

## Sustainable Food

### Submission by the Royal Society for the Protection of Birds to the Environmental Audit Committee

#### Executive summary

1. To achieve sustainability of the UK farming system, government must create a policy framework ensuring that environmental principles are adopted at the farm level and supported by retailers and other parts of the food chain.
2. While there are trade-offs between the amount of food that can be produced and other ecosystem services provided by land, careful planning and management can minimise these trade-offs and achieve the required balance of services.
3. The RSPB's long-standing and ongoing involvement in scientific research, policy development and land management advice, and our experience as a farming organisation, makes us uniquely placed to help in the development and implementation of solutions to help agriculture become more sustainable.

#### Introduction

4. The RSPB welcomes the opportunity to respond to the EAC's inquiry into sustainable food.
5. Environmental impacts occur at all stages of the food supply chain from farming to food consumption and disposal of waste. Sustainability of the agriculture sector will hinge on all three pillars of sustainability – environmental, social and economic. In this response, we focus on the impacts of the production of food from farming and on biodiversity specifically, as this is our relevant area of expertise.
6. The RSPB's agriculture vision is for *sustainable systems of farming that produce adequate supplies of safe, healthy food; protect the natural resources of soil, air and water that farming depends on; help to protect and enhance wildlife and habitats; provide jobs in rural areas and contribute to a diverse rural economy.*
7. The RSPB strives to achieve this vision by engaging with agriculture in a variety of ways. Our long-standing science programme includes monitoring farmland bird populations, researching causes of declines and testing solutions. We work with farmers to develop and promote farm management that benefits biodiversity, and with government to develop

agricultural policies that support more sustainable farming. We have first-hand experience of the challenges of farming - delivering good yields, a healthy profit margin and good environmental outcomes - through ownership and running of Hope Farm, a conventional arable farm in Cambridgeshire.<sup>1</sup> We also have a lot of experience in managing our own livestock and working with livestock farmers and graziers on our reserves, as part of our conservation delivery work.

### **How can the environmental and climate change impacts of the food we choose to eat best be reduced?**

8. Farming is often associated with positive externalities; indeed many species and habitats have evolved to co-exist with farming practices. However, since 1945 significant changes have taken place in UK agriculture. A dramatic increase in production has been achieved, but a side effect has been a range of negative environmental impacts including declines in biodiversity<sup>2</sup>, reduction of water quality, soil degradation, and increased emissions of greenhouse gases.
9. Reforms of the Common Agricultural Policy (CAP) to date, in particular decoupling subsidies from production and the introduction of agri-environment schemes, have been important first steps to addressing these issues. Environmental benefits have also arisen from the fact that farmers are applying fewer inputs (pesticides and nitrogen fertilizers) now than they have for some years, partly driven by price increases. However, despite the best efforts of a growing number of farmers and land managers in the UK, there is still much more to be done to achieve an environmentally sustainable UK farming sector. In the long term a significant shift is likely to be required to move away from intrinsically unsustainable practices. In the short term the priority should be uptake of best practice and proven solutions via a range of policy and non policy levers, in the following key areas.
10. *Protect and enhance biodiversity.* Biodiversity has an intrinsic value but also plays an important ecosystem service role in agricultural production e.g. pollination services provided by bees are estimated to be worth €153 billion each year globally.<sup>3</sup> We must make space for wildlife in the farmed landscape (through agri-environment measures and less intensive farming methods such as organic); maintain farming systems with High Nature

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<sup>1</sup> For further information see <http://www.rspb.org.uk/ourwork/farming/hopefarm/>

<sup>2</sup> Robinson, R.A. *et al* (2002) Post-war changes in arable farming and biodiversity in Great Britain. *Journal of Applied Ecology* 39, 157–176

<sup>3</sup> Gallai, N *et al.* (2008) *Economic valuation of the vulnerability of world agriculture confronted with pollinator decline.* *Ecological Economics*, [doi:10.1016/j.ecolecon.2008.06.014](https://doi.org/10.1016/j.ecolecon.2008.06.014)

Value, and protect the UK's remaining semi-natural habitats from conversion to intensive agriculture. There are some immediate opportunities for the direct and indirect negative impacts of farming on biodiversity to be minimised, e.g. through good implementation of the Water Framework Directive, the Sustainable Use Directive and the Nitrates Directive.

