

Food Security in Great Britain: Past experience and the current view.

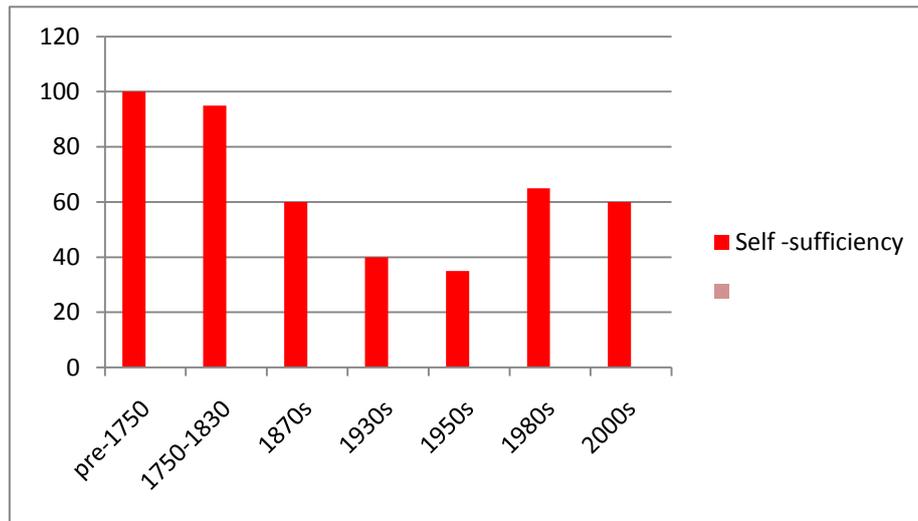
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Questions about food security are currently high on the public agenda in the UK and elsewhere. The exceptional food and other commodity price rises of 2008 highlighted the vulnerability of international food markets (Colman 2010), and the price rises in early 2011 have only heightened those concerns. A very recent, well received Foresight document "*Foresight: The Future of Food and Farming: Challenges and choices for global sustainability*" (Government Office for Science, 2011) covers the issues of food security in a much more comprehensive way than this short paper can do, and provides an excellent overview.

This paper will first present a brief history of British food supply over the past two and a half centuries through the lens of English food '*self-sufficiency*' (this being the only data available over such a long time). It will examine the conflict of interests and policies which have occurred in connection with key stages of this history, and will discuss the current position in public debate.

1. UK experience in terms of self-sufficiency.

Figure 1. UK – Approximate levels of Self-sufficiency² (%).



Source; RuSource (2007)

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² "Self-sufficiency" is calculated as the farm-gate value of UK raw food production (including for export) divided by the value of raw food for UK consumption. It is a measure of UK agriculture's competitiveness rather than of food security, which is a more complex issue.

Figure 1 displays estimates for periods since 1750 of the UK's self-sufficiency in food. At the outset a clear distinction must be drawn between *self-sufficiency*, (the percentage of food consumption supplied by national production) and *food-security*, which FAO defines as "*Food security exists when all people, at all times have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life*"³. If a high level of self-sufficiency can only be achieved by policies which force consumer prices to high levels, it would cause hardship to large numbers of the poor and compromise their food-security; it might also restrict their ability to express their food preferences. Hence the two concepts must be treated separately.

The main historical events underlying the pattern of change in Figure 1 are:

