



Department
for Environment
Food & Rural Affairs

Strategic Environmental Assessment of the Draft Rural Development Programme in England

Environmental Report

June 2014



The European Agricultural Fund
for Rural Development:

Europe investing in rural areas

URS

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Chapter 1: Introduction

URS Infrastructure & Environment Ltd. has been commissioned to undertake an independent Strategic Environmental Assessment (SEA) in support of Defra's Rural Development Programme for England (the 'draft Programme'), 2014-2020.

Strategic Environmental Assessment explained

Strategic Environmental Assessment (SEA) is a mechanism for considering and communicating the impacts of a draft plan or programme, and the reasonable alternatives considered as part of its development, on the environment, with a view to avoiding and mitigating adverse impacts and maximising the positives. An SEA of the Rural Development Programme is a legal requirement.

An SEA must be undertaken in-line with the procedures prescribed by the Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA Regulations), which transposed the EU Strategic Environmental Assessment (SEA) Directive into national law.¹

Two key procedural requirements of the SEA Regulations are that:

- a consultation on 'the **scope** and level of detail of the information' that is likely to be required to assess the relevant plan or programme must be carried out with the 'consultation bodies' which, by reason of their specific environmental responsibilities, are likely to be concerned by the environmental effects of the plan or programme being implemented. In this case, English Heritage, the Environment Agency and Natural England should specifically be consulted; and
- a report, called an **Environmental Report**, should be published for consultation alongside the draft plan or programme. This report should present an assessment of the draft plan or programme and assess any reasonable alternatives and set out the 'likely significant effects' that would result from implementation of the Rural Development Programme.

Note that a consultation summary covering both the Scoping Report consultation and the Environmental Report consultation is provided in **Annex C**.

Structure of the Environmental Report

This document is the Environment Report. A draft Rural Development Programme (the 'draft Programme') has been published alongside this report. **Chapter 2** provides a

¹ European Commission (2001) Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment

background to the Common Agricultural Policy (CAP) and the main changes being introduced through CAP reform, as well as a description of the current Rural Development Programme (herein referred to as the 'extant RDP') in England, 2007-2013.

A description of the assessment methodology is provided in **Chapter 3**. This sets out (i) how the 'baseline' for assessing the impacts of the draft Programme has been identified; (ii) a comparison of the budgets for the extant RDP and the draft Programme (in 'real' terms); and (iii) how the assessment is presented. **Chapter 4** sets out the scope of the SEA having taken into account consultation on the scope of the assessment.

Chapter 5 sets out the development of the draft Programme to date, including the proposed 'reasonable alternatives' presented as part of the CAP implementation consultation and SEA Scoping Report. It provides an assessment of the reasonable alternatives in relation to the 12 'topic' areas identified in the Scoping Report and identifies the government's 'preferred option' and why it was chosen.

Chapter 6 provides a more detailed assessment of the draft Programme, including the 'likely significant effects' that would result from implementation of the draft Programme in relations to the 12 'topic' areas. Each topic section is split into three parts:

1. What is the scope?²
2. What is the likely evolution of the environment without the draft Programme?;³ and
3. What are the likely effects of the draft Programme?

Finally, **Chapter 7** sets out the next steps for finalising the draft Programme, in addition to setting out proposed measures for monitoring significant effects of the draft Programme.

Regulatory requirements

SEA Requirements

The SEA Regulations (2004) require certain things to be carried out and procedures to be followed. Where these apply, they are highlighted and explained in **red boxes**.

The SEA Regulations require certain information to be included in the Environmental Report. **Table 1.1** sets out these requirements and a series of questions that consequently need to be addressed.

² This is a summary of the Scoping Report sections.

³ The likely evolution of the current state of the environment on the basis of the absolute minimum that might be programmed.

Table 1.1: Questions that must be answered in the Environmental Report in order to meet Regulatory requirements⁴

Environmental Report Question	In line with Schedule II the report must include...	
What's the scope of the SEA?	What's the programme seeking to achieve?	<ul style="list-style-type: none"> • An outline of the contents, main objectives of the programme.
	What's the environmental 'context'?	<ul style="list-style-type: none"> • The relationship with other relevant plans and programmes • The relevant environmental protection objectives, established at international or national level •
	What's the environmental 'baseline'?	<ul style="list-style-type: none"> • The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the programme • The environmental characteristics of areas likely to be significantly affected • Any existing environmental problems which are relevant to the programme including those relating to any areas of particular environmental importance
	What are the key issues that should be a focus?	<ul style="list-style-type: none"> • Any existing environmental problems which are relevant to the programme including those relating to any areas of particular environmental importance
What has programme-making / SEA involved up to this point?	<ul style="list-style-type: none"> • Outline reasons for selecting the alternatives dealt with (and thus an explanation of the 'reasonableness' of the approach) • The likely significant effects associated with alternatives • Outline reasons for selecting the preferred approach in-light of alternatives assessment / a description of how environmental objectives and considerations are reflected in the draft programme. 	
What are the assessment findings at this current stage?	<ul style="list-style-type: none"> • The likely significant effects associated with the draft programme • The measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the draft programme 	
What happens next?	<ul style="list-style-type: none"> • A description of the measures envisaged for monitoring the draft plan or programme 	

⁴ Environmental Assessment of Plans and Programmes Regulations 2004

N.B. The right-hand column of Table 1.1 does not quote directly from Schedule 2 of the Regulations. Rather, it reflects a degree of interpretation. This interpretation is explained in **Annex A** of this report.

This Environmental Report has also been subject to an *ex-ante* (i.e. before the event) evaluation. The outcome of this is presented in **Annex B**.

What's the draft Programme seeking to achieve?

The Government's objectives for the new Rural Development Programme in England, 2014-2020 are to:

- Improve the environment: this includes helping to ensure that by 2021 the natural environment is improved as set out in the Natural Environment White Paper.
- Increase the productivity and efficiency of farming and forestry businesses, in order to improve their competitiveness and reduce the reliance of farmers and land managers on subsidies.
- Promote strong rural economic growth.

Rural development programmes are the delivery mechanism for Pillar 2 of the CAP. Political agreement on the wider CAP reform package includes a new Rural Development Regulation, 1305/2013. This regulation provides the overarching legal framework for what the new Rural Development Programme in England can support using the European Agricultural Fund for Rural Development (EAFRD) for the period 2014-2020. A new "Horizontal" Regulation, 1306/2013, sets out important rules for how the CAP (including rural development programmes) should be managed, financed and controlled.

Rural development also forms part of a suite of European Strategic and Investment Funds (ESIF), alongside the European Social Fund, European Regional Development Fund and the European Maritime and Fisheries Fund. A Common Provisions regulation, 1303/2013, sets out common rules for these funds.

The European Commission will also publish a number of delegated acts and implementing acts setting out more detail on how programmes should be implemented. These are not expected to be agreed until spring 2014. The new Rural Development Programme will start on 1 January 2015, with a transition year of the current programme activity during 2014.

Areas of scheme focus

The focus of the schemes to be introduced under the draft Programme is as follows:

Environment

Defra will be introducing a new Environmental Land Management scheme (NELMS). This will be a multi-objective scheme contributing to the delivery of outcomes in relation to biodiversity, soil and water issues; historic environment; landscape; genetic conservation and educational access.

This scheme will consist of:

- A **Priority sites offer (Upper-tier)**: multi annual agreements for farmers and land-owners with a main focus on designated and priority sites.
- A **Priority areas offer (Mid-tier)**: multi annual agreements for farmers and land-owners with a focus on delivering change at a landscape scale.
- A **Universal small scale grants offer**, either tied to a multi annual agreement or a stand-alone grant with a clear environmental benefit.

Productivity

Defra will be introducing a farming and forestry productivity scheme. This will be focused on five main areas:

- **Innovation, technology diffusion and knowledge transfer**: to help translate new technology into practice and provide training and advice.
- **Farm competitiveness and supply chain relationships**: supporting better business practice and improving awareness of supply chains.
- **Woodland Enterprise and Supply Chain**: supporting supply chain activity for woodfuel and venison.
- **Resource efficiency and management**: supporting improved water storage, rainwater harvesting, irrigation, drainage and water recycling and improved slurry use and storage.
- **Animal health and welfare**: supporting better awareness of risk management and biosecurity, animal husbandry and training.

Growth:

Local Enterprise Partnerships will set out their priorities for spend in rural areas based on the following priorities:

- **Building knowledge and skills in rural areas**: support for business related skills development and advisory services.
- **Funding new and developing micro, small and medium sized rural business**: supporting the creation and development of micro and small sized rural businesses, including new or improved business processes.
- **Funding small scale renewable and broadband investments**: capital grant support for investment in broadband infrastructure in hard to reach locations and help to overcome barriers to getting community energy schemes off the ground.
- **Support for tourism activities in rural areas**: activities which support co-operation at a local level around the destination offer and product development.

LEADER⁵:

A new National Delivery Framework will set out the main priorities for LEADER groups in the draft Programme. The main priorities for investment through LEADER will be:

- support for micro and small enterprises and farm diversification;

⁵ LEADER ("Liaison Entre Actions de Développement de l'Économie Rurale"),

- support for increasing farm productivity;
- support for rural tourism;
- support for increasing forestry productivity;
- provision of rural services; and
- support for cultural and heritage activity;

What's the draft Programme not seeking to achieve?

The draft Programme does not set out activities and funding under CAP Pillar 1 i.e. direct payment to farmers and market control measures. These areas have therefore not been directly assessed but have nonetheless been considered in the assessment.

Chapter 2: Background

This section provides background on the current Rural Development Programme for England (the 'extant RDP'), the Common Agricultural Policy (CAP) and briefly explains the changes to the CAP that will affect the draft Programme.

The Common Agricultural Policy

The **European Union's Common Agricultural Policy (CAP)** is the framework under which European farmers operate. It sets out a range of farming, environmental and rural development activities as well as controlling EU agricultural markets. It is the single largest common policy across the EU.

The CAP is split into two "pillars":

- Pillar 1 provides income support for farmers through direct payments and market control measures; and
- Pillar 2 promotes rural development through Rural Development Programmes in each Member State or region.

The CAP is delivered through seven year programming periods, with a new period starting from 2014.

A new **Basic Payment Scheme** will replace the current **Single Payment Scheme** as the main element of direct payments under Pillar 1. Requirements for payment will still be based upon the holding of eligible land and entitlements as well as meeting so called cross-compliance requirements.

However, there will be a number of changes to Pillar 1. These include:

- 'Greening' of Direct Payments: this requires farmers to deliver basic annual environmental measures that go beyond cross compliance, in order to secure more tangible environmental outputs from direct payment subsidies;
- the introduction of an 'active farmer test';⁶
- rules requiring the largest payments to be reduced (so called 'digressive' payments); and
- the introduction of a scheme to support young farmers who have recently started farming.

⁶ In order to receive direct payments claimants will in future have to meet an 'active farmer test', the detailed rules of which have yet to be defined. What is clear is that the test will be in two parts. The first part is a 'negative list' of business types which will be ineligible to apply for direct payments. The second part refers to a minimum level of activity and affects claimants when most of their land is naturally kept in a state suitable for grazing or agriculture.

There will remain a requirement to develop seven-year RDPs. Key aspects of Pillar 2 include:

- a menu of ‘measures’ that EU Member States can use in the design of RDPs. The ‘Axes’ of support in the current programme have been removed;
- Member States must spend at least 30% of their funding on measures to protect and enhance the environment; and
- Member States must also spend at least 5% through the local delivery mechanism known as the LEADER approach.

EU Rural Development funds (known as EAFRD⁷) are now also part of a wider set of **European Structural and Investment Funds** (ESIF), alongside the **European Regional Development Fund** (ERDF), the **European Social Fund** (ESF) and the **European Maritime and Fisheries Fund** (EMFF).

The CAP reform proposals allow Member States to transfer up to 15% of Pillar 1 funds to Pillar 2 and vice-versa.

The Rural Development Programme for England, 2007-2013

The current **Rural Development Programme for England** (RDPE 2007-2013) (the ‘extant RDP’) has a total budget of £3.7bn. Of this budget, around £800m is derived from EU Rural Development funds and a further £1.7bn through transfer from Pillar 1 funds (voluntary and compulsory modulation). National co-financing from the UK Exchequer accounts for a further £1.2bn. As noted above, delivery of the extant RDP will continue into 2014.

The programme is built around four axes (objectives):

- **Axis 1** – Improving the competitiveness of the agricultural and forestry sector (circa £370m);
- **Axis 2** – Improving the environment and countryside (circa £3.2bn). This is primarily spent on agri-environment schemes. It also includes delivery of the English Woodland Grant Scheme. Agri-environment schemes account for about £2.9bn of the overall budget for the extant RDP.
- **Axis 3** – Quality of life in rural areas and diversification of the rural economy (circa £290m); and
- **Axis 4** – the LEADER approach, a ‘bottom-up’ community-led delivery approach funded by the other 3 Axes (particularly Axes 1&3).

⁷ EAFRD stands for the European Agricultural Fund for Rural Development

Current Rural Development Programme schemes

The extant RDP is delivered through a number of schemes.

The largest aspect of the extant RDP is Environmental Stewardship, an agri-environmental scheme. This consists of four main elements:

- **Entry Level Stewardship (ELS).** This provides for the management of environmental features, including for example hedgerows, ditches and stone walls in addition to land management options such as low input grassland, the provision of wild bird seed mixtures and the creation of buffer strips.
- **Organic Entry Level Stewardship (OELS).** This is the organic strand of ELS. It is geared to organic and organic/conventional mixed farming systems.⁸
- **Uplands Entry Level Stewardship (Uplands ELS).** This supports hill farmers with payments for environmental management and is open to all farmers with land in Severely Disadvantaged Areas,⁹ regardless of the size of the holding.
- **Higher Level Stewardship (HLS)** is more targeted and involves complex types of environmental management with agreements tailored to local circumstances. This would include for example, the creation, restoration and recreation of important habitats through a set of more targeted options.

The latest data indicates that the uptake of Environmental Stewardship has gradually increased since it was rolled out in 2005. By the end of 2012 there were some 46,000 agreements managing 6,205,000 ha.¹⁰

HLS also provides funding for capital items that support land management options. **Historic and Traditional Buildings (HTB)** funding is also available under HLS to support capital works in relation to heritage assets.

Support to deliver better **access to the countryside** is also available through Environmental Stewardship. This supports educational access (such as classrooms) and capital options for establishing linear or open access to the countryside via for example, payment for items such as stiles and gates.

⁸Between 2004 and 2010 the area of agricultural land farmed organically or in conversion in England gradually increased, peaking at 392,000 ha. This has subsequently declined and in 2012, 3.6% (324 th ha) of agricultural land in England was classified either as organic or in conversion.

⁹ In the UK, Less Favoured Areas (land located and included in the list of less favoured areas adopted by Article 2 of European Council Directive No.75/268EEC on mountain and hill farming in less favoured areas) are classified into Severely Disadvantaged Areas and Disadvantaged Areas. DA and SDA land is generally suitable for extensive livestock production and for the growing of crops for livestock feed, but agricultural production is restricted (and for SDA areas, severely restricted) by soil, relief, aspect or climate conditions.

¹⁰ Defra (2013) A3 Farms in agri-environment schemes [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/232589/agindicator-a3-27aug13.pdf. Accessed 28/04/2014

An **Entry Level Stewardship Training and Information Programme** (ETIP) encourages increased uptake of ELS and is designed to improve the choice of options in new or renewed agreements with a view to improving the environmental benefits delivered by farmers.

The **English Woodland Grant Scheme** (EWGS), delivered by the Forestry Commission delivers agreements that support woodland creation and enhanced woodland management and improvement. It also aids delivery of the **Woodfuel Strategy for England** by providing support for the creation of woodland access to facilitate timber extraction and support for some of the additional costs associated with bringing timber to the market for the first time.

The Rural Payments Agency administers **Uplands Transitional Payments** (UTP) to farmers who are unable to enter **Uplands Entry Level Stewardship** (UELS). This replaced the **Hill Farmers Allowance** (HFA). These payments are provided to farmers whose agri-environment agreement was carried forward from the previous Rural Development Programme period, 2000-2006 under either the multi-annual **Countryside Stewardship Scheme** or the **Environmentally Sensitive Area** schemes into the 2007-2013 period. UTP also helps to ensure that agriculture continues to make its contribution to rural society and the managed environment of the English uplands. It recognises the specific difficulties faced in these regions and the role that hill farmers play in delivering landscape and other environmental benefits.

Two main grant schemes (one large and the other small) are delivered by Defra's Rural Development Programme Team – see below. These two schemes were introduced in late 2011 and early 2012 and replaced a number of schemes delivered at a regional level via Regional Development Agencies (RDAs). Defra brought delivery of the main socio-economic aspects of the programme into the department from July 2011, in part to help deliver a nationally consistent offer for beneficiaries.

The **Rural Economy Grant** (REG) scheme provides grants of up to £1 million for micro and small to medium sized enterprises (SMEs) to boost farming competitiveness, and support significant growth particularly in the agri-food, rural tourism, forestry, renewable energy, and other high-potential sectors (e.g. the ICT and creative sectors). This includes a specific **Dairy Fund** to help the dairy sector to increase its competitiveness and to access new markets by strengthening the sector's position in the supply chain through co-operation.

The **Farming and Forestry Improvement Scheme**, provides small grants to help farmers, foresters and horticultural businesses to improve their competitiveness. It provides support under five main areas: animal health and welfare, nutrient management, energy efficiency, forestry and water management.

A **Skills and Knowledge Transfer Framework**, designed to deliver flexible and locally available skills training to support the farming and forestry sectors and enable rural business growth.

The **Rural Community Broadband Fund** (RCBF) provides funding for the hardest-to-reach rural areas. The RCBF is jointly funded through the extant RDP and Broadband Delivery UK. It provides grant to community projects located in hard to reach areas that would not otherwise receive superfast broadband under the Government's wider £530m rural broadband programme.

The extant RDP also provides a package of support for **Rural Tourism**, designed to promote tourism, support rural businesses, improve tourism in AONBs and to develop local path networks. This includes the **Paths for Communities** scheme, delivered by Natural England.

A **Catchment Sensitive Farming** scheme, also delivered by Natural England, provides one-to-one and group advice, practical demonstrations and capital grants to the farming community in targeted priority areas to help farmers change their practices and reduce diffuse pollution. An **Energy Crops Scheme**, also delivered by Natural England provides establishment grants for approved energy crops.

Chapter 3: Assessment methodology

SEA Requirements

“The [Environmental] report shall include such of the information referred to in Schedule 2 to these Regulations as may reasonably be required, taking account of:

- (a) current knowledge and methods of assessment;*
- (b) the contents and level of detail in the plan or programme;*
- (c) the stage of the plan or programme in the decision-making process; and*
- (d) the extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment.”*

Regulation 12 (3)

Establishing the ‘baseline’

Establishing an appropriate ‘baseline’ is a key step in the SEA process. It involves providing a ‘snapshot’ of both the current state of the environment and a description of how it might change in future in the absence of the plan or programme, in this case the draft Programme. While the former is reasonably straightforward to establish using existing information sources, determining the latter is more challenging as, in reality, in the absence of the extant RDP there are a number of competing and complementary plans and programmes in place. Furthermore, in the case of the draft Programme, this is a rather hypothetical exercise given that the draft Programme is prepared under Pillar 2 of the Common Agricultural Policy (CAP), and is subject to its own regulations i.e. it is not something the Government can choose not to do.

In light of this, establishing the ‘likely evolution’ of the environment without the draft Programme involves anticipating changes to the environment associated with the absolute minimum that might be programmed. This includes the multi-annual contractual commitments from the current Rural Development Programme for agri-environment and forestry schemes, which amounts to £2.16bn. This meets the legal obligation to have a Rural Development Programme and for 30% of the funds drawn from the EU to be spent on environment and land management measures. In addition, this absolute minimum must incorporate the legal obligation for 5% of EU funds to be spent through LEADER. The absolute minimum represents running down the extant RDP over the life of the new round of CAP, as on-going contractual commitments from the current Programme diminish each year.

