



Department
for Environment
Food & Rural Affairs

Health and Harmony: the future for food, farming and the environment in a Green Brexit

February 2018



Health and Harmony: the future for food, farming and the environment in a Green Brexit

Presented to Parliament

by the Secretary of State for Environment, Food and Rural Affairs

by Command of Her Majesty

February 2018

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Foreword

Leaving the European Union (EU) provides a once-in-a-generation opportunity to reform agriculture. This paper outlines how we plan to change the way we use the land, so as better to promote health and harmony.

For more than forty years, the EU's Common Agricultural Policy (CAP) has decided how we farm our land, the food we grow and rear and the state of the natural environment. Over that period, the environment has deteriorated, productivity has been held back and public health has been compromised. Now we are leaving the EU we can design a more rational, and sensitive agriculture policy which promotes environmental enhancement, supports profitable food production and contributes to a healthier society.

The environmental damage we have suffered while inside the Common Agricultural Policy has been significant. Soil health has deteriorated. Farmland bird numbers have dropped. Precious habitats have been eroded.

And at the same time a system of subsidy skewed towards those with the biggest landholdings has kept land prices and rents high, prevented new talent coming into farming and held back innovation.

Even with those constraints, however, British farmers have been producing high quality food, doing their best to protect the environment and keeping our rural areas economically healthy.

But government can do more to help. And outside the EU the possibilities for healthy growth are all the greater.

The proposals in this paper set out a range of possible paths to a brighter future for farming. They are the beginning of a conversation, not a conclusion and we want everyone who cares about the food we eat and the environment around us to contribute.

The Rt Hon Michael Gove MP

Executive summary

1. Farmers and land managers grow our food and shape our natural environment. They protect the beauty of our countryside, the majesty of our forests and the richness of our wildlife. Agriculture employs nearly 500,000 people and is a key part of the food and drink industry, which contributes £112 billion to the economy. Agriculture accounts for over 70% of land use in the UK, and has a major influence on our environment.
2. This paper consults on a new, post-CAP domestic settlement for agriculture designed for our own circumstances, with greater freedom for all parts of the United Kingdom. Farming and the countryside affects us all in our daily lives, and we welcome the views of **all** readers on the policy ideas set out in this paper. This consultation marks the first step on the road to a new agricultural policy outside of the EU so that together, we make the right decisions to secure a bright future for farming and the environment.

Leaving the Common Agricultural Policy

3. Approaches to farming have been shaped by the Common Agricultural Policy (CAP). The CAP introduced some of the world's first agri-environment schemes, making progress towards improving our environment. Significant reforms have helped to shift the CAP away from the 'butter mountains' and 'wine lakes' of the 1980s. Decoupling Direct Payments from production has reduced some of the incentives to produce in an environmentally-harmful way.
4. Despite this, the CAP remains flawed. Even though we have some of the most innovative farmers in the world, land-based subsidies can undermine incentives for widespread productivity improvement and are bad value for taxpayers. Efforts to enhance our environment have also been limited by the bureaucratic structure of the CAP. It has imposed unnecessary regulatory burdens and failed to reward some public goods adequately, such as measures to improve water quality and soil health.

Our ambition for farming and the environment

5. Leaving the European Union and the CAP will give us the opportunity for fundamental reform. We want a more dynamic, more self-reliant agriculture industry as we continue to compete internationally, supplying products of the highest standards to the domestic market and increasing exports. But, alongside this, we want a reformed agricultural and land management policy to deliver a better and richer environment in England.
6. We will incentivise methods of farming that create new habitats for wildlife, increase biodiversity, reduce flood risk, better mitigate climate change and improve air quality by reducing agricultural emissions. We will achieve this by ensuring that public money is spent on public goods, such as restoring peat bog and measures which sequester carbon from the atmosphere; protecting dry stone walls and other iconic aspects of our heritage; and reducing disease through new initiatives that better monitor animal health and welfare.

7. We believe this is a vision that could work for the whole of the UK but we recognise that devolution provides each administration with the powers to decide its own priorities. In line with the principles underpinning the creation of common frameworks agreed by the Joint Ministerial Committee (EU Negotiations), frameworks will be established where they are necessary in order to enable a well-functioning internal market across the United Kingdom, compliance with international obligations and protection of our common resources. Together, we are confident that we can determine frameworks with the right mix of commonality **and** flexibility. It is the government's expectation that the process will lead to an increase in decision-making powers for each of the devolved administrations.

An 'agricultural transition'

8. We will maintain the same cash total funding for the sector until the end of this parliament: this includes all EU and Exchequer funding provided for farm support under both Pillar 1 and Pillar 2 of the current CAP. This commitment applies to each part of the UK.
9. We will formally leave the European Union in March 2019. The government anticipates that we will agree an implementation period for the whole country with the EU lasting for around another two years. Once we have the freedom to move away from the CAP, there will be an 'agricultural transition' period in England. This will give farmers time to prepare for new trading relationships and an environmental land management system.

Our proposals for England

10. In England, Direct Payments will continue during the 'agricultural transition'. So that we can support farmers to prepare for change, we will need to free up funds. To do this, we propose to apply reductions to Direct Payments, starting with those receiving the highest payments, to fund pilots of environmental land management schemes and to help farmers unlock their full potential for sustainable production. The devolved administrations will have the same flexibility to target support in a way that best suits their circumstances.
11. There is a huge opportunity for UK agriculture to improve its competitiveness – developing the next generation of food and farming technology, adopting the latest agronomic techniques, reducing the impact of pests and diseases, investing in skills and equipment and collaborating with other farmers and processors. We want our future policy to provide an enabling environment for farmers to improve their productivity and add value to their products, so they can become more profitable and competitive. We therefore propose to further reduce and phase out Direct Payments in England completely by the end of the 'agricultural transition' period, which will last a number of years beyond the implementation period.
12. We recognise that some sectors may find it more difficult than others to adapt – for example, those located in the most remote, wild and beautiful parts of England. We recognise the environmental and cultural value of our rural landscapes and traditional

ways of life, including areas such as the uplands. The uplands have the potential to benefit from new environmental land management schemes, given the nature of their landscapes and the many public goods that they deliver, such as biodiversity, flood risk mitigation and carbon sequestration. We will explore possible options on how we can best support such areas.

13. We will also look to simplify existing schemes during the 'agricultural transition' period. We will seek to simplify Countryside Stewardship schemes, cross compliance and remove or reduce current ineffective greening requirements, before we move to a new regulatory regime.

- **A new environmental land management system**

14. We propose for our new agricultural policy to be underpinned by payment of public money for the provision of public goods. While environmental enhancement and protection are of key importance, better animal and plant health, animal welfare, improved public access, rural resilience and productivity are also areas where government could play a role in supporting farmers and land managers in the future.
15. From the end of the 'agricultural transition', a new environmental land management system will be the cornerstone of our agricultural policy in England. The system will help us to deliver our manifesto commitment to be the first generation to leave the environment in a better state than we inherited it. Farming is crucial to achieving the goals set out in our recently published 25 Year Environment Plan. A new environmental land management system will help us to preserve the investment in our countryside that has already been made and delivered by farmers. It will consist of a new scheme that pays providers for delivering environmentally beneficial outcomes; and will provide support for farmers and land managers as we move towards a more effective application of the 'polluter pays' principle.
16. Our new environmental land management system will be underpinned by natural capital principles, so that the benefits the natural environment provides for people and wildlife are properly valued and used to inform decisions on future land management. The new system aims to deliver benefits such as improved air, water and soil quality; increased biodiversity; climate change mitigation and adaptation; and cultural benefits that improve our mental and physical well-being, while protecting our historic environment.
17. We will learn from the implementation of past schemes, consult with stakeholders on the design of new and ambitious schemes and pilot them in preparation for the introduction of the system.

- **High animal welfare**

18. The public has an expectation of high animal welfare standards and consumers want to know what they are buying. We want to safeguard the welfare of our livestock, building on our existing reputation for world leading standards. Rather than significantly raising

the UK legislative baseline, we could pilot schemes that offer targeted payments to farmers who deliver higher welfare outcomes in sectors where animal welfare largely remains at the legislative minimum.

- **Excellent plant and animal health standards**

19. Productive and resilient forestry, horticulture and agriculture industries depend on good tree, plant and animal health. Preventing and tackling pests and disease in trees, plants and animals also has wider benefits for productivity, the environment, tackling climate change and public health. In line with our commitment in the 25 Year Environment Plan, we want to see a substantial reduction in endemic disease.

- **Smarter regulation and enforcement**

20. Our high environmental and animal health and welfare standards are underpinned by robust domestic legislation. Parts of the current enforcement system impose disproportionate penalties or provide insufficient scope for farmers to remedy underperformance. We would want to design a new, fairer enforcement system whilst maintaining a robust approach that delivers value for money for taxpayers. Further to this, Dame Glenys Stacey will be conducting a thorough and comprehensive review of the inspections regime, seeing how inspections can be removed, reduced or improved to lessen the burden on farmers while maintaining and enhancing our animal, environmental and plant health standards.
21. During the ‘agricultural transition’ period, we want to seize the opportunity that leaving the EU offers to change the regulatory culture and provide a more integrated, appropriate and targeted enforcement system. With greater regulatory simplification at its heart, our new system will achieve environmental, animal health and welfare objectives and support farmers to uphold standards.
22. As well as maintaining high standards through appropriate regulation, we also propose to support industry initiatives to improve animal and plant health, including through better information-sharing. We will also consider funding innovative approaches to improving farm animal welfare.

- **Managing risk and volatility**

23. Farmers are exposed to year-on-year price volatility and other risks, which can negatively affect planning and investment for the future. Farm businesses can already manage their risks through diversification of income, financial planning and the use of tax smoothing. The best way of improving resilience in the farming sector is to support increases in farm productivity, promote better animal and plant health, and make sure farmers have access to the tools they need to effectively manage their risk. We are consulting on the barriers to wider development of insurance, futures contracts and other risk management tools, and how government can encourage their adoption. We are also considering how to improve the government response to major crises.

– Helping rural communities prosper

24. Agriculture exists within broader rural communities and economies. We recognise that businesses in rural areas (including farms) face particular challenges, which include reduced physical and digital connectivity; and we will be working closely with the Department for Digital, Culture, Media and Sport on improving rural broadband and 4G. Those who live and work in the countryside should have the same opportunities as those in urban areas. We will work with the Ministry of Housing, Communities and Local Government on the design of the UK Shared Prosperity Fund, as part of delivering the government's Industrial Strategy, to support rural businesses.

International trade

25. Accessing new markets can allow our farmers to export more British produce and increase their profits, as well as to spread risk. While competition helps to drive down prices, consumers also benefit from increased choice. We know that consumers buy certain products for a range of reasons which also include provenance and sustainability. Building on the GREAT Britain campaign, we want to help develop a British brand that can help inform those choices. The government is fully committed to maintaining high standards of consumer, worker and environmental protection in trade agreements. We will adopt a trade approach which promotes industry innovation and lower prices for consumers. But we also need to adopt a trade approach that allows sufficient time for the industry to prepare.

A skilled workforce

26. Making sure that our agriculture, horticulture, forestry and food supply chain industries have access to sufficient and suitably-skilled labour is essential to industry growth and competitiveness. We will take the opportunity to stimulate a forward-thinking agricultural industry that invests in the future through innovative practice and automation. We want to help attract more of our graduates and domestic workforce into this vibrant industry.

A new statutory framework

27. The farming industry needs a new statutory framework to allow us to deliver many of the reforms set out in this paper. We will introduce an Agriculture Bill that breaks from the CAP, providing us with the ability to set out a domestic policy that will stand the test of time.

Your views

28. We should all have an interest in the landscape around us: it must sustain us now and be held in trust for future generations. **We welcome all views on our policy proposals.** By working together we can maintain a safe, high-quality supply of food, produced in a way that enhances the environment and our precious countryside.

All of the cases studies in this paper are based on real farms, farmers and businesses. We are grateful to all those who have agreed to have their details included. That agreement does not amount to an endorsement of the proposals outlined in the paper.

This paper is accompanied by two annexes. Annex A sets out some of the early suggestions that have emerged from discussions with a range of stakeholders and invites further views from all those with an interest in our countryside and our environment. Annex B lists some of the types of land management practices, currently within Countryside Stewardship, that have delivered multiple outcomes and seeks views on whether some of these options could be included in a future environmental land management system.