- Before 1750 agricultural trade was very limited, especially in commodities which could be produced in the UK, the population was under 10 million, and mainly occupied on the land. It is therefore unsurprising that the country was largely self-sufficient in food at that time, although there was a great deal of poverty and food hardship.
- The industrial revolution got underway in the late 1700s, with the mechanisation of the textile industry and growth of the coal, iron and steel industries. This led to a rapid increase in the urban population.
- The Napoleonic Wars around 1800, unrest in Europe and some very poor harvests caused great instability in the price of grain and led to pressure from landowners for the introduction of tariffs on grain imports in the so-called "Corn Laws" enacted first in 1815. These were not particularly successful in halting price instability, but did lead to higher grain prices. The UK remained largely self-sufficient in food, but there was great hardship among the poor, both rural and urban.
- A movement for free-trade emerged, led in large part by people from Manchester and the North- West of England, and agitation for the removal of grain tariffs and 'Repeal of the Corn Laws' grew. The new industrialists supported repeal on the grounds that it would help contain food prices and help them keep down wage costs and make them more competitive. Supporters of workers and consumers also argued for repeal on the grounds that it would reduce the price of bread. It may, therefore appear that there was an unlikely alignment of interests both arguing for repeal. However, it is a fundamental result of economics in competitive markets that the benefits of a removing a tax should result in a price fall which will be shared between producers and consumers. So the coming together of producers and

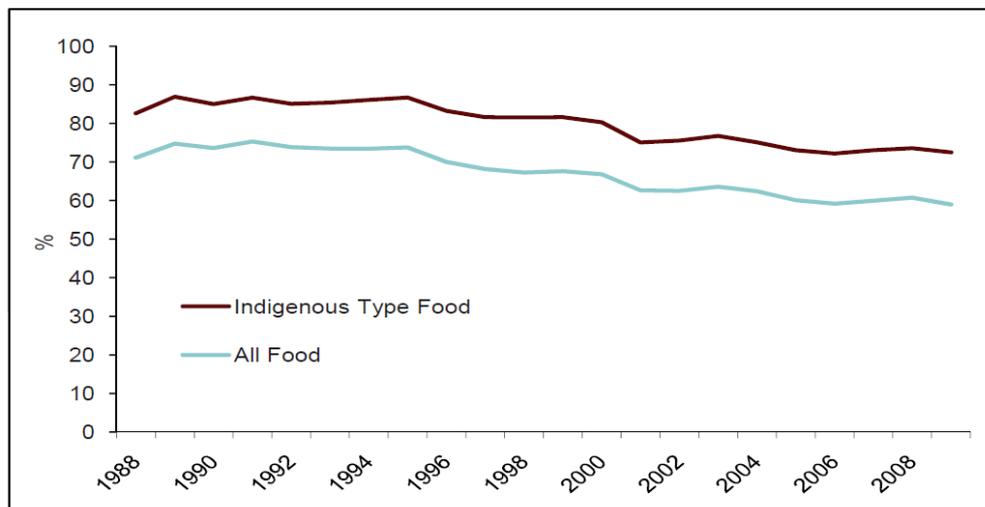
³ Rome Declaration on World Food Security, 1996, Food and Agriculture Organisation of the United Nations.

consumer interests to argue for repeal are understandable. The Corn Laws were repealed in 1846, and an era of free-trade (with minimal agricultural support) in agricultural produce began which lasted until the 1950s.

- By 1870 food self-sufficiency had fallen drastically. True the population had risen to over 20 million, but with free-trade, dramatic reductions in ocean transport rates resulting from the development of steam ships, and the opening up of the mid-west of the USA and of Australasia, cheaply competitive food imports increasingly fed the urban population. British agriculture entered a period of decline which lasted until the 1950s when a new agricultural support system (of production subsidies, but with no import tariffs) began to take effect. At the outbreak of the Second World War in 1939 the UK's food self-sufficiency in all food was less than 40%.
- During the war food was strictly rationed, importing food extremely difficult and measures were put in place to increase domestic production, despite shortages of labour and equipment. Ironically, it is often said that, despite the short rations everyone had to survive on, the nation's diet was healthier, because balanced in terms of nutrients, than it is now when food is plentiful.
- The 1947 Agriculture Act created a producer price support system based on "deficiency payments", whereby if the average price of, say, wheat fell below a predetermined support level producers received a subsidy payment equal to the difference on every ton they marketed. This applied to all major commodities other than poultry meat, pigs and horticulture. Significantly, free trade was maintained with imports able to enter tariff free. Nevertheless an increase in domestic supply did result after 1950.
- In 1973, the UK joined the European Union, and began a five-year transition of agricultural support from deficiency payments to the application of import tariffs at highly protectionist rates. As Figure 1 shows this caused self-sufficiency in total food to rise to over 60% in the 1980s, and as Figure 2 shows to rise to over 70% by 1990. Self-sufficiency in indigenous foods rose to around 85% by 1990.