Added to this is the proposed Pillar 1 'Greening'. From 2015, the Basic Payment made to farmers under Pillar 1 will, for the first time, include an element (30%) conditional upon the meeting of three Greening requirements. These requirements are Crop Diversification, the protection of Permanent Grassland, and the need for 5% of arable land to be maintained as Ecological Focus Areas. All claimants are required to meet these requirements, although there are a number of exemptions. The **environmental benefits of the Greening measures are expected to be relatively low**, but widespread, and **Greening will now provide the baseline with regards to environmental practice anticipated on farms**. Whilst Pillar 1 Greening technically provides the future baseline, the uncertainty surrounding its delivery makes it very difficult to accurately take it into account its effects over the lifetime of the draft Programme.

Cross-compliance

Under the reformed Common Agricultural Policy (CAP), the framework setting out cross compliance requirements has changed. Claimants still have to respect Statutory Management Requirements (SMRs) and Good Agricultural and Environmental Conditions (GAECs). Several SMR standards have been removed compared to the current framework and some have been altered, with GAEC requirements becoming more aligned with SMRs. For information the following has changed;

- 5 SMRs have been removed: sewage sludge (current SMR 3), groundwater (which has been changed to a GAEC), and 3 relating to animal disease (current SMRs 13, 14, 15);
- 2 SMRs have been 'simplified' to remove some requirements (current SMRs 1 (Wild birds) and 5 (Habitats and Species));

With regard to GAECs, proposals have included combining some of the current requirements, and there are a few that have been lost or moved due to the wording in the new EU framework. The Government announced its decision on the future of GAECs on 10 June 2014.

In order to provide further and arguably more useful context for the SEA, an assessment against the current RDP has also been undertaken. This assumes that the 'extant RDP' is simply rolled forward with the same level of funding and the same schemes in place. In order to assess the performance of the draft Programme versus the extant RDP, evidence has been drawn from the published Impact Assessment of the draft Programme as well as a series of evaluations of extant RDP schemes which highlight lessons learnt, areas for improvement etc. A summary of schemes under the current RDP can be found in **Annex E**.

Budgetary comparison¹¹

As part of the SEA process it is useful to consider how levels of funding for different 'areas of intervention' under the draft Programme compare with the extant RDP. The relevant figures are set out in **Table 3.1** in 'real' terms, i.e. adjusted for inflation, and have been used to inform the assessment of the effect of the draft Programme vs. extant RDP. For comparison, the nominal budget for the draft Programme is £3.5 billion. This equates to £3.269 billion in real terms.

It should be noted that even if there is a difference in spend between the old and new programmes, this does not necessarily correspond to the loss of any particular environmental benefit or other cost as the government has stated that the draft Programme has been developed in a way that is more targeted with the aim of achieving greater value for money. It cannot therefore be assumed that a smaller RDP budget equates to a less positive environmental impact.

Table 3.1: Extant RDP and draft Programme budgets in 'real terms'

	2007-2013	2014-2020
Area of intervention	Budget in £2012/13 prices (£000,000s)	
Environment	3,040	2,847
Productivity	302	128.6
Growth	193.03	158.62
LEADER	126.83	127.69
Total	3,662.5	3,269

Assessment

The assessment was structured under the 12 topics identified in the Scoping Report. For each topic a range of assessment questions were identified. Taken together, the topics and questions provide a methodological 'framework' for assessing the likely significant effects of the draft Programme on the environment.

The 12 topic areas are as follows:

¹¹ Note that throughout the document budget figures are generally provided in nominal terms unless otherwise stated.

1. Air quality
2. Biodiversity and nature conservation
3. Climate change mitigation
4. Climate change adaptation
5. Landscape and cultural heritage
6. Population and human health
7. Soil management
8. Waste
9. Water management
10. Rural economy
11. Tourism and countryside access
12. Woodland

Using this framework, the assessment takes into account two factors in reaching conclusions as to the likely significant effects of the draft Programme:

1. the 'do minimum' baseline described above; and
2. where possible, the performance of the extant RDP.

Every effort has been made to predict effects accurately; however, this is inherently challenging given the high level nature and broad intent of the draft Programme. The draft Programme is necessarily vague in terms of where in England interventions will take place as the precise spatial focus will be determined through implementation of the schemes to which the draft Programme allocates funding. As such, it is only possible for the assessment to identify general, high level effects and this has been reflected not only in the assessment but also in the evidence base assembled to inform it. Overall, a reasonable level of professional judgement has been necessary in order to come to conclusions with regard to effects (and their relative significance).

The ability to predict effects accurately is also limited by our understanding of the 'do nothing' baseline, particularly how this may evolve under the absolute minimum that might be programmed (see 'Establishing the baseline') and how the draft Programme might be implemented in practice. In light of the uncertainties involved, there is a need to exercise caution when identifying effects and evaluating their significance and ensure that all assumptions are explained (see **Annex D**). In many instances it was not possible to predict significant effects, but it was possible to comment on the draft Programme's merits (or otherwise) in more general terms e.g. identifying generally positive or negative effects.

It is important to note that effects are predicted taking into account the criteria presented within Schedule 2 of the SEA Regulations. So, for example, account is taken of the **probability, duration, frequency and reversibility** of effects as far as possible. **Cumulative effects** are also considered (i.e. where the effects of the draft Programme may combine with the effects of other planned or on-going activity that is beyond the remit of the draft Programme). These effect 'characteristics' are **described within the assessment as appropriate**.

The effects are recorded under each topic against the agreed SEA Framework elements. We have used a simple set of symbols to indicate whether the draft Programme is anticipated to have positive, negative or uncertain effects when compared against the ‘do minimum’ and ‘business-as-usual’ baselines. We have also provided commentary where relevant with regard to the Schedule 2 effect characteristics. **Table 3.2** provides an example. **Table 3.3** describes the symbols used.

Table 3.2: Example assessment summary table

SEA assessment question (Will the draft RDP...?)	When compared against Do-minimum	When compared against Business as usual
Question 1....etc.		
Question 2		
Question 3		
...		
Assessment comments:		

Table 3.3: Description of assessment symbols

Symbol	Description
+	There is a likely positive effect in relation to this question
-	There is a likely negative effect in relation to this question
↔	There are both likely positive and negative effects
?	The effects are unknown or uncertain
~	The effects are largely the same
X	No relationship to this question

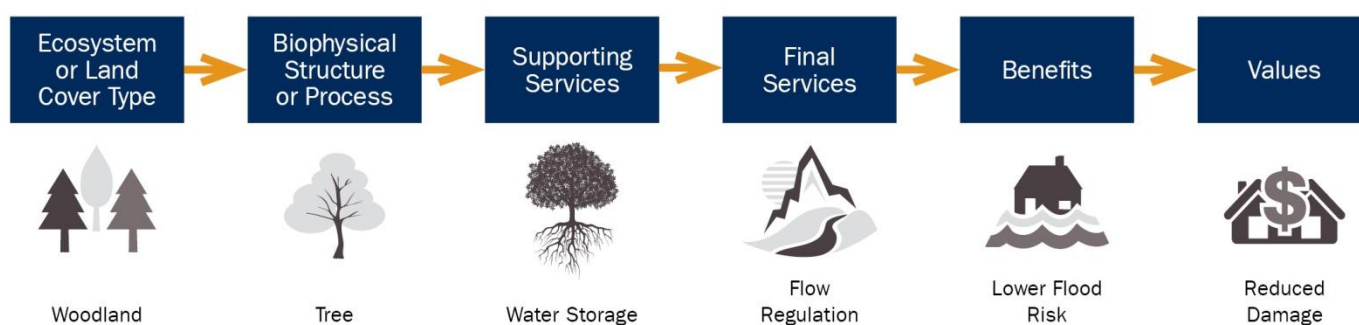
Rural proofing

Rural proofing is a process that enables policy-makers to take into account the needs and interests of rural people, communities and businesses in England in the development and implementation of policies, plans and programmes. For central government, rural proofing means assessing policy options to ensure these provide fair solutions for rural areas. The government's rural proofing guidelines sets out eight 'What?' questions which have been implicitly addressed in this SEA.¹²

Ecosystem services

An ecosystem approach to decision-making is seen as increasingly important. According to the Ecosystems Knowledge Network, "An ecosystems approach helps to ensure that the range of services provided by nature is considered more fully in decisions made at all levels and by all sectors and professional groups".¹³ One of the means to assist in implementing the ecosystem approach is to use the 'ecosystems cascade' to consider the links between ecosystem functions, ecosystem services, the benefits people derive from these services and the values they attach to them – see **Figure 3.1**. As such, we have endeavoured to consider these linkages and take account of ecosystem services in the assessment (see example below).

Figure 3.1: An ecosystems cascade¹⁴



¹²Defra (2013) National Rural Proofing Guidelines July 2013. Available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/200093/rural-proofing-pamphlet.pdf. Accessed 23/02/2014

¹³ See Ecosystems Knowledge Network (2013) *Applying the Approach* [online] available at: <http://ekn.defra.gov.uk/apply/> (accessed 23/08/2013)

¹⁴ Adapted from Potschin, M.B. and Haines-Young, R.H. (2011). Ecosystem services: Exploring a geographical perspective. *Progress in Physical Geography* 2011 35: 575.

Chapter 4: What's the scope of the SEA?

A Scoping Report was subject to consultation in October – November 2013 for the required five week period.¹⁵ Responses were received from the statutory consultees (English Heritage, Environment Agency and Natural England) and other interested parties (National British Mountaineering Council, National Farmers Union, RSPB and Yara International). A summary of the responses are set out in **Annex C**. Where applicable, the Environmental Report reflects the comments received.¹⁶

A summary of the scope of each topic is presented in each topic chapter. **Table 3.4** presents the SEA Framework as amended through consultation. Where amendments have been made, they are marked with **bold green text**. The SEA Framework reflects the policy context, baseline data and environmental issues identified established through SEA scoping and provides the 'framework' for undertaking the assessment.

Ecosystems services

The UK National Ecosystem Assessment (NEA) was a major study co-funded by Defra and published in 2011. It provided the first systematic analysis of the UK's natural environment in terms of the benefits it provides to society and continuing economic prosperity.

The NEA assessed the status and trend of ecosystem services across eight broad habitats (e.g., coastal margins, enclosed farmland, woodlands, etc.), summarising their relative importance in delivering ecosystem services and the overall direction of change in the flow of services over recent decades.

The status of ecosystem services and the trends in their provision provides an important part of the baseline against which the effects of the new RDP will be assessed. The measures included within the draft Programme can, in turn, have significant impacts on the supply of ecosystem services.

¹⁵ https://consult.defra.gov.uk/communications/strategic-environmental-assessment/supporting_documents/RDP%20SEA%20Scoping%20Report.pdf

¹⁶ Note that a 'Track Changed' version of the Scoping Report, amended in light of consultation, is available on request.

Table 3.4: SEA framework

Assessment questions (will the draft Programme ...?)	Key problems / issues
Topic 1 – Air quality	
<ul style="list-style-type: none"> • Increase / decrease levels of air pollutants (PM₁₀ and PM_{2.5}, ozone, ammonia and NO_x levels (both concentration and deposition))? 	<ul style="list-style-type: none"> • Whilst PM₁₀, PM_{2.5} and NO₂ levels are higher in urban areas, pinch points in market towns may be susceptible to higher levels of pollution and smaller settlements may still have pollution issues from being away from the natural gas grid or being close to busy roads. • Areas of high intensity livestock rearing can result in odour issues. • The risk of introducing receptors into places where there are existing sources of odour or dust, or where additional strain could be put on a local road network that is already operating under stress should be avoided. • Ammonia emissions have increased slightly in recent years after a prolonged period of decrease and are projected to fall by 8% between 2005 and 2020; they are projected to continue to lead to excessive nitrogen deposition at protected ecological sites.
<ul style="list-style-type: none"> • Increase / decrease car journeys? 	
<ul style="list-style-type: none"> • Expose new receptors to potential air pollution including odour? 	
Topic 2 – Biodiversity and nature conservation	
<ul style="list-style-type: none"> • Increase populations of priority (Section 41) species on farmland, including levels of farmland birds? 	<ul style="list-style-type: none"> • Whilst improvements have been made in stabilising or reversing declines in certain specialist bird species and priority habitats over the current programming period, over 40% of priority habitats and 50% of priority species were still declining according to the most
<ul style="list-style-type: none"> • Improve the condition of SSSIs and priority habitats both within and outside SSSIs on agricultural land? 	
<ul style="list-style-type: none"> • Create a coherent and resilient ecological network, through 	

<p>coordinated landscape scale delivery and targeted habitat re-creation?</p>	<p>recent analysis.¹⁷</p> <ul style="list-style-type: none"> • Significant progress has been made towards achieving favourable or favourable recovering condition on SSSIs on agricultural land as a consequence of targeted agri-environment scheme management. • Agricultural management (intensification and abandonment) together with associated air and water pollution remains the most significant causes of unfavourable condition on SSSIs and on non-designated priority habitat. • Habitats are fragmented and create a barrier for necessary species movement and migration in response to climate change.
<p>Topic 3 – Climate change mitigation</p>	
<ul style="list-style-type: none"> • Reduce the net emissions of greenhouse gases? 	<ul style="list-style-type: none"> • Agriculture is responsible for the majority of methane and nitrous oxide emissions and for a relatively small proportion of CO₂ emissions. • Emissions of such gases from agriculture have fallen largely because of a reduction in livestock numbers and fertiliser use, but to a more limited extent than the decline from other sources. This trend is likely to continue, in addition to generating other economic and environmental benefits. • Energy prices are likely to continue to increase;¹⁸ the potential benefits
<ul style="list-style-type: none"> • Increase resource efficiency? 	
<ul style="list-style-type: none"> • Employ measures which not only reduce GHG emissions but also support wider environmental targets and adaptation? 	
<ul style="list-style-type: none"> • Increase land-based carbon sequestration, in a manner that also contributes to other environmental objectives including biodiversity conservation? 	
<ul style="list-style-type: none"> • Encourage the use / development of 	

¹⁷ Defra (2013) Biodiversity 2020: a strategy for England's wildlife and ecosystem services Indicators 2013 Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253546/England_full_FINAL.pdf. Accessed 23/02/2014

zero / low carbon energy?	<p>from promoting energy efficiency in all sectors, including water and fertiliser use, will therefore also increase, resulting in reduced greenhouse gas emissions.</p> <ul style="list-style-type: none"> • Market trends, rising costs and the introduction of EU Directives on the use of biofuels will widen the market for energy crops.
Topic 4 – Climate change adaptation	
<ul style="list-style-type: none"> • Help reduce the risk of flooding? 	<ul style="list-style-type: none"> • There is clear evidence that temperatures have increased, particularly in recent years, and this will have impacts in terms of both growing seasons and conditions for wildlife; adaptation will need to consider species migration, both native and non-native and changes in the prevalence of pests and disease. • Extreme weather events are likely to occur more often. • Land use management can affect flood risk if it affects the provision of soft and hard infrastructure for storing excess water and slowing down peak flows. • There is need to plan for the long term including projects with a long lead in time. • Water availability, exacerbated by climate change, reduction in agricultural efficiency and an increased demand for food through a growing population will increasingly become an issue.
<ul style="list-style-type: none"> • Address the risk of limited water availability? 	
<ul style="list-style-type: none"> • Help create a rural economy resilient to the effects of climate change? 	
<ul style="list-style-type: none"> • Enhance the resilience and quality of semi-natural habitats through appropriate management and appropriate expansion (reducing fragmentation and improving ecological connectivity at the landscape scale)? 	

¹⁸ DECC (2013) Valuation of energy use and greenhouse gas emissions for appraisal (Tables 4-8). Available at: <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal> Accessed 23/02/2014

Topic 5 – Landscape and cultural heritage	
<ul style="list-style-type: none"> • Help reduce the erosion of landscape character? 	
<ul style="list-style-type: none"> • Protect and enhance cultural heritage in rural areas? 	<ul style="list-style-type: none"> • Protected landscapes and historic assets in rural areas are associated with and influenced by past and present patterns of land management.
<ul style="list-style-type: none"> • Minimise the potential for field enclosures and minimise removal of linear or other characteristic features? 	<ul style="list-style-type: none"> • Changes in agricultural practice, particularly mechanisation, intensification and specialisation in farming, have resulted in larger field sizes and a consequent loss of some distinctive linear and tree landscape features and of distinctive areas of semi-natural habitat.
<ul style="list-style-type: none"> • Reduce the potential for farm activities to damage archaeological assets? 	<ul style="list-style-type: none"> • There has been conflict between conservation of archaeological sites and farming.
<ul style="list-style-type: none"> • Retain landscape distinctiveness? 	<ul style="list-style-type: none"> • The combination of these and other factors has resulted in significant changes to the character of landscapes which has reduced their distinctiveness. • Landscape quality and a distinctive sense of place remain key features attracting people to the countryside and are part of the cultural identity and experience of communities that live there. • Pressure from changing agricultural practices and farm building conversions can be a threat to cultural heritage.
Topic 6 – Population and human health	
<ul style="list-style-type: none"> • Help support the health and well-being of rural populations? 	<ul style="list-style-type: none"> • Rural populations are generally older than those of England as a whole.
<ul style="list-style-type: none"> • Increase levels of economic activity? 	
<ul style="list-style-type: none"> • Help support and promote the production of healthy food and drink? 	<ul style="list-style-type: none"> • Quality of life in rural areas is closely related to environmental

<ul style="list-style-type: none"> • Support a better quality of life for rural populations, including for an increasingly ageing population? 	<p>quality.</p> <ul style="list-style-type: none"> • Migration to rural areas tends to be more pronounced amongst older people.
<ul style="list-style-type: none"> • Encourage a redistribution of age ranges in rural areas? 	<ul style="list-style-type: none"> • Increasing levels of economic activity help to improve community sustainability by widening opportunity and reducing out-migration of those of working age.
	<ul style="list-style-type: none"> • The production of food is, and will remain, the central purpose of the agricultural sector, and this will have an impact on the health of the population in England.
	<ul style="list-style-type: none"> • More widely, however, there is increasing recognition of the mental and physical health benefits of exercise and of access to green space and the countryside.
Topic 7 – Soil management	
<ul style="list-style-type: none"> • Help maintain the function of agricultural soil? 	<ul style="list-style-type: none"> • Soil erosion is of increasing concern in England.
<ul style="list-style-type: none"> • Encourage the retention, protection and utilisation of high quality agricultural soil? 	<ul style="list-style-type: none"> • Poor management of soils leads to compaction and erosion. This is closely linked to water pollution, flooding and also to greenhouse gas emissions.
<ul style="list-style-type: none"> • Increase carbon storage capacity in soils and enhance organic matter content in soil? 	<ul style="list-style-type: none"> • Peat soils in the uplands should be appropriately managed.
<ul style="list-style-type: none"> • Facilitate knowledge transfer in soil management techniques? 	
<ul style="list-style-type: none"> • Deliver improvements in the quality of advice given to land managers, so they are better placed to recognise carbon related issues on their holdings and pursue cost-effective soil management? 	
<ul style="list-style-type: none"> • Provide support for innovations in soil management e.g. using agro-ecological approaches to farming? 	