The Future Farming and Countryside Evidence Compendium provides a detailed assessment of the current state of agriculture in the UK to underpin the proposals laid out in this paper. The research and analysis in this pack is taken from a variety of disciplines – scientific research, statistics, economics, social research or operational research, and geographical information. The Evidence Compendium includes data on the economics of agriculture and rural livelihoods, agriculture and food production and on agriculture's role in environmental land management. The specific pages in the Evidence Compendium that are referred to by statements in this paper are indicated by the following bracket system [EC:xx].

1. Agriculture: the case for change

Agriculture is an integral part of the UK countryside. It matters beyond its economic contribution. Farming makes up over 70% of the UK landscape [EC:14]. It shapes the countryside, influences the quality of our environment, affects the health and abundance of UK wildlife [EC:12] and supports rural communities [EC:04]. Maintaining and improving the economic, environmental and wider benefits derived from farming will be essential as we leave the EU.

The UK's farmed land is rich in social and cultural heritage and significance. The food we eat affects our health and well-being and our connectedness to the world around us. The food production to supply ratio of indigenous food¹ was 76% in 2016 [EC:51]. Food production provides an essential basis for food and drink sector industries and contributes towards the £18 billion of UK food and drink exports. Agriculture is also an important livelihood for many in the UK, employing 1.5% of the UK workforce, or 500,000 people [EC:16].

A number of public goods arise from farming and forestry. This includes contributing to the protection and enhancement of the character of our historic landscapes; biodiversity and environmental provision; climate change mitigation [EC:56]; innovation and development which provide consumers with better, safer, cheaper food; and animal disease surveillance and control. Outside of the EU, we have an opportunity to support farmers and landowners better to deliver these public benefits.

The current state

For 45 years agriculture policy in the UK has been determined by the EU's Common Agricultural Policy. While the CAP's intentions did indeed evolve and focus more meaningfully on the environmental impacts of agriculture, outside the EU, the UK can do more to optimise agriculture and environmental policy to the UK's specific circumstances.

The CAP involves three main kinds of payments. The first, Direct Payments under 'Pillar I' (€3.1 billion in the UK in 2016), mainly comprises the Basic Payment Scheme (BPS) and a 'greening' component which is 30% of the Direct Payment total, as well as the Young Farmers Scheme [EC:34]. The second, also under Pillar I, are predominantly market management measures. These work to provide price support for producers by combining with import tariffs to keep agricultural prices higher than they would otherwise be; encourage producer collaboration; and provide measures to manage crises. The third, 'Pillar II' (€0.8 billion in 2016), is for rural development schemes which include agri-environmental measures.

¹ Indigenous food excludes those foods not commercially grown in the UK, and is typified by fruits such as bananas, which could not be reasonably grown in our climate but are the UK's most bought fruit. Indigenous food is therefore the food we could grow.

Across the many farm types in England, grazing livestock are most dependent on Direct Payments [EC:35]. While farmers are the direct recipients of these payments, they are not always the true beneficiaries. Direct Payments can distort land prices, rents and other aspects of the market, creating a reliance on these payments, which can limit farmers' ability to improve the profitability of their businesses [EC:37-8]. Through heavy subsidy and other market-distorting tools, the CAP can undermine incentives for productivity improvement, imposes unnecessary regulatory burdens and delivers poor value for money. It is bad for farmers, taxpayers, consumers and the environment. To sustain a profitable business, many farmers and landowners currently draw on Direct Payments and engage in diversification [EC:28].

Farm Business Income and amount of Direct Payment varies across the different farm types [EC:24]. Those sectors with the lowest Direct Payments include some of our most productive and innovative farmers [EC:35]. With less Direct Payments than most other sectors, the pig and poultry sectors have achieved success through product differentiation and integration across the supply chain. Leaving the EU presents an opportunity for the UK farming industry to boost its agricultural productivity.

Those sectors in which a high proportion of farmers currently depend on Direct Payments just to break even are often located in the most remote, wild and beautiful parts of the UK [EC:35-6]. We recognise that these areas are unique, and can face different circumstances. For example, the distinctive character of the Lake District landscape has been shaped through long association with sheep farming, one of the sectors currently most dependent on Direct Payments.

Environmental impacts of farming

The different ways in which farmers can manage the land have both positive and negative impacts on the environment [EC:60-66]. Pillar II of the CAP aims to achieve a range of outcomes beyond income support. It includes schemes aimed at improving farmers' competitiveness, supporting business growth in the rural economy and incentivising farmers to improve the environment.

Agri-environment schemes use around 87% of Pillar II spend in England. The current scheme in England is called Countryside Stewardship. It supports a range of environmental benefits, including slowing the decline in wildlife populations, tree planting, improving water quality and providing more high-quality recreation opportunities [EC:59]. Applicants for these schemes can choose and be paid for specific outcomes they wish to deliver [EC:58]. As they have to choose from a narrow set of prescribed options, this limits the ability of farmers and land managers to try out new techniques for environmental land management.

There is evidence that land in publically funded agri-environment schemes can deliver benefits which outweigh the payments made.² In England, over the last five years, agri-environment schemes have delivered successes such as:

- 280,000 km maintenance, management and restoration of hedgerows, ditches and stonewalls [EC:59].
- estimated annual greenhouse gas savings of 1.5 MtCO₂e
- creating nesting and food resources to increase breeding populations of nationally scarce farmland birds and pollinators such as circl buntings, stone curlews and the marsh fritillary butterfly
- 19,000 hectares of planted areas providing pollen and nectar sources for pollinators. Higher Level Scheme management for pollinators can significantly increase the size of wild bumblebee populations. [EC:59].

The CAP, however, has not been effective enough at reversing environmental damage caused by agriculture. Agriculture has increased negative pressures on the environment through pollution and practices which lead to habitat and species loss [EC:12].

Greenhouse gas emissions from UK agriculture were estimated to cost £3.1 billion per annum in 2015. This constituted 10% of total UK emissions [EC:63]. Moreover, 83% of ammonia emissions are attributable to farming, at an estimated cost of £456 million in terms of human health and environmental impacts in 2015 (in 2017 prices) [EC:64]. In addition, the annual external cost to farmers from soil erosion and compaction from agriculture was estimated to be £305 million in 2010 for England and Wales (in 2017 prices) [EC:61]. These negative environmental effects do not reflect on the motivations of farmers but on the flawed system under which they operate.

Animal and plant health and welfare

Endemic pests, diseases and health conditions have a significant impact on productivity across the livestock, crop, timber and horticultural sectors. Maintaining healthy plants, trees and animals protects the economic value generated by the livestock, crop, horticultural and forestry sectors, and also delivers a range of wider environmental and societal benefits [EC:32-3].

We want high standards in animal welfare to be at the heart of a world-leading food industry. The UK already has a strong reputation in this field, having been assessed as one of the top four countries by World Animal Protection. The UK has banned the use of sow stalls and veal crates ahead of similar measures introduced by the EU. We will

² We estimate that for every £1 invested through agri-environment schemes, this delivers £2 to £6 worth of benefits, with a central estimate of £4. This estimate was based on the previous Environmental Stewardship scheme, with the Benefit to Cost Ratio for the current and more targeted Countryside Stewardship scheme likely to be towards the higher end of this range. In addition, a 2012 study on farmland bird population growth rates showed positive effects related to the management of winter food resources for a number of seed eating species.

continue to produce food of the highest quality, and these practices will continue to be underpinned by high environmental and animal welfare standards.

In the future, the government has an important role to play in setting the regulatory baseline to protect our high environmental, plant and animal health and animal welfare standards and creating a level playing field for farmers and land managers. Agricultural support should then focus on:

i. Encouraging industry to invest, raise standards and improve self-reliance

We have an opportunity to transform how we support the agriculture and horticulture sector. We will support the industry to adapt to a new world: one which will yield greater economic benefits, and improved environmental, biodiversity and animal health outcomes.

ii. Rewarding farmers and land managers to deliver environmental goods that benefit all

Our aim is for public money to buy public goods. In 25 years' time, we want cleaner air and water, richer habitats for more wildlife and an approach to agriculture and land use which puts the environment first. From 2022 onwards, a new environmental land management system will be the cornerstone of our agricultural policy, achieving improved biodiversity, water, air quality, climate change mitigation, and the safeguarding of our historic landscapes. This will allow us to fulfil our manifesto commitment to become the first generation to leave the environment in a better state than we found it.

Moving away from the Common Agricultural Policy in England

Before we leave the CAP, we want to improve farmers' experience by making the existing system as simple and as efficient as possible within the confines of the existing regulatory framework.

After leaving the CAP, we propose to continue Direct Payments while applying reductions, starting with those receiving the highest payments. This will free up money to pilot environmental land management schemes and help farmers unlock their full potential for sustainable production. We propose to do this over an 'agricultural transition' period to provide sufficient time for farmers to adapt their businesses to a post-CAP world.

We propose to replace cross compliance, greening and Countryside Stewardship with a new environmental land management system. The new system will pay for the provision of environmental benefits, and will provide support for farmers and land managers as we move towards a new environmental baseline based on the 'polluter pays' principle.

2. Reform within the CAP

Complying with the CAP regulations presents a challenge to farmers and land managers, policymakers and delivery agencies. The administration of the Basic Payment Scheme and Countryside Stewardship can restrict access through complicated application systems and burdensome evidence requirements.

Uptake of Countryside Stewardship has been lower than we would wish. Many farmers and land managers have been put off by the complexity of the scheme. Moreover, processing delays have harmed the reputation of the scheme, lowering its appeal. This has consequences for our environmental objectives.

The CAP framework allows us some limited flexibility to improve the experience of applicants to current CAP schemes and improve outcomes for the environment, whilst maintaining accountability and value for money. We have listened to views and propose to:

- i. continue to review opportunities to make it easier to apply for the Basic Payment Scheme and reduce evidence burdens on the customer within the confines of the existing regulatory framework
- ii. make it easier to apply for Countryside Stewardship and significantly improve the applicant experience. This will lead to increases in uptake and benefits to the environment. We will use this opportunity to pilot new approaches to inform the development of a future environmental land management scheme.

For 2018, we are:

- a. offering four, easy to apply for farm wildlife packages in a simplified offer
- b. making the scheme much easier to access by radically cutting down the application form for the four wildlife packages in the simplified offer
- c. making the arable simplified package available online as a pilot so farmers can apply when they apply for their Basic Payment Scheme payments
- d. cutting red tape by reducing evidence requirements to the minimum necessary, to lessen burdens on the customer while continuing to make sure we achieve our environmental outcomes. From 2018, this will apply to the options in the simplified offer
- e. increasing the maximum grant for the Hedgerows and Boundaries Grant to £10,000, capitalising on the popularity of the grant
- f. improving underlying IT to speed up the processing of claims and applications so that agreements and payments are issued promptly
- g. moving the application windows to reduce peaks of workload, so that customers will have their applications and claims processed more promptly

For Countryside Stewardship in 2019, we wish to go further and are looking at the potential to:

- a. develop further simplified packages to provide a positive experience for the applicant and benefit the environment
- b. simplify the application form for all elements of the scheme, including forestry offers
- c. expand the online offer where possible, learning from the Hedgerows and Boundaries Grant and the pilot online arable package
- d. reduce evidence requirements in the rest of the scheme where we can

We will continue to run a simplified Countryside Stewardship scheme until we introduce a new environmental land management scheme. In order to give security and certainty to farmers and land managers, Countryside Stewardship will continue to be part of the Rural Development Programme. This will run along broadly similar lines until its planned end in 2020. Under the programme, we will also help farmers improve productivity and prepare for the policy set out in this paper. We will continue to support rural businesses with the funding available through the current programme.

Case study: Hedgerows and Boundaries Grant

The Hedgerows and Boundaries Grant is a standalone scheme under Countryside Stewardship and is a popular approach with farmers and stakeholders. Applicants select from a range of investments such as hedgerow laying, coppicing and restoration of dry stone walls. They create habitat and feeding areas for birds, insects and small mammals as well as adding to the character of the local landscape. These works can have a lasting legacy for our countryside.

This simple grant offer is competitive, but the scoring is easy to follow and has been agreed with stakeholders. In 2016, the first year of the grant, we funded 728 agreements with a value of £3 million. This resulted in the restoration of 45,897m of stone walls and 177,539m of hedges.

Consultation questions

Please rank the following ideas for simplification of the current CAP, indicating the three options which are most appealing to you:

- a) Develop further simplified packages**
- b) Simplify the application form**
- c) Expand the online offer**
- d) Reduce evidence requirements in the rest of the scheme**

How can we improve the delivery of the current Countryside Stewardship scheme and increase uptake by farmers and land managers to help achieve valuable environmental outcomes?

