



**Science for
Sustainable
Agriculture**

ELMS review is an opportunity to put scientific evidence and data at the heart of farm policy

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Science for Sustainable Agriculture

Recent reports that Defra Ministers are re-thinking aspects of the Environmental Land Management Scheme (ELMS) are causing understandable frustration and uncertainty among farmers over the future system of farm payments. However, faced with the even greater uncertainties over our future food supply caused by war in Ukraine, the effects of climate change and spiralling energy and input costs, it is absolutely right that the Government should be reviewing policies which would set our farming industry on a trajectory towards lower-yielding production systems and even re-wilding of productive farmland.

To deliver the best outcomes for food security, the environment and the climate, Defra Ministers must restore the strategic policy focus on sustainable intensification in UK agriculture, underpinned by science-based metrics, and with a clear focus on genetic innovation as the main driver of agricultural productivity.

[Science for Sustainable Agriculture](#) (SSA), which brings together a high-level grouping of political, scientific and industry leaders, is urging Ministers to ensure that scientific rigour and evidence lie at the heart of our food and farming policies, and that British agriculture embraces technology and innovation to increase its food production capacity in the face of heightened food security concerns, while at the same time mitigating and adapting to climate change, enhancing biodiversity and environmental outcomes, and conserving precious natural resources.

In its [launch prospectus](#) presented to former Defra Minister Victoria Prentis MP in May 2022, Science for Sustainable Agriculture warned of a policy drift towards lower-yielding farming systems, as the Government ignored the outputs of its own four-year research programme into sustainable intensification, and while policy development – including the Environmental Land Management Schemes (ELMS) – was overly reliant on campaigning and voluntary NGOs.

The SSA report noted that the recommendations of Professor Sir John Beddington's [Foresight report](#) on The Future of Food and Farming remain as urgent and relevant today as when issued more than 11 years ago, and the policy group has reiterated its call on Ministers to:

- Restore the strategic policy focus on sustainable intensification in UK agriculture - using scientific knowledge and innovation to help optimise the balance between food production, resource use and environmental impact, and re-focusing on the outputs of the four year, Defra-funded Sustainable Intensification Research Programme (SIP);
- Adopt meaningful, science-based metrics for sustainable agriculture as a critical evidence-base to drive best practice at farm level and frame the policy, R&D and regulatory agenda, focused on measuring resource use and environmental impact per functional unit of output, and building on the metrics and sustainability indicator work already funded by Defra as part of the SIP programme;
- Recognise the importance of genetic innovation, in both crops and livestock, as the single main driver of productivity gains in agriculture, by moving further and faster to make UK regulation of new genetic technologies in agriculture more proportionate and enabling, by establishing a long-term, strategic Crop Genetic Innovation Research Fund in response to Professor Jane Langdale's 2021 [review of UK plant science](#) for UKRI, which warned that major opportunities to translate early-stage genetic discoveries from lab to field are being lost, and by reviewing the case for similar action in relation to livestock genetics and breeding.

As a group we have also highlighted the urgent need for a coherent land use strategy – providing a science-based assessment of competing demands and priorities on our limited land resources – to precede the policy options being developed by Defra.

The SSA prospectus pointed to [peer-reviewed research](#) conducted over 10 years across a range of farming systems, led by UK conservation scientist Professor Andrew Balmford, which concluded that the most effective way to keep pace with increasing human demands for food while protecting habitats and preventing further biodiversity loss is through high-tech, high-yield production on land that is already farmed, mirrored by explicit policy measures to make sure other land is set-aside for nature and/or carbon sequestration.

Drawing on this work in a UK context, the SSA report endorsed Professor Balmford's creative vision of a three-compartment model for land use – allowing room for a combination of managed and natural habitat, low-intensity farming and high-yield, high-tech farming – as an evidence-based approach to sustainable intensification which, if properly implemented, could deliver a more sustainable balance in terms of food production, environmental protection and climate impact.

Based on a detailed analysis of two regions of England (The Fens and Salisbury Plain), agricultural economist Graham Brookes recently [suggested](#) that an allocation of land of about 60% in high yielding/intensity farming, 25% as managed and natural habitat (no agriculture) and 15% in low intensity/yielding, extensive farming might be appropriate for the country as a whole.

Our fellow SSA advisory group member, Norfolk arable farmer David Hill, has [emphasised](#) the importance of having a science-based assessment of future land use

allocations, before too much of our productive land is consigned to re-wilding, tree planting or low-yield farming systems, and before too much public money is designated to reward less productive farming systems when the scientific evidence tells us to focus on high yield farming.

I would strongly urge Ministers to take these evidence-based recommendations and considerations into account as part of the ongoing policy review.

Julian Sturdy is Conservative MP for the York Outer constituency. He chairs the All-Party Parliamentary Group on Science and Technology in Agriculture, and is a member of the Science for Sustainable Agriculture advisory group.