Topic 8 - Waste	
<ul style="list-style-type: none"> • Help ensure that rural activities adhere to the waste hierarchy? 	<ul style="list-style-type: none"> • Almost all agricultural waste is re-used on farms. Such wastes have high concentrations of phosphates and nitrates, and so have the potential to exacerbate water pollution if not properly managed. • Regulation and focus on other solid wastes (plastics, packaging, etc.) is increasing, and the cost of their management is likely to increase accordingly. • Waste costs are rising as a result of increased taxation and the need to meet higher standards, and this may create opportunities for waste minimisation and waste management services in rural areas.
<ul style="list-style-type: none"> • Encourage waste minimisation / reuse? 	
<ul style="list-style-type: none"> • Ensure the safe management of agricultural waste? 	
<ul style="list-style-type: none"> • Encourage energy from waste practices? 	
Topic 9 – Water management	
<ul style="list-style-type: none"> • Ensure adequate water supply and quality to meet environmental and other uses as well as those of agriculture? 	<ul style="list-style-type: none"> • Agricultural demand for water is comparable to that of the manufacturing industry; changes in water availability as a result of climate change may bring the issue of agricultural water use increasingly to the fore. • Land drainage needs to be controlled in order to regulate water levels according to the needs of different land uses, to ensure water availability and to prevent over abstraction. • Land drainage also has implications for water quality as drainage generally results in bypassing areas of natural nutrient/pollutant mitigation (e.g. in soils or aquifers). • Water pollution associated with run-off (surface) and subsurface (i.e. in subsurface drains, soils and groundwater) from
<ul style="list-style-type: none"> • Create businesses resilient to future water scarcity? 	
<ul style="list-style-type: none"> • Encourage water resource efficiency? 	
<ul style="list-style-type: none"> • Reduce rates of abstraction? 	
<ul style="list-style-type: none"> • Reduce water pollution, in particular diffuse pollution? 	
<ul style="list-style-type: none"> • Promote better environmental practice amongst farmers and land managers? 	
<ul style="list-style-type: none"> • Reduce surface water runoff? 	
<ul style="list-style-type: none"> • Support progress towards achievement of favourable condition in aquatic and wetland priority habitats and the species they 	

<p>support?</p>	<p>agricultural fertilisers has reduced in recent years for some substances, whereas others are less well understood. However, wider improvements in the performance of industry and urban wastewater treatment have been more rapid, and agriculture is now one of the main contributors to water pollution with impacts on both drinking water quality and aquatic ecosystems</p>
<ul style="list-style-type: none"> • Promotes nutrient use efficiency or the use of integrated pest management to reduce the use of Plant Protection Products (PPPs)? 	<ul style="list-style-type: none"> • Agricultural practices such as agri-environment schemes also have an influence on the speed with which rainwater enters rivers and contributes to flooding.
<p>Topic 10 – Rural economy</p>	
<ul style="list-style-type: none"> • Ensure a vital and vibrant rural economy? 	<ul style="list-style-type: none"> • Rural areas have experienced little change in levels of productivity.
<ul style="list-style-type: none"> • Increase rural economic productivity? 	<ul style="list-style-type: none"> • Rural areas have worsening levels of enterprise, with declining numbers of businesses and start-ups.
<ul style="list-style-type: none"> • Increase the number of businesses in rural areas, including start-ups? 	<ul style="list-style-type: none"> • Capital investment in rural areas has declined since 1999 levels, particularly in predominantly rural areas.
<ul style="list-style-type: none"> • Increase or safeguard the number of jobs? 	
<ul style="list-style-type: none"> • Increase renewable energy production in rural areas? 	
<ul style="list-style-type: none"> • Increase the level of capital investment to rural areas? 	
<ul style="list-style-type: none"> • Increase the competitiveness of the farming, food and drink sector? 	
<ul style="list-style-type: none"> • Increase levels of innovation in the farming, food and drink sectors and within rural areas? 	
<p>Topic 11 – Tourism and countryside access</p>	
<ul style="list-style-type: none"> • Enable increased access to the countryside? 	<ul style="list-style-type: none"> • Tourism in rural areas is a more significant generator of employment

<ul style="list-style-type: none"> • Maintain, diversify and increase rural tourism? 	<p>in rural areas than the agricultural food sector.</p>
<ul style="list-style-type: none"> • Increase information available to the public on access routes and open spaces? 	<ul style="list-style-type: none"> • Rural tourism is based to a very large extent on the quality of the landscape, and on the availability of activities in the countryside, including tranquillity, scenery, open space, fresh air, and plants and wildlife.
<ul style="list-style-type: none"> • Enable communities to plan and manage their tourism assets? 	<ul style="list-style-type: none"> • Recreational visits to the countryside have been increasing, and this increase is expected to continue.
<ul style="list-style-type: none"> • Encourage educational visits to increase knowledge of the countryside and rural issues? 	<ul style="list-style-type: none"> • Visits to cultural attractions are also increasing. • Access to the countryside is often linked to access to a motor vehicle. Therefore increased access to the countryside may have implications with regard to local air quality.

Topic 12 – Woodland

<ul style="list-style-type: none"> • Promote a significant level of new woodland creation to support the development of a coherent and resilient ecological network targeted to deliver multiple environmental benefits (e.g. flood alleviation, improvement in water and air quality, provision of riparian shade and cooling, extension of habitats to aid species migration and the protection of soil resources)? 	<ul style="list-style-type: none"> • The Government has set an indicative figure to increase woodland cover to 12% of England’s land area by 2060. • The Government has set a target indicative figure to bring around two-thirds of woodland into active management over the next five years, with this figure eventually rising to 80% on the assumption that markets for wood products continue to develop.
<ul style="list-style-type: none"> • Effectively encourage private woodland owners to increase levels of management? 	<ul style="list-style-type: none"> • Ancient and semi-natural woodlands, which have the greatest value for nature conservation, have historically declined in extent due to losses to agriculture and, to a lesser extent, development and through conversion to plantations of non-native species, particularly conifers. Likewise open habitats,
<ul style="list-style-type: none"> • Promote the protection and restoration of ancient and semi-natural woodlands? 	
<ul style="list-style-type: none"> • Effectively promote woodland access for a greater number of people? 	

such as heathlands, wetlands and moorlands need to be restored and protected from plantation forestry.

- Only 55% of the population has access to woods larger than 20 ha within 4 km of their home. An improvement to public access to woodlands needs to be achieved to benefit human health and education.¹⁹

¹⁹ Quine, C. Cahalan, C., Hester, A., Humphrey, J., Kirby, K., Moffat, A. and Valatin, G. (2011). Woodlands In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge.

Chapter 5: How have the draft Programme and SEA been developed up to this point?

Development of the draft Programme to date

Summary of the Impact Assessment and development of scenarios

The consultation stage Impact Assessment published by Defra alongside the consultation document in November 2013 established a 'do-minimum' baseline and assessed eight potential scenarios in relation to the draft Programme. The spend under the baseline complied with the minimum EU legal requirements for the draft Programme. The costs and benefits of the eight potential scenarios therefore accrued over-and-above the do minimum baseline. The eight budget scenarios were premised on different levels of funding being transferred from Pillar 1 to Pillar 2 of the CAP. The scenarios and the focus of spending under each one are outlined below. The Impact Assessment included both monetised and wider environmental and socio economic impacts of the draft Programme, and wherever possible based estimates on evaluation evidence from the previous programme. Impact evaluation evidence from the previous programme varied, however, in terms of its robustness and a conservative approach was taken to mitigate this for the Impact Assessment. Defra, taking a cautious approach rather than identify a preferred scenario, concluded that a 15% transfer from Pillar 1 to Pillar 2 would generate greater economic benefits than a 9% transfer.

Consultation response summary

The Government issued a consultation on the implementation of CAP reform in England on 31 October 2013. The consultation paper and supporting documents are available at https://consult.defra.gov.uk/agricultural-policy/cap-consultation/consult_view. The consultation closed on 28 November 2013. In total, 4,928 responses were received: 767 of these were received on-line, and 4,161 by email and post. The main Government response to the consultation was published on 20 December and is available at <https://www.gov.uk/government/consultations/common-agricultural-policy-reform-implementation-in-england>.

The consultation showed strong support for making the best use of CAP money for the benefit of the environment, farmers, taxpayers and rural businesses. In particular, there was a widespread desire among the public to use the draft Programme to deliver the environmental and public goods that direct payments cannot.

Defra announced that enhancing the natural environment and meeting their key environmental commitments, would remain the top priority for the draft Programme with 87% spending within the programme focused specifically towards the environment via an agri-environment scheme more targeted than the current Environmental Stewardship scheme.

Defra also announced spending allocations to support Farming and Forestry Competitiveness (Productivity), Growth and the LEADER approach. 4% of the draft Programme will support farming and forestry competitiveness while 5% will be made available directly to Local Enterprise Partnerships (LEPs) through the Growth programme. Through their investment strategies, LEPs will set out how they want this spent in their rural areas to build knowledge and skills, support new and developing micro and small rural businesses, invest in small scale renewable and broadband investments and support tourism activities, alongside money from other European Structural and Investment Funds, specifically the European Regional Development Fund (ERDF) and European Social Fund (ESF).

The bottom-up, community led, LEADER approach will work alongside Growth programme funds, with a strengthened contribution of funds invested through LEADER to delivering jobs and growth in rural areas. The total budget for LEADER will be about 4% of the draft Programme.

Finally, Defra announced (and subsequently) notified the European Commission that, for England, the government will, in each year of the CAP period from 2014 to 2019, transfer 12% of the budget from Direct Payments to farmers (Pillar 1) to Rural Development (Pillar 2).

A review will be held in 2016 into the demand for agri-environment schemes and the competitiveness of English agriculture with the intention of moving to a 15% transfer rate in 2018 and 2019, the final two years of the CAP period.

A further more detailed response setting out how Defra plans to target the new agri-environment scheme and funding to support farming and forestry competitiveness and lessons learned was published on 26 February. This is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284801/cap-consult-response-201402.pdf.

Budget scenarios

Defra set out eight 'scenarios' for assessment in the Impact Assessment for the draft Programme in addition to a do minimum scenario (see 'Establishing the baseline').²⁰ The scenarios consisted of four different uses of the budgets that would result from transfers of funding from Pillar 1 to Pillar 2 of 9% (the rate used in the current CAP) and 15% (the maximum allowed under the reformed CAP). The scenarios were:

- 9% transfer
 - **Balance as now (9%).** The balance of spend would remain in the same proportions as for the current programme: 83% environmental land

²⁰ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: https://consult.defra.gov.uk/agricultural-policy/cap-consultation/supporting_documents/131022%20%20RDP%20Impact%20Assessment%20%20final.pdf
Accessed 23/02/2014

- management; 5% farm and forestry productivity; 8% general rural growth; and 4% LEADER.
- **More environmental focus (9%).** This increases the balance of spend on new environmental land management schemes: 88% environmental land management; 3% farm and forestry productivity; 5% general rural growth; and 4% LEADER.
- **More rural growth focus (9%).** This increases the balance of spend on rural growth: 78% environmental land management; 3% farm and forestry productivity; 15% general rural growth; and 4% LEADER.
- **More farm and forestry productivity focus (9%).** This increases the balance of spend on farm and forestry productivity: 80% environmental land management; 8% farm and forestry productivity; 8% general rural growth; and 4% LEADER.
- 15% transfer
 - **Balance as now (15%).** The balance of spend across broad uses of funds would remain in the same proportions as for the current programme: 83% environmental land management; 5% farm and forestry productivity; 8% general rural growth; and 4% LEADER.
 - **More environmental focus (15%).** This increases the balance of spend on new environmental land management schemes: 88% environmental land management; 3% farm and forestry productivity; 5% general rural growth; and 4% LEADER.
 - **More rural growth focus (15%).** This increases the balance of spend on rural growth: 78% environmental land management; 3% farm and forestry productivity; 15% general rural growth; and 4% LEADER.
 - **More farm and forestry productivity focus (15%).** This increases the balance of spend on farm and forestry productivity: 80% environmental land management; 8% farm and forestry productivity; 8% general rural growth; and 4% LEADER.

Preferred option

The preferred option that was announced in the consultation response was to **transfer 12% of the CAP budget from Direct Payments to farmers (Pillar 1) to Rural Development (Pillar 2) with an increased environment focus**. A review will be held in 2016 into the demand for agri-environment schemes and the competitiveness of English agriculture with the intention of moving to a 15% transfer rate in 2018 and 2019, the final two years of the CAP period. This follows the decision already taken to transfer 9% of Direct Payments in 2013 to the Rural Development budget in 2014 as part of transition to the new CAP. The preferred option will also allocate spending as per **Table 5.1** below.

Table 5.1: Allocation of nominal spending for 12% transfer from Pillar 1 to Pillar 2 with increased environment focus

Preferred Option: 12% transfer environment focus	Nominal Spending (£m)	% of total budget
Existing commitments on agri-environment and forestry	2,155	61
New Environmental Land Management Scheme	925	26
LEADER	138	4
Farming and forestry competitiveness	141	4
Growth programme	177	5
Total	3,536	100

The focus for the spending under the draft Programme, in addition to the existing commitments, will therefore include:

- **New Environmental Land Management Scheme:** The intention is to have a single new scheme to replace Environmental Stewardship and this will comprise two main types of agreements, Upper-tier and Mid-tier. Upper-tier, the more site specific element, would be aimed at the improvement or maintenance of the most important designated sites (such as Sites of Special Scientific Interest (SSSIs)). Mid-tier, which is more area based, is targeted at improvements in the wider countryside, including more landscape scale co-ordination in line with the vision in the Natural Environment White Paper. The selection criteria would promote clusters or groups of coordinated agreements across the landscape.
- **LEADER:** 5% of EU rural development funding has to be allocated to the programme. This equates to 4% when national funding is taken into account. LEADER investment is to be re-focussed so that an estimated 70% of the funding will directly support economic growth and rural jobs.
- **Farm and forestry productivity:** funding is set to be targeted on the most beneficial investments that would help businesses become more productive and market orientated. It will also be aligned with the UK Strategy for Agricultural Technologies and include knowledge transfer, innovation, and development of technical skills, improved cooperation and investment in food and forestry supply chains.²¹ This funding will be potentially available to all farmers and foresters.

²¹ Her Majesty's Government (2013) A UK Strategy for Agricultural Technologies. Available online: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/227259/9643-BIS-UK_Agri_Tech_Strategy_Accessible.pdf. Accessed 27/02/2014

- **Growth Programme:** funding will support economic growth through building knowledge and skills in rural areas; funding new, and developing non-agricultural, micro and small rural business; funding small scale renewable and broadband investments in rural areas; and providing support for tourism activities in rural areas.

Why was this option chosen and was it in line with SEA findings?

Prior to the consultation on CAP implementation, the Secretary of State indicated that he was minded to transfer the full 15% from Pillar 1 to Pillar 2, where it could be demonstrated that it could deliver worthwhile and valuable outcomes for farming and society and contribute to rural economic growth and enhance the environment.

Many respondents to the consultation on CAP implementation strongly endorsed the use of rural development spending to deliver the environmental and public goods that Pillar 1 'direct payments' cannot and the view that the draft Programme can deliver worthwhile and valuable outcomes for society and contribute to rural economic growth and enhance the environment.

However, as Defra will be introducing a range of new schemes through the draft Programme in 2015, they are keen to assess the effectiveness, demand and take up of the schemes once these are in operation. Defra will also not be spending money on new schemes immediately. The first payments to farmers under NELMS will not be made until 2016.

For this reason Defra concluded that the 'preferred option' allowed the government to move towards a full 15% transfer only after effectiveness, demand and take-up have been evaluated. This is the reason why the preferred option was chosen over the four alternative 15% transfer scenarios.

With this rate of transfer Defra is set to spend over £3.5 bn on rural development from 2014 to 2020 rising to around £3.65 bn with an increased transfer rate of 15% from 2018. Defra will be spending nearly £3.1 bn on the environment over this period. This would rise to nearly £3.2 bn if the transfer rate rises to 15% in the last 2 years of the RDP.

Defra considers that this level of transfer between Pillar 1 and 2 represents the best balance between using Rural Development money to deliver public goods and meeting its obligations. It allows Defra to assess demand for the draft Programme as it is delivered and enables farmers to make a smooth transition to the new Direct Payment budget. It also provides funding to help the farming industry become more productive and competitive and should generate jobs and growth.

Why choose a greater focus on the environment?

Defra believes that the evidence for a need to support a greater focus on the environment is very strong. As part of the Impact Assessment published by Defra alongside the CAP Implementation consultation, the scenario with **the highest central**

estimate of the benefit to cost ratio was Scenario 6, the Environmental focus scenario with a 15% Pillar 1 to Pillar 2 transfer. This is because the agri-environment schemes have the highest quantified benefit to cost ratios.²²

While progress towards the Biodiversity 2020²³ outcomes continues to be made, the cost of fully delivering these could reach in the region of £500m per year by 2020. It has also been estimated that fully addressing the issue of diffuse pollution from agriculture through the Rural Development Programme could cost around £460m per annum. In addition, more than £80m per annum would be required to avoid deterioration in water quality from diffuse agricultural pollution.²⁴

It is clear that the amounts of money required to deliver Biodiversity 2020 outcomes and 'good status'²⁵ under the Water Framework Directive (WFD) are likely to exceed the funds available and that, in any event, other sorts of measures will be needed in combination with the draft Programme to meet environmental obligations under this and other Directives.

It is Defra's view that an increased focus on the environment and more targeted land management to secure multiple outcomes will help support meeting their obligations. Funding to support the rural development can deliver worthwhile and valuable outcomes for society and contribute to rural economic growth and enhance the environment. Defra argue that, at the same time, there remains a need to continue to **reduce farmers' reliance on subsidy and help the sector become more productive and market orientated**. Re-focussing LEADER spend to directly support economic growth and rural jobs, alongside growth activity delivered through Local Enterprise Partnerships allows for 13% of the programme funding to be focussed on the rural economy, targeted at specific local need.

²² https://consult.defra.gov.uk/agricultural-policy/cap-consultation/supporting_documents/131022%20%20RDP%20Impact%20Assessment%20%20final.pdf

²³ Defra (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services. Available online: <https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services>. Accessed 27/02/2014

²⁴ Defra (2013) Implementation of CAP Reform in England Consultation Document. Available online: <file:///C:/Users/alewhi1/Downloads/131022%20CAP%20reform%20consultation%20full%20doc%20-%20Final.pdf>. Accessed 27/02/2014

²⁵ Annex V of the WFD

Table 5.2: Summary of all scenarios²⁶

Level of transfer	9%	9%	9%	9%	15%	15%	15%	15%	12%
Scenario spending allocations	1	2	3	4	5	6	7	8	PO
Environmental land management	83%	88%	78%	80%	83%	88%	78%	80%	87%
Farm and forestry productivity	5%	3%	3%	8%	5%	3%	3%	8%	4%
Rural growth	8%	5%	15%	8%	8%	5%	15%	8%	5%
LEADER	4%	4%	4%	4%	4%	4%	4%	4%	4%

All nine scenarios include the £2.16 billion of existing contractual commitments as detailed in the do minimum scenario. Scenarios 5 - 8 have a larger total spend than scenarios 1 - 4, reflecting the increase in transfer from 9% to 15% between Pillar 1 and Pillar 2 under these scenarios. Scenario 5 (15% transfer and 'balance as now' proportions) has a total budget and funding allocation between scheme areas that is **similar to the extant RDP** in cash terms.

Table 5.3: Scenario budget allocations excluding the existing £2.155 billion of contractual commitments for agri-environment (£m, 2013, cash terms)

Level of transfer	9%	9%	9%	9%	15%	15%	15%	15%	12%
Scenario spending allocations	1	2	3	4	5	6	7	8	PO
Environmental land management	507	667	347	411	1060	1254	866	944	925
Farm and forestry productivity	160	96	96	256	194	116	116	310	141
Rural growth	256	160	480	256	310	194	581	310	177
LEADER	122	122	122	122	155	155	155	155	140

²⁶ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: https://consult.defra.gov.uk/agricultural-policy/cap-consultation/supporting_documents/131022%20%20RDP%20Impact%20Assessment%20%20final.pdf Accessed 23/02/2014

The nine scenarios (eight original scenarios plus the preferred option) have been assessed below under each SEA topic.

Assessment of reasonable alternatives

Air quality

Scenario 6 offers the greatest potential for addressing the air pollution issues identified in the SEA Scoping Report. Specifically, a 15% transfer would roll forward a similar level of funding as that for the extant RDP but could be more focused on measures to improve air quality. These measures could be delivered through the NELMS and include interventions such as woodland creation which could help reduce air pollution and through tree planting close to point sources of emissions such as ammonia which could help reduce **negative effects**.

