



# Addressing the productivity gap in UK agriculture

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**Current taxpayer funding of applied and near-market agricultural R&D is not delivering value for money. With growth in UK agricultural productivity lagging seriously behind competitor countries, including those with lower public investment in research and innovation, agribusiness consultant James Wallace calls for a new approach to determining R&D spending priorities and subsequent knowledge transfer onto farm.**

UK agriculture urgently needs to improve its productivity.

Higher productivity – producing more output per unit of input - is essential for UK farming to compete in the global market. It is the foundation for a successful, profitable and sustainable farming industry in post-Brexit Britain.

And yet UK agricultural productivity growth lags seriously behind our competitors.

Just over three years ago, in February 2020, the Food & Drink Sector Council's Agricultural Productivity Working Group (APWG), chaired by former NFU President Sir Peter Kendall, issued a report warning that UK farming productivity growth is not achieving its potential.

The report noted that UK agricultural productivity has grown by just 18% since 1991, significantly lower than other countries such as the Netherlands (52%), United States (54%) and France (82%).

Left untouched, and confronted with a new set of challenges – including greater post-Brexit exposure to global markets, changes to farm support policies, climate change and commitments to achieve net zero emissions - the APWG report warned that Britain's farming industry faces decline, denying consumers and our domestic food industry the affordable, sustainably produced agricultural goods they demand.

Of course, the report was written before the Covid pandemic and war in Ukraine took their toll. The ensuing cost-of-living crisis and food price crunch, with food inflation

reaching its highest level for 45 years, have further underlined the urgent need for UK agriculture to focus on improving its productivity.

The APWG report also made clear that improving agricultural productivity is emphatically not about producing more with no thought to the environmental consequences or consumer expectations, indeed to the contrary: “the prize of greater productivity is significantly better use of our natural, environmental resources”.

The report added that higher productivity growth can be closely correlated to reduced environmental impact and is therefore also aligned with wider sustainability objectives.

In pointing the way forward to tackle UK agriculture’s productivity gap, the APWG report called for urgent action to address a fragmented knowledge exchange landscape, “tackling the problems associated with having a wide range of delivery bodies, variable messaging and no central point for quality assured advice.”

It also highlighted the need to ensure innovation funding and research strategy are geared towards the needs of the industry.

I couldn’t agree more.

Taxpayer-funded R&D expenditure must be targeted on those areas where technology and innovation will yield the greatest benefits. And research investment must be supported by an effective knowledge exchange infrastructure to transfer these advances into on-farm uptake and application.

Over the past fifty years, we have witnessed a move from farmer led R&D where development of new agronomy techniques, breeding improvements and machinery innovation largely took place at farm level or on experimental husbandry farms led by practical farmer innovators.

Now we have high tech laboratories, large research bodies based on science parks and data processing organisations all undertaking R&D off farm. These tend to focus on products or technologies which can be commercialised to generate a clear return on the funding investment. However, improvements in productivity require farm-based adaptation of new technologies and innovations, focused on improving output at reduced costs. Much of this will come from better – and more sustainable – farm management systems.

Despite major annual expenditure on agricultural Research and Development, UK farm productivity continues to increase at a snail’s pace of 1% per annum.

Comparisons by Defra in their 2020 report on Farm Performance and Profitability concluded that “UK agricultural productivity has not grown as fast as some of our competitors including those with lower public investment in innovation”.

We have created bodies such as an Agricultural Strategy Council to determine research priorities, funded major research facilities such as Rothamsted, John Innes and Moredun and established various “world leading centres of excellence”. It is also now 10 years since the launch of the £160m UK Agri-Tech Strategy, which promised

to forge new models of collaboration between public and private sector, and to bridge the gap between basic scientific research and its commercial, on-farm application.

And yet UK farming productivity growth still lags behind our international competitors.

Poor value for money was a major concern raised by farmers and other stakeholders during Defra's consultation on the role of the Agriculture and Horticulture Development Board (AHDB), and highlighted by AHDB petitioners seeking to opt out of the Potato and Horticulture statutory levy payments. The conclusion of the Defra study suggested that "fragmentation and coordination failures in the current UK innovation system have resulted in poor translation of public spending on innovation into productivity on the farm".

In other words, we have a problem in how we determine R&D spending priorities and subsequent knowledge transfer.

This arises from a major flaw in R&D decision-making procedures. UK agricultural R&D investment decisions are primarily supplier (researcher) led, not user (farmer) driven. Money is allocated by bodies such as UKRI-BBSRC, Innovate UK and the levy boards based on proposals submitted by the research community. The funding body may indicate general priority topics, but the proposals will reflect the focus of the research community to seek funding for the areas where they have existing expertise and facilities, or which might advance their career prospects. Industry support is considered desirable but comes from those seeking opportunities to develop their own businesses not necessarily to improve UK farm performance.

R&D funding proposals are judged by a peer group of senior researchers who are focused on the quality of the research, and not necessarily its value for improving farm productivity. There is little incentive within the funding process to make an objective assessment of the productivity benefits of the projects presented or how results will be disseminated. Farmer/industry involvement in the process is usually based on small advisory groups of "experts" who are considered representative of the industry. Decisions are made on a subjective basis considering the proposals presented to them. While these experts will do their best, inevitably their knowledge of the industry is limited to their own individual experiences and biases.

As a process for making scientific R&D funding decisions the procedure is far from being objective and scientific! The result is a poor return on the public investment.

At the same time, there is no effective knowledge exchange or consultation process in place with industry to identify the areas where research would yield the greatest benefit to UK agriculture or which would have the greatest value on farm.

Techniques such as cost/benefit analysis are well established in other industries and can easily be adapted for agriculture, for example by collating the views of a wide range of farmers, advisers and others in each sector of the industry to identify the major restrictions to improving their farm performance, the costs involved, and how frequently they affect their farming business. Priority areas to target R&D investment could then be more readily identified, communicated and translated into funding calls.

Alongside the process for establishing research priorities, a more effective knowledge transfer system is also needed to get results utilised on farm. Ongoing discussion of a new, integrated 'What Works Centre' or 'Evidence for Farming Initiative' makes sense, but it must carry industry-wide support and engagement to succeed.

Improved farm productivity can only be achieved through the management and use of new knowledge and technology on farm. We need a farmer not researcher-led decision-making process. Current taxpayer funding of applied and near-market agricultural R&D is not delivering value for money, and a consensus within the farming industry is needed of where R&D investment can give the greatest benefit.

With full industry participation in setting future priorities for R&D and integrating the knowledge exchange function we could deliver sustainable improvements in UK farm productivity and ensure Britain's farmers are resilient, profitable, and competitive on world agricultural markets.

***James Wallace is an independent agribusiness consultant. After graduating with a BSc in Agriculture at Edinburgh University and MSc from the London Business School, he has spent his career working in the UK seeds, plant breeding industry. He is a former board member of Agricultural Industries Confederation (AIC) and the Euroseeds Cereals Sector as well as serving on numerous industry advisory committees and working groups. He is a strong advocate of the improved sustainability, protein security and climate impact potential of increased investment and innovation in home-grown pulses such as peas and beans.***