



**Global Food Systems and UK Food Imports:
Resilience, Safety and Security**

Discussions from the ESRC Public Policy Seminar 30 March 2012

Foreword

In the UK, we have become used to a plentiful supply of affordable food, with a good proportion of it sourced from outside the UK. But we cannot rely on this situation continuing into the future. Global demand to feed a growing and richer population is increasing faster than supply. As competition for food on the global markets increases we may not be able access the same food, at the same prices, as in recent decades. This may become particularly noticeable with increased price volatility in response to changes in supply (such as from climatic events).

The ESRC Public Policy Seminar on '*Global Food Systems and UK Food Imports*' brought scientists and non-scientists together to discuss the broad range of factors which affect the stability and resilience of food supply chains in the UK. As we are not self-sufficient in the UK, our food supply chains, in part, depend on events outside the UK. Conversely, the choices we make have important implications for elsewhere in the world. For example, if we choose to eat more meat then more animal feed will be required. Much of our animal feed is imported, for example soya, and our demand for soya is a contributory driver of the conversion of rain forest to agriculture in the tropics.

Food security for the UK is now inextricably linked to global production, demand and supply, and must be considered in this broader context. When we think about the sustainability, safety and resilience of UK food imports, we must consider challenges which range from those with a local or UK national focus to more wide-ranging European and global issues.

We cannot be complacent about these challenges. In my view, ensuring global food security, and ensuring it is socially, economically and environmentally sustainable, is perhaps the most important societal issue we face. Based on the research activities of our partners in the Global Food Security (GFS) programme, we aim to help food producers and processors, retailers, consumers and civil society respond to and manage this challenge.

The discussion and ideas generated at the ESRC Public Policy Seminar will help bring us nearer to meeting that goal. Issues raised by participants during that seminar are highlighted in this publication. These issues and insights will now be used to stimulate actions and further debate on the key challenges surrounding the importation of food into the UK and those areas where future research is likely to prove most fruitful.

Professor Tim Benton
Champion, UK Global Food Security programme

Introduction

The UK is heavily dependent on imported food to supply the needs of a growing population. At the same time a broad range of factors are likely to affect the supply chains on which we depend. The effects of climate change, crop and animal diseases and price rises are just some of the many factors which are likely to affect our ability to import sufficient levels of food in future. As the intensity and range of these pressures increase, the security of supply chains and food safety may come under threat.

Disruptions to the supply of imports will have serious knock-on effects; economically, socially and to the health and wellbeing of the population. How we respond to these threats and how we prepare for the possible consequences is a matter of national importance. In this context, partners in the Global Food Security (GFS) Research Partnership came together in March 2012 to hold a Public Policy Seminar to discuss issues surrounding global food systems and the importation of food into the UK.

Chaired by Richard Tiffin, Director of the Centre for Food Security and Professor of Applied Economics at the University of Reading, the morning session of the seminar featured presentations from academia, government and industry. The afternoon session comprised three breakout groups on the following topics: global supply resilience, food safety, and domestic supply resilience and imports.

The first section of this report outlines the issues and concerns regarding food resilience, safety and security raised by speakers and audience participants during the seminar. The second section highlights topics which seminar participants suggested as possibilities for future research activity.

The GFS partnership is working to develop a research agenda that will address the issues surrounding importation of food into the UK from the perspectives of multiple stakeholders and policymakers in the UK. This seminar provided some of those stakeholders with the opportunity to share their ideas and insights with seminar organisers, the Economic and Social Research Council (ESRC) and other partners in the GFS programme.

The final section of this report outlines how the GFS partnership aims to build on the increased understanding gained from the seminar and incorporate these insights into the wider GFS programme.

Section I

Global food systems and UK food imports: resilience, safety and security

During the seminar presentations, Q&A sessions and breakout discussion groups, seminar participants raised the following points:

Resilience of food supply: key issues

“It’s vital that we take a global perspective if we are to secure the UK’s food interests,” Chris Durham, Defra

A global view is required

“Take a relatively simple food produced in the UK like a chocolate Kit Kat – it contains cocoa from Africa, milk products from the UK, whey from New Zealand, palm oil from Asia, sugar from South America, wheat from Europe. So we simply can’t look at the supply chain in terms of the UK alone. Increasingly, perturbations elsewhere in the world will feed back into the availability and price of food the UK,” Professor Tim Benton, Champion, Global Food Security programme (commenting following the seminar)

Food security, according to the 1996 World Food Summit definition, occurs when ‘all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life’.

While the UK Government has recently assessed the UK’s food security as high, food security for the UK is *inextricably* linked to global production, demand and supply factors. As such, the UK already experiences shocks to its food system. For example, the price spikes of 2008 and a 5.2 per cent rise in the average UK food bill between July 2010 and July 2011.