3. An ‘agricultural transition’

All taxpayers, including farmers, fund Direct Payments. Direct Payments were first introduced under the CAP in the mid-1990s to compensate farmers for reductions in the value of market price support. They have since been reformed a number of times, including to decouple them from production. They are now largely based on the number of hectares of agricultural land the farmer has [EC:34].

While there is a strong case for supporting the farmed environment, Direct Payments are poor value for money, untargeted and can undermine farmers’ ability to improve the profitability of their businesses [EC:34-9]. They have distorted land prices and rents, can stifle innovation and impede increases in productivity. We therefore want to move away from Direct Payments, eventually phasing them out altogether. However, we know farmers need stability, certainty and a smooth transition to a replacement system. So we will not switch off Direct Payments overnight.

We will pay the 2019 Basic Payment Scheme in England on the same basis as we do now (with the potential for some simplifications, as described in Chapter 2). We then plan to continue Direct Payments during an ‘agricultural transition’ period, which will last a number of years. During the ‘agricultural transition’, we plan to apply reductions to Direct Payments, starting with those receiving the highest payments first, in order to free up money to help the industry prepare for the future and to pilot new environmental land management schemes [EC:43-4]. We plan to begin the ‘agricultural transition’ as soon as we are able to do so, subject to the negotiations with the EU. After this ‘agricultural transition’, we propose that Direct Payments will end in England and be replaced with a system of public money for public goods, principally environmental enhancement (see Chapter 6).

The ‘agricultural transition’ will give farmers time to adapt. There is clear evidence showing that the scope for productivity improvement would enable farms, on average, to remain profitable following a withdrawal of Direct Payments [EC:40]. This would be more challenging in some sectors (e.g. grazing livestock) than others (e.g. dairy, pigs and poultry). We understand that many farm businesses currently rely on Direct Payments to break even [EC:23]. Farmers may wish to apply for payments under our new environmental land management system and we will seek to involve them in trials of this system during the ‘agricultural transition’. We recognise that farmers in remote areas may need tailored support, as set out in Chapter 8.

We could apply the payment reductions by using one of the following approaches. Each of which would free up the same amount of money. At a macro level, a 1% reduction in Direct Payments in England currently releases approximately £16.5 million. In each of the examples given, around £150 million would be freed up in the first year of the ‘agricultural transition’:

i. Apply progressive reductions to farmers' payments, with higher percentage reductions applied to amounts in higher payment bands (as with income tax). [EC:44]

For example, for the first year of the 'agricultural transition', we could set a threshold of £25,000. Progressive reductions would only apply to payment amounts above this.

For claims above £25,000, we could apply a 5% reduction for the amount between £25,000 and £30,000, a 10% reduction for the amount between £30,000 and £40,000, a 15% reduction for the amount between £40,000 and £50,000, with higher percentage reductions for amounts in higher payment bands. We could then apply a 75% reduction for amounts over £200,000.

This example would affect around 19,000 farmers (22% of recipients, with highest reductions for those with amounts in the highest payment bands). Of these, 13,500 would face a payment reduction of less than £5,000 and around 300 farmers, all with claims worth over £200,000, would face a payment reduction of over £75,000.

This approach means those that receive the largest payments initially face the biggest, but not the entire, burden of reductions. It also means that, compared to option (ii), more farmers are affected earlier.

ii. Apply a cap to the largest payments. [EC:44]

For example, we could apply a cap of £100,000 for the first year of the 'agricultural transition'. This example would affect around 2,100 farmers (2% of recipients, who would on average face higher reductions than under option (i)).

This approach would mean those that receive the largest payments would initially face the entire burden of reductions. It has been argued that these large farms generally benefit from economies of scale, have the greatest assets and therefore can best cope with payment reductions. However, some of these large farm businesses do currently rely on Direct Payments to break even.

In the early years of the 'agricultural transition', the payment reductions would be concentrated on a relatively small number of farmers, some of whom would receive very large reductions. The farmers that receive the lowest payments would not face any reductions for several years.

iii. Apply a different cap or reduction to a higher or lower number of payments

Different threshold and reduction percentages could be applied to some payments which would release a similar amount of funding for environmental and other public goods compared with the 2 options above. We could initially apply larger reduction percentages affecting a smaller number of farmers, or smaller reduction percentages affecting a larger number of farmers. Applying reductions more widely earlier in the transition would mean more farmers are incentivised more quickly to begin to adapt their businesses and improve their productivity.

Possible conditions for receiving Direct Payments during the ‘agricultural transition’

We are looking at what we will ask farmers in England to do to receive their Direct Payments during the ‘agricultural transition’.

- i. We could broadly retain and simplify the current scheme requirements. In particular, we could apply the simplifications described in Chapter 2, as well as further simplifications once we have left the CAP. This could be simplifying cross compliance and removing some, or all, of the current ineffective greening rules.
- ii. Alternatively, we could continue to make payments to current recipients during the ‘agricultural transition’ period irrespective of the area farmed. Under this approach, there would be no requirement to remain a farmer. It would be a radical simplification and, for example, would remove the need for recipients to meet land eligibility rules or comply with greening to receive payment. Payments to each applicant could be based on the value of Direct Payments made to them in a historic reference period. Farmers might choose to use the payments to invest in and adapt their businesses, or exit the sector. Farm businesses would still need to comply with environmental, animal and plant health and animal welfare standards, irrespective of whether they receive payments during the ‘agricultural transition’ period. This would therefore require a new enforcement mechanism, which could include improved inspections and more proportionate penalties for non-compliance (see Chapter 9). Delinking payments from land in this way would avoid the risk of perverse incentives for farmers to split their businesses if the government applied a cap or progressive reductions. It would also facilitate restructuring and productivity improvements even as payments are being reduced.

Beyond Year 1 of the ‘agricultural transition’

Whichever option is adopted for reducing Direct Payments, we envisage that further payment reductions would be applied in later years of the ‘agricultural transition’ until the payments have been phased out completely. This could either entail further reductions each year, so the reductions are introduced gradually; or further reductions applied in a fewer number of steps, e.g. further reductions applied after three years of the transition. The further reductions to Direct Payments would release more money for pilots of future schemes.

Farmers may choose to use the Direct Payments received to invest in managing their income volatility. They could take advantage of existing tax options to save money for future investments or to provide a cushion during a bad year. Farmers can employ tools to help insure against crop failure or animal disease or to protect against price changes, such as those already available (or under development) in the private sector.

Consultation questions

What is the best way of applying reductions to Direct Payments? Please select your preferred option from the following:

- a) Apply progressive reductions, with higher percentage reductions applied to amounts in higher payment bands *
- b) Apply a cap to the largest payments
- c) Other (please specify)

* please provide views on the payment bands and percentage reductions we should apply.

What conditions should be attached to Direct Payments during the 'agricultural transition'? Please select your preferred options from the following:

- a) Retain and simplify the current requirements by removing all of the greening rules
- b) Retain and simplify cross compliance rules and their enforcement
- c) Make payments to current recipients, who are allowed to leave the land, using the payment to help them do so
- d) Other (please specify)

What are the factors that should drive the profile for reducing Direct Payments during the 'agricultural transition'?

How long should the 'agricultural transition' period be?

4. A successful future for farming

Farming excellence and profitability

As we reduce Direct Payments, we can move resources to support better value for money initiatives and promote efficient farming practice that will underpin our new domestic policy. Whether it is producing high quality food that commands premium prices, pioneering technological breakthroughs to boost efficiency, or developing new ways of protecting and enhancing the environment, the best British farmers are innovators and pace-setters. Across the industry, there are opportunities to go further and improve productivity, profitability and performance through research, adoption of best practice, investment in new tools and technologies and adoption of new business models [EC:40]. Individual business decisions are key to future progress and boosting the economic performance of farming. The government wants to play its part and help to make this happen.

Case study: AB Agri, company profile

AB Agri is a £1.2 billion animal nutrition and agricultural services business, part of Associated British Foods plc. It operates across the agri-food supply chain from research to retailer. The business began in 1984, working with British Sugar to take leftover waste from sugar factories and convert it into nutritious and cost-effective animal feed. It has rapidly expanded through acquisition, technological expertise and nutrition innovation. AB Agri now employs more than 2,000 people and supplies products and services to farmers, feed and food manufacturers, processors and retailers, selling products in more than 70 countries.

AB Agri is investing in driving the use of technology in agriculture and using data to deliver insight and drive real time productivity improvements. It provides independent advice, services and support to growers who wish to use precision crop production techniques to improve the economic, agronomic and environmental performance of their farm business.

The business is also an advocate for careers in the agri-food supply chain, helping to inspire young people to consider careers in food and farming. As well as offering apprenticeships and graduate programmes, the business cultivates strong relationships with local colleges and schools.

It is critical that as we leave the EU and prepare for a new world that we embrace the excellence already found across our industry – extending the world-class performance, techniques and innovation found on many British farms and making this the norm. Evidence from the Organisation for Economic Co-operation and Development (OECD)³ shows that the take-up of skills and knowledge is an essential factor in improving efficiency and competitiveness on-farm. To be competitive, farmers need to recognise and adopt the latest tools and technologies, and develop the right agronomic and business management skills [EC:27].

We want to encourage more farmers to benchmark themselves against the best and commit to Continuing Professional Development (CPD). There is an important role for knowledge sharing, producer cooperation, and farmer-to-farmer learning to kick-start a wider culture of excellence. Agriculture and horticulture are increasingly high-tech, capital intensive industries. We will encourage farmers and growers to invest in new technologies and processes to increase their profitability, tackle plant and animal diseases and improve animal health.

We will work with the Agriculture and Horticulture Development Board (AHDB) to encourage a focus on stronger resource efficiency and sustainable growth. We will continue to raise the industry's status and help create opportunities for the next generation of talented people to enjoy a successful career in farming, including further work with councils to encourage a vibrant network of council farms. We will explore new business models and the scope for reforming agricultural tenancy laws to support succession planning and remove barriers to investment. The wider land management sector, including forestry, faces many similar issues that might benefit from similar solutions.

³ Fostering Productivity and Competitiveness in Agriculture, OECD, 2011

Consultation questions

How can we improve the take-up of knowledge and advice by farmers and land managers? Please rank your top three options by order of preference:

- a) Encouraging benchmarking and farmer-to-farmer learning
- b) Working with industry to improve standards and coordination
- c) Better access to skills providers and resources
- d) Developing formal incentives to encourage training and career development
- e) Making Continuing Professional Development (CPD) a condition of any future grants or loans
- f) Other (please specify)

What are the main barriers to new capital investment that can boost profitability and improve animal and plant health on-farm? Please rank your top three options by order of the biggest issues:

- a) Insufficient access to support and advice
- b) Uncertainty about the future and where to target new investment
- c) Difficulties with securing finance from private lenders
- d) Investments in buildings, innovation or new equipment are prohibitively expensive
- e) Underlying profitability of the business
- f) 'Social' issues (such as lack of succession or security of tenure)
- g) Other (please specify)

What are the most effective ways to support new entrants and encourage more young people into a career in farming and land management?

Does existing tenancy law present barriers to new entrants, productivity and investment?

Agricultural technology and research

Since the agricultural revolution and the reinvention of farming in the sixteenth century, the UK has pioneered new systems and approaches. Jethro Tull, James Hutton and Robert Bakewell are famous innovators who transformed domestic agriculture through selective breeding of livestock and new systems of cropping into a thriving system, capable of feeding new industrial cities. Lady Denman and the pioneering Women's Institutes also made a huge contribution to growing, preserving and increasing the supply of food from the First World War onwards.

In 2013, the AgriTech Strategy committed £160 million to create four world class Centres for Agricultural Innovation and stimulated businesses and academia to work together on over 100 research and development projects to improve agricultural productivity through the Agri-tech Catalyst programme.

Case study: Harper Adams University

The Agricultural Engineering Innovation Centre and the National Centre for Precision Farming at Shropshire's Harper Adams University conduct research and provide support to improve our understanding of precision farming methods.

In September 2017, Harper Adams researchers, working with Yorkshire-based Small Medium Enterprise (SME), Precision Decisions and other industry sponsors, completed a world first. They had successfully grown a crop of barley using only autonomous vehicles and drones and without a human setting foot in the field.

