countries.

Figure 1: Origins of food consumed in the United Kingdom: 2003, 2008, 2013, 2018

The **origins of food consumed in the UK** is quoted as 50%. This differs to the Self Sufficiency Ratio. Defra's [Food Statistics Pocketbook](#) states that based on the farm-gate value of unprocessed food in 2018, the UK supplied just over half (53%) of the food consumed in the UK. The UK origin figure consists of UK domestic production minus UK exports. The idea behind this figure is that sourcing food from a diverse range of stable regions, in addition to domestically, enhances food security.

Figure 2 illustrates the UK's self-sufficiency for the past 60 years from 1956 to 2018. As stated above, the Self Sufficiency Ratio is estimated to be 61% for all food in 2018 and it is 75% for indigenous type food (e.g. food that can be produced within the climatic limitations of the UK). This essentially means that the UK grows 61% of the food it eats. The 75% figure excludes non-indigenous items such as exotic fruit – bananas, mangoes, tea, coffee and spices – foods that cannot be grown (either at all or on a meaningful scale) in the UK.¹ Self-sufficiency peaked in 1984 at 78% for all food, and 95% for indigenous type foods. Since then and roughly over the past 30 years, the UK's self-sufficiency in foods has been decreasing.

**Figure 2: Self-sufficiency (food production to supply ratio)**

Methodology behind self-sufficiency calculation

The production values used for the self-sufficiency calculations are weighted. Defra calculate 'reevaluation factors' based on [ONS supply and use tables](#). The latest release was in July 2018 and the data is for 1997 to 2016. For the manufacturing sub sectors (SIC10.1 – 10.8) Defra take the total intermediate consumption at purchasers' prices as a proportion of total output of products, and the average of these across the sectors for high/lightly processed, e.g. sugar is lightly processed, bread and biscuits highly processed. Unprocessed has a factor of 1.

¹ <https://www.countryfile.com/news/can-the-uk-feed-itself-after-brexit/>

Those factors are applied to production values from the [agricultural accounts](#) and trade data in the main, with a few add ons such as aquaculture. (Output data measured in terms of value is available from 1973-2018 calendar years).

For indigenous, Defra have an indigeneity indicator that they apply to commodity codes on trade. The degree of processing categorisation that they use for commodity codes is similar. This was developed years ago by Defra, and they apply this methodology consistently.

There usually are a few minor data gaps, e.g. aquaculture data is not available every year so sometimes it has to be rolled forward. The calculation is fairly robust, if it is meaningful to try and estimate self-sufficiency across all food types into a single number.

Self-sufficiency by sector

Defra provide self-sufficiency data by sector in the [Agriculture in the UK publication](#) and [Agriculture in the UK datasets](#). By sector, the calculation is based on **production by volume**.

Self-sufficiency is calculated as production as a percentage of total new supply for use in the UK. Total new supply is also referred to as consumption where this is production + imports – exports. And self-sufficiency is calculated as production/consumption.

The calculations for production are slightly different for different sectors, but measures are all quantity measures. For example, for livestock production such as sheep, lamb, beef, and poultrymeat sectors, carcase weight equivalent measures are used for production. Whereas for potatoes, Defra use the volume of harvested production.

An example of sector self-sufficiency for poultry meat is provided below.

		2018
Production (carcase weight)		1,939
Total imports (from EU and RoW)		584
Total exports (from EU and RoW)		354
Consumption (production + imports – exports)		2,169
Self-sufficiency (production/consumption)	(%)	89%

Table 1: Self-sufficiency example for Poultry meat

Source: Defra, Agriculture in the UK²

Availability of data for self-sufficiency by sector varies for each sector and commodity type. For example, self-sufficiency data for milk is available from 1995 as import and export data are not available prior to this. While, for wheat, data is available from 1984, on the other hand for poultry meat data is available from 1973.

Figure 3 compares UK self-sufficiency in selected commodities in 2000 and 2018.

