



House of Commons
Environment, Food and Rural
Affairs Committee

**Securing food supplies
up to 2050:
Government Response
to the Committee's
Fourth Report of
Session 2008–09**

**Third Special Report of Session 2008–
09**

*Ordered by The House of Commons
to be printed 14 October 2009*

HC 1022
Published on 19 October 2009
by authority of the House of Commons
London: The Stationery Office Limited
£0.00

Environment, Food and Rural Affairs Committee

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Third Special Report

The Environment, Food and Rural Affairs Committee reported to the House on *Securing food supplies up to 2050: the challenges faced by the UK* in its Fourth Report of Session 2008–09, published on 21 July 2009 as HC 213. The Government's response to the Report was received on 25 September 2009.

Government response

Introduction

1. The Government welcomes the Environment, Food and Rural Affairs Committee's thorough and constructive report on this important subject. We have taken careful note of the Committee's conclusions and recommendations, the main thrust of which we accept.
2. In particular, we welcome the Committee's recognition of the work that the Government has done on food security, particularly our current assessment of the state of our food supplies.
3. The Committee's report also highlights the Government's work to develop a vision and strategy on the future of food. A package of documents on the future of our food system was published on 10 August 2009. As well as the UK's first food security assessment, the package also includes an interactive tool called 'Food 2030', to enable discussion and debate about the future of food, as well as a progress update on the objectives set out in the 'Food Matters' report, published by the Cabinet Office in 2008. In addition, a consultation has been launched on how best to measure our success in creating a sustainable food system, through indicators grouped into themes such as healthy and informed consumers, and skills and innovation.
4. The food strategy for the future will be published early in the new year, drawing on responses to the consultation.
5. The food strategy will also be underpinned by a new cross-government food research and innovation strategy to be published later in the year. The Food Research sub-Group of the Food Strategy Task Force is leading the development of this, under the chairmanship of the Government's Chief Scientific Adviser. The BBSRC is leading the development of plans for coordination of current research through a new cross council multi-disciplinary programme in Food Security with Defra, Dfid and other key partners.

RESPONSE TO CONCLUSIONS AND RECOMMENDATIONS

The projections made at the FAO food security conference

1. *At the World Food Security Conference in Rome, it was announced that there was a need to increase food production by 50% by 2030 and double it by 2050. These figures are based on assumptions about population growth and patterns of*

consumption. It is important to bear in mind that they are projections rather than targets. They are a useful way of focusing attention on food production. However, they should also be used to draw attention to population growth, diet, and waste at all stage of the food chain, and the need for policy responses in these areas. (Paragraph 22)

We are currently analysing the basis of the Food and Agriculture Organisation (FAO) 2030/50 projections. In 2006 FAO produced projections of slowing demand growth. Clearly rising population adds to food demand (although it also adds to labour force), but it is also true that population growth is declining as countries develop and urbanise. FAO data shows that, in the period 1970–2000, world population grew on average by around 1.7% per year. This is expected to fall to 1.0% per year in the period 2000–30, and to 0.5% per year in the period 2030–50. This dampening effect on demand growth is partly offset by rising incomes. Using 2000 as a baseline, FAO projections roughly correspond to the Conference figures, if 2000 is considered the starting point: i.e. 56% over the period 2000–2030 and 87% increase over the period 2000–2050. These projections imply that demand and by implication, food production in the period 2006–2050 would increase by around 70%, and this has been confirmed in this year's OECD-FAO *Agricultural Outlook, 2009–2018* and *The Resource Outlook to 2050*, both published in June 2009.¹ The latter suggests that, compared to the 2005 to 2007 average, food production needs to increase by 70 percent by 2050 to cope with the projected increase in world population and to raise average food consumption to 3130 kcal per person per day by 2050. It should be noted that in the period 2000–2007 food production increased at a faster rate than the projections. The difference between 100% and 70% is not trivial: it is more than the food production of the whole American continent. So claims around food production needing to increase 50/100% need to be treated with care.

Notwithstanding the varying assumptions about population growth and patterns of consumption in the future, it is clear that there will be a significant increase in global food demand over the next 50 years.

Increasing sustainable agricultural production and productivity will be important to feed this growing population—not least in Africa where our vision is to see a doubling of agricultural production over the next 20 years in ways that manage natural resources sustainably and are adapted to climate change.

But simply increasing food production will not end hunger. Even when food was at its cheapest in 2000, there were still 800 million people without enough food to eat. There are huge problems in terms of access to food, distribution, and affordability. There is also a significant potential contribution of reducing losses/waste in meeting increased demand. For instance, the 2009 UNEP report: *The environmental food crisis* estimated that harvest losses and distribution losses and waste add up to approximately 1400 kcal/capita/day or 70% of current final consumption. Put another way, if these global losses were halved we could feed another 1/3 of today's population.

¹ The estimated increase in production of 70% is quoted by OECD FAO in their *Agricultural Outlook 2009 2018* (published on 17th June 2009) http://www.agri_outlook.org/pages/0,2987,en_36774715_36775671_1_1_1_1_1,00.html See p. 11, fifth bullet point. More detail is provided in *THE RESOURCE OUTLOOK TO 2050* <http://www.fao.org/es/esd/Natural%20resource%20use%20-%20Bruinsma.pdf>. We are aware that other headline projections have been attributed to FAO and cited in international fora, and we are further investigating this, together with Dfid.

It is therefore important that we complement our work to increase sustainable agricultural production with our work on trade and CAP reform, reducing food waste across the food chain, supporting research and development, looking at how we can ensure better diets and nutrition, and ensuring social protection systems are in place to help vulnerable people who cannot produce or buy enough food to feed themselves and their families.

The Foresight Project on Global Food and Farming Futures is looking comprehensively at all these issues and is due to report in 2010. It will help to ensure the continued high profile of this issue. And Defra has already commissioned research into how we can meet anticipated 2030 food demand in the most environmentally sustainable way, which we hope will inform this work.

2. More work is needed on future patterns of consumption. Doubling production by 2050 may focus the minds of policymakers, but, by itself, it is too broad a projection on which to base a response. We recommend that the Foresight Project on Global Food and Farming Futures, which is due to report in October 2010, provide a clear and accessible breakdown of this projection, encompassing where and at what rate the population increases are likely to take place, and how demand is likely to change. It should indicate the implications of these factors for world production of different food commodities. Defra should determine how it will monitor global food production and demand trends in order further to refine the projections in the future. (Paragraph 23)

The Foresight Project will undertake a detailed analysis of global food system out to 2050, including population growth and changing patterns of consumption around the world, together with changes in the production and processing of food and the wider food supply chain. It will consider the major challenges faced, the uncertainty associated with them and analyse how they could interact to affect the food system and give rise to future shocks and stresses.

The Foresight Project's Lead Expert Group has proposed that there is a need to review the existing global agricultural models and to consider the state of the art in long-run modelling of alternative scenarios. The Chief Scientific Adviser to Defra, Professor Bob Watson, has agreed to fund a series of modelling workshops to explore these issues, bringing together expertise in the current state of global agricultural modelling and exploring potential links with climate change models.

Defra are also studying the basis of the Food and Agriculture Organisations projections to gain a more critical understanding of the various factors and how they vary geographically. We are also considering including demand analysis explicitly within the global availability theme of our Food Security Assessment.

Sustainability

3. Producing sufficient food is only part of the challenge the world faces, the implications of the way in which it is produced are equally important. The only acceptable form of food production is that which meets the needs of the present without compromising the ability of future generations to meet their needs. Applying this

principle to food production requires a fundamental shift in thinking and an open-minded approach to embracing solutions from across the spectrum of production methods. (Paragraph 31)

It is clear that the sustainability of food production and consumption is key. In the face of a growing global population it becomes increasingly important that we stop degrading our capacity to produce the food of future generations. Soil quality, water availability and quality, biodiversity and fish stocks are the resources on which future food production depends and we need to recognise that these are finite resources. There will be a decreasing capacity to feed the growth in global food needs by further extending farmland into new areas and by increasing the fish catch. We will need to learn how to produce more food from the resources that we have and in ways that do not diminish these resources. Climate change will have a particular impact, so it is essential that the farming and food industries play their full part in reducing their dependency on fossil fuels and reducing methane and nitrous oxide emissions.

