

# A Pebble in the Pond

**Opportunities for farming,  
food and nature after Brexit**





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Cowslips and early purple orchids on chalk downland. © Bob Gibbons



## Executive Summary

As England prepares to leave the EU we have a once in a lifetime opportunity to change the way we support England's land managers. This report shows how leaving the EU will enable us to channel money from the public purse to land managers in such a way that they can both produce food, help nature and provide all the other benefits society needs.

The last forty years of farm subsidies from Europe via the Common Agricultural Policy has contributed to a dramatic decline in nature on farmland – land that covers three quarters of England. The vote to leave the EU means we have to create a new system to support farmers to produce the food we all need.

This is an opportunity that cannot be ignored. If England grasps this opportunity, the UK's departure from the EU will yield benefits for nature and society that will be felt by generations to come.

- The damaging subsidies that existed within the EU can be altered in order to protect and restore our countryside rather than damage it. Nature, and the people of England will benefit from these changes.
- Farmers are paid too little for the food they produce and in some cases are paid less than the cost of production. Supermarkets and others in the supply chain take most of the profit, leaving the farmers with the risks. This is an opportunity to tackle that injustice.
- Subsidies currently paid to highly profitable farmers can be redirected to support small-scale sustainable farming, which benefits nature.
- Landowners who provide benefits to society such as carbon storage or flood alleviation can be supported.
- The UK's unique Heritage Sites – from natural heritage, to historic buildings, to archaeological sites – can be protected for the future.
- Far more action is needed to stop damage to nature from farming. Where an outright ban is not needed, a polluter pays principle can be widely adopted. Urgent action can be taken as a result of leaving the EU, to reduce the hazards of pesticides, to benefit nature, improve human health and produce healthier food.
- Greater transparency in the way our countryside is managed and our lands are farmed can result from the UK leaving the EU, benefitting British farmers, society, our nature and the environment.
- A new relationship between people and food can be developed. Educating children about where food comes from and how it is produced, is the first step to understanding the true cost and value of food.

**This report explores the relationship between farmland, food, people and nature; and identifies ways in which that relationship can be strengthened.**

## Introduction

People Need Nature (PNN) is a Charitable Incorporated Organisation established in 2015. It is dedicated to promoting the sensory, emotional and spiritual value of nature, the importance of nature on public land and its place in public decision-making.

It advocates a different approach regarding how nature is valued and protected, particularly in relation to publicly owned land, public policy making and public expenditure. We aim to influence and drive new policy.

It collects evidence and commissions new research, which highlights the sensory, emotional and spiritual value of nature. It focuses on three strands: nature's spiritual value; nature as inspiration; and how these ethical approaches are applied to public decisions about nature.

PNN develops innovative partnerships and collaborations with religious and spiritual groups, artists, musicians and writers to celebrate the spiritual and inspirational values of nature, through performances, exhibitions and publications.

It believes that while the decision for the UK to leave the European Union presents some profound risks to the future of the environment in England, there is one great opportunity – to create a new system of support and regulation to cover agriculture, that benefits nature, benefits the production of sustainable healthy food, and thereby benefits society and the economy. Any future farm support and regulation system will evolve separately within each of the devolved countries of the United Kingdom. People Need Nature is a charity registered in England and Wales; this report focuses specifically on England.

This brief report is aimed at the general public rather than at a technical audience of policy-makers or politicians – though we hope they will also find it of interest. We will develop more in-depth analysis of the issues raised here on our website:

[www.peopleneednature.org.uk](http://www.peopleneednature.org.uk)





## Food and nature

For many people the place where they most often encounter nature is not where you might expect. That place is on the plates or boxes or wrapping where we meet our food. Everyone eats and drinks. The decisions we make about what food we buy and eat, affect nature here in the UK and across the world. This report looks specifically at the links between food and nature in England.

Food comes from nature. It sounds so obvious why would anyone question it? But to many it's not obvious and the links are many and complex. All of our food, from a chicken tikka take-away to a gourmet steak, originally comes from wild nature. Chickens have evolved from the Asian jungle fowl. Carrots have been bred from wild plants growing in southern Europe. Cows trace their ancestry back to extinct wild cattle. Wheat and barley were growing wild in places like Syria before they were cultivated over 10,000 years ago. Even now, the genes still found in those wild crop relatives are sought out, to find ways of protecting modern crops from diseases and pests. During

those 10,000 years, wild nature has adapted to live on the same farmland where crops are grown and livestock is raised. Gradually farming techniques have developed which enable farmers to increase the yields of crops and livestock, but have become less hospitable to wildlife. Now farmers have the technology to produce food with the almost total exclusion of wildlife. This is a choice, at its core driven by our desire for cheaper and cheaper food.

After the end of the Second World War, when millions were hungry and even starving, across Europe, there was a massive drive to produce enough food for everyone, as cheaply as possible. This was a great achievement for farmers and the scientists who developed the tools they needed, such as artificial fertilisers, pesticides, and new farm machinery. But there has been a cost to this success; and the cost has been borne by nature, by communities and by society. Cheap food in the shops means that farmers are being encouraged to evict nature from farmland – often against their better judgement and consciences. Many farmers love to see wildlife on their farmland, but feel under pressure to produce ever more cheap food.

Now, as we prepare to leave the European Union, and the Common Agricultural Policy, we stand at a crossroads, and as a nation we need to choose which way to go. Do we continue down the road we have been on for the last 70 years, searching for new ways to make food cheaper at the point of sale? Or do we want to change direction and support farmers in producing high quality food that is produced in ways, which do not harm the environment. If we take the latter route, we may need to be prepared to pay more for our food in the shops, but by doing so the improvements to nature, the environment, and the population are clear.

Over the past four decades, as a nation, our spending priorities have changed: housing costs have increased greatly, for example. We now spend the lowest proportion of national income on food of any country in the EU. With such a low spend on food, the victims have been both the environment and our communities. Driving food prices down will only cause further damage to communities and the environment. Now is the time to recognise our attitude towards the price of food has to change.