At a global level, food insecurity has serious consequences not only in terms of lack of access to the right type of foods at appropriate prices but also in terms of international conflicts and economic growth. For example, food insecurity has been identified as a contributory factor to recent uprisings in the Middle East and North Africa.

In the UK, the size and diversity of the UK food industry makes it relatively resilient to disruptions. Nevertheless, disruptions to the global food system are expected to increase in future due to climate and other environmental changes. For example, change climate will have direct or indirect impacts on food production and supplies due to rising temperatures, changing rainfall patterns and increasing incidence of extreme weather events.

Changing climate may also lead to changes in the distribution and/or severity of pests and diseases and a declining number of pollinators. Access to water will become increasingly problematic. Increasing climate and environment related disruptions will affect UK food supply in terms of price, choice and availability.

Issues:

- How resilient will the price, choice and availability of UK food supplies remain in future given the anticipated increase in shocks and disruptions to the global food system?
- The food choices made in the UK have important implications and drive behaviour elsewhere in the world. How does this affect supply chain resilience?
- By what mechanisms do markets respond to local perturbations? Is it possible to predict the global impact of apparently small perturbations in individual countries? For example, some commentators believe that the price spike of 2008 is associated with a drought which affected Australian cereal production – although Australia is a relatively minor player in the food market.

A growing demand for food

“We need to understand that the nine billion global population forecast for 2050 will be living in a completely different environment from today. Most of the population growth will take place in the developing world and will be accompanied by huge urbanisation. This raises a whole set of questions about how the food will get to those cities, how it will be distributed and what the supply chain will look like. Competition for food is certain to increase,” Professor Richard Tiffin, Director of the Centre for Food Security, University of Reading

The global population is expected to grow to more than nine billion by 2050. The Food and Agriculture Organisation of the United Nations (FAO) predicts that global demand for food will grow by 50 per cent by 2030 and 70 per cent by 2050. Global population growth, coupled with demographic change, increasing affluence and urbanisation is leading not only to growth in demand for food but also to significant shifts in consumption patterns. Rising affluence, for example, is associated with increased food consumption, especially for meat and dairy products.

Issues:

- The world in 2050 will look very different from today. Most population growth will take place in developing countries, but many more people in developing countries will be living in towns and cities. Moreover, the diet of those living in the large cities of the future may change and lead, potentially, to a rise in obesity problems. Rapid urbanisation raises major questions concerning the availability of food and access to food. How well do we understand the effects of a very different global environment on food security?
- Demand for meat and dairy products is growing, particularly in Asia. In China alone, meat consumption has more than doubled in the past 20 years, and is projected to double again by 2030. Nutritional transition has wide-ranging economic, social and environmental impacts. For example, increasing demand for animal feed increases pressure to convert forest to agricultural land. How will predicted changes in meat

consumption across different countries affect demand for the range of agricultural produce?

- As the majority of the world's most productive land is already in use, the need to produce more food will place increasing pressure on land, water and energy resources, but also sources of other inputs such as mineral phosphate (an essential plant nutrient) How will socio-economic factors affect resource sustainability? What tensions will arise if measures to improve environmental sustainability are taken at the same time as steps to increase agricultural productivity? Where does resource sustainability fit into the food security debate?
- The current drive to increase the use of biofuels poses a particular pressure on land use. Expanding biofuel production to meet national targets is likely to add to food insecurity by placing increasing pressure on food prices.

Declining self-sufficiency in food

The UK is approximately 60 per cent self-sufficient in food supply. UK food self-sufficiency has declined rapidly in the past few decades, from almost 80 per cent in the 1984 to 60 per cent in 2010 (Figure 1). The UK is becoming increasingly dependent on food imports and, at the same time, is one of the few developed countries with a population that is expected to expand significantly over the next few decades.

Food self-sufficiency in the UK is not an option, nor is self-sufficiency in the inputs such as energy, labour, pesticides on which the UK agricultural sector depends. Rising energy and fuel prices in particular pose a significant challenge to the production and distribution of food in the UK.