The head-in-the-sand approach

4. It is clear that maximising food production does not depend on agriculture alone but also on infrastructure-transport systems, as well as food storage. (Paragraph 41)

We agree with the Committee's findings, as both effective and sustainable infrastructure and food storage are essential in helping to reduce losses throughout the supply chain. However, while we want farmers to produce as much as possible, there are two conditions: that consumers want what our farmers produce, and that increases in production are achieved sustainably, so as not to jeopardise the ability of future generations to exploit and enjoy our natural resources and landscapes. At a global level food production needs to meet demand, which it currently does. 2008 saw the largest grain harvest the world has ever seen, some 1.79 billion tonnes, with major cereal prices halving from their April 2008 peaks. But regional and local shortages are keeping prices high in some countries. Increasing levels of poverty due to the global financial crisis have pushed the number of people in the world going hungry to over one billion. Simply increasing food production would not address this problem as some regions would continue to have surpluses, others shortages.

Improvements to roads, a basic global-good on which agriculture depends heavily, will enable farmers to access key inputs (such as higher-yielding seed varieties, and fertiliser) more readily and more cheaply, market their produce, and facilitate intra-regional trade to help move produce to areas where there are local shortages. Better water management systems will remove the uncertainty that comes from relying on rain to water crops, particularly as rainfall becomes more unpredictable: in Africa less than 5% of arable land is currently irrigated, compared to one third in South Asia. And access to national electric power systems will reduce the cost of energy to farmers, and stimulate wide-ranging rural development.

Most of the investment in agricultural production will come from the private sector, but investment in global goods will mainly come from governments, with support from donors

in developing countries. We very much welcome the agreement reached at the G8 Summit in Italy in July for donors to provide up to \$20 billion of agricultural investment in developing countries over the next three years, a significant element of which should be invested in infrastructure.

5. *Doing nothing to contribute to the world's food supplies would be morally unacceptable: at a time when a fundamental shift in thinking is required, the UK should set an example, not bury its head in the sand. Land-rich countries such as Brazil have great potential to boost global food supplies, but neither their ability to realise this potential, nor a well-functioning global market, can be taken for granted. A healthy domestic agriculture is an essential component of a secure food system in the UK. (Paragraph 47)*

Meeting global demands for food is partly about increasing production sustainably. However, in addition, the international community also needs to make more efficient use of what is already produced by taking practical steps to reduce post-harvest losses, and by the more effective and sustainable use of inputs including seeds, fertiliser, and water. As noted in the *Food Matters* report “production of cereals and other food in the UK makes a small but meaningful contribution to overall global food supply”. In 2007, UK production of wheat and barley accounted respectively for 2.2% and 3.8% of total global production. In total UK cereals accounted for around 1% of global cereal exports. The UK will continue to work to ensure its agriculture is as efficient and sustainable as possible, and play its full part in contributing to global food security, through bilateral and multilateral engagement with governments and international bodies, the approach we take to our development assistance, and by improving the evidence base for more sustainable and productive agriculture.

The agriculture of developing countries will also need to be made more productive over the coming years. Most of the world's population growth over the next 40 years will take place in developing countries. Many countries in Africa will see their populations treble, and their agricultural systems will need to respond accordingly. But the international response must be holistic, and the UK's greatest impact will be via its influence on international policy, diplomatic initiatives, development programmes and research efforts. These include our contribution to the international partnership to tackle global hunger sustainably through the Global Partnership for Agriculture and Food Security (GPAFS).

Research is vital and we are focusing world-class scientific research efforts on food security through the UK's Research Councils. We are working with BBSRC to establish a new cross-Research Council and Government Department initiative on food security. The Government is also committing, through Dfid, £400m to support and improve international agricultural research, along with contributions to the International Fund for Agricultural Development (IFAD), and the Consultative Group for International Agricultural Research (CGIAR).

As well as increasing production, developing new crop varieties, and introducing new technologies, particularly those relating to climate adaptation, the fundamentals of the world food supply system must be addressed. There must be an early conclusion to the Doha trade talks, to give better access to developing countries products. We will continue

to argue for radical reform of the CAP and reject trade protectionism which discourages investment in developing countries. And the practice of some donors to dump surplus food on developing countries under the guise of “food aid” must also be ended, as this undercuts local farmers. The UK government is pushing hard on all these fronts.

The self-sufficient approach

6. The Commission should investigate further what means would be at its disposal in the unlikely event of a breakdown of the single market. However, the fact that trading relationships are fragile is an argument in favour of spreading the risk by having relationships with multiple countries, working to build strong relationships, and having contingency plans, not an argument in favour of self-sufficiency. (Paragraph 51)

The Government is unable to answer on behalf of the EU Commission, but agrees that building strong trade relationships is important. Trade spreads risks to disruption, encourages productivity growth, keeps prices competitive, and increases our supply options for food. The diversity and extent of our food supplies is fundamental to UK availability and access, and reflects the strength of our trading relationships. The Government will continue to pursue trade liberalisation through close working within the EU as a priority. We believe that the successful completion of the World Trade Organisation's Doha Development Agenda as a multilateral trade deal should be reached as soon as possible. In the meantime the EU is pursuing ambitious bilateral trade agreements including with Korea and India. The global recession will be made worse if there is a retreat into protectionism and the UK will use all opportunities to keep global markets open.

7. The UK should not aim to be self-sufficient, even in indigenous food stuffs. Total self-sufficiency would make the UK's food supplies less secure rather than more secure. (Paragraph 52)

We agree with the Committee's view on self-sufficiency. Food security is fundamentally about availability, affordability and access to nutritious and sustainably produced food. It is not a question of domestic self-sufficiency. The UK is currently 73% self-sufficient in all indigenous foods, a higher proportion than in the 1950s. The UK is also a significant exporter of wheat, lamb, dairy products and breakfast cereals. Even if it were possible, self-sufficiency would not insulate us against disruptions to our domestic supply chain and retail distribution system. It would open up the UK to risks of adverse weather events, crop failure and animal disease outbreaks. We would continue to depend on imported fertilisers, machinery and certain foods for a balanced diet. Similarly, our food chain relies on various forms of energy, much of which is imported, so ensuring our energy security is as much of a priority.

Food colonialism or “land-grabbing”

8. We welcome the recent report by the UN Food and Agriculture Organisation, the International Fund for Agricultural Development, and the International Institute

for Environment and Development on the large-scale acquisition of farmland in sub-Saharan Africa by overseas investors. It is a first step towards exploring the implications of this global trend. We urge the bodies involved to continue their work on the phenomenon, with the aim of providing an accurate picture of the extent of the trend and of developing a set of international guidelines that include provisions for local producers, property rights, sustainable management and transparent rules. We note the involvement of Dfid in the initial study and urge it to continue to provide input to subsequent studies. Defra should report on the implications of the trend for UK food security. (Paragraph 56)

In general, investment in developing country agriculture is to be welcomed. Lack of investment in agriculture over the last 25 years has been a contributory cause of declining production and increasing food insecurity. Such investment often brings with it better infrastructure—roads, water, power—employment opportunities, greater economic growth, reductions in poverty levels, and increasing food security. But appropriate controls need to be put in place to ensure that negotiations are conducted fairly, that the rights (both legal and moral) of local people are not infringed, that the food security of the country concerned is not adversely affected, and that deals are conducted in an open and transparent way. That is why we warmly welcome the proposals made by the Government of Japan at the recent G8 summit in Italy to introduce better regulation into the land market and we look forward to working with them over the coming months to reach agreement on an international set of criteria to govern such transactions.

In addition, Defra, in partnership with Chatham House and IIED, are convening relevant government officials to consider the implications that these deals present for UK food security and wider development policy in more detail and establish whether further analysis is necessary, while Foresight will be considering the potential longer term impacts of these deals.

The sustainable production approach

9. Defra should commission research to establish the reasons for the relatively low level of domestic fruit and vegetable production. This should include a study of the procurement practices of supermarkets, food manufacturers and the food service industry to establish how these practices impact on the problem. Defra's new Council of Food Policy Advisers should consider how the barriers to increased domestic fruit and vegetable production could be removed. (Paragraph 59)

We agree with this recommendation. Defra has an ongoing dialogue with the production industry to understand its business drivers and constraints. There is also a regular dialogue with retailers. Following early advice from the Council of Food Policy Advisers (CFPA), who hold the view that production and consumption should be looked at together, Defra held a roundtable meeting of those involved with the fresh produce industry (producers, retailers, consumer interests, R&D institutions etc.) to look at the barriers to both increasing consumption and production of UK fresh produce. As a result of this meeting, Defra is considering setting up a fruit and vegetables task force to take forward some of the

issues identified as standing in the way of increasing home-production and consumption, of fruit and vegetables. This needs a sound evidence base, including, perhaps, further research of the kind suggested by the Committee. The possible new task force would link to the CFPA, either via membership or by reporting back on achievements.