In contrast, scenarios 1 - 4 could result in a greater threat to air quality through their focus on rural growth and productivity. The focus on tourism and economic activity has the **potential** to result in decreasing air quality as a result of increased vehicle journeys (e.g. more visitors to rural areas and more jobs created resulting in more commuting to / within rural areas). The other scenarios are also likely to result in the risk of this occurring, but it is reasonable to assume that this would lessen the more funding for rural growth and productivity is reduced. It should be borne in mind that it is difficult to determine the *net* effect on air quality as potentially **negative effects** could be outweighed by **positive effects** e.g. increases in energy efficiency vs. increased activity. However, the localised nature of some potential air quality issues would not be affected (e.g. traffic related pinch points in market towns).

In general terms, it seems reasonable to conclude that **Scenario 6** would have the greatest **positive effect** on air quality. All the 15% transfer scenarios (5-8) and the Preferred Option (12% transfer) would perform better than the 9% scenarios (1-4) in terms of air quality.

Biodiversity and nature conservation

The 15% transfer scenarios would provide greater levels of spending on environmental outcomes relative to the 9% transfer scenarios as well as the 12% preferred option scenario. Generally speaking, greater spending on environmental outcomes is likely to lead to correspondingly more **positive effects** for biodiversity. The 15% scenarios would better enable meeting the targets and challenges set out in the Lawton Review and the Natural Environment White Paper (NEWP) to be achieved, particularly through addressing habitat fragmentation and promoting landscape-scale interventions.²⁷

²⁷ Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborne, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.A., Tew, T.E., Varley, J., and Wynne, G.R. (2010). Making Space for Nature: a review of England's wildlife sites and ecological network.

Following this logic, **Scenario 6** would have the greatest **positive effect** on biodiversity since it provides the highest level of funding for achieving environmental outcomes. Scenario 6 also offers the advantage of bringing forward benefits over a shorter time period. All the 15% transfer scenarios (5-8) and the Preferred Option (12% transfer) would perform better than the 9% scenarios (1-4) in terms of biodiversity and nature conservation.

Climate change mitigation

The Impact Assessment sets out the carbon savings associated with all the scenarios. **Scenario 6** (highlighted in blue) performs the best in relation to this topic.

Table 5.4: Carbon savings associated with all the scenarios.²⁸

Scenario	Description	Avoided Carbon (million tonnes/CO ₂)	
		Min	Max
1	Balance as now (9% transfer)	5.6	6.0
2	More environmental focus (9% transfer)	7.3	7.9
3	More rural growth focus (9% transfer)	3.8	4.1
4	More farm and forestry productivity focus (9% transfer)	4.5	4.9
5	Balance as now (15% transfer)	11.7	12.6
6	More environmental focus (15% transfer)	13.8	14.9
7	More rural growth focus (15% transfer)	9.5	10.3
8	More farm and forestry productivity focus (15% transfer)	10.4	11.2
9	Preferred Option (12% transfer, environment focus)	10.2	11.0

Report to Defra [online] available at:

<http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf> (accessed 25 April 2011).

²⁸ Carbon savings associated with agri-environment come from the OSCAR model that is used by the EU Commission. Estimates of carbon savings associated with forestry activities come from the Forestry Commission's woodland carbon code lookup tables. See also Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020.

Climate change adaptation

Climate change represents one of the greatest threats to biodiversity, the natural environment and rural communities. Measures under Environment and Productivity are likely to have the greatest influence on climate change adaptation through providing targeted support including improved flood management practices, landscape scale interventions for species (and their range) and habitat management, and improved understanding of the risks and opportunities associated with climate change.

A 9% transfer is likely to impact on the scope and geographical reach of measures, thus affecting the prospects for building more adaptive and resilient landscapes.

Scenario 6, with a 15% level of transfer, has the highest allocation of funding for Environment measures and would provide the best opportunity to meet the challenge set out in the and Lawton Review and NEWP and therefore has the greatest **positive effect** in relation to adapting to climate change. Nevertheless, scenarios 5 and 8, which both have the same total combined funding allocation for Environment and Productivity, could potentially deliver similar benefits to Scenario 6, dependent on the allocation of funding under the Productivity scheme. The Productivity scheme's four key areas each present opportunities for knowledge transfer and improved risk management in terms of climate change adaptation. A 15% level of transfer would enable more innovative and comprehensive measures to be delivered and would be better able to address root-cause interventions to meet the complex challenges of climate change adaptation. All the 15% transfer scenarios (5-8) and the Preferred Option (12% transfer) would perform better than the 9% scenarios (1-4) in terms of climate change adaptation.

Landscape and cultural heritage

Landscape quality is key to public enjoyment of the countryside. The landscape and cultural heritage appreciated and valued by wider society is the result of centuries of evolving farming and land management practices in order to support livelihoods.

Environmental land management focuses on the management of features of the environment and helps maintain the attractiveness of the rural landscape and conserve its cultural heritage. Funding for environmental and cultural landscape features is instrumental for preserving landscape quality.

The extent to which the Productivity and Growth schemes would affect issues identified for this sustainability topic is **uncertain**, in the main due to **uncertainty** with regard to their implementation at this stage. Measures to support industry competitiveness facilitate rural diversification and improved access and communications may result in a change in the nature of countryside activities with effects on the landscape. Renewable energy schemes will need to be considered on their merits and proposals should pay due care and attention to their potential impact on landscape and cultural heritage as, depending on the proposal, they could potentially have **negative effects**.

Potential **positive effects** could result from greater visitor numbers as a consequence of increased rural economic activity and improved access to cultural heritage. On the other hand, increased economic activity and therefore development pressures and transport movements could have **negative effects** on the landscape through impacts on view and / or tranquillity. The scale and direction of the effect is dependent on local circumstances and implementation and is therefore **uncertain**.

On balance the greatest benefit for this topic will be realised through Environment. Productivity and Growth may have an **uncertain** effect on landscape and cultural heritage. The greatest level of transfer will deliver the greatest positive outcomes; hence, **Scenario 6** is likely to result in the greatest **positive effects** as this provides the highest allocation level for Environment. Conversely, Scenario 3 is likely to result in the least **positive effects**. All the 15% transfer scenarios (5-8) and the Preferred Option (12% transfer) would perform better than the 9% scenarios (1-4) in terms of landscape and cultural heritage.

Population and human health

The focus of this topic is to assess the effects of the scenarios on the health and well-being of rural populations through measures such as increased economic activity, encouraging younger people to stay and work within rural areas, ensuring a better quality of life and supporting better health. The assessment's focus on socio-economic factors recognises the strong links between these and health and wellbeing.²⁹

Productivity, Growth and LEADER are likely to have the greatest benefit in relation to this topic with Environment likely to have the least effect. The Growth scheme aims to support the diversification of the rural economy and micro/small businesses, and tourism activities while Productivity aims to improve the efficiency and effectiveness of business operations within the farm, forestry and land-based sectors.

Growth should present the greatest opportunities for diversifying the rural economy and increasing the attractiveness of rural areas in order to retain young people and attract people, business and investment to these areas. Growth may help balance the trend towards an ageing rural population while increasing economic activity. Specific measures under the Growth Scheme such as promoting basic services and village renewal (Measure 7) should help address particular rural challenges including dispersed populations and social isolation and limited access to amenities and services.

Productivity which focuses only on agricultural, forestry and land based businesses will help improve the competitiveness of these industries; however it is unlikely to facilitate as much economic diversification compared to Growth. Nonetheless, it should provide an additional boost to these sectors and so help businesses to expand and create jobs.

²⁹ Marmot, M. Fair society, healthy lives: the Marmot Review: strategic review of health inequalities in England post-2010. (2010) ISBN 9780956487001

Environment measures, albeit to a markedly lesser extent could also contribute positively to this topic through maintaining the attractiveness of the rural environment and helping to attract people, business and investment. Woodland creation, combined with recreational access could provide multiple revenue streams and in parallel facilitate increased opportunities for exercise to support healthy lifestyles. Furthermore measures to provide advice and support to the farming community for environmental improvements, particularly in areas with particular deprivation issues may also help to improve the quality of life for local people.

The focus for investment through LEADER is on job creation, business development support for rural services, tourism, cultural and heritage activities. The LEADER scheme has the capacity to support job creation for younger people in rural areas in particular. While the percentage funding allocation for LEADER is the same for all scenarios, a greater transfer, 15% versus 9% would ensure greater support for this topic.

On balance and given the level of detail available it is likely that the Growth scheme has the potential for the greatest benefit for this topic, followed by LEADER, Productivity and Environment (albeit this is very **uncertain** given the different absolute levels of funding for each scheme). Hence, **Scenario 7**, with 15% of funding for Growth, 4% for LEADER, 3% for Productivity, and 78% for Environment should deliver the greatest **positive effects** on population and human health. The assessment is based on quantified employment data set out in Defra's Impact Assessment. Therefore, based on the number of jobs predicted, most of the scenarios perform better than the preferred scenario in this topic by virtue of the fact that they generate more jobs.

Soil management

Agriculture, forestry and tourism are significant contributors to soil erosion across Europe; notably through intensive cultivation, the use of heavy machinery, high livestock densities and poor forestry practice. The loss, compaction or deterioration of soil can have wider **negative effects** in terms of flooding, water pollution, NOx emissions and the release of carbon. Soil management and the purification and detoxification of soils provide a 'regulating' service delivering final goods in terms of pollution control and water regulation, reducing drought and regulating river flow. Upland and peat soils present specific challenges e.g. erosion, mineralisation (carbon loss), source of dissolved organic carbon in water etc.

Higher investment in Environment is likely to lead to:

- improved soil management;
- increased protection of soil from erosion, including as a result of woodland creation; and
- increased protection of soil quality.

Investment in forestry and farming productivity schemes has the potential to worsen soil erosion through encouraging more intensive agriculture and forestry. However, for

Productivity led scenarios and those scenarios with the highest Environment / Productivity allocation the dissemination of best practice methods through knowledge transfer (e.g. in the forestry sector if support is specifically available for investments in soil-friendly harvesting machinery³⁰), could result in **positive effects** for soil management.

Growth is likely to have negligible effects on soil management.

The best performing scenarios are those which provide the greatest funding for improving soil quality (environmental land management), improving poor farming and forestry practice (farm and forestry productivity) and where spending is lower on rural growth. **Scenario 6** is considered the most favourable option as it maximises investment in Environment whilst investing least in Growth. Scenario 5 ranks second as it has the second-highest investment in environmental land management schemes and second-least in terms of rural growth. Scenario 3 performs the least favourably due to its emphasis on Growth and provision of the lowest proportion of funds for environmental land management. All the 15% transfer scenarios (5-8) and the Preferred Option (12% transfer) would perform better than the 9% scenarios (1-4) in terms of soil management.

Waste

Almost all organic agricultural waste is re-used on farms. However this has potential implications for water quality due to the potential leakage of phosphates and nitrates to watercourses when waste is stored on-site. There are also potential implications for air quality in terms of odour from stored manure. Agricultural waste can be used to generate energy through anaerobic digestion (AD) or other forms of energy recovery; or recycled through composting.

The government has encouraged the development of anaerobic digestion because of its potential to improve nutrient management on farm, producing a bio-fertiliser that can replace inorganic fertilisers (with greenhouse gas emission savings) as well as avoiding the methane emissions associated with sending organic waste to landfill. By providing an additional source of income, AD can also help promote the financial sustainability of farm businesses. Defra is currently providing up to £3m of loan funding to support small-scale on-farm AD outside of the 'extant' RDP.

In England, the waste hierarchy is a guide to both sustainable waste management and a legal requirement. The hierarchy gives top priority to waste prevention, followed by preparing for re-use, then recycling, other types of recovery (including energy recovery), and last of all disposal (e.g. landfill). The scenarios that allocate the greatest levels of funding to resource efficiency (Growth + Productivity) are considered most favourable in terms of waste. Therefore **Scenario 7** is considered the most favourable scenario.

³⁰ Article 26 (2) Regulation (EU) No 1305/2013

Water management

Agriculture has a significant impact on waterbodies nationally through diffuse pollution. Water pollution from agriculture is related to surface water run-off collecting nutrients and sediments from fertilisers, pesticides and manure use as well as leaching through to the groundwater.

Water quality can be improved through agreeing with farmers an integrated package of multi-annual agreements which deliver land use change and improved land management, as well as through the provision of advice and capital grants. Surface water run-off and flooding can be reduced through management approaches such as wetland creation for enhanced water storage.

Agriculture can also affect the volume of water in waterbodies due to abstraction for irrigation and other uses. Reducing abstraction is therefore also important for minimising impacts on waterbodies, particularly in the south east of England where the demand for water is the greatest (not just from agriculture). In the south east of England in particular, reductions in demand for water, water efficiency measures, the construction of reservoirs and other water storage facilities are all going to be required. In addition, there may be a need to change the crops that are grown or focus further investment on research and development to develop crop types which are more resilient to reduced water availability.

Water management options will be delivered both through Environment and Productivity. Increased funding for land use change and land management measures and capital grants would help to promote better environmental practice amongst farmers, reducing demand for water and reducing levels of diffuse pollution through green infrastructure measures and promoting awareness of the financial and environmental impacts associated with inappropriate /excessive fertiliser and pesticide use. Woodland creation and a wider increase in tree cover could bring benefits for surface water flooding and water quality. As such the scenario with the greatest level of expenditure in terms of environmental land management would perform most favourably in terms of this topic, which is **Scenario 6**.

Farm and forestry productivity investment should lead to **positive effects** on water management through schemes that aim to raise awareness and support the availability of new technology and farming practices which may improve environmental performance through sustainable intensification, resource efficiency or reduced reliance on fertiliser inputs. The least beneficial option for this topic would be Scenario 3 as it invests the most in rural growth which may lead to relative increases in the demand for water. All the 15% transfer scenarios (5-8) and the Preferred Option (12% transfer) would perform better than the 9% scenarios (1-4) in terms of water management.

Rural economy

Defra provided **illustrative estimates** of jobs created and participants in training for Growth and LEADER **only**.³¹ A number of indicative assumptions were made in order to generate these estimates which have been adjusted for deadweight.³² The participants in training especially are likely to be overestimates however, given limited data availability in the RDP online database under Axis 3 of the extant RDP. The estimates are reproduced in **Table 5.5** below.

Table 5.5: Jobs created / safeguarded and participants in training under different scenarios and the Preferred Option

Scenario	No. Of Jobs	Participants in Training
Scenario 1: 9% P1-P2 Same as now	7,900	77,200
Scenario 2: 9% P1-P2 Environment Focus	5,800	48,200
Scenario 3: 9% P1-P2 Growth Focus	12,800	144,700
Scenario 4: 9% P1-P2 Competitiveness Focus	7,900	77,200
Scenario 5: 15% P1-P2 Spending as current RDPE	9,700	93,300
Scenario 6: 15% P1-P2 Environment Focus	7,200	58,400
Scenario 7: 15% P1-P2 Growth Focus	15,700	175,000
Scenario 8: 15% P1-P2 Competitiveness Focus	9,700	93,400
Scenario 9: Preferred Scenario - 12% P1-P2 Environment Focus	6,500	53,300

Based on the illustrative estimates of jobs created and participants in training for Growth and LEADER, Scenario 7 performs best and is therefore likely to have the greatest **positive effect** on employment and the rural economy. This is simply because more spending is allocated to Growth in this scenario. Whilst all scenarios are likely to have **positive effects** on the rural economy compared to the do-minimum, it is considered that

³¹ Due to the uncertainty around delivery of the new programme.

³² The costs to society created by market inefficiency.

Scenario 7, through the creation of more jobs than any of the other scenarios, performs best.

Tourism and countryside access

A thriving and resilient rural economy requires a diverse and skilled business base to contribute to local and national sustainable economic growth. Rural businesses and communities need fair access to modern ICT and other services, as well as being able to capitalise on the inherent value of their (often) prime location through green energy, tourism, culture and heritage related initiatives. Distance to market, access to skilled labour, a lack of supply chain agglomeration and pressures on services are just a number of barriers faced by those in rural areas. It is important to note that the tourism and countryside access topic has significant inter-relationships with other SEA topics, in particular biodiversity and nature conservation, human health, landscape and cultural heritage and climate change adaptation. These inter-relationships are influenced by other important socio-economic factors such as the nature and extent local facilities and services.

A significant draw for tourists to rural areas is the quality of the natural environment. Visit England argues that *“Rural tourism provides an escape for the urban population and a range of distinct leisure time activities. It provides recreation and tranquillity and the interweaving of nature with local architecture, food, culture and community.”*³³ Efforts to improve the rural environment, support rural communities and grow the rural economy could, generally speaking, attract a greater number of tourists to rural areas.

Generally speaking, investment in farm and forestry productivity is less likely to benefit tourism and countryside access and may adversely affect the enjoyment of rural areas as a result of impacts linked to increased economic activity.

Growth has the greatest influence on tourism and countryside access. The Rural Economy Grant has supported significant growth in many sectors including rural tourism, with benefits in terms of countryside access and enhancing the ability of tourists to explore rural areas. However, access options in environmental land management schemes have changed since 2010 (with regard to HLS) and there are no specific countryside access schemes proposed under the RDP scenarios. Educational access is an option within Environment and as such scenarios with high funding levels allocated to Environment are likely to perform positively. Similarly, tourism, as a driver for access, would contribute positively. The scenarios with the highest aggregate of Environment and Growth are scenarios 5 and 6. Given the multiple benefits of higher Environment apportionment, **Scenario 6** would be the most favourable.

³³ Visit England (unknown) Visit England Rural Action Plan. Available online at: http://www.visitengland.org/Images/FINALRural%20Tourism%20Action%20Plan_tcm30-32567.pdf . Accessed: 21/02/2014

Woodland

The SEA Scoping Report indicates that there is a need for greater woodland cover across the country; a need to increase the number of privately-owned woodlands under active management; and a need to restore ancient and semi-natural Woodland. Achieving these aims would have a number of benefits for other SEA topics, particularly biodiversity, carbon sequestration, and landscape and recreation. It should be noted that management of woodland may have minor **negative effects** on landscape, recreation and public access.

Environment aims to increase levels of woodland cover and sites under active management. The scenario with the greatest level of spend on Environment would therefore have the greatest **positive effect** in terms of increasing woodland cover, improving levels of management and promoting the restoration of ancient and semi-natural woodland – hence **Scenario 6** would be the most favourable.

Woodland Enterprise and Supply Chain measures under Productivity would help promote greater levels of woodland management. Scenarios with a high allocation to Productivity and Environment would therefore be preferred; in this case **Scenario 6** would again be preferred.

Summary

Table 5.6 summarises the performance of the eight ‘reasonable alternatives’ and Defra’s ‘Preferred Scenario’ by ranking their relative performance 1-9 (with 1 being the best and 9 the worst) in relation to each SEA topic. Overall, it can be concluded that the scenarios with the 15% transfer option (5-8) would lead to an overall improvement in **positive effects** and a decrease in **negative effects**. As the Preferred Option transfers less funding from Pillar 1 to Pillar 2 than scenarios 5-8, it does not perform quite so well as the 15% transfer option. However, it performs better than the 9% transfer option (scenarios 1-4) for almost all of the SEA topics with the exception of population and human health, and rural economy. It should be noted that **all** the scenarios assessed would perform well against the do-minimum baseline given that they all go beyond the legal minimum described in the baseline. For the purpose of the assessment, Scenario 5 is equivalent to the business as usual (i.e. it is closest to the extant RDP).

It is important to reiterate the rationale for choosing the Preferred Option as this provides a useful note of caution when compared to the 15% transfer options. The 12% Preferred Option allows for an assessment of demand for the programme as it is delivered and enables farmers to make a smooth transition to the new Pillar 1 Direct Payment budget. A 15% transfer option is untested and thus its impact is unknown. The 12% transfer provides a precautionary approach to funding, basing further increases on demand and effectiveness.