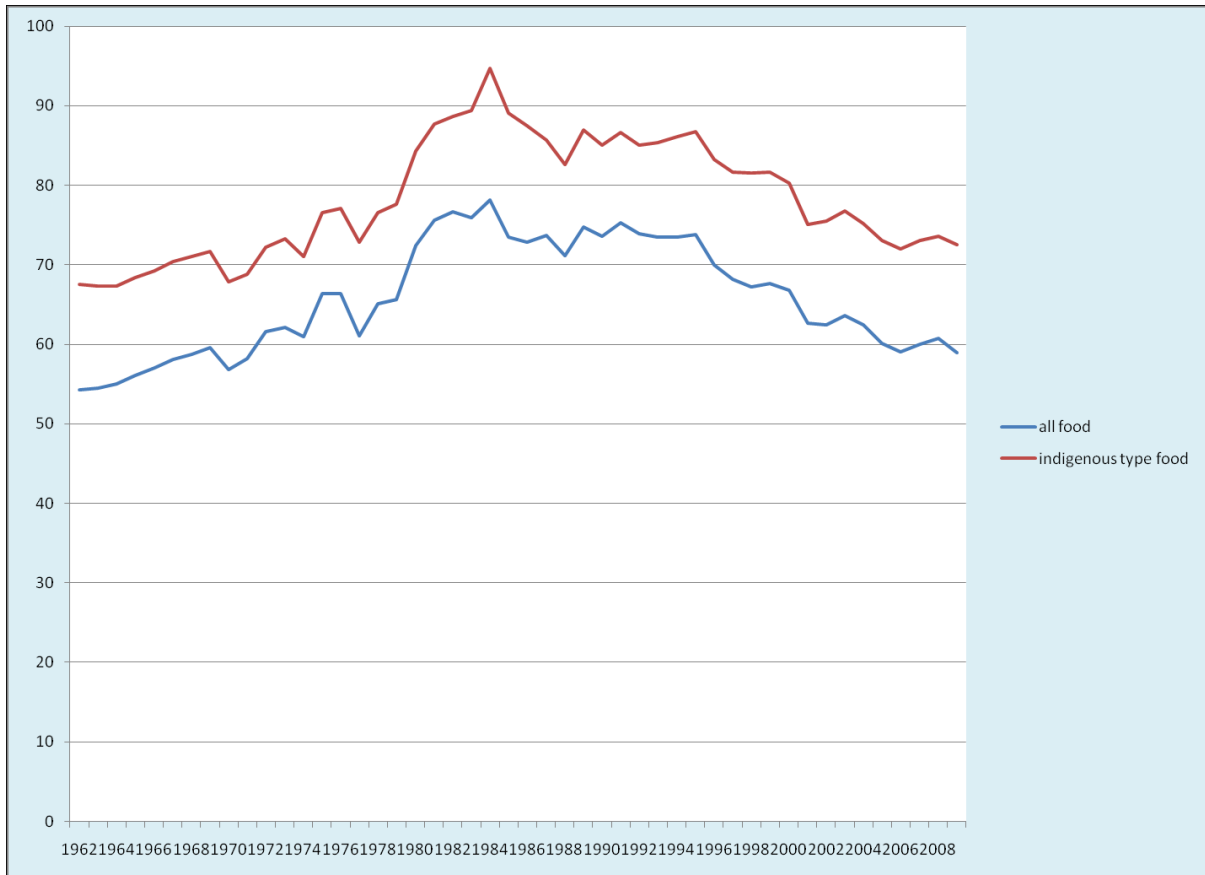


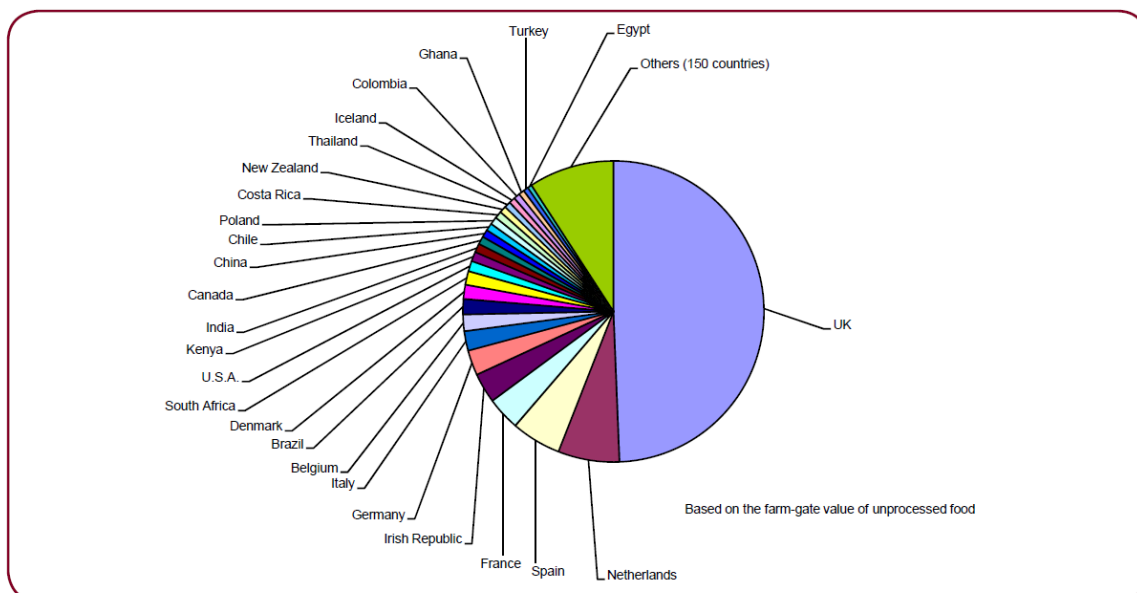
Figure 1: Trends in UK food self-sufficiency 1960 – 2010 Source: Defra

