



We have a wonderful country and tremendous resources of which we can be proud. This paper focuses on how we can manage those resources sustainably and make sure that the value of natural environment to our overall well being is properly understood and nurtured.

Harnessing the contribution that our own natural resources can make towards our essential needs will have a positive effect on both our energy and food security with wide-ranging ramifications. And by appreciating the important part that agriculture plays in our economy, we go some way towards mapping the vital balances that underlie our manufacturing and service industries.

In June 2011, the Secretary of State for the Environment, Caroline Spelman, launched the findings of the UK National Ecosystem Assessment (there is a link in the Further Resources section), which analysed the value of the UK's natural environment by taking account of the economic, health and social benefits we get from nature. This was the first of its kind at a fully national scale and paves the way for a better-informed, frank discussion about how we price our environment. It also underlined how interlinked our lives and environment are. Debates over building new power stations must also consider energy prices and security of supply; discussions about supporting farmers need also pause to consider food security and the effect of price rises upon the poorest in society.

This discussion brief focuses on green spaces, food and energy, three areas which have a direct and serious effect on our day to day well-being. The document is longer than our usual briefs and groups may wish to focus on one or two sections only.

Green spaces and biodiversity

Much of England's wildlife is now restricted to protected areas. England has 10 National parks, covering 9.1 per cent country. 14.4 per cent of England is classified an Area of National Beauty and 6.1 per cent as a site of Special Scientific Interest. Despite these protections, over the last 50 years habitats such as hedgerows, woodlands and wildflower meadows have been destroyed. In the last 25 years there have been rapid losses of once common species such as Hedgehogs, House Sparrows and Common Toads.

While the EU has recognised the problems which our natural environment faces, it failed to meet its commitment to halt biodiversity loss by 2010. Biodiversity has become an issue of global environmental importance.

Retaining biodiversity and a range of species and habitats is vital in order to maintain the 'natural capital' that sustains our economy and well-being. Healthy wetlands provide a natural water purification service, as well as flood protection, and carbon sequestration. The disappearance of a wetland means that these services would need to be replaced by man-made capital - like a water treatment plant. Bees and other pollinators provide a service worth £430 million a year to British farmers. Agriculture, fisheries, forestry, health, and water provision are all

intricately linked with the state of our natural capital. The global value of ecosystem services has been estimated at \$33 trillion per annum.¹

Some industries are likely to feel the impact of biodiversity risk more than others. A recent report subdivided FTSE companies into high, medium and low risk sectors. The high risk group includes: Construction, Electricity, Food & Drug Retailers, Food Producers & Processors, Forestry & Paper, Leisure & Hotels, Mining, Oil & Gas, and Utilities. Risks attached to poor environmental management by these firms include: reputation, and knock-on effects on access to land or capital; security of supply; and relations with regulators. Given the environmental and political necessity to address biodiversity and natural capital, already over a third of the FTSE 100 companies in these high risk sectors are taking substantive action to assess and manage biodiversity risks.²

In recent years, there has been increased awareness of the positive and negative impact of some agricultural practices. There is a balancing act between the agricultural intensification essential for making farming pay and the environmental consequences, particularly on the water system. In past years farming has been a considerable source of water pollution from fertilisers, pesticides and run off from livestock buildings, but many of these substances have been regarded as essential in the intensive crop production demanded by current food markets.

As an industry, farming has reacted swiftly to try to reverse the negative effects of certain polluting practices, with fertiliser use falling by nearly 15 per cent in the last ten years.³ Sustainably farmed countryside can deliver key environmental objectives: biodiversity, flood management, recreation and a means of tackling climate change. Increasing the efficiency of agriculture and farming could also allow for bio fuel production. However, it is not a solution for farming alone to solve – ‘hard-headed realism is needed- we should not assume that we can deliver all ecosystem services effectively from a single plot of land’.⁴ National and local strategies and partnerships can bring together carbon capture opportunities from peat bogs and chalklands, and water companies are working with farmers and other landowners to improve water quality, bring grasslands back into use and restore lost and neglected wildlife-rich habitats.⁵