## Background

Farming has come a long way in the last 100 years. Before the First World War, the Empire fed Britain – in 1914 only a third of food was produced in Britain. As U-boat attacks on shipping increased, subsidies to support British

farmers were introduced towards the end of the First World War, alongside rationing. The subsidies were then withdrawn in 1921, and coupled with the removal of tariffs on Canadian wheat, led to a wholesale collapse in the farming industry, which lasted through the 1930s. At the outbreak of the Second World War, farming

was at least in part nationalised. War Agriculture Committees (the War Ag) were established in every county and these told farmers which fields had to be ploughed to produce food, in return for payments to buy tractors and other equipment, and free labour. Seven million acres of grassland was ploughed to grow cereals, mainly during the Great Harvests of 1941 and 1942 – a combination of rationing, increased farm production and the mass conversion of public parks and gardens to allotments for vegetables. This great effort enabled Britain to survive through the Second World War without starvation, a cost paid by many countries in Continental Europe.

In 1947 the Agriculture Act enshrined in law the Government's commitment to use public money to support farmers to increase food production. During the following three decades the drive to produce food (with public subsidies) excluded all other considerations. This is the era when woods were grubbed out, meadows and downlands ploughed, reseeded and fertilised, hedgerows removed, wetlands drained and rivers straightened. Even into the 1970s Farm Improvement Grants were paid for such practices.

British troops help with the harvest on an English farm during 1941.  
© Imperial War Museums (D 4903)



In 1973 the UK joined the Common Market and farmers began receiving subsidies from the Common Agricultural Policy. The more food farmers produced, the more they were paid, so, unsurprisingly, they produced yet more food. This created a further wave of intensification that led to further declines in wildlife, more pollution and more environmental damage, across Europe. By 1988 even the European Commission had woken up to the fact that the money spent to encourage farmers to grow ever more food (food that was not even wanted – remember the butter mountains and wine lakes) was causing environmental havoc. Thus began the long road of reform, which continues to this day.

The State of Nature report was recently published, and identified modern chemical farming as the main cause for the loss of nature across the UK. This caused some backlash from the farming community, who suggested other causes were to blame. But the evidence is clear for everyone to see, although history would indicate that the impact of modern chemical farming on nature had started long before 1970, when most recording of wildlife started in a systematic way.

## Farming in England

In 2015 farmland across England is split between arable land, to grow cereals, and grassland for livestock to graze. Of the 9 million hectares of farmland in England, 54% is arable land and 41% grassland. Two thirds of farmland is owned by the farmer, while one third is rented. Farmland in the UK is owned by 0.25% of the population.

Most (84%) arable land grows cereals and oilseed rape. Just 30% of this area is used to produce wheat good enough to mill for flour, and most of this is used to make bread. The other 70% of wheat and other cereals grown in England is used to feed animals, principally cattle, pigs and chickens. Around 5 million tonnes of cereals are used to feed animals in Great Britain. The chances are that the beef you buy has been fed with cereals, particularly for the last few months of its life as it is fattened before slaughter.

Around 10% of cereal crops are used to produce biofuels. Only 5% of arable land is used to grow vegetables and nearly half of that land is used to grow potatoes. Nearly 4% of arable land (173,000 ha) is used to grow maize, of which 34,000 ha is used to fuel anaerobic digester biogas plants. The rest is converted into silage and used as feed for cattle, mostly in the dairy industry. Much of our milk and cheese is made from cows fed on maize in sheds.



Cattle eating silage. © Andrew Linscott/Alamy.com

Livestock includes cattle, sheep, lambs, pigs and chickens. There are over 5 million cows in England and nearly twice as many cows live on dairy farms as on beef farms. 15 million sheep live in England (and the UK as a whole has the largest sheep population in the EU), compared with just under 4 million pigs. 33 million chickens are kept for eggs, and 82 million broiler chickens are produced for meat. Animal welfare laws have altered the way pigs and chickens, in particular, are farmed. Free-range pigs now have access to fields, while free range chickens can also venture outside.

Around 300,000 people are directly employed to grow food in England. 40% of these are regular or casual farm workers (Defra June Farm Survey, published October 2015).

## Subsidies

Farmers receive subsidies under the EU Common Agricultural Policy. These are payments from the public purse. The total amount of subsidy paid out to farmers varies from year to year (due to the fluctuating exchange rate between the pound and the Euro) but for the UK as a whole it is between £3 and £4 billion a year. As the pound devalues against the Euro, these payments increase in value. Any farmer with more than 5 hectares of land is eligible to claim basic payments, which are around £200 per hectare. There is no upper limit on the amount that can be paid, so a landowner with 10,000 ha will get the same level of area payment as a small holder with 5 ha. Even grouse moors are now eligible to receive farm payments, as long as the land can, in theory, be grazed. Around three quarters of farm subsidies are paid to landowners without any obligation to manage the

land with nature in mind, as long as they work within the system of rules known as Cross Compliance (see page 4). The remaining quarter of the subsidies are paid via a system called Countryside Stewardship, which is the current Agri-Environment Scheme.

## Agri-Environment Schemes

Agri-Environment Schemes (AE Schemes) have been around for 30 years in England. These schemes pay farmers and other landowners to farm in a way which is better for nature and the wider environment. The payments are partly compensation for the income that the farmer would have been able to derive had they farmed the land more intensively. Payments are also made to fund the infrastructure needed to farm extensively (such as installing a water supply for livestock).

A great deal of money has been spent in England over the past 30 years on Agri-Environment Schemes. But the evidence that these schemes have actually slowed stopped or reversed declines in wildlife populations is, at best, mixed (conservation evidence review (Dicks *et al.* 2016. Pay farmers to cover the cost of conservation measures. Conservation Evidence).

These schemes have certainly worked for a few species of bird or butterfly, but these have invariably benefited from additional funds raised outside of the farm subsidy system (such as Lottery funds), and funds used to pay for project officers to work with farmers to achieve the results. The Entry Level Scheme, which ran from 2005 to 2014, paid farmers to do very little for wildlife, but may have created a 'stay of execution' for some wildlife.



Now that scheme has gone, it is likely that the pressures on farmland wildlife will increase substantially. In this way, AE schemes can be seen as the public ‘renting nature’ from landowners. As soon as the rental payments stop, the nature is removed. One particular problem with the rental approach is that the schemes operated over much too short a timescale. Even 10 years is not long enough to either provide long-term security for nature, or to allow nature to recover within habitat creation projects.

Well-designed agri-environment schemes that are guaranteed for 25 or 50 years should feature in any new farm support programme. They should be very closely targeted onto areas where they will produce the best outcomes. They should not be prescriptive but rather define the outcomes, with farmers, working with advisors, to agree the best way to achieve them. These should be additional to a separate scheme to support landowners to protect highly valuable natural and human heritage (see *Protecting heritage* below).