11. *Reduce agriculture's contribution to climate change.* Agricultural greenhouse gas emissions are linked to soil management, fuel and nitrogen fertiliser use and livestock management. Climate change mitigation measures must be assessed and implemented as part of a broader approach to addressing *all* environmental objectives at the national, regional, landscape and farm levels. Some proposed actions, such as intensifying livestock farming with the aim of decreasing emissions per unit of production, risk potentially irreversible negative impacts on biodiversity and resource protection, as well as missing significant opportunities for achieving long term reductions in emissions. Furthermore, they may not reduce total net emissions because of impacts beyond the farm gate. Maintaining natural and semi-natural habitats, on the other hand, has been shown to be one of the most cost-effective approaches for mitigating climate change,<sup>4</sup> while better soil management can help safeguard significant carbon stores as well as benefiting biodiversity and resource protection.<sup>5,6</sup> Accounting methods used to calculate emissions must include all of the greenhouse gas emissions that arise from farming decisions, including indirect emissions such as from land use change, to enable mitigation approaches to be properly assessed and compared.
12. *Build sustainable climate change adaptation into agricultural systems.* UK agriculture will need to adapt to the effects of climate change including changes in rainfall and temperature, more frequent extreme weather events and a potential increase in invasive alien species. As with mitigation, this should not be pursued in isolation from wider environmental objectives. The farming sector also has a responsibility to contribute to the adaptation of wider society and the natural environment. Changes must be made in the wider countryside to build biodiversity's resilience to climate change, including extending and buffering existing areas of semi-natural habitat and creating new habitat in places of strategic importance to wildlife.<sup>7</sup>

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<sup>4</sup> Turner et al, (2009) *A force to fight global warming*. Nature 462, 278-279

<sup>5</sup> Miers RH (1970) *Design of underdrainage based on field evidence in England and Wales* MSc thesis, Newcastle University

<sup>6</sup> Holman, IP (2009) *An estimate of peat reserves and loss in the East Anglian Fens*. Commissioned by the RSPB; Natural England (2009) *England's peatlands: carbon storage and greenhouse gases*

<sup>7</sup> Lawton, J.H. *et al.* (2010) *Making Space for Nature: a review of England's wildlife sites and ecological network*. Report to Defra.

## **What are the land-use trade-offs that affect food production and supply and how should these be managed?**

13. Land is needed for food production, but there is increasing competition from other uses such as urbanisation and bioenergy production, as well as the need to provide other ecosystem services such as flood management and carbon storage. It is apparent that a more coherent, consistent approach is needed for managing the growing demands on land.<sup>8</sup>
14. *Agricultural production vs. biodiversity.* Agricultural production competes directly with wild biodiversity for space and resources (water, nutrients etc). We need to find and implement ways to minimise the trade-off and achieve the required balance. Agri-environment schemes in the UK have created the potential for this to be achieved across the landscape, as well as in priority areas important for particular species. The RSPB's Hope Farm demonstrates how this balance can be achieved using broad and shallow options offered under Entry Level Stewardship (ELS).<sup>9</sup> This is a conventional arable farm incorporating a package of agri-environment options designed to provide the 'Big Three' needs of farmland birds.<sup>10</sup> Since the RSPB purchased the farm in 2000, we have recorded farmland bird population increases of 201%. The farm has increased its profitability during the same time period, and produces above-average yields. The contractors who carry out the farm work have been able to integrate agri-environment measures efficiently with the overall management of the farm. Measures to benefit biodiversity, such as sowing wild flower seed mixes, have been implemented in parts of the farm that are awkward to cultivate, such as oddly-shaped corners and less well-drained areas, minimising the impact on overall farm productivity and in some cases actually increasing the efficiency of operations. Only 3.2% of the arable land is currently out of production, and since this tends to be the less productive areas, the sacrifice in production is even smaller.
15. There is still much more to be done. We need to develop and use frameworks and tools to balance not only the needs of biodiversity and production, but also a range of other environmental obligations and objectives, such as reducing diffuse pollution from the agriculture sector and reducing net greenhouse gas emissions. We are trying to do just that at Hope Farm over the next 5 years, and we will be actively seeking help as well as providing input to others as we learn from this experience.
16. While there are some wildlife-friendly farming systems that support high species richness, a large proportion of wild species globally cannot survive in even the most benign farming

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<sup>8</sup> Foresight (2010) *Land Use Futures Project* Executive Summary. The Government Office for Science, London.

<sup>9</sup> Entry Level Stewardship is the 'broad and shallow' strand of England's Environmental Stewardship agri-environment scheme.

<sup>10</sup> The Big Three are a safe place to nest; food in spring and summer for chicks; food and shelter over the winter.

systems. To conserve those species, protection of wild lands will remain essential, including retaining current protection for Sites of Special Scientific Interest (SSSIs) and Natura 2000 sites, and biodiversity hotspots around the world.<sup>11</sup>

17. *Competing ecosystem services.*<sup>12</sup> Multiple ecosystem services can frequently be delivered from the same area of land through careful land use and management decisions. Different environmental objectives often overlap to a great degree. For example, actions to improve water quality by reducing agricultural run-off can also deliver lower greenhouse gas emissions along with soil quality and biodiversity benefits. Agri-environment schemes provide a means of addressing multiple objectives including biodiversity, climate mitigation and resource protection.<sup>13</sup> There is a trade-off, however, in that *all* ecosystem services cannot be maximised on the same parcel of land. Usually, an area of land will have a primary function (dictated by factors such as soil, topography and land use history) which is maximised while allowing the provision of other services as far as possible. On Hope Farm for example, the primary function is food production, but the land is managed so as to provide biodiversity enhancement as well, while reducing pollution and greenhouse gas emissions by following best practice. We need to build into our farming decisions a way of finding a balance between ecosystem service delivery objectives at a very local level.

### **How can the Government help to deliver healthy food sustainably, whilst also delivering affordable food for all?**

18. The UK enjoys a high degree of food security and there is no immediate threat to that situation, nor any short-term need to increase production in the UK.<sup>14</sup> Although global food production will need to increase over the coming decades, the UK's contribution to this growth will not be large. There is no scope to significantly increase the land area in the UK devoted to production. There *is* scope for the UK to *sustainably* increase its total food production by bringing farms that are currently under-performing up to the standards of the 'best' farms (in terms of both yield and environmental management). However, given

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<sup>11</sup> Phalan, B., *et al.* *Minimising the harm to biodiversity of producing more food globally.* Food Policy (2010), [doi:10.1016/j.foodpol.2010.11.008](https://doi.org/10.1016/j.foodpol.2010.11.008)

<sup>12</sup> The Millennium Ecosystem Assessment defines ecosystem services as the benefits people obtain from ecosystems, including provisioning services such as food; regulating services such as regulation of floods; supporting services such as soil formation; and cultural services such as recreational benefits. See <http://www.maweb.org/en/Condition.aspx>

<sup>13</sup> Natural England (2009) Agri-environment schemes in England 2009: a review of results and effectiveness. [http://www.naturalengland.org.uk/Images/AE-schemes09\\_tcm6-14969.pdf](http://www.naturalengland.org.uk/Images/AE-schemes09_tcm6-14969.pdf)

<sup>14</sup> Defra (2009) *UK Food Security Assessment* <http://www.defra.gov.uk/foodfarm/food/pdf/food-assess-approach-0908.pdf>

that the UK holds only 0.34% of the world's agricultural land, this would not have a significant impact on global food supplies. UK agriculture should focus primarily on protecting the ecosystem services that are vital for continued food production into the future.

19. The principles of sustainable agriculture should be applied at farm level, but in order to be successful farmers and landowners must be supported by a policy framework that facilitates and rewards actions that make their enterprises more sustainable. It is clear from the continuing farmland bird declines that the current balance of regulation and incentives is not fit for purpose to support the level of delivery required into the future.
20. The forthcoming reform of the CAP represents a critical opportunity for creating a framework of 'public money for public goods'. There are also some relatively straightforward steps that Government could take immediately to make better use of millions of pounds of taxpayers' money to deliver real results on the ground.
21. *Regulation.* Regulatory approaches have a strong track record of securing and improving environmental quality, but inspection and enforcement of environmental protection regulations is currently inadequate. The current legislative framework for agriculture fails to fully ensure a 'do no harm' approach is taken or that the Polluter Pays Principle is reflected.
22. *Address the failure of the market to internalise the negative externalities of food production, particularly livestock farming.* Although livestock farming can provide important environmental benefits, intensive production can bring significant negative environmental impacts including overgrazing, pollution and loss of habitat and carbon stores domestically and overseas where feed crops are produced.<sup>15</sup> Environmental taxes and other financial levers, for example on chemical inputs and feed produced overseas, could be a way of internalising these externalities.<sup>16</sup>
23. *Agri-environment schemes.* Agri-environment schemes are a critical tool for making farming more sustainable, through addressing specific problems in a targeted way and rewarding good practice that goes beyond the regulatory baseline. The continuation of adequately resourced and well-designed agri-environment schemes should be a priority for Government in its negotiations on the future of the Common Agricultural Policy (CAP).

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<sup>15</sup> IAASTD (2008) *Agriculture at a crossroads. Global summary for decision makers.*

[http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads\\_Global%20Summary%20for%20Decision%20Makers%20\(English\).pdf](http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Global%20Summary%20for%20Decision%20Makers%20(English).pdf)

<sup>16</sup> RSPB (2010) Financing nature in an age of austerity. [http://www.rspb.org.uk/Images/Financingnature\\_tcm9-262166.pdf](http://www.rspb.org.uk/Images/Financingnature_tcm9-262166.pdf)

Targeted agri-environment measures (such as Higher Level Stewardship in England) need significantly more resourcing than they currently receive to ensure priority sites and species are managed appropriately.<sup>17</sup> “Broad and shallow” schemes need to be structured so as to ensure they deliver the desired ecological outcomes. The success of RSPB’s Hope Farm in reversing farmland bird declines demonstrates that the right tools are already available within Entry Level Stewardship. This success could be replicated across the country if the scheme was restructured to ensure the right combinations of options went into each agri-environment agreement to deliver the needs of farmland birds.

24. Policy levers should be used to incentivize High Nature Value farming systems. The CAP could play a significant role by recognising and rewarding high quality and sustainably managed extensive grazing systems that deliver multiple ‘public goods’.<sup>18</sup>
25. *Cross compliance*. Although cross compliance has the potential to improve baseline environmental standards across Europe, a number of structural weaknesses currently prevent it from delivering effectively for biodiversity and the environment.<sup>19</sup> Cross compliance inspection and enforcement should be strengthened in the UK to address the known problems.<sup>20</sup>
26. *Climate change mitigation*. Government has chosen to rely initially on voluntary action by the agriculture industry to deliver greenhouse gas emission reduction targets, through the UK Greenhouse Gas Action Plan. In 2012 there will be a review of progress, and interventions – through regulation, tax etc – will be made if voluntary action has not been sufficient. However, there are currently no robust indicators or systems of monitoring progress in place. This needs to be addressed. The action plan is also not based upon a holistic approach to reducing emissions in rational, cost-effective and sustainable ways. For example, the promotion of reseeded grasslands with high sugar ryegrasses, or of increasing production of maize silage (both identified as a means to reduce emissions of methane from livestock), could be disastrous for both biodiversity, for resource protection (both soil and water), and counter-productive from a mitigation perspective (because of negative impacts on carbon stores and sequestration rates).

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<sup>17</sup> LUPG (2009) Estimating the Scale of Future Environmental Land Management Requirements for the UK. <http://lupg.org.uk/Default.aspx?page=158>

<sup>18</sup> The defining characteristics of public goods are non-rivalry and non-excludability, meaning that no-one can be excluded from enjoying them and users cannot be charged for them. Examples include farmland biodiversity and an attractive landscape. See also Cooper, T. *et al* (2009) *The provision of public goods through agriculture in the European Union*. Report prepared for DG Agriculture and Rural Development, Contract no. 30-CE-0233091/00-28, Institute for European Environmental Policy: London.

<sup>19</sup> Birdlife International (2009). *Through the green smokescreen: How is CAP cross-compliance delivering for biodiversity?* [http://www.birdlife.org/news/news/2009/11/green\\_smokescreen.html](http://www.birdlife.org/news/news/2009/11/green_smokescreen.html)

<sup>20</sup> European Court of Auditors 2008. *Is cross-compliance an effective policy?* Special report No 8:27-29

27. *Research and development.* R&D is crucial to develop more sustainable production methods, and to ensure that the potential impacts of new systems are fully assessed. Agricultural R&D investment has however declined in recent decades, alongside a shift from public to private sector investment. Private research generally pursues a profit objective, while public funded research tends to investigate areas with 'public good' potential. Government must provide adequate funding and good, transparent governance for agricultural research to meet the good of society.
28. *Food assurance schemes.* Consumers place importance on food assurance schemes<sup>21</sup>, so it is important that they represent genuine environmental benefit. There is evidence that terms such as 'grass-fed' and 'outdoor-bred' are increasingly being misused. Specific concerns have been raised that the Red Tractor Logo brings little 'added value' for the consumer.<sup>22</sup> Defra could revisit the Sustainable Development Commission's recommendation to transform the RTL into a 'green tractor' for domestic food production.<sup>23</sup> Development of such a standard should involve a range of stakeholders with different areas of expertise and should adhere to ISEAL principles.<sup>24</sup>