The "Hands Free Hectare" project was a major step in revolutionising how we feed the world whilst helping to protect the environment. To limit damage to the soil for future harvests, and increase efficiency, the team employed a small modified tractor and combine equipped with cameras, sensors and GPS systems. Drones monitored the field, while a robot "scout" collected plant samples for inspection. This research has attracted world-wide interest in UK innovation in agricultural practice, prompting international partners to work with the team and resulting in news coverage in over 80 countries to date.

In 2017, the Industrial Strategy White Paper committed to establishing a new Food and Drink Sector Council to lead work across the whole food chain to secure the UK's position as a global leader in sustainable, affordable, safe and high-quality food and drink. Additionally, the Industrial Strategy supports innovative and highly-efficient precision agriculture through the Industrial Strategy Challenge Fund programme: 'Transforming food production'.

We have the opportunity to go even further by building on our existing strengths and investments – including the forthcoming Bioeconomy Strategy and Clean Growth Plan. By working with our world-leading research and innovation institutes, and farming industry, we

can drive the very latest technology and deliver an innovative agriculture and horticulture industry. In partnership with industry, we will encourage widespread adoption of precision agriculture, pioneer new approaches to crop protection and encourage more commercial research to improve plant breeding and agronomic techniques. New approaches, such as vertical farming, can harness the combined power of robotics, photonics, artificial intelligence and smart energy management systems, as well as plant biotechnology. We want to explore how collaborative research ventures, involving farmers and other partners (such as research syndicates) can develop a new generation of agricultural technology. This would enable farm businesses to work together to overcome common challenges through bespoke technological solutions.

Consultation questions

What are the priority research topics that industry and government should focus on to drive improvements in productivity and resource efficiency? Please rank your top three options by order of importance:

- a) Plant and animal breeding and genetics
- b) Crop and livestock health and animal welfare
- c) Data driven smart and precision agriculture
- d) Managing resources sustainably, including agro-chemicals
- e) Improving environmental performance, including soil health
- f) Safety and trust in the supply chain
- g) Other (please specify)

How can industry and government put farmers in the driving seat to ensure that agricultural R&D delivers what they need? Please rank your top three options by order of importance:

- a) Encouraging a stronger focus on near-market applied agricultural R&D
- b) Bringing groups of farms together in research syndicates to deliver practical solutions
- c) Accelerating the 'proof of concept' testing of novel approaches to agricultural constraints
- d) Giving the farming industry a greater say in setting the strategic direction for research funding
- e) Other (please specify)

What are the main barriers to adopting new technology and ideas on-farm, and how can we overcome them?

Labour: a skilled workforce

Attracting skills and talent is crucial to realising our ambitions for a thriving agriculture and horticulture sector. Agricultural technologies are transforming farming, creating new types of jobs and requirements for new kinds of skills. By raising awareness of agriculture as an exciting and attractive career path, people will understand the opportunities available to them in the farming and land management industry.

We are already taking action through apprenticeships: we will create more apprenticeships, widen participation and create progression for apprentices. Our apprenticeship reforms will meet the skills needs of employers by putting them in control and enabling them to work with education providers to develop their workforces now and in the future.

Our post-16 Skills Plan is reforming technical education, setting up fifteen career routes, including one in “Agriculture, Environment and Animal Care”, and developing T Levels. The new Careers Strategy identifies how careers advice and information can address skills shortages, regional disparities and promotion of lifelong learning. Industry itself has an essential role in inspiring people to consider careers in food and farming and helping them develop the diverse skills and qualifications needed to succeed.

We will encourage a stronger culture of knowledge and skills that enables our farmers and land managers to learn from, and outpace, the world’s best. Better-performing farmers are more likely to have qualifications, participate in professional development schemes and undertake risk management practices⁴ [EC:27]. In 2013, only 18% of farm managers in England had full agricultural training, with 61% having only practical experience.⁵ The Industrial Strategy will provide an opportunity for industry to work together, including through the newly established Food and Drink Sector Council, to prioritise skills and training.

It is vital that the agricultural and horticultural sector is able to plan ahead and secure the appropriately skilled people that it needs, across both the permanent and seasonal workforce. The government recognises the concerns of stakeholders in relation to the current reliance on migrant workers, and acknowledges the need for an implementation period following our exit from the EU to avoid a cliff edge for businesses. For the longer term, we want to work with industry to encourage more domestic workers to enter the profession and attract the engineering, manufacturing, research and other STEM skills necessary for an increasingly sophisticated food and farming industry.

The government will continue to work with industry to monitor labour supply and demand. Currently, a significant proportion of the agricultural workforce comes from outside the UK. Our future immigration framework needs to work in the best interests of the UK - controlling immigration whilst continuing to welcome those that make an invaluable contribution. The Migration Advisory Committee has been commissioned to provide advice

⁴ Defra, Farm Business Survey 2011-12, and Farm Structure Survey 2013.

⁵ Defra, Farm Business Survey 2011-12, and Farm Structure Survey 2013.

on the economic and social impacts of the UK's exit from the European Union, and on how the UK's immigration system should be aligned with a modern industrial strategy. Their report, expected in September 2018, will help to inform further policy development. We will carefully consider the findings of the Migration Advisory Committee report.

Consultation questions

What are the priority skills gaps across UK agriculture? Please rank your top three options by order of importance:

- a) Business / financial**
- b) Risk management**
- c) Leadership**
- d) Engineering**
- e) Manufacturing**
- f) Research**
- g) Other (please specify)**

What can industry do to help make agriculture and land management a great career choice?

How can government support industry to build the resilience of the agricultural sector to meet labour demand?

Implementing our new agricultural policy in England

We will replace the Common Agricultural Policy with a new system which pays public money for public goods.

A new environmental land management system will be the cornerstone of our agricultural and land management policy. We will support farmers and land managers to deliver substantial environmental improvements, securing public and business benefits from the farmed environment. Other public goods we could support include animal welfare, promoting agricultural productivity, public access, and supporting rural and upland resilience.

A strong baseline will maintain and enhance important environmental, animal and plant health and animal welfare standards, backed by an integrated inspection and enforcement regime.

Farmers will have access to the tools they need to manage income volatility but must take responsibility to invest for the lean years as other sectors have done.

5. Public money for public goods

We propose for our new agricultural policy to be underpinned by payment of public money for the provision of public goods.

Environmental enhancement and protection

Protection and enhancement of our environment could be considered the pre-eminent public good, providing value for farmers, land managers, citizens and taxpayers alike. The actions of farmers and land managers now can help to preserve our natural landscapes and capital for future generations. Environmental public goods underpinning our approach to future agricultural policy could include:

i. Improved soil health

Healthy soil is essential in underpinning a huge range of environmental benefits, including food production; biodiversity; carbon storage; and flood protection. However, the ability of soil to perform these functions is reduced when it is degraded, eroded or lost. Soil health can be affected in a number of ways, including by erosion from water or wind; poor land management practices that increase compaction; or even an inappropriate amount of vegetation cover [EC:61].

ii. Improved water quality

Maintaining and improving the quality of our water has a wide range of important benefits, including protecting our supply of clean drinking water; improving public health; providing increased recreation opportunities; underpinning sustainable food production; and preventing loss of, or damage to, habitats and species that rely on the water environment [EC:60].

iii. Better air quality

Clean air is vital to human health and the environment. When ammonia is released into the air, it reacts with nitrogen oxides and sulphur dioxide and forms 'secondary particulate matter' which has a significant impact on human health [EC:65]. Most notably, ammonia contributes to smog in urban areas. In addition, when deposited on land, ammonia can cause acidification or overload soils and watercourses with nitrogen, leading to biodiversity loss in sensitive habitats.

iv. Increased biodiversity

Biodiversity describes the variety of life on Earth – of ecosystems, species and of the genetic diversity they contain. Biodiversity 2020 commits us to 'take steps to halt biodiversity losses', both because it is valued in its own right, and because biodiversity provides a range of other benefits such as supporting pollinators, which have an estimated value of between £700 million to the UK economy⁶, or even

⁶ Sustainable Pollination Service for Crops: A BBSRC Funded study, University of Reading, 2014

climate regulation. Land management practices can have major impacts on biodiversity.

v. Climate change mitigation

Nitrous oxide and methane greenhouse gas emissions from agriculture have fallen by around 15% since 1990, and agriculture currently contributes 10% of UK emissions [EC:63]. Whilst it remains incredibly important that we continue to reduce carbon emissions from the farming sector, environmental land management could play a pivotal role in responding to climate change by increasing the ability of farmland and the countryside to sequester carbon, thereby enhancing the benefits and value of our natural resources.

vi. Enhanced beauty, heritage and engagement with the natural environment

Agriculture and farming practices shape our rural historic environment, our distinctive landscape features and our historical monuments [EC:55-6]. The conservation and enhancement of our cultural heritage contributes directly to a healthier environment, benefitting people, offering support to thriving rural economies and national prosperity.

Woods and forests offer many benefits to society and the economy. They offer the potential for very significant benefits in carbon sequestration; provide outdoor spaces for exercise and recreation; and also contribute to improving agricultural productivity and rural business diversification.

In addition to environmental enhancement, our new policy could also work towards achieving any or all of the following outcomes:

Better animal and plant health and animal welfare

i. World-class animal welfare

The public has an expectation of high animal welfare standards and consumers want to know what they are buying. Better welfare can contribute towards healthier animals and this can drive up farm productivity and profitability.

ii. High animal health standards

Poor animal health and endemic disease costs millions of pounds each year in lost productivity for the livestock industry, with the extensive grazing sectors in particular suffering low incomes. For example, mastitis alone costs industry £180 million each year [EC:32]. Action that helps to improve animal health and the capability of farmers to manage the risks posed by disease can help to create a more productive, resilient and self-reliant livestock sector. It helps strengthen the nation's biosecurity, protecting society from the impacts of external pest and disease risk.

Animal health also has a wider impact on public health. For example, the use of veterinary medicines to tackle endemic diseases contributes to the development of antimicrobial resistance (AMR). This poses a risk to the future effectiveness of

antimicrobial medicines for both animal and human use, and thus places a burden on the National Health Service [EC:32].

iii. Protection of crops, tree, plant and bee health

Managing and reducing the impact of pests and diseases on the farming and forestry sectors helps protect the value that healthy trees and plants contribute to the UK economy, society and environment, estimated to be at least £8 billion per year [EC:33]. In addition to the wider benefits of healthy woods and forests outlined above, better biosecurity reduces the risks of dealing with costly outbreaks and promotes more productive and self-reliant farming sectors.

Improved productivity and competitiveness

Alongside its responsibility for regulation and taxation, the public sector provides or funds many of the foundations of productivity – including education, vocational training, transport and other infrastructure, and scientific research. Investment in research and development can improve productivity and bring environmental benefits. This matters, because our natural capital is an essential basis for economic growth and productivity over the long-term.

There are a range of innovations across farming (e.g. technology, data science, gene-editing, improved tracking and traceability of livestock or new plant biosecurity measures) which can increase productivity; help us to safeguard the public goods of animal and human health; and ensure we better protect the environment.

Preserving rural resilience and traditional farming and landscapes in the uplands

Agricultural land is rich in a social and cultural relevance beyond just the economic and environmental. Farmland has shaped and continues to shape England's unique natural landscape. The identity of England's natural landscape is locally dependent and is a place where past generations have toiled to shape future ones. The beauty of the upland farm is often in inverse proportion to the fertility of its soil and the profit margins of their businesses. Hill farmers maintain a panorama of dry stonewalls and grazed moorlands. The upland way of life, the unique food produced, and the great art that these landscapes have inspired attract visitors from around the world.

Areas such as the uplands deliver many public goods that are worthy of public investment: not only are they a beautiful and rich part of our heritage, they can encourage biodiversity, protect water quality and store carbon. Farm businesses and communities in rural areas can face particular challenges, including physical and digital connectivity. Improved connectivity increases innovation and productivity across the economy, bringing significant economic rewards.

Public access to the countryside

With agriculture accounting for more than 70% of land use in the UK, farmland forms an important amenity value for those who are accessing it and farmers and land managers can have a vital part to play in facilitating a deeper connection with the countryside. This may be through the maintenance of public rights of way, which can improve public health through access to clean air and exercise, for instance horse riding or providing opportunities for recreation and tourism. In 2010, England's National Parks accumulated 104.2 million visitor days and attracted spending of £2.2 billion.

The UK's unique landscape also makes it a widely sought after location for film and television, thus providing an important advantage for the UK's creative arts industry over its international competitors. Initiatives such as Open Farm Sunday can also act as an important vehicle to educate the general public about where their food comes from and the natural environment.