Issues:

- No-one would argue that the UK should be 100 per cent self-sufficient in food. Indeed, self-sufficiency is no longer considered a viable option. What, if any, are the consequences of declining self-sufficiency in terms of the availability and price of food?

Narrow sources for food imports

The UK, as shown in Figure 2, is heavily reliant on a relatively small number of countries for its food imports.



Source: HMRC overseas trade statistics

Figure 2: Source of food consumed in the UK

Issues:

- What are the implications for food security – particularly UK susceptibility to price rises – of reliance on a small pool of food suppliers?
- What would be the implications for food safety if the range of suppliers were to increase?

Food price volatility

“Food affordability is a key dimension of food security. We need a better understanding of price dispersion in order to ensure that it does not affect the affordability of food for the vulnerable groups in our society,” Dr Cesar Revoredo-Giha, Scottish Agricultural College

After many years of relatively cheap food in the UK, a spike in food prices in 2008 followed by a period of rising prices, has provided an impetus to wider debate on the resilience of the UK’s food chain and the differential impact of rising food prices across UK society.

Lower income families spend a greater proportion of their income on food than better off households. Higher food prices therefore have a greater impact on the budget of poorer and more vulnerable households.

UK consumers are increasingly vulnerable to price rises because stocks of food are no longer held. The government has no food reserves of its own, and overall reserves within the UK run to just a few days. Within the food chain, the UK has come to rely overwhelmingly on large supermarkets and their logistics networks. The vulnerability of this aspect of the food chain is highlighted in Defra’s UK Food Security Assessment (updated 2010) which points to a ‘deterioration’ in retailer warehouse stocks.

Rising food prices may also have an impact on UK and global economic growth as they will reduce the amount consumers spend in other sectors of the economy. Food price inflation may also slow economic growth internationally as it also threatens the economic health of major emerging economies, such as China and India.

Issues:

- Will consumers respond to rising prices by compromising on the quality of food they buy? Consumer purchasing of fruit and vegetables has recently fallen back to 2005-6 levels. Do rising prices make it more difficult for low income households to maintain healthy diets?
- Within the food chain, the UK has come to rely overwhelmingly on large supermarkets and their logistics networks. These networks may be particularly vulnerable to shocks and disruptions, whether natural, accidental or malicious.
- A current lack of data inhibits greater understanding of the factors influencing price volatility. What are the factors that lie behind price dispersion?
- What mechanisms can be devised to buffer against growing market volatility and under which conditions to different mechanisms work best?

A better functioning supply chain

How the food supply chain works is important for all European citizens since it impacts the safety, quality and price of food products. The European Commission Communication, 'A better functioning supply chain in Europe' (EC, 2009) identifies several areas in which the current functioning of the food supply chain is problematic. For example, the relationships between the different actors in the food supply chain sometimes conflict.

In Europe, the food supply chain comprises very different economic actors: farmers, either independent or in cooperatives, food producers, either Small to Medium Enterprises (SMEs) or large international groups and distributors, ranging from small corner shops or supermarket chains. Very often there is an asymmetry of bargaining power between actors which can lead to unfair practices, such as unilateral changes in delivery date, quantity or prices. In the UK, there is a perception that the major supermarkets wield undue power over suppliers and producers.

Issues:

- To date, much attention has focused on the resilience of agricultural *production*. Greater attention should now be paid to the resilience of the supply chain as a whole.
- Supply chains are complex and diverse arrangements. A greater focus on understanding domestic supply chains is needed. How could the functioning of the supply chain in Europe be improved in ways that have positive consequences for citizens, through better food at cheaper prices, and for companies active in agriculture, food processing and distribution, through greater collaboration, fairness and transparency?

- Are major corporations such as Unilever or Kraft focusing sufficiently on the resilience of their supply chains? What assistance may they need to address this issue?
- Given difficulties of distribution, what is the potential of small, 'informal' growers to make an impact on patterns of consumption?

Food choices

“The UK does not only face concerns for food resilience from population growth but from a high level of over consumption and waste,” Dr Mirjam Roeder, University of Manchester

Increased purchasing power, shifting food preferences, access to global markets and growing populations have led to significant shifts in consumption patterns in recent years that are anticipated to continue in coming years. However the emergent pattern of dietary shifts is unlikely to provide the same health benefits as well-balanced diets rich in grains and other vegetable products.