### **How can consumers best be helped to make more sustainable choices about food?**

29. The food industry and government must not 'pass the buck' to consumers on the issue of sustainability. Consumers rightly expect that a certain amount of 'choice editing' will be carried out by government and retailers, so that the least sustainable or otherwise unethical products will not be offered in shops. It is therefore vital to have a strong regulatory baseline in place.
30. *Labelling.* Accurate labelling helps to inform consumers about methods of food production. Improved labelling for environmentally-beneficial farming systems could be encouraged, for example, by developing new labels (such as 'HNV farming' defined by appropriate standards), or by improving the environmental requirements for existing assurance schemes. There are limitations to relying on labelling, including the potential to confuse or disengage customers by providing too much information, and the risk of perpetuating social inequity by putting a price premium on products with an 'ethical' label. In the long term,

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<sup>21</sup> Defra (2009) *UK Food Security Assessment* <http://www.defra.gov.uk/foodfarm/food/pdf/food-assess-approach-0908.pdf>

<sup>22</sup> Sustainable Development Commission (2005) *Sustainability Implications of the Little Red Tractor Scheme*

<sup>23</sup> Sustainable Development Commission (2008) *Green, Healthy, Fair: A review of the government's role in supporting sustainable supermarket food*

<sup>24</sup> <http://www.isealalliance.org/content/about-us>

the food industry should move away from sustainability as a niche market and instead continue to raise the basic standard of all products.

31. *Information campaigns.* Education and awareness raising can inform consumers of the impacts of different systems of production and advocate more sustainable choices. Nutritional advice should be fully integrated with environmental sustainability.<sup>25</sup>

### **Which aspects of the food production and supply chain are presenting the biggest problems for the sustainability of the food industry?**

32. Forms of resource-intensive agriculture currently prevalent in the UK and other developed countries are fundamentally unsustainable<sup>26</sup>. The following paragraphs outline some of the many challenges, and serve to demonstrate the breadth of issues that must be addressed to achieve sustainability of the farming sector. Some environmental impacts can be mitigated, for example through precision farming techniques, but long-term solutions, particularly in the face of peak oil and phosphorus, will need to be developed.
33. *Biodiversity loss in the UK.* Farmland biodiversity is declining in the UK: for example the breeding farmland birds index was 49% lower in 2009 than its 1970 level.<sup>27</sup> In the UK lowlands, changes in livestock farming practice, including increased nitrogen input, higher stocking densities, a switch from hay to silage, loss of mixed farming and widespread field drainage, are considered a major cause of farmland bird declines. In arable areas, agricultural intensification and simplification of the landscape have driven biodiversity loss.<sup>28</sup> The RSPB's Hope Farm demonstrates that declines in widespread farmland bird species can be reversed by making fairly small changes to conventional lowland arable farming. For High Nature Value farming systems, profitability tends to be marginal, and the current system of payments under the CAP does not adequately support them, so they are likely to go out of business or intensify their farming practices,<sup>29</sup> both of which can be detrimental to biodiversity. Pesticide use is another major threat to biodiversity, by direct killing of a species or removal of its food source. The principles of Integrated Pest

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<sup>25</sup> WWF (2011) *Livewell: a balance of healthy and sustainable food choices.*

[http://www.wwf.org.uk/what\\_we\\_do/campaigning/food\\_campaign/livewell\\_2020/](http://www.wwf.org.uk/what_we_do/campaigning/food_campaign/livewell_2020/)

<sup>26</sup> IAASTD (2008) *Agriculture at a crossroads. Global summary for decision makers.*

[http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads\\_Global%20Summary%20or%20Decision%20Makers%20\(English\).pdf](http://www.agassessment.org/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Global%20Summary%20or%20Decision%20Makers%20(English).pdf)

<sup>27</sup> UK Common Bird indicator <http://www.defra.gov.uk/evidence/statistics/environment/wildlife/kf/wdkf03.htm>

<sup>28</sup> Robinson, R.A. *et al* (2002) Post-war changes in arable farming and biodiversity in Great Britain. *Journal of Applied Ecology* 39, 157–176

<sup>29</sup> Beaufoy, G. *et al* (2010) *CAP reform 2013: last chance to stop the decline of Europe's High Nature Value farming?*

[http://www.birdlife.org/eu/pdfs/HNV\\_Policy\\_document\\_proof6\\_010910.pdf](http://www.birdlife.org/eu/pdfs/HNV_Policy_document_proof6_010910.pdf)

Management need to be widely adopted by the farming industry to decrease the proportion of food lost to pests and pathogens while reducing reliance on pesticides.