Consultation questions

Which of the environmental outcomes listed below do you consider to be the most important public goods that government should support? Please rank your top three options by order of importance:

- a) Improved soil health
- b) Improved water quality
- c) Better air quality
- d) Increased biodiversity
- e) Climate change mitigation
- f) Enhanced beauty, heritage and engagement with the natural environment

Of the other options listed below, which do you consider to be the most important public goods that government should support? Please rank your top three options by order of importance:

- a) World-class animal welfare
- b) High animal health standards
- c) Protection of crops, tree, plant and bee health
- d) Improved productivity and competitiveness
- e) Preserving rural resilience and traditional farming and landscapes in the uplands
- f) Public access to the countryside

Are there any other public goods which you think the government should support?

6. Enhancing our environment

During an 'agricultural transition' period, we will prepare to move to a new system which puts environmental outcomes at the heart of government support. Throughout this period we will learn from the past and build on effective elements currently in place under Countryside Stewardship. We will work with farmers, land managers and environmental experts to trial new approaches. We will investigate innovative mechanisms with the potential to improve environmental outcomes. We will also make sure that no one in an existing scheme is unfairly disadvantaged when we make the transition to new arrangements.

Our key outcomes

The principal public good we want to support in future is environmental protection and enhancement. A new environmental land management system, underpinned by natural capital principles, would contribute to delivering against many of the key outcomes set out in the 25 Year Environment Plan and the Clean Growth Strategy. These include clean air; clean and plentiful water; thriving plants and wildlife; reduced risk of harm from environmental hazards such as flooding and drought; using resources from nature more sustainably and efficiently; enhanced beauty, heritage and engagement for the natural environment and mitigating and adapting to climate change.

We have an opportunity to improve the health of our soils and the water quality of our catchments. This could involve measures which increase awareness and support the creation and maintenance of buffer strips next to waterways, to reduce water pollution caused by fertiliser run-off from agriculture. We can reduce the harmful contribution agriculture makes to ammonia emissions and air quality, for instance, through encouraging the use of low emission slurry spreading equipment or supporting investment in slurry covers.

We can improve biodiversity, incentivise practices which support carbon sequestration and greenhouse gas reduction to help to tackle climate change and continue to support woodlands and forestry. This could be achieved through support for landscape scale restoration projects, hedgerow creation and habitat management. We can conserve and enhance our landscapes and rural heritage and increase the quality, diversity and access to nature-based recreation and tourism. We will also continue to recognise the benefits of organic production, support projects which prevent flooding and encourage new measures to promote nature-friendly farming.

A new system will promote long term sustainable land management. We want farmers and foresters to integrate their plans for the production of environmental goods with plans for the production of food and timber. Improving the environment can also benefit the competitiveness of the sector, for example, through improving soils and increasing resource efficiency.

Future schemes will continue to be consistent with the effective functioning of the UK internal market and be aligned with our international obligations under the World Trade Organisation Agreement on Agriculture. This agreement sets out commitments for limiting trade-distorting subsidies, and the UK will continue to adopt policies in accordance with those commitments. More information is provided in Chapter 14 on trade and international commitments.

We will therefore introduce a new environmental land management system that could involve some or all of the following.

- i. **New Environmental Land Management schemes:** offering multi-annual agreements to support the delivery of valuable environmental improvements countrywide. These would be straightforward to understand; have a streamlined application process to lower the barriers many farmers faced to participation in past schemes; and minimise bureaucracy to encourage wide participation. Support could include schemes open to nearly all land managers who wish to enhance the natural environment; and enhanced support and continued funding for technical advice for projects which meet national priorities and require complex, place-specific management (such as wetland and woodland creation, or peatland restoration.)
- ii. **Funding for collaborative projects:** incentivising land managers to work together to secure environmental improvements at landscape and catchment level. This funding will support co-ordinated action on areas such as diffuse water pollution and the protection of priority habitats, where land managers need to work together across multiple sites in order to deliver environmental benefits.
- iii. **Capital grants:** supporting land managers to adopt sustainable practices and reduce negative environmental impacts in a transition towards a fuller application of the 'polluter pays' principle.
- iv. **A 'user friendly' design:** we will aim to reduce prescription and bureaucracy in a new system, encouraging participation and enabling environmental improvements to occur countrywide. As we develop a new system, we intend to explore measures to improve scheme administration and participant experience. We will investigate rolling monthly start dates to agreements, monthly payments and other actions which can reduce paperwork.
- v. **Innovative mechanisms:** we will explore new approaches with the potential to achieve better environmental outcomes and improve value for money. Such mechanisms could include reverse auctions, tendering, conservation covenants and actions which encourage private investment in natural capital. We will further investigate different payment options through these mechanisms, with the potential to offer fair rewards and strong incentives for participation, in return for increased levels of public benefits from improved environmental outcomes.

Case study: Delivering the 25 Year Environment Plan's goals

Soil health

Haywood Oaks Farm is an arable farm on rolling hills on the outskirts of Blidworth, Nottinghamshire. It is one of eight linked farms which are part of the 1,000 ha Robert Thomas Farms operation. Sandy soil on the farm was liable to be blown away by strong winds, while heavy rainfall also had the potential to wash away valuable top soil. Through a Higher Level Stewardship (Environmental Stewardship) agreement, owner Richard Thomas and farm manager Andrew Bainbridge planted shelterbelts to protect both the soil and crops from the full impact of intense wind and rainfall. This has helped to reduce the extent to which topsoil was being washed away.

It was felt that more work needed to be done and between 2014 to 2017 Richard, Andrew and more recently Richard's son, James Thomas, have worked with the Woodland Trust to plant further shelterbelts. This consisted of planting 7,550 trees which included oak, holly, rowan and birch. These were matched to suit the soil type and tree species that already existed on the farm. Trees were planted in less productive or more exposed areas, which were less favourable to crop production.

These are now helping to improve water infiltration rates and to act as a natural barrier to diffuse strong winds. This work will help to minimise soil degradation through preventing the loss of vital nutrients from the soil.

Biodiversity

Edward Cross farms with his father Richard as a tenant at Flitcham in West Norfolk. They manage 330 ha of gently sloping, chalky arable land, as well as 35 ha of river valley grassland. The farm has been in agri-environment schemes benefitting biodiversity since the mid-1990s.

The schemes have deployed a package of options that provide habitats and year-round food resources (e.g. through growing specific mixtures and naturally occurring local flora that provide flowers, insects and seeds), so that the farm now supports a huge range of farm wildlife, with farmland bird species (including grey partridge, tree sparrow, skylark, linnet and yellowhammer) showing positive increases over the years. Stone-curlews and lapwings breeding on the farm use special cultivated fallow plots put in place to attract ground-nesting birds. The stone-curlews returned to breed on the farm in 2013, with two pairs raising at least one brood every year since.

Arable land reverted to flower-rich chalk grassland through agri-environment schemes supports a high diversity of pollinating insects and has attracted several nationally rare insects, including species new to Norfolk or rediscovered here after an absence of over a century.

Water quality

The Devon Wildlife Trust has been instrumental in efforts to restore Culm grassland, a wet grassland habitat once common to West Devon and Cornwall. Devon currently supports 80% of Culm grassland in England.

In the period 2008 to 2015, the Wildlife Trust worked with farmers to restore 3,984ha of Culm grassland and work is continuing to create a further 5,000 ha by 2025. This will provide a range of environmental benefits such as flood prevention, clean water, biodiversity and carbon storage.

Storm run-off from intensively managed grassland has been estimated to be on average eleven times greater than Culm grassland, with the uneven and tussocky nature of the Culm grassland better able to retain water before it is released at a more gradual rate. When the next stage of Culm grassland restoration is complete, a study to value the ecosystem benefits by the Devon Wildlife Trust and the University of Exeter has calculated that Culm grassland will have a combined water and carbon value of £20.5 million, for £2 million of investment by the Wildlife Trust and landowners with agri-environment funding.

Air quality

Richard Mortimer owns A&M Contracting, a business operating across farms in the Waveney catchment on the Norfolk Suffolk border. In 2010, due to increased farmer awareness of diffuse pollution from agriculture as a result of Catchment Sensitive Farming activity, A&M Contracting saw an opportunity to invest in a precision slurry spreading system which offered an efficient and low risk slurry application and management solution.

This method reduces diffuse water and air pollution, while creating cost savings and resource efficiencies for the farmer. The system applies slurry to the land via a boom drop hose as opposed to a conventional splash plate method. This significantly reduces emissions of ammonia through decreasing the slurry surface area exposed to the air and leads to better utilisation of available nitrogen by the crop. The system measures the application rate and amount of nitrogen being applied to the field. These actions make sure that crop requirements are met, reduces the amount of fertiliser that a farmer needs to use and minimises excessive fertilisation of soils, which in turn reduces the loss of excess nitrogen to air and water.

Climate change mitigation

Chris Harrison farms pedigree Swaledale Sheep above the rural market town of Alston in Cumbria. Chris is a keen conservationist and believes that good upland farming can go hand-in-hand with a healthy natural environment.

In 2010 Chris entered his 518 ha holding into a Higher Level agri-environment scheme and in the following year used expert advice from Natural England to block more than 10 km of actively eroding moorland grips across some 270 ha of his open fell land. By restoring the hydrology of his peatland habitats alongside a programme of active conservation grazing, Chris has been able to ensure that significant volumes of greenhouse gases remain stored within his soils. This, along with the increased abundance of plants like the peat-forming sphagnum mosses, will enable these rare habitats to function more fully and store increased volumes of carbon in the future.

Chris farms in a high rainfall area and his considerable efforts to restore the ecology of his farm have much wider potential benefits. By intercepting increased volumes of rainfall and slowing the flow of water leaving his farm, he can help to reduce the levels of flood risk posed to local communities further down along the course of the South Tyne River.

Enhanced beauty, heritage and engagement with the natural environment

The National Forest is creating a vast, new forest for the nation across 200m² of the Midlands. Since 1991, the area has been transformed through the planting of 8.5 million trees, with forest cover increasing from 6% to 20%. 70% of the new woodlands have been planted by private landowners, including around 320 farm woods, which range from 0.25 ha to 100ha in size. Many landowners have moved from being purely farmers to tree planters and increasingly woodland and tourism managers.

Farm woodlands have often been planted to provide the setting for landowners to diversify into leisure, tourism and biodiversity land uses. 79% of the Forest's new woods have some public access. 2,200ha of wildlife habitats have been created or brought into management. Many schemes have featured community tree planting and educational activities for schools – contributing to improved health, recreation, wildlife and air quality benefits across the area. This includes the sequestering of 66 thousand kilo tonnes of carbon between 1990 and 2010. Farm-based forestry, leisure and tourism schemes are also significant elements of a growing visitor and woodland economy. The National Forest now attracts 8.16 million visitors a year, which supports around 4,850 tourism jobs and contributes £395 million to the local economy. Management of farm woods is also supporting a growing woodland economy, with around 70% of woods now in active management.

Protecting and enhancing rural heritage

Ashnott Lead Mine and Lime Kiln is a remarkable survival of small-scale industrial remains. Ashnott had been on the Heritage at Risk Register since 2009. Erosion from cattle hooves was damaging the mining remains, while the lime kiln was losing stability due to damaging vegetation growth and wind movement from heavy loads of ivy in a nearby tree.

A drone survey by Historic England's Research Team compared landscape evidence to historic maps and underground exploration. When important workings were discovered beyond the scheduled monument boundary, the Historic England Listing Team extended the scheduling to protect the whole site. Meanwhile, a Countryside Stewardship agreement worked up with Natural England funded a fence to exclude cattle. Finally, a Historic England Management Agreement tackled repair and maintenance of the lime kiln. Thanks to the farmer and land agent's willingness, this rare industrial site is no longer at risk.

Case study: results-based agri-environment payments scheme

Natural England is currently running pilot schemes to test the effectiveness of a results-based payments approach for a future environmental land management system.

The pilot consists of 34 agreements, covering a total area of 230 ha with a focus on four environmental objectives: species-rich hay meadow and habitat for breeding waders in North Yorkshire and provision of winter bird food and pollen and nectar sources in Norfolk and Suffolk. The pilot is co-funded by the EU; and in North Yorkshire, the pilot is being run in collaboration with the Yorkshire Dales National Park Authority. The pilot aims to:

- reward the environmental outcomes delivered by land managers, rather than the actions they carry out. This has the potential to improve the value for money achieved from public investment, with funding targeted only where public benefits have been provided through effective land management.
- improve environmental outcomes. Initial monitoring of similar schemes across Europe has shown some positive effects on biodiversity. In this case, tiered payments, relative to the scale of the results delivered, were used to incentivise the land managers to go further in work to provide environmental benefits, yet were still consistent with World Trade Organisation rules for non-trade-distorting (i.e. Green Box) support.
- reduce the dependence on a prescriptive approach, allowing land managers to use their expertise, judgement and knowledge of the practices that work best for their land. This also has the potential to improve environmental outcomes.
- increase ownership and understanding of the outcomes, with land managers valuing the flexibility and trust this approach provides.

