



All-Party Parliamentary Group on Science and Technology in Agriculture

Climate Smart Agriculture: Transatlantic dialogue for more sustainable and efficient food production

Notes of Meeting held on Tuesday 10 December 2024

Meeting Room P, Portcullis House and via Zoom

In attendance:

George Freeman MP (chair)
Charlie Dewhurst MP
Lord Taylor of Holbeach
Lord Cameron of Dillington
Baroness Batters
Roz Savage MP
Lord Roborough
Earl of Devon
Professor Lord Trees
Earl of Caithness
Ann Davies MP

Guest speakers:

Jason Hafemeister, Acting Deputy Under Secretary, USDA Foreign Agricultural Service (FAS)
Nick Gardner, Chair, US Sustainability Alliance
Eric Coronel, Director of Science & Research, Field to Market
Teresa Miller, Board Member, US Sustainability Alliance

Stakeholder attendees:

Jim Morton, Syngenta; Prof Louise Manning, Univ of Lincoln; Mark Suthern, Environment Agency; Dr Susannah Bolton, SRUC; Milika Buurman, Elsoms Seeds; Dave Hughes, Syngenta; Prof Huw Jones, Aberystwyth Uni; Dr Craig Lewis, Genus/PIC; Prof Jonathan Jones, The Sainsbury Laboratory; Graham Brookes, PG Economics; Paul Billings, Germinal Seeds; Chris Jackson, UK TAG; Mark Buckingham, Bayer CropScience; Roz Bird, Norwich Research Park; Saskia Hervey, Earlham Institute; Charlie Curtis, British Sugar; Jackie Evans, ADAS; Justine Gallie, Food Standards Agency; Dr Helen Ferrier, NFU; Jessica Dewhurst, Food Standards Agency; David Barton, NFU; Phil Garnham, Breckland Council; Kim Matthews, AHDB; Dr Julian South, MAGB; James Thompson, NFU; David Green, USSA; Jennifer Wilson, USSA; Fiona Shuttleworth, House of Lords; Alexandra Baych, US Embassy; Jonathan Little, US Embassy; Daniel Pearsall, Group Co-ordinator.

1. Chair's welcome and introduction

George Freeman MP (GF) welcomed fellow officers, members, guest speakers and stakeholders, briefly introducing the topic for discussion. He noted that as nations around the world wrestle with the challenge of producing more food for a growing population while protecting the environment and natural resources, the US Government has set out a very clear Agriculture Innovation Agenda with an aim of increasing food production by 40% by 2050 while reducing agriculture's

environmental footprint by 50%. This meeting provided a prime opportunity to understand more about those ambitious goals and the steps being taken to achieve them, in the hope that the UK might do something similarly bold. He also noted that evidence is starting to emerge that combining increased intensity of production on good land with properly done conservation of habitats and diversity on the less good land is the way forward. He explained that the All-Party Group was dedicated to bringing good science, data and evidence to that debate to help Ministers in the new Government who have publicly said they want to increase food production and help tackle global greenhouse gas emissions. He suggested that this meeting was a further significant contribution to that information gathering process.

2. Guest speakers

(NB Guest speakers' slide presentations are available to download via the Meetings section of the APPGSTA website - <https://www.appg-agscience.org.uk/meetings>)

Jason Hafemeister, Acting Deputy Under Secretary, USDA Foreign Agricultural Service

Jason Hafemeister (JH) opened by noting that at current rates of global agricultural productivity growth, meeting the challenge of feeding another two billion people by 2050 would mean putting an area the size of India under the plough, which would be simply unsustainable. The solution lies in finding new and better ways to farm, including embracing new technologies. It was also about trade and optimising the means of production – Guatemala should not be growing wheat, the US should be growing wheat – Guatemala should be growing pineapples. Building larger, long-term markets was also the key to securing investment in new technologies, new crop and livestock breeding techniques.

JH explained that the US leans heavily on the market for solutions to the challenge of developing climate smart agriculture - the value of US agricultural production is around \$400 bn per year. Pointing to the difference between regulation and subsidies, he suggested that while regulation was effective at stopping certain practices, it was not necessarily the best way to encourage and enable new behaviour.

Bearing in mind that with an outgoing Biden administration things could be very different in two months' time, JH outline the concept of the USDA's \$3bn Partnerships for Climate Smart Agriculture programme, which provides seed funding to encourage farming and food chain partners to submit proposals for new, more sustainable approaches to agricultural production, bringing opportunities to reduce GHG emissions, to increase carbon sequestration, and to create valuable new premium markets and value chains.

