



All-Party Parliamentary Group on Science and Technology in Agriculture

Notes of Inaugural Meeting held on Monday 11 November 2024

Macmillan Room, Portcullis House

Key priorities for UK agricultural science and innovation to deliver for food security, climate and nature

In attendance:

George Freeman MP
Charlie Dewhurst MP
Andrew Pakes MP
Julia Buckley MP
Lord Carrington
Lord Taylor of Holbeach
Lord Cameron of Dillington
Baroness Batters

Guest speakers:

Dr Helen Ferrier, Chief Science Adviser, NFU
Josh Woolliscroft, Head of External Affairs, CropLife UK
Ed Barker, Head of Policy, Agricultural Industries Confederation (AIC)
Professor Mario Caccamo, Chief Executive, NIAB
Dr Anthony Hopkins, Head of Policy, British Society of Plant Breeders (BSPB)

Stakeholder attendees:

Laura Marshall, Royal Society of Biology; Feodora Rayner, CropLife UK; Elizabeth Hedges, CropLife UK; Tony Moran, Cibus UK Ltd; Prof Richard Napier, Univ of Warwick; Roger Vickers, PGRO; Prof Tina Barsby, G's Growers; Jim Morton, Syngenta; Rosie Bryson, ADAS; Jackie Evans, ADAS; Elizabeth Scott, NIAB; Thomas Vincent, FSA; Elizabeth Warham, RBG Kew; Dr Susannah Bolton, SRUC; Janette Aquilina, British Poultry Council; Prof Louise Manning, Univ of Lincoln; Martin Collison, Collison Assoc; Nick Goodwin, Anglia Innovation Partnership; Dr Penny Hundleby, John Innes Centre; Mimi Tanimoto, John Innes Centre; Sheridawn Schieman, Corteva Agriscience Ltd; Jennifer Butcher, ABF; Mark Buckingham, Bayer CropScience; Jon Williams, BASF; Daniel Pearsall, Group Co-ordinator.

1. Inaugural meeting

Confirmation of All-Party Group's purpose and remit

All members present agreed to the continued existence of the All-Party Group in the new Parliament, with the remit: *"To provide a forum for parliamentarians and stakeholders to debate and highlight the value of science and technology in agriculture."*

Election of chair and officers

All members present supported the nomination and election of George Freeman MP as chair, and of Charlie Dewhurst MP, Lord Grantchester and Professor Lord Trees as vice-chairs.

Role of co-ordinator and proposed new core stakeholder

All members present endorsed the role of Daniel Pearsall as Group Co-ordinator, and supported the proposed inclusion of the European Forum of Farm Animal Breeders (EFFAB) as an additional core stakeholder of the Group.

2. Chair's introduction

Taking the chair, George Freeman MP (GF) welcomed members and stakeholders to the inaugural meeting of a Group which he had previously chaired as a newly-elected MP. He explained that this was shortly after the publication of Sir John Beddington's Foresight Report on global food security, which warned of a 'perfect storm' of rapid population growth, climate change and increasing pressure on the planet's finite natural resources. He suggested that the role of agricultural science and technology in tackling those challenges remained as urgent today, if not more so, with the world moving at pace to meet demands for increased food production while delivering on net zero commitments.

But GF also highlighted the ongoing mismatch between the UK's world-leading position in high-citation, academic research, and the country's ability to tap into the billions of pounds being deployed globally in applied agricultural research and innovation. Fourteen years earlier, GF noted that the All-Party Group had been instrumental in pushing for the UK Agri-Tech Strategy as a means of unlocking that potential, but he expressed his disappointment that the programme had not worked out as envisaged, including the aspirations for a central role for agri-metrics and data as strongly advocated by this Group.

As the new Government developed plans for its own Industrial Strategy, GF indicated that he was keen to share the lessons learned from the past 10 years of the Agri-Tech Strategy in a spirit of constructive debate, and capitalising on the UK's position outside the EU to forge a successful, sustainable, productive future for UK agriculture.