Some collaborative R&D in HortLINK has sought to address technical and economic constraints that the industry, including the Horticultural Development Company (HDC), has identified. For example current projects include a range of integrated crop management studies that seek to reduce reliance on chemical pesticide application and which may provide options where existing approvals are likely to be rescinded as well as areas such as water efficiency, increasing shelf life and reducing waste. Defra also has research in place responding to debate about the environmental burdens of importing food into the UK versus national or local production. This includes comparative life cycle assessment of food commodities (including fruit and vegetables) procured for UK consumption through a variety of supply chains as well as research to explore the benefits and trade-offs associated with local food procurement to assess the environmental, economic and social attributes of different supply chains and identify conflicts and barriers to promoting sustainable local food production.

Recognising the influence of consumer demand on local markets, Defra research has also examined factors influencing consumer and food chain purchasing decisions, attitudes and behaviours including drivers and barriers towards purchasing local and regional foods and determined the extent of UK demand for these foods. The research found potential for further growth of local and regional food and drink products, but expansion was impeded by behavioural, structural and institutional factors including poor awareness, restrictions in the supply chain and accessibility by large-scale food trade. Barriers to consumer purchasing included cost, availability and restricted product range. With the increasing popularity of these foods, education of retailers, food service and consumers is needed to promote the availability, accessibility and benefits of local and regional foods to encourage sales and consumption.

10. Defra should produce its own estimate of the amount by which consumption of fruit and vegetables would rise if people in the UK followed the Government's five-a-day guidelines. (Paragraph 60)

Fruit and vegetable purchases were an average 2.4 kg per person per week in 2007², equivalent to consumption of 3.9 portions a day after allowing for wastage. On the basis of this figure, consumption would need to increase by around 30% to reach the five-a-day target. This would be equivalent to an increase in purchases of 0.7 kg per person per week (assuming no change in the level of wastage), or 2.2 million tonnes per year for the UK as a whole. This compares with a current level of annual production of fruit and vegetables in the UK of 3.0 million tonnes in 2008, and total supplies of fresh fruit and vegetables (which excludes imports of fruit juices and other processed products) of 8.1 million tonnes.³

11. There is a big difference between aiming to be self-sufficient and aiming to increase production of certain commodities. The UK should aim to increase its

2 Expenditure and Food Survey

3 Agriculture in the UK 2008, tables 5.9 and 5.12

production of those fruit and vegetables that are suited to being grown here, particularly where there is evidence of an increase in demand. It should also explore the potential for an increase in cereal production. However, again, we emphasise that it is essential that this increase in production is carried out sustainably. (Paragraph 61)

We agree on encouraging an increase in the production of crops which can be grown in the UK for which there is a market, and to the extent that this can be done without adverse impact on the environment and in the context of the Government's wider environmental strategy, especially agri-environment schemes and cross-compliance. The response to the preceding recommendation refers to potential work to look at the issues bearing on greater production and consumption. We are also looking ahead to consider the potential impact of climate change on crop suitability for UK production. The UK National Strategy for Fruit and Vegetable Producer Organisations incorporates a specific environmental framework and Defra's own R&D work includes many projects looking for means for agriculture and horticulture to improve its environmental sustainability.

In most years the UK is already a net exporter of cereals and this has a direct impact on market prices, which reflect the need for our grain to be competitive on export markets. Recent reforms of the CAP, particularly the introduction of decoupling and the removal of compulsory set-aside, mean that UK cereal producers are now much better able to respond to market signals in terms of their planting decisions. This was fully demonstrated last year when UK growers produced the largest ever UK cereals crop of 24.3 million tonnes—despite very difficult harvesting conditions because of the wet weather. Looking to the future, UK cereals production will be determined largely by market demand underpinned by sustainable natural resource management, but the potential for UK producers to increase production in response to domestic demand (for example from the biofuels sector) or for export clearly exists.

Meat and dairy production

12. UK consumers buying meat and dairy products should be encouraged to consider the environmental, as well as the health, impacts of their choices. To enable consumers to make informed decisions, Defra needs to do more work on what are the most sustainable methods of livestock production, and the balance to be struck between animal welfare, biodiversity, greenhouse gas emissions, and the need to conserve inputs such as water. (Paragraph 65)

Consumers have an important role to play in reducing the environmental impact of the food system. They need, and many want, to be able to make informed choices about what they eat. To help with this, Government provides advice to consumers on sustainable food choices, including on the Greener Living pages on DirectGov. As recommended by the *Food Matters* report, the Food Standards Agency will provide a “one-stop-shop” of consumer information on sustainable diets, nutrition and food safety.

Government information to consumers and others is based on the latest evidence and policy. To inform that evidence base, Defra has commissioned research to assess the

environmental impacts of agricultural commodities, and compare the impacts of production under different farming systems (projects IS0205⁴ and IS0208⁵). It has also commissioned research to quantify and identify solutions for reducing the impacts of farming on greenhouse gas (GHG) emissions, biodiversity, emissions to air and water, and water use, and to assess tradeoffs between pollutants. With the establishment of demonstration catchments, Defra is taking a more integrated approach to assessing the impacts of multiple interventions on multiple pollutants. This research is generating guidance on how to modify farming systems to reduce their negative environmental impacts, while maintaining or increasing productivity, and also meeting other demands such as animal welfare.

Fish

13. *The marine environment is an important source of food. However, the current state of many fish stocks is a serious cause for concern. Defra, the Department of Health and the Food Standard Agency should consider the wisdom of continuing to advise consumers to eat at least two portions of fish a week at a time when the ability of the marine environment to meet this demand is questionable. The fishing industry and the Government have a duty to encourage consumers to try sustainable, less well known types of fish and shellfish. Defra and the devolved Administrations should produce a study evaluating the potential of sustainable aquaculture off the shores of the UK. (Paragraph 68)*

Sustainable fish

The Government agrees that a significant number of fish stocks are currently in a poor state. This is due to a complex mix of overfishing, high natural mortality (low numbers of fish surviving to a size where they are taken commercially) and other environmental factors. There are serious problems with EU cod stocks and measures have been put in place through annual negotiations under the existing Common Fisheries Policy (CFP) to halt and ultimately reverse this decline. These apply in the Irish Sea, North Sea, Eastern Channel and the West of Scotland. Plans to assist the recovery of Northern Hake, Western Channel sole, North Sea plaice and sole and West of Scotland herring stocks have also been introduced.

The recent release of the film on sustainable fisheries, “*The end of the line*” (based on Charles Clover’s book) and subsequent media coverage has raised the public profile of sustainability issues in the seafood industry and the marine environment more generally. The Government recognises the difficulties in providing for increasing consumer demands for healthy food options whilst ensuring sustainable use of fisheries resources. This issue forms part of our current online discussion on Food 2030 which will inform our future food strategy (see recommendation 18).

4 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities.

5 A theoretical analysis of how the protein requirements of livestock in England and Wales might be best met

The Food Standards Agency has recently reviewed its advice on fish consumption, working with a range of stakeholders and partners, including other Government Departments notably Defra, Department of Health and Scottish Government. This reflects the Agency's commitment to take sustainability into account in policy making, and also responds to earlier comments from stakeholders that such a review would be timely. The evidence for the health benefits of fish consumption remains clear, but revised advice for consumers will set this more firmly in the wider sustainability context. In particular, this will offer practical advice to assist individual consumers in making informed, sustainable choices, highlight the wide range of seafood available, and offer advice on preparing less well known types. It will also provide links to other sources of information for those wishing to investigate the background in more detail. The revised advice was published via the FSA websites in September 2009.

The Sea Fish Industry Authority (or “Seafish”), a non-departmental public body and sponsored by the four UK Fisheries Administrations, provides advice and training to the seafood supply chain on a range of environmental and sustainability issues.⁶

Aquaculture

Defra recognises the concerns, raised by The Marine Conservation Society, that current conversion rates are unfavourable for the most commonly produced fish from aquaculture and that some environmental concerns remain. Defra is working with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) to support development of new techniques to improve productivity and sustainability of aquaculture production in the UK.