- **The Coalition Programme for Government.** The Coalition Government has published a Natural Environment White Paper – the first in 25 years to look at the whole natural environment and what we need to do to make it better. They have increased funding for high level stewardship by 80 per cent to protect and enhance farmland biodiversity and published the landmark Foresight

¹ GLOBE International Commission on Land Use, Change and Ecosystems, ‘Natural capital: The new political imperative’, (December, 2010), p.2 <http://static.zsl.org/files/natural-capital-the-new-political-imperative-final-report-1243.pdf>

² ISIS Asset Management, Is biodiversity a material risk for companies? An assessment of the exposure of FTSE sectors to biodiversity risk, (September, 2004), p.7, p.21 http://www.businessandbiodiversity.org/pdf/FC_per_cent20Biodiversity_per_cent20Report_per_cent20FINAL.pdf

³ Alan Spedding, RuSource, Briefing 517, Differentiation: A sustainable future for UK agriculture, (2008), p.2 http://www.arthurrankcentre.org.uk/projects/rusource_briefings/rus07/517.pdf

⁴ Making Space for Nature, Ibid., p.6 <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

⁵ The example of the Workign Wtlands programme in Devon, as set out in Making Space for Nature, Ibid., p.74 <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

report on what's needed to feed a growing population in the decades ahead, and raising food security up the international agenda.

- In 2012, Defra will publish the UK's first ever adapting to climate change plan, clearly setting out what the UK needs to do to adapt its infrastructure to the threats posed by climate change such as more frequent extreme weather. But they are already making active changes such as improving our cities by planting a million trees over the life of this Parliament and reviewing the National Park governance arrangements (the results are currently being considered with an announcement due shortly).

Food

Food manufacturing is the UK's single largest manufacturing sector. It employs more than 3 million people in a huge range of businesses, from farms to retail.⁶ The food and drink supply chain is a major part of the UK economy, accounting for 7 per cent of GDP and employing 3.7 million people in everything from food retailing to restaurants and canteens to farming and fishing.⁷

Since mid-2007 prices of all foods have risen substantially. In July 2010 prices for basics had increased: for eggs 46 per cent, butter 43 per cent, pork 36 per cent, cheese 27 per cent, milk 26 per cent, beef 23 per cent, bread 22 per cent and poultry 17 per cent.⁸

Although the productivity of UK agriculture has increased by 55 per cent since 1973, productivity growth has fallen behind other countries since the early 1990s. The UK's agricultural productivity now lies behind the US, Netherlands, Denmark and Spain. Scientists believe the ultimate yield potential for European wheat is at least 19 tonnes per hectare, but in the UK in 2008 (a record yield) it was only 8.2 tonnes.⁹

Total imports of food, beverages and tobacco in 2010 amounted to £33,520 million. £16,062 million was exported, creating a food trade deficit of -£17,458 million.¹⁰

Decline in the farming sector, accompanied by rising population, has resulted in a loss of self-sufficiency: even in domestically-produced foods, the UK is currently only 72 per cent self-sufficient. A recent study found that it is likely that only grains and dairy products can be produced cheaply enough in the UK to be competitive on the global market. Farmers face challenges to find further efficiencies if their businesses are to survive¹¹ and thrive.

⁶ DEFRA, Food 2030 report, (2010), p.2,

<http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy-summary.pdf>

⁷ *Sustainable Livestock Bill*, Bill 5 of 2010-11, Research paper 10/71 10, (November, 2010), p.15
<http://www.parliament.uk/briefingpapers/commons/lib/research/rp2010/RP10-071.pdf>

⁸ DEFRA, Food Statistics Pocketbook 2010, p.25

<http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy.pdf>

⁹ Taylor review, Science for a new age of agriculture, (2010), p.2

¹⁰ ONS, Statistical Bulletin, UK Trade, January 2011, Value of trade in goods by commodity, (2011), p.24 <http://www.statistics.gov.uk/pdffdir/trd0311.pdf>

¹¹ Environment, Food and Rural Affairs Select Committee, , The Common Agricultural Policy after 2013, Food security, point 36
<http://www.publications.parliament.uk/pa/cm201011/cmselect/cmenvfru/671/67105.htm#a7>