GF expressed an ambition to engage proactively with the new intake of Labour MPs, particularly those with scientific interests and/or representing rural constituencies, to ensure the All-Party Group's work, and the importance of agri-tech in relation to everyday issues such as food security and affordability, healthy eating and net zero, are fully appreciated.

To that end, plans for the Group to host an agri-tech showcase event in the New Year highlighting the contribution of UK-developed, UK-funded innovations were discussed, alongside the possibility of securing the Upper Waiting Hall exhibition space in the main Palace of Westminster.

Plans for next APPG meeting on 10 December were also shared, when the Group would be hosting a high-level US delegation from USDA, the US Sustainability Alliance and agri-data organisation Field to Market to discuss the US approach to delivering 'climate smart agriculture' in the context of an overall policy objective for US farmers and ranchers to produce 40% more food by 2050 while reducing agriculture's environmental footprint by 50%.

GF also paid tribute to outgoing chair Julian Sturdy, who had chaired the Group so successfully over the preceding eight years, covering a period which had included the APPG playing such a pivotal role in leading calls for regulatory reform in relation to new breeding techniques such as genome editing, resulting in the passing into law of the Genetic Technology (Precision Breeding) Act 2023.

3. Guest speakers

GF invited guest speakers from some of the APPG's core stakeholder organisations to share their thoughts on the key priorities for UK agricultural science and innovation to deliver for food security, climate and nature.

Dr Helen Ferrier, Chief Science Adviser, NFU

Helen Ferrier (HF) welcomed the re-constitution of the All-Party Group, and GF's return as chair, as such an important part of the opinion-forming and policy-making landscape in this area.

HF highlighted the importance of forging a strong working link between the science community and farmers putting new innovations into practice on the ground. It was also important to recognise the amount of public funds directed towards agri-tech, but while a small number of farming businesses had been closely involved and had benefited from that funding, HF considered that there was still a clear need for a more coordinated mechanism for knowledge transfer and knowledge exchange – eg along the lines of the proposed What Works Centre for agriculture to act as a central repository for all the research work taking place – to support individual farms' decision-making and so deliver a return on taxpayer investment.

HF also pointed to the need to identify gaps in terms of the research taking place vs. what is needed by the industry. She highlighted a recent report by the Centre for Effective Innovation in Agriculture, led by the Royal Agricultural University, which brought together a wide range of production challenges, skills needs etc from individual farmers and growers, and emphasised the need to bring research activity and industry needs closer together.

HF noted that the UK does have strong applied research organisations, such as NIAB and Fera, working to deliver on those objectives, but much better co-ordination of activity between Government, industry and the research base is needed, addressing the real challenges facing farmers and growers.

Proportionate and enabling regulation of new farming technologies also had a key role to play in supporting a more productive, profitable and sustainable farming sector, and in that respect HF welcomed plans to set up a new Regulatory Innovation Office, as well as recent signals that the Labour Government is set to press ahead with implementing the Precision Breeding Act for plants, adding that precision breeding in relation to livestock must also be brought forward and not sidelined.

Josh Woolliscroft, Head of External Affairs, CropLife UK

Josh Woolliscroft (JW) noted that the world was in a very exciting place technologically in terms of the innovations coming forward allowing more people to be fed using less land while addressing climate and biodiversity challenges, but he suggested that the missing piece - at least in terms of the UK – was the ability of regulators to keep pace. He highlighted the following three specific challenges and priorities for CropLife UK, representing crop protection and biotech interests:

Delivery of conventional chemical pesticides – since leaving the EU, JW indicated that UK regulation and authorisation of crop protection products has gone from one of the best and most efficient systems in Europe to one of the slowest. Loss of active substances is already affecting farms and productivity with potential implications for food security and affordability. It is also potentially holding back the registration of other crop protection solutions such as biopesticides.

