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Boosting British agri-tech to reduce inputs

KEY RECOMMENDATIONS



Remove restrictions on the use of drones outside of the line of sight and for the precision application of pesticides on crops.



Review the Sludge (Use in Agriculture) Regulations 1989 to examine whether the further processing of bio-solids for use in fertiliser could allow farmers to safely transition away from nitrogen-based, carbon-intensive products.



Loosen existing limitations on the use of insect protein in animal feeds.



Simplify the licensing process for new seaweed farms to encourage the use of seaweed as a methane suppressant in animal feed and improve the biodiversity of marine sites.



Target existing research and development funding to refine and demonstrate the technology for small-scale, low-cost seaweed processing centres to reduce the upfront cost of establishing profitable farms.

For centuries, Britain has been at the forefront of scientific innovation. Outside the EU, the UK is free to establish a new system of agricultural regulation. We cannot afford to waste this opportunity. Following the UK's departure from the EU, the Defra-commissioned Stacey Review set to rationalise the basis through which future farming regulation should be made: to safeguard animal and plant welfare, ensure good land management, and prevent hazards.²⁸ Proportionate, smart regulation enables farmers to fulfil these goals and, with the right regulatory framework, the UK could lead global innovations in agri-tech. This is good for British farmers, businesses, and the environment.

It is right that we restrict the use of new technologies with the potential to harm human, animal, or environmental health, that we guard against the risk of stranded assets to farmers' finances, and that we prioritise incentivising changes to land management techniques alongside technological solutions. But, too often, red tape prevents farmers from accessing new technologies which could enable them to employ more sustainable practices.

Drones are a particularly pertinent example. The Health and Safety Executive currently prohibits drones from being used for the precision application of pesticides, despite lacking any evidence that doing so is harmful to environmental, human, or animal health. Lifting this restriction could allow for the more targeted use of harmful pesticides without impacting crop yields. Research from PwC has shown that the use of drones could reduce the volume of pesticides by over 30 percent.²⁹

More broadly, drones have been shown to be an effective tool in agriculture. By using machine learning and camera technology, farmers can monitor their crops remotely, helping to increase yields and cut food waste. However, existing regulations prohibit the use

of drones outside of the operator's line of sight. These burdensome regulations should be scrapped to allow farmers to take advantage of this new technology. Doing this could also help to reduce soil compaction, as heavy farm machinery would no longer be required to visit sites or apply materials. To mitigate the risk of aerial collisions, the Civil Aviation Authority's existing limitations under the Drone and Model Aircraft Code regarding the maximum height of flight and the distance required between drones, people, residential, recreational, industrial, and commercial settings should still apply. An exemption for agricultural buildings should be included in a revised edition of the code.

Fertilisers are another area where cutting red tape could unlock new technologies and help farmers go green. Over two and a half gigatonnes of carbon are emitted every year from synthetic fertilisers - more than global aviation and shipping combined.³⁰ Tackling this significant source of carbon will be key to meeting our commitment to net zero. In addition to introducing a Carbon Border Adjustment Mechanism on imported fertiliser products, the government should review the Sludge (Use in Agriculture) Regulations 1989. If processed waste bio-solids are found to be safe for use in fertiliser, alternative products with these as their base could allow farmers to safely transition away from nitrogen-based, more carbon-intensive products. This could be a significant development in cutting scope three emissions in agriculture, reducing imports of fertiliser, and improving the capacity of water treatment works. In research funding, priority should also be given to research into improving crop resilience and seeds which are not reliant on nitrogen-based fertilisers.

To further limit emissions from agriculture and encourage new technologies, the Food Standards Agency should amend regulatory requirements for using additional substrates in insect farming,

allowing for a broader range of feedstocks for insect farms. Animal feed accounts for around 75 percent of global soy production and its cultivation has been linked to deforestation. The widespread adoption of insect protein as an alternative for animal feed could help to reduce our reliance on soy and halt deforestation, with some estimates suggesting that the UK could cut imports of soy by 524,000 tonnes by 2050.³¹ Europe and North America have advanced well ahead of the UK in the use of insect proteins. Outside the EU, the UK is uniquely placed to become a market leader in this emerging industry, and existing limitations on the use of insect protein in animal feeds should be examined.

Seaweed has also been shown to act as an effective methane suppressant when applied to ruminant diets, with studies showing greenhouse gases could be reduced by between 82.4 percent³² and 95 percent³³. However, convoluted marine licensing requirements are restricting the number of viable UK-based seaweed farms. Currently, prospective seaweed farmers need to rent an area of the seabed from the Crown Estate and then obtain a separate lease from the relevant statutory nature conservation body. To reduce the financial risk of establishing a new farm, exacerbated by the arduous process of obtaining a lease, this process should be simplified so that speculative rights to establish a seaweed farm can be obtained prior to leasing an area from the Crown Estate.

There are also issues with the harvesting and processing of seaweed which need to be resolved to fully realise its potential. Once harvested, seaweed needs to be processed within four to six hours, requiring farmers to supply their own product. Therefore, large upfront capital investment is needed from prospective seaweed farmers. Existing research and development funding should be targeted to refine and demonstrate the necessary technology for smaller-scale, lower capital

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cost processing centres to reduce the upfront cost of establishing profitable farms. Making these changes could help to boost the biodiversity of the marine environment too. In one study, up to 17 animal species were found to inhabit a new aquaculture farm along with seven other types of seaweed.³⁴

ENDNOTES

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