However, as Figure 2 shows, UK food self-sufficiency has been falling steadily since 1990, and in 2009 was some 72% in indigenous food and 59% in all food. Self-sufficiency in all food is currently 15% below its peak in 1995.

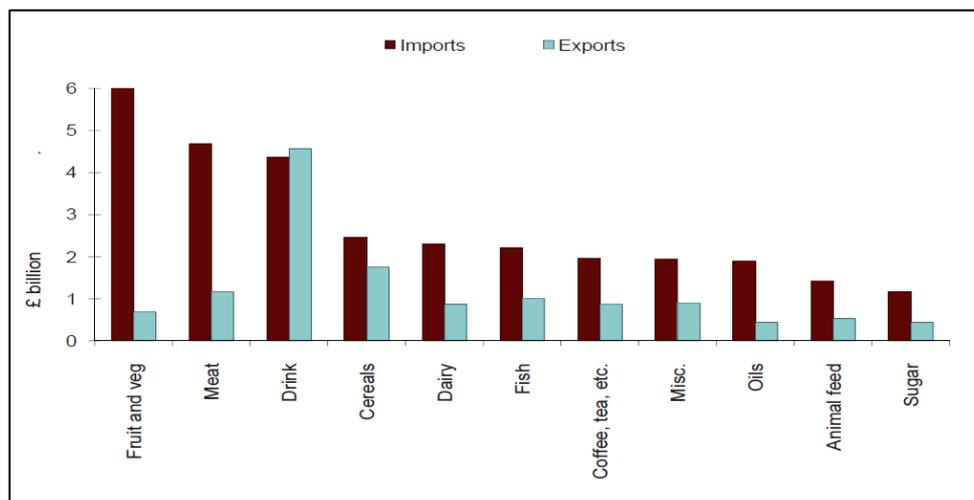
Figure 2. Trends in UK Self-sufficiency, 1988-2009



Source: *Food Statistics Pocketbook 2010*, Defra.

As a final illustration Figure 3 records the 2008 UK trade balance in the major food groups: in only one, drink is there a slight trade surplus.

Figure 3. UK trade in different food groups, 2008



Source: *Defra analysis of HMRC overseas trade statistics*

2. The basic approach of economics.

The initial theoretical position of economics is that free-trade, based on comparative advantage and competitive markets leads to an allocation of production and consumption which maximises welfare. There are, however, many qualifications of this position. The free-trade outcome certainly does not ensure the needs of all individuals are met, and one of the global issues confronting

society is the very slow progress of meeting the UN Millennium goals of halving the number of people living on less than one dollar a day and reducing the number of malnourished individuals. Currently it is estimated that over 925 million people are malnourished, and the progress to reduce the incidence of malnourishment has been reversed in the past few years. 1.4 billion people are living in poverty and this may well rise between 2010 and 2015 according to UN (2010). The UN declaration of the goals refers to *fair trade*, rather than *free trade*, recognising that the more developed countries can apply trade policies and laws which (at least temporarily) assist their citizens at the expense of others in less-developed countries. That points to an issue at the heart of the food security debate, which is that policies enacted under pressure for national food self-sufficiency, or simply for support for agriculture have negative effects on the poor. Developed countries applying such policies can put in place 'safety nets' (income supports, food consumption subsidies, food stamps, etc...) to prevent the poorest of their own nationals suffering unduly from the higher food prices resulting from this support, but by reducing imports they have negative impacts on other countries.