Piloting will continue during the 'agricultural transition' period, alongside further testing to roll out results-based payments for additional environmental land management options. The results of the first pilots will inform the design and approach for a new environmental land management system to be introduced from 2022.

Consultation questions

From the list below, please select which outcomes would be best achieved by incentivising action across a number of farms or other land parcels in a future environmental land management system:

- a) Recreation
- b) Water quality
- c) Flood mitigation
- d) Habitat restoration
- e) Species recovery
- f) Soil quality
- g) Cultural heritage
- h) Carbon sequestration and greenhouse gas reduction
- i) Air quality
- j) Woodlands and forestry
- k) Other (please specify)

What role should outcome based payments have in a new environmental land management system?

How can an approach to a new environmental land management system be developed that balances national and local priorities for environmental outcomes?

How can farmers and land managers work together or with third parties to deliver environmental outcomes?

7. Fulfilling our responsibility to animals

Farmed animals are an integral part of our countryside. We have a responsibility to maintain their health and welfare throughout their life. Excellent standards of animal health can reduce reliance on veterinary medicines and help protect the nation from the environmental and economic impacts of disease.

We already have a strong regulatory framework in place to make sure that health and welfare standards are maintained. There is scope to raise this regulatory baseline, whilst also simplifying and improving enforcement, as set out in Chapter 9.

Animal welfare

We want to safeguard the welfare of our livestock, building on our existing reputation for world leading standards. The UK has led the way in making significant welfare advances by banning the use of close confinement sow stalls for pigs and the use of veal crates back in the 1990s. In addition to our plans to make CCTV in slaughterhouses in England compulsory, we also propose to take early steps to control the export of live animals for slaughter as we leave the EU. We are mindful that farmers have to compete with overseas producers whose farm animal welfare standards may not be as robust as our own.

Animal welfare is one of the public goods we could support in the future. During the ‘agricultural transition’, we could pilot schemes that offer targeted payments to farmers who deliver higher welfare outcomes in sectors where animal welfare largely remains at the legislative minimum. Payments could also be made to farmers who trial a new approach or technology which could improve welfare outcomes but which is not an industry standard.

We want to make sure our high standards are easily understood. Retailers and assurance schemes offer consumers a choice of products to different welfare standards. However, it is not always clear to the consumer what standards underpin welfare terminology; and definitions on labels, such as “grass fed”, can vary between retailers. We are considering whether providing greater clarity of information to consumers could support higher welfare production.

Animal health

In line with our commitment in the 25 Year Environment Plan, we want to see a substantial reduction in endemic disease. Endemic disease and other health conditions can have a significant impact on industry productivity. They also affect animal welfare, antibiotic use, greenhouse gas emissions and resilience to disease threats. Coordinated action and strong industry leadership is required to tackle these issues. Different sectors face different challenges, and our approach will need to reflect that. Government and industry capture a

wealth of data relating to livestock and their health. However, in a number of instances, data is distributed across many datasets with a lack of coordination, and these are not well exploited.

We propose to work with industry to develop an ambitious plan to tackle endemic disease and drive up animal health standards. A clear vision and programme of partnership action will help us to tackle non-statutory endemic disease and health conditions in the form of an **Animal Health 'Pathway'**. The Pathway could take many forms, but as a minimum we envisage it will set the vision, a framework for co-operation and simple standards against which to benchmark performance.

We want to strengthen industry leadership and delivery capability, enabling and supporting action to manage animal health risks at farm level. We propose to work with industry to establish a partnership body to oversee development and delivery of the 'Pathway'. There are various options for what form a body might take and how it could be funded. Again, we will need to consider how to reflect sectoral differences.

A high level of farmer participation is essential for disease control schemes to be successful and to drive up standards across each sector. We propose providing targeted support for priority disease control and health schemes, learning lessons from the Bovine TB programme in England and schemes elsewhere in the UK and overseas. We want to work with industry to identify the measures most likely to encourage mass participation, considering the respective roles of veterinarians, markets, retailers, assurance schemes and government.

Case study: Animal Health Ireland

Animal Health Ireland is an independent company established as a partnership between private organisations and businesses in the agri-food sector and the Department of Agriculture, Food and Marine (DAFM). It delivers control programmes and advice for diseases of livestock that are not subject to international regulation in partnership with veterinarians and other service providers to help Ireland's livestock market remain profitable and sustainable. For example, their mastitis programme, CellCheck, notes a €38 million benefit in 2015 relative to 2013, due to reduced somatic cell counts. Databases for several programmes are maintained by the Irish Cattle Breeding Federation Database, providing an online tool for recording and monitoring animal health data. Animal Health Ireland is a not-for-profit organisation, funded by private sector stakeholders with matching support, to an agreed ceiling, provided by DAFM.

We propose to unlock the potential of data as a risk management tool through improved traceability, surveillance and use of electronic identification. We want to work with industry to bring together datasets on traceability, animal health and production, and make this data appropriately transparent to relevant stakeholders. We also propose to explore ways to accelerate the use of electronic identification and encourage greater participation in

surveillance, building on existing data-sharing initiatives. This will improve the coverage and robustness of our veterinary surveillance system, increase our ability to detect new and emerging threats and provide actionable intelligence for both government and industry.

Consultation questions

Do you think there is a strong case for government funding pilots and other schemes which incentivise and deliver improved welfare?

Should government set further standards to ensure greater consistency and understanding of welfare information at the point of purchase? Please indicate a single preference of the below options:

- a) Yes
- b) Yes, as long as it does not present an unreasonable burden to farmers
- c) Perhaps in some areas
- d) No, it should be up to retailers and consumers
- e) Other (please specify)

***if you answered 'perhaps in some areas', please elaborate.**

What type of action do you feel is most likely to have the biggest impact on improving animal health on farms? Please rank your top three choices from the below list, in order of importance:

- a) Use of regulation to ensure action is taken
- b) Use of financial incentives to support action
- c) Supporting vets to provide targeted animal health advice on farm
- d) Making it easier for retailers and other parts of the supply chain to recognise and reward higher standards of animal health
- e) An industry body with responsibility for promoting animal health
- f) Research and knowledge exchange
- g) Transparent and easily accessible data
- h) An understanding of animal health standards on comparable farms
- i) Other (please specify)
- j) N/A – Cannot rank as they are all equally important.

How can the government best support industry to develop an ambitious plan to tackle endemic diseases and drive up animal health standards?

8. Supporting rural communities and remote farming

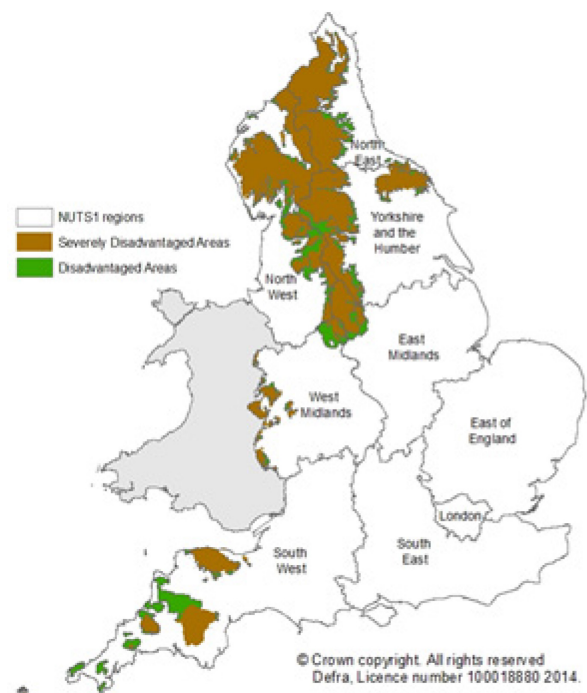
Farming and land management contributes to the rural economy and the nature of the places that people enjoy living in and visiting. Places like the Lake District, now a World Heritage Site, have been shaped by people over the millennia. These places represent a significant part of our heritage, bringing a wealth of environmental, archaeological and recreational value. Tourism represents a major source of income to rural communities in upland areas, with an estimated 70 million day visits to upland National Parks in England. Upland farmers and land managers play a key role in managing the land for all to enjoy.

The uplands and other remote areas

Since 1975, hill farming has traditionally been supported through financial payments to Less Favoured Areas (LFAs.) In England, Less Favoured Areas are divided into two groups, with the more challenging areas classified as Severely Disadvantaged Areas. These tend to be upland areas. The majority of farms in Severely Disadvantaged Areas (but not all) are grazing livestock businesses with sheep or cattle, although dairy farms and forestry are also important in some areas.

Farming activity in these areas is more restricted than in lowland areas due to poor soil fertility and steep hill slopes. Heather moorland dominates the landscape, which is of poor nutritional value to livestock, requiring a larger area of land to produce the same amount of livestock than lowland areas. These limitations mean most upland farms have fewer opportunities to improve their productivity than lowland farms. Compared to lowland farms, farms within the Severely Disadvantaged Area have less opportunity to diversify. Where they have diversified, they have a lower income from diversified enterprises. Agri-environment schemes also tend to make a greater contribution to average income than lowland farms [EC:24].

Many upland areas have the potential to benefit from new environmental land management schemes, given the nature of their landscapes and the many public goods that they deliver. They can encourage biodiversity, protect water quality and store carbon. However, we recognise that these areas are unique, and can face different challenges.



We want to help farmers and land managers in remote areas respond to the specific challenges and opportunities that arise from leaving from the EU. Producing high-quality food, maximising environmental benefits and diversification (e.g. into energy generation, tourism and commercial forestry) are all opportunities, but we recognise that these will be defined by the surrounding landscape and by investment potential. Traditional ways of life are also valuable, and we want to understand how changes to farming support may affect farmers and their wider communities. A clear vision for the uplands will be an important part of our agricultural policy, and we want to explore what this should be.

Case study: Dartmoor Farming Futures

Dartmoor Farming Futures (DFF) is a pilot project to manage better the public and environmental benefits associated with Dartmoor moorland.

By agreeing the outcomes sought collaboratively, farmers and landowners are given more responsibility for the design and delivery of agri-environment schemes. The farmer-led initiative focuses on the complete range of public benefits associated with upland farming from food production to carbon sequestration. The initiative was developed by Dartmoor National Park Authority, the Duchy of Cornwall and Dartmoor Commoners Council, with support from Natural England, RSPB and South West Water.

The most recent evaluation focused on the impact of the scheme on farmer behaviour, perceptions and farm businesses. Several key strengths were identified as a result: improved understanding of the species, habitats and archaeological features found on the commons; improved understanding of outcomes desired under agri-environment schemes; and empowerment of commoners to take ownership of outcomes, management and monitoring.

Rural businesses

It is important for rural communities to be sustainable and multi-generational, providing employment opportunities for the young and not forcing people out due to a lack of suitable housing. We want to raise the productivity of rural businesses to improve growth and prosperity across rural communities. We will work with the Ministry of Housing, Communities and Local Government on the design of the UK Shared Prosperity Fund, as part of delivering the government's Industrial Strategy, to support rural businesses.

We recognise that businesses and communities in rural areas face particular challenges, including physical and digital connectivity. Alongside the significant public investment being made, the Department for Digital, Culture, Media and Sport is working to make improvements to digital connectivity, including in rural areas. Improved connectivity also increases innovation and productivity across the economy, bringing significant economic rewards. In agriculture, improved connectivity can support precision farming, including environmental sensing systems.

Consultation questions

How should farming, land management and rural communities continue to be supported to deliver environmental, social and cultural benefits in the uplands?

There are a number of challenges facing rural communities and businesses. Please rank your top three options by order of importance:

- a) Broadband coverage**
- b) Mobile phone coverage**
- c) Access to finance**
- d) Affordable housing**
- e) Availability of suitable business accommodation**
- f) Access to skilled labour**
- g) Transport connectivity**
- h) Other, please specify**

With reference to the way you have ranked your answer to the previous question, what should government do to address the challenges faced by rural communities and businesses post-EU Exit?