Precision Breeding Act – JW welcomed the new Government's recent announcement that it will bring forward the secondary legislation needed to implement the Precision Breeding Act as soon as Parliamentary time allows, and it is important that the legislation is proportionate and enabling, reflecting the strong cross-party support for the Act's central objective to free up the use of these technologies. But it must also be recognised that there is more work to be done to realise the full potential of precision breeding across the UK, since the current scope of the legislation is England-only.

GMO import approvals – JW also raised concerns over the Food Standards Agency's slow and inefficient system for approving the import of GMOs for use as feed ingredients, which sought to 'platinum-plate' the EU's already lengthy processes. In Australia, securing import approval for GMOs takes around a year, in the UK it is more like five years, he noted.

Ed Barker, Head of Policy, Agricultural Industries Confederation (AIC)

Representing grain merchants and suppliers of seeds, fertilisers, crop protection inputs and agronomy advice, AIC head of policy Ed Barker (EB) highlighted three key challenges which a more outcomes-focused approach to agricultural research and innovation could help address.

First, he pointed to the lack of cropping diversity UK-wide and a reduction in the variety of crops grown, with much greater reliance on wheat and barley at the expense of traditional break crops. Declining areas of oilseed rape and field beans in particular were prompting concerns over security of home-grown vegetable oil supplies and increased dependence on protein imports for pig and poultry feed. A more diverse rotation was also better for nature and soil health, he added, highlighting the need for plant breeding solutions in particular to make these crops more economically viable.

Secondly, he highlighted the increasing challenges facing farmers in meeting crop quality specifications, whether in relation to wheat for breadmaking, barley for malting or oilseed rape, peas and beans for human consumption. This was primarily as a result of climate change and the greater frequency of more extreme weather events, but also due to a declining crop protection toolbox and other restrictions on chemical and fertiliser use.

Thirdly he expressed interest in the Regulatory Innovation Office and whether it would help streamline and accelerate approval processes in the agriculture sector. Harmonisation and regulatory alignment with other countries, for example in relation to precision breeding, would also be needed to avoid international trade disruption. Current UK approval processes for agricultural inputs such as GMOs and methane-reducing feed additives were extremely slow, he explained, noting that at current rate of progress clearing the backlog of existing applications would take an estimated 18 years.

Professor Mario Caccamo, Chief Executive, NIAB

Mario Caccamo (MC) agreed with previous comments that it was important to recognise that the £0.5bn in public funding allocated to agricultural R&D in the UK was a significant amount, and that it was equally important – for example through a 10-year review of the Agri-Tech Strategy – to understand why it is not translating into serious impact in terms of domestic agricultural productivity growth, inward investment and tech-based exports.

MC agreed with calls for greater cropping diversity, which could potentially be delivered through improved access to new breeding technologies.

He pointed to a lack of clarity over the long-term strategic goals for UK agriculture, and what was expected of Britain's farmers. For example, it was not clear what was meant by 'food security' – producing more at home or importing more?

MC suggested that a 25-year agricultural roadmap to 2050 was urgently needed, with explicit targets for food production and reduced environmental impact, and key performance indicators not only to benchmark and monitor progress towards those goals, but also to frame the R&D agenda.

MC noted the fragmented nature of the applied agricultural research landscape in the UK, with a large number of relatively small research institutes and organisations competing for the same funding pots, with little co-ordination and significant scope for both duplication and gaps in research effort.

A 10-year review of the Agri-Tech Strategy might also provide the opportunity to consider how agricultural R&D is organised and prioritised in other countries where significant levels of productivity growth and private sector investment have been achieved.

In terms of critical technologies, MC pointed to AI and genetic innovation as the key drivers for the future, which would both require the policy and regulatory environment to realise their potential, possibly also leading to new business models within the farming industry.

Dr Anthony Hopkins, Head of Policy, British Society of Plant Breeders (BSPB)

Anthony Hopkins (AH) suggested that plant breeding was in need of a higher profile and should be taken more seriously in the formulation of agricultural and environmental policy. He indicated that it was a sector often overlooked. A recent House of Lords report into the horticulture sector, for example, scarcely mentioned the importance of plant breeding and seeds, and the same was true of multiple government reports, for example in relation to SFI options and environmental policy.