Some industries are rising to this challenge better than others: potato yields have increased by 18 per cent, and sugar beet by around 45 per cent over the last 20 years; wheat yields have increased by almost 8 per cent over 10 years, and barley by 6 per cent.¹² In contrast, the beef industry appears to be in decline. The English total breeding herd fell by 27 per cent between 1990 and 2007; the dairy herd fell by 38 per cent, despite this milk production increased.¹³

- **The Coalition Programme for Government.** The Coalition is reducing the regulatory burden on farmers. In May 2011, the Farming Regulation Task Force (set up by Jim Paice MP in June last year) made 200 recommendations for reducing red tape; these are now being considered by the Government and work has already begun on implementing some of the recommendations. The Secretary of State, Caroline Spelman, has also announced extra support for hill farmers. A new Animal Health and Welfare Board for England has been set up to bring together DEFRA officials and livestock keepers who will share the responsibility for preparing for and dealing with outbreaks of disease.
- The *Coalition Programme for Government* also agreed to promote high standards of farm animal welfare and ensure that food procured by government departments, and eventually the whole public sector, meets British standards of production wherever this can be achieved without increasing overall cost.
- So far, the British Government has led action which prevented an attempt by some EU Member States to delay a ban on 'battery cages' for laying hens. They have also implemented new regulations on the welfare of meat chickens and are preparing to publish new Government Buying Standards for food and catering services.

Energy: Energy Security

[I]n the future energy security will be almost as important as defence to the overall security of a country's interest Tony Blair, 2006¹⁴

On current trends, world demand for energy is set to increase by around 50 per cent by 2030. Even if action is taken to reduce emissions, increasing demand is still likely. Output from the North Sea is in decline and can only be partially replaced by indigenous supplies of energy such as wind. Without serious reform of the electricity market, the UK will become more dependent on imported fuels to meet energy demand. By 2020 up to 80 per cent of our fuels might have to come from overseas.¹⁵ With less reliable supplies than before our exposure to significant price spikes will be increased.

(percentage of sufficiency includes consumption of indigenous food for example tropical fruits that cannot be grown here)

¹² DEFRA, Food 2030 report, (2010), p.33

<http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy.pdf>

¹³ The organisation for the English beef and sheep industry (EBLEX), In the balance? The future of the English beef industry, (2009), p.9

http://www.eblex.org.uk/documents/content/publications/p_cp_inthebalance.pdf#

¹⁴ Speech at the official launch of Langed gas pipeline, 16 October 2006

¹⁵ DTI, *Energy White Paper*, May 2007 <http://stats.bis.gov.uk/ewp/index.asp>

The current mix of our energy sources is also less than desirable. The UK is dependent for 90 per cent of its energy needs on fossil fuels, which increasingly come from imports.¹⁶

In fact, the deterioration of our infrastructure, storage and transmission facilities is such that an adviser to the last government had to admit in 2009 that we might face blackouts: 'there is a worry that in 2016 there might not be enough electricity'.¹⁷

The Coalition Programme for Government. The Coalition is committed to preventing coal-fired power stations being built unless they are equipped with sufficient carbon capture and storage (CCS) to meet the emissions performance standard. In the Spending Review in October, they announced up to £1 billion investment in the world's first commercial-scale CCS power plant and in the 2011 Budget, they committed to public funding for four CCS power plants from general taxation.

- The Coalition has also made substantial proposals to reform the electricity market in order to reduce our dependence on fossil fuels, including: carbon price support; feed-in tariffs for large-scale electricity generators; capacity payments to ensure there is an adequate safety cushion of capacity; and an emissions performance standard to limit how much carbon the most carbon intensive power stations can emit. A White Paper on electricity market reform will be published before the Summer Recess.¹⁸

Energy: Fuel Poverty

Fuel poverty occurs when a household needs to spend more than 10 per cent of its income on fuel in order to keep their heating at a satisfactory level. One family in five is now in fuel poverty, with the number of families living in fuel poverty up by 2.8 million over the last six years. Estimates show that every 1 per cent rise in energy prices implies an increase of 40,000 in Fuel Poverty.¹⁹ And fuel prices threaten to rise by as much as 60 or even 100 per cent over the next decade.²⁰