9. Changing regulatory culture

Effective, well-designed regulation protects consumers, businesses, employees and the environment. Poorly-designed regulation costs time and money. Complex and disproportionate enforcement causes confusion and unnecessary stress.

Currently, we require farmers to comply with a broad spectrum of environmental, animal health and welfare legislation, such as rules that prevent over abstraction of water sources and animal traceability requirements to prevent the spread of disease. This provides crucial protection for our environment and high quality standards on farms. However, the current system puts excessive burdens on farmers and can be very rigid in its application. On occasion, an incomplete record or the loss of one cattle ear tag can lead to substantial reductions to payments.

Leaving the EU will allow us more scope to design a system that is right for England. Outside of the CAP, we can design an integrated inspection and enforcement regime that is more targeted and proportionate. There is scope to raise regulatory standards in some areas to maintain and enhance standards. In others, we can look at moving away from disproportionate enforcement that can heavily penalise some farmers for minor errors. We will enable a new regulatory culture in which standards are upheld and their enforcement is less disproportionately punitive and rigid in its application, without weakening our standards.

We have considered various inspection and enforcement methods, which could include greater use of remote sensing and risk-based inspection; and advice courses and civil sanctions to enforce regulations. Further to this, Dame Glenys Stacey will be conducting a thorough and comprehensive review of the inspections regime, seeing how inspections can be removed, reduced or improved to lessen the burden on farmers while maintaining and enhancing our animal, environmental and plant health standards.

We are already piloting new approaches to regulating agriculture by being outcome-focused, risk-based and proportionate. For example, working with the Environment Agency, we have developed new farming rules for water to improve water quality and soil health. This new set of common sense rules will apply to all farmers.

We have a high baseline for animal health standards, which we will continue to enforce. We also have some of the highest animal welfare standards in the world: after leaving the EU we should not only maintain but strengthen those standards. We have already set out our proposals to introduce mandatory CCTV in slaughterhouses.

Case study: The Field Activity programme

The Field Activity programme was, in part, set up in response to the 2015 manifesto commitment to free farmers in England from the burden of red tape. To date, Defra has removed over 10, 000 visits through a combination of policy changes, use of industry earned recognition assurance, better risk profiling and intelligent uses of data and resources to combine inspections.

The programme is transforming the way field-based services are delivered and co-ordinated, to be more efficient and effective by:

- improving risk-based targeting of non-compliant business;
- deploying new in-field mobile technology, enabling staff to carry out activity in the field and to optimise the use of our resources; and
- moving work between agencies to be more efficient and flexible.

The programme is working with industry to reduce duplicative government activity by increasing the use of industry self-regulation and data to reduce visits to compliant customers. Defra is using inspection data from the British Egg Industry Council to assess how to reduce the number of government egg marketing visits. The programme is also working with the Red Tractor assurance organisation to launch a similar scheme for animal by-product and cross compliance visits.

Transforming inspection activity so that it delivers efficiencies and flexibility is a key step towards creating a more targeted and proportionate inspection and enforcement regime.

As soon as is practical, we propose to:

- i. maintain a strong regulatory baseline of standards that reflects the 'polluter pays' principle. This will be the foundation of our future environmental land management system, setting out minimum standards that all farmers and land managers must comply with.
- ii. replace cross compliance with a new, better targeted and proportionate mechanism to enforce the regulatory baseline. This could cover measures already paid for under Pillar II of the CAP or extend further.

Consultation questions

How can we improve inspections for environmental, animal health and welfare standards? Please indicate any of your preferred options below.

- a) Greater use of risk-based targeting**
- b) Greater use of earned recognition, for instance for membership of assurance schemes**
- c) Increased remote sensing**
- d) Increased options for self-reporting**
- e) Better data sharing amongst government agencies**
- f) Other (please specify)**

Which parts of the regulatory baseline could be improved, and how?

How can we deliver a more targeted and proportionate enforcement system?

10. Risk management and resilience

Farmers are exposed to risks from many quarters, meaning farm business income can fluctuate greatly year-to-year [EC:21]. Some years are good, other years are not. The weather affects the yield of the harvest and when the grass can be cut for silage. Pests can devastate crops and woodlands and diseases can wipe out herds and flocks. Global prices and exchange rates vary for both inputs and sales. Farming is profitable over time but looking at individual years, volatility within the industry is higher than most other sectors of the UK economy. This volatility makes it harder for farmers to plan, reduces long-term investment and makes businesses difficult to sustain.

The best way of improving resilience in the farming sector is to support increases in farm productivity. Profitable farms are more resilient with readier access to capital. Our immediate focus, therefore, will be on improving productivity and profitability so farm businesses can be more self-reliant and invest for the lean years as other sectors do.

We must also make sure farmers have access to the tools they need to manage year-to-year income volatility. Farm businesses can already manage their risks through diversification of income, financial planning and the use of tax smoothing. Farmers and government also take action to reduce and mitigate on-farm risks, particularly through animal and plant health biosecurity measures. Insurance can reduce the financial costs to a farmer following a crop failure or animal disease, and use of futures and options contracts can help protect margins and stabilise prices. Despite these benefits, fewer than one in five farmers currently buy agricultural insurance.

Case study: index insurance in the sugar beet sector

The innovative index-based insurance offered to sugar beet farmers in the UK was developed by a collaboration between the National Farmers Union and British Sugar (which processes 100% of sugar beet in the UK). NFU Mutual provides the cover but the premium is fully paid by British Sugar.

Index insurance is a type of cover that has become increasingly popular over the last decade, particularly for weather-related risks. Index insurance differs from standard insurance by triggering payouts based on an agreed-upon index or measurement being met, rather than by actual losses suffered by the insured party. Index insurances typically require less farm-specific data than other insurances and so are easier to administer.

This type of collaboration creates sufficient demand to develop bespoke products, and improves the affordability and accessibility of insurance. Index-based insurance could be an avenue to consider for a broader range of crops or livestock, particularly in sectors where there are a small number of large players at some stage of the supply chain.

In some other countries, governments subsidise the cost of risk management products, forming a significant indirect subsidy to farmers. But these approaches can distort markets, undermine the need to properly reduce and mitigate risks and do not deliver value for taxpayers' money. Instead, there is an opportunity for market-led risk management tools, such as insurance or futures and options contracts, which enable farm businesses to reduce losses or to protect against price drops.

Innovative new commercial products designed to help farmers smooth income volatility are currently being developed and introduced. These will add to the toolkit of risk management solutions available to farm businesses. We want to better understand the role that government can and should play in facilitating these developments, without distorting the development of a healthy and independent private market. To do this, we need to understand the relationship farmers have with risk better, and the barriers to the uptake of insurance and other tools. We will conduct behavioural research and engage the farming and insurance sectors in order to inform further work in this area.

Data availability is one area where government may play a role. Data can improve private sector provision of insurance products and, by improving certainty, can reduce premiums. Improved data transparency also helps farmers to understand, target and manage risks and plan more effectively. As part of our response to the recent review of the Groceries Code Adjudicator, the government has committed to explore the case for mandatory reporting of price and volume data from producers, manufacturers, wholesalers and retailers for some agricultural commodities whilst safeguarding the privacy of sensitive information. This could support both the development of insurance and futures markets, but also improve supply chain transparency, improving the position of producers.

Common Market Organisation (CMO) regulations

The CMO regulations originally formed the core of the CAP. Initiated in the mid-1960s, the aim of the CMO regulations was to manage agricultural markets by maintaining prices paid to farmers within the EU at high levels. Experience demonstrated that high intervention prices were expensive for consumers and taxpayers and were an inefficient way to support farm profits. Starting with the MacSharry reforms of the mid 1990s, intervention prices were scaled back, with farmers compensated for this change with the introduction of Direct Payments. Some of the most market-distorting elements have been removed entirely. For example, the last CMO production quota, on sugar beet production, was removed in 2017.

The CMO today still includes a wide range of measures that in one form or other are intended to support prices paid to producers. These include the purchase of, or subsidies for the storage of, surplus commodities (both public intervention, and private storage aid), tariff barriers, marketing standards, competition and collaboration rules and sector-specific support schemes, such as for beekeeping, school milk and fruit and vegetable Producer Organisations. In addition, there are broad powers for the EU to stabilise markets at times of crisis. Those powers were used most recently for UK producers to provide packages of support for dairy farmers in 2015 and 2016.

As well as helping to manage their short-term volatility, farmers may also in highly exceptional circumstances need support in the event of a significant crisis such as a disease outbreak or catastrophic weather. We propose domestic provision for safety net mechanisms currently provided by the EU Common Market Organisation regulations, which will allow the government to intervene in such crises. We will consider how best to define and respond to these crises in future.

Consultation questions

What factors most affect farm businesses' decisions on whether to buy agricultural insurance? Please rank your top three options by order of importance:

- a) Desire to protect themselves from general risks (e.g. – revenue protection)
- b) Desire to protect themselves from specific risks (e.g. – flooding, pests or disease)
- c) Provision of government compensation for some risks
- d) Cost of insurance
- e) Complexity and administrative burden of insurance
- f) Availability of relevant insurance products
- g) Other (please specify)

What additional skills, data and tools would help better manage volatility in agricultural production and revenues for (a) farm businesses and (b) insurance providers?

How can current arrangements for managing market crises and providing crisis support be improved?

11. Protecting crop, tree, plant and bee health

Crops, trees, plants and honey bees provide huge value to the economy and society. Pests and disease threaten that value [EC:33]. Dealing with outbreaks can be costly to businesses, society and government. Businesses may face significant economic losses through destruction of crops and stock; communities may lose iconic trees and access to woodland; and beekeepers may lose all of their colonies.

Farmers must be able to protect their crops and people must be protected from the risks that pesticides can pose to them and the environment. Strong regulation of pesticides is essential to limit the risks, but this should be supplemented by integrated pest management. This means using all the available tools to protect crops, with the least possible use of pesticides. Steps that can be taken include crop rotation, the use of biopesticides and encouraging natural predators. There is the potential for greater use of plant breeding techniques, making better use of genetics and the resources held in gene banks to ensure their natural resilience to pests and diseases. By making integrated pest management central to our approach to crop protection, the government can encourage wider investment in research and development.

While integrated pest management is key to protecting crops, we also want to be better able to withstand and recover from the impacts of pests and diseases in the wider environment, protecting the benefits offered by plants and trees for generations to come. We want to make sure our trees can withstand future challenges by increasing their resilience and ensuring we have systems in place to support outbreak response and landscape recovery.

We are keen to find ways to support landowners to enable them to take appropriate and timely action in response to pest and disease outbreaks. This could include support to fell infected trees or shrubs, treat infection, as well as supporting pre-emptive action through the removal of pest reservoirs. We are also keen to work with landowners to support recovery from pest and disease outbreaks in landscapes through replanting with appropriate species. This would build resilience and help reduce the impact of any future outbreak.

We want to see productive, skilled and self-reliant arable, horticulture, forestry and beekeeping sectors, with reduced losses from pest and disease outbreaks. We have a strong track record of working with industry to strengthen biosecurity for these sectors, for example, through the creation of the UK Plant Health Risk Register. As we leave the European Union, we have an opportunity to build on our strong biosecurity standards, working closely with industry and wider stakeholders to reduce the risks from tree, plant and honey bee pests and diseases. We want to work with stakeholders to promote the development of a bio-secure supply chain.

Case Study: Plant Health Risk Register

The UK Plant Health Risk Register is the basis of a process for the systematic, proactive screening of potential new and emerging plant health risks. There are currently over 950 pests and diseases included in the register. It can inform government decisions on the key actions to be taken, including regulatory action both within the EU while we are a Member State (e.g. Emerald Ash Borer and *Xylella*) and domestically after we leave.

It has also been used to help inform research priorities and contingency planning as well as eradication/containment strategies in response to outbreaks (e.g. Asian Longhorn beetle and *Meloidogyne fallax*). It has helped where co-ordinated industry action is more appropriate (e.g. *Drosophila suzukii* and *Tuta absoluta*). The risk register is used by researchers and industry to look at areas of high risk in terms of pests and sourcing of planting material. Risks are reviewed on a monthly basis, based on the results of horizon scanning and new evidence.

Consultation questions

Where there are insufficient commercial drivers, how far do you agree or disagree that government should play a role in supporting:

- a) Industry, woodland owners and others to respond collaboratively and swiftly to outbreaks of priority pests and diseases in trees?
- b) Landscape recovery following pest and disease outbreaks, and the development of more resilient trees?
- c) The development of a bio-secure supply chain across the forestry, horticulture and beekeeping sectors?