² Agriculture in the UK 2018 datasets. <https://www.gov.uk/government/statistical-data-sets/agriculture-in-the-united-kingdom>

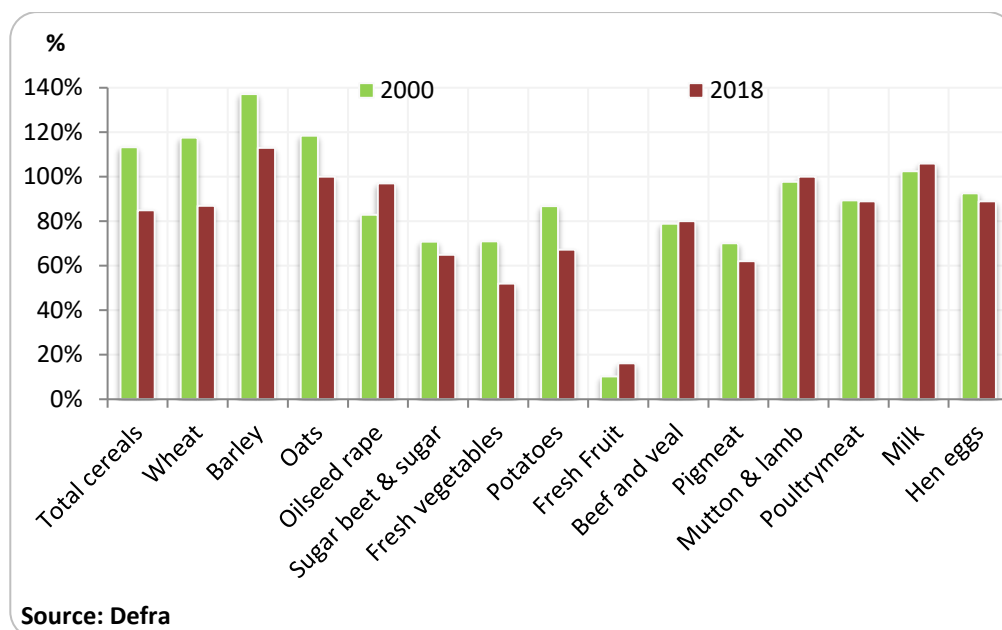


Figure 3: Self-sufficiency in selected commodities

Similarly, Table 2 shows self-sufficiency data for selected commodities but in a table format. This shows the earliest dates from when self-sufficiency data is available for selected commodities and data for selected years succeeding this.

Self-sufficiency by commodity	1973	1980	1984	1985	1988	1989	1995	1997	2000	2005	2010	2015	2017	2018 (provisional)
Total cereals			114%	108%	107%	121%	113%	113%	113%	103%	112%	100%	91%	85%
Wheat			108%	102%	103%	121%	117%	121%	118%	110%	118%	103%	92%	86%
Barley			151%	141%	140%	158%	135%	124%	137%	115%	121%	124%	115%	113%
Oats			93%	99%	99%	102%	153%	112%	119%	99%	109%	104%	97%	100%
Oilseed rape			112%	135%	107%	100%	71%	94%	83%	107%	105%	109%	91%	97%
Sugar		47%	51%	56%	57%	58%	64%	70%	71%	71%	55%	55%	64%	65%
Fresh vegetables			77%	77%	78%	77%	67%	70%	71%	60%	59%	55%	57%	52%
Potatoes				93%	90%	88%	88%	91%	87%	85%	85%	71%	73%	67%
Fresh Fruit					18%	22%	14%	10%	10%	10%	12%	18%	17%	16%
Cattle and calves				99%	88%	94%	114%	77%	79%	74%	83%	80%	81%	80%
Pigmeat				78%	78%	75%	80%	83%	70%	48%	53%	62%	61%	62%
Sheep and lambs				73%	90%	93%	110%	95%	98%	90%	92%	93%	101%	100%
Poultrymeat	100%	99%	97%	96%	98%	98%	94%	96%	89%	88%	88%	87%	90%	89%
Milk							100%	101%	103%	104%	103%	104%	106%	106%
Hen eggs		100%	96%	96%	98%	98%	95%	95%	93%	88%	87%	84%	86%	89%
Butter								79%	64%	61%	62%	73%	82%	87%
Cheese								66%	63%	60%	54%	56%	59%	59%

Table 2: Self-sufficiency by commodity

Source: Defra, Agriculture in the UK and AHDB