How nutritious and healthy is the average UK diet? Despite extensive promotion of the benefits of eating five portions of fruit and vegetables a day, only 12 per cent of the UK population hits this target. The average UK consumer eats 2.5 servings of fruit and vegetables a day; 1.9 million people from the UK's poorest households eat less than one serving of fruit and vegetables a day.

In developed countries, increased meat and dairy consumption (particularly rising demand for resource-expensive meats such as beef), combined with an increased intake of high sugar and high fat foods is leading to nutritional deficiencies as well as a growing number of cases of obesity and associated illnesses.

Obesity is now a significant problem in the UK; one in three 10-11 year olds are overweight. But, as Figure 3 shows, obesity has a differential impact across socio-economic groups: those living on lower incomes have higher levels of obesity than higher income groups.

FIGURE 1: Prevalence of obesity in adults (aged 16 and over) by equivalised household income quintile. England, 2004–08



Source: Health Survey for England

Figure 3: Obesity rates by socio-economic group

Issues:

- When thinking about food security, the focus has often been on questions of food production and supply. Greater attention should be paid to understanding people’s food choices: what people eat and why, the cultural context behind these choices and the implications of these choices.
- The UK’s growing obesity problem and evidence of poor diet suggest that much scope remains in understanding people’s diet choices and what influences these choices. What influences behaviour change in relation to the food we eat? What initiatives are most effective in promoting broad-based access to healthy food across different socioeconomic groups?
- Consumer expectations concerning the variety and quality of food available are high. UK consumers have access to 450 different varieties of fruit and vegetables. Could choice editing (ie, controlling or limiting the choices available to consumers) become an issue in future and how would consumers react to restricted choice?
- In the UK, huge inequalities exist in the nutritional value of people’s diet. How can we ensure greater equality of diet and that overall we have a healthier, more nutritious and sustainable diet? In what ways could dietary shifts impact food security? Will increased pressure on available arable land and primary products have impacts on people’s diet, and will those impacts have a distributional aspect?
- Greater understanding is needed to establish precisely what ‘sustainable food’ and a ‘sustainable diet’ represents. Do we need to look at the risks associated with dietary recommendations: ie, can we sustain ‘five a day’?

Food waste

“The greatest responsibility for food waste lies with consumers in the UK. Some 70 per cent of food waste is thrown away from homes. Some 60 per cent of food that is thrown away is within its sell by date,” Nigel Jenny, CEO, Fresh Produce Consortium

Estimates suggest that up to one third of the food bought in the UK is thrown away. In all, some 18-20 million tonnes of food is wasted in the UK each year with household food waste contributing 6.7 million tonnes of this total. Fruit and vegetables represent 42 per cent of all food waste by weight.

Issues:

- Reducing food waste in the UK would have a significant positive impact on food security. However, food waste by consumers is primarily a behavioural issue. Why is wasting food culturally acceptable in the UK? How can people be incentivised to eat well and not waste food while maintaining safety?
- How well do we understand what happens to food once it goes through a person’s front door?

Agricultural employment, research and innovation

“The declining trend in state funded agricultural research should be reversed,” Professor Tony Allan, King’s College London.

More, not less, investment in agricultural research and innovation is required if the world is to produce more food than it does now on roughly the same amount of land, using less water and with less harm to the environment.

Retaining its status as a world leader in innovative research should be a priority for the UK. Greater agricultural R&D investment is required in the UK combined with more scholarships available for postgraduate training in applied agricultural research. Since many developing countries still lack the requisite R&D capabilities to meet their food security challenges unassisted, leadership from countries such as the UK will become yet more important.

In addition, more younger, well-trained farmers are needed. The number of people employed in agriculture in the UK has fallen and the average age of UK farmers has increased. For Europe, estimates suggest that two thirds of farmers are now aged 55 years of age or older.

Agricultural advisory and extension services are a vital element in improving farmers’ knowledge and efficiency and ensuring novel technologies and practices can be adapted to individual farming circumstances.

Issues:

- Agriculture is not a popular career choice among young people. How can younger people not only in the UK but worldwide become more engaged in farming? What could make agriculture a more attractive career option? What steps need to be taken to encourage young people to study agricultural science?

Building resilience into the food system

Opportunities exist to build greater resilience into the food system through changes to farming, social and financial systems. Greater resilience can be built into plants, for example, by breeding varieties that can better withstand extreme temperature events. Growing a broader mix of crop varieties would build more resilience into the farming system.

Insurance, too, offers an opportunity to build greater resilience through financial systems.