And yet plant breeding holds the key to many of these challenges, he said, whether it is reducing pesticide inputs, improving the efficiency of fertiliser use, breeding for more diverse rotations, or improving the resilience of crop varieties to the effects of a changing climate.

UK plant breeding had consistently delivered a 1.5% increase in crop yield potential over the past 50 years – indeed it was only through plant breeding that modern crop production is happening at all.

But looking ahead to 2050 and the global challenge of producing up to 70% more food, more sustainably, AH said the current rate of progress was still not fast enough. With 25 years to save the planet, it wouldn't be achieved through 'business as usual' or, even worse, reverting to more old-fashioned farming practices.

That was why early implementation of the Precision Breeding Act was so critical, he explained, because more precise, faster technologies like genome editing can help reduce breeding timelines significantly. We cannot afford not to be pursuing these technologies, he said, pointing to the need for an enabling regulatory framework, with quick, predictable processes supported by clear, pro-innovation policies to help developers get products to market.

AH also highlighted the need to address continuing post-Brexit challenges such as the increased costs and delays involved in registering new varieties which, dealing with a much smaller UK market outside the EU, was potentially stifling investment in UK-based innovation. Breeders were also experiencing major delays, and extra costs and red tape, moving seeds, plants and breeding material in and out of the EU. This was also leading to reduced breeding activity focused on the needs of UK growers, with some EU-based breeders already cutting back on the number of varieties sent to the UK, particularly in the horticulture sector.

Genetic improvement through plant breeding innovation would be critical to deliver on the new Government strong commitment to food security, and to delivering policy outcomes which allow food production, climate change mitigation and nature restoration to go hand in hand, he said.

But realising that in practice would require much greater policy recognition of the importance of plant breeding, and the development of more proportionate, streamlined and predictable regulatory processes, not only for new precision breeding technologies such as genome editing, but also to alleviate the serious operational challenges still facing the day-to-day business of conventional breeding as a result of Brexit, now almost five years since the UK left the EU.

Questions & discussion

The following points were raised by members and stakeholders during questions and discussion:

Importance of recognising diversity in agriculture – more women are involved in farming around the world than men, so agri-tech must not always be billed as 'toys for boys'.

Wider health implications of agri-tech developments must also be considered. Farming is already a solitary profession with relatively high levels of mental health problems. Increasing automation within the industry could compound these issues.

In the UK, a fundamental issue is land use and competition for land, highlighting the imperative to increase and optimise productivity on a smaller footprint of farmland so releasing other land for other uses.

Role of AI in collecting, curating and harnessing the vast silos of data within the agricultural industry is critical. The UK was a leader in the field but is now lagging behind. However, effective systems of data management will not be achieved without proper governance arrangements in place to provide transparency, confidence and trust in relation to how shared data will be used.

A national land use framework is critical, but central government must not overlook the significant role and influence of local authorities in determining local land use decisions, eg abattoirs, grain stores, reservoirs.

Important to connect the research base with the needs of farmers on the ground: 'Scientists don't always listen to farmers.'

UK can learn from how other countries organise their agricultural research. New Zealand and the Netherlands have seven-year research programmes, and set priorities for R&D on a 'co-creation' basis with industry. Germany has a 10-year R&D cycle.

Food waste in the supply chain is a key issue to be addressed.

Because of Defra, agriculture sits on its own within government but it is an important sector of British industry which needs to be closely connected to other departments focused on supporting growth, innovation, wealth creation. Is having its own department, rather than being treated as another component of industrial policy, helping or hindering British agriculture?

"Science and innovation in agriculture must be seen as part of the solution, not part of the problem."

Concluding the meeting, GF thanked guest speakers, members and stakeholder attendees for their contribution to an informative and interactive session, which had certainly provided ample food for thought to help frame the All-Party Group's work programme over the coming months.