Table 5.6: Summary of the assessment of reasonable alternatives

SEA Topic	Scenario								
	1	2	3	4	5	6	7	8	9
Air quality	7	6	9	8	2	1	5	3	4
Biodiversity and nature conservation	7	6	9	8	2	1	5	3	4
Climate change mitigation³⁴	7	6	9	8	2	1	5	3	4
Climate change adaptation	7	6	9	8	2	1	5	2	4
Landscape and cultural heritage	7	6	9	8	2	1	5	3	4
Population and human health	5	9	2	5	3	7	1	3	8
Soil management	7	6	9	8	2	1	5	3	4
Waste	8	9	6	7	3	5	1	2	4
Water Management	7	6	9	8	2	1	5	3	4
Rural economy³⁵	5	9	2	5	3	7	1	3	8
Tourism and countryside access	7	6	9	8	2	1	5	3	4
Woodland	7	6	9	8	2	1	5	3	4

In general, all of the 15% transfer scenarios would provide greater levels of spending on environmental outcomes than the Preferred Option (12% transfer) and the 9% transfer scenarios. Defra’s Impact Assessment indicated that having a 9% transfer “*would impact on the extent to which real improvements in environmental outcomes could take place.*” However, the Preferred Option, which would transfer 12%, would still enable

³⁴ Based on maximum savings

³⁵ Based on jobs created

improvements in environmental outcomes, and a transition might be later made to a full 15% transfer, but taking into account the demand for and effectiveness of the range of new schemes that will be introduced through the draft Programme. In summary, all the 15% transfer scenarios generally perform better against the SEA topics than the 9% scenarios, and slightly better than the Preferred Option (due to the higher level of funding transfer).

There are three things that should be borne in mind in considering the assessment. First, Scenario 6 represents an 'environmental priority' scenario under both the 9% and 15% transfers. The Preferred Scenario is also an environmental priority scenario as it allocates 87% of funding toward Environment. Therefore where Scenario 6 performs well by virtue of its relatively strong environmental focus, so should the Preferred Scenario. Second, as discussed previously, there is provision for a review of the RDP in 2016. At this point it is proposed that the 12% transfer is escalated to 15%. This being the case, the RDP by 2016 may essentially equate to Scenario 6 and therefore constitute the most favourable scenario. Third, Defra's consultation response sets out an intention to place a much greater focus of the remaining 13% of spend on jobs and growth. The assessment does not factor this in.

Chapter 6: What are the assessment findings at this current stage?

The SEA Regulations require the Environmental Report to include *inter alia*:

“The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as:

- a. biodiversity;*
- b. population;*
- c. human health;*
- d. fauna;*
- e. flora;*
- f. soil;*
- g. water;*
- h. air;*
- i. climatic factors;*
- j. material assets;*
- k. cultural heritage, including architectural and archaeological heritage;*
- l. landscape; and*
- m. the inter-relationship between the issues referred to in sub-paragraphs (a) to (l).”*

The SEA Regulations also require the Environmental Report to include:

“The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.”

Schedule 2

This chapter presents the assessment of the Draft RDP 2014-2020. The assessment was based on a number of assumptions; these are included in **Annex D**.

Air quality

What is the scope?

The pollutants of greatest concern to health and biodiversity in the UK are particulate matter (PM) (specifically PM_{2.5} and PM₁₀), nitrogen oxides (NO and NO₂), ammonia and ozone. The transport sector is the dominant source of PM₁₀ and NO₂ emissions in England.³⁶ The highest levels of PM₁₀ and NO₂ emissions are seen in large urban areas and on busy roads. Concentrations of PM₁₀ and NO₂ decrease away from the main source of the emission and, as such, concentrations of these pollutants generally tend to be lower in rural areas.³⁷ However, high levels of PM₁₀ and NO₂ can often occur due to congestion on the roads of small market towns, or where road infrastructure was not designed for the volume of traffic or type of vehicles it currently accommodates. Re-suspended soil from agricultural land and farming activities can lead to significant dust concentrations in rural areas. Ammonia reacts with other gaseous pollutants to form particles which account for a significant fraction of the PM_{2.5} which is the major cause of the health effects associated with air pollution.

Intensive livestock rearing in rural areas can result in odour and air pollution. In 2012, agriculture accounted for 82% of ammonia emissions in the UK. Cattle are the major contributor to ammonia emissions, accounting for about 40% of the UK total, with pigs and poultry contributing a further 16%.³⁸ This is relevant to other sustainability topics, as the effect of ammonia on the environment includes contributing to the acidification and eutrophication of natural ecosystems leading to changes in biodiversity, for example reduced plant species richness.

What is the likely evolution without the programme?

In the absence of the draft Programme, air quality is likely to continue its current trajectory as it is not considered that the existing programme has a significant effect on air pollution. However, some pollutants, notably ammonia, that are decreasing, may decrease at a slower pace. In fact, ammonia emissions might conceivably increase if appropriate incentives for good farming practice are not provided.

³⁶ National Atmospheric Emissions Inventory, J MacCarthy, G Thistlethwaite, Y Pang, E Salisbury and T Misselbrook (2012), Air Quality Pollutant Inventories for England, Scotland, Wales and Northern Ireland: 1990-2010; [online] available at: http://uk-air.defra.gov.uk/reports/cat07/1209130947_DA_AQPI_2010_MainBody_v1.pdf. Accessed 09/09/2013.

³⁷ National Atmospheric Emissions Inventory, J MacCarthy, G Thistlethwaite, Y Pang, E Salisbury and T Misselbrook (2012), Air Quality Pollutant Inventories for England, Scotland, Wales and Northern Ireland: 1990-2010; [online] available at: http://uk-air.defra.gov.uk/reports/cat07/1209130947_DA_AQPI_2010_MainBody_v1.pdf Accessed 09/09/2013.

³⁸ National Atmospheric Emissions Inventory, to be published shortly

What is the effect of the draft Programme?

Ammonia emissions represent a potential **negative effect** on the environment via nitrogen deposition and their contribution to population weighted mean PM_{2.5} exposure (as a precursor to particulate matter).³⁹ Ammonia emissions are also a trans-boundary issue under the Gothenburg Protocol. The cost to human health in the UK was estimated to be over £561 million in 2010 while the recent National Ecosystem Assessment estimated that the cost to the environment may be even greater, standing at £922 million.⁴⁰ There remain on-going diffuse and point source air and water pollution issues.⁴¹

The potential for the new environmental land management scheme to lead to improvements is small. This is evidenced through a Food and Environment Research Agency (FERA) evaluation of the extant RDP that stated: "*the additional benefits of these services are likely to be relatively small compared to the value of wildlife, landscape, and carbon savings.*"⁴² This is not to say that the new environmental land management scheme *can't* contribute to ameliorating air pollution - evidence suggests that trees (in the right circumstances) can take up ozone, ammonia and particles⁴³ so the afforestation elements of the new environmental land management scheme may benefit air quality (although this is not likely to have a bearing on the national emissions inventory as its contribution is likely to be small and locally focused). This is reflected in the environmental stewardship (ES) evaluation in that ES provides other benefits by way of: "*air quality improvements e.g. through higher hedge rows capturing more PM₁₀*".⁴⁴ Tree planting around point sources of air pollution (e.g. livestock buildings, yards, manure / slurry stores) can help to capture ammonia.

Productivity schemes to improve fertiliser and manure management will also help to reduce losses of ammonia and nitrous oxide at source. Animal breeding, genetic engineering, or direct feed supplements and new types of forage plants can also help reduce ammonia and methane losses.⁴⁵ The management of slurry stores and incorporating livestock manures into the soil rather than using broadcast spreaders, i.e. slurry injection, trailing shoes etc., can also contribute to a reduction in ammonia and methane. This may also have an indirect effect in reducing associated odour.

³⁹ National Atmospheric Emissions Inventory. To be published shortly.

⁴⁰ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

⁴¹ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: https://consult.defra.gov.uk/agricultural-policy/cap-consultation/supporting_documents/131022%20%20RDP%20Impact%20Assessment%20%20final.pdf

⁴² The Food and Environment Research Agency. 2010. Estimating the wildlife and landscape benefits of environmental stewardship. Final report. July 2010.

⁴³ Forestry Commission (unknown) *Determining the benefits of woodland on air quality*. Available online: <http://www.forestry.gov.uk/fr/INFD-62DFHK>. Accessed 11/02/2014 11:48

⁴⁴ FERA (2010) Estimating the Wildlife and Landscape Benefits of Environmental Stewardship. Available at: <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/estimatingthewildlife.pdf>. Accessed 18/2/2014.

⁴⁵ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020.

Priorities 4A, 4B, 5D and 5E of the programme aim to target interventions to reduce ammonia emissions at source. The impacts of resulting nitrogen pollution on sensitive sites should therefore be reduced. There is also increased spending on training and skills acquisition for farming (e.g. fertiliser and manure management) proposed in the draft Programme.

Whilst there is some consideration for ammonia and NO_x emissions in the draft Programme, there is little consideration for the potential adverse impact of increased rural activity and support for rural tourism on transport-related emissions. The Scoping Report indicates that rural towns, particularly market towns, may form 'pinch points' where there are traffic bottlenecks. Where there are pinch points, increased congestion can lead to increased concentrations of transport related emissions. Whilst air quality is mainly 'good' in rural areas,⁴⁶ it is accepted that NO₂ is at its highest next to busy roads. The result may be that measures to stimulate economic growth could lead to higher NO₂/PM emissions through increased transport movements.

Given the above, the draft RDP has the potential to have a small **positive effect** (dependent on the effectiveness of tree planting e.g. if appropriately targeted downwind of a source or upwind of a protected habitat) on air quality in relation to ammonia, nitrogen deposition and PM. In contrast, local air quality as a result of potential increased traffic may be **negatively affected**. There is a **high level of uncertainty** in identifying these impacts given the lack of data on how the pinch points might manifest in rural areas. Existing systems through the planning and local air quality management process may provide some mitigation (e.g. local authorities can declare Air Quality Management Areas where air quality objectives are exceeded).

Cross-cutting effects

- **Water management:** management of slurry stores and incorporating livestock manures into the soil rather than using broadcast spreaders – i.e. slurry injection, trailing shoes etc. can deliver water quality benefits. Nitrogen deposition has an acidification effect on freshwater and upland habitats as well as a fertilising / eutrophication effect.
- **Human health:** reductions in ammonia emissions and PM could positively affect human health.

Air quality summary	Potential effects of Draft RDP compared with:	
Question	Do minimum	Business as usual
<ul style="list-style-type: none"> • Increase / decrease levels of air pollutants (PM₁₀ and PM_{2.5}, ozone, ammonia and NO_x levels (both 	+ reduce levels of ammonia and PM - ? increase levels of NO ₂	+ reduce levels of ammonia and PM - ? increase levels of NO ₂

⁴⁶ I.e. there are fewer Air Quality management Areas (AQMAs) designated in rural areas than in urban areas.

concentration and deposition))?		
<ul style="list-style-type: none"> Increase / decrease car journeys? 	-? increase car journeys	-? increase car journeys
<ul style="list-style-type: none"> Expose new receptors to potential air pollution including odour? 	? unknown	? unknown

Assessment comments:

Compared against the do minimum scenario, it is expected that the draft Programme would have **significant positive effects** with regard to reducing ammonia emissions. There is the potential for **negative effects** with regards to NO₂ emissions.

Against the business as usual scenario, there are expected to be **positive effects** relative to the extant RDP due to the measures identified that can reduce ammonia emissions. There is the potential for **negative effects** with regards to NO₂ emissions

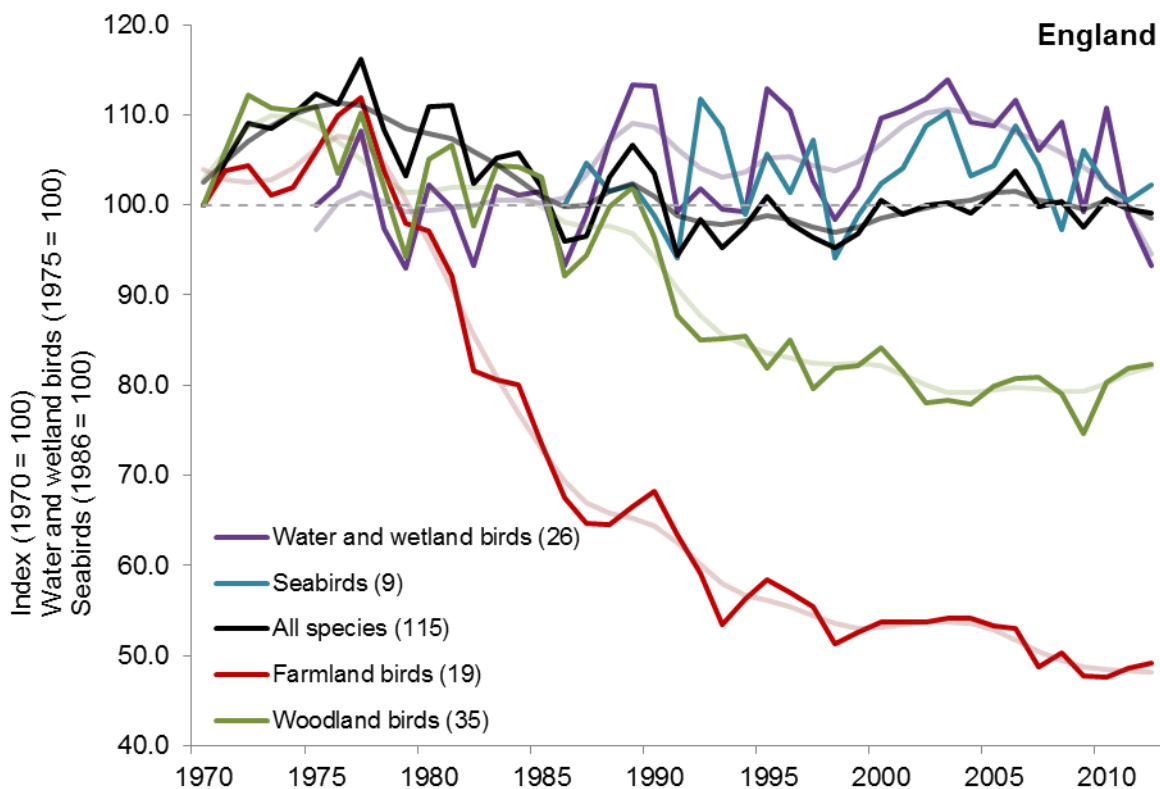
All effects are likely to be **long-term** and **temporary** i.e. trees can be removed and the rural economy may expand or contract over time. There are potential **positive interactions** with other elements of the draft Programme (e.g. the emphasis on biodiversity conservation and woodland creation) and, in general, the overarching multifunctional approach underpinning the draft Programme.

Biodiversity and nature conservation

What is the scope?

A complex relationship exists between farming and nature conservation, and there are significant inter-relationships between this topic and others, in particular landscape and cultural heritage, soil management and woodland. While farmland provides habitat for wildlife, the intensification of farming since the Second World War has resulted in long term declines in certain habitats and their associated flora and fauna. Bird populations are a good indicator for wider biodiversity and ecosystem health. Between 1970 and 1998, the Farmland Bird Index declined by 43%. Although the largest decreases in farmland bird populations occurred between the late 1970s and the early 1990s, there has been a pronounced decline of 11% since 2003. Woodland birds have also experienced a decline since the 1970s although this declined levelled off from about 1995 and shows a short-term increase since 2005.

Figure 6.1: Populations of wild birds, 1970 to 2012⁴⁷



Across all habitats apparent reductions and continuing declines in the diversity of many wild species, including the variety and abundance of pollinators, is of particular concern.

⁴⁷ RSPB, BTO, JNCC, Defra Note: i) figures in brackets show the number of species within each group, ii) within each category, darker lines show unsmoothed data and paler lines of the same colour show smoothed trend data

However, some significant progress has been made as a result of targeted agri-environment scheme management: for example, the proportion of Sites of Special Scientific Interest (SSSIs) on agricultural land classified as favourable or recovering has increased from 45% in 2003 to 96% in 2014.⁴⁸

However it is not just bird species that are of concern. Some 60% of England's flowering plants are declining with 29% declining strongly. In contrast plants of nutrient-rich environments are increasing.⁴⁹ There are also continuing localised extinction events. For example, on average, one species of flowering plant is lost from each English county every two years, with the greatest rates of loss in the south and east.⁵⁰ There have also been rapid losses (of more than 50% in the last 25 years) of once common species such as hedgehogs, house sparrows and common toads, and extinction of many species in parts of their former range. The fragmentation of semi-natural habitats, both farmed and woodland, leaves the populations they contain less able to move and adapt in response to climate change as their climate 'space' disappears.

With regard to UK Biodiversity Action Plan (BAP) habitats, 12 of these are classified as being predominantly agricultural. In 2010 there was an increase in the number of priority farmland habitats assessed as stable or increasing, four were classified as decreasing (hedgerows; blanket bog; upland hay meadows; lowland meadows).⁵¹ For farmland BAP species, the evidence indicates that in 2008, 56 species (51%) were classified as being either stable or increasing and 37 species (27%) were classified as declining including skylark, linnet, and corn bunting (see Figure 6.2).⁵²

⁴⁸ Defra Observatory monitoring framework – indicator data sheet (2013). Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181317/defra-stats-foodfarm-environ-obs-indicators-de8-121019.pdf. Accessed 24/02/2014. Report on condition of SSSIs, Natural England, March 2014. The proportion of England's territory protected under the EC Habitats and Birds Directive as a 'Natura 2000' site is 5% [EU Common Context Indicator 34]

⁴⁹ RSPB (2013) The State of Nature report; England summary: http://www.rspb.org.uk/Images/england_tcm9-345846.pdf

⁵⁰ Walker, K.J. (2003) One species a year? An evaluation of plant extinctions in selected British vice counties since 1900. *Watsonia*, 24: 359-374.

⁵¹ Defra (2013) Indicator DE1: Status of farmland UK Biodiversity Action Plan priority habitats in England [online] available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>. Accessed 01/05/2014

⁵² Defra (2010) Indicator DE2: Status of Biodiversity Action Plan (BAP) priority farmland species [online] available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

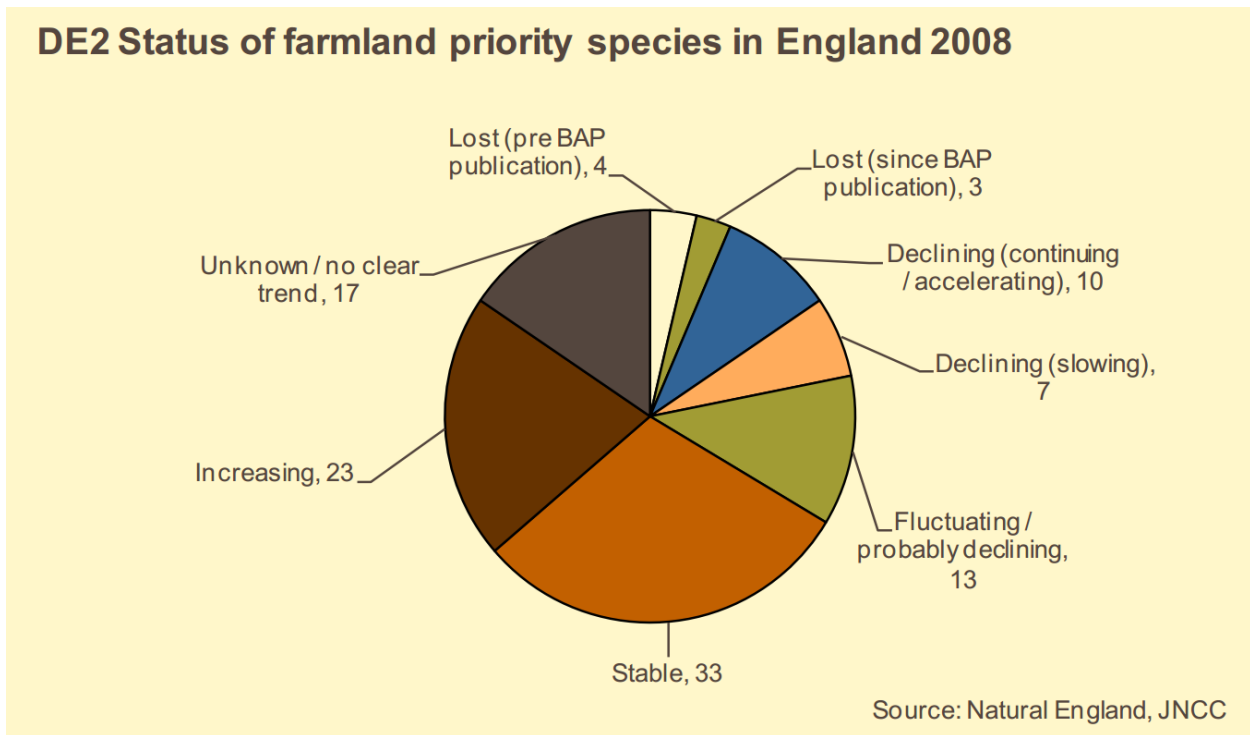


Figure 6.2: DE2: Status of Biodiversity Action Plan (BAP) priority farmland species

What is the likely evolution without the programme?

