Sustainable Livestock Bill and Symposium: one year progress report

The report summarises progress by government, industry and others since the Sustainable Livestock Symposium in March 2011. It details some positive developments in the area of research into soy feed alternatives and farming industry work to promote more sustainable, lower GHG farming. However against the considerable needs and outcomes identified in the Symposium the overall conclusion is that progress has been inadequate and significant opportunities missed over the past year to encourage and promote more sustainable livestock production and consumption.
1. Summary of findings

“There is no clear strategy for agriculture and our view is too much expectation being put on the industry to do the right thing (Given that ‘the right thing’ has yet to be defined given the trade offs involved around best use of land and resources and that markets do not currently adequately factor in the value of ecosystem services).”

Food Business survey respondent

There is growing consensus that addressing the environmental impacts of livestock farming is crucial to a sustainable food and farming future. These include overseas impact of feed production particularly how production of soy for animal feeds is driving deforestation in South America. Friends of the Earth has been campaigning since 2008 to highlight these issues and has been working with stakeholders to develop solutions.

This report details progress on issues identified at the Sustainable Livestock Symposium in March 2011 which was organized by Friends of the Earth to take
stock of progress and what needed to be done. The research was undertaken through analysis of institutional, NGO, farmers, food business and other data sources as well as a small number of surveys with stakeholders from these sectors. The main findings are as follows:

**The Government** has made progress in one key area but has failed to take significant steps in other policy areas and has missed key opportunities presented during the year to begin the process of change identified at the symposium. On the positive side:

- There is a specific and relatively substantial programme of new research on livestock and alternative feeds – with multiple partnerships in the supply chain and supporting research that could significantly address soy substitution. The multi-million pound TSB project and others could deliver some very useful outcomes if these are delivered in practical and assessable ways to the farm and feed industry.
- **Projects** have been initiated, such as the Green Food project which may look at livestock and feed issues. But these are at an early stage and so far the terms of reference and the tight schedule suggest that they will be focused on a small number of high profile issues and whether they will adequately address UK or global biodiversity and GHG associated with food and feed imports is unclear.

But progress in other areas has been very limited or regressive:

- The position taken by the government on CAP reform so far will do little to drive reform that favours more sustainable livestock production, despite clear opportunities available do so. Alarmingly, some of the positions taken by the Government could further drive intensification of the livestock sector, with no evidence that this would be ‘sustainable’. The Government made no apparent effort to support moves that would enhance domestic feed production and sustainable livestock goals for example by supporting mandatory crop rotations under greening of Pillar1. The focus on export lead growth for the UK meat and dairy sector rather than growth based on high quality, sustainable local markets will continue the trend towards UK factory farms.
- There has been no attention paid to the use of processed food waste as feed which would be a quick win as safe and suitable processed food waste is already available.
- Efforts to promote sustainable diets which reduce livestock impacts of consumption are lacking.
- There was clear opportunity missed in promoting a more sustainable livestock message and outcome in the new government food procurement standards – the Government Buying Standards.
- The issue of costs of UK protein feed (relative to soy) and how farmers are able to deal with a highly concentrated buyers market has not been
addressed. As one academic respondent put it: “scientifically sound and valid information on opportunities to reduce reliance on soya will find their place amongst the many stakeholders involved. Uptake, however, is largely an economic matter, and is difficult to foresee.” There seems little effort to ensure UK domestic feed production or grass based systems are more profitable – and the introduction of the Grocery Code Adjudicator may have indicated some willingness to act but this has been delayed. If a Bill to introduce the Adjudicator does appear in the May 2012 Queen’s Speech that will be a welcome development.

The Farming industry has made some progress. Several industry bodies and farmers are involved in new research projects which could be valuable to the development of soy alternatives. The development of the Pasture Fed Livestock Association is a positive one as are EBLEX and PBEX initiatives to look at feed issues. Farmers have also been working on industry roadmaps and developing these further to deliver mainly GHG emission reductions. The GHG Action plan for Agriculture does refer to some useful areas of work on feeds but with no specific objectives to reduce the global biodiversity impact of UK livestock supply chains. How far the industry can act without adequate support from both government and the food industry is open to question.

On retailer progress, without a full survey, it is hard to assess progress by the retailers overall. Clearly some, notably Marks and Spencers, are investing in research on alternatives and have some commitment to the issues highlighted in the symposium. It would be unreasonable to pass judgment on the others as it has not been possible to do a detailed study.

Regarding other initiatives: The WWF Livewell project is delivering a real and practical approach to the problem of sustainable diets.

One key gap in terms of progress or evidence of progress is in the poultry sector. As this is the sector with both a significant use of soy and also considerable barriers to progress (in terms of the financial state of the sector and in the use of alternatives in feed) it is regrettable that little attention appears to have been paid this year to addressing these barriers.

Overall, some progress has been made against the goals and proposals made at the March Symposium. But the government - as a key funder and with the opportunity to both encourage industry action and to drive policy change here and in Europe – has shown too little leadership or coordination on the issues highlighted in the symposium and has missed some specific opportunities. Some parts of the farming and retail industry have made some efforts to develop schemes to reduce their overall environmental impact and are working on research to look at soy alternatives. It is not easy to assess at this stage whether these are making a difference in terms of real outcomes.
It has not been possible to cover progress by the **Devolved administrations** and stakeholders in this study. This should be an area for analyses.

2. **Introduction**

There is growing consensus that addressing the environmental impacts of livestock farming is crucial to a sustainable food and farming future. While Greenhouse Gas (GHG) emissions from livestock grab the headlines there are also significant impacts on biodiversity loss, soil degradation and water quality and availability from the livestock sector. The production of soy for animal feeds is driving deforestation in South America. But a thriving livestock sector in the UK is important for rural livelihoods and can positively contribute to biodiversity and landscapes as well as food security.

Friends of the Earth aims to find solutions that ensure a sustainable and resilient future for the industry. There is no single policy that will reduce the environmental impact of livestock production whilst maintaining farmers’ livelihoods so Friends of the Earth wants to see a strategic approach to these issues that takes action on many fronts. That is why it backed Robert Flello’s Sustainable Livestock Bill in 2010, which gained considerable support amongst MPs and a range of organisations. During the second reading debate on the Bill in November 2012 (during which the Bill failed to progress), Agriculture Minister Jim Paice offered to participate in a conference of all interested parties to take stock of progress and what needed to be done and to publish a report on achievements.

To facilitate this, Friends of the Earth organised a Sustainable Livestock Symposium in March 2011 with key stakeholders from the farming industry along with retailers, academics and environmental NGOs. At the event the Minister promised that DEFRA would “play its part” and would produce a ‘one year on report’ setting out progress in March 2012. This commitment was welcomed by Friends of the Earth.

Friends of the Earth produced a report of the symposium\(^1\) including a summary of next steps needed, drawn from the presentations and discussion groups on the day. Many of the actions identified at the event required action from DEFRA and other Government departments. These included:

- Taking a leading role in CAP reform to ensure sustainable livestock production and home grown proteins get the support they need
- Research into viable alternatives to soy and ensuring that practical advice is passed to farmers
- Investigating the potential for waste products to be better utilised in animal feeds
- Ensuring that environmental impacts overseas including GHG emissions are measured and taken into account in climate change and farming policy
- Support, advice and funding to help farmers to sell direct to customers
- Clear information and advice to the public on a healthy and sustainable diet.
Actions for other stakeholders were also identified.

Aims of this study

At the end of 2011 Friends of the Earth identified the need for an assessment of progress on the priority actions identified at the symposium. This research was commissioned to assess developments by Government and other stakeholders on sustainable livestock since March 2011. The Terms of Reference for this work were to produce an overview assessment of the progress made by DEFRA and stakeholders on sustainable livestock as follows:

- Assess progress by Government
- Assess policy development
- Assess progress of Industry Initiatives Farming industry, Retailers, others
- Assess views of selection of symposium delegates and other stakeholders on progress since the event against the main actions identified.

3. Methodology

The research was undertaken during December 2011 and January 2012 through a review of main stakeholder literature and websites and via responses to a survey sent to a selection of delegates at the Symposium and phone interviews. This included representatives from UK central government, farmer, academic, NGO and the multiple retailers. As most respondents did not want their views to be attributed, we identify quotes only by sector. The survey has been supplemented with a range of secondary sources derived from the industry and from Government.

4. Findings: Government progress

During the March 2011 Symposium there was consensus that DEFRA and wider Government, as well as European institutions, had a key role in ensuring a sustainable livestock future. Areas for action included:

- The need for more research and development on alternatives to soy and new livestock feeding regimes using practical approach such as trials. The results of these projects need to be passed on to farmers as practical and affordable new approaches in an effective extension service.
- The need to ensure upcoming CAP reforms to deliver useful outcomes: such as how payments could support appropriate farmer responses e.g. sustainable hill farming, extensive grazing, mixed farming; rotations which include a protein crop. Policy support was seen as vital to secure a more consistent supply of peas and beans for feed e.g. a protein crop premium and the CAP should be better linked to public benefits including health – delegates identified the opportunities for Pillar II of CAP to fund innovation and infrastructure necessary to use alternative feeds.
• Government was also seen as central in driving more utilization of food industry waste products, for instance pig swill, through both research and also by encouraging businesses to trial such systems.
• It was also suggested that DEFRA could help by assisting farmers in direct selling to consumers which brings better return to farmers, and providing support and advice on internet and social networking to help farmers with direct selling.
• Government had an immediate opportunity though its new draft food Government Buying Standards (GBS) for central government and in, for example, schools and hospitals, to influence consumer behaviour more widely and to reward companies and farmers who are making positive changes - i.e. using public funds to drive industry action and deliver meals that are more sustainable.
• Providing clearer advice and leadership to industry and consumers on healthy sustainable diets and ensuring that in the longer term, prices better reflect environmental costs.

The following summarises relevant Government progress in these areas including: research and development projects on for instance alternative feeds to soy; advice to farmers; use of waste; sustainable diets; food procurement; and other initiatives with business or institutions to identify options for change.

4.1. Research and Development – new projects

"Through their involvement in TSB funded activities, especially on sustainable protein supply, government is supporting developments in this area.” Academic survey respondent

The symposium delegates identified the need for more government backed research into best viable alternatives to soy, reducing use of inputs, disease resistant animals, the safe use of waste food as feed, and ensuring that practical advice is passed to farmers and feed compounders. The following details new and on-going work in relevant areas that the government is supporting.

4.1.1. ENBBIO LINK Project (2010 +)
The ENBBIO LINK project is a collaborative 3 year project which started in October 2010, and involves 25 industry and academic partners, sponsored by DEFRA through the Sustainable Livestock Production LINK programme. As this is a key project and started within the Friends of the Earth Campaign period, and continues to be supported by DEFRA it is included here.

The project description suggests it’s concerned with the “UK agriculture’s reliance on imported soya as the main protein source [which] has recently raised environmental concerns relating to land use change and, specifically, the release of carbon from cropping of high carbon stock soils.”
They are investigating Distillers Dried Grains with Solubles (DDGS) as these byproducts of the grain industry are considered possible sources of a quality co-product for the UK feed industry which can have a positive impact on energy and nutrient utilisation. The aim of the project is to quantify sources of variability in wheat DDGS - a co-product of the modern bioethanol and distilling industries - identify opportunities to enhance its value, to consider processes to reduce fibre content which would better suit non-ruminant diets, and to quantify the contribution of the co-products to the overall GHG balance of UK crop, livestock and ethanol production.

It is suggested that this would provide “a cost-effective alternative to imported proteins. DDGS can arise from a variety of sources including wheat (W-DDGS; bioethanol production) and barley (B-DDGS; fermentation / distillation industry).” And that this contributes to the “industry’s goal of reducing its reliance on imported feedstuffs including soya bean meal requires optimisation of all the processes involved in manufacture, to ensure that nutritive value is maximised.”

BPEX, a project partner, say “Reliance on imported soya as the main protein source in the pig industry has recently raised environmental concerns relating to land use change and, specifically, the release of carbon from cropping of high carbon stock soils.” .. “DDGS provides an opportunity to supply the UK feed industry with large quantities of a consistent and high quality co-product which could have a positive impact on energy and nutrient utilisation and, at the same time, reduce levels of imported proteins.”

The research is being carried out by ADAS, Nottingham University and Manchester University and four divisions of the AHDB are involved with the project: BPEX, HGCA, DairyCo and EBLEX. Partners include ADAS UK Ltd, University of Manchester, University of Nottingham, Scottish Agricultural College (SAC), Ensus, HGCA, Syngenta, Marks & Spencer PLCNEPIC (North East Processing Industries Cluster).

As this project has the stated aim of reducing soy imports it could have a significant positive impact. However, there are potential issues to consider such as the overall impact of UK bioethanol production on UK biodiversity and overall GHG emissions; the potential for these co-products to drive further intensification of livestock production and possible indirect land use change as it makes bioethanol production from grains more viable thereby driving UK wheat users overseas for wheat supplies. A detailed analysis is needed of the programme of work, the range of indicators chosen for analysis of benefits and the outputs.

4.1.2. DEFRA Projects
The DEFRA Livestock Team also have a small (£222k) “in house” Evidence Base programme budget which is used to provide ad hoc studies and reports to inform more evidence needs of policy makers such as statistical information on the competitiveness of the Upland sheep sector or the use of soya in animal feed etc.
ADAS is the main contractor. The English Farming and Food Partnerships (EFFP) have also been commissioned to do work on improving supply chain relationships; examples include the Pig Supply Chain project with the EFFP as DEFRA’s part contribution to the Pig Meat Supply Chain Task Force.

The following projects are listed in the wider DEFRA EVIDENCE PLAN 2011/12. In this plan DEFRA also includes a series of projects under AGRICULTURE AND CLIMATE CHANGE – such as “AC0210 Economic and environmental impacts of livestock production in the UK” - these are not listed below as they are mainly about UK GHG inventory, but may have some relevance.

**IF0199 Ruminant GIN: Genetic Improvement Network for Ruminant Livestock**
Modelling analyses together with selective breeding of animals with superior estimated breeding values (genetic values) and trialling to test their performance and environmental impact are being used to develop the next generation of genetic improvement tools. These tools are being developed to help reduce the environmental footprint of UK’s ruminant production systems, alongside experimental quantification of the impact that these breeding improvements could have on production efficiency, improved health, fertility and survival and environmental sustainability/GHG emissions. Whether this will help ensure overall sustainability and reduce reliance on unsustainably sources feeds is not yet apparent.

**IF0145 Understanding and dissecting the genetic control of key “environmental impact” traits in forage grasses and legumes**
As ensuring the viability and sustainability of pasture based systems were seen as a key goal at the Livestock Symposium, this project could be helpful. The project is concerned with delivering environmental sustainability traits to UK grasslands using the extensive genetic resources found in the UK grasses and clovers. It aims to produce new tools and improved germplasm which it is suggested “will make a significant contribution in three key areas: adaptations to climate change through improved grassland design to reduce soil compaction and overland flow that causes flooding and soil/nutrient run-off; increasing the carbon sequestration potential of grasslands; improving the stability and resilience of grasslands through the use of multi-species mixtures.” This is co-funded with industry to “ensure uptake of the research findings into the UK forage grasses and legume breeding programmes”. Improvements to grassland traits could assist with ensuring pasture systems have more viability but if the resulting grasses require considerable fertilizer input there could be increased environmental impacts via increased associated GHG emissions and leaching.

**IF0147- DEFRA Pulse Crop Genetic Improvement Network**
As identified in Friends of the Earths campaign and at the symposium, pulse crops are desirable as ‘break crops’ in cereal crop production, requiring no added nitrogen fertiliser, and are important home grown sources of plant-derived protein for food and animal feed as an alternative to imported soya. However they are not as profitable and reliable for farmers as the main arable crops. This project aims to build on
resources to provide tools and germplasm for traits (yield, disease resistance, quality and reduced lodging) that will make pea/bean production more attractive and viable for UK farmers. This has a direct application to the outcomes identified in the Symposium.

**LK0697-Environmental and Nutritional Benefits of Bioethanol Co-products (ENBBIO)**

Investigate livestock as a recycling route for protein-rich by-products from bioethanol production. See above.

There are also two recent now closed competitions for research tenders which may be relevant in providing data for on farm sustainability: Evidence base on sustainable livestock intensification through increased scales of production FFG 1102; and Feed management on livestock farms FFG 1101. These could however provide a basis for further accelerating the trend towards high input livestock systems. It is understood that the FFG1102 project has been cancelled.

### 4.1.3. Green Pig Project (2008-2012)

This project was initiated well before the March Symposium but DEFRA and others are promoting the study and the 2011 interim findings are relevant.

The aim of this project is to assess the potential for greater inclusion of home grown legumes (peas and beans) as an environmentally friendly alternative to soybean meal and to identify whether specific varieties have a closer match to the requirements of the UK pig feeding industry than others. One of the lead researchers suggest that “through Green Pig, dissemination plans of the outcomes are formulated to inform a wide range of ardencies, including farmers through road shows etc”. And that “DEFRA policy advisers are actively engaging with researchers and industrial partners of Green Pig on informing policy on soya alternatives with Green Pig outcomes”.

Some initial results are that although the alternative proteins work well, the cost relative to soya and consistency of supply are the biggest constraint of using peas/beans as an economic alternative to soya in grower/finisher diets. One survey respondent from the farm industry agreed that the interim Green Pig conclusions are positive; that substitution of homegrown proteins has had no detrimental effect on live weight gain and it is possible to substitute soy entirely for weaners and finishers. Amino acid balance and slurry disposal issues are not problems - only perceived problems. The key issues will be cost, dissemination and knowledge transfer. It was suggested that retailers have been absent from the project but that they are key to driving demand, for example by marketing ‘homegrown feeds’ in similar manner to ‘grass-fed’ particularly for the premium market eg Waitrose, M&S and Co-op.

The observation was made that this needs to be “dragged forward by consumers/retail end” (see later for retailer initiatives). A major concern is that feed compounders, growers, and pig farmers won’t adopt peas and beans until there is an economic argument to do so – they don’t grow peas and beans for the animal feed
market yet because there is “not enough margin and soya or rape by-products are cheaper”. Feed compounders are it seems taking up more rape meal (around 40% protein content) – but this is possibly not included in Green Pig trials. There may also be unintended consequences to UK farmland biodiversity if more oil seed rape is produced as a result.

Green Pig Research partners: SAC, University of Nottingham, NIAB, BOCM Pauls, BPEX, Evonik-Degussa, Genesis QA, Harbro, Premier Nutrition Products, PGRO, QMS, Soil Association and UNIP. Match funding is from DEFRA under the Sustainable Livestock Production LINK programme.

4.1.4. Sustainable Protein production Project (SPP) – Technology Strategy Board (TSB)

Research totaling £16 million was announced by the Technology Strategy Board for 29 projects in September 2011 to look into the domestic supply of protein for animals thereby decreasing our reliance on imports. This was a key theme of the Sustainable Livestock symposium. The Technology Strategy Board will invest a total of £7.9 million in the projects while DEFRA will provide funding totalling £5 million. The Biotechnology and Biological Sciences Research Council (BBSRC) will contribute £2.5 million to ten of the projects while the Scottish Government will provide support worth £500,000 to seven projects.

Amongst others they will be looking at triticale (as a substitute for wheat feed), the yield and protein content of peas and beans and optimization of protein from home-grown oil seed rape. One of the partners is ADAS. As are the following: AB Agri Ltd (2 projects), Agrovista UK Ltd, Barenbrug UK Ltd, Beef Improvement Grouping Ltd, Bernard Matthews Ltd, Birchgrove Eggs, Carbon Sequestration Ltd, Dalehead Foods Limited, Embedded Technology Solutions Ltd, Eminate Ltd, EWOS Ltd, Faire Ltd, Farm Energy & Control Services Ltd, Germinal Holdings, H.R. Fell & Sons Ltd, JSR Genetics (2 projects), Marine Harvest Scotland Ltd, Marks and Spencer plc, National Milk Records plc, Paragonvet Ltd, Pfizer Ltd, Phytoquest Ltd, St Helen's Farm, Velcourt Ltd, Wherry & Sons Ltd (2 projects) and Yara UK Ltd.

This research project stems from an initiative launched in 2009 – Sustainable Agriculture and Food – in which the TSB aims to bring the government, business and researchers together in a major initiative to stimulate the development of new technologies that will increase food productivity, while decreasing the environmental impact of the food and farming industries. The SPP project, which went out for competition to interested parties in February 2011 – is part of this process. A list of the 28 projects to be funded is now available but it is not yet clear how long the projects will last or the full scope of their work.

Of the 28 projects listed, 17 are directly concerned with feeds. These include: Alternative protein production technology for animal feed; Improving the sustainability and quality of DDGS, the high-protein animal feed co-product from
bioethanol production, by using triticale as a biofuel feedstock; and an integrated programme for the development of Lupins as a sustainable protein source for UK Agriculture and Aquaculture (LUKAA). The following describes one relevant project:

**Faba beans as an alternative to animal feed**

A simple low-cost bean, grown in the UK, could replace imported soya and fishmeal used as feed for salmon, pigs and poultry. With potentially major implications for the Scottish aquaculture and agriculture industries, as well as improved sustainability of farming in the UK, a project has been set up by a consortium of UK scientists and industry partners to investigate a range of benefits from faba beans.¹¹

The consortium has been awarded funding of almost £2.6 million by the Technology Strategy Board. Faba beans – a type of broad bean – have been cultivated for thousands of years and are now grown in temperate areas of the world, including many countries in Europe. Their botanical name is *Vicia faba* and they can also be sold as Windsor beans, broad beans, horse beans or field beans. The project will also investigate the development of new bean strains specifically targeted to salmon production that requires higher-protein levels and lower anti-nutritional compounds than products used for non-ruminant animal production.

The four-year project is led by EWOS Ltd based near Bathgate and involves five other industrial partners - BioMar Ltd, WN Lindsay, Limagrain, Marine Harvest (Scotland) Ltd and Harbro Ltd - and five academic partners, the Universities of Stirling, Aberdeen and St Andrews, the James Hutton Institute and the Scottish Agricultural College.

One retail industry survey respondent was very positive about the TSB programme, stating that “the TSB project structure works better for knowledge transfer than other research funding structures as: 1) All project bids need to have clear dissemination plans in place to benefit UK plc 2) TSB is particularly good at encouraging and facilitating collaboration - all the right institutes are involved and partners across the supply chain 3) Project funding is allocated for research that is innovative and stretching but at the same time can be commercialized”

**Conclusions**

Whilst some of the research above was commissioned prior to the coalition government taking office, there are considerable levels of new work which could provide some of the answers farmers need on feeds and feeding systems. The specific feed related TSB projects could provide some very real alternative domestic feed approaches for livestock and the multi-stakeholder nature of the research programmes could assist in ensuring the outcomes are practical and usable. There may be questions around the overall sustainability of the feeds produced, especially where co-products are being used for instance as biofuel/feed systems where the full UK biodiversity and GHG impact needs careful attention. It is not yet clear where
there is adequate research on soy feed alternatives for UK poultry but egg and broiler companies are involved in some of the TSB projects.

Grass based systems are included in the mix of projects but gaps in the research programme include use of processed food wastes, such as bakery and biscuits, in feeds and there is no work specifically on how to link supply and demand i.e in the long term how we can ensure more sustainable meat and dairy consumption i.e. behavioral research and how farmers and the supply chain can respond to the resulting changes in the market place.

### 4.2. Advice to farmers

One key theme of the March symposium was that of ensuring farmers had access to adequate advice and support in the transition to more sustainable livestock systems and that new research, for example on feed alternatives or breeds, needed to be translated into practical advice at farm level. There are also perceived rather than actual barriers to take up of alternative feeds, which can only be overcome through practical farmer to farmer demonstration and a well resourced advisory service. The following outlines changes to the farmer advisory services that have been implemented over the past year by Government.

#### 4.2.1. Future of the Farm Advisory System

In January 2010 the government commissioned an analysis of advice to farmers. The conclusions included that “measures relating to nutrient management appear to be well catered for within current advice provision, perhaps because of publicly funded advice services such as the England Catchment Sensitive Farming Delivery Initiative. Several areas appear to be less well covered, including livestock diet and health, measures relating to energy efficiency and carbon storage. There is also a low level of advice available to farmers on energy crops.” This would indicate that there is a significant gap to be filled by any new arrangements in terms of diets and wider environmental issues.

In the DEFRA May 2011 Business Plan they referred to work to “Conduct a pilot project to develop and trial methods for delivering integrated environmental advice for farmers (including on reducing greenhouse gas emissions; adapting to climate change; improving air, soil and water quality; biodiversity; farming competitiveness; performance and resilience; and Environmental Stewardship)”.

DEFRA undertook a competitive tender exercise for a new contract to provide a new farm advisory service in 2011. A winning bid was identified and a contract to provide a new “Farming Advice Service” (FAS) was negotiated and awarded. The new service, launched from 1 January 2012, will initially incorporate complementary advice themes alongside cross compliance, including nutrient management, climate change adaption and mitigation, and competitiveness. The service will be delivered in active partnership with industry and stakeholders. DEFRA anticipate further advice themes being added to the new service.
• Cross compliance
• Nutrient management
• Competitiveness, and
• Climate change adaptation and mitigation

There is a new website at: www.DEFRA.gov.uk/farming-advice. It is not clear how far this will cover the subjects covered under this review relating to sustainable livestock. For example, it is important that the Farming Advice Service covers nutrient management beyond the relatively narrow scope of the Water Framework Directive, to include balancing nutrients on farm and addressing nutrient imports, such as through feeds. One NGO survey respondent indicated that advisory bodies were increasingly focused on productivity, carbon, energy and to some extent water and introducing UK biodiversity issues was becoming a real problem. Global biodiversity is very low down the list of issues to talk to livestock farmers about. One retail survey respondent however noted that it was “Positive news about establishment of one stop shop for Farm Advice Service by DEFRA.”

4.2.2. Skills

Regarding whether the farm and feed industry were adequately skilled to apply new approaches needed - such as new feeding regimes and new breeds - the previous administration’s DEFRA’s Skills for Farming Project, developed with the farming industry, produced a strategy and action plan in early 2010 to improve skills development in the farming industry. In April 2011 a review of progress was published.\(^{15}\) This indicates that whilst environmental sustainability is not a focus some projects, such as on technology transfer to refer to “environmental impact and animal performance” and given the increasing carbon indicators required in the livestock industry that this will be covered in the skills programmes being introduced.

It has not been possible to identify whether any specific outcomes from this relevant to developing sustainable livestock systems have been achieved such as farmers gaining more training for example in using new feeds.

4.2.3. FWAG

It is worth noting the recent crisis in the Farm and Wildlife Advisory Group, which has been advising farmers on issues related to sustainable conservation farming for 42 years. FWAG went into administration in November 2011 and a statement said “The current economic climate combined with the Government spending cuts has negatively affected the organisation’s performance to the extent an Administration process was required.”\(^ {16}\) Whilst the FWAG focus was mainly on conservation it could have played a role in advising farmers on relevant issues such as sustainable crop rotations, conservation extensive pastures and sustainable use of new legume crops.

Conclusion

During the past year a review of advisory services was completed and a new ‘one stop shop’ was launched– it was not possible to identify if this will deliver positive
outcomes regarding sustainable livestock and feeds and the scope of its work is likely to evolve. There is a clear need for greater dissemination of research findings to farmers and following that up with specific advice to farmers. Will the new advisory system be able to pass on information about how UK proteins can be used, in terms of economic benefits as well as suitability for the animals, in place of soy? And will advice on growing these on farms be available? The government needs to make a clear commitment to this in the work programme of the new service.

Some NGO respondents are concerned that emphasis will be on ensuring advice on efficiency of carbon and energy and that UK and global biodiversity issues are likely to be neglected.

### 4.3. Local Food initiatives

Whilst this is not specific to livestock, the issue of local food and promotion of local products to consumers was brought up at the symposium as “Funding to help farmers to sell direct to customers” was considered useful in promoting sustainable livestock objectives. There have been developments worth noting in 2011. One survey respondent noted that the Local Enterprise Partnerships that replaced the old Regional Development Agencies have not yet taken any interest in food. A few of the regional food groups that were set up after Foot and Mouth Disease are still active, but all are struggling in terms of money and other resources. Most have diminished to a brand or smaller promotional activity.

Sustain noted that it is still not clear how UK and European funds that previously supported a lot of regional work on food (e.g. Life+, Leader+ and others) are being administered, or whether these are still reaching food enterprises. With the reduction in agencies and DEFRA related advisory bodies, a lot of the knowledge, contacts and structures disappeared. Sustain’s recent research on local food enterprises demonstrates that European money, particularly for capital investment at an early stage of local food enterprise development, has been a critical factor in the success of many enterprises. There was a large influx of money about five years ago from the Big Lottery, via the Making Local Food Work (£10m) and Local Food Fund (£50m) programmes, but these will end in spring 2012.¹⁷

### Conclusion

Local food projects - which could help smaller and sustainable meat and livestock producers market more directly to supportive customers and procurers - are either closed or closing over the current period and local food groups are struggling as funding streams disappear. It is not clear how government plans to fill these gaps. There is little impetus for organisations now to get involved, as using local and sustainably produced food has not been mandated. There does not appear to be further DEFRA support planned in terms of structured support programmes or money to enable support groups to do the work.
4.4. Waste food
There are three areas where waste is relevant to sustainable livestock future: using processed food waste as food instead of other proteins; addressing the waste of meat and dairy at the domestic level; and the controversial issue of using waste animal protein (processed animal protein or PAP) as animal feed which was banned after the Bovine Spongiform Encephalopathy (BSE) crisis in the 1990s. At the March symposium one of the main opportunities suggested for reducing soy imports was in investigating the potential for waste products to be better utilised in animal feeds. Stakeholders also identified the need to tackle waste of meat through greater whole carcass utilisation.

4.4.1. Food wastes as feed
There is considerable interest in the public interest sector and some of the farm sector to increase the use of processed food waste as feed.\textsuperscript{18} WRAP estimates that 2.2 million tonnes of by-product are already sent to animal feed from the manufacturing stage of the chain.\textsuperscript{19} But far more could be diverted to feed. It was not possible to find any specific new government initiatives or policy on diverting food waste to feed (see later for the Feeding the 5000 initiative).

It is interesting to note that we export food for use as animal feed. The UK exported £2.8 million in compound preparations and food waste for animal feed per year (2008 to 2010).\textsuperscript{20}

4.4.2. Domestic and retail waste of meat and dairy
Recent WRAP research highlights the extent to which fresh meat is wasted or lost in the UK food supply chain.\textsuperscript{21} Households are wasting around 570,000 tonnes of fresh meat each year, of which 260,000 (46%) is avoidable. This was Legacy research commissioned by the previous government and it is not clear how far the detailed recommendations have been taken up by industry or government.\textsuperscript{22}

4.4.3. Processed animal protein
The European Commission have presented a draft proposal to allow the feeding of all processed animal protein derived from non-ruminants, to non-ruminants of a different species subject to tight channelling and testing controls. Currently this is not allowed which cuts off one possible route for reducing the need for soy protein in pig and poultry feeds. Discussion with Member States is on-going. If the regulations do change to encourage both the greater use of residual material and the feeding of rendered protein to livestock (avoiding intra-species recycling), then there may be some potential benefits to industry. Regarding processed animal protein (PAP) rules, it was not possible to determine DEFRA position on this at the time of writing though its evidence plan does refer to research relevant to the Animal By Products Regulation and use of animal byproducts.\textsuperscript{23} As the Food Standards Agency is the ‘central competent authority’ for animal feed in the UK, and negotiates on the UK’s behalf on legislative proposals made by the European Commission in Brussels its
position is probably key. At its September 2011 open meeting, the FSA Board discussed a European Union proposal that the ban on processed animal protein being fed to non-ruminants should be relaxed. The FSA is advising the government not to allow any relaxation of the feeding of animal proteins for livestock.\textsuperscript{24}

**Conclusion**

Despite considerable scope for taking rapid action to promote processed food waste as a safe alternative to soy especially as landfill costs are due to rise, there is little government progress on promoting or facilitating the use of food waste as feed. None of the new research projects apparently investigate this option. Nor are there outcomes on the controversial processed animal protein as feed issue. Some attention has been paid in the last year to general domestic food waste which would include meat and dairy and the new WRAP research on food waste, sponsored by DEFRA, is useful in highlighting the considerable amount of meat and dairy produce wasted.

### 4.5. Consumers and their Diets

The importance of helping consumers to understand the benefits of a lower impact diet was noted at the Symposium. This could include information on the environmental benefits of changing meat and dairy consumption. One suggestion was that we “Need better definition of a sustainable diet because it’s not there for land based production in same way as for fish. One potential could be a ‘grass fed’ label.” It was felt that government had a clear role in influencing consumer behavior in terms of clearer advice and leadership and ensuring that in the longer term price should better reflect environmental costs.

#### 4.5.1. DirectGov Consumer advice

The main DirectGov advice pages on greener food fail to mention meat and dairy - which would have fitted well in the ‘Choose climate friendly food section’.\textsuperscript{25} Given that the main source of greenhouse gas emissions in our food purchasing comes via meat and dairy consumption this is a significant omission which could confuse many website viewers. One section does encourage consumers to buy directly – a recommendation of the March Symposium - for example at a farmers’ market, as it “means you can ask producers how their food is produced. Try looking for food: from farmers who give high priority to looking after wildlife on their farm •produced in a way which helps conserve rural landscapes, like upland sheep or cattle grazing”.

There are a few messages about the impact of meat consumption as follows. But overall there is little marketing or any significant initiative to reach different types of consumers with a message about more sustainable livestock consumption approach.

#### 4.5.2. Understanding food behaviors

This project on food behaviors looked at evidence on consumer attitudes towards sustainable food alongside evidence on consumer purchasing patterns. Though initiated by the previous government, the results were publicised in 2011 by the
current government. Using new data on attitudes and behaviours from a single source, this project aimed to draw comparisons between the two, investigating how attitudes translate into behaviours. The main livestock reference in this work was to animal welfare and the conclusions were not hugely surprising. The animal welfare segmentation of consumers – 6 segments including full supporters, budget and indifferent purchasers - was cross-linked with the DEFRA pro-environmental segmentation.

Those who were classed as cautious followers and indifferent shoppers in terms of animal welfare tend to be detached in terms of the DEFRA pro-environmental segmentation i.e. they were likely to make neither welfare or greener food choices. This would indicate a need to better inform shoppers about the wider benefits of livestock systems which are better for animals as well as the environment. This could be considered a complex task requiring joint commitment by industry and government.

4.5.3. Eat Seasonably

This project funded by DEFRA, Esmee Fairbairn Foundation and Kingfisher, is “about inspiring and enabling people to eat more seasonal fruit and vegetables and helping them to grow their own”. The Eat Seasonably website contains the following text including reference to cutting down on meat:

“Eating seasonably is also a great first step towards thinking about the wider environmental implications of your diet. In fact, there are many ways to decrease the impact of what you and your family eat. Some links to things you can do today:

- Support environmentally friendly farming by buying organic produce – Soil Association
- Cut down your meat intake: livestock farming is one of the most significant causes of climate change – Compassion in World Farming
- Choose fish from sustainable sources – Marine Stewardship Council “

4.5.4. Green Food Project

Stemming from a commitment in the Natural Environment White Paper, published in June 2011, a new Green Food project brings together government, the farming and food industries and environmental and consumer groups. DEFRA minister Jim Paice chairs the project panel.

It is considering “how we can increase food production and enhance the environment” (more information is in the Natural Environment White Paper) ..to work through these perceived conflicts and help us develop policies not just for the next year or two but to take us to 2050. It is creating the future framework for farming and food. The balance between productivity and environment in the work programme is not yet clear, as there are few details publicly available. This project is “driven forward in partnership”, and the Steering Group includes senior representatives from farming
and food sectors, the service industry and the environmental sector. The project will look at how we can:

- improve growth & competitiveness in the farming and food industry
- increase food production in the UK, and consider our role in global food security
- protect and enhance our natural environment

Details of the dairy subgroup terms of work were provided by DEFRA. It is welcome that the dairy subgroup is considering one of the key environmental issues for English dairy farming to be “4. Biodiversity loss and Greenhouse gas emissions arising from forest and savannah conversion driven by the use of soy and palm derived feedstuffs from the tropics and South America.”

The questions this subgroup is aiming to look at does include questions around consumer behaviors. But it is unclear to what extent consumer action is being considered a realistic variable in the scenarios being investigated for the future economic and environmental viability of the sector. If as it appears, ensuring increased production is the overriding theme, the reducing consumption is unlikely to be considered. It is also unclear so far if there will be any public dissemination of the findings.

In the Ministers have committed to publishing initial conclusions from this work by July 2012 (was originally June).

There is significant confusion amongst the NGOs directly involved about what this is for and what the output will be. DEFRA has confirmed that the Task force has 12/13 members including NGOs and an academic. More detail is in Table 1 below.

### 4.5.5. Food Standards Agency

The most recent issue of the FSA’s ‘Bite’ public magazine is focused on animal feeds. This 28 page edition covers feed production worldwide, the biodiversity impacts and controversial topics such as GM material in feeds, ‘keeping dioxins off the menu’, and the possible relaxation of the European feed ban to allow the feeding of non-ruminant processed animal protein (PAP) to non-ruminants – a practice banned after the BSE crisis in 1996.

The Food Standards Agency is the ‘central competent authority’ for animal feed in the UK, and negotiates on the UK’s behalf on legislative proposals made by the European Commission. The FSA has done work to assess the public’s likely attitude towards a change in the current ban on using processed animal protein (PAP) in feed. Focus group work indicated a clear public reluctance to change the current status quo. The majority of people taking part in research commissioned by the Food Standards Agency were against European Commission proposals to relax a ban on using processed animal protein in livestock feed for chicken and pigs. It is not clear how those taking part had wider environmental issues explained to them – the summary report stated that “Groups felt that the possible economic and environmental benefits were the most important – there would be less wastage of
meat by-products and a reduction in carbon emissions from importing soya, currently used as an alternative to PAP. However, these reasons were not considered compelling or urgent enough to change a system that was not broken and to introduce a level of risk into the food chain. The overall conclusion of those surveyed was that BSE had been reduced to such low levels as a result of the various feed bans that relaxing them now seemed like a backwards step."

A transcript of a special FSA Board meeting on the TSE ban proposals provides insight into the advice given to UK ministers regarding and relaxation of the ban – which is to oppose it. This government is likely to agree with the FSA thereby reducing one option for reducing reliance on imported proteins.

Conclusion

Given the severe cuts to DEFRA’s promotional budgets, there is little evidence that any greener food marketing and promotion is being carried out or planned. None of the above initiatives are likely to encourage consumers to eat more sustainably by consuming less and higher standard meat and dairy. It appears that over the past two years the work by the previous government on diets and sustainability (resulting from the Cabinet Office Food Matters report and FSA initiatives) has been dropped. This is despite considerable advice by government experts that this is an area needing attention.

The Government’s own Climate Change Committee suggested in 2011 in its 4th Carbon budget that it should consider policy options around encouraging sustainable diets but it will be more than a year since that recommendation was made and there is no evidence that the government is acting on this advice. In addition, the Government’s Chief Scientific Advisor sir John Beddington lead the team producing the major Foresight report on the Future of Food and Farming.30 This report noted that “there is little dispute about the importance of a balanced diet and the role of a moderate intake of livestock products, communicating this to the consumer should be a priority for public health” (page 103). This report also concluded that “policy makers should recognise that more proactive measures affecting the demand and production of meat may be needed in the future” and that “triggers for more proactive action to curb the consumption of meat may already be present.”

So even if during this timescale we wouldn’t have expected to see new policies to curb meat consumption it would have been reasonable to expect some activity, new research, debates and consultation on this important issue. It should at the very least be a specific strand of work under the Green Food initiative and there should be an explicit goal of providing advice and information on diets and waste to consumers.

One retail survey comment was that “it seems that no one department in Government is owning this combined agenda. Our view is this has gone backwards over last few years. At one point (Cabinet Office report on Future of Food) the
agendas were joined up however now they are not. A healthy and sustainable diet has yet to be properly defined, we need to be challenging and revisit the science rather than basing predictions on what we believe is right now. .. but we believe there needs to be joint activity by Dept of Health and DEFRA to input into the debate and find an approach that is right for the UK."

Another retailer noted that there was a real void now in terms of diets - they were “hoping for government advice as it would help us as its really complicated.. especially with the issue of unintended consequences such as on diets and iron deficiency if less meat is eaten”.

Another NGO survey respondent suggested that DEFRA has not provided clear advice on sustainable diets and that the Change4Life renewed initiatives around healthy eating can be criticized as supporting the agenda of the food corporations. The corporations now partnering the government on Change4Life include Mars, Pepsico and Cadburys all of which produce high sugar, fat and salt products. The conflict is illustrated by the recent analysis of the new Change4Life voucher scheme administered by UK retailers to encourage healthier choices. Their analysis exposed that £50 Change4Life vouchers require a spend of £275.08 and in one case it was cheaper to buy a healthier equivalent product without the corresponding retailer Change 4 life discount voucher.

There also appears to be a continued reluctance to combine healthy eating guidance with advice on sustainable diets, and the new Responsibility deal with business delivering healthy eating guidance has no reference to environmental issues.

One way in which consumers could gain more information on sustainable diets is via public canteens and where the standards used for governments’ own food procurement affects consumer choice. This is covered in the next section.

### 4.6. Public food procurement

The Sustainable Livestock Symposium identified the potential for food procurement by public bodies (government, schools, hospitals etc) to help drive a sustainable livestock agenda: Farmers need a reason to change their behaviors around feeds and other methods and if food procurers are able to actively seek livestock products produced with low impacts, this could be a driver for farmers to change practices. Public procurement standards could reward companies/ and farmers who are making positive changes; and there is potential for standards in public procurement to influence consumer behaviour more widely through information linked to menus for instance. It was suggested that standards for Government departments (Government Buying Standards) should be mandatory across the whole public sector, and that industry and civil society groups need to collaborate over standards.

The new food procurement standards for central government were launched in 2011 (see Policy chapter below for analysis). There is no evidence that the new
Government Buying Standards will address any of the crucial issues identified in the Sustainable Livestock Symposium. They are mandatory, one recommendation of the symposium, but they apply only to central government, not schools, care homes or hospitals. Consumers eating the meals produced using these new standards are unlikely to be affected with respect to meat and dairy consumption. Caroline Spelman MP, Secretary of State for Environment, Food and Rural Affairs when launching the new standards in July 2011 suggested they will help “mainstream sustainability, strengthen the Government’s performance in this area and put processes in place to join-up activity across government much more effectively.”

However, standards were seen by one NGO as a “significant missed opportunity for government to take serious action on reducing the GHGs associated with livestock production.” Another NGO survey respondent states that the “Government Buying Standards…are largely limited to buy British type messages, not about sustainability. They are again a step back on previous initiatives.”

There are no elements within the standards about food ingredients or livestock products that would have a significant benefit. There is a positive element in terms of purchase of more sustainable fish (a biodiversity issue) and there is an encouragement to use LEAF or Organic-certified produce but it is very small, at only 5% of food procured.

It is felt that the aim was to bring all departments “up to the average already achieved” rather than seeking to use Central Government’s catering to demonstrate what can be achieved by meeting higher standards. There is no reference to changing or reducing soya fed meat or dairy ingredient use overall. (see Policy chapter below for analysis).

DEFRA is about to commission some research to look at the uptake and applicability of Government Buying Standards by schools and hospitals. A Pilot carbon assessment tool for procurement is relevant although it was commissioned well before this government came into power.

PAS 2050 INFORMING LOW CARBON PROCUREMENT: PILOT STUDY – FOOD

This study was initiated before the present administration but gave its final report in September 2010. This aimed to test how the PAS 2050 Carbon footprinting standard could be applied to products and services to inform sustainable procurement in the public sector, using a sample of food products. The five pilot food products were selected according to quantities purchased by the NHS, availability of carbon lifecycle data, and the type of product. The foods chosen were: potatoes, chicken meat, apples, milk and a beef cottage pie.

This identified that feed was the largest contributor to emissions in chicken meat in catering and identified that as an ‘hotspot’ requiring action “A diet containing 30% soya meal, compared to the 20% in our example, would result in the chicken meat...
producers having 6% higher emissions associated with its production – a total of 3.09 kg CO2e per kg meat)."

For milk, the feeds and methane from enteric fermentation were the hotspots and for beef the methane from enteric fermentation and fertiliser use on grass (the researchers assumed grassfed beef was used which is not always the case in cottage pies).

The ideas and recommendations from this DEFRA funded study to address these ‘hotspots’ in catering do not seem to have been taken up in the new Government Buying Standards for food.

One commentator noted “There is no coherent approach to public sector food buying, increasing fragmentation, and a government philosophy of local and fragmented decision-making that will lead to spiralling costs. For example, Food for Life has been an exceptional programme to raise school food standards, and yet it is not being adopted as the norm for school food provision or funded by central government to continue to provide the valuable support services that make it succeed.”

The NFU has also expressed concerns noting that “as a result of the Government Buying Standards falling well short of an overall aim of ‘ensuring that where Government lays down standards of production, its own purchases should meet these standards’ due to a myopic focus on ensuring that there is no overall increase in costs lobbying continues. The NFU has met with Andrew George MP and a number of stakeholders to discuss ways in which the coalition government can leverage the public sector into buying more British food and following meetings with DEFRA it has been agreed that the NFU can advise on the rewriting of the guidance notes. It is hoped that this will have a positive effect.”

Finally it is worth noting that the Conservative Party Food Procurement Taskforce set up before the last election made detailed recommendations for food procurement. 37 In April 2010, the taskforce recommended that:

• the Government should introduce mandatory health, environmental and ethical standards for all public sector food;

• the Government should create a ‘Code for Sustainable Food’, setting out what food standards should be introduced and how they should be implemented and improved over time. One of the recommended criteria for awarding points under a new sustainable food code was “Steps are taken to reduce the portion sizes of meat to encourage responsible eating habits (with a positive emphasis on grass-fed and farm-assured meat).” 38

The report also included some examples of good practice including Nottingham University Hospitals NHS Trust, which now sources 30% of all food from local producers. The Trust has saved £20,000 per year through buying locally procured
fruit and vegetables. The cost per portion of meat was also reduced by purchasing better quality meat, which gave a higher yield and has a lower wastage factor than cheaper meat.

Despite the positive recommendations, few of the Taskforce recommendations have been taken up.

**Conclusion**

The opportunity of using public food procurement to drive a more sustainable livestock sector has been significantly missed. The government has ignored the explicit recommendations of its own Task Force. Even the aim of supporting UK produce is not necessarily going to be achieved as procurers will still have to choose the lowest cost option to fulfil the “where this does not increase overall costs” principle. Yet it does not make sense when the benefits are obvious and when voluntary initiatives - such as the Food For Life programme - are showing clear evidence of the health, social and environmental benefits when menus, such as in schools, are improved.

**4.7. Reform of the Common Agricultural Policy**

The Symposium identified the current reform of the Common Agricultural Policy (CAP) as a key opportunity to implement policy measures that support farmers in moving away from soy animal feed and encouraging production of home grown protein alternatives. CAP spending and policy instruments could help maintain, and incentivise farmers to shift to, lower impact livestock rearing methods such as hill farming and mixed farming systems.

Despite clear occasions in the political process to extend political support for moves to reduce Europe’s dependence on imported soy and opportunities to make specific recommendations in the draft legal text on CAP reform to achieve this, the UK Government has so far done neither.

**4.7.1. Political support for a Protein Plan**

The CAP reform process began in November 2010 with a formal communication from the European Commission (EC) outlining the broad goals of the CAP reform, which recognized the challenge for the EU to ‘encourage the synergies between crop and livestock farming, e.g. in proteins’. At the same time the Commission also launched a formal consultation to receive input from stakeholders on their initial proposals for CAP. The UK Government formally responded to the EC consultation3940 - a significant opportunity to signal to the EC their support for an action plan on proteins. Yet the UK response makes no reference at all to the role of the CAP in reducing soy dependence or supporting a sustainable livestock sector. The UK response overall is negative about ‘greening’ CAP payments and does not consider any specific agenda to address livestock farming stating, “the UK is
concerned that other proposals - such as capping payments and greening Pillar 1 – would be counterproductive to EU aims to develop a competitive agriculture sector...“

In June 2011 the European Parliament (EP) formally responded to the EC proposal with strong support for addressing the protein issue, “[the EP] Notes with concern that EU dependence on imported animal feed, particularly soy, has contributed to the growing demand for land abroad, leading to deforestation, the displacement of communities and an expansion of genetically modified soy in South America; accordingly, calls on the Commission to make the reduction of dependency of imported protein feed, i.e. through development and expansion of sustainable protein crops in the EU, one of its main priority” The EP also called for support for proteins in arable crop rotations to help farmers move away from soy feeds and support for grassland systems. Despite the political statements from both other EU institutions on proteins, the UK has not supported these in debates at the EU Council or in public or media statements.

4.7.2. INCENTIVES FOR HOME-GROWN FEEDS

4.7.2.1. GREENING PILLAR ONE

The EC released draft legislative text on CAP reform in October 2011. The text contains certain measures that if implemented robustly, in line with recommendations from Civil Society and the EC’s own research could improve EU supply of proteins and alternatives to soy, while at the same time providing significant other environmental and economic benefits to farmers. One such measure is the proposal to green Pillar 1 payments of the CAP. 30% of Pillar 1 payments would be conditional on farmers implementing three mandatory measures: i) areas of ecological significance ii) protecting grasslands iii) diversifying monocultures through crop diversification. Of these, strengthening the crop diversification to a robust crop rotation measure (with at least three crops, including a leguminous crop) and a well devised grassland preservation measure that differentiates between extensively and intensively managed grasslands could play a key role in moving UK farmers away from soy.

Instead of supporting the aims of greening, recognizing their benefits for soy and livestock, and engaging fully in designing the detail to achieve the most benefits, the UK Government has been vocal about its lack of support for the current greening measures. The way the Government has positioned itself on greening in Council negotiations as well as publically has been detrimental to achieving improvements for soy and livestock. Arguments against greening that have been stated are: that it would impact competitiveness of UK agriculture; add too much bureaucracy relative to the amount of environmental benefits; that greening should be delivered through Pillar 2.

Yet there is significant evidence that crop rotations can make farmers more competitive environmentally and economically. There is also a strong imperative for
action to reduce the environmental impacts of UK farming, without which there is a risk of damaging the resource base on which farming depends, making it unviable in the long term. 47 48 49

Demanding greening through Pillar 2 ignores the fact that many of the outcomes of greening would not be delivered under current agri-environment schemes and that Pillar 2 schemes are voluntary and backed by less than a quarter of the CAP budget. 50

The UK Government has also repeatedly called for British farmers’ contributions through agri-environment schemes to count towards “greening”. 51 While agri-environment schemes are welcome, there are no schemes in agri-environment that address sustainability of the livestock sector or its dependence on soy imports or that are similar in nature to the crop-rotation requirement and therefore cannot be seen as a substitute. By calling for this the UK is undermining the ability of greening to deliver for sustainability of livestock.

The vast majority of the UK CAP budget, about 4 billion pounds a year, is spent through Pillar 1 and there is urgent need to improve its environmental delivery. While the current greening measures proposed are too weak, there is scope to improve all the measures. Therefore instead of dismissing greening for its failure to deliver the Government could provide political and technical support for stronger greening.

4.7.2.2. COUPLED SUPPORT FOR PROTEIN CROPS

The draft legislative proposals allow coupled support for certain crops on environmental grounds. There is evidence that coupled support can benefit certain sectors such as upland livestock farming and proteins. The EFRA Committee as well as Commission for Rural Communities Uplands review have recommended better targeting of support for farming in the uplands. 52 53 The EU, and in particular the UK, have been very successful at increasing protein production in the past which was achieved through coupled payments for protein crops. 54

However, the UK Government has consistently opposed any specific coupled payments. 55 56

4.7.3. REDISTRIBUTING AND TARGETTING CAP PAYMENTS

In the UK, more than 90% of CAP direct payments go to less than 10% of the largest, mostly arable farms with little environmental conditionality. Many of these farms benefit from economies of scale, and have benefited from high prices for cereals in the last few years. Little CAP money is directed towards sustainable livestock farms that are delivering public goods such as using home-grown feed stocks. These farms are struggling to survive and not rewarded by the market for their social and environmental benefits. 57
The draft CAP text proposes capping payments to very large farms and channeling this money into Pillar 2. Capping could mitigate some of the unfair distribution of CAP payments, channel payments to public goods and form an important source of income for environmental innovation in Pillar 2. The UK Government is opposed to capping payments on the grounds that it would discriminate against ‘competitive’ farms. Yet there is little evidence that large high output farms are delivering public goods.

There are also other measures proposed that could target payments to livestock farms providing social and environmental benefits such as a payment for areas of natural constraints and payments for small farmers which could be supported by the Government.

4.7.4. PROMOTING EXPORT COMPETITIVENESS OVER FEED SELF-SUFFICIENCY AND THE ENVIRONMENT

The UK Government has repeatedly pitted competitiveness and the need to produce and export more livestock products against their environment sustainability in CAP discussions. This is a key argument for retaining subsidies for large farms, encouraging consolidation and reducing farm operating costs as a strategy for farms to survive. However, the UK is far from self-sufficient in livestock as our production is based on a high dependency on feed imports. A focus on export lead growth for the livestock industry without addressing feed imports means the UK is responsible for a land grab of several million hectares in South America. Consolidation and intensification of livestock production in order to remain competitive on world markets pushes farmers to source the lowest cost feed and externalize environmental costs associated with imports of soy feed such as nitrogen pollution, deforestation abroad and greenhouse gas emissions.

This strategy for the livestock sector does not respect international recognition that it is not the role of the UK to feed the world but rather to support and allow other countries to feed themselves. It also ignores the resolution of the European Parliament on an EU policy framework to assist developing countries in addressing food security challenges which recommended, “support [for] protein crops in the EU so as to give the Union greater autonomy, thus contributing to the diversification of agriculture in the developing countries.”

4.7.5. LACK OF ADEQUATE DEFENCE OF CROSS COMPLIANCE

UK farmers’ receipt of CAP direct payments are conditional on farmers complying with cross compliance, a set of statutory management requirements (SMR) based on existing EU legislation and guidelines for keeping land in good agricultural condition (GEAC). Current cross compliance has serious shortcomings and has failed to drive better environmental performance from farming. Failures include ineffective monitoring and enforcement, an inadequate scope that doesn’t cover some of the main environmental impacts from farming and weak control and sanction systems.
However, if it is strengthened cross compliance combined with greening and more in-depth Pillar 2 measures could raise the baseline environmental performance of farming.

One of the key issues with regard to livestock is nitrogen pollution, which imposes costs to society of about €70–€320 billion per year. One of the main sources of nitrogen pollution are livestock units where the driver of nitrogen overload is soy feed imports which effectively import large amounts of nitrogen which is fed to animals and then released into soils and water as manure. Incorporating nitrogen management measures in cross compliance such as proper implementation of the Nitrogen and Water Framework Directives and encouraging integrated crop and livestock systems could tackle this.

However, the Government has focused on simplifying and scaling back cross compliance rather than providing a vision for its role in tackling pollution from livestock and moving to livestock units that can recycle nitrogen on farm. Proposals from the Government include reducing monitoring, keeping weak sanctions and reducing the scope of cross compliance.

4.7.6. A STRONG PILLAR 2

The Government has played a positive role in recognizing the importance of Pillar 2 and keeping an adequate Pillar 2 budget. Measures in Pillar 2 lend themselves to more in depth work with farms to improve their environmental performance. Therefore with the right measures Pillar 2 can encourage best practice for livestock systems, provide financial incentives to farms to grow their own feed as well as provide advisory services for farmers.

CONCLUSION

So far, despite several opportunities to reform the CAP in line with the need to reduce soy imports, and encourage home grown feeds and extensive farming systems, the Government has failed to grasp them, with the exception of support for Pillar 2. There is still a significant opportunity for the UK to use its negotiating position in CAP to promote sustainable livestock. The UK is in discussion with several other EU countries on specific proposals such as greening. It is also vocal in Council debates on CAP and forging relationships with the European Parliament and UK MEPs. It should use these mechanisms to:

- Push for genuine greening that includes crop rotations with legumes
- Support the targeting of payments to increase production of protein crops based on environmental considerations
- Publish a coherent vision for the various instruments in CAP reform that can shift the UK towards less soy imports and sustainable livestock
- Investigate better measures to balance nitrogen and manure management on farm through Pillar 1 and 2
• Support capping of payments with a plan of how to channel money generated to upland and extensive livestock
• Promote targeted payments to smaller and High Nature Value farms
• Develop a comprehensive strategy for the future of the livestock sector that focuses on high quality production for local markets based on local feeds
• Support proper implementation of cross compliance without allowing simplification to become a smokescreen for weaker environmental outcomes

4.8. Conferences, events, Initiatives
The following summarise other relevant initiatives, presentations and activities the English Government has been involved in.

• DEFRA supported a two-day discussion meeting ‘Reducing greenhouse gas emissions from agriculture: meeting the challenges of food security and climate change’ which sought to identify the issues and potential solutions to the need for the UK agriculture sector to reduce greenhouse gas emissions to contribute to national and global reduction targets. This does include reference to relevant livestock strategies including “At the UK level, therefore, greenhouse gas emissions from livestock could be partially offset by expansion of permanent pasture, by conversion of arable land to grassland and through improved management of livestock on hill and upland areas.” But there was no clear discussion on overseas GHG and other impacts. 67
• DEFRA also recently announced an Innovation summit in March 2012 to raise awareness of the resources available to food and farming businesses to help them innovate. 68 No further details were available at time of writing.
• At The 2012 Oxford Farming Conference (OFC) the DEFRA Secretary of State Caroline Spelman suggested she had “worked with my G20 colleagues to push for a more predictable world for food producers and consumers, in both developed and developing countries. The result was a new Global Action Plan for Agriculture, to provide greater transparency on harvests and stocks, helping tackle price volatility”. 69 However, this action plan is weak. Civil Society Organisations made specific recommendations on tackling meat production and consumption in the Committee on Food Security (supported by the UN high level panel report on food price volatility) but the G20 agenda ignores this.
• The UK is a key contributor to the Global Research Alliance on Agricultural Greenhouse Gases; DEFRA is spending over £12 million to refine how agriculture measures its greenhouse gas emissions, so that effects of mitigation can be measured. It is not clear whether this will cover issues identified in the Symposium.
• Caroline Spelman also indicated at the OFC that they are giving full support to the industry-led Greenhouse Gas Action Plan, which promotes resource-efficient farming and land management.
• DEFRA is involved in the new Products Research Forum and is on steering group. This Forum has been set up to allow the environmental impacts of
products to be measured, analysed and reduced in a non competitive collaborative structure: “a cohesive framework that allows a range of product-related environmental impacts to be quantified, reduced and communicated”. It is coordinated by WRAP and has a wide industry stakeholder membership. It is not yet clear how this will include meat and dairy products but it does refer to 240 food products as part of the work programme. As it will be looking at “environmental impact “hotspots” for each product category or group” it would be surprising if meat and dairy were not included.\textsuperscript{72}

Other initiatives are covered elsewhere in this report.

\textit{Conclusion}

Whilst there is considerable effort by Government to promote the greenhouse gas mitigation and adaptation initiatives they are sponsoring, there have been no major new initiatives specific to the Sustainable Livestock symposium themes. The Oxford Farming conference speeches by DEFRA ministers indicated a continued prioritization given to increase productivity, competitiveness and reduce red tape. The other initiatives mentioned will do little to address the issues raised in the symposium, but instead continue to promote business as usual.

5. Findings: Policy developments since symposium

This chapter covers key policy areas relevant to the ideas presented at the Sustainable Livestock Symposium. If the government was serious about the “common goal to make sure the industry is sustainable” as noted by Farm Minister Jim Paice, then there should have been some policy developments in the past year to reflect that commitment.

It is worth reproducing here one food industry respondent’s comment on policy: “Our aspiration regarding overseas environmental impact extends well beyond carbon to water, biodiversity, eco-systems etc, and we know that we need increasingly sophisticated tools to be developed to let us measure and manage these impacts. At the moment there is little evidence that these are taken into account in climate change and farming policy. Important to also recognise that the implications of land use are commercially important as a predictor of likely future pricing given that animal feed choices have a strong impact on price of goods.”

\begin{table}[h]
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\begin{tabular}{|l|l|l|l|}
\hline
\textbf{Policy area} & \textbf{Details of policy development} & \textbf{Impact on SL issues} & \textbf{progress} \\
\hline
1. CAP reform negotiations (See 5.7) & Proposals to green Pillar 1 payments. 30% of payments would be conditional on farmers implementing i) & Strengthening crop diversification to a robust crop rotation measure (with at least three crops, including a) & The UK has been vocal in opposing greening measures \\
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\end{tabular}
\end{table}
<p>| Areas of ecological significance ii) protecting grasslands iii) diversifying monocultures through crop diversification. | Leguminous crop) and a grassland preservation measure that differentiates between extensively and intensively managed grasslands could play a key role in moving farmers away from soy. There is evidence that coupled support can benefit certain sectors such as upland livestock farming and proteins. Capping could mitigate some of the unfair distribution of CAP payments, channel payments to public goods and form an important source of income for environmental innovation in Pillar 2. Strengthened cross compliance could improve the environmental impact of livestock production. Eg by incorporating nitrogen management measures and encouraging integrated crop and livestock systems. With the right measures Pillar 2 could help provide financial incentives to farms to grow their | Proposal for some coupled support for certain crops on environmental grounds. Proposal to cap payments to very large farms and channeling this money into Pillar 2. Current cross compliance has serious shortcomings and has failed to drive better environmental performance from farming. Pillar 2 proposals could lend themselves to more in depth work with farms to improve their environmental performance. The UK has not supported coupled payments. The UK Government is opposed to capping payments stating that it would discriminate against ‘competitive’ farms. The Government has focused on simplifying and scaling back cross compliance rather than providing a vision for its role in tackling pollution from livestock and moving to livestock units that can recycle nitrogen on farm. The Government has played a positive role in recognising the importance of Pillar 2 and keeping an adequate Pillar 2 budget. |</p>
<table>
<thead>
<tr>
<th>2. Farming and Forestry Improvement Scheme</th>
<th>New scheme launched Nov 2011 with £20 million fund. For profit-boosting green schemes that save energy and reduce carbon emissions; grants between £2,500 and £25,000</th>
<th>Includes livestock schemes and manure to reduce reliance on ‘artificial fertilizers’; Includes extra funds for Uplands Carbon elements relate to energy use and probably only UK carbon emissions. There is no specific reference to feeds but could possibly be used to support on farm processing of feeds and there could be support which boosts the viability of upland livestock systems?</th>
<th>Just launched</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Food and Consumption policy</td>
<td>Green Food Project (see 5.5.4)</td>
<td>May cover issues of supply and sustainability of overseas inputs like soy. Working groups set up on consumption (bread and curry) and production (wheat and dairy) and Land use. Unclear as to whether this will cover overseas impacts adequately or help drive action on the symposium issues such as new product formulation, consumer behaviour, information and</td>
<td>The first project report will be in June/July 2012. The group is asking for input to the project in an online consultation and discussion in the Spring.</td>
</tr>
</tbody>
</table>
| 4. Biodiversity | New 2011 National Environment White Paper (NEWP) refers to global commodities and sustainable sourcing “the overall value of this commodity [palm] could in fact be negative. This also applies to other commodities such as cotton and soy.” 74 | No specific policy measures have been proposed to tackle the soy issue though Green Food project may address this.

The recent Update on progress contains no specific reference to soy or feeds or overseas biodiversity. 75

Measures proposed refer to business tools and guidance on natural capital plus “work with the EU Joint Research Council to develop evidence on the environmental impacts of products and their supply chains, and to consider future developments in minimum standards under the EU Ecodesign Directive.” |

| 5. Forests | DEFRA announced a £10 million contribution to a joint project to tackle deforestation in Brazil, 76 at the Durban Climate talks in December 2011, to “support a project based in the Cerrado, central Brazil, and aims to reduce rates of deforestation by | These are very small funds for addressing such a major issue and they are not tackling root causes, such as UK and EU consumption of soy feeds and beef.

Overseas aid was not a focus at the symposium. |
supporting environmental registration of rural properties and by helping farmers restore vegetation on illegally cleared land. Part of its aim is to “...see gross tropical deforestation halved by 2020 and net global deforestation halted by 2030.” This is part of the UK’s REDD+ contribution of £2.9 billion to 2014/15.

<table>
<thead>
<tr>
<th>6. Use of Waste food in feeds, PAP</th>
<th>Food Waste as feed - No new policy on food waste</th>
<th>There were clear opportunities identified at the symposium to increase use of food waste in feed but these have not been pursued.</th>
<th>No progress so far</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic waste</td>
<td>No new policy on domestic waste specific to sustainable livestock issues</td>
<td></td>
</tr>
<tr>
<td>PAP - On 23 March 2011 the Animal By-Products (Enforcement) (England) Regulations No.2011/881 came into force. Similar legislation applies in the rest of the UK. The Regulations include some derogations from the EU rules.</td>
<td>The FSA Board advice to government, as noted above, is not to relax the ban on feeding non ruminant waste to livestock.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>7. Procurement</th>
<th>New Government Buying Standards for food and catering services were introduced in June 2011. An overall benefit of £39m has been identified from the policy over the</th>
<th>This represents around £150million worth of purchases by central government on meat and dairy produce according to Sustain. Yet there are no</th>
<th>It has only just been introduced and only applies to Central government and agencies. This means it does not extend to</th>
</tr>
</thead>
</table>
The new specification - Food and catering services standards – which contain reference to:
- indicating the origin of the meat, meat products and dairy products
- Animal welfare – eggs
- All fish are demonstrably sustainable with all wild-caught fish meeting the FAO Code of Conduct for Responsible Fisheries (includes Marine Stewardship Council certification and Marine Conservation Society ‘fish to eat’).
- At least 10% by value of primary commodity (i.e. raw ingredient) food and drink is produced to certified or assured higher level environmental standards (e.g. organic, LEAF).
- Meat and meat products, biscuits, cakes and pastries (procured by volume) are lower in saturated fat where available.

significant elements in the new public food procurement policy or new mandatory Government Buying Standards (covering one third of public sector food) to address on sustainable livestock issues or limit greenhouse gas emissions associated with food ingredients.

The majority two thirds of public sector catering (i.e. mainly schools, hospitals, armed forces and local authorities)

As there is no reference to meat and dairy from a global environmental perspective it is unlikely to have an impact.

| 8. Climate | No new climate policy that relates to the outcomes of the symposium. | This despite clear indications that action to curb GHG from food production and consumption is needed from both | Not possible to say |
The Committee on Climate Change and their research team has started to look at the implications of different dietary balances (for which the plant-livestock balance is by far the most significant) in terms of implications for land-use change, deforestation and effects on biodiversity and carbon sequestration.

One NGO respondent observed that the likelihood of CCC ideas considerations being incorporated into government policy to reduce embedded emissions “seems unlikely, given that the UK Government’s legal commitments do not cover embedded emissions.”

According to one NGO respondent, the CCC and the Foresight report.
Conclusion

The overall assessment is that there have not been any significant policy developments and in some policy areas such as CAP, NEWP, diets and procurement there have been significant missed opportunities.

6. Findings: Industry progress

The symposium outcomes identified a number of ways in which the food industry - including farmers, retailers and the food service sector – as well as other stakeholders such as NGOs, could deliver a more sustainable livestock sector. This chapter looks at what has been achieved or further developed by the industry over the past year.

6.1. Farming community

The farming industry is a key player in working towards a more sustainable livestock system in England. Key areas they could contribute include research and development projects on feeds, breeds and pasture. They could work to incorporate protein feeds in rotations, given a favorable market and policy environment. They could work with retailers to develop ways to encourage consumer choices which favour lower impact meat and dairy products – via labeling, education, marketing and promotions. It was also felt that industry and civil society groups need to collaborate over product standards.

It is worth noting that a number of survey respondent felt that farmers were in a poor position to take action and that retailers and government needed to facilitate the change through an enabling policy environment, and by ensuring better prices and a fairer deal in the market place. One respondent noted that the industry wide levy board – the Agriculture and Horticulture Development Board (AHDB) will be hosting the trial of an information hub to provide relevant accredited information in one location

“The farming industry to some extent has its hands tied; needs more policy support from government, incentives to act, a better deal from retailers etc. Recent statements from NFU anti environment are unhelpful.” NGO survey respondent

“The farming community is by large aiming to make ends meet by trying to get economically attractive feeds. Where this is possible through use of home grown material, they will go for it. Where this is not possible, farmers do not always have the alternatives available. ...on the on Green Pig [project], involvement of pig producers as well as BPEX and QMS ensure good stakeholder engagements.” Academic respondent
6.1.1. SAI Sustainable Beef Group
This group aims to collaborate on a pre-competitive basis in seeking understanding, consensus and solutions to the sustainability challenges faced by the beef supply chain. Working collaboratively to develop standard methodologies for carbon footprinting for the European sector and addressing issues such as land use change. M&S is indirectly involved. For 2011 the group has decided to focus on Greenhouse Gas (GHG) emissions.

It is not clear from the papers whether this will encompass direct and indirect and use change (LUC) issues and therefore soy

6.1.2. Dairy Roadmap Review 2011
The Dairy Roadmap was launched by an industry consortium in 2008 and identified the commitment of the dairy supply chain to minimise environmental, largely UK climate, impact throughout the chain. A 2011 report details progress made against the 2010 targets established in 2008.

With regard specifically to the issues concerning the Sustainable Livestock Symposium, there is little in the 2011 report. The targets on nutrient management could have provided an opportunity to look at alternative feed sources. It is not clear from the farmer, processor or retailer reports whether any activities have affected feed use or other relevant issues. The carbon footprinting work could include overseas land use emissions but this is not specified. The waste targets for all players in the dairy chain could help reduce the impact of livestock production. The Dairy Roadmap is a ‘living document’ and will be updated at regular intervals.

Future Dairy Roadmap targets which may be useful in the context of the sustainable livestock issues.

Dairy farmers 2015 - Dairy farmers encouraged to calculate carbon footprints.

Dairy farmers 2020 - 20-30% reduction in GHG (carbon dioxide equivalents including CO₂, CH₄, N₂O) balance* from dairy farms between 1990 and 2020.

6.1.3. DairyCo and Retailer carbon footprinting
It is worth noting the on-going DairyCo carbon footprinting study (September 2010-March 2013). This is a three-year project to determine the carbon footprints of 415 dairy farms varying in size, system and geographical location. The findings of this study will be shared with all British dairy farming businesses to ensure that they can all benefit from the work. DairyCo anticipates that there will be ‘win-win’ of efficiencies and environmental savings on the participating farms.
The Dairy Roadmap (see 7.1.2) also summarizes retailer initiatives and most are undertaking carbon footprints of their diary suppliers. None of these so far indicated that they will be including overseas GHG emissions or wider biodiversity issues in their analysis. Further analysis will be needed to see if this is the case.

6.1.4. Dairy 2020

Dairy2020 is a futures project bringing together key players in the UK dairy sector to develop a sustainability strategy to ensure a “successful, sustainable and thriving industry in the future”. The project, which was launched in May 2011, aims to answer the question “what does a sustainable dairy industry look like, and what contribution can it make to a sustainable world?”

The project is led by its steering group, which included: Asda, DairyCo, two DairyCo farmers, Dairy UK, DEFRA, First Milk, Forum for the Future, NFU and Volac. The steering group is supported by a wider working group which includes representatives from the majority of UK retailers (Morrisons, M&S, Sainsbury’s, Tesco, Waitrose), representatives from branded manufacturers (for example Danone and Kraft), NGOs (for example WWF and LEAF), and crucially, representatives from the dairy farming community.

Outputs from the project are proposed to include:

- A short vision statement – this will be very top-line, but serve as a clear statement of ambition.
- A set of scenarios, exploring the different possible worlds in which the dairy industry may have to operate in 2020.
- Risks and opportunities for the dairy industry for achieving that vision in different possible futures
- Recommendations for action that will enable a sustainable dairy industry to thrive in 2020. These recommendations will specify the collective, and individual, action needed from farmers, processors, retailers, policy makers and beyond.

6.1.5. The Processors and Growers Research Organisation (PGRO)

PGRO is the UK centre for applied research into temperate peas, beans and other legumes for both animal feed and human consumption. Comprising 16 staff at the Thornhaugh research station, 11 are qualified agricultural scientists. They are actively promoting the use of peas and beans in rotations, run events for farmers on how to use available and new varieties, and are involved in a number of the multiple partner research projects outlined in 5.1. 84

6.1.6. Greenhouse gas action plan for Agriculture Industry (GHGAP)85

The 2009 UK Low Carbon Transition Plan sets out how the UK will meet the emissions reduction target of 3 million tonnes CO₂e for agriculture by the third

The GHGAP comprises 19 agricultural organisations and this group published a Framework for Action in February 2010. The objectives of the GHGAP are to establish a robust partnership to achieve a voluntary approach that encourages the adoption of practices that increase production efficiency.

The Framework for Action includes the following relevant initiatives:

Action 12. **Livestock nutrition** - plan diets and feeding regimes to achieve desired productivity, efficiently making use of resources available including home grown crops and food industry origin co-products, carefully matching nutrient content and availability to animal requirements. Consider using feed technology and additives to improve feed use efficiency.

Action 15. **Plan grassland management (and forage management)** to meet production objectives - use clover mixes to reduce the need for nitrogen application, high sugar grasses where appropriate, and utilise forage production efficiently.

Annex B of this Framework sets out the details of the current and new activities that will be undertaken to encourage uptake of on-farm actions. There is not enough detail in the specific Activities to Deliver Each Priority for Action including Crop nutrient management, Management skills and advice, and Livestock Nutrition. These plans mostly fail to refer to any targets related to home grown crops or co-products as identified in the Framework for action above.

There appears to be little reference to the poultry sector.

A few sections do contain some relevant targets as follows: **TABLE 2**

<table>
<thead>
<tr>
<th>Priority area</th>
<th>Current activity</th>
<th>New activity (by 2014)</th>
<th>Delivery Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock health</td>
<td></td>
<td>BPEX Two-Tonne Sow programme: health stream from spring 2011</td>
<td>BPEX KT managers (leaflets, events, website, workshops)</td>
</tr>
<tr>
<td><strong>GHG Mitigation Research</strong> R&amp;D supporting improved farming practice for efficiency of resource use: soil, nutrients and energy usage, and renewable</td>
<td>Optimal livestock feeding trials ongoing: dairy, pigs, sheep</td>
<td>Evaluation of alternative/ reduced protein and feed conversion efficiency work for productivity gains: dairy, pigs, sheep [note not poultry]</td>
<td>BPEX, EBLEX, DairyCo and AIC Member companies, ORC and organic and low input research project partners</td>
</tr>
<tr>
<td>energy generation: Livestock Nutrition</td>
<td>feeding for different farming systems</td>
<td>Manipulation of feeding/finishing regimes to reduce GHGs</td>
<td>Analysis of oat varieties to reduce GHG emissions from ruminants and crop protection</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Improved Genetic Potential - Crops</td>
<td>Research into nitrogen use efficiency (NUE) of wheat and legume breeding ongoing</td>
<td>Selection of existing varieties for characteristics favourable for nutrient use efficiency for various management systems</td>
<td>All delivery partners</td>
</tr>
</tbody>
</table>

The emphasis of the GHGAP appears to be increasing efficiency and reducing costs to deliver carbon reductions. Overall it is not clear that this will tackle many of the issues identified in the Symposium.

**6.1.7. Pasture Fed Livestock**

**EBLEX** published a new manual on winter forage crops, which would lead to reduced reliance on indoor feeding. They delivered a number of initiatives to encourage producers to improve their grassland management and conservation for winter feeding to reduce need for supplementary feeding. They have a considerable research programme, which will help pasture based farming deliver some water, biodiversity and carbon benefits.86

The **Pasture Fed Livestock Association (PFLA)** was formed in 2011 in order to champion the virtues of pasture and to provide a distinct identity for livestock systems that are based on pasture. The Pasture-Fed Livestock Association (PFLA) is a new organisation comprising farmers, academics and people who have a general interest in developing the potential of pasture and the often-forgotten benefits that it offers.
There are currently many forms of livestock produce that claim to be “Grass-Fed” but because this term is not clearly defined and is in such widespread use already, it can be applied to virtually any livestock system where grass forms part of the livestock diet.

The group has developed a set of Production Standards\textsuperscript{87} using the term “Pasture-Fed”, which they believe more accurately describes the diverse range of plants that ruminant livestock typically graze. These Standards are based on “principles of good animal husbandry and practical farming experience”. They define what Pasture Fed means and to support these Standards they have also developed the “Pastoral” brand, which aims to ensure all produce bearing that mark has been reared to Pasture-Fed Standards.\textsuperscript{88}

It is worth noting here that the Food Chain Alliance referred to the fact that “some supermarket companies have established detailed requirements governing the amount of time and conditions under which cattle must be at pasture in order for them to qualify for grass-fed beef designations. The concept is good for animals—their welfare should improve as a result.”\textsuperscript{89} It has not been possible in the time to verify this statement but it would be an area to look at as such standards could enhance viability of pasture if there is a market premium.

\textbf{6.1.8. Organic Centre Wales – poultry feed alternatives}\textsuperscript{90}

Organic Centre Wales has commissioned the Organic Research Centre - Elm Farm to assess the contribution that UK produced sunflower and oil seed rape (OSR) can make to organic poultry rations. The ORC – Elm Farm study covers a number of aspects including: the basic nutritional composition of sunflower and oil seed rape; the proportion of a bird's dietary requirements that could be met from these crops; their limitations such as anti nutritional factors and taints; the area of these crops currently grown organically in the UK and the potential for their expansion; and basic agronomy under organic conditions.

Tony Little, who is coordinating this work for Organic Centre Wales said ‘This is a very timely piece of work. The challenges associated with feeding organic poultry will get bigger as the proportion of non organic ingredients permitted reduces in 2012. What we hope to do is show how we can feed birds more sustainably while offering savings to poultry producers and opportunities for arable growers.’

\textbf{6.1.9. Pigs}

The various projects BPEX\textsuperscript{91} are involved with are seeking alternatives to soy as source of protein, but also improving the efficiency of pig production. They are particularly concerned with advances in feed technology to maximise the yield per unit of input, as this helps cut the use of all feed ingredients. They have produced a Pig Industry Roadmap and Heath and Welfare strategy.\textsuperscript{92} The Roadmap was
launched in April 2011 and the four environmental impact categories being targeted are:

• Climate change potential: is an increase in temperature caused by the emission of greenhouse gases into the atmosphere. The target is a 17% reduction

• Eutrophication potential: is the amount of nutrients such as nitrate and phosphate from manure or slurry that ends up in the aquatic environment. The target reduction is 15%

• Acidification potential: relates to the release of acidic gases such as ammonia, again from slurry or manure or sulphur dioxide from burning fossil fuels. These have the potential to form acid rain, which, in turn, can damage ecosystems. The target is a 15% cut.

This includes several key areas of work such as the “potential synergies are exploited eg the interdependence of the pig and dairy sectors where the dairy sector supplies co-products such as whey used as pig feed” and includes an extensive examination of the issues associated with soy feeds and short and long term solutions to the problems identified. This is the most extensive examination seen in this study by an industry body. The industry is working to reduce waste in the pig meat supply chain for example working to export fifth quarter products to the far east, working with the meat processing and retail industries, improving users knowledge about using the products on offer, this then has an impact on the efficiency with which we use inputs so providing a better overall outcome.

An industry survey respondent noted that the pig feed industry is already using many co-products in feed. For assurance standards compliance all feed needs to be FEMAS accredited. To encourage local marketing the BPEX Marketing team produce training and marketing materials and regional showcase events and competitions providing exposure for local businesses.

The respondent also noted that feed compounders would also be willing to include a greater proportion of home grown pulses, but whilst they are using some, sufficient quantities for year round operation of the mill do not exist. There are logistical issues in the feed mills, which have been set up to use many ingredients, but another product means more bins, etc. There are nutritional reasons why you cannot change quickly a pigs diet from soy based to peas or beans and back, there must be a period of adaption. The feed industry is working hard to reduce soy inputs because they are costly.

6.1.10. Farmers using food waste

It is worth mentioning a couple of companies that specialize in using unsold bread, brewery waste, cake, confectionery and cereal for conversion into low cost livestock.
feed: UK Farm Fields94 and Leafield Feeds95. The latter identified 2011 as a key year as the Government is introducing new landfill legislation which will make landfill more costly. Disposing of food products that cannot be sold costs manufacturers, distributors and retailers millions of pounds annually. It is clearly possible to turn this potentially valuable food into a revenue stream that has both economic and environmental benefits. Another initiative, which was noted by the pig industry, was www.wheyfeed.co.uk which provides dairy liquid by-products to all sectors of the animal feed market.

Conclusion

The farming industry is taking some steps to reduce its reliance on important feeds and is involved in a number of important feed research projects. The dairy, pig and beef and lamb sectors are all taking some steps to address some of the feed issues identified in the symposium. Certain sectors are also promoting significantly higher sustainability standards in the market place which includes promoting pasture based systems, alternative organic feeds for poultry and working to use food processing waste as feed.

6.2. Retailers

“They will talk around the ideas but there is a lack of commitment to do anything active.” NGO survey respondent

At the sustainable Livestock Symposium, delegates discussed the ways in which retailers could support a transition towards more livestock being produced. One crucial issues was the need for farmers to have an adequate reward via market for doing the right thing e.g. extensive grazing or supporting pilot schemes within their new producer groups using alternative feeds.

Retailers could support the use of voluntary codes involving whole supply chain ensuring the on ground impact was verifiable and fair. Retailers could also help with tackling meat waste of meat for instance by encouraging use of the whole carcass in product formulations or by customers. It was felt that retailers also have key role through choice editing for example processed food could be reformulated. Retail initiatives such as those on carbon are focused on cutting costs. They could have the right outcome, perhaps on feeds, but this is not currently their objective. Consumers need information so honest and effective labeling was key. Also as sustainability is hard to define to consumers – selling points for the public are more likely to be landscape, local food, health and retailers could help to develop these ideas further.

6.2.1. Retailer Initiatives

There has not been scope in this report to carry out a full analysis of retailer initiatives on issues relevant to those raised at the Symposium. However, below are some examples of positive practice:
Farmer Advice
M&S have set up an Animal Feed Advisory Group made up of independent academic and industry experts. The group will develop a ‘risk based’ approach to assessing the impact of all animal feed raw materials and this will inform animal feed policy decisions. M&S have also developed a tool to help dairy producers remove palm from feeds while maintaining the required energy rations. They are looking at how this can be applied to other sectors and other animal feed issues.

M&S are involved in the Sustainability Consortium initiative which is gathering evidence around impacts of products, and played a key role in ensuring that livestock was included in the initial list of priority categories.

Research
Asda is hoping to reduce CO2 emissions by 186,000 tonnes with a new type of grass for its cattle and sheep. Developed in Britain, Aber High Sugar Grass (HSG) is meant to cut methane emissions by 20% per animal, as well as limit feed costs by providing better nutrition. The supermarket has had good results at the trial stage, and is now introducing it to its 13,500 farmers across the UK.\(^\text{96}\)

M&S are involved in two of the TSB funded projects around sustainable protein 1) leaf protein concentrate and 2) improving yields of beans and pulses

Diets
M&S are involved with WWF’s One Planet Food programme and actively promote sources of sustainable protein, for example vegetarian options and meat substitutes products, as tasty, delicious food that consumers want to eat. Through their health and nutrition advice M&S advise customers to limit intake of red meat with the aim of reducing saturated fats. M&S have established a health website for our customers - [http://health.marksandspencer.com](http://health.marksandspencer.com)

Tesco: Internal systems track all soy-related ingredients to ensure they come from a non-GM source outside of the Amazon biome. Also track the soy used as animal feed by our meat suppliers

Pasture based
The Co-op’s fresh and frozen beef is produced from cattle reared outdoors on livestock farms, compatible with traditional extensive farming systems, where it is possible to produce traditional fodder-based animal feed.

Food Waste
Morrisons has reported a number of measures to minimise food waste: “We sort, grade and, when appropriate, wash the produce ourselves. For some products, for example broccoli, we cut off the stems so that customers only pay for what they eat, with stems made available for animal feed. By packing a range of sizes and individually pricing them, customers can also help reduce waste by buying only what they need.”\(^\text{97}\) At Morrisons, a potato smaller than 45mm in diameter will be taken out
of the load and used as baby roasters, if they are really small, as animal feed. Nothing is thrown away."

6.2.2. Retailer wide Industry initiatives

Waste and feed

Regarding waste there seems little appetite for dealing with food from the supply chain by diverting it to animal feed. The recent presentations of the WRAP Courtauld commitment (a voluntary commitment by UK retailers to reduce overall waste) contained no feed related initiatives. For this voluntary commitment by the end of 2012 the British Retail Consortium has a target to reduce supermarket food waste by 5%. At the end of 2010 they had only reached 0.4%.

At a recent WRAP evaluation of ways to reduce levels of fresh potato waste along the retail supply chain and in the household, there appeared to be no mention of using waste potatoes or peelings in feed.

One positive example to note is that Hain Celestial Group, which manufactures sandwiches for M&S, was wasting 13,000 slices of fresh bread every day and paying around £65,000 a year to send it to an anaerobic digestion plant. The company changed its waste policy and now sells its unwanted bread to a farmer for around £25 a tonne as feed for pigs and cattle.

Deforestation

The Consumer Goods Forum (a group of 400 companies including Marks and Spencer, Tesco, Morrison and Waitrose/John Lewis, Unilever and Carrefour) has agreed to: mobilise their collective resources to help achieve zero net deforestation by 2020 in recognition that the consumer goods industry, through its growing use of soya, palm oil, beef, paper and board, creates many of the economic incentives which drive deforestation. This is one of the principal drivers of climate change, accounting for 17% of greenhouse gases today.

Certification – the Round Table on Responsible Soy

The RTRS was established in 2006 in Switzerland, as a multi-stakeholder initiative which aims to “facilitate a global dialogue on soy production that is economically viable, socially equitable and environmentally sound”. The RTRS has more than 150 members include soybean growers, crushers, traders, food and feed manufacturers and civil society organizations. Most UK supermarkets are members. Members also include seed and agrochemical producers Monsanto, Syngenta, and DuPont/Pioneer (through its membership of the soya producers’ association Aapresid); grain traders ADM, Bunge, and Cargill; and energy giant BP. The RTRS has developed a set of principles and criteria, which define the production of soy. They claim to ensure that
Conclusion

There are some positive developments in the sector, notably that some retailers are involved in research initiatives on soy alternatives. But there is little interest in helping consumers choose more sustainable diets; and there is no evidence that the major multiples are prepared to play fairer with better prices and deals for farmers and the food retail industry association the British Retail Consortium have opposed the introduction of a supermarket Ombudsman to oversee the fair use of the supermarket Code of Practice.  

With regard to soy used in their meat products, whilst most of the multiple retailers have some policy relating to tropical forests it has not been possible to measure actual UK retailer activities and sourcing or to assess levels of institutional action on soy feed use – such as how far commodity buyers have been trained on soy issues or development of alternative approaches by UK farmers. The development of certified Roundtable on Responsible Soy (RTRS) has been a major one – and most retailers have responded by declaring ambitions to source RTRS soy. But this does not tackle the major issues created by the expansion of soy production and meat consumption.

In May 2011, the Meat Trades Journal did a survey on the ‘green policies’ of the major UK retailers. This revealed some projects to support farmers, efficiency and GHG reductions on farm but little to tackle the issues identified in the Symposium. The Cooperative is the only one to mention soy feed issues.  

Some retailers, such as Tesco, have attempted to track and influence soy sourcing, but it is important to note that GM-free has been the main driver for this over the past decade. More recent concerns over soy, beef and deforestation are only beginning now to have an impact. Most retailers have or are considering joining the RTRS. There is little purchasing of certified produce so far and the RTRS has come under widespread criticism from civil society organizations for its failure to genuinely address environmental and social impacts of soy cultivation and simply providing a veneer of sustainability whilst allowing business as usual.

6.3. Other stakeholders

WWF

In collaboration with the Rowett Institute of Nutrition and Health at the University of Aberdeen, WWF has launched its Livewell initiative about healthy diets adapting the government’s advice on eating – the Eatwell plate – so it also considers the environment. WWF produced a definition of a sustainable diet that is nutritionally viable: the Livewell plate. The public information includes statements such as no new land of native habitat or high conservation value areas (forests) have been cleared for soy cultivation since May 2009.
“Livewell shows that by reducing, but not eliminating, animal based proteins from our diet we can meet recommendations for health and emissions reduction targets for 2020.”

Sustain
Sustain’s new Sick of Nasty Meat campaign is highlighting to the public that the Government spends more than £150 million of taxpayers’ money every year on cheap-and-nasty meat served in schools, hospitals and care homes. DEFRA calculates that 23% of food bought by the public sector is meat and meat products, costing approximately £150 million a year. Yet as Sustain notes, eating less - but better quality - meat wouldn’t cost any more, and would be better for health, jobs, the environment, animals and taste buds. They are asking supporters to sign up to the campaign petition and support the demand for better food standards in public canteens.105

Food for Life Partnership (Soil Association, Focus on Food Campaign, Health Education Trust, Garden Organic)
The Food for Life Partnership has worked with around 4,000 schools in a £16.9 million Lottery-funded programme to raise the standards of food and food education in schools. This has been independently evaluated. At Silver and Gold mark level, action by caterers to reduce overall use of livestock products is encouraged and rewarded. From January 2012, improvements to the healthiness and sustainability of food under the Food for Life Catering Mark programme will be measured and assessed through a points-based system modelled closely on the recommendations of the Conservative Party Food Procurement Taskforce (see 5.6).

Food Waste campaign-Feeding5k.org
Feeding the 5,000 (led by author Tristram Stuart) has launched a campaign with the support of the Mayor of London, Friends of the Earth and others to promote a Food Waste Pyramid for food companies that encourage diversion of food waste to human use, and to animal use – in preference to AD or composting. A major public event in London’s Trafalgar Square highlighted how waste food could feed thousands. Four pigs were brought to the square by Friends of the Earth and ate the apple pulp produced in the juicing of over a tone of “waste” apples and pears- showing the potential in the UK for food that can’t be used for people to be fed to animals. One NGO survey respondent noted that considerable work needs to happen at a national and regional policy level before this will be taken seriously or have impact at scale.

The group has helped to generate debates in the UK Parliament on what the government can do to promote the solutions to food waste. Last December, Baroness Jenkin of Kennington tabled a question for short debate in the House of Lords on the benefits of feeding some types of discarded food to livestock – a far more efficient way of dealing with surplus food than sending it for compost or
anaerobic digestion. In March 2012 Kerry McCarthy tabled a 10-minute rule bill on food waste, focused on increasing the diversion of good quality food to food redistribution charities.

The campaign highlights the considerable drop in domestic food waste – a 13% reduction in 2011 compared to the UK food industry’s “dismal achievement of just 0.4% food waste reduction since the signing of phase two of the Courtauld Commitment.”

**Academic**

*Research Training – Alternative foods for cattle sheep and goats*

The University of Reading is taking a leading role in a new £3.5 million project starting in 2011/12 to look into producing healthy and sustainable animal feeds as part of an EU programme to train a new generation of researchers. In this latest network, 15 groups from seven countries will work on the project to investigate alternative foods for cattle, sheep and goats. The project was initiated because of the effect climate change will have on food production, including animal feeds. Its organisers say animals in Europe are fed with large quantities of soya beans imported from the tropics, which is not sustainable, but home-grown protein sources, such as forage legumes, offer a valuable alternative.

The project organisers say ruminants, especially dairy cows, are major contributors to environmental pollution, but by eating sainfoin or birdsfoot trefoil, which are almost forgotten traditional forage legumes, polluting emissions from animals could be cut significantly.

**Other Governments**

A **Dutch commission** has presented a report focusing on achieving sustainable livestock production in 2020. This would require a radical turnaround and should happen on a national basis. The report has received mixed responses. The commission, led by Daan van Doorn, previous CEO at Vion Food, was set up by the Noord-Brabant province, and calls for a careful livestock industry, which is in harmony with its direct surroundings and in which animals are the most important in modern facilities.

Sadly in recent month the **Swedish government’s** National Food Administration's clear advice to consumers, which included information on meat and dairy impact and why reduced consumption may be beneficial have been weakened so much that they have been removed. However reading the NFA website it still makes some useful statements about the impact of meat and dairy.

In October 2011 **the Danish government** has introduced a new ‘fat tax’, which will put an extra cost on foods that are high in saturated fat. This will include meat and
dairy products but it is not clear if any additional information on wider benefits is being given to the public. Whilst this could possibly send a negative message it would be useful development.\textsuperscript{110}

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