The economic argument against protectionist policies towards agriculture, and against prioritising self-sufficiency is that it leads to inefficient allocation of resources, it leads to resources being diverted into domestic agriculture which would be more productive elsewhere, and reduces the overall welfare growth which can be generated by specialisation and trade. This is a powerful argument and lies behind the objectives of the, now stalled, Doha process in the World Trade Organisation to reduce barriers to freer trade. The resistances which have stalled the process reflect to a large degree an unwillingness of certain countries to dismantle policies which could adversely affect powerful interest groups within them, even though theory argues that there would be overall welfare benefits to those countries.

3. Economic Externalities, Climate Change and Sustainability.

Another crucial caveat to the fundamental economic argument for free trade, concerns the issue of externalities, that is of costs and benefits which arise through trade but which are not reflected in the prices paid for the items traded. In the case of trade in food, and of food security, the issue relates to the huge external costs generated by global agriculture in terms of water use (70% of the world's 'blue' water), greenhouse gas emissions (possibly 30% of total GHG emissions), deforestation, land degradation, energy and scarce resource use. The numbers in the previous sentence are taken from Foresight (2011), which discusses each of these factors in some detail and cites a large bibliography of sources relating to them. The fact is that sustainability of food production in the face

of projected global population growth, climate change and projected is at the top of the global agenda after two or three decades of relative neglect of the agricultural sector. As Foresight (2011) reports, the projections are for global food and energy prices⁴ to rise over the coming years, posing serious issues for poverty and malnutrition alleviation.

The issue of sustainability is at the core of the long-term food security problem, which raises the question of how policies are to be managed at the national level and co-ordinated with the global level. In particular how can national policy developed in ways which do not lead to a reduction of food security for the poorest people in developing nations? Such actions as food export bans and other temporary trade restrictions in the face of food price shortage and price shocks are singled out by policy formers and economists as unacceptable national policy reactions, which makes matters worse for others. Undoubtedly, involved in the issue of long term food security is the potential for conflict between narrow national interests and wider global welfare. Sustainability is a complex, multifaceted concept, but there is a widespread view that policy needs to be directed towards it, and that "business as usual" is not an option.

4. The UK's current position on food its security.

In 2009 the Department for Environment and Rural Affairs (Defra) undertook an extensive consultation to assess the UK's food security up to 2030 by matching a set of objective criteria (scorecard criteria) for food-security against broad categories of potential threats. This was condensed down to the following summarising framework presented here as Figure 4 (Defra (2009) page12):

⁴ The projections are for real food prices to rise, that is to increase relative to other prices, although as Colman (2010) argues there are some difficulties with the conventional treatment of that topic.

Figure 4. Framework for assessing food security.

| Scorecard themes | Types of threats and challenges (illustrative) | | | |
|------------------------------------|---|---|--|--|
| | Political | Technical | Demographic & economic | Environmental |
| Global availability | Wars Export restrictions Bilateral land deals Bio-fuel policies | Yield growth Investment and skills | World population growth Incomes growth | Floods, droughts Plants / animal disease Changing climate |
| Global resource sustainability | Wars; Institutional and policy failures | Farming practices | World population growth; Farming intensification | Water scarcities Desertification, Soil erosion Climate change; Ecosystems breakdown |
| UK availability and access | Trade embargoes, Breakdown in international trade; Breakdown in EU trade; EU Regulations | Decline in non-renewable energy; Port closures | Importance of fruit and veg consumption and imports; Sharp decline in UK competitiveness | Animal disease Coastal flooding of ports; Water scarcities; Bio-diversity risks |
| UK food chain resilience | Strikes / protests Regulation | Radioactive fallouts; IT corruption Contingency planning; Just-in-time | Oil shocks; Absenteeism due to pandemic flu; Food chain concentration; Financial crises | Extreme weather events |
| Household affordability and access | Planning restrictions | Lack of transport | Poverty; Food inflation; Currency devaluations; Unemployment | Extreme weather events |
| Safety and confidence | Malicious activity regulatory failures | Contamination; | Increasing demand for complex processed products; Longer supply chains | Pests and diseases |