Without implementation of the draft Programme, sites of biodiversity importance are likely to come under increasing pressure from agricultural intensification and long-term declines in habitats and species are likely to continue. Farmland bird populations may continue to fall and progress in improving SSSIs on agricultural land may stall or go backwards. Overall, without the support of the draft Programme, declines in habitats and species might accelerate.

Rising population and associated housing and infrastructure development may also put pressure on remaining semi-natural habitat. A failure to better 'connect' existing parcels of semi-natural habitats through wildlife or green corridors may lead to further declines in biodiversity as species populations become increasingly unviable or unable to move in response to the effects of climate change.

The UK Climate Change Risk Assessment⁵³ also notes that risks to biodiversity from climate change will result from lower water levels and reduced river flows so exposing freshwater habitats to increased concentrations of pollutants from agriculture, sewage and air pollution.⁵⁴

⁵³ Defra (2012) UK Climate Change Risk Assessment: Government Report [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69487/pb13698-climate-risk-assessment.pdf. Accessed 03/03/2014

⁵⁴ Defra (2012) UK Climate Change Risk Assessment: Government Report [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69487/pb13698-climate-risk-assessment.pdf. Accessed 03/03/2014

What is the effect of the draft Programme?

Under Environment, there is an allocation of £0.9 bn in 'new' funds i.e. over-and-above the budget for commitments in the extant RDP. £2.2 bn is already allocated to funding existing agri-environment commitments. In addition to funding existing commitments under Environmental Stewardship, Defra intends to introduce a new environmental land management scheme.

It is assumed, at least in the initial years of funding under the draft Programme, that the programme's environmental performance would be very similar to 'business-as-usual' (i.e. falling numbers of farmland birds, habitat loss and fragmentation on the one hand but improvements in SSSI condition and short-term improvements in woodland bird populations on the other). As the funding for the extant schemes decreases over time, funding for NELMS would correspondingly increase.

Funding for biodiversity represents 75% of overall funding for the new environmental land management scheme and therefore accounts for both the most significant proportion of funding under Environment but also of the whole draft Programme. The new environment scheme will target high value options, increasing multi-functionality and delivering benefits as part of the 'Priority Sites approach but will also support, through 'Priority Areas', a landscape scale approach which could begin to connect disparate parcels of semi-natural habitat and so address habitat fragmentation.

This approach (which *may* be enhanced by 'greening' under Pillar 1) should see a progress in reversing habitat and species declines in rural areas and collectively 'raise the bar' with regard to farming practice and nature conservation. Whilst the assessment has highlighted potentially **positive effects** of the draft Programme for biodiversity and nature conservation there remains significant **uncertainty**, particularly with respect to the capacity for Pillar 1 to deliver substantial environmental improvements and also some concerns on the likely efficacy of the 'Priority Areas' approach which attempts to persuade land managers to cooperate at the landscape scale.

Evidence shows that the "*value of wildlife and landscape benefits provided by ES [Environmental Stewardship] to the public...exceeds its costs*". Furthermore, value for money in terms of perceived wildlife and landscape benefits are similar for both ELS and HLS.⁵⁵ HLS is noted to have provided an effective and targeted approach to delivering biodiversity and other environmental priorities.⁵⁶ The intention is to retain this as part of the NELMS through a priority sites offer, the so-called 'Upper-tier'.

⁵⁵ FERA (2010) Estimating the Wildlife and Landscape Benefits of Environmental Stewardship. Available at: <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/estimatingthewildlife.pdf>. Accessed 18/2/2014.

⁵⁶ Defra (2013) Consultation on the implementation of CAP reform in England, Summary of responses and government response. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267987/cap-reform-sum-resp-201312.pdf. Accessed 20/2/2014.

Therefore the benefits derived from this approach under the previous RDPE will continue generating a **positive effect** under the draft Programme. With regard to farmland birds, there is some **uncertainty** as to whether a targeted approach to high priority habitats would compensate for the loss of ELS.

The evidence suggests that on balance, there is a probability that the new environmental land management scheme may result in a more positive population trend than under the current ES scheme and that “[r]efocusing management in areas of high priority may therefore be a conservation strategy at least as effective as the current distribution under ES.” However, the evidence suggests that, for farmland birds, the new environmental land management scheme is unlikely to bridge the gap resulting from still declining long-term bird trends.⁵⁷

The draft Programme is expected to have a **positive effect** but the outcome is likely to depend on the success of targeting on the ground: “*The impacts on national [bird] populations will then depend on both the extent to which the effects of management improvements scale up and the effectiveness of the landscape-scale targeting with respect to the vulnerable or declining populations of a given species.*”⁵⁸

Generally speaking, support for facilitation between farmers to secure landscape scale delivery focusing on priorities identified through NELMS should help deliver benefits for biodiversity and other scheme objectives.

Evidence indicates that the Catchment Sensitive Farming (CSF) initiative, which involved providing advice and capital grants to farmers to tackle diffuse water pollution, can effectively provide improvements to water quality in “*priority catchments where mitigation options can be targeted and integrated according to particular circumstances and water quality priorities through advice tailored to individual holdings*”.⁵⁹ The tackling of water pollution and more general improvements in water quality can be beneficial to biodiversity and help the government meet its obligations under the Water Framework Directive. Under the draft Programme, CSF will be subsumed within the water quality element of the new Environment funding. Funding for water quality under the scheme will be used to deliver an integrated package of land use change and land management, advice and

⁵⁷ Aonghais S.C.P. Cook and Gavin M. Siriwardena (2013). Estimating the impact of a reduction in the land coverage of English agri-environment schemes on environmental assets: farmland bird populations. Report to Natural England and Defra, November 2013. Available at: http://randd.defra.gov.uk/Document.aspx?Document=11774_LM0437Twpagesummary.pdf . Accessed 11/04/2014.

⁵⁸ All quotes in this paragraph are taken from Aonghais S.C.P. Cook and Gavin M. Siriwardena (2013). Estimating the impact of a reduction in the land coverage of English agri-environment schemes on environmental assets: farmland bird populations. Report to Natural England and Defra, November 2013. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=19205&FromSearch=Y&Publisher=1&SearchText=lm04&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description> . Accessed 20/2/2014.

⁵⁹ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316> . Accessed 18/2/2014.

capital grants. Total funding is significantly more than that previously allocated to CSF; in addition the ‘targeted’ approach of funding should address recommendations for the evaluation of the extant RDP. This suggests that the draft Programme is likely to have **positive effects** on water quality, which should have an **indirect positive effect** on biodiversity more generally.

There are significant opportunities for biodiversity enhancement in woodlands through both improved management and woodland expansion and these are considered in more detail under the SEA topic ‘Woodlands’.

Woodland creation is included within the new scheme but there is unlikely to be sufficient budget available to meet the government’s 12% indicative figure woodland cover across England by 2060 on its own.⁶⁰ Nevertheless, the rate of woodland planting is likely to remain the same as under the existing RDP. This rate of planting should result in **positive effects** on biodiversity although the effects would obviously be more positive if the 12% target were attained. The provision of measures to support forestry is likely to further **positively** affect levels of woodland biodiversity through promoting improved woodland management. With regard to woodland birds, the evidence indicates a long-term decline in populations, with a short-term increase since around 2005 (see **Figure 6.1**). Evidence on the effect of the England Woodland Grant Scheme (EWGS) on woodland birds is inconclusive⁶¹ (and is the subject of on-going research) the effectiveness of woodland creation and management in promoting a revival in woodland bird populations should be monitored as part of the draft Programme. The EWGS is being subsumed into the new Environmental scheme and thus schemes for the creation and management of woodland will continue. The effect on woodland birds however is **uncertain**.

The emphasis towards farming competitiveness and resource efficiency within ‘Productivity’ may result in indirect benefits rather than direct biodiversity gains. Through increased efficiency of pesticide, fertilizer and water use and the management of ammonia emissions there should be **indirect positive effects** on biodiversity.

The effects of the advisory and knowledge transfer measures are **uncertain** at this stage. Evidence suggests that Productivity measures should provide improved on-farm environmental sustainability and improvements to soil and land management practices.⁶² Furthermore, the effects on ammonia as identified in the Air Quality topic should have **positive effects** for biodiversity. Fundamentally though, the effect is dependent on the

⁶⁰ Defra (2013). Government Forestry and Woodlands Policy Statement, Incorporating the Government’s Response to the Independent Panel on Forestry’s Final Report [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221023/pb13871-forestry-policy-statement.pdf. Accessed 01/03/2014.

⁶¹ Bellamy, P. and Charman, E. (2012) Monitoring of the bird and habitat response to Woodland Improvement Grant 80 in the East Midlands region (EWGS monitoring).

⁶² Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

nature of training and advice offered. Furthermore, at this level of assessment it is not envisaged that this measure (building knowledge and skills) would have a significant impact.

The effects of Growth measures on biodiversity are perhaps more indirect and diffuse. In the main, these focus on the rural economy and the promotion of tourism. This increase in Growth (e.g. of tourism provision, as was achieved under the extant RDP) could lead to increased (recreational) pressure on high value sites with effects such as species disturbance (e.g. of ground nesting birds) and soil compaction leading to potentially **negative effects** on biodiversity. However, there is a **high level of uncertainty** in predicting impacts as these will depend on the nature and implementation of future schemes.

Approximately 40% of LEADER project support from the extant RDP was focused on projects to improve the natural environment. About 25% of the RDP 2014-2020 LEADER budget relates to biodiversity and enhancement of the natural environment. Whilst this is less than under the extant LEADER scheme, it should result in a, albeit very small, **positive effect**.

Cross-cutting effects

- **Air quality:** increased habitat creation, particularly with regard to trees and other flora that can take up atmospheric pollutants should have a crosscutting effect with air quality in terms of improving local air quality around point sources e.g. ammonia,
- **Climate change adaptation:** improving biodiversity, and importantly, allowing the ‘space’ for biodiversity can provide a level of resilience for climate sensitive species and provide an opportunity for them to adapt to a changing climate.
- **Water management:** tree planting and other biodiversity enhancements can help to provide water management services and improve water quality.

Biodiversity and nature conservation summary	Potential effects of Draft RDP compared with:	
	Do minimum	Business as usual
<ul style="list-style-type: none"> • Increase populations of priority (Section 41) species on farmland, including levels of farmland birds? 	+ increase populations locally	+ ? medium term positive impact dependent on the effectiveness of targeting.

<ul style="list-style-type: none"> • Improve the condition of SSSIs and priority habitats both within and outside SSSIs on agricultural land? 	+ improved SSSI condition overall, despite uncertain negative effects from Growth measures	+ likely that draft Programme would continue with significant progress made as a result of targeted agri-environment scheme management.
<ul style="list-style-type: none"> • Create a coherent and resilient ecological network, through coordinated landscape scale delivery and targeted habitat re-creation? 	+ reduced rate of fragmentation	+ ? landscape scale approach of 'Mid-tier'
<ul style="list-style-type: none"> • Reduce air and water pollution through increased resource efficiency? 	+ reduced pollution	+ reduced pollution through prioritisation of 'water' under NELMs

Assessment comments:

Relative to the do-minimum scenario, there should be **positive effects** across all the assessment questions given the lower starting point. It is expected that these effects would be significant.

Against the business as usual scenario, the picture is less clear, what can be said it that the effects identified are not considered 'significant' at this stage, in large part due to the **uncertainty** surrounding the development of future schemes and levels of take-up and effectiveness of delivery on the ground. The effects identified are likely to be **medium to long-term** (although effects accruing through the extant RDP would continue). If the draft Programme were to be removed (and nothing took its place) it is likely that **positive effects** would be lost - the effects identified are therefore **temporary** and **reversible**.

Protecting biodiversity will reinforce efforts to promote wider environmental objectives such as improved air quality, landscape and water quality.

Climate change mitigation

What is the scope?

A complex relationship exists between agriculture and climate change, and there are significant inter-relationships between this topic and with others topics, in particular, the rural economy, human health, biodiversity and nature conservation, woodlands (through acting as carbon stores) and waste. Although agriculture is responsible for only a small proportion of the UK's carbon dioxide emissions, the sector is more closely associated with emissions of other greenhouse gases (GHGs) such as methane and nitrous oxide. In 2011, methane accounted for 8% of the UK's GHG emissions. Agriculture is the largest source of methane emissions in the UK, accounting for about 43% of all methane emissions in 2011. Nitrous oxide emissions accounted for 6% of all GHG emissions in 2011, 84% of which were generated by agriculture (based on MtCO_{2e}).⁶³

Fertiliser application and emissions from agriculture wastes are the most important sources of nitrous oxide. The usage of fertiliser varies substantially between farm types due to the different nutrient requirements of different crops,⁶⁴ while emissions from agricultural wastes are directly influenced by livestock numbers and the infrastructure used in storing the waste.^{65 66} Energy use on farms has fallen by 40% since 1995,⁶⁷ and emissions of methane and nitrous oxide from agriculture have declined by at least 20% since 1990,⁶⁸ largely because of a reduction in livestock numbers and fertiliser use. There has been a continued decline in the dairy herd since milk quotas were introduced in 1984. Sheep have experienced a less dramatic reduction in numbers whilst there has been little overall change in beef cattle numbers for England as a whole.⁶⁹

⁶³ DECC (2013) 2012 UK Greenhouse Gas Emissions, provisional figures and 2011 UK Greenhouse Gas Emissions, final figures by fuel type and end-user [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193414/280313_ghg_national_statistics_release_2012_provisional.pdf. Accessed 09/09/2013.

⁶⁴ Defra (2012) Observatory monitoring framework – indicator data sheet [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193799/agindicator-c4-02may13.pdf. Accessed 12/09/2013.

⁶⁵ British Survey of Fertiliser Practice (2012) Fertiliser Use On Farm Crops For Crop Year 2012 [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192605/fertiliseruse-report2012-25apr13.pdf [accessed 12/09/2013]

⁶⁶ Defra (2013) Land Use on Agricultural Holdings [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/183103/defra-stats-foodfarm-landuselivestock-june-results-englandtimeseries-121101.xls [accessed 12/09/2013]

⁶⁷ DEFRA (2012) 2012 review of progress in reducing greenhouse gas emissions from English agriculture [online] available at: <https://www.gov.uk/government/publications/2012-review-of-progress-in-reducing-greenhouse-gas-emissions-from-english-agriculture> (accessed 27/01/2014).

⁶⁸ Defra (2014) D1: Methane emissions from agriculture, available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>; Defra (2014) DD2: Nitrous oxide emissions from agriculture, available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

⁶⁹ Defra (2013) B12 Livestock numbers [online] available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

There has been a significant increase in the net energy derived from agricultural biomass since 1990 with an accelerated increase from 2008 – 2012 (see Figure 6.2).⁷⁰

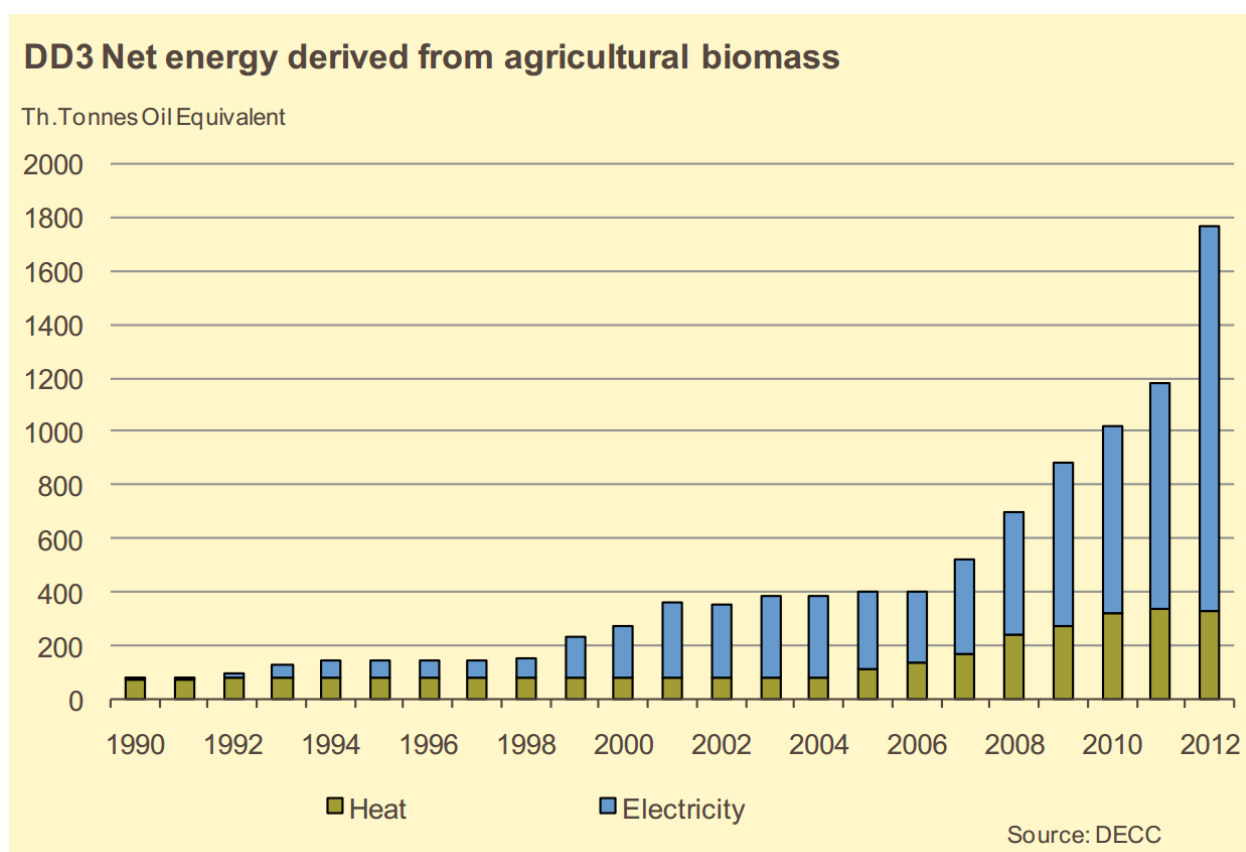


Figure 6.2: Net energy derived from agricultural biomass

What is the likely evolution without the programme?

Climate change mitigation is likely to increase in prominence as an ‘issue’ as the impacts of a changing climate are increasingly felt. The 2009 UK Climate Change Projections predict that (by 2080):

- winters are likely to be warmer by around 2.2°C;
- summers are likely to be hotter by around 2.8°C (see **Figure 6.2**);
- winter rainfall is likely to increase by 16%; and
- summer rainfall is likely to decrease by 19% (see **Figure 6.3**).

The future baseline under the 2009 UK Climate Change Projections also includes a potential increase in the frequency of extreme weather events over time, such as heat waves, storms and flooding.

