



All-Party Parliamentary Group on Science and Technology in Agriculture

SUSTAINABLE INTENSIFICATION AND METRICS IN AGRICULTURE

Julian Sturdy MP

Westminster Hall Debate, Tuesday 22 February 2022

In bringing forward this debate, I declare an interest as an arable farmer and chair of the APPG on Science and Technology in Agriculture.

The world needs to increase food production and availability by 70% by 2050 to keep pace with the food needs of a rapidly expanding global population, in the face of climate change and increasing pressure on the world's finite natural resources.

With its good soils, temperate climate, professional farming sector and world-leading R&D, Britain is uniquely placed not only to optimise its capacity for sustainable efficient food production, but also to become a global hub for agri-science excellence and innovation: exporting technological solutions, attracting inward investment, and fostering international research collaboration.

Outside the EU, Britain has a unique opportunity to lead in these fields, and to put scientific rigour and evidence at the heart of UK policy development.

Early action by Defra to make gene editing regulations more science-based and proportionate, re-aligning our approach with other countries such as Australia, Japan, Brazil, Argentina and the US, is a positive and welcome first step.

Members of the APPG on Science and Technology in Agriculture led calls for the Government to take action on this issue during the passage of the Agriculture Bill, and we are grateful to Ministers for listening and responding to those calls.

Access to precision breeding tools will bring new opportunities to keep pace with demands for increased agricultural productivity, improved resource-use efficiency, more durable pest and disease resistance, better nutrition and resilience to climate change.

But for this happen we must also ensure that future farm policies embrace and support the use of innovative technologies.

Like many others in the sector, I am concerned that the direction of travel is far from clear in terms of the Government's future vision for agriculture.

We cannot afford to be complacent with something as fundamental as food security. The global food supply and demand balance today remains as precarious as 11 years ago when Sir John Beddington's Foresight report urged governments to pursue a policy of 'sustainable intensification' in agriculture to meet future food needs in the context of population growth, climate change and finite natural resources of land, water and fossil fuels.

Last year's OECD-FAO Outlook Report 2021-2030 warned that with 8.5 billion mouths to feed by 2030, a business as usual approach will fall short of achieving Sustainable Development Goal 2 on zero hunger by 2030. The OECD-FAO report also highlighted the critical role of public and private

sector R&D investments in enhancing productivity on existing farmland, so alleviating pressure to bring more land into production.

I believe we have a responsibility to optimise our capacity for sustainable efficient food production, and not to offshore our food system impacts to regions of the world which may be much more vulnerable to the production-limiting effects of climate change.

There are mounting concerns that without a clear vision and definition of what is meant by sustainable agriculture, the UK is at risk of sleepwalking into its own food crisis.

Writing in the journal *Food Policy*, Robert Paarlberg of Harvard Kennedy School recently highlighted the transatlantic policy tensions between the EU's Farm to Fork Strategy - including plans to expand organic farming, reduce synthetic chemical use and reject modern biotechnology – and the United States' approach to emphasise agricultural innovations based on the latest science, articulated through its Global Coalition on Sustainable Productivity Growth.

Last September I wrote to the Prime Minister urging the UK Government to sign up to this Coalition, which was established by US Agriculture Secretary Tom Vilsack to demonstrate that farmers can adopt environmentally friendly and climate-smart farming practices without sacrificing productivity.

I didn't receive a reply from Number 10, so can I ask the Minister today: will the UK Government join other countries such as Australia, Canada and Brazil in signing up to the Global Coalition for Sustainable Productivity Growth?

And can the Minister explain where the UK sits in terms of the agricultural policy tensions described by Robert Paarlberg?

Last year, a meeting of the APPG in Science and Technology in Agriculture entitled 'Whatever happened to Sustainable Intensification?', included contributions from leading UK experts in the fields of crop science, agricultural economics, rural policy and conservation science.

The meeting highlighted serious concerns that current farm policy development lacks scientific rigour, and that the policy focus on 'sustainable intensification' has diminished.