Issues:

- What is the optimal way to build resilience into the food system given the variety of ways that are open to intervention?
- Any changes to farming systems, particularly changes which intensify production could have adverse environmental impacts including increased water and land use, soil erosion and degradation, loss of biodiversity, as well as increased greenhouse gas emissions and water pollution. Changes in land use potentially undermine the capacity of ecosystems on which food production critically depends. There are other potential techniques which are efficient and environmentally friendly, however these technologies could raise other issues such as how to spread information and transfer knowledge.
- What practical measures are needed to lower the ideological barriers between organic and Genetically Modified (GM) foods, and thus fully exploit the combined potential of both modes of production? However, it is not just the ideological barriers to new technology that must be considered but also the impact that new technologies (such as cloning and GM) would have on production systems.

A larger role for government?

“The view appears to be growing that food is just too important to leave to the market,” Professor Richard Tiffin, Director of the Centre for Food Security, University of Reading

Concerns over food security, sparked for many by the price rises of 2008, call into question the ‘hands-off’ approach adopted by recent governments to food production in the UK. While realisation is growing that government needs to take a bigger role in ensuring the security of UK food supply, debate surrounds how and in what ways it is appropriate for government to step back into the food system.

Issues:

- What potential exists for government intervention that rewards ‘good’ production ie, a health orientated Common Agricultural Policy (CAP)? What are the ill effects of current subsidies that have a weighting towards potentially unhealthy high fat foods.

- Should policies continue to prioritise the availability of cheap food?
- How do trade policies and subsidies impact on the reliability of the market?
- How can national food security policies be designed to be more compatible with worldwide open market food policies while securing the interests of local farmers and equitable access to food?
- How far are policies on pesticides and GM foods driven by the perception of hazard, rather than scientific evidence of risk? What risk does EU regulation on, for example, pesticides pose to agricultural productivity?

Food safety and security: key issues

“Our challenge is to understand where risks arise in the supply chain and how best to control these risks,” Dr Sharn Bowen, Food Standards Agency

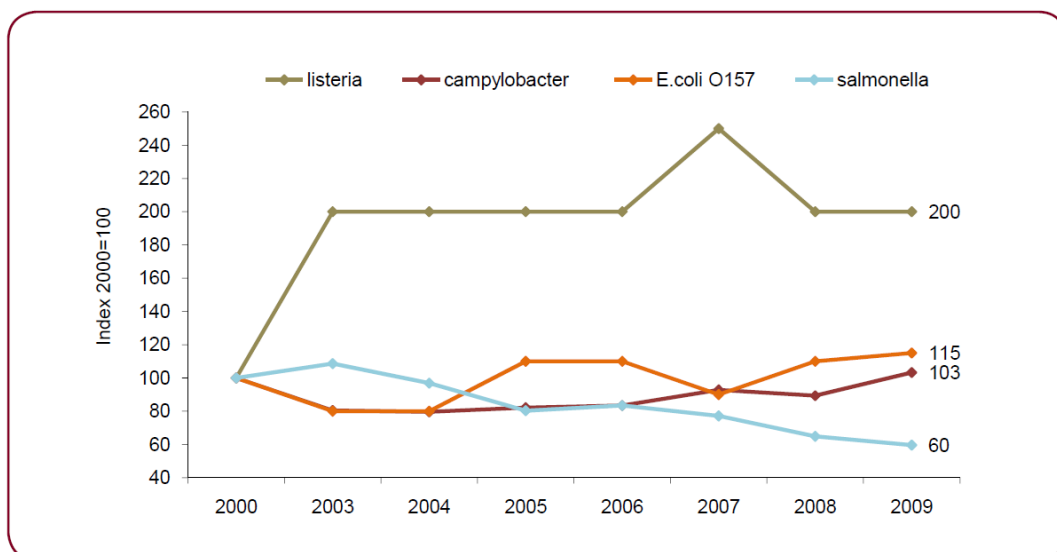
Securing safer foods

The real value of food imports to the UK has increased steadily since 2000 reaching £34 billion in 2010 (comprising £6.4 billion unprocessed imports, £15.4 billion lightly processed imports and £11.9 billion highly processed imports).

In the UK, the Food Standards Agency (FSA) has a wide remit not only for microbiological and chemical food safety across the whole food chain and irrespective of where the food is sourced, but also plays a key role in ensuring that consumers can make informed choices about the food they eat, including protection from food fraud and illegal practices.

Ensuring that imported food is safe to eat is a growing challenge for the FSA. Recent highly publicised food and feed incidents include dioxins in animal feed; mycotoxins in nuts, *E.coli* O104:H4 in sprouting seeds; Sudan I dye in chilli powder; unauthorised GM rice and melamine in milk.