## Other subsidies

While farmers and landowners receive generous payments for owning land, they also benefit from the generosity of the tax system. Farmland is exempt from inheritance tax, for example. Farming businesses also benefit from Capital Gains Tax rules, which make farmland very attractive as a tax shelter. Companies set up in tax havens to avoid paying tax, are now investing in UK farmland as it delivers a guaranteed return on their investment, paid for by public subsidy. Farmland can also be converted to development land, leading to a hundred-fold (or more) increase in its value. (<https://www.theguardian.com/society/2015/sep/02/britain-farmland-tax-haven-reform>)

## Regulation and taxation

Regulation stops everyone from doing things that are damaging to society, people or the environment. Just as you cannot turn your house into a hotel, or drive an unsafe car on the road, farmers need to be regulated, to ensure what they do does not damage the environment or cause species and habitats to become extinct. Under the Common Agricultural Policy, regulations for farming have been bound together into one system called Cross Compliance. This has the disadvantage of being one set of rules, which are applied across the entire



Maize is grown for biogas in the Dorset Area of Outstanding Natural Beauty.  
© Miles King

28 member states of the European Union, ranging from olive groves in the Mediterranean, to sheep farming in the uplands of Scotland. Conversely, EU regulations have prevented Genetically Modified (GM) Crops from being planted in Europe and have also banned the import of American beef grown using growth hormones. The EU has also banned the use of neonicotinoid pesticides, which are highly toxic to insects, on some crops.

Once the UK leaves the EU, we will need to create a new set of farm regulations. This should be much less bureaucratic than the ones created by the EU, but should also be more effective. Cross compliance has failed to protect the environment from activities such as farm slurry entering rivers and killing wildlife, or soil being washed from maize stubble fields and contributing to downstream flooding.

Regulations and laws are there to protect the environment, animal and human health. There is no reason why they should only apply to farmers receiving subsidies. They should apply to everyone carrying out farming activities. Some things, such as allowing slurry to leak into watercourses should be illegal. Others, which are less damaging but still significant should be discouraged through taxation. This is known as the Polluter Pays principle. To put it simply, if someone is carrying out an activity which damages the environment, then they should pay (either a fine or a tax) to cover the cost of remedying the damage. It could be much more widely adopted than has been the case so far.

Maize is a popular crop, but it also has very serious impacts on the environment. Maize is increasingly grown to provide a fuel for Anaerobic Digesters, which in turn produce

biogas. This biogas production is being subsidised twice, firstly via the farm subsidy system, then by subsidies to produce renewable energy. Overall once everything is accounted for, very little greenhouse gas emissions are saved in the production of biogas, but the environmental damage can be severe. Because maize is harvested late in the season, the stubble is usually left over winter. Rains then wash the unprotected soil off the maize fields into nearby rivers and streams. This makes downstream flooding much worse. Maize fields are also very poor for wildlife; nothing much can live in them. Herbicides are used to prevent weeds from growing and competing with the crop. For some places, such as on steep slopes or near rivers and streams, maize growing should not be allowed. Elsewhere, using the Polluter Pays principle, farmers growing maize would pay a set amount (per hectare), which would be used to counteract the damaging impact of growing the crop. The derived income, for example, could be used for schemes to catch sediment washing from maize fields. The same approach could be applied to use of pesticides or fertilisers.

## Protecting heritage

Heritage covers a wide range of things, but they are all valued by society. Heritage includes nature (natural heritage), archaeology, buildings, landscape and even a sense of place. Heritage is often not valued economically, but is accounted for through legal instruments. Sites of Special Scientific Interest, Scheduled Ancient Monuments, Listed Buildings, National Parks and Areas of Outstanding Natural Beauty are all legal mechanisms which require landowners to take steps to protect and manage these features which in some

ways belong to the nation. Some of these with World Heritage Status have a meaning and value which extends beyond national boundaries. In this sense, the individual landowner's property rights are restricted (without compensation for the loss of any potential profit derived from ignoring that heritage). Landowners are usually, and rightly, recompensed by society, for the costs of maintaining or caring for the heritage.

In theory the best sites supporting nature in England are protected by laws which date back to 1949. In practice, this does not happen. Just over half of all the land eligible to be protected as Sites of Special Scientific Interest in England have been legally protected. The remainder are described as

“local wildlife sites”, but have no legal protection. Highly valuable nature sites are lost each year to intensive agriculture, development or other activities. For some wildlife habitats, such as wildflower meadows, 98 out of every 100 acres of meadows present in 1940, have been lost. Similar losses apply to heathlands, ponds, woodlands, wetlands and downlands – and to archaeological and historical sites. One study into typical ridge and furrow countryside in Northampton found 82% of ridge and furrow fields have been lost between 1960 and 1996, with losses continuing. (D. Hall (2001) *Turning the Plough*. Quoted in *English Heritage Conservation Bulletin* 42 (2001) ).

It is time to complete what was started in 1949 and protect all land, which

supports significant populations of wildlife and their habitats, and significant archaeology, history and landscape. All of the land, which is valuable enough to be designated as SSSI or as a Scheduled Ancient Monument, should be designated.

And whereas at the moment agri-environment scheme funds (which are supposed to support voluntary activities by farmers) are partly siphoned away to pay for management on these legally protected sites, in the future a separate fund should be established to pay for the protection and management of these places, which are every bit as valuable as mediaeval churches or castles, Saxon hordes, great paintings or Shakespeare's first folios.

Ancient ridge and furrow field. © Skyscan Photo Library/Alamy.com

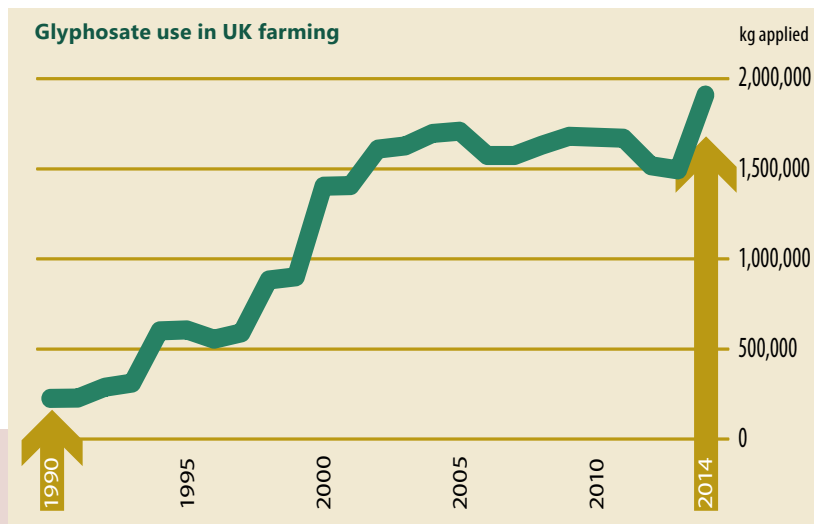




## Regulatory action on pesticides

There are serious concerns about the safety to human health of the most widely used herbicide in agriculture – glyphosate (also known as Round-Up). There is strong evidence that this chemical, whose use is increasing dramatically, is a carcinogen, yet it is commonly found as a contaminant in food.