Improving energy efficiency is one of the most effective ways of remedying fuel poverty as more than 14 million of Britain's 25 million homes lack one or both of loft insulation and cavity wall insulation. As housing accounts for around 27 per cent of UK carbon emissions, improved insulation would also help to cut our national carbon emissions.²¹

- **The Coalition Programme for Government.** Through the 'Green Deal', the Government will give every home up to £10,000 worth of energy improvement measures – with more for hard-to-treat homes – paid for out of savings made

¹⁶ *Hansard*, 4 February 2009, Col. 1372WA

¹⁷ [BBC News](#), 11 September 2009

¹⁸ DECC, *Electricity Market Reform*, December 2010

¹⁹ Brinkley, A. And Less, S. (2010), *Cold Comfort*, Policy Exchange, p.1

²⁰ Citigroup global Markets Inc (2009) *The £1,000,000,000 (trillion) decade*, p.10

²¹ Boardman, B (2007), *Home Truths: A Low-Carbon Strategy to Reduce UK Housing Emissions by 80% by 2050*, Environmental Change Institute, University of Oxford

on fuel bills over 25 years. This will help to cut energy costs for vulnerable families and is now being extended to businesses.

Energy: Renewable Energy

Science supports the view that there are major risks associated with climate change but the substantial potential costs of climate change mitigation are a legitimate concern for all. It is vital that we shift away from our reliance on fossil fuels; the UK currently has the third lowest contribution from renewable energy of any EU country, ahead of only Luxembourg and Malta. The last Government committed in three manifestos to cutting UK carbon emissions by 20 per cent by 2010 but failed to achieve this target: emissions in 2010 were only 16.6 per cent lower than 1990 levels, with almost half this decrease achieved by the previous Conservative government.

- **The Coalition Programme for Government.** The Coalition is establishing a 'smart grid' that will enable a feed-in market for renewable electricity generation. Mass rollout is expected to start in 2014 and be complete by 2019. They are also legislating to for additional powers that will allow them to deliver an offshore electricity grid in order to support the development of a new generation of offshore wind power.
- The Renewable Heat Incentive – the world's first large-scale scheme of financial incentives for renewable heat – will provide substantial financial support for heat generation, for example through anaerobic digestion. There are also proposals to increase feed-in tariffs for farm-scale anaerobic digestion.
- The Office for Renewable Energy Development is looking at how to promote community-owned renewable energy schemes and is investigating the possibility of allowing communities to keep the additional business rates they generate as part of these schemes. At the same time, the Department for Energy and Climate Change is removing obstacles to new nuclear power, while ensuring there is no public subsidy.
- The Government is also creating a new Green Investment Bank. So far, £3 billion of funding has been committed, with a further £15 billion of investment leveraged in from the private sector. The Bank will be operational in 2012-13 and will have full borrowing powers from 2015-16, once the national debt is falling as a share of GDP.

Natural resources in 2015

1. How should we value and measure our natural resources? What do you consider to be the most valuable or important natural resource in your area, and please tell us a little about it.
2. What are the competitive pressures on British farming? What can be done to support, sustain and increase profits from this important industry? What will be the major challenges for agriculture in 2015 and beyond?
3. Does genetically modified food have a role to play in British farming?



4. Is self-sufficiency a realistic or desirable goal in food or energy?
5. What do you consider to be the most likely green energy solution/application in 2015 and beyond that could be implemented to ensure that green energy helps us towards securing and delivering energy security for our country?

Further resources for groups to consider

UK National Ecosystem Assessment

<http://uknea.unep-wcmc.org/Home/tabid/38/Default.aspx>

DEFRA, Food 2030 report

<http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy-summary.pdf>

DEFRA, The Natural Choice: securing the value of nature, 2011

<http://www.archive.defra.gov.uk/environment/natural/documents/newp-white-paper-110607.pdf>

DECC, Briefing on the Energy Bill 2011

<http://www.decc.gov.uk/assets/decc/legislation/energybill/427-energy-security-and-green-economy-bill.pdf>

Parliament, Webpage showing the progress of the Energy Bill 2011

<http://services.parliament.uk/bills/2010-11/energyhl.html>

People to seek opinions from

Farmers, planning officials, property developers