We were reminded that Defra responded to Professor Beddington's Foresight Report by initiating the Sustainable Intensification Research Programme, or SIP, a £4.5m, four-year, multi-partner research programme to investigate the challenge of securing the optimum balance between food production, resource use and environmental protection.

And yet while the concept of sustainable intensification and the scientific rationale which underpins it remain as relevant and urgent as ever, the outputs, recommendations and advice generated through the Defra SIP platform appear to have been quietly shelved and forgotten.

The weight of scientific evidence points to a need to optimise production on existing farmland. Professor Andrew Balmford, a conservation scientist at Cambridge University, told the All-Party Group that the most effective way to keep pace with increasing human demands for food while protecting habitats and preventing further biodiversity loss is through hi-tech, high-yield production on land that is already farmed, mirrored by explicit policy incentives and regulations to make sure other land is set-aside for nature. It turns out this is also the most efficient way to meet climate change objectives through increased opportunities for carbon sequestration and storage.

As a matter of urgency, Government must revisit and reinvigorate the policy focus on sustainable intensification as the most effective way - perhaps the only way - to feed an increasingly hungry, warming planet. And if the term 'sustainable intensification' has fallen out of fashion, as Defra's Chief Scientific Adviser Professor Gideon Henderson suggested to us recently, then by all means call it something else, but we must above all be guided by the science. The science that Defra itself has funded.

I am genuinely concerned about a shift away from science- and evidence-based policy-making within the Department, and towards an over-reliance on voluntary and campaigning NGOs to support the Government's vision of sustainable agriculture.

Nowhere is this more apparent than in Defra's approach to the issue of sustainability metrics in agriculture. While Gideon Henderson suggested to us in January that the Government is a long way away from having a mature policy in relation to metrics, correspondence I have received on the issue from Defra Ministers would suggest that one particular model, the Sustainable Food Trust's Global Farm Metric, is firmly embedded in the Government's thinking.

Not only is the Sustainable Food Trust an activist, pro-organic NGO which openly campaigns against technologies the Government is seeking to enable, such as gene editing, but the model itself is designed to reward less productive, more extensive farming systems by favouring a whole farm, or area-based approach to measuring resource use and environmental impact.

Again, Professor Balmford told the All-Party Group that meaningful sustainability comparisons between different farming systems require an assessment of resource use and external impacts per unit of food produced, rather than per area farmed.

Professor Paul Wilson, an agricultural economist at the University of Nottingham who leads the Government's Farm Business Survey programme, agreed that an area-based approach for sustainability indicators such as carbon footprint or greenhouse gas emissions is flawed in principle and that there needs to be a clear reference point in terms of the amount of food produced to have any relevance.

Professor Wilson also led the metrics component of the Defra SIP project, which again does not appear to be feeding into the Government's thinking. This included a huge amount of work on sustainability metrics and indicators, including the prototype development of a farmer-friendly data and benchmarking dashboard allowing producers to assess and compare their performance against those indicators and against a weighted average of their peers.

As a Group we have long advocated the need to embed data science and sustainability metrics at the heart of a policy agenda focused on securing the optimum balance between food production, resource use and environmental impact.

We believe access to metrics capable of objectively and consistently monitoring that balance will be essential to set targets and measure progress for sustainable efficient production, to develop coherent R&D programmes, to understand and disseminate advice on best practice throughout the industry, and to provide meaningful information to consumers relating to the sustainability impact of each unit of food produced, whether a litre of milk or a kg of potatoes.

In addition to my earlier questions about whether the UK will sign up to the Global Coalition for Sustainable Productivity Growth, and where the UK sits in terms of the agricultural policy tensions described by Robert Paarlberg, I will conclude with two final questions.

Will the Minister agree, in view of the concerns I have raised, to submit the Global Farm Metric model to a process of independent scientific scrutiny and validation with leading academic experts in the field?

Will the Minister commit to facilitate a joint roundtable with our All-Party Group to take forward discussions on the development of robust and meaningful metrics for sustainable agriculture, including consideration of the work already funded by Defra as part of the Sustainable Intensification Research Programme?