The Government recognises that aquaculture has an important part to play in meeting the needs of UK consumers for a sustainable supply of fish and seafood. In 2006 aquaculture accounted for 42% of worldwide fish production. About 93% of aquaculture production occurs in Asia. More than 60% of production takes place in freshwater. In the coming decades aquaculture could become the greatest source of increased fish and shellfish production required to bridge the gap between the diminishing supply from wild resources and significantly increased demand for secure food for UK consumers and particularly in helping address the protein nutrition needs of the poorer countries in Africa and Asia.

A recent study commissioned by Defra explored the potential for aquaculture to contribute to the future security of food and non-food products and services in the UK and specifically England. The report suggested that there was scope to increase production but recognised a number of constraints, including technical and geographical constraints, from reviewing England's marine and freshwater resources.

The Scottish Government believes that there remains significant scope for sustainable growth of both its finfish and shellfish aquaculture, as set out in *A Fresh Start: The Renewed Strategic Framework for Scottish Aquaculture*. A number of projects are also underway looking at the production of algae for biomass/renewable energy generation and for food production, including as part of integrated poly-culture systems in which algae absorbs excess nutrients associated with finfish production. The Scottish Government is actively considering how offshore salmon farming can be supported and developed.

6 <http://www.seafish.org/sea/sustainability.asp>

There is currently no offshore aquaculture/mariculture industry established in Wales. The importance of inshore aquaculture production has increased substantially in Wales in recent years. It is felt that there is a potential to expand this activity and further contribute to food supplies, therefore reducing pressures on other wild stocks which are under increasing pressure. However, the diversity of aquaculture products that exist in Wales (mussels, oysters, bass farming etc) is not necessarily reflected in other parts of the UK, for instance in Scotland where aquaculture is very much centred on salmon farming. WAG would welcome the inclusion of aquaculture considerations into a new CFP and possibly enhanced EC support in the form of financial assistance outside of the European Fisheries Fund (EFF). Land based aquaculture is increasingly used to produce saltwater species such as sea bass and Wales is at the forefront of closed system aquaculture development, using the latest re-circulation technology. Wales continues to attract investment which is presently backed by the EFF to develop its aquaculture industry.

The Department for Agriculture and Rural Development (DARD) is responsible for the licensing of all fish farms in Northern Ireland. The majority of marine aquaculture is located within Northern Ireland's five sea loughs i.e. Lough Foyle, Larne Lough, Belfast Lough, Strangford Lough and Carlingford Lough. This consists mainly of the bottom culture of mussels and the trestle culture of Pacific oysters. There are also two licensed salmon farm sites off the Co Antrim coast. As in Wales, aquaculture development in Northern Ireland may attract financial support under the EFF.

The four UK administrations will consider the possibility of a joint UK study evaluating the potential of sustainable aquaculture off the shores of the UK.

The environmental impact of increased population

14. Defra should produce a study setting out the volume of particular commodities that the UK would be capable of producing under different scenarios and the impact that this production would have on the environment. This study into "The UK's Agricultural Potential" should include work on the most sustainable methods of both arable and livestock production. (Paragraph 70)

The environmental impacts of increasing production are important and complex and it is not possible to encompass this in a single study. Defra has commissioned research to assess the environmental impacts of agricultural commodities, and compare the impacts of production under different farming systems (projects IS0205⁷ and IS0208⁸). It has also commissioned research to quantify and identify solutions for reducing the impacts of farming on greenhouse gas (GHG) emissions, biodiversity, emissions to air and water, and water use, and to assess trade-offs between pollutants, which necessarily consider the impacts on animal welfare. With the establishment of demonstration catchments, Defra is taking a more integrated approach to assessing the impacts of multiple interventions on multiple pollutants. This research is generating guidance on how to modify farming systems to reduce their negative environmental impacts, while maintaining or increasing productivity.

7 Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities.

8 A theoretical analysis of how the protein requirements of livestock in England and Wales might be best met

The Foresight Project on Global Food and Farming Futures has also commissioned a small number of regional case studies, one of which will explore the potential of the UK, as a representative north-west European country, to raise productivity together with the challenges and impacts of doing so.

Local and home production

15. We welcome the increasing enthusiasm among consumers for buying food that is local to a particular area of the UK, and also for growing their own food. In terms of overall production, these trends are a small contribution to a huge challenge, but they are a way of reconnecting people with food production and have an important part to play in encouraging the sort of changes in consumer behaviour that will be necessary for a sustainable system of food production. The role of local and home production, and of educating children about food, should be incorporated in Defra's vision and strategy for food. When it has been established that there is an unmet demand for allotments in a local authority area, the Government should require the local authority to publish, within three years, a plan setting out how it proposes to meet the demand. (Paragraph 74)

Reconnection with food

Food Matters reported in 2008 that “people have become more interested in food production and provenance”. However, it is clear that there is still a way to go to reconnect consumers with products, place, nature and process, and to reconnect producers with their market.

It was also reported in *Food Matters* that action was needed to actively engage with consumers. Considerable work is underway to define a sustainable diet and to gain an understanding of consumer attitudes and potential for moving towards behaviours supporting it. The Council of Food Policy Advisers has defined this as a priority for their attention in their first report, which was published on 14 September. Reconnection is likely to be a key part of moving people towards pro-environmental behaviours.

An interest in reconnecting with food is apparent from the number of local food initiatives that exist as well as surveys of purchases of food with particular “ethical” credentials, e.g. local, organic, free-range. The *Food Matters* report expressed clear support of local initiatives to engage people in food which Defra endorses. Defra is supporting an action-based research project looking at the role of community food projects in enabling and encouraging behaviour change. The project will see the community-led development of a closed-loop waste system, in which food waste will be collected, composted, using a “Rocket” composter and used to grow fruit and vegetables on a housing estate. The project will explore the ways in which the adoption of pro-environmental behaviours may be encouraged amongst hard to reach groups.

Locally produced food

We recognise that there is growing public enthusiasm for locally-produced food and food with a clear regional provenance. This offers an opportunity to our producers. The marketing of regional and local food can bring economic and social benefits for producers and consumers. Because there are fewer middlemen, it allows farmers and small producers to retain a higher proportion of the end price of their produce. It also increases consumer choice and raises awareness and interest in local food by helping to improve consumers' understanding of the rural economy and food production. Over the last 6 years we have helped to facilitate local sourcing by providing funding to support a range of measures to help regional and local food producers overcome barriers to market. Examples include “meet the buyer” events aimed at retailers and the food service sector; support for farmers' markets and farm shops; and the encouragement of food hubs and shared distribution facilities. Support for the sector in England continues, at a regional level, by the Regional Development Agencies (RDAs) for activities linked to the promotion of quality regional and local food. RDAs are also responsible for the delivery of part of the Defra's Rural Development Programme for England (RDPE). Funding is available under this Programme for improving the competitiveness of a wide range of rural businesses, which could include regional and local food producers.

Home production

We agree that the role of local and home production, and of educating children about food, should be incorporated in the Government's vision and strategy for food.

Defra has supported the Eat Seasonably campaign,⁹ which included a “Grow your own” element. It encourages people to eat locally in season fruit and vegetables as it generally requires less energy to produce food that is relying on natural sunlight and temperatures to grow and seasonal food tends to cost people less as production and distribution costs are lower. Consumer research tells us that eating more fruit and vegetables when they are seasonally available is a simple but significant step towards a more sustainable diet for mainstream consumers. The ‘Grow Your Own’ phase of the campaign launched in March with a focus on making it easy for people to grow their own fruit and vegetables by providing simple step by step instructions and linking to partners' websites who provide support in a variety of ways, e.g. by helping people get support.

An independent evaluation of the campaign is currently underway. It and other work underway internally to map the evidence base for the benefits of domestic food growing, community gardens and allotments will inform the extent and specifics that are incorporated into the Government's vision and strategy for food.

Allotments

In light of the increased public interest in local and home grown there has been a corresponding interest in allotments and their use, as well as a wider interest in the use of public and other land which could, in the right circumstances, be made available for local food growing. There are some excellent examples of local authorities demonstrating

9 <http://www.eatseasonably.co.uk/>

innovative approaches to making land available to grow in order to meet demand, as well as continuing to provide statutory allotments.

Growing in the Community, the good practice guide for local authority allotment officers, aims to assist them in their statutory duty to provide allotments. The most recent version of *Growing in the Community*, published in March 2008, is going to be made available online shortly, to ensure that it reaches a wider audience. Government has recently commissioned the Federation of City Farms and Community Gardens to produce an update to *Growing in the Community*, which will be focused on how local authorities can contribute towards meeting the growing demand for allotments, by identifying good practice in minimising the time people who wish to rent an allotment have to wait before they can do so.