As the trends in listeria highlighted in Figure 4 indicate, considerable scope exists to improve the safety of food, both imported and home grown eaten in the UK.



Source: Food Standards Agency / Health Protection Agency (HPA), 2011

Figure 4: UK trends in listeria, campylobacter, E.coli O157 and salmonella 2000-2010

Issues:

- Growing population is likely to result in the introduction of new technologies, including biotechnology – could these have potential negative implications for food safety?
- As the Sudan I dye in chilli powder incident shows, it is very difficult to anticipate when and where food safety problems will arise. From a food safety viewpoint, where are the weak points in the food supply chain and how can the anticipation of emerging risks be improved?
- While the majority of checks on imports are carried out when the food has crossed the UK border, can more be done to identify risks further upstream in the supply chain ie, closer to the producer rather than the consumer? Where does responsibility lie for food safety along the supply chain and how can behaviour be influenced along the entirety of the chain? How can we take account of changing food security levels?
- Challenges and threats to food security are likely to be sensitive to fluctuations in global food security. When appraising emerging risks, it will be necessary to factor in the food security levels of the UK's trading partners.
- In countries such as China and India, it has traditionally been difficult for authorities to closely supervise the activities of a very large number of small farmers. Can a greater sense of shared responsibility be embedded in countries that import to the UK?
- Is there a stronger role for the private sector to play in strengthening import safety? Is greater self-regulation possible in the industry?
- In terms of food safety, where should resources be placed in order to control risk? Using the example of campylobacter in chicken, should greater resources be placed in reducing the incidence of campylobacter or in advising consumers on more appropriate cooking methods?

Tackling food fraud

Food fraud, fraudulent food certification bodies and food contamination are key issues to be addressed in terms of improving food safety. At least five per cent of pesticides are currently fake, according to an article published in *Chemistry and Industry* (6 November 2006). Contamination of animal feed is a growing and significant problem, particularly as demand for meat and milk will increase in future.

Issues:

- The problem of food fraud may increase as food prices rise.
- How could resources be targeted better in order to improve food safety? Is it better to put resources into identifying fraud and enforcement services or into raising public consciousness regarding the problem of food counterfeiting and fraud?
- How could technology be used to speed up the identification of fraud?
- New ways of thinking (such as thinking 'like a criminal') are required in order to anticipate problems and better understand risks. Horizon scanning can help identify the 'big issues' of the future – the 'unknown unknowns'.

Agro-terrorist threats

The Government's Centre for the Protection of National Infrastructure (CPNI) identifies three main agro-terrorist threats to food and drink. First, malicious contamination with toxic materials; second, sabotage of the supply chain leading to food shortage; and third, misuse of food and drink materials for terrorist or criminal purposes.

Issues:

- How safe is the UK food supply chain from existing and potential malicious threats to food security such as cyberthreats? Is the extent of these threats fully understood?

Section 2

Research priorities

What research activities could contribute to ensuring that the future importation of food in the UK will be fair, sustainable, resilient and safe? Seminar participants suggested that the following broad themes merit further consideration by partners in the GFS programme.

A social science perspective

Considerable scope exists to address the complexity of the food security agenda from a social science perspective. This perspective needs to be at the heart of research initiatives, not an add-on in the later stages.

A changed world

The world will be a very different place by 2050. How will global population growth, increased urbanisation, environmental change and changing economic climates affect UK food demand and the capacity of other countries to meet this demand? Similarly, how will these changes impact food security globally, particularly in developing countries?

Global diet

What are the issues for UK food supply as well environmental and resource sustainability of changing global diets in terms of 1) growing consumption of meat 2) a growing and increasingly urban population in developing countries? What are the nutritional issues which will arise in the developing world as countries become wealthier and more urbanised? What are the nutritional issues for the UK where both under and over nutrition co-exist? What is a sustainable diet and how is it designed, measured and achieved?

Food waste

What issues underpin consumer behaviours which result in up to one third of the food purchased by consumers in the UK being thrown away? Will reducing food waste have food safety implications? Conversely, are there food safety implications causing food waste?

Ecosystem sustainability

Food can be viewed as just one of the ecosystem services that are delivered from land. How can we deliver increased food production while minimising the negative impacts on biodiversity and ecosystem services such as pollination and carbon sequestration? How much will the degradation of natural capital affect food security and in turn food safety? Indeed, how may concerns over food security impact natural capital and thus food safety?

Resilience of the global food system to shocks

Better understanding is required of the mechanisms by which shocks and perturbations impact the global food system. Scope exists for socio-economic research that focuses on how markets and consumers respond to perturbations.

New technologies

New technologies are likely to be used to increase food availability but how will this impact the food production sector? Greater understanding will be needed of the potential impacts of increased use of new technology on the nutritional and safety aspects of food.

Global markets

Too little is currently known regarding food safety in developing countries. Possible research questions include: What food safety practices are currently in place? What factors (behavioural, structural, legal, political and cultural) limit food safety behaviours? What is the potential of the informal food sector (eg, street food) to improve food security, and food safety in developing countries? What mechanisms could be employed to ensure that the food imported in to the UK is safe further up the supply chain? Further research is needed into understanding behaviours within the supply chain. As we source food from new markets and producers how can/should we ensure that standards are maintained.

Section 3

Next steps

The ESRC remains committed to funding the highest quality research under the Global Food Security research partnership and will continue to work with key organisations within the partnership to develop initiatives that build on the themes discussed in this document. Such initiatives may form part of wider activities that seek to understand the interfaces between energy, environment, food security and water or may be standalone activities focused solely on food security.

Recognising the complexities of the various issues raised at this seminar is an important step in designing a response and ESRC will continue to consult with partners and stakeholders going forward.

The ESRC will make this report available in electronic format and publish on their website (www.esrc.ac.uk). This document will also feed into future dialogue surrounding the key social science issues in the food security space and will inform ESRC strategic planning. Notification of any upcoming funding opportunities or events related to food security will be announced on the ESRC website and via various social media outlets.

Any questions, comments or feedback for the ESRC should be addressed to the named contact on the ESRC Food Security webpage.

For more information on the Global Food Security Research partnership, please contact: info@foodsecurity.ac.uk

Or visit:

<http://www.foodsecurity.ac.uk/>

Further information

Presentations to the ESRC Public Policy Seminar on Global Food Systems and UK Food Imports: Resilience, Safety and Security were made by:

Chair: Richard Tiffin, Director of the Centre for Food Security and Professor of Applied Economics at the University of Reading. Professor Tiffin previously held posts at the Universities of Newcastle and Durham. His current research is focused on diet and health policy, in particularly the impacts of fiscal policies with the objective of improving dietary health. Email: j.r.tiffin@reading.ac.uk

Dr Sharn Bowen, Head of Enforcement Strategy at the FSA. Dr Bowen joined the FSA in 2001 and has held a variety of policy and corporate services posts since then. For the last two years, she has worked within the FSA's Operations Group, developing the FSA's Compliance and Enforcement Strategy. She is responsible for the FSA Strategic Plan priorities on imported food. Email: Sharn.Bowen@foodstandards.gsi.gov.uk

Chris Durham, Economic Advisor on global commodities markets and food security at DEFRA. He has been a member of the Government Economics Service since 2007 and has co-authored the Government Economics' Services' study into The Economics of Sustainable Development, and has contributed to papers on environmental valuations and the use of ecosystems services in policy making. Email: Christopher.Durham@defra.gsi.gov.uk

Nigel Jenny, CEO of the Fresh Produce Consortium. Mr Jenny joined the Fresh Produce Consortium in 2004 and also sits on the EU equivalent organisation as Vice Chairman of the

Wholesale Division. He is committed to the promotion of fresh produce in the UK and is actively involved in industry initiatives including 5 A Day, the School Fruit and Veg Scheme and the FPC's Eat in Colour healthy eating campaign. Email: nigel@freshproduce.org

Dr Cesar Revoredo-Giha, Senior Food Marketing Economist at the Scottish Agricultural College (SAC). Dr Revoredo-Giha is a senior economist and team leader of food marketing research at the Land Economy and Environment Research Group at the SAC. His current research interests include industrial organisation of the food sector, international trade in commodity markets and economic modelling. Email: cesar.revoredo@sac.ac.uk

The Global Food Security (GFS) programme is a multi-agency initiative bringing together the interests of the Research Councils, Executive Agencies and Government Departments. The partners and sponsors are:

- Research Councils UK (RCUK)
- Biotechnology and Biological Sciences Research Council (BBSRC)
- Economic and Social Research Council (ESRC)
- Engineering and Physical Sciences Research Council (EPSRC)
- Medical Research Council (MRC)
- Natural Environment Research Council (NERC)
- Department for Business, Innovation and Skills (BIS)
- Department for Environment, Food and Rural Affairs (DEFRA)
- Department of Health (DH)
- Department for International Development (DFID)
- Government Office for Science (BIS)
- Food Standards Agency (FSA)
- Scottish Government (SG)
- Technology Strategy Board (TSB)
- Welsh Government (WG)

Further details of the GFS programme: www.foodsecurity.ac.uk

GFS Programme Manager, Riaz Bhunnoo Email: Riaz.Bhunoo@bbsrc.ac.uk

GFS Academic Champion, Professor Tim Benton Email: Tim.Benton@foodsecurity.ac.uk