Glyphosate use has increased five-fold over the past 20 years, as this graph shows.



## CASE STUDY

### Pesticide Action Network UK

#### 1. Establish strong regulatory controls on pesticides including targets and incentives to cut pesticide use

Despite years of voluntary approaches aimed at reducing the harm that the use of pesticides does to the environment, it is clear that they do not work and that the current approach of 'managing' risk whilst supporting the use of pesticides does not benefit the environment. Water is still polluted, farmland birds are still in decline, pollinators such as bees are declining and wild flower diversity is shrinking.

One way to reduce the risk is to reduce the use of pesticides overall and this can only be achieved by setting clear targets for those reductions. In this way proper strategies can be developed for achieving the same levels of pest and weed control without the use of pesticides. We already know that it would be possible to reduce the amount of pesticides used in the arable sector by 30% overnight with proper implementation of integrated pest management, if farmers are supported in taking action.

Although the overall goal is to reduce the burden of pesticides on the environment, immediate reductions are needed for those pesticides that are most hazardous to human health and the environment. To protect human health, carcinogens, reproductive toxins, developmental toxins or endocrine disrupting chemicals should be targeted. Those that are toxic to bees and other pollinators, harmful to aquatic organisms, causes of repeated water contamination or accumulate within food chains, would be targeted to protect the health of the environment.



© Tim Scrivener/Alamy.com

To help achieve these, targets must be set with clear timeframes. France issued a target of 50% reduction in pesticide use by 2020. Incentives must be developed to assist and reward those farmers that are successful in reducing their use of pesticides.

#### 2. Support farmers wanting to adopt more environmentally friendly practises – including organic – with training and practical research

Farmers are often cast as the villains and blamed for the overuse of pesticides and the resulting negative impacts of such use. However, over the last 20 years the agricultural research base in the UK has shrunk to almost nothing, there are no longer sufficient advice and extension services for farmers and a lack of focus on research that is practical in field rather than theoretical. There has also been a focus on what is deemed to be the 'scientific' approach, using more pesticides, fertilisers and looking to genetic modification as the solution, when what we should be looking at is non-chemical approaches including the development of more resistant strains, better rotations of crops and other key elements of an integrated pest-management approach.

In Denmark there has been significant investment in advisory services for farmers working at field level and these have resulted in significant reductions on the amounts and frequencies of pesticide treatments. Similarly, in France there has been much research into developing integrated pest management approaches which provide practical solutions for farmers there. The UK needs to develop research facilities that are aimed towards moving away from dependence on pesticides, and develop, in conjunction with farmers, strategies and systems that will deliver real change.

This cannot be delivered solely by research and farmers. Farmers are often not able to explore non-chemical options due to financial constraints placed on them by the retailers. Margins are too small to experiment and risk losing income that might result from even a small reduction in yield. To overcome this, retailers must work with and support their growers to change practises by providing fair prices. In terms of incentives a significant help would be an insurance scheme for those switching to non-chemical approaches that would ensure that any loss in yield or income is covered and they are allowed to develop new techniques without financial risk or worry.



## Public goods

Landowners should be paid to deliver public goods to society. Public goods are defined as things which benefit society but do not create a private profit. For them to be considered to be true public goods, they should be available to everybody (non-exclusive) and they should not be used up by one group of people, making them unavailable to others (non-rival). For these reasons food production is not a public good, as the food can be sold by the farmer to whoever they choose.

Separate from the statutory protected heritage there is a range of public goods which land provides to society. These include features that make up the fabric of the landscape – hedges, ponds, copses, streams, field headlands, which, together create the backbone of the English countryside (especially in the lowlands.) These features need protection and management, but it is right that landowners should be paid to carry out that protection and management on behalf of society.

Other public goods provided by landowners (at least in theory) include the provision of clean water, flood prevention, carbon storage and sequestration, access to nature, landscape quality, healthy pollinator populations, and the many valuable yet intangible things nature provides to people – inspiration, joy, reflection, solace, emotional and spiritual experiences.

When landowners produce food in a way which leads to a loss of nature,



The Blackmore Vale from Bulbarrow Hill, Dorset. © David Noton/naturepl.com

polluted watercourses, or contributes towards climate change, public goods are being damaged. This can be described as a market failure, because the market (often the retail price of the food produced) has failed to account for the external costs to the environment. One solution to this market failure is to price all public goods using Natural Capital accounting. This approach, however, is fraught with dangers (see page 8).

## Transparency

Currently landowners receive £4 billion a year of public funds in England via the Common Agricultural Policy. Three quarters of this money is paid as direct payments, just for owning the land.

The other quarter is paid via Agri-Environment Schemes (see page 3), which are intended to encourage farmers to farm in a less intense way, allowing more room for nature to live alongside the crops or livestock. It is often difficult to find out how much public subsidy a farmer is receiving, or what they are providing in return. For the direct payment this information is not up to date and the scant information provided is seldom detailed enough to show which farms receive payments.

For agri-environment schemes, more information is provided to the public via the MAGIC ([www.magic.defra.gov.uk](http://www.magic.defra.gov.uk)) website. But even then information only shows where there are scheme agreements and how much the landowners are being paid, but no

Access to nature is a public good. © Bob Gibbons



## Transparency and openness in post-Brexit farming policy

A personal viewpoint from Guy Shrubsole, land campaigner (<http://whoownsengland.wordpress.com>)

'Leave' campaigners urged voters to 'take back control of your country'. 'Taking back control' must mean, at minimum, knowing who actually owns our country, and what they're paid to farm and manage it.

Successive UK governments have been reluctant to disclose the recipients of the £3 billion annual CAP subsidy – perhaps because they include the families and relatives of many MPs and Peers. But after years of campaigning by groups such as FarmSubsidy.org, and in response to a recent EU regulation, Defra have been forced to publish details of who gets farm subsidies in excess of £1 k, with annual updates.