Local authorities are already expected to consider how needs are best met in their Local Development Frameworks (LDF); Planning Policy Guidance Note 17 (Open Space, Sport and Recreation) states that local authorities should undertake robust assessments of existing and future needs of their communities for open space, sports and recreational facilities, which includes allotments. These should form the starting point for establishing an effective strategy for open space, sport and recreation and underpinning evidence for preparing appropriate policies in documents within LDFs.

Legislation does not lay down minimum standards or a required nature or extent of allotment garden provision. The Government considers it appropriate that each local authority should decide for itself what proportion of its resources to devote to these purposes. Allotment authorities therefore have room to exercise discretion about the level of and timescale for provision of allotment gardens and facilities on site. Recognising the finite availability of open space in some urban areas, and the competing demands on such land for a wide range of amenity uses, including parks, allotments, natural and semi-natural habitats, outdoor sports facilities and play areas for children and teenagers and the clear benefits they provide, PPG17 requires local authorities to set locally derived standards for the provision of different types of open space in their area taking account of local circumstances.

Under the Smallholdings and Allotments Act 1908 there is a duty on local authorities to provide allotments where they perceive a demand for them in their area. Where an allotments authority is of the opinion that there is a demand for allotments in its area, section 23 of the 1908 Act puts the authority under a duty to provide a sufficient number of allotments and to let them to persons residing in its area who want them.

Given the powers that exist, the Government does not support this part of the recommendation.

The role of Defra

16. Defra's approach to the security of food supplies must take place in the context of the European Union. However, we believe that there is still scope for Defra to develop its own food policy and that the clearer this policy and the stronger Defra's leadership, the more chance the UK has of shaping the direction of any emerging EU policy on this issue. (Paragraph 78)

The UK Food Security Assessment recognises the importance of both EU and global trade to UK food security, and provides an innovative and integrated new way to look at food security, which could be applied more widely across Europe. As such, Defra intends to promote the assessment with the new European Parliament, Commissioners and other Member States as good practice, while also raising the profile of Foresight Project to help catalyse interest and support.

Defra, in partnership with BIS and Dfid will also continue to stress the importance of open trade flows and efficient markets in agricultural produce in underpinning global food security, and press for continued reform of CAP and support for a successful conclusion to the Doha Development Agreement.

17. It is beyond the scope of this inquiry to assess the impact of the new EU pesticides legislation on the security of food supplies. However, we note with concern that the Government's Chief Scientific Adviser does not believe that it is an evidence-based policy. Defra should press for the EU to agree that future changes of this nature must not be approved by the Council of Ministers or the European Parliament until a full evidence-based evaluation of the proposals has been undertaken. (Paragraph 79)

The Government agrees that this legislative proposal should have been accompanied by a full impact assessment by the Commission and argued strongly for this throughout the negotiations. The UK published its own impact assessments at various stages of the negotiations to demonstrate to others what the impacts might be. The Government supports most of the Regulation, but does not believe that the provision for initial assessment of compounds based on hazard criteria rather than risk assessment (particularly for potential endocrine disruptors where agreed definitions do not yet exist) has been shown to be proportionate. The Government will be discussing how a derogation from this provision can be used for essential crop protection purposes in the UK where the risk assessment for the use of a compound is acceptable. In any future revisions of the Regulation, the Government will continue to press for an evidence-based policy.

Defra's progress so far

18. The vision and strategy for food, for which Defra was assigned responsibility in the Cabinet Office's Food Matters report, must provide a long-term framework for the UK food and farming industries. It should commit the UK to increasing production of those commodities which are best suited to being produced here, provided that this can be done in a sustainable way. Defra must recognise that calling for more domestic food production is one thing, but it cannot order that this be done. It must, however, lay out clearly what role it has in helping the UK food and farming industries to achieve this objective. The vision and strategy cannot be expected to supply all the answers, but it must supply clear direction and indicate what further work is needed and the deadline for its completion. Cross-party consensus on the vision and strategy is essential. (Paragraph 85)

We agree with the Committee's recommendation that the vision and strategy should set a clear goal for a sustainable food system, shared with organisations in the food industry, and that it should be accompanied by an action plan setting out what Government, the food industry and consumers need to do in order to achieve that goal. An online discussion to gather views from a range of stakeholders and consumers on the strategy on the future of food to 2030 (Food 2030) was launched on 10 August and is available at <http://sandbox.defra.gov.uk/food2030>. The discussion closes on 16 October and comments will be analysed and fed into the development of the final strategy.

Assessing the risks

19. We welcome the fact that Defra is undertaking a comprehensive assessment of the risks to the security of the UK's food supplies. This work should be used as the basis for monitoring and managing risks, and should be regularly updated. Together with the vision and strategy for food, it should inform food policy decisions across all departments. It should also be used as a basis for contingency planning. The European Commission should undertake its own assessment of the risks to the security of food supplies in the EU. (Paragraph 86)

In August 2009, Defra published a detailed assessment of UK food security as part of a package of documents on the future of food. The papers: 'UK Food Security Assessment: Our approach', 'UK Food Security Assessment: Detailed Analysis' and 'UK Food Security: Summary' describe the Government's approach to monitoring a complex issue and ensuring the UK maintains a high level of food security, drawing on a full analytical assessment. The papers set out what food security is, the challenges and risks facing UK food security, our current assessment of the state of our food supplies, and how we plan to continue to deliver sufficient, safe and nutritious food for all in the UK. These documents have been the product of our discussions with stakeholders over the past year, are intended as a practical tool for policy and decision makers, and will be subject to review as evidence needs and sources develop.

The Food Security Assessment contains indicators on energy reliability, the diversity of our oil and gas imports, retailer and cereal stock levels, the diversity of our food industry, business continuity planning, the viability of large manufacturers, and the capacity of our strategic road network, that will be used to inform contingency planning. Defra also uses the national risk assessment capability (which identifies risks to the UK as a whole over a five year period, and assesses their likelihood and impact) to form the basis for decisions about emergency preparedness and about capability planning.

The UK's new Food Security Assessment recognises the importance of both EU and global trade to UK food security, and could be applied more widely across Europe. We are unable to answer for the European Commission, but we intend to promote the assessment with the new European Parliament, Commissioners and other Member States as an example of good practice.

The structure for delivering food policy

20. We believe that both the Food Strategy Task Force and the Cabinet Sub-Committee on Food could benefit from input from the food sector. They should set out how they intend to involve members of the sector in their deliberations. (Paragraph 89)

We agree that there are advantages from engaging with the food sector, and the Government will continue to do so. There are a range of existing mechanisms in place for this engagement, including within individual departments and with established groups, including the Council of Food Policy Advisers. Where appropriate, stakeholders views are shared between departments at these cross-Whitehall groups and relevant information and outputs shared with stakeholders.

Following the publication of the *One year on* report, the role of the Food Strategy Task Force will now be revised. In the light of the outcome, the group will consider the best way to engage with members of the food sector. This will not replace the need for individual departments to continue to engage on policy specific concerns.

The results of this engagement with the food sector, whether by individual departments or mechanisms such as the Council of Food Policy Advisers, are a valuable input to the Cabinet Sub-Committee on Food.

21. Defra should use its review of its relationships with the food sector to consider how it can encourage the wider food sector to interact with the Council of Food Policy Advisers. (Paragraph 92)

The Council of Food Policy Advisers has engaged and continues to engage widely with a range of stakeholders, from charities, to industry, to government departments. Defra also draws attention to the activities of the Council through its regular contact with stakeholders. The Council are happy to take suggestions from Defra on key stakeholders, although they also maintain a degree of distance and independence. In setting their agenda and priorities they will continue to invite a range of food sector stakeholders to discuss views at meetings and are open to comments and suggestions via the website. A selection of those met with to date can be found below:

Martin Haworth (NFU)
 Joanne Denny-Finch (IGD)
 Andrew Sharpe (Thanet Earth/Fresca Group)
 Nigel Jenney (Fresh Produce Consortium)
 Tony Byrne / Allan Edwards (Compass Group)
 Tony Lowe (Fareshare)
 Justin King (Sainsbury's)
 English Apples and Pear Board
 Food and Drink Federation Executive Board

22. We extend a cautious welcome to the new groups working on food policy. The composition of the Food Strategy Task Force and the Cabinet Sub-Committee on Food means that they have the potential to improve co-ordination across Government. However, the Task Force and the Sub-Committee must be used as a way of facilitating

action, rather than a substitute for it. To this end, as much information as possible about the groups' decisions and the work resulting from them should be published on the internet. The Government should make use of modern, IT-based solutions as a way of engaging with consumers and the food and farming industries. The Council of Food Policy Advisers is already setting a good example. The Task Force should aim to publish more information about its work and the Sub Committee should consider whether it can disclose any, even very basic, information—if not about its work, then at least about any work set in train as a result of its deliberations. (Paragraph 93)

The on-line consultation on the future of food (Food 2030), launched on 10 August, is a new way for us to engage with our stakeholders. We have also recently refreshed the Defra website as a portal for accessing information on food policy. We will continue to look at new ways of engaging, including making use of IT-based solutions, as we look to restructure the Food Strategy Task Force. The new group will consider the best approach.