⁷⁰ Defra (2013) Indicator DD3: Net energy derived from agricultural biomass [online] available from: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

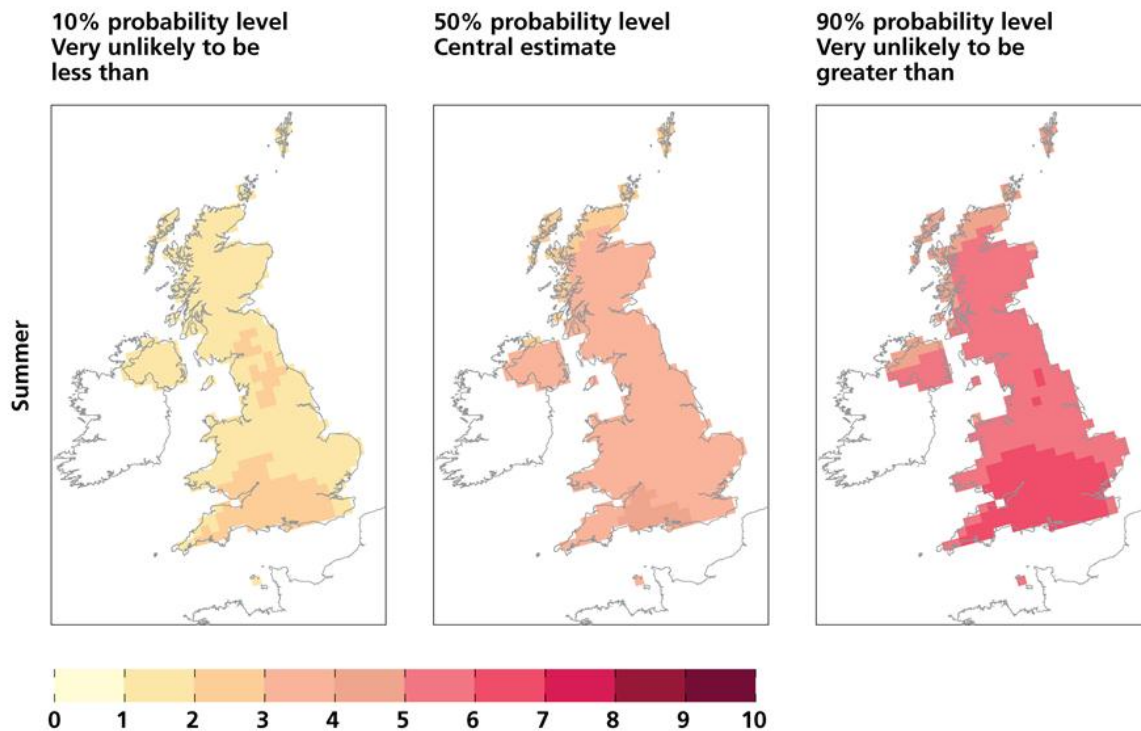


Figure 6.2: Change in summer mean temperature (°C) for the 2080s, Medium emissions scenario.⁷¹

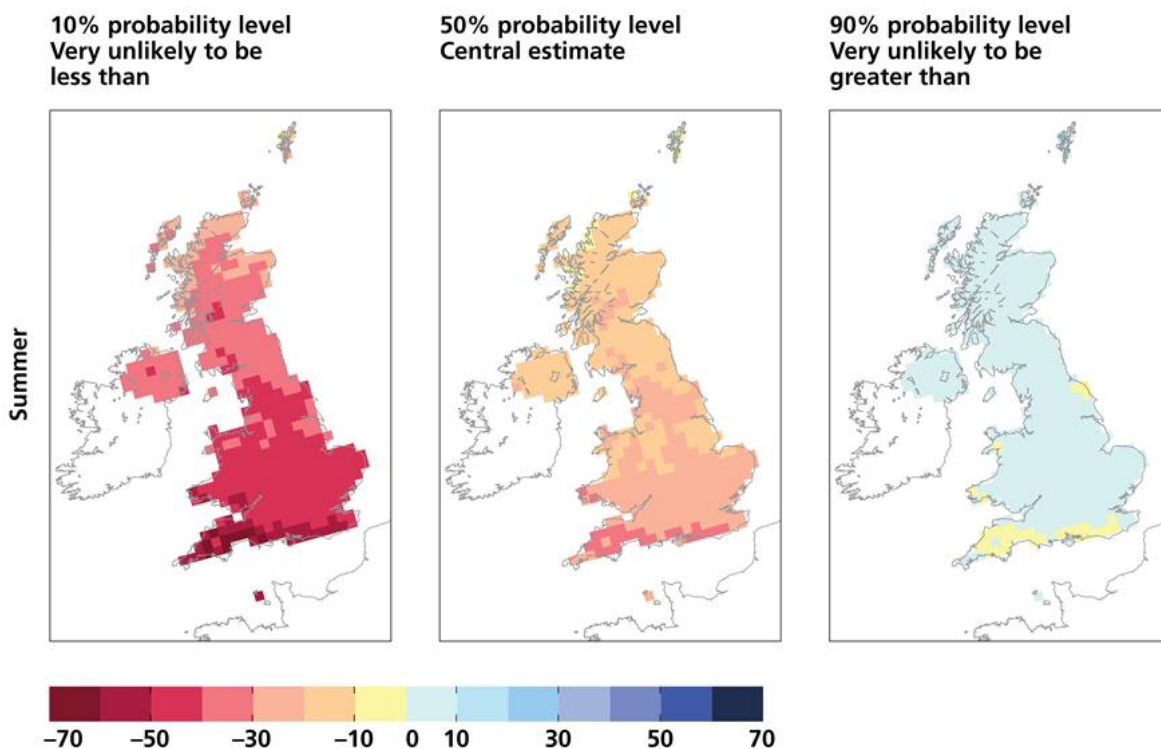


Figure 6.3: Change in summer mean precipitation (5) for the 2080s, Medium emissions scenario.⁷²

⁷¹ UKCIP (2009) *UK impacts – maps & key findings*. Available at: <http://www.ukcip.org.uk/essentials/uk-impacts/#precipitation>. Accessed 09/09/2013.

In the absence of influence of the draft Programme, the probability of rural activities reducing emissions would be lower, given that funding for projects would run out in the medium term.

What is the effect of the draft Programme?

This topic focuses on the key factors contributing to climate change and the measures required to reduce emissions of GHGs and so contribute to mitigating climate change.

The SEA Scoping Report identified methane and nitrous oxide to be of particular relevance in the context of agriculture and rural development. In 2011, agriculture was responsible for 43% of all methane emissions and 84% of all nitrous oxide emissions (of which around 93% were generated by soils). Since 1990, methane emissions have decreased by over 20% (as a consequence of declining livestock numbers); and emissions of nitrous oxide have decreased by over 19% (mainly due to a decrease in synthetic fertiliser application).⁷³ Nonetheless, the 2012 review of progress in reducing greenhouse gas emissions from English agriculture examined progress in mitigating climate change and identified that English agriculture, by adopting a range of measures, had the potential to further reduce emissions.⁷⁴

While agriculture is responsible for only a very small proportion of carbon dioxide emissions, soil is nonetheless an important carbon store and poor soil management can reduce its effectiveness as a carbon sink. Recent evidence has suggested that average soil organic matter content has declined across all land uses in England and Wales.⁷⁵ Better land management and restoration of certain habitats (e.g. peatlands) has the potential to mitigate and potentially re-start sequestration to directly reduce greenhouse gas emissions.

Defra has calculated that the draft Programme (based on spending on agri-environment and forestry activities only) could result in potential savings of between 10.2 and 11 million tonnes of CO₂. The new 'Mid-tier' is expected to avoid between 1,800 and 2,600 tonnes per £ million of expenditure and the Higher-tier is expected to avoid between 6,700 and 8,200 tonnes per £ million of expenditure.⁷⁶ These estimates assume that GHG savings from agri-environment options which reduce output are not offset by increases in output elsewhere. In reality, output could well increase elsewhere, but this is very difficult to determine.

⁷² UKCIP (2009) UK impacts – maps & key findings. Available at: <http://www.ukcip.org.uk/essentials/uk-impacts/#precipitation>. Accessed 09/09/2013.

⁷³ UK Greenhouse Gas Inventory, 1990 to 2011 (2013) Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207605/UK_GHG_Inventory_1990-2011-Report.pdf. Accessed 20/2/2014.

⁷⁴ DEFRA (2012) 2012 review of progress in reducing greenhouse gas emissions from English agriculture. Available at: <https://www.gov.uk/government/publications/2012-review-of-progress-in-reducing-greenhouse-gas-emissions-from-english-agriculture>. Accessed 20/2/2014.

⁷⁵ Bellamy P. H., Loveland P. J., Bradley R. I., Lark R. M., & Kirk G. J. D. (2005) Carbon losses from all soils across England and Wales 1978–2003, *Nature*, 437, 245-248

⁷⁶ Based on internal Defra estimates.

The NELMS includes a number of measures focused on climate change mitigation. These include measures that will deliver direct benefits (e.g. carbon sequestration), such as the creation of woodland and the protection and restoration of peatlands.

The new scheme will incorporate a targeting framework to maximise opportunities for the delivery of multiple objectives. This will be particularly important in order to maximise the 'co-benefits' that can be generated from individual actions, for example, woodland creation can generate multiple benefits including deliver carbon sequestration, flood attenuation and improved habitat connectivity.

Measures in the draft Programme to deliver rural economic growth include funding for resource efficiency and renewable energy, including anaerobic digestion. Productivity measures also aim to, amongst others things, enable the farming, forestry and land based sectors to become more resource efficient. These measures are likely to deliver absolute GHG emissions savings and help build resilience to climate change through creating and supporting decentralised energy generation systems. The extent of savings from anaerobic digestion will be dependent on a number of factors, including whether feedstocks are imported onto farms to co-digest with livestock manures.

Evidence indicates that non-CO₂ GHG emissions from the agricultural sector continue to decline (see **Table 6.1**). CO₂ emissions dropped by 20% over the base year of 1990.⁷⁷ However, the 2012 review of progress in reducing greenhouse gas emissions from English agriculture identified opportunities for further improvements and demonstrable win-wins in terms of both reduced emissions and greater efficiencies.⁷⁸

Table 6.1: Non-CO₂ emissions from agriculture net of land use change in England⁷⁹ (thousand tonnes CO₂ equivalent)

	2006	2007	2008	2009	2010
CH ₄ and N ₂ O	29,549	29,148	29,085	28,633	28,909
Net soil emissions (+)/removals (-)	2,177	2,031	1,913	1,525	1,577
Total agriculture	31,726	31,180	30,997	30,159	30,486
Total GHG emissions	495,494	493,509	480,298	438,022	448,436

Drawing on identified opportunities for emissions savings should result in **positive effects** through Environment and Growth. These would be in terms of reducing emissions through carbon sequestration, renewable energy generation and more efficient and effective land management practices. It should be noted that GHG savings from

⁷⁷ Salisbury et al. June 2013. Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1990-2011.

⁷⁸ DEFRA (2012) 2012 review of progress in reducing greenhouse gas emissions from English agriculture. Available at: <https://www.gov.uk/government/publications/2012-review-of-progress-in-reducing-greenhouse-gas-emissions-from-english-agriculture>. Accessed 20/2/2014.

⁷⁹ UK National Atmospheric Emissions Inventory

anaerobic digestion may be marginal if new materials are imported onto farms to co-digest with livestock manures.

Cross-cutting effects

- **Waste:** there are crosscutting effects with the anaerobic digestion proposals in the waste section of this report in terms of reducing the reliance of farms and agricultural activities on fossil fuels.

Climate change mitigation summary	Potential effects of Draft RDP compared with:	
	Do minimum	Business as usual
<ul style="list-style-type: none"> • Reduce the net emissions of greenhouse gases? 	+ reduced GHG emissions	+ ? extent of reduction will depend on increases elsewhere in the wider economy; however, the draft RDP will lead to reductions in this sector.
<ul style="list-style-type: none"> • Increase resource efficiency? 	+ improved resource efficiency	+ ? RDP to target further improvements in resource efficiency
<ul style="list-style-type: none"> • Employ measures which not only reduce GHG emissions but also support wider environmental targets and adaptation? 	+ encourage multi-benefit interventions	+ NELMS targeting to maximise delivery of multiple objectives.
<ul style="list-style-type: none"> • Increase land-based carbon sequestration, in a manner that also contributes to other environmental objectives including biodiversity conservation? 	+ increase carbon sequestration in soils, woodland, peatlands	? increase carbon sequestration in soils, woodland, peatlands, but effect relative to extant RDP uncertain.
<ul style="list-style-type: none"> • Encourage the use / development of zero / low carbon energy? 	+ funding for renewables	? level of funding for renewables relative to extant RDP is unclear

Assessment comments:

Relative to the do minimum scenario, it is likely that there would be **significant positive effects** across the board.

Against the business as usual scenario, whilst there is more **uncertain**, the draft Programme should still result in **positive effects**.

All effects are potentially temporary over the long term i.e. land use changes over time and wind turbines have finite lifetimes.

Climate change adaptation

What is the scope?

Average global temperatures are now about 0.9°C warmer than they were 100 years ago.⁸⁰ In central England, the annual mean temperature increased by about 1.0°C over this period, and the last decade was on average about 0.7°C warmer than the average for 1961-1990.⁸¹ While there may be some benefits to the environment from warming – for example, some species are expected to gain ‘space’⁸² – the physical effects of warming will have a range of negative implications for farming. These are likely to include less stable and more unpredictable weather, as well as changes in growing seasons. Climate change could lead to an increase in the occurrence of extreme weather patterns leading to increased periods of drought or flooding, both of which will put agricultural production under pressure.⁸³ Droughts, flooding and increased temperatures (including water temperature) will also put terrestrial and aquatic ecosystems under pressure. Increased rainfall, causing mobilisation of sediment and pollutants, will damage soil, species and habitats and affect water quality. There is also a risk of an increase in pests, diseases, and non-native invasive species entering and more easily becoming established in the UK due to the shifting climate. The frequency and severity of flooding is also a concern: changes in land use and management practices affect runoff generation and flooding at a local scale, but, conversely, agricultural management can help to mitigate flood risk. This topic has significant inter-relationships with other SEA topics including biodiversity and nature conservation, the rural economy, water management and soil management.

What is the likely evolution without the programme?

In future, changes in land use and intensification of agricultural production are likely to continue to be a source of flood risk in rural areas. The implications of these changes may become more serious as a result of climate change, which may lead to increasingly intense rainfall events.

⁸⁰ DECC (2013) Central England and global surface temperature. [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/229814/surface_temperature_summary_report.pdf. Accessed 09/09/2013.

⁸¹ DECC (2013) Central England and global surface temperature. [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/229814/surface_temperature_summary_report.pdf. Accessed 09/09/2013.

⁸² Adaptation Sub-Committee (2013) Managing the land in a changing climate: Adaptation Sub-Committee Progress Report 2013 [online] available at: <http://www.theccc.org.uk/publication/managing-the-land-in-a-changing-climate/>. Accessed 24/02/2014.

⁸³ Adaptation Sub-Committee (2013) Managing the land in a changing climate: Adaptation Sub-Committee Progress Report 2013 [online] available at: <http://www.theccc.org.uk/publication/managing-the-land-in-a-changing-climate/>. Accessed 24/02/2014.

The impact on growing seasons and crops is **uncertain**; however it is likely that there will be increased incidents of crop damage due to extreme weather events. There may also be opportunities for growing new crops or securing more harvest cycles if growing seasons are lengthened. It is likely that water availability will worsen and soil degradation will continue.

Without the implementation of the RDP, farms and rural business may not be as resilient to changes in climate and extreme weather events. This may result in greater losses of crops and a failure to increase resilience in the face of climate change.

What is the effect of the draft Programme?

The SEA Scoping Report identified the need to understand and adapt to the changing climate. Climate change presents both threats and opportunities for different areas of the rural economy with each requiring different adaptation approaches. Of particular importance is the need to adapt to more extreme and variable weather patterns. More intense rainfall will increase the risk of flooding to agricultural land, homes and businesses; and droughts will affect crop yields, water availability and soil degradation. Impacts also include those on species and habitats (including aquatic ecosystems) due to lower flows in rivers.

Agricultural management can play a key role in alleviating flooding by increasing the interception of precipitation and extending lag times, i.e. the times it takes rainfall to reach rivers. Better management of water resources by the farming community will also help it to reduce its reliance on freshwater abstractions.

NELMS seeks to provide targeted support for flood management and other support to assist in promoting climate change adaptation. This is in addition to existing committed schemes and increased funding (compared to the extant RDP) for HLS and UELS (the uplands being the major water gathering and storage areas for much of England's water supply). The new scheme also recognises the value of genetic diversity and the value this provides in building resilience within the agricultural sector to more extreme weather events.

Climate change is one of the most significant threats to biodiversity and the draft Programme's aim to target intervention for species and habitat management at a landscape scale, recognising that many habitats remain fragmented, should help focus efforts on improving habitat quality and connectivity. The draft Programme recognises the need to help 'rebuild a coherent ecological network' and 'improve and maintain the most important designated sites such as Sites of Special Scientific Interest'. Such measures will help support biodiversity's adaptive capacity and its resilience to climate change.

In terms of physical assets, Productivity support for rainwater harvesting and the construction of reservoirs for on-farm water storage will help farmers to be better able to adapt to climate change. Of particular importance will be funding towards increasing awareness and encouraging co-operation between different actors regarding the challenges and opportunities posed by climate change. The identified four key areas of

Productivity present opportunities to facilitate knowledge transfer and improve business and risk management skills helping to raise awareness and encourage farmers to identify and take action against the threats and opportunities presented by climate change. A more informed and market aware agricultural community will be able to plan even better to mitigate risks and capitalise on potential opportunities. The success of advice delivered under the Catchment Sensitive Farming scheme, for example, demonstrated that the provision of advice can be an effective way for the farming community to learn more about particular issues and their effects and reliance on the natural environment.⁸⁴ It is assumed that the successor to CSF in the new Environment scheme will continue to deliver a positive outcome.

Carefully managed forestry activities, both in terms of afforestation and improved woodland management have the potential to reduce downstream flood risk. Cooperation between farmers and foresters should help to build better understanding of respective roles in reducing lowland flooding, for example, by more effectively locating upland woodland and implementing sustainable felling strategies.

Measures to support small scale energy infrastructure including decentralised energy systems and community scale renewable technologies, combined with improved business skills training, will enable opportunities to diversify and build resilience into the rural economy.

Taking into account the likely benefits from re-allocating committed funding to upland areas, adopting a more targeted and focused approach under the new Environment scheme and targeted funding under Productivity, the draft Programme is considered likely to have a **positive effect** with regards to climate change adaptation.

Cross-cutting effects

- **Water management:** increasing resource efficiency and other adaptation orientated schemes would have crosscutting effects on climate change adaptation, particular the mid-tier ES approach in NELMS.

Climate change adaptation summary	Potential effects of Draft RDP compared with:	
Question	Do minimum	Business as usual
<ul style="list-style-type: none"> • Help reduce the risk of flooding? 	+ increased flood management	+ NELMS targeted support for flood management + increased 'Upper-tier' funding

⁸⁴ Catchment Sensitive Farming ECSFDI Phase 1 & 2 Full Evaluation Report (2011) Available at: http://www.naturalengland.org.uk/Images/csf-evaluationreport_tcm6-27149.pdf?bcsi_scan_AB11CAA0E2721250=FTnRx5okR9vHt+wFBz8yFw3aITo1AQAA5u9EIQ==&bcsi_scan_filename=csf-evaluationreport_tcm6-27149.pdf. Accessed 20/2/2014.

<ul style="list-style-type: none"> Address the risk of limited water availability? 	+ funding for water storage assets, afforestation etc.	? level of input/impact relative to extant RDP is unclear
<ul style="list-style-type: none"> Help create a rural economy resilient to the effects of climate change? 	+ flood management, landscape-scale approach, decentralised energy	+ flood management, landscape-scale approach, decentralised energy, increased awareness of the opportunities climate change can bring.
<ul style="list-style-type: none"> Enhance the resilience and quality of semi-natural habitats through appropriate management and appropriate expansion (reducing fragmentation and improving ecological connectivity at the landscape scale)? 	+ Mid-tier’s landscape approach should effect the resilience and connectivity of habitats.	+ Mid-tier’s landscape approach should effect the resilience and connectivity of habitats.

Assessment comments:

Compared to the do-minimum scenario it is likely that the draft Programme would **have significant positive effects**.

Comparing against the business as usual scenario, the effects are more **uncertain** but generally speaking, **positive**.

The effects of the draft Programme will be **short – long term**. These effects will need to be **permanent** to ensure long-term resilience to climate change. The interface with Pillar 1 activities such as field management will need to be considered in order not to generate **negative cumulative effects**.