It is vital this continues, both whilst we remain in the CAP and beyond. The case for transparency is already strong. After all, groups like the TaxPayers' Alliance clamour daily for politicians to disclose how public money is spent on welfare, the NHS and energy. Farming should be no different. As we move to a post-Brexit farm subsidy system, paid for directly by UK taxpayers, the need for full disclosure is overwhelming.

But income is one thing; ownership another. Here, too, we need to open up information on who owns our country.

The Environment Secretary, Andrea Leadsom, has already professed her enthusiasm for the 'Open Defra' project begun by her predecessor, Liz Truss, to release thousands of public datasets on all aspects of the environment. Yet it is the datasets that *haven't* yet been released through Open Defra that are really interesting – most notably the



© Guy Shrubsole

Rural Land Register. This huge dataset reveals who owns every farm in Britain, and much else besides; yet it remains a locked box, hidden from public view.

Defra's remit doesn't cover the Land Registry, the official registrar of all traded land in England and Wales, a quango now under the aegis of BEIS. The Land Registry appears thankfully to have survived its second privatisation attempt in two years. Yet no-one can pretend it works well for the public when you have to pay £3 each and every time you want to know who owns a single field. If Companies House has been able to do without licensing fees and reinvent itself as an open data organisation, so can the Land Registry – but it takes political will to do so.

Releasing such land ownership data would unlock incalculable value: for conservationists wanting to link up landowners to create wildlife corridors; for flood-risk managers seeking to promote natural flood defence measures across catchments; for communities looking to grow food on underused land. Opening up all this data could be done immediately, long before Brexit. And it would provide the basis for a post-Brexit farming system in which we could actually start to 'take back control' – by knowing who owns our country and what they're paid for the privilege.

information is available about the types of wildlife benefiting from the schemes.

The public should be able to see very clearly where their support is going, who is receiving it and for what.

MAGIC is a good start but much more information is needed – for example on which public goods are being supported on each farm. Maps should show who owns what land so they can see where the value is and where the money is being spent.

## Natural capital

Nature is not valued in economic decision-making (so called market failure) and one approach being strongly advocated at the moment is Natural Capital Accounting. This ascribes monetary value to public goods, such as carbon stored in the soil, the value of a bee as a crop pollinator, or the value of public parks for their health benefits. (<http://www.bbc.co.uk/news/science-environment-37403915>)

The Government has established the Natural Capital Committee to enthusiastically promote this approach which, it is believed, will help humanity re-evaluate our relationship with nature. Leading natural capital economist Dieter Helm is promoting a natural capital approach to reforming farm support, such that farmers compete with each other to provide public goods such as wildlife, landscape and built heritage, or flood prevention. (<http://www.dieterhelm.co.uk/natural-capital/environment/agricultural-policy-after-brexit/>)

Defra minister George Eustice has also previously suggested that nature can be helped by the creation of a "tradeable market in biodiversity obligations." (<https://www.georgeeustice.org.uk/news/time-transform-cap>)

This was what Defra Secretary of State Andrea Leadsom was referring to when she suggested that upland farms could produce butterflies while lowland ones produce sheep. (<http://www.bbc.co.uk/news/science-environment-36809570>)

There are, however, profound problems with this approach. There is evidence to suggest that economic arguments "crowd out" ethical reasons for wanting to care for nature, turning it into a purely economic exercise. Nature provides a wide range of benefits to humanity, such as sources of inspiration, reflection, and benefits to our mental and spiritual wellbeing. These are either notoriously difficult to value economically, or impossible to do so. The risk is that they too get crowded out by the things it is possible to put a number on. Creating artificial markets to trade in imaginary credits does not have a history of success either – witness the disaster of the EU Emissions Trading Scheme for Carbon credits, internal markets in the NHS or the rail industry. Finally, the notion that one piece of nature can be traded with another runs fundamentally against the idea that places are important to people, for the nature that lives there, for their history and for their meaning to local communities and individuals. That 'Sense of Place' (*genius loci*) cannot be traded. It develops over decades, hundreds or thousands of years; it is found in the interplay between nature



and culture; and it lives as much in people's minds and memories as it does as a physical reality. The idea that one community would happily lose its local ancient wildflower meadow, because ten were being created somewhere else, was what made the idea of Biodiversity Offsetting so deeply unpopular. At present, it appears to have been dropped.

The focus should be on those mechanisms, which have been proven repeatedly as successful, when well targeted, at helping to protect nature – legislation, taxation, regulation, education and incentives. It is very unfashionable to promote the power of regulation – thanks to the influence of a small but vociferous minority with distorted views on the primacy of individual liberty and freedom of choice, relentlessly painting such mechanisms in a negative light. The evidence, however, is overwhelming: regulation works at preventing damage to nature in the name of profit. ([http://www.rspb.org.uk/Images/usingregulation\\_tcm9-408677.pdf](http://www.rspb.org.uk/Images/usingregulation_tcm9-408677.pdf))

## Small really is beautiful

Brexit provides us with the opportunity to rethink how we support food production in England and the kind of producers we want to support. Ironically, the current subsidy system excludes the smallest producers, yet these are perhaps the producers that should be supported the most. Small-scale food

production is more sustainable, provides work for more people, produces food which is consumed locally, has shorter supply chains, and provides greater returns to the farmers. There is evidence that small-scale food production is also better for wildlife and produces healthier food. There is also a closer link between food production and local communities, so people know exactly where their food has come from, how it has been produced and whether it has been produced sustainably.

A new support system could provide financial incentives for landowners to rent (on a long-term lease) land to small-scale producers to encourage sustainable production, particularly of fruit and vegetables, of which we import so much from overseas. Farmers' markets and local food hubs have received financial support from EU funding pots in the past (such as LEADER), though these are often hard to reach funds, and are only available for one or a few years. An England farm support system could inject much more support into small-scale food production.