In common with other Cabinet Committees, the Prime Minister has published the terms of reference and membership of the Cabinet Sub-Committee on Food. Announcements about government action in relation to the food sector will be made in the usual way.

23. *Defra's vision for the UK food and farming industries is still being formulated. We are encouraged by the signs that Defra has begun to recognise the importance of UK production, as well as trade, in securing food supplies. It is essential that it develops and articulates this vision. Clear leadership from Defra is crucial to the security of the UK's food supplies because it will encourage the food and farming industries, and consumers, to respond in a co-ordinated way to the challenges posed by a growing global population, climate change, and increasingly scarce resources. (Paragraph 94)*

We agree with the Committee's recommendation. The aims of developing a vision and strategy for food are to define what we mean by a sustainable and secure food system, set a roadmap to achieving our goal, and to build buy-in with stakeholders to help improve delivery of existing and future policies. The benefits of this will be to give stakeholders a clear indication of Government's thinking on sustainable food, demonstrate leadership on the big challenges in the food system, and to bring together our policies for a sustainable and secure food system.

Targets for production

24. *Targets are a crude and, in most cases, impractical way of increasing food production. We see no point in Defra adopting production targets for particular commodities. Instead, Defra should concentrate on helping to build capacity within the food and farming industries so that they are well placed to respond to market signals. However, if the global or national situation with regard to food were to worsen significantly, and the market did fail to deliver supplies of certain food stuffs, the possibility that the Government may need to consider production targets, and*

Government-held stocks of particular commodities, should not be ruled out altogether. (Paragraph 97)

We agree that production targets would not be helpful. Direct support for production may have a role in times of crisis, but the surpluses created by European production subsidies demonstrated the drawbacks. We want to see a British farming sector that is competitive, and producing food that consumers want, in a way that is sustainable, so as not to jeopardise the ability of future generations to exploit and enjoy our natural resources and landscapes.

Capacity building has to be focused on improving productivity and competitiveness so the farming and food industries are flexible and can respond quickly to satisfy market demands. We are working with the farming industry on improving its skills levels, particularly business skills.

National and global stock levels are monitored in the UK food security assessment. Business continuity planning across the supply chain is also a key factor in ensuring continuous food supplies to consumers. Part of the Food Strategy Task Force is currently reviewing, as part of its work on global food markets, the arguments in respect of Government-held stocks. We are also working to identify whether further measures might be necessary to bolster the competitiveness and resilience of the industry.

The Common Agricultural Policy

25. We do not consider that the interests of food security would be served by a return to direct production subsidies under the CAP, although, again, if the global situation with regard to food supplies were to worsen significantly, the possibility of some form of direct production subsidy should not be excluded altogether. The CAP is a way of rewarding farmers for the provision of environmental services. However, the focus of the post-2013 CAP should be on sustainable food production, rather than land management by itself. Europe has a responsibility to contribute to global food supplies and the EU must ensure that European countries are in a position to respond to increased demand. We are disappointed that the Lisbon Treaty did not address the out-of-date nature of European agricultural obligations and reflect the increasing importance of sustainability. The principles of the new CAP should be reflected in future amendments of EU treaties. (Paragraph 106)

The Government agrees that it is vital to increase food production globally, and that this must be in an environmentally sustainable way to avoid storing up bigger problems in the future. The Government also agrees that food security interests would not be served by a return to direct production subsidies, and nor do we envisage a time when there would be a need to reconsider them; direct production subsidies exacerbate food security concerns by distorting markets and undermining the ability of other countries to produce and trade agricultural goods. Instead, a competitive and sustainable agricultural sector is crucial for global, European and UK food security, one which is driven by a free and open global market providing a diverse supply with access to safe, quality, and nutritional food. We want to see the CAP reformed to deliver this, rewarding farmers for the provision of

societal benefits, particularly environmental outcomes that are not otherwise delivered through the market. Environmental protection was mandated by the Treaty establishing the European Community with the addition of a provision (Treaty of Amsterdam, 1997) that it be incorporated into all other policies, including the CAP, and there are existing schemes under Pillar 2 of CAP that are designed to encourage farmers to adopt environmentally beneficial land management practices, which underpin the long term sustainability of EU natural resources. There are signs that progress is being made, and these sorts of targeted programmes need to be continued and strengthened as CAP is reformed.

Research and development

26. *UK scientific research is crucial to the security of food supplies. Without adequately structured, funded and focused research, the challenge of producing more food and producing it sustainably will not be met. Concentrating on developing a strong research base in the UK could also have a beneficial impact on global food security. The Government should encourage UK research institutes and universities to build more links with research centres that are working on food and farming worldwide, particularly in developing countries. (Paragraph 112)*

The UK has world-class facilities and resources which underpin agri-food research, and which bring benefit not only to the UK but internationally in addressing food security challenges. The national capability includes major facilities and centres of expertise at Research Council and Government institutes, as well as in the university and private sectors. The Government recognises that continuing to capitalise on the excellence of the UK's research base will require a strategic and coordinated approach to sustaining and developing this essential infrastructure. Also important will be to further strengthen links between UK research institutes, academia and business, both within the UK and with European and international partners. The Government has several funding mechanisms to facilitate this, including LINK programmes, Technology Strategy Board initiatives, and strategic partnerships between Dfid and the Research Councils. UK organisations also participate strongly in the EU Framework Programmes, which address not only food production, manufacture and safety but also health-related issues such as obesity. For example, in the EU Framework 6 Programme theme on Food Safety and Quality, the UK was represented on 121 approved project contracts.

Defra also has a strong growing collaboration with China on environmentally sustainable agriculture including development of a UK-China Food Security Action Plan to accelerate bilateral cooperation on food security through research collaboration, improving food quality and food safety and promoting agricultural trade, and through joint cooperation in agriculture and fisheries in Africa.

The research budget

27. *More money needs to be spent on public-sector food and farming research in the UK. The long-term nature of returns from research means that this money needs to be committed without delay. We urge Defra, the Government's Chief Scientific*

Adviser, and the BBSRC to continue to make the case for increased investment in food and farming research, using new structures such as the Food Research Sub-Group to convey their arguments in a co-ordinated and coherent way. (Paragraph 118)

The Government agrees the need to reprioritise investment in agri-food research in order to strengthen its impact on policy goals and the longer term vision for a more sustainable food system. The range of activities and programmes to achieve this will be brought together in a new cross-government food research and innovation strategy, to be published later in the year. The Food Research sub-Group of the Food Strategy Task Force is leading the development of this, under the chairmanship of the Government's Chief Scientific Adviser. The BBSRC is leading the development of plans for coordination of current research through a new cross council multi-disciplinary programme in Food Security with Defra, Dfid and other key partners.

The focus of the research

28. The focus of public sector food and farming research should be on increasing production sustainably and on realising benefits to the consumer and to the environment across the whole of the food chain. Defra should develop a long-term strategic research agenda, overseen by its Chief Scientific Adviser, rather than allowing its research priorities to be determined wholly or largely by policy teams. Such an approach must reflect both the potential of UK agriculture, and the threats it faces from pests, diseases and climate change. (Paragraph 120)

Through the vision sub-group of the Food Strategy Taskforce, the Government is strengthening its approach to food policy, including by developing a shared understanding of its goals and priorities for the food system. The overall government vision for a more sustainable food system identified what an economically, environmentally and socially sustainable food system should look like in 2030. It builds on four established strategic policy objectives for food, which are to secure:

- i. fair prices, choice, access to food and food security through promotion of open and competitive markets;
- ii. continuous improvement in food safety;
- iii. changes needed to deliver healthier diets; and
- iv. a more environmentally sustainable food chain.

Investment in science and technology has a key role to play in ensuring a secure, sustainable and healthy food supply, and is integral to all aspects of the vision. A joined-up approach on research and innovation is vital, to underpin coherent policy making, to maximise the contribution of UK research in addressing domestic and global goals, and to help reap the opportunities of vast global markets. The Government will publish a new cross-government food research and innovation strategy in the autumn, providing enhanced focus on food security research and a framework for collaboration between key funders and other stakeholders.

Defra under the lead of its Chief Scientific Advisor is in the process of reviewing its long term evidence investment strategy for all policy areas, including food. This review covers the full range of Defra's investment in economics, social and natural science including in-house expert staff, external expert advice and contracted monitoring and surveillance, and R&D, taking full account of existing knowledge and of data gathering and research funded by other UK and international funders. Its aim is to ensure that Defra invests in evidence in the most cost-effective way to:

- deliver robust and timely evidence to support the development, appraisal, delivery and evaluation of policy. Support the delivery of Defra's departmental priorities and reflect the strategic needs of the whole Defra network;
- Address future opportunities and threats;
- Deliver the required internal skills; and
- Support key external capabilities.

Recognising the need for innovation and innovative approaches, the strategy will drive best practice in the procurement and use of evidence and prioritise our investments so as to get the biggest impact now and for the future.

29. It is not within the scope of this report to offer a detailed assessment of the role of GM technology in securing food supplies up to 2050 and beyond. However, we believe that the potential of GM technology in the context of sustainable food production should be explored further. Defra has a role to play not only in commissioning some of the research, but in gaining public trust through the provision of comprehensible information, based on evidence. It should make an effort to "negotiate a ceasefire" on the destruction of GM crop trials so that more facts can be established. (Paragraph 123)

The Government agrees that the potential of GM technology in the context of sustainable food production should be explored further. Safety must remain our top priority in relation to GM technology. Whilst we are satisfied that the current regulatory system is robust and does ensure safety, we must continue to ensure it adapts to keep pace with changes in the technology and its use.

The identification of potential solutions to sustainable food production challenges must be 'needs' led. Whilst GM will not be the answer to all the challenges we face, as long as safety is ensured, potential GM solutions should be considered. For example, the Government has funded a range of research, some of which is GM, to develop ways to combat the potato cyst nematode, a widespread pest that has a significant impact on yields. Dfid is already supporting research on GM crops, as part of its broader funding of agricultural research, to benefit poor farmers in developing countries and help achieve food security. An example is the development of *Bt brassicas* (cabbages) which are resistant to a major pest, the diamond back moth. The use of *Bt brassicas* have the potential to increase food production and the incomes of many small holder farmers who grow them. They could also have a positive environmental impact by reducing the use of pesticides which farmers now use to control the moth.

The Government will continue to be led by science when assessing the safety of GM technologies. As well as communicating the science of the possible risks of such products, there is a need to understand and communicate their potential benefits and the concerns some sections of the public hold. The FSA is taking forward a programme of consumer engagement. This will provide an opportunity to discuss with consumers their understanding of GM, what it might bring in terms of risks and benefits, and what information can be provided to enable consumers to make informed choices.

Research utilising GM technologies to build our understanding of plants or to produce potentially beneficial GM products must be allowed to proceed without the threat of vandalism. The actions of a very small minority must not be allowed to hamper efforts to better understand these technologies or to act as an unreasonable block on fundamental research and potentially useful innovation. The Government will seek to facilitate the hosting of such research trials at suitable sites that can provide greater security if required (including, if appropriate, through funding of security costs for eligible grants by BBSRC), and will continue to work with the police to ensure that, whilst peaceful protest can proceed, property is protected and those who engage in criminal activity are prosecuted. In line with this the BBSRC and Defra have recently funded the security arrangements, as part of the broader project costs, for a re-run of the University of Leeds nematode-resistant potato research trial.

Translational services and research

30. *It is essential that, once research has been carried out, its benefits can be realised by people working in the food and farming sectors. The extent to which this was identified as a failing in the present system is a serious cause for concern. In conjunction with the BBSRC, Defra should set out what more it intends to do to address this failing. There is a case for the reinstatement of a public-sector provider of advice on best practice, similar to the old ADAS system, to co-ordinate and build on existing translational services. It should act as an agricultural equivalent of Business Link. (Paragraph 126)*

The Government agrees the importance of efficiently translating research outputs into practical use. It recognises too the complexity of the issues and challenges involved.

Food and farming comprise a diverse range of sectors, with differing profiles of business size and varying levels of expertise in accessing and applying new technologies and innovations. Translational services need to consider research outputs in relation to products, processes, technologies and knowledge, and tailored to the specific circumstances and challenges faced by each sector, and indeed by individual companies.

Industry bodies will often have a key contribution to make, given their understanding of the companies and issues in their sector, and of the most effective means of relaying information and advice.

Proposals for strengthening translational services will need to take account of the existing landscape of relevant services and organisations, including the Agriculture and Horticulture Development Board, the LINK programme, Farming Futures and future

contributions planned by the Technology Strategy Board, among others. A Business Link-type service for agriculture to contribute to improving the efficiency and effectiveness of translational services is an interesting idea that the Government will consider further with stakeholder bodies, alongside other possible solutions. It is unlikely however that there will be any “one size fits all” approach, and affordability is clearly one factor.

The public/private Food Research Partnership (FRP), established by the Government Chief Scientific Adviser and bringing together senior representatives of the public sector (including Defra and BBSRC), academics, NGOs and industry from across food and agriculture, is currently looking at these issues and possible solutions. A number of aspects will be considered, including the balance of roles between the public and private sectors.

Skills

31. We emphasise the urgency of addressing the potential gaps in food and farming skills. We are particularly concerned about the applied sciences. We believe that there is already sufficient evidence for Defra to reintroduce a studentship scheme based on the scheme formerly run by MAFF, with the aim of encouraging more young people to acquire the skills that will help the UK and the world to produce more food, more sustainably. We recommend that Defra reintroduce such a scheme. (Paragraph 130)

The Government recognises the importance of maintaining a range of strategically important areas of expertise in the UK in order to tackle the challenges surrounding food security. The Council of Food Policy Advisors has already identified skills as a key issue to consider and will be gathering evidence and considering solutions, alongside key stakeholders, over the next few months.

The Food Research Partnership under Professor John Beddington brings together the key funders and research providers, both public and private, in order to understand high-level skills needs better, and how to address any emerging vulnerability in the supply of expertise which research providers and employers need. A subgroup looking specifically at skills issues has been convened and will be reporting to the Food Research Partnership in September 2009. BBSRC as the lead organisation with responsibility for funding post-graduate training in this area already provides a number of mechanisms to allow academia, industry and the Levy Bodies to work together on collaborative training—such as pump-priming for short-course professional development, Knowledge Transfer Partnerships (with the Technology Strategy Board), and CASE PhD studentships. A consultation on the new BBSRC-led initiative, Advanced Training Partnerships, will be launched in the Autumn with the aim of funding consortia of research training providers, employers, the agricultural colleges, and other bodies, to ensure that emerging areas of vulnerability are identified and addressed in partnership.

As part of the development of Defra's next Evidence Investment Strategy and workforce planning, we are considering how we ensure the right balance of skills and disciplines in the department, including the supply of skilled personnel to Defra. As part of the strategy we are also considering how we can encourage more interactions between academia and government.

Skills improvement is also a core element of the Government's vision for farming, establishing an industry which has all the appropriate skills to be fully competitive in the marketplace and have less impact on the environment. Hilary Benn hosted an agri-skills roundtable meeting at the Royal Agricultural College in early April 2009, bringing together a range of stakeholders from across the farming industry and the public sector. One of the critical areas for skills development is improving business skills to increase farms' profitability and competitiveness. The industry-led Agri-Skills Forum is now developing an action plan for how the industry and Government can work to further raise farming skills levels. In September 2009, Government also launched the new Diploma for 14–19 year olds in Environmental and Land-Based Studies. This will help young people learn about the role of the countryside and may help them into careers in agriculture.