Where there are insufficient commercial drivers, what role should government play in:

- a) Supporting industry, woodland owners and others to respond collaboratively and swiftly to outbreaks of priority pests and diseases in trees?
- b) Promoting landscape recovery following pest and disease outbreaks, and the development of more resilient trees?

What support, if any, can the government offer to promote the development of a bio-secure supply chain across the forestry, horticulture and beekeeping sectors?

12. Ensuring fairness in the supply chain

A transparent and properly functioning food supply chain should provide affordable, safe food for consumers. Subject to this, we want to see a fair share of risk and reward for farmers, processors, manufacturers and retailers. As Direct Payments to farmers are reduced and gradually phased out, it is important to build on and widen existing traditions of co-operatives to encourage a stronger culture of cooperation, transparency and fair dealing as part of a modern, 21st century food chain.

Most farmers are comparatively small-scale sellers, dealing with a smaller number of comparatively large-scale processors and retailers. In some sectors, farmers can give themselves greater power to negotiate contracts and market their produce by coming together in Producer Organisations (POs). We propose to maintain the special status of POs, including derogations from competition rules. Collective decision-making is not the traditional model for UK farmers, but the modern supply chain means attitudes have to change. Farmers could benefit from recognising how much more strength they can achieve through cooperation.

Case study: cooperatives

The Organic Milk Suppliers Cooperative (OMSCo)

OMSCo was formed in 1994 by five dairy farmers who joined forces to market their organic milk. Today, OMSCo has over 200 farmer members across the UK, producing over 250 million litres and 65% of the UK's organic milk supply. OMSCo have worked hard to develop new markets for UK organic milk through investment in carefully targeted marketing campaigns. OMSCo have also developed new export opportunities for organic dairy products - for example, forming a partnership with a US co-op to sell the only European organic cheese available in the USA. Alongside this, the technical advice and support that they offer to members helps reduce production costs and maximise profitability.

Cooperatives are a powerful way for farmers to benefit from economies of scale and lower the costs of buying inputs or hiring services such as storage and transport. Agricultural cooperatives also enable farmers to access new markets and reduce risks.

ANM Group

Established in 1872, ANM Group is one of Scotland's leading and most active farming, food and finance businesses and ranked in the top 25 of UK co-operatives. It has more than 140 years at the centre of the agricultural industry in Scotland. It is highly diversified with interests in the land market, commercial and industrial plant and machinery equipment, and in the catering and hospitality industry. ANM Group aims to maximise returns for its 5000 members, ensuring the sector is fit for the future.

ANM Group provides members and customers with the infrastructure, skills and systems needed to trade their livestock, goods and services openly and fairly. Profits are used to sustainably grow and develop the business.

It is timely to consider how contracts and the use of grading systems in abattoirs can be improved to make sure that farmers are working to clear and meaningful terms and conditions. The introduction of formal codes of practice could strengthen the integrity of the supply chain and make sure that farmers are treated fairly. We will continue to champion the role of the Groceries Code Adjudicator.

Bigger and better-equipped processors and retailers often have a clear view of the market, while farm business – more fragmented and small – frequently do not. This can create mistrust about pricing and the way that profits are shared along the chain. We want to explore how the collection and dissemination of market data could be improved to increase transparency, encourage better communication and the sharing of information, and support efficient working across the supply chain.

Consultation questions

How can we improve transparency and relationships across the food supply chain? Please rank your top three options by order of importance:

- a) Promoting Producer Organisations and other formal structures?
- b) Introducing statutory codes of conduct?
- c) Improving the provision of data on volumes, stocks and prices etc.?
- d) Other (please specify)?

What are the biggest barriers to collaboration amongst farmers?

What are the most important benefits that collaboration between farmers and other parts of the supply chain can bring? How could government help to enable this?

The framework for our new agricultural policy

13. Devolution: maintaining cohesion and flexibility

Leaving the European Union will be an important step in the devolution of agriculture. Under the existing constitutional settlements, agriculture is devolved in Scotland, Wales and Northern Ireland. However, many of the rules in these areas are currently set at the EU level, although some discretion is allowed in Direct Payments to farmers; and each administration has a rural development programme (e.g. agri-environment schemes and rural economic growth) that they deliver.

The devolved administrations and the UK government are working together to determine where common frameworks need to be established in some areas that are currently governed by EU law, but that are otherwise within areas of competence of the devolved administrations or legislatures (as agreed by the Joint Ministerial Committee (EU Negotiations)). The JMC (EN) agreed the following principles:

i. Common frameworks will be established where they are necessary in order to:

- enable the functioning of the UK internal market, while acknowledging policy divergence
- ensure compliance with international obligations
- ensure the UK can negotiate, enter into and implement new trade agreements and international treaties
- enable the management of common resources
- administer and provide access to justice in cases with a cross-border element
- safeguard the security of the UK

ii. Frameworks will respect the devolution settlements and the democratic accountability of the devolved legislatures and will therefore:

- be based on established conventions and practices, including the competence of the devolved institutions and will not normally be adjusted without their consent

- maintain, as a minimum, equivalent flexibility for tailoring policies to the specific needs of each territory as is afforded by current EU rules
- lead to a significant increase in decision-making powers for the devolved administrations

iii. Frameworks will ensure recognition of the economic and social linkages between Northern Ireland and Ireland and that Northern Ireland will be the only part of the UK that shares a land frontier with the EU. They will also adhere to the Belfast Agreement.

As part of the work on common frameworks, we are also interested to know whether there are any impacts on cross-border farms, and other relevant landholdings and associated businesses, where each administration can tailor its own agriculture policy.

The devolved administrations and the UK government have made good progress on identifying where a common approach may be needed. It is the UK government's expectation and intention that the process will lead to an increase in decision-making powers for each of the devolved administrations.

In relation to Northern Ireland we are also mindful, that, pursuant to the requirements of the Belfast ('Good Friday') Agreement and its establishing treaty, the North South Ministerial Council agreed agriculture as one of its six areas of cooperation. In the December Joint UK-EU Report, the UK committed to protecting North-South cooperation in full, including with respect to agriculture.

We will, therefore:

- continue to work closely with the devolved administrations to agree where a common approach is required across the UK. Where commonality is essential we expect to need UK wide legislative frameworks.
- continue to work closely on areas where commonality is desirable and where it may be possible to consider cooperative arrangements such as Memorandums of Understanding or more informal arrangements. Informal arrangements could include information sharing on new design and outcomes of environmental and productivity schemes.

Consultation questions

With reference to the principles set out by JMC(EN) above, what are the agriculture and land management policy areas where a common approach across the UK is necessary?

What are the likely impacts on cross-border farms if each administration can tailor its own agriculture and land management policy?

14. International trade

For the first time in more than 40 years, the UK will have its own trade policy. We want to maximise our trade opportunities globally and across all countries – both by boosting our trading relationships with old friends and new allies, and by seeking a deep and special partnership with the EU.

Through our approach to trade, we have a golden opportunity to help our farmers to grow more, sell more and export more great British food, building on our high quality brand. British food and farming has a world-class reputation for quality. We are proud to have some of the highest animal welfare standards in the world. Maintaining and enhancing our high standards of food safety, animal welfare and environmental protection will remain paramount.

Accessing new markets will allow our farmers to export more British produce and increase their profits as well as to spread risk. Opening up our own markets can also benefit consumers by offering more choice and strengthening the discipline of competition that helps keep food affordable. But price is not the only concern. We know that consumers buy certain products for a range of reasons, which also include provenance and sustainability. We want to help build the reputation of British produce both at home and globally to inform those choices.

UK food and drink is already gaining improved access to global markets, as illustrated below. Some companies, however, have yet to take advantage of the opportunities stemming from greater market access. We want to exploit this potential as we negotiate future trading arrangements.

The EU is our biggest trading partner for agricultural products, so our future relationship with the EU 27 is of vital importance. The government is committed to securing a deep and special partnership with the EU, including a bold and ambitious economic partnership. The UK wants to secure the freest trade possible in goods and services between the UK and the EU. Ensuring as frictionless trade as possible for our agricultural sectors is particularly important where much of the produce is perishable and time is critical.

The government is committed to securing continuity in the effect of existing EU Free Trade Agreements and other EU preferential arrangements. Through membership of the EU, the UK is currently party to around 40 international trade agreements covering over 65 countries. We are discussing with our trading partners how continuity is best achieved, including through the implementation period, and have had positive discussions with partner countries on our approach in relation to a range of agreements. The Trade and Taxation (Cross-border Trade) Bills, both introduced to Parliament in December 2017, will provide continuity by enabling the preservation of the UK's current trade and investment relationships, while creating the necessary legal powers to ensure we are ready to operate independently when we exit the EU.

Many developing countries also export agricultural and fisheries products to the UK under EU unilateral trade preference schemes. The Trade White Paper explains how the government plans to ensure a smooth transition for these countries as we exit the EU.

In the future, the UK will be in a position to independently exercise its existing rights as a World Trade Organization (WTO) member and will continue to be subject to the full obligations of WTO membership. WTO agreements could represent a framework for our future agriculture policy. Within this framework, support to farming industries are defined according to their potential for trade distortion and notified under the following categories:

- **Green box support** covers specific types of payments that are considered not to distort trade. Decoupled payments and agri-environment schemes fit in this category, provided specific criteria are met. There is no limit on the aggregate amount that a WTO member can spend via the green box.
- **Blue box support** is considered trade-distorting but does not encourage production. Set aside payments were in this category and Scotland's coupled payments sit in the blue box too. Currently, there is no limit on the aggregate amount that a WTO member can spend via the blue box.
- **Amber box** support covers any payments that do not fit in the green or blue box and are therefore considered trade-distorting. The EU's market price support sits in this category. WTO members have agreed to limit their amber box payments. All members have a *de minimis* limit proportional to the value of their annual agricultural production. Some members have a higher commitment as a result of the Uruguay Round negotiations, such as €72.4 billion in the case of the EU. The UK and EU have proposed this amber box allocation is apportioned between them as the UK leaves the EU.

We already have a range of trade relationships in place with different markets, and will continue to improve and progress our bilateral trading relationships. There are many ways in which the UK can strengthen its trade and investment relationships with partners across the world. One important way is to agree a Free Trade Agreement (FTA) and a number of countries have shown a keen interest in doing so. But a range of options is available to us, from discrete bilateral agreements to broader regional types of partnerships. We will examine the range of relationships that are appropriate and available to us, drawing on best practice from the EU and elsewhere.

Any such future trade relationships must work for consumers, farmers, and businesses in the UK. The government is fully committed to ensuring the maintenance of high standards of consumer, worker and environmental protection in trade agreements.

We are determined to ensure that our farm businesses can thrive in this new trading environment, competing successfully on the world stage. The competitiveness and productivity gains envisaged in this paper will be a key factor in this but improvements will take time. We will adopt a trade approach which promotes industry innovation and lower

prices for consumers. But we also need to adopt a trade approach that allows sufficient time for the industry to prepare.

Consultation questions

How far do you agree or disagree with the broad priorities set out in the trade chapter?

How can government and industry work together to open up new markets?

How can we best protect and promote our brand, remaining global leaders in environmental protection, food safety, and in standards of production and animal welfare?

15. Legislation: the Agriculture Bill

We will introduce an Agriculture Bill that breaks from the CAP, providing the United Kingdom with the ability to set out a domestic policy that will stand the test of time.

We will make sure that Parliament has due scrutiny of our agriculture legislative programme, we will seek consent from the devolved legislatures where relevant and ensure that farmers and land managers have time to prepare and adjust.

To meet the policy ambition set out in this consultation paper, the Agriculture Bill could provide legislative powers, including:

- i. to continue making payments to farmers and land managers, with power to amend eligibility criteria for payments
- ii. measures to strip out unnecessary bureaucracy and strengthen the delivery landscape
- iii. to create new schemes for one or more of the following purposes:
 - promoting and increasing agricultural productivity and resilience
 - preserving, protecting and enhancing the environment
 - providing support to rural communities
 - animal and plant health and animal welfare
 - public access
- iv. to establish a new basic compliance or inspection regime
- v. to take emergency measures to provide aid in extreme events
- vi. to retain UK-wide frameworks where we need commonality
- vii. to provide for continuity during the ‘agricultural transition’ period for some elements of the current CAP

Consultation questions

How far do you agree with the proposed powers of the Agriculture Bill?

What other measures might we need in the Agriculture Bill to achieve our objectives?