## The Landworkers Alliance

The Landworkers Alliance represents a wide range of small-scale food producers. They have produced a framework for British Agricultural Policy, after Brexit. The LWA has proposed a number of changes to farm policy which will help strengthen the connection between people, all of whom

are consumers of food, and nature. These include targeting farm support towards small-scale producers who have a much smaller impact on nature and the environment, relative to the amount of food they produce. At the moment, farm subsidies are available only to farmers with more than 5 hectares, which excludes the producers it should be supporting. LWA also calls for funding to encourage new entrants into farming, and an expansion of land owned by local authorities (County Farms are currently being sold off). And the LWA argues that large retailers (supermarkets) currently have far too much power over producers, and that this prevents producers from being paid a fair price for their produce. Read the entire Landworkers Alliance framework here: (<http://landworkersalliance.org.uk/2016/08/more-farmers-better-food-a-framework-for-british-agricultural-policy/#more-41587>)

## Organic/ permaculture

We need to develop new ways of growing food that are carbon neutral or help to soak up greenhouse gases, and help restore land for nature. There is some evidence that organic farming is better for nature than conventional farming, though this depends on the farming system employed. Permaculture is more sustainable than organic farming, as it makes more use of natural systems to keep soils fertile and produce food, as well as helping nature.

Stroud Farmer's Market. © Nick Turner/naturepl.com



Pigs in the orchard. © Chris Smaje





## Small-holders, food production and nature

A personal viewpoint from farmer and writer Chris Smaje ([www.smallfarmfuture.org.uk](http://www.smallfarmfuture.org.uk))

I started farming in 2007 on a 7-ha urban fringe site that I co-own. I was motivated mainly by political and environmental concerns about the need for a more localised, organic food system and had little prior practical experience of farming, although the opportunity to switch from a word-based desk job to a practical outdoor one also attracted me.

Our site now comprises a mixture of newly planted woodland and permanent pasture stocked with sheep and pigs, and a small-scale commercial market garden. Its main product is vegetables, which are sold locally mostly through a box scheme and a Food Assembly. We also sell a little fruit, plus woodland and livestock products. More recently, we've started running a small campsite on the site, which is considerably more lucrative in terms of income per hours of labour input than the farming. The farm and retail work is done by the two business partners, plus a paid intern and paid part-time staff, along with occasional local volunteers and short-term residential volunteers (World Wide Opportunities on Organic Farms – WWOOFers).

We've tried to develop the site with the aim of making it agriculturally productive and economically self-sustaining, as well as wildlife-friendly and as ecologically sustainable as possible – not an easy set of objectives to juggle. I'm aware of research studies that are rather dismissive of the ecological benefits of small mixed organic farms in the wider landscape, but my subjective impression is that the mixture of maturing new woodland, extensively-managed permanent pasture (including wood pasture), relatively large areas left wild and a relatively limited area of intensive cropping, has led to an increase in wild species – particularly herbaceous plants, birds, insects and other small invertebrates. We try to close the fertility loop on the site as much as possible, the main outside input being woodchip for composting from local tree surgeons. Fertility otherwise comes mostly from clover leys, vermicomposting and animal and human manure onsite. We buy-in very little feed for livestock, so stocking densities are low. Other research has been equally dismissive of the environmental/carbon benefits of local food production – a topic I've written about elsewhere. My feeling is that unless we have a food and farming system where production and consumption are strongly linked geographically, there's insufficient feedback in the system for people to modify damaging consumer behaviour.

We think that what we're doing is a pretty good way to farm, and a pretty good way to live, and it has generated a certain amount of interest in our local area and beyond. But it's difficult to farm in this way and make it pay, and it's difficult for new entrants with new ideas to get

into farming. We've only been able to do it through a combination of luck, bloody-mindedness and – probably most importantly – possessing a certain amount of start-up capital to inject into the business. Still, in our latest full year of trading we made around £19,000 – not far off the national average farm salary, and with no subsidies, which I think is a reasonable effort for a new farm business operating on just seven hectares.

The reason that so little mixed, ecologically-oriented fruit-and-veg production of the kind that we do occurs in the UK is, I think, because food and energy prices are very low while land and labour prices are high. To unpack this a bit:

- Food prices are low partly as a result of an agricultural subsidy regime that systematically favours large-scale landownership and heavily mechanised cereal farming, with little scope for small-scale mixed farmers to benefit, or to experiment with ideas like wood pasture.
- Food prices are also low because of the artificially low price of diesel – the ratio of human labour costs to fuel costs pushes the sector towards large-scale cereal or stock farming, with fruit and vegetable production largely out-sourced to countries with cheaper labour, and most domestic market gardening confined to arable-type operations using cheap migrant labour in a few areas with the best soils.
- Food prices are also low because of the market distortion introduced by the monopsony (buyer's monopoly) of the supermarkets and other middlemen. Small-scale farmers try to circumvent this by direct local retail, but most innovations like this (e.g. box schemes) eventually get colonised by large corporate concerns.
- Land prices are artificially high – especially for small urban fringe sites suited to mixed farming and small-scale horticulture. This is due largely to the pressure on land for housing, equestrian and other uses (and the generally speculative nature of the market for land). Access to farmland on reasonable terms, through other means such as county farms or small-scale farm tenancies, is also increasingly difficult, partly because small farms have been absorbed into larger ones.
- Small-scale farmers of moderate means often try to get around this by buying bare agricultural land at lower prices and then trying to develop the farm buildings and ultimately farm dwellings that they need to farm well. But this brings them into conflict with the planning system, and often with local, non-farming, rural residents – neither of which tend to be sympathetic to their development needs. This results in high costs in terms of money, time, bureaucracy-negotiation and emotional energy.



## CASE STUDY Village Farm



© Rebecca Hosking

Village Farm is a small (70 ha) farm on the very southern tip of England, in South Hams, Devon. The farmers there use the principle of holistic planned grazing, which means moving their flock of 800 sheep (and goats and pigs) on a daily basis around the farm, which is split up into 365 small paddocks. The sheep have been bred to be hardy and live outdoors throughout the year. Even in the depths of winter, a paddock has enough forage in it so there is no supplementary feeding.

Each paddock is only grazed for one day, then left for the 364 days. This means that for most of the time, the paddocks are full of wildlife – there are orchids, and plentiful nesting skylarks – enough to attract in Merlins. Holistic planned grazing also encourages carbon to be stored in the soil, and does not require inputs of fertiliser or any pesticides. The lamb produced is slaughtered locally and marketed direct to consumers. At present the

farm is selling 12 tonnes of lamb (liveweight) per year and will be selling grass-fed pork next year.

Village Farm's ethos is to farm in harmony with nature, and the farmers regard the wildlife and the farm animals with equal respect.