Introduced two years ago, JH explained that the programme is still in its early stages, with promising results starting to come in but with no conclusions reached yet. The current focus is on measurement, monitoring and verification, including the challenge of identifying common denominators across producers and a fair return on investment calculation, as well as differentiating short term gains from long-term gains.

JH said he expects the programme to reveal much more over the coming years in terms of best practice for sustainable intensification and climate smart agriculture, although he emphasised that this was an add on to the existing pressures of market forces, with consumers already demanding more sustainable food products and companies expected to meet ESG goals, as well as regulations setting requirements for clean air and water, and environmental responsibility requirements linked to farm payments etc.

Nick Gardner, Chair, US Sustainability Alliance

Nick Gardner (NG) introduced the US Sustainability Alliance as a coalition of 28 US exporter associations, which started out 12 years ago under a USDA export-oriented programme with eight trade associations focused on sharing the values and experiences of US farmers, fishermen, foresters and supply chain partners regarding sustainable practices and conservation programmes.

He emphasised USSA's 'three-legged stool' approach to sustainability, which was about addressing environmental, economic and social impacts. Reducing environmental impacts makes no sense to farmers if the economics don't stack up, while societal concerns relate to issues such as animal welfare and farmers' role in the rural community.

NG explained that USSA represents around two-thirds of US agricultural exports to Europe (including the UK), which are valued at around \$10bn per year, with \$3.1bn coming the other way from Europe. Annual US agricultural exports to the UK are valued at around \$1.6bn pa.

Pointing to the diversity of issues facing his 27,000 US dairy farmer members, and the wide range of climatic zones, soil types, sizes of enterprise and farming systems involved, NG noted that there was no one-size-fits-all solution behind the sustained productivity growth of 1.5% pa US agriculture delivered between 1948 and 2021.

However, he underlined the importance of access to new technologies and innovation in helping farmers become more productive and sustainable at the same time – producing more with less. He also emphasised that 95% of US dairy farms are family-owned, and 97-98% family farms across US agriculture as a whole.

NG concluded by highlighting the importance of talking about trade as a two-way dialogue, and not just focusing on financial transactions but also on the importance of exchanging ideas, including in relation to agricultural technologies and their regulation. USSA's role in seeking to facilitate trade was not to preach, but to explore similarities and common ways of working, and to understand differences.

Eric Coronel, Director of Science & Research, Field to Market

Eric Coronel (EC) introduced Field to Market (FtM) as a non-profit, membership-based organisation which brings all sectors of the food supply chain together in a pre-competitive space to define, measure and advance the sustainability of food, feed and fibre production in the US, based on the creation and farm-level delivery of sustainability metrics and data solutions. EC added that FtM is committed to being grounded in science, fully transparent, outcomes-focused and technology-neutral.

EC explained that FtM's mission revolves around delivering a sustainable balance between economic outcomes, in terms of farmers livelihoods, and environmental objectives, in terms of resilient ecosystems.

EC emphasised that FtM is not focused solely on one environmental objective (eg reduced GHG emissions) but on analysing multiple metrics simultaneously to ensure trade-offs between different environmental impacts can be taken into account. Eight parameters are currently included: biodiversity; land use; energy use; soil conservation; GHG emissions; soil carbon; irrigated water use; water quality.

EC illustrated how the 'Fieldprint Platform' enables FtM to track sustainability performance over time across these multiple metrics, for example as growers transition to practices such as minimum tillage and use of cover crops to reduce GHG emissions, enhance soil health and reduce water run-off. FtM collects farm-level data directly from individual growers and does not rely on national or state averages to assess sustainability outcomes. EC acknowledged that this was a time-intensive process, but it was the only way to create relationships with growers to deliver improvements on individual farms year after year.

In terms of strategies to encourage grower participation, EC explained that FtM receives \$81m from USDA climate smart agriculture programmes to develop a financing strategy for growers, for example via yield guarantees and loan reductions, as well as rewarding specific practices, with a

five-year aim to cover 10.6 million acres across 34 states and delivering 2.6 million tonnes of GHG savings through conservation practices.

3. Questions & discussion

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

The US Innovation Agenda target of 40% increased agricultural production with 50% reduced footprint by 2050 was described as 'aspirational', but is intended to frame the kind of measures – cultivation practices, cover crops, seed technologies, improved management of forests and non-agricultural land – that will contribute towards that goal.