Landscape and cultural heritage

What is the scope?

Landscape quality, including the quality of the cultural or historic landscape, is key to public enjoyment of the countryside, and as such has cross-cutting relevance to other SEA topics including the rural economy, and tourism and countryside access. Agricultural intensification over the last 60 years has resulted in the loss of key elements of the landscape, including traditional and vernacular buildings, historic parkland and field boundaries. Hedgerows play an important role on farms, provide an important habitat for wildlife, and are often seen as a defining feature of the English landscape; yet in some parts of England 50% of hedgerows have been lost since 1945.⁸⁵ An Institute of Terrestrial Ecology (ITE) survey of hedgerow changes revealed that between 1990 and 1998 remnant hedgerow length in England and Wales had declined by 21%. The historic environment also makes a fundamental contribution to the character and public appeal of the countryside and its settlements. Nearly half of all listed buildings, over 80% of England's 20,000 Scheduled Monuments,⁸⁶ and two-thirds of Anglican parish churches are located in rural areas. The national Monuments at Risk (MARS) project⁸⁷, published in 1998, found that, since 1945, agriculture had been the single biggest cause of unrecorded loss to archaeological sites in England, and was responsible for 30% of instances of cumulative damage. It is estimated that 3,000 Scheduled Ancient Monuments are being ploughed and damaged annually. Farmers and landowners play a key role in ensuring the continued preservation of the historic landscape for future generations.

What is the likely evolution without the programme?

Landscape

The rural landscape has been shaped by agricultural practices for thousands of years. This is unlikely to change and agricultural practices will continue drive future changes in the landscape. This pressure is combined with other drivers for change including climate change mitigation (provision of renewables such as wind energy), a changing climate (precipitation and temperature changes) and transport and urban development will also exert pressure on the landscape. These pressures will continue with or without the programme. Alongside the land use planning system, Rural Development Programme support can help maintain and enhance landscape character and quality, notably as a priority consideration for all agri-environment investments in alongside other outcomes. Without the Rural Development Programme, changes in farming practices, notably those

⁸⁵ RSPB (unknown) Hedgerow loss/gain: the position [online] available at: http://www.rspb.org.uk/ourwork/conservation/advice/farmhedges/loss_gain.aspx. Accessed 04/03/2014

⁸⁶ English Heritage (2013) Per. Comm

⁸⁷ English Heritage (2008) *1998/2008 Surveys* [online] available at: <http://www.english-heritage.org.uk/caring/heritage-at-risk/archaeology/scheduled-monuments-at-risk/1998-2008-surveys/> (accessed 09/09/2013)

associated with intensification of management may result in a degradation of landscape character.

Cultural Heritage

The cultural heritage of rural areas is likely to face continued changes in the future, with some areas experiencing increased pressure in future due to the effects of a growing population, intensification in farming practices and the conversion of farm buildings to non-agricultural uses. Without the contribution of the draft Programme, some heritage assets may be more likely to be lost or damaged by development, and opportunities for their redevelopment and restoration may be missed.

What is the effect of the draft Programme?

Landscapes / seascapes and local places provide 'cultural' ecosystem services. Landscape quality is a key to the continued public enjoyment of the countryside.

Under the extant Rural Development Programme, Environmental Stewardship considered the management of rural landscape and cultural heritage to be a priority. In the draft Programme, the new Environment scheme will see a lower level of overall funding allocated to these although the scheme will be more targeted and priorities will be revised, so not all previous Environmental Stewardship contracts will be renewed, which may also affect the protection of some archaeological sites.

Given the important role of Environmental Stewardship in the extant RDP in protecting the historic environment, any reduction in funding is likely to have **less positive effects** for the historic environment and potentially loss of forms of protection. The draft Programme is one of a number of interventions which seeks to protect the historic environment and a range of legal instruments also offer significant amounts of protection.⁸⁸ As such lower levels of funding under the RDP *may* not result in any significant change in protections afforded scheduled sites.⁸⁹ The NELMS Opportunity Assessment which looked at the impact of a reduction in agri-environment land coverage concluded that none of the scenarios it modelled resulted in very significant changes for the historic environment. Moreover, under 'Scenario B' of the NELMS Opportunity Assessment (which is understood to be the likely outcome) better targeted schemes (i.e. the new Environment scheme) were considered to compensate for the loss of coverage under ELS.⁹⁰

⁸⁸ <http://www.english-heritage.org.uk/publications/interventions-prosecutions-alternative-disposals/interventions-guidance.pdf>

⁸⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263943/1291-B_English_Heritage_Accessible__1_.pdf

⁹⁰ LUC (2013) NELMS Opportunity Assessment, Estimating the impact of a reduction in agri-environment land coverage on

environmental assets, Assessing the Potential Effects on Landscape. Available at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17454&FromSearch=Y&Publisher=1&SearchText=bd5303&SortString=ProjectCode&SortOrder=Asc&Paging=10%23Description>. Accessed 20/2/2014

The draft Programme does not specifically reference measures to support traditional craft skills, such as dry stone walling, the retention of which is necessary to protect and enhance landscape quality and rural heritage; however, funding for traditional skills has previously been made available under LEADER.⁹¹ The Government announced on 10 June 2014 that the landscape features part of the Ecological Focus Areas element of 'Greening' will comprise hedges.^{92 93} The availability of funding for traditional skills will help to ensure people are trained in relevant skills although the extent of their subsequent use is obviously **uncertain**. Under Growth schemes, there is the potential for the intensification for rural land use (e.g. through increased business activity and funding for small-scale renewables / community energy schemes) to affect landscape character but the effect is **uncertain** as it is dependent on implementation, location and design.

While overall funding levels for the preservation and enhancement of landscape quality and cultural heritage is lower under the draft Programme, prioritisation and targeting of the new Environmental scheme has the potential to maintain a similar level of landscape and heritage quality through 'Mid-tier' funding. The outcomes for this topic will be dependent on actual delivery; however, at this stage, there is too much **uncertainty** over implementation for significant effects to be identified.

⁹¹ Dry Stone Walling Association of Great Britain. Available at: <http://www.dswa.org.uk/about-the-dswa.asp>. Accessed 18/2/2014.

⁹² Council of the European Union (2013) Proposal for a Regulation of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy (CAP Reform) - Consolidated draft Regulation. Available at: <http://register.consilium.europa.eu/doc/srv?l=EN&t=PDF&gc=true&sc=false&f=ST%2013294%202013%20NIT&r=http%3A%2F%2Fregister.consilium.europa.eu%2Fpd%2Fen%2F13%2Fst13%2Fst13294.en13.pdf>. Accessed 24/02/2014.

⁹³ The Government announcement on greening and cross compliance was made on 10 June 2014: <https://www.gov.uk/government/consultations/common-agricultural-policy-reform-implementation-in-england>

Landscape and cultural heritage summary	Potential effects of Draft RDP compared with:	
Question (will the draft Programme...?)	Do minimum	Business as usual
<ul style="list-style-type: none"> Help reduce the erosion of landscape character? 	+ conserve landscape character	+ conserve landscape character through environmental stewardship/new Environment scheme ? uncertain effects due to intensification of rural land use.
<ul style="list-style-type: none"> Protect and enhance cultural heritage in rural areas? 	+ historic and traditional buildings	~ funding for historic and traditional buildings is reduced; however the effects are unclear in relation to the extant RDP.
<ul style="list-style-type: none"> Minimise the potential for field enclosures and minimise removal of linear or other characteristic features? 	+ funding for managing trees, hedgerows	? level of input/targeting relative to extant RDP is unclear
<ul style="list-style-type: none"> Reduce the potential for farm activities to damage archaeological assets? 	+ new Environment scheme preserves archaeological assets.	? The effects are unknown or uncertain, while there will be some protection of important and significant archaeological sites, levels of funding are lower than in the extant RDP and effect of targeting relative to extant RDP is unclear.
<ul style="list-style-type: none"> Retain landscape distinctiveness? 	+ support for historic and traditional buildings, traditional crafts	~ NELMS funding for historic and traditional buildings is reduced; however the effects are unclear in relation to the extant RDP.

Assessment comments:

Relative to the do-minimum scenario, there would largely be **significant positive effects** compared to the legal minimum. This would be delivered through NELMS funding for the historic environment and LEADER schemes.

Comparing against the business-as-usual scenario there is some **uncertainty**. Mid-tier Environmental Stewardship may provide some **positive effects**. However, the effect of funding on, and awareness of, cultural heritage, given the **uncertainty**, should be investigated further.

Proposed interventions will have **direct** impacts on local character and distinctiveness, however the direction of the effect is uncertain. Depending on the types of measures targeted these may be **temporary** or **permanent**.

It is recommended that as part of any review of the operation of Heritage England following its creation consideration is given to the significance and effectiveness of the RDP programme (and other factors) in protecting the historic environment.

Population and human health

What is the scope?

9.3 million people (or 17.6% of the population of England) live in rural areas, including 481,000 who live in settlements in a sparse setting. The population living in a sparse setting accounts for 0.9% of the national population and 5.2% of the total rural population.⁹⁴ Over half of those living in rural areas are aged 45 years or over, compared with two fifths of those living in urban areas. There is a marked difference between rural and urban populations in the 15 to 29 age group. In urban areas this age group accounts for 22.2% of the population whereas in rural areas they make up just 14.6%.⁹⁵ Settlements in a sparse setting tend to have the highest proportions of their populations amongst older age groups. In rural towns and villages in sparse settings, 25% of the population are over 65 years old compared with just 13% of the population in larger settlements. However, health outcomes are more favourable in rural areas than urban areas: life expectancy is higher, infant mortality rates are lower and potential years of life lost from common causes of premature death are also lower.⁹⁶

What is the likely evolution without the programme?

The age profile of rural populations will increase, with in-migration most likely from older people being a contributory factor. This will place an increasing strain on health infrastructure and potentially reduce economic potential as the proportion of the population of working age decreases. This will be exacerbated by the fact that life expectancy is higher (and indeed general health indicators are better) in rural areas.

It is unlikely that the draft Programme will have any direct influence on human health and population. However, without the programme, it might be that human health is adversely affected through a reduction in economic activity in rural areas.

What is the effect of the draft Programme?

The focus of this SEA topic is to assess the draft Programme's potential effects on the health and well-being of rural populations, particularly, in relation to levels of economic activity; the production of healthy food and drink; rural quality of life; and encouraging younger people to live and work in rural areas.

The draft Programme recognises the challenges faced by rural populations, in particular those relating to housing affordability, high levels of fuel poverty, limited access to

⁹⁴ ONS (2011) Census data. Available at: <http://www.ons.gov.uk/ons/index.html>. Accessed 18/2/2014.

⁹⁵ Defra (2013) *Statistical Digest of Rural England 2013*. Available at: <https://www.gov.uk/government/publications/statistical-digest-of-rural-england-2013>. Accessed 9/9/2013.

⁹⁶ Defra (2013) *Living in rural areas* [online] available at: <http://www.defra.gov.uk/statistics/rural/rural-living/health/> (accessed 09/09/2013)

services and amenities, and an ageing population, particularly within the farming and forestry sectors.

Economic activity

Measures to promote rural economic growth will be delivered by Local Enterprise Partnerships (LEPs) and through LEADER local development strategies. The Growth Programme will support the diversification of the rural economy and provide support to non-agricultural micro/small business and tourism-related activities. Specific measures under the draft Programme include knowledge transfer and information actions; (Measure 1); advisory services, farm management and farm relief services (Measure 2); investments in physical assets (Measure 4); farm and business development (Measure 6); basic services and village renewal in rural areas (Measure 7); and co-operation (Measure 16).

In co-ordination with the Growth scheme, the new Productivity scheme will include funding support for equipment and infrastructure, training courses and the development of co-operative groups. The new Productivity scheme aims to deliver better and more effective training. However, funding is down from £302m in the current RDP to £128.6 m, thus benefits may be more limited over the Programme period.

In the short-term, the greatest impact to improved economic activity is likely to be from small-scale support through the availability of grants/investment in equipment and infrastructure, in particular for small businesses.⁹⁷ It is uncertain as to whether the level of funding for grants / investment will increase under the draft Programme compared to the extant RDP. An assessment of the current RDP identified the cost of grant administration as an issue in a number of cases and argued that a simpler set of rules for small grants would present a better approach.⁹⁸ Nonetheless, funding has been effective. Evidence from the Woodfuels East Programme in the East of England noted that a total of 90 micro-businesses were either assisted at start-up or supported to grow under the extant RDP which assisted not only those businesses directly but also helped develop a sustainable supply chain. In this case, co-benefits included better woodland management and improved deer control.⁹⁹ It is uncertain whether the level of funding for such measures will be maintained, increased or reduced. Should funding be maintained or increased and/or more effectively administered these measures could continue to deliver and support local business opportunities. However, given the relative reduction in funding it is unlikely that they would deliver outcomes significantly better than the extant RDP. Building on lessons learnt and ensuring efficient and effective targeting of funding may

⁹⁷ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

⁹⁸ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

⁹⁹ Sustainability East 2013. *Evaluation of Woodfuel East – Final Report*

mitigate the risk of significant adverse effects as a consequence of reduced funding under the draft Programme. Consequently, it is likely that effects on economic activity and related effects on health (due to the link between economic activity and health¹⁰⁰) are likely to be broadly similar to the extant RDP, although there is some **uncertainty**.

The focus for investment through LEADER is on job creation and business development support for rural services, tourism, cultural and heritage activities. The budget for LEADER under the draft Programme is expected to be similar to that of the extant RDP, albeit slightly higher (£127.69 compared to £125.42 m for the extant RDP). Evidence of LEADER's effectiveness under the existing RDP indicates that whilst overall impacts in relation to employment and GVA are relatively modest, the benefits it generates are largely new and retained within the local area. The evaluation of LEADER reported that 55% of businesses surveyed identified financial benefits, and 44% employment benefits that would not have occurred without LEADER.¹⁰¹ It is therefore reasonable to assume that LEADER will continue to deliver **positive effects** in terms of supporting local economic growth; however these are unlikely to be significantly greater to those delivered under the extant RDP.

Economic activity / younger people

Rural areas will continue to experience an ageing population over the draft Programme period with corresponding implications for local health infrastructure and possibly the economic potential of rural areas as the proportion of people of working age within the population declines. A key challenge is to encourage younger people to stay within rural areas and to encourage greater in-migration of younger people.

The draft Programme's measures related to knowledge transfer, business development and advisory services focused towards young farmers should help support and encourage new younger farmers. The OECD note that improving the skills and education of farmers is key to their ability to innovate, and with that deliver productivity gains which benefit the farming industry, consumers and the wider economy.¹⁰² The CCRI report indicated that younger farmers were undertaking training, potentially indicating that more young farmers are staying within farming (although this carries a **high level of uncertainty**).¹⁰³

Wider business development support and training, and up-skilling of local populations will help encourage a more diverse rural economic base and provide opportunities to

¹⁰⁰ Marmot, M. Fair society, healthy lives: the Marmot Review: strategic review of health inequalities in England post-2010. (2010) ISBN 9780956487001

¹⁰¹ ekosgen (2011) National Impact Assessment of LEADER. Impact Report – Final. Available at: <http://rdpenetwork.defra.gov.uk/assets/files/Impact%20of%20Leader/National%20Impact%20Assessment%20of%20LEADER.pdf>. Accessed 18/2/2014.

¹⁰² OECD (2013) *Agricultural Innovation Systems: A framework for Analysing the Role for Government*

¹⁰³ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

encourage younger people to stay in rural areas. It is uncertain whether the effects of these measures under the draft Programme will be significantly different to those under the extant RDP. Funding for improved broadband access and reducing distance-to-markets should help increase the attractiveness of rural areas for business investment. The draft Programme's bottom-up approach to delivering funding in line with LEP strategic economic plans has the potential to target specific local needs and build economies of scale and potentially overcome these barriers.

In terms of community services, young people and older people were the greatest recipients of LEADER support under the extant RDP. Young people were also the largest specific target group benefiting from new facilities. LEADER will receive a small increase in funding relative to the extant RDP and such measures, assuming they continue, should help to reduce migration of young people to urban areas.¹⁰⁴

Quality of life

The draft Programme recognises the link between health and wellbeing and the natural environment. The FERA evaluation identified that Environmental Stewardship has the benefit of providing *“additional countryside access and possible improvements in human physical and mental health e.g. through previously sedentary people undertaking exercise on HLS land subject to access agreements”*.¹⁰⁵ Environmental land management funding, albeit slightly lower for the draft Programme compared to the extant RDP, may lead to an improvement in local environmental quality through its focus on environmental and water resources. However, no new countryside access is included under the draft Programme (there has not been funding for this since 2010) and only educational access would be funded through NELMS. Catchment Sensitive Farming ‘type grants’ such as for fencing to keep livestock away from rivers could reduce, for example, faecal matter (and associated microbial pathogen) loads in bathing and shellfish waters. Such measures, combined with improved countryside access through LEADER have the potential to promote improvements in physical and mental health.¹⁰⁶

Measures to reduce ammonia emissions at source should help to mitigate the societal and health costs associated with ammonia pollution, estimated at £626 million in 2011 (societal cost) and £2,160/tonne (health damage cost). Note, any ammonia reductions are likely to have only small benefits for human health if they are upwind of population centres.

Ultimately, total allocated funding in real terms (for Growth, LEADER and Productivity) amounts to £414.91 m for the draft Programme compared to £621.08 m for the extant

¹⁰⁴ ekosgen (2011) National Impact Assessment of LEADER. Impact Report – Final. Available at: <http://rdpenetwork.defra.gov.uk/assets/files/Impact%20of%20Leader/National%20Impact%20Assessment%20of%20LEADER.pdf>. Accessed 18/2/2014.

¹⁰⁵ FERA (2010) Estimating the Wildlife and Landscape Benefits of Environmental Stewardship. Available at: <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/estimatingthewildlife.pdf>. Accessed 18/2/2014.

¹⁰⁶ Ibid.

RDP. Therefore, the draft Programme may struggle to generate the same benefits as previously realised, even given the more targeted focus of funding.

Population and human health summary	Potential effects of Draft RDP compared with:9	
Question (will the draft Programme...?)	Do minimum	Business-as-usual
<ul style="list-style-type: none"> • Help support the health and well-being of rural populations? 	+ see below	? see below
<ul style="list-style-type: none"> • Increase levels of economic activity? 	+ grants for assets, training, broad band	? level/impact of funding for assets, training, etc. relative to extant RDP is unclear
<ul style="list-style-type: none"> • Help support and promote the production of healthy food and drink? 	X	X
<ul style="list-style-type: none"> • Support a better quality of life for rural populations, including for an increasingly ageing population? 	+ support for rural businesses, broad band and young farmers	+ ? support for rural businesses, broad band and young farmers, but details yet to be confirmed
<ul style="list-style-type: none"> • Encourage a redistribution of age ranges in rural areas? 	+ support for rural businesses, broad band and young farmers	+ ? support for rural businesses, broad band and young farmers, but details yet to be confirmed

Assessment comments:

Under the do-minimum scenario, the draft Programme is predicted to have a number of **significant positive effects**, mainly through the Growth and Productivity schemes. These are all likely to be significant against the legal minimum baseline.

Under the business-as-usual scenario, the effects are less clear. Growth and Productivity are likely to have **positive effects** but the significance of these cannot be determined due to high levels of **uncertain** with regard to delivery and up-take.

Impacts of interventions on health and wellbeing are likely to be both **direct** and **indirect** and are highly contingent on wider factors such as the performance of the national economy and a wide range of other factors.

Soil management

What is the scope?

The function and health of soils is critical for agricultural production and to wider environmental health. Soil management has significant inter-relationships with other SEA topics, in particular biodiversity and nature conservation, the rural economy, climate change adaptation, and water management. Depending on their type and location, soils may help regulate water flow, water quality, protect archaeological remains and support wildlife. Critically, while soil management and the purification and detoxification of soils are a 'regulating' ecosystem service delivering final goods in terms of pollution control, evidence suggests that England is failing to conserve its natural capