

NEW ECONOMICS FOUNDATION



Solutions for the farm of the future

Executive Summary

Could protein crops shake-up UK agriculture?

Protein crops – plants with high levels of natural proteins such as peas, beans, and lentils – are consistently highlighted as a solution to the wide-ranging demands placed on UK agriculture. And yet the cultivation of these crops in the UK continues to be very limited. Protein crops barely register in national production statistics or are left out entirely.

But there are signs of a shift underway. The United Nations declared 2016 as the 'International Year of Pulses', putting the class of protein crops in the spotlight for many of its food and agriculture campaigns. Additionally, pulses have begun to get attention as an important part of meat-free and gluten-free diets. Even the label of pulses as 'poor man's meat' in much of the developed world is starting to fade; reports that Prince George was served Puy lentils at St. Thomas's school have shot demand for the product to new heights.

With the right framework in place, it may be that the time for the widespread cultivation of protein crops in the UK has come.

A broken food system

The UK's food system is fundamentally broken. While it delivers a large amount of food to the consumer at low prices, this comes at the expense of almost every other objective that we might reasonably expect from a food system. The system is environmentally unsustainable, energy-intensive, highly concentrated, supports 'bad jobs', highly complex and opaque, unequal, unhealthy, and volatile. In terms of environmental sustainability, while every sector of the economy is struggling to lower its inputs and emissions, it is the agriculture sector that is consistently lagging behind in relation to various environmental challenges.

Protein crop potential

Pulses are nitrogen-fixing crops, taking their nitrogen from the air and depositing it in the soil. Unlike most crops, the use of resource-intensive nitrogen fertilisers is not required.

For consumers, pulses can contribute to a healthy diet through their high protein content and are also a good source of iron and fibre. To the extent that protein crops substitute for animal proteins, there is a range of secondary benefits (e.g. reduced methane emissions, reduced water use, respecting animal rights) from the reduced impacts of animal agriculture.

If UK diets are to be sustainable, healthy, affordable, and ethical, it is clear that protein crops represent a win-win-win.

A shift to plant proteins, especially as a substitute for animal proteins, is desperately needed.

The impact of Brexit

The exit of the UK from the EU and thus the Common Agricultural Policy implies inevitable shake-up in the agricultural system. Whereas in most sectors the bulk of income is constituted by sales of goods and services in the market, for the farming sector over half of total farming income comes from subsidies. The farm subsidy regime is expected to change, with many groups in the UK calling for a change from area-based subsidies to subsidies based on 'public money for public benefit'. Correctly designed, this could and should benefit protein crops, with their high contribution to public health and low environmental impact, and their potential for more widespread UK cultivation and consumption.

Barriers to development

The failure of protein crops to spark widespread interest from UK farmers can be traced to a number of barriers. These barriers are complex, interwoven, and exist at different levels of the food system.

At the farm-level, protein crops are not widely cultivated due to their low economic returns compared to other, more profitable, alternatives. Costs are relatively high for protein crops due to the protections needed to ward off weeds and pests as well as the necessary conversion of some farm machinery. Revenues are relatively low due to the low-yield nature of the crops and weak prices as a result of low consumer demand.

Subsidies, an important revenue source for UK farms, are not currently directed more towards protein crops than other alternatives.

There are also more systemic barriers. There is a lack of knowledge from both producers and consumers about the potential benefits of protein crops. Farmers also may







be reluctant to change farming methods for reasons of culture or identity. This is only furthered by limited infrastructure for processing protein crops beyond the farm. Agricultural research and development tends to follow existing levels of production, just as market power and political representation is concentrated around large, existing producers.

Summary table of the challenges and solutions for the cultivation of protein crops in the UK

Challenge	Barriers	Solution	Policy recommendations
Financial	Low-yield nature of protein crops; undirected subsidies to protein crops; technological lock-in and existing capital	Subsidies	Create a Protein Aid Scheme. These subsidies would directly support the growing of protein crops through a direct payment per hectare of land under cultivation.
Opportunities	Farming culture and tradition resists change; lack of producer knowledge; lack of post-farmgate infrastructure for protein crops	Entry	Make protein crops a focus of a new farm entry scheme. This scheme should target access to land, startup costs, and training. This could be paired with the Protein Aid Scheme for ease of application.
Knowledge	Environmental factors; little research interest due to low production; protein crops can be high-risk and vulnerable	Research	Create a publicly funded programme for pulse research and harmonise data collection. One model would be to match fund the protein crop industry levy over a ten year plan of research support.
Alternatives	The existence of more profitable alternatives	Taxes	Implement a farmed animal tax. This tax should account for the environmental, health and intrinsic losses from animal farming. One model would be to deduct this tax from animal farming subsidies.
Demand	Lack of consumer knowledge; lack of consumer demand	Public procurement	Increase the serving of plant proteins in public sector canteens. This applies across levels of government and can join up with 'Buy British' schemes.
Power	Entrenched interests and power structures	Decision-making processes	Consult on farming policy with a wider range of stakeholders. This includes smaller agricultural holders and the views of groups not formally represented.

Recommendations

Our policy recommendations for the UK government are:

-  **Subsidies:** Create a Protein Aid Scheme
-  **Entry:** Make protein crops a focus of a new farm entry scheme
-  **Research:** Designate funding for the research and development of protein crops
-  **Taxes:** Deduct farm subsidies to account for externalities in animal farming
-  **Public procurement:** Increase the serving of plant proteins in public canteens
-  **Decision-making processes:** Give a voice to a wider range of stakeholders

Besides promoting protein crops, these policies also have the potential to address a number of pressing issues for UK agriculture at present. Increases in research funding can boost productivity. A new farmer entry scheme can help address the decline in the number of farms and within farm labour. Implementing a tax on farmed animals could lower the net government contribution to UK agriculture and thus generate a more sustainable funding model. Public procurement can help inform consumers, and a wider stakeholder consultation process can be coupled with efforts to address the lack of power and agency felt in many rural communities.

These proposals would put the UK at the forefront of countries leading the way for sustainable and healthy food systems– inspiring not a race to the bottom in standards, but acting as a role model for other countries to follow.

Written by New Economics Foundation, commissioned by The Vegan Society

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