While the direction of travel for EU (and UK) farm policy points towards 'extensification', the US takes the view that every productive acre of existing farmland taken out of production means cutting down three acres of rainforest to make up for the loss in food production. The way forward lies in finding ways to intensify production on existing land, but to do it more sustainably - 'sustainable intensification'.

One of the most powerful strategies to help farmers produce more food while reducing their environmental footprint will be continuous genetic improvement – for both crops and livestock.

Methane-reducing feed additives in cattle are also seen as an important tool for helping dairy and beef producers improve their carbon footprint – watching the public and media debate over Bovaer closely and with some concern. Very important that ineffective communication or crisis handling in situations like this does not jeopardise access to such a vital tool.

Food security must also be viewed in terms of nutrition security, highlighting the crucial role of livestock agriculture in converting inedible by-products or crops into high quality protein.

One of the key challenges facing UK farmers is the lack of a clear, long-term plan and a sense that the goalposts are constantly moving – ie whether they are primarily seen as food producers or stewards of the countryside.

Irrespective of the imminent change in US administration, global trade developments as far as the US is concerned will continue to be driven by the three 'B's – Brazil, Beijing and Brussels. Beijing is the consumer, the fastest growing market for US agricultural products; Brazil is the competitor with increasing acreage and increasing yields; and Brussels for the precedents the EU is setting for regulatory practice.

How tariffs on agricultural goods might be used by the US from 2025 onwards – eg to be more protectionist or as a negotiating lever against unfair trade practices – remains an open question.

Recognition that the US has different politics from the UK and Europe governing the uptake by farmers of new technologies and innovations such as precision breeding, and the critical role of NGOs and food retailers in that process.

US consumer surveys on food highlight price, taste and availability as the top issues of concern, not the use of particular technologies or production methods.

Funding and delivery of agricultural research and innovation in the US is a combination of federal, USDA-funded programmes, university-led research and private sector R&D. An extensive network of on-farm advisers based at land grant universities is supported by USDA to share the knowledge with practising farmers.

Peanut breeding was cited as a case study of how this worked in practice, with the private sector funding genetic research and conventional breeding work at state universities which over a 10-year

period had developed new strains of peanuts requiring half as much pesticide inputs without impacting taste or yield.

A condition of participation in the USDA-funded climate smart agriculture programmes is that individual farmers share their data to allow for initial benchmarking and monitoring of progress over time. Getting consistent baseline metrics relevant to all producers and to different sectors of the supply chain remains a live issue.

Research in the UK highlighting a five-fold difference in GHG emissions per kg of beef between different production systems underlines the enormous scope for improved on-farm performance through measuring and sharing of best practice.

As part of the climate smart partnerships programme, USDA has established a 'climate-hub' to make such data readily accessible to producers to help understand what works best, under a range of different conditions, geographies and systems etc.

The challenge, on a global scale, of identifying harmonised approaches to measuring the environmental impacts of on-farm production, when so many different tools and methods are available.

The question of how to introduce baselining, metrics and monitoring at the practical farm level, including regional or national averages, in a way that incentivises farmers to participate and does not send the message that they are a 'good' or a 'bad' farmer.

The need for sustainable food production, climate change and biodiversity targets to be discussed on the international stage at the same time, not compartmentalised resulting in domestic farm policies – eg in the UK – which encourage conservation practices and rewilding of farmland at the expense of food production.

Food production cannot be sidelined at future COP talks in the way it has to date. The US has a key role to play in leading that debate, and with an incoming Republican administration, mindful of the interests of farmers and the value of new technology there could be grounds to be optimistic on that front.

Crop yield increases over time in the US have been driven by different factors, first mechanisation, then chemical inputs, then biotech, now big data – as each has run its course a new idea has emerged, but it not yet clear what the next driver will be, perhaps more genetics, or more sophisticated use of AI and data manipulation.

Food vs fuel debate in relation to the use of corn-derived ethanol not seen by US participants as a major issue of concern in relation to either food or fuel prices, with increasing electrification of transport likely to suppress demand, and every gallon of oil or gas kept underground seen as positive in terms of safeguarding suppliers for future generations.

Concluding the meeting, GF thanked guest speakers, members and stakeholder attendees for their contribution to an informative and interactive session, which above all highlighted the shared objectives and common ground on both sides of the Atlantic in seeking to use farm-level data to understand how best to produce more from less. The session provided fertile ground for future UK/US collaboration, as well as supporting the All-Party Group's mission to help the new UK Government develop science-based policies on these issues.