



HOUSE OF LORDS

EUROPEAN UNION COMMITTEE Agriculture, Fisheries and Environment Sub-Committee (Sub-Committee D)

**Innovation in EU agriculture Seminar
30 November 2011**

Summary of discussion

Participants

Members of the EU Sub-Committee on Agriculture, Fisheries and Environment:

- Baroness Byford
- the Earl of Caithness
- Lord Cameron of Dillington
- Lord Carter of Coles (Chairman)
- Lord Giddens
- Lord Lewis of Newnham
- Baroness Parminter, and
- Baroness Sharp of Guildford

Other participants:

- David Alvis (Lead Technologist, Sustainable Agriculture and Food, Technology Strategy Board)
- Dr Paul Burrows (Director, Corporate Policy and Strategy, Biotechnology and Biological Sciences Research Council)
- Dr Julian Clark, of the University of Birmingham, Specialist Adviser to the innovation in EU agriculture inquiry
- Professor Ian Crute (Chief Scientist, Agriculture and Horticulture Development Board)

- Dr John French (CEO, InCrops Enterprise Hub)
- Dr Andrea Graham (Acting Chief Science and Regulatory Affairs Adviser, National Farmers' Union)
- Dr Timothy Hall (Head of Agriculture, Forestry, Fisheries and Aquaculture Unit, Research and Innovation Directorate-General , European Commission)
- Gwilym Jones, cabinet of Agriculture Commissioner Ciolos, European Commission
- Katrine Jorgensen (Political Officer, Danish Embassy in London)
- Jonathan Levin (French National Institute for Agricultural Research)
- Francesca Manchi (Information and Communication Officer, European Commission)
- Sue Popple (Deputy Director, farming and food science and GM policy and regulation, Department for Environment, Food and Rural Affairs)
- Christopher Price (Director of Policy and Advice, Country Land and Business Association)
- Lord Roper, Chairman, EU Select Committee, and
- Lord Taylor of Holbeach (Parliamentary Under-Secretary of State, Department for Environment, Food and Rural Affairs).

In attendance:

- Paul Bristow, Committee Clerk
- Alistair Dillon, Committee Policy Analyst
- Mandeep Lally, Committee Assistant, and
- Dr Jonny Wentworth, Parliamentary Office for Science and Technology.

The context of the inquiry into innovation in EU agriculture, and subsequent developments

Dr Julian Clark said that the Lords committee had carried out the inquiry in 2010-11 against the background of a widespread recognition that European agriculture faced several grand societal challenges: water scarcity; multiple land uses; an ageing population; climate change; and a decline in farm productivity. All these pointed to the need for agriculture to innovate. Key issues in the context of innovation in EU agriculture were the state of EU agricultural

research; the question of how innovative knowledge should be transferred to farms; and critical issues of policy-making and regulation in the UK and EU.

The committee's report, published in July 2011, took as its basic premise that innovation must be at the heart of agricultural policy-making both in Europe and in the UK, in an effort to respond to major challenges. The report identified several barriers to innovation. These included a thin business base in agriculture; a weak knowledge base; the operation of the Common Agricultural Policy (CAP); downward pressure on farm incomes; regulation; an ageing industry, and the low skills base of the farm population; negative public perceptions of novel practices, e.g., genetic modification (GM) of crops; a lack of clarity over intellectual property (IP) rights; and the fact that European research placed limited emphasis on activities with farmers.

In the recommendations made in the report, the committee focused on three areas which the EU and the UK Government were urged to consider. These were: first, significant increased investment in scientific research in the agricultural sector; second, ensuring that innovative knowledge was fully communicated to the agricultural sector; and third, overcoming the “innovation-hostile environment” in Brussels. Overall, the report recognised that the lack of agricultural innovation was as much a policy and market problem as a science and technology problem. Media reactions to the report had welcomed what was seen as a radical and progressive approach to fitting EU agriculture to meet the challenges of the 21st century.

Developments since the completion of the inquiry had included the worsening financial crisis in the Eurozone and a widespread deepening of the economic recession. But following the report's argument, these developments should be seen as a spur, not a brake, to efforts to encourage innovation: e.g., the EU's “Europe 2020” initiative embodied “a strategy for smart, sustainable and inclusive growth”, and the Hauser report to the UK's BIS Department stated that the economic crisis “brings the need for an innovation system that enables the UK to emerge strongly from the downturn into sharp focus”.