Trees also play an important part of the farm, both in terms of providing shelter (it is an exposed location) for the animals, but also for their value for wildlife, and as carbon stores. Village Farm have planted 15,000 trees, which included transforming a former arable field where the soils were exhausted, into an orchard and small wood. Village Farm also recognises that the deep roots of trees draw up nutrients (and water) from the sub strata and this helps make their pastures more fertile. Find out more about Village Farm on their website <http://www.thevillagefarm.co.uk/>

## Woodlands

Woodlands in England currently receive subsidies from the European Union, just as farmland does. Some woodland management benefits nature, including the growth of hardwood trees for timber and fuel. Native hardwoods such as oak and ash are best for wildlife, but softwood conifers grow more quickly and cheaply. Woodlands are also widely used to rear pheasants for shooting. Some 40 million pheasants are reared and released in England each year for shooting. These pheasants, which are not native (they originate in Asia), eat a great deal of wildlife and the disposal of their carcasses after they have been shot can also cause problems in the environment. Intensive pheasant shoots

currently benefit from public subsidies and generate harm to nature and the environment.

As is the case for farmland, public subsidies to woodland owners should only be provided where they in turn provide public goods. The Forestry Commission woodlands, which are publicly owned, provide access for millions of people to enjoy nature. It is debatable whether private woodland owners should benefit from public subsidies if the public have no access to those woods, though clearly access would have to be managed for safety reasons, for example, when trees are being felled. Woodlands with intensive pheasant shoots should probably not be eligible to receive public subsidies.



Dead pheasants left to rot by a shoot.  
© League Against Cruel Sports

## Uplands

England's uplands include the Lake District, the Pennines, Dartmoor and Exmoor. These are places where few people live but are enjoyed by many. As farmed landscapes they support most of the English sheep flock. Grouse moors dominate many uplands in the north, where moorland and bog are burnt and mown to encourage new heather growth for Red Grouse to eat. This is controversial, not least because farm subsidies from the public purse support this management. Some advocate removing all farming from large areas of the uplands to promote rewilding.

Currently, subsidies support the survival of upland farming communities. Removing the subsidies would see whole communities disappear. And some upland farming systems support a wide variety of wildlife, as well as protecting archaeology and landscape features (sometimes called High Nature Value farming). Upland heathland and bogs have been damaged by over-grazing by sheep in the past (and associated drainage works). This has created large areas of uniform upland grassland with very little wildlife. Undrained bogs are an important store of carbon and also act as sponges holding back water which otherwise causes flooding downstream.

Public subsidies should pay for public goods in the uplands as much as in the lowlands. These public goods include storing (and soaking up) carbon, storing water to prevent flooding downstream, creating attractive landscapes for tourism and creating places where upland wildlife can thrive. In the future, upland farmers may need to focus more on these goods and less on producing food.

## Flooding

Urban flooding is made far worse by the way farmland in the catchment is managed. This is particularly true in the uplands but also true in lowland catchments. Extreme rainfall has become significantly more serious over the last 20 years, and the evidence points to this being a permanent change brought about by climate change.

There is now an urgent need to develop programmes which support farmers in slowing the flow of water from catchments, and for storing floodwater in times of flood. Public subsidies should support landowners to change the way they manage their land in order to reduce or eliminate downstream flooding of urban areas. Landowners can reasonably expect to receive payments from the public purse in return for changing the way they manage their farmland, and specifically for storing

large quantities of flood water during extreme weather events. Immediate action can be taken by using existing valuable resources, such as floodplain meadows, and by using Natural Flood Management techniques (see below), such as were successful in preventing flooding at Pickering last winter.

## Bringing people and nature together through food

There is an increasing detachment between people and the food they eat. Far more effort is needed to bring people to understand the consequences of the food choices they make. According to a recent survey, one quarter of adults did not realise milk comes from cows, while half of them didn't know butter came from dairy cows. (<http://www.express.co.uk/news/uk/675831/British-produce-meat-bacon-beef-milk-eggs-farms-UK>). But it goes deeper than that. What actually happens when someone chooses to buy a cheap chicken? How much of nature is affected by that decision? What about the energy used (carbon footprint) or the amount of water consumed? Where were the cereals produced to feed the chicken during its 40 days of life, and what impact does that cereal production have on things like flooding or climate change?

## Grouse moors

### A personal viewpoint from Dr Mark Avery

Areas primarily used for grouse shooting, for which clients will pay upwards of £5,000 for a day's shooting, are mostly eligible for the normal agricultural payments for upland areas of around £56/hectare. This is quite a bonus for large upland landowners such as Michael Cannon (pub-trade tycoon and owner of the 7,000 ha Wemmergill grouse moor) or American billionaire Robert Miller (owner of the 13,000 ha Gunnerside Estate). There has to be a question of whether the payments they receive through CAP are good value for the public purse when they are supporting what is essentially a personal hobby of shooting birds for fun. Was this really what public agricultural support was intended to do?

The questions grow even more pointed when there is considerable evidence of damage to ecosystem services, such as carbon storage, flood mitigation and water quality caused by intensive moorland management, let alone the almost complete absence of many protected birds of prey from grouse moors across the uplands of Britain. If public payments were being made on the basis of delivery of ecosystem services then they would be supporting a public benefit which would be well worth having.



© David Kjaer/naturepl.com



## CASE STUDY Floodplain meadows

Floodplain meadows are amongst our most beautiful and ancient places for wildlife, dating back at least to Roman times. They support a wide range of different kinds of wildlife, as well as being full of history and culture. Although most of them have been destroyed, there are some important areas where flood meadows have survived, and these can play an important role in reducing downstream flooding. The Floodplain Meadows Partnership has carried out research into the benefits of floodplain meadows for flood alleviation and found that: "Floodplain meadows can help to reduce flood peaks to towns and cities located downstream by absorbing and storing water that would otherwise flood low lying areas". For example, Clifton and Rawcliff Ings floodplain meadows lie north of the city of York. The Ings have a flood storage capacity of 2.3 million cubic metres of water in winter, which reduces the medium-range floods in the centre of York by 15 cm, enough to reduce the risk of flooding to many properties (*Floodplain Meadows – Beauty and Utility: A Technical Handbook*).



Floodplain meadow with snake's-head fritillaries. © Mike Dodds

## CASE STUDY Natural Flood Management

Natural Flood Management encompasses a range of techniques intended to slow the flow of water from a catchment. These can include creating woody debris dams in streams, rewetting former wetlands by blocking ditches and removing field drains, and also bringing back natural flood engineers such as Beavers.