The conclusion arrived at was that *"by any objective measure, we enjoy a high degree of food security in the UK today. As a modern trading economy, the UK enjoys a rich diversity of nutritious food from home and abroad, so we have a vested interest in the sustainability of our food wherever it comes from. We have high standards of food quality and safety and, although we are keen to understand the effects of recent price rises on the poorest, most of us have access to affordable and nutritious food"* (Defra 2009, page 7). As a background to its position, it is important to recognise that the UK has, for the last 20 years been one of the leading advocates of reducing agricultural support in the EU and of liberalising trade, and that despite the recent fall in food self-sufficiency it clearly retains that position. It accepts that the UK needs a diversity of sources through trade to satisfy food needs and security of supply, and that the international supply chain is crucial in providing the necessary resilience against weather and other shocks to the system. Defra (2009, p.19) also recognises that there has been an increase in the last few years of families in the UK on low income who are struggling to cope with multiple pressures, but particularly of higher food and energy prices.

There are no specific new measures currently being put in place to alleviate this problem, which emphasises that overall national feed security does not extend to every individual.

Nevertheless as Figure 4 demonstrates there is a clear recognition that there are threats and uncertainties, which call for measures to be taken to help ensure UK food security. These measures place considerable emphasis on increasing the *sustainability* of production as reflected in reduced energy use, protecting water quality, reduction of wastage in the food chain, and adjusting diets to reduce demand for livestock products. It is argued that there is considerable scope for adopting more sustainable technologies throughout the food chain. At the same time there is recognition of the needs to invest in the skills base for domestic production and food chain management, something which has been neglected in recent years. Seen against the global future for food supply and demand the UK's efforts will be puny, unless there are major changes elsewhere, particularly since the financial commitment to new measures is small. However, the UK is committed to trying to reach international agreement on further trade liberalisation and to reforming the Common Agricultural Policy of the EU to further reduce price supports for production.

5. Concluding Observations.

The UK has adopted a slightly modified definition of food security to be *"ensuring the availability of, and access to, affordable, safe and nutritious food sufficient for an active lifestyle, for all, at all times"* (Defra 2009). In a broad sense, according to this definition the UK currently enjoys food security. It is a relatively wealthy country, with a moderate climate. Through domestic production, trade and food safety regulation it has a commercial system which delivers a comprehensive range of foods at all times which are affordable by most people. There are, however, poorer families and individuals who struggle to afford the diet they would prefer and which is balanced and healthy.

Importantly, the Defra document qualifies the above definition by adding *" To enable this, our food must be reliable and resilient to shocks and crises and be produced and brought to market as sustainably as possible, and ensuring food security must sit alongside other priorities such as tackling climate change and securing a healthy natural environment.* These are important qualifications, which recognise the global challenges ahead, and reflect determination to try and achieve the greenhouse gas emission reduction targets agreed in the Kyoto protocol. UK agriculture already operates with many more environmental and food safety restrictions than apply in many of the countries from which food is imported, and the cost burden that these impose on UK farmers may

well increase as Government pushes for a more sustainable agriculture. Thus there is a potential conflict between commitment to sustainability and providing the set of policies which will enable the UK's agricultural sector to compete and prosper, unless the sustainability criterion is applied to agriculture worldwide. Imports will continue to be a major contributor to food security in the UK, although in a crisis Defra assessed that with a change of diet (reduction in animal product consumption) and waste reduction the UK could be food self-sufficient (Defra (2010) p.83). Such an extreme outcome is not envisaged, and underlines the UK's relatively favourable position. Globally, however, reducing the number of people living in a malnourished state is going to be a major challenge given all the resource and environmental constraints which will grow.

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