Key recent policy developments had included the European Commission's adoption in October of proposals for CAP reform, which had included provisions on the European Innovation Partnership (EIP) for Agriculture; and the G-20 Farm Ministers June 2011 conference, which had produced the action plan on food price volatility. The final agreement from the recent G-20 meeting in Cannes (4 November) noted “Promoting agricultural production is key to feed the world population... In particular, we decide to invest in and support research and development of agriculture productivity”.

CAP reform and agricultural innovation systems

Mr Gwilym Jones said that the committee's report had appeared at a key point during the thinking within the European Commission which had led both to the October 2011 proposals for CAP reform, and to the Horizon 2020 package for the EU's research framework from 2014 to 2020 (adopted by the Commission on 30 November).

In June, the Commission had already decided to propose that the budget for research related to the food security challenge should be more than doubled, to some 4.5 billion euros. Food security had to be safeguarded in a context where demands on agriculture would be heightened by demographic developments and the impact of climate change. There was an undoubted need to ensure an interlinking between agriculture and business. Agriculture was a very important sector: the EU accounted for 18% of world food exports, and some 7.5 million people were employed in agriculture in the EU.

It was also important to recognise the diversity of farming across the EU. Average farm incomes were low, which made progressive investment by such farmers unlikely. There was a choice for the future between allowing increasing intensification towards large farm sizes, or preserving space for small farmers, with related implications for sustainability and the vitality of rural communities. The Commission supported the two-pillar structure of the CAP: Pillar 1, providing the single farm payment, was a bed-rock of stability for farms of all sizes; Pillar 2 provided a range of rural development measures.

In the face of the food security challenge, it was important to raise the competitiveness and productivity of EU agriculture, but this had to be done in a way which ensured that it was sustainable over the long term. Previous reforms of the CAP had de-coupled subsidies from production, so that the sector had become far more market-oriented. Further increases in competitiveness needed to be guided to ensure sustainability. Environmental measures were promoted through Pillar 2, but this was a voluntary pillar, and take-up did not cover all farmers. So the Commission wished to ensure that single farm payments were effectively linked to sustainability measures, and this was the basis for the "greening" of Pillar 1.

Measures supporting research, innovation and knowledge transfer were included in the October 2011 CAP proposals, and these reflected the points made in recent publications, such as the January 2011 Foresight Global Food report, and the Lords committee's report. The June 2011 meeting of the G-20 Farm Ministers had also been significant. It had not pointed to any move to stabilise markets through intervention, but had called for greater transparency, not least through a global agriculture monitoring system based in the FAO.

The Commission considered that the establishment of the Farm Advisory System (FAS) had been a positive step, but that its role needed to be expanded: in 2008-09, the FAS had given advice to only 32,000 producers across the EU. There was a disconnection in knowledge transfer in the EU; given the diversity of EU agriculture, it was important that research should be adapted to local conditions.

Fundamental research must be maintained, but it was important to boost research which fed into practical concerns, and the European Innovation Partnership (EIP) on Agriculture would be a key tool to achieve this, promoting greater co-operation between farmers, researchers and the agri-food industry. The proposals for rural development under the CAP included a significant new focus on knowledge transfer, with a re-vamped FAS proposal. In concert with the EIP proposal and the new approach to research and innovation in Horizon 2020, the proposals should serve to move EU agriculture on to a much stronger basis to meet the food security challenge.

Discussion

Professor Crute said that the EU needed to guard against the polarisation of thinking that set increased productivity against achieving more sustainable systems of production; they were not different targets or mutually exclusive. Highly productive systems contributed to sustainability by, for example, sparing land for uses other than food production. There were trade-offs to be made in carrying both objectives forward at the same time; but the solution did not lie in promoting “extensive” agriculture. In fact, the UK Foresight report emphasised the importance of “sustainable intensification”. He welcomed the call in the committee’s report for greater investment in promoting agricultural innovation, but stressed that there had been a significant erosion of the relevant EU capacity to exploit such investment. The on-farm skills base needed refreshing; a good deal of the capacity in higher education available had been lost by educational institutes; and in much of the EU there was very little capability in not-for-profit advisory services. It was essential that the partnership approach on knowledge transfer included the commercial sector where much of the expertise now resided..

Lord Cameron said that there were important opportunities for EU agriculture in the current situation, so long as innovation was effectively embraced. In this context, it was not helpful to rule out GM technologies *a priori*: we needed to keep an open mind. He questioned whether, as regards agricultural extension work, the structure favoured by the European Commission was the right one: it was very difficult to get advice down to the level of the smallest farmers. He considered that the aim should be not knowledge transfer but knowledge exchange, which would require that scientists should meet farmers face-to-face to learn about their priorities.