Rewilding Britain has identified a range of different actions which can help reduce flooding. For example, the installation of 16 woody debris dams in valleys above Painswick, in Gloucestershire, led to a peak flow three times lower than before the dams were created, helping to reduce the risk of downstream flooding. A similar story comes from the National Trust Holnicote Estate on Exmoor, in Devon, where the Source to Sea project took place. The Trust rewetted moorland (by blocking drains), created woody debris dams and restored floodplain meadows. Despite record rainfall in winter 2013, properties that would have been flooded previously remained dry.



Farmland can store floodwater preventing downstream flooding. © Bob Gibbons

## Growing food in schools

Education is the key to a better understanding the consequences of the food choices we make. Very little is taught in schools about where food comes from, how it is produced, and the impact on things like nature or the wider environment, including human health. School grounds could be used much more widely to grow food, to help children learn about where food comes from and the different ways it is produced.

Where food comes from, how it is produced, what food is healthy, and what lies behind its cost, should be part of the national curriculum. All school food should be sourced locally, and produced sustainably. Schools should visit the places where their food comes from, get to know the producers, even the animals. If more schools took part in food-production, had their own allotments, for example, then they could help children understand the link between food production and nature. Although there are resources aimed at schoolchildren (Countryside Classroom), these appear to be aimed more at explaining to children why the current system works so well, rather than providing children with the opportunities to gain a deeper understanding of how food is produced. Initiatives such as Food Growing Schools (<http://www.foodgrowingschools.org/>) encourage schools in London to get their children growing food.

## Food is too cheap

**Good food that is grown with nature in mind should be seen as a right not a luxury**

Farmers tend to profit least of all those involved with the process of getting food from the field to the plate. Official estimates suggest that on average for every pound spent in a supermarket, only 9p goes to the farmer. Some produce food, such as milk, that is sold at below the cost of production. Latest figures suggest the average dairy farmer loses 3p for every litre produced – milk is used as a 'loss leader' by supermarkets, to entice buyers into stores. Amazingly, supermarkets charge suppliers, when their products are placed 'on promotion'. These charges are then passed on to the farmers, through a fall in the price they receive. The big four supermarkets now command three quarters of all food sales. While the dairy farm sector is in crisis, supermarket profits measure collectively in billions of pounds a year. Supermarkets and others in the 'supply chain' take most of the profit derived

from food, while leaving the farmers, the producers, with all the risk.

Food is so cheap that around one third of all food and drink bought in the UK is thrown away. NFU hill farming committee chairman Robin Milton recently said: "Supermarket shelves are groaning with unlimited cheap food."

**"If you buy the lie of cheap food a bird or butterfly dies"**

Food, at the point of sale, is too cheap. But the costs of this cheap food are often hidden. Cheap food with poor nutrition leads to health problems like obesity. Cheap food hides the low pay and poor working conditions of migrant labour. And cheap food hides the costs to nature. As farmer and author John Lewis-Stempel said: "If you buy the lie of cheap food a bird or butterfly dies."

This is because farmers are put under such extreme pressure to produce food at as low a cost as possible, that they farm the land to squeeze every last drop of productivity from it, leaving no room for wildlife. Where does this pressure come from? It comes from supermarkets, and it comes from consumers. The market ignores the costs to nature, human health and wellbeing, or the wider environment. UK consumers spend the lowest proportion of their income on food, out of all the countries of Europe – 15% less than the European average.

Since the 2008 global financial crash, food poverty has become an increasing

problem, and this has led to the creation of a network of food banks. Some will argue that food poverty should be a

reason to drive down the cost of food at the point of sale. This argument, however, ignores the fact that food is already unsustainably cheap to buy, because the wider external costs are ignored.

Those who push for ever-cheaper food are not interested in what sort of countryside we have in England. Their only concerns are that everyone should be free to buy food from wherever they want, including the very cheapest, produced with slave labour, using pesticides which are illegal in Britain, or causing environmental destruction.

A race to the bottom risks contaminated food being introduced into the market; it is not so long ago that price pressures led to the horse-meat scandal, or BSE. The cheapest food for everyone means the richest in society benefit as much as the poorest – the equivalent of having a flat rate of income tax for everyone.

There are already existing schemes which support particular groups in society, such as child benefit for families, pension credits for pensioners. All children in the first three years of school receive free meals, while children from families with low incomes benefit from free school meals throughout their school years – specifically so those

children can benefit from receiving at least one healthy meal a day.

Is it really that radical to suggest that the public purse should support the poorest in society so they can have access to healthy, sustainably sourced food?

## Food security

We currently produce around two thirds of the food we consume, though this varies greatly according to the type of food. Some foods, such as rice or bananas, cannot be produced here so we have to import them. On the other hand, 84% of meat and 86% of dairy and eggs we consume, are produced in Britain. But only 23% of fruit and vegetables are produced here (Defra Food Statistics Pocketbook 2015).

There is a strong case for more fruit and vegetables to be grown in this country – and for that to take place in a way that creates well-paid jobs and in a sustainable way, which brings people closer to nature. Many types of fruit and vegetable can now be grown in England both outside and under cover, on highly productive but small plots (see Chris Smaje case study). This type of production should be supported under any new farm support scheme. One of the biggest challenges is for new producers to find land on which they can start an enterprise. A new farm support scheme could fund Local Authorities or Community Land Trusts to purchase or lease land from local landowners to produce food for local markets.

## Conclusion

Food is an essential part of everyone's lives, and we need to think much more about where it comes from and the cost to nature, the environment, and to society from the way it is produced. By starting at this point, we can design a system, which supports food being grown in ways that benefit nature and help foster communities. Landowners deserve to be paid when they provide the public with benefits like clean water, reduced flooding, carbon storage and more wildlife.

Some farming systems are innately more likely to produce these benefits, including organic, permaculture and small-scale farmers. Large-scale hightech farming will continue to play a major role in food production in England, but this does not need public subsidies to do so. In future, regulation will need to be much stronger, to ensure that farming systems do not have serious impacts on nature and the environment.

For 75 years, public funds have supported farmers to grow as much food as they possibly can,

with little regard for the impact this has had on nature, human health or society. Supermarkets have driven food prices down to the point where farmers get less for their produce than it costs to grow, leaving many dependent on public subsidies for their income.

The decision to leave the EU has created a rare opportunity to change the way we think about food, how it is produced and how much it really costs. We can take this opportunity to change the farm support system, or let it slip by. It's up to all of us to decide.

This report was written by Miles King, People Need Nature

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