34. *Water use.* Water is necessary for both agricultural production and other ecosystem services including biodiversity. Demand for water extraction from agriculture is likely to increase with climate change, just as the resources available are likely to decline. Water availability will limit the quality, quantity and type of produce grown in the UK and may also affect the soils quality.
35. *Water pollution.* Diffuse pollution from agriculture is a serious problem in the UK with both nutrients and pesticides adversely affecting water quality. The UN Millennium Ecosystem Assessment<sup>30</sup> has identified eutrophication as one of the most serious threats to biodiversity and ecosystem function. Pollution also represents the escape of valuable plant nutrients into the wider environment, where their ability to boost crop production is lost.
36. *Soil loss.* Soil erosion or degradation can significantly affect our capacity to grow crops. 2.3 million tonnes of soil were lost in the UK between 1995-1998, mostly due to agricultural practices<sup>31</sup>. Inversion tillage and drainage have reduced the amount of organic matter left within many soils in the UK<sup>32</sup>. The stability and quality of soil must be improved if the UK's productive capacity is to be maintained, especially given that future farming systems will need to rely less on artificial fertilizers and manage changeable water availability. Soil loss into water bodies through agricultural run-off is also a source of pollution, degrading water quality and leading to biodiversity losses.
37. *Emissions from land use.* Greenhouse gas emissions from land management and land use change both in the UK and abroad are difficult to quantify but are extremely significant. Further research is needed to fully understand net emissions from land management to enable us to assess and compare different farming systems.
38. *Imported soy.* Much of the UK livestock sector (especially pigs and poultry) is dependant on overseas grown protein crops, particularly soy, to achieve quick growth rates.<sup>33</sup> Large areas

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<sup>30</sup> <http://www.maweb.org/en/index.aspx>

<sup>31</sup> Environment Agency (2004) *The State of Soils in England & Wales* <http://publications.environment-agency.gov.uk/pdf/GEHO0304BKBH-e-e.pdf>

<sup>32</sup> Bellamy P.H., Loveland P.J., Bradley R.I., Lark R.M. & Kirk G.J.D. (2005) *Carbon losses from all soils across England and Wales 1978–2003*. *Nature*, 437, 245-248

<sup>33</sup> Defra and the Food Standards Agency (2009) *GM Crops and Foods: Follow-up to the Food Matters Report* by Defra and the FSA

of land in Brazil, Paraguay and Argentina have been converted for soy production, causing deforestation, greenhouse gas emissions and the loss of valuable wildlife habitat.<sup>34</sup>

39. *Dependence on finite resources.* The dominant model of UK agriculture is highly mechanised and input intensive. This produces high yields and can be extremely efficient in terms of labour, land use and capital, but is intrinsically unsustainable as it depends on finite resources, notably oil and phosphorus.<sup>35</sup> The need to develop and adopt low carbon approaches to food production is important both for energy security concerns and to reduce agriculture's contribution to climate change.
40. Many authors have reported the environmental problems in other parts of the food chain including the impacts of food packaging, transport, retail and waste disposal.<sup>36</sup> As well as reducing their own environmental impacts, food processors and retailers must encourage, facilitate and pay for environmental protection and enhancement.

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<sup>34</sup> Friends of the Earth (2008) *What's feeding our food – the environmental and social effects of livestock sector*

<sup>35</sup> The Soil Association (2010) *A rock and a hard place: Peak phosphorus and the threat to our food security*  
<http://www.soilassociation.org/LinkClick.aspx?fileticket=eeGPQIORrkW%3D&tabid=57>

<sup>36</sup> See for example: Friends of the Earth (2005) *Checking out the Environment? Environmental impacts of supermarkets*; Sustain (2011) *The Food Miles Report*; Defra (2010) *Food 2030*