Lord Giddens said that he saw a case for the EU to re-consider its use of the “precautionary principle” in deciding on policy and legislation. Food security in the long term might, for example, be subject to greater risks from the avoidance of bio-technology than from its use. More generally, as the world became increasingly subject to anthropogenic factors, including the impact of climate change, the EU and its Member States would be operating in an environment of unprecedented risk and uncertainty. In his view, this called for pro-activity

in a range of areas; leaving agriculture to develop according to market principles would not be enough; and there were undoubtedly tensions between boosting output and sustainability concerns which would not be easy to resolve.

Mr Jones said that bio-technology in agriculture was not just about GM crops: on the latter, there was a deep political division among EU citizens, that could not readily be resolved; but Horizon 2020 would show support for other aspects of bio-technology. He agreed that any build-up of farm advice should draw on the strengths of existing commercial practice: farmers needed to be presented with a business case for innovative practices; and knowledge exchange was important, and was one of the defining characteristics for the proposed EIP, as well as for other aspects of the rural development proposals.

EU research for innovation in agriculture

Dr Hall said that his responsibilities in DG Research and Innovation in relation to the Framework Programme covered research into primary production aspects of agriculture, forestry and fisheries, while colleagues dealt with food and bio-technology, and DG Research and Innovation more generally also dealt with research into environment and climate change, energy production and use and other topics. The effort was being made to ensure good inter-linking between all these topics.

When the new Commission had taken office some two years earlier, it was given a mandate to boost innovation, under the Europe 2020 banner. A key flagship initiative was the Innovation Union, launched in October 2010, and this had important links with another flagship initiative, on a Resource-Efficient Europe.

The Commission was conscious of the need to ensure that EU-funded research was taken up by the end-user. In agriculture, however, advisory services had declined, and there was little support available from the public purse: changes to ADAS in England were a case in point. Without active intermediaries, it was very difficult to get knowledge from researchers to practitioners.

DG Research and Innovation had sought to reflect the “innovation mandate” in its activities under the current Framework Programme (to 2013); support was being given to more topics aimed at delivering new products/processes; and around 15% of research funding was being provided to SMEs.

The sharing of information across borders, and avoidance of duplication, was very important and much of that related to nationally funded research since the Commission itself managed a small proportion of total European research funds.

In terms of agriculture, Dr Hall emphasised the need to consider the bio-economy as a whole, considering food and non-food uses for crops, while keeping pre- and post-harvest losses to a minimum and making efficient use of waste.

The Commission was concerned to improve inter-disciplinary co-operation. For example, it had promoted integrated marine research by bringing together five separate themes in joint calls for research applications, an approach which could be followed in the next funding package, from 2014.

The Standing Committee on Agricultural Research (SCAR) played an active role in foresight studies, and was currently taking forward work on Agricultural Knowledge and Innovation Systems (AKIS), coordinated by France and the Netherlands, with strong inputs from Dr Krijn Poppe of the Netherlands. The outcome of the SCAR AKIS project would be recommendations which would also cover extension services, and which would be of great interest to the Commission and Member States.

The European Research Area (ERA) approach had allowed better co-ordination between national research programmes. The Commission was now encouraging research Joint Programming Initiatives (JPIs), which again aligned research work by individual Member States in large-scale operations. An example known to the committee was the JPI on agriculture, food security and climate change, led by the UK's BBSRC and France's INRA. It was hoped that the next funding package would see further development of JPIs.

European Technology Platforms (ETPs) had begun some 5 or 6 years earlier, as industry groupings which provided advice on research funding needs. It was important for the ETPs to continue developing their roles as “innovation brokers”.

As of 30 November, Horizon 2020 was a formal proposal from the European Commission. It was intended to ensure that all research activities under the Framework Programme would be more tightly linked to innovation: three funding streams would be brought together in a single package, and funding would be shaped around societal challenges, including food security, sustainable agriculture and the bio-economy, for which a budget of some 4.5 billion euros was proposed over 7 years.

In conclusion, the Commission recognised that past funding for research aimed at innovation in agriculture had been inadequate, but this reflected the past widespread lack of recognition at the political level of the importance of climate change and food security. With the Commission's Horizon 2020 proposals, funding would be increased, and DG Research and Innovation's approach to the challenges of sustainable agriculture and food security would be closely tied in with DG Agriculture: there would be a form of co-management of funding programmes, and research would be better targeted at the end-users.

Discussion

Dr John French said that InCrops' experience since its creation in 2008 of providing support to businesses in the bio-economy had enabled it to propose a model for a European network for agricultural innovation which had been published as an appendix to the Lords committee's report. The model had two key elements: an EU network of business, research and government, with transnational delivery within a strategic framework; and a business-based, bottom-up approach to identifying innovation opportunities. InCrops' proposals had been well-received at the EU level; they shared the objectives and, in large part, the partnership approach of the proposed EIP on sustainable and productive agriculture; there was a clear need for capacity-building across the EU to support an agricultural innovation network, but he was hopeful that InCrops would be able to contribute to putting an effective network in place.

Prof Crute endorsed the need for scientific research, in the UK and in the EU, to listen to the messages about priorities coming from the bottom up; there was a danger that top-class scientists were only rewarded for gaining plaudits from their peers in the research community but without a focus on where the opportunities existed to remove constraints and enable agriculture to become both more productive and deal with issues of sustainability. The UK Research Councils tended to focus funding on research that was conceived as contributing to delivering an end-point of new commercial products for the agri-food sector. While this remained important, it was very important not to ignore research that delivered important outcomes through knowledge that enabled the development and adoption of new farming practices which were not so readily placed into a commercial context.

Lord Lewis commented that communication within the research community and between researchers and farmers was very important: the process had not been assisted by the loss in recent years of agricultural capacity at universities.

Dr Graham stressed the need for communication about agricultural innovation to make the case with practical, product-based examples; and she welcomed the Commission's intention to reduce the complexity that had so far characterised applications for EU research funding.

Dr Burrows said that, whereas in the past the UK Research Councils may have seen excellence of research as an end in itself, they now looked for evidence of impact, and they provided funding for knowledge exchange activities. In the UK, a total of some £470 million was spent per annum on agri-food research, including a collaborative food security programme involving the Research Councils, Government Departments, the TSB, devolved administrations, and the Wellcome Trust.

Comments by Lord Taylor of Holbeach, Department for Environment, Food and Rural Affairs

Lord Taylor said that he welcomed the committee's report; holding ministerial responsibility within Defra for the science brief, he was able to confirm that his Department saw innovation in agriculture as very important. The Foresight Global Food report had made the case for sustainable intensification of agriculture, and for "climate-smart" food systems. In the UK, and the EU, the need was to raise our game and provide more leadership; the UK Government already invested significantly in agri-food research, but if the industry was to improve its ability to withstand future shocks, it made sense for the UK to co-operate more fully within the EU and more widely.

He welcomed what Mr Hall had said about the European Commission's approach to research for innovation in agriculture. The Government was supportive of the EU's research mechanisms as described, including ERA-NETs and JPIs. More widely, the UK also took part in the Global Research Alliance on greenhouse gases, which it saw as a good example of the partnership approach. In January 2012, the UK Government would produce its climate risk assessment, linked to the national adaptation programme.

He said that, while in Opposition, he had been asked by parliamentary colleagues to carry out a review of agricultural research and knowledge; now that he had been appointed as a minister, he had been asked to implement the findings of that review. Good progress was being made, and this included better public-private collaboration to improve knowledge transfer. There had indeed been an erosion of capacity, which had to be overcome. While the result might not be the re-creation of ADAS as of old, it was vital to re-populate the area of intermediaries between laboratory and farm. The UK had first-class scientists carrying out research: what was essential would be to provide adequate opportunities for scientists and farmers to connect with each other.

The Government welcomed the Common Strategic Framework approach to research and innovation, and supported the identification of food security and climate change as a grand challenge. The impact of Horizon 2020 would crucially depend on the delivery of research in practice. The Government also looked for an ambitious reform of the CAP to make it possible for EU agriculture to become more innovative and competitive, by achieving sustainable intensification; in its view, the October 2011 reform proposals fell short of what was needed. It welcomed the proposal for an Agriculture EIP, and would work closely with the Commission on the process of establishing operational groups and clarifying their remit.

In short, he considered that there was a strong consensus about the challenges facing EU agriculture and the need for innovative responses, but he stressed that all involved needed to evangelise about the issues. Focused endeavour was required to drive through the solutions, and to secure tangible outcomes with practical delivery systems.

Conclusion

Lord Carter thanked all participants. He said that the seminar had shown again that agriculture was in a new era, of potential shortage, rather than frequent surplus. Innovation was essential to securing the sector's future. The committee saw a special responsibility on Government, particularly on Defra, to drive forward innovation in agriculture, working with other Member States in the EU and with the European Commission. The committee would speak up when more needed to be done, but it would also make clear its support for those institutions and organisations who were working to promote innovative, productive and sustainable agriculture.