The food chain

32. *Defra should set out how it plans to address the perceived weaknesses in its understanding of the food supply chain and what measures it intends to take to ensure that dialogue with the food industry leads to action. As a first step, it should arrange for more of its officials to undertake work placements in different sectors of the food and farming industries so that they can experience the problems, challenges and possibilities at first hand. (Paragraph 131)*

Defra is committed to making interchange available to people at all levels throughout the organisation, as there are potentially great benefits both to the individual and the department. Typical types of interchange to develop the skills of staff include: secondment (both inwards and outwards); loans to other departments and legal traineeship. In addition, Defra's HR policies allow for attachments of less than 3 months to undertake short-term projects; twinning of two people at similar levels in different organisations to meet regularly to learn from and support each other, where experience is needed in a relevant subject; and "buddying", whereby regular meetings with someone at a similar level in a different but linked organisation can be organised for mutual benefit and support. A recent example of interchange was a secondment to the Food and Drink Federation of a Defra member of the SCS for the period of one year. However, these types of interchange require that officials actively seek out these opportunities—as the benefits to the official in question need to be balanced by that individual with their domestic arrangements and potential loss of career opportunities within the Department during their period of absence.

In addition to promoting the opportunity for interchange to its staff, Defra meets regularly with the food industry and its trade associations to explore issues of mutual interest, commissions social, economic and scientific evidence from its in-house food specialists (which includes economic, statistical and scientific staff), and the Defra Food Policy Unit arranges a programme of visits to the food industry each year for Ministers, members of the Council of Food Policy Advisors and officials. This programme will continue for the foreseeable future.

33. *Food must be affordable to the consumer, but its prices must also make it worthwhile to produce in the first place. An agricultural system must be profitable to*

be healthy. Defra should initiate work to establish whether the different agricultural sectors are currently sufficiently profitable to enable them to invest, and therefore improve productivity in the long term. (Paragraph 133)

Defra already collects detailed data on the profitability, economic performance and financial health of farm businesses in England through the annual Farm Business Survey. This enables comparison of the profitability of key agricultural and horticultural sectors and farm sizes in the different regions in England. The data show a wide variation in economic performance across farms and within farm types. This shows there is scope for the low performers to considerably improve, via increased output, reduced costs or both. This might mean increasing scale, but not necessarily—within any farm size band, the range in performance between the best and the worst is considerable—suggesting that many businesses can considerably improve performance without having to increase their size.

One of the key outcomes of this data collection and analysis is the distribution of performance across farms, with the most efficient being profitable and able to invest, but with the gap between them and the rest widening over time. We need to understand the characteristics of those farms at the frontier of efficiency and what we can do to help improve those who are under-performing. We recently held a workshop and a discussion document on this is planned for this Autumn on what Government, industry and other players can do to improve the resilience and competitiveness of the sector.

34. Strong relationships in the food chain are an important element of securing food supplies over the long term. Defra should consider applying the principle of the Pig Meat Supply Chain Task Force to other sectors where necessary. (Paragraph 134)

Government agrees that supply chain co-operation can provide an important contribution to securing food supplies in the longer term. As stated in our response to the Committee's report on *The English Pig Industry*, relationships between retailers and producers are primarily commercial ones for them to determine, and this is not a matter in which government should normally intervene. However, we accept there is an important role for government to play in fostering greater transparency up and down the supply chain, and acting as a catalyst to encourage greater collaboration where there are challenges to be faced which would benefit from a more co-ordinated or integrated approach.

The Pig Meat Supply Chain Task Force, set up by Government earlier this year, aims to improve the resilience of the pig meat supply chain through increased collaboration and achieving best practice throughout the chain. In order to ensure the initiative would deliver tangible benefits, it was agreed at the outset that the Task Force would be set up for a limited time period, initially of a year, and would be strongly focussed on the successful delivery of outcomes and outputs. The success of the Task Force will be measured against the delivery of relevant goals identified by the four subgroups, which are focussing on labelling, procurement, environmental regulation and herd health, and agreed by the Task Force. To date good progress is being made against the agreed goals of all the subgroups.

The principle of supporting and fostering strong supply chain relationships is also already in evidence through other government initiatives, such as the Dairy Supply Chain Forum which provides a framework within which the different parts of the dairy sector can come

together to discuss challenges facing the industry and develop collaborative solutions to those challenges. At the most recent meeting in June 2009, it was agreed that a new Horizon Scanning Working Group would be established to help identify those challenges and issues affecting sector confidence at present, and help develop possible solutions.

As outlined in response to the Committee's recommendation on the need for increased UK production and consumption of fruit and vegetables, Defra is also considering establishing a fruit and vegetables task force which will begin to take forward some of the issues identified which stand in the way of this.

There are no plans as yet to replicate the above examples in other commodity sectors. However we are already seeing the value of such initiatives in improving supply chain relationships and would be open to supporting other sectors in developing their own Task Forces, where there are specific improvements to be made.

35. Defra should monitor the supply chain infrastructure in the short-term to ensure that potentially damaging trends are identified and addressed before they affect the UK's abilities to secure its food supplies in the long term. (Paragraph 135)

We have published on 10 August 2009 a package of material on the future of our food system. This includes our work on Food Security, for which indicators covering global availability and food chain resilience have been developed. Additionally, a consultation on a set of indicators Defra is developing for a sustainable food system has also been published. The aim of this developing work is to produce a suite of indicators which will measure progress towards a sustainable food system. These include indicators for economic and performance, to ensure that potentially damaging trends are identified. When complete, these indicators will form a companion to the UK food security assessment. The framework of proposed indicators is based around seven themes:

- Economic performance and resilience
- Skills and innovation
- Eco-efficiency
- Essential resources
- A healthy and well managed ecosystem
- Healthy and informed consumers
- A safe food supply.

Conclusion

36. We are broadly satisfied that Defra is beginning to move in the right direction. However, there is a great deal still to do. The scale and importance of the challenge is such that we recommend that Defra publish a supplement to its Departmental Annual Report, detailing what it is doing to ensure the long-term security of the UK's food supplies, both through trade and domestic production. (Paragraph 137)

We welcome the Committee's view on our progress and agree that there is much work to do.

We published the first assessment of UK's food security on 10 August 2009. This sets out our detailed assessment of the resilience of the UK food system to risks and challenges and suggested areas where further actions may need to be taken. We also set out our approach and the actions we are already taking to face the challenge of meeting our future food security. However, it is clear that given these future challenges, we will need to continue to assess and manage the risks to food security on an on-going basis.

We will review the most significant risks under each of the six themes on a regular basis, drawing in any new insights from wider horizon-scanning and scenario-based approaches, such as those used in the Foresight study. We will use this information to look at what the risks might be in five and ten years time, and further ahead to 2050.

We will keep the indicators under review and revise them or develop them as necessary, for examples as new evidence becomes available. It is intended that the UK Food Security Assessment will be a working tool for decision-makers, including Government, business and other individuals and organisations, and we will continue to make updated information available in order to help inform decision-making and prioritise action. In the immediate future, the Assessment will also feed into the cross-Government vision and strategy for food, to be developed later this year. This will set out action required from Government, business and other actors to ensure future security and sustainability of our food system.

Progress in strengthening our food security will be monitored through Defra's own performance management system. We have as a Departmental Strategic Outcome (DSO) a sustainable, secure and healthy food system, and our progress on delivering DSOs is set out in our Departmental Report. It is logical that we would include a section within this to report on food security, which is an important element of delivering our DSO.

37. Securing food supplies is a vast subject and there are many aspects that we have not been able to cover in this report. We regard this as the first in a series of food-related inquiries to be undertaken by this Committee. It is likely that our subsequent work will focus on some of the solutions to the challenges we have outlined. We would welcome feedback and suggestions for future work. We propose to hold a public discussion to enable people to respond to the report and to the Government's reply, and to shape the direction of future inquiries on this subject. (Paragraph 138)

We agree that this is an important and wide-ranging topic and would welcome further contributions from the Committee. The UK Food Security Assessment shows that the UK is doing well in many areas which make up a secure and sustainable food system, such as a diverse food supply and a strong distribution system.

The main challenge will be to meet increasing and changing demand—a global need—while ensuring the sustainability of our food system so that it continues to be secure in the medium and long-term. We need to find ways to reduce environmental impacts of food production, including climate change, water and biodiversity impacts. Globally, a changing climate will pose considerable challenges to agriculture, including falling crop yields in

many areas, particularly developing regions, and significant decreases in water availability. Defra, in partnership with DH and FSA, is currently hosting an online discussion¹⁰ on these and other food related issues as part of our consultation to develop a food strategy for 2030, and has already received a number of comments from members of the public, food businesses and other interested organisations.

Department for Environment, Food and Rural Affairs

September 2009

10 <http://sandbox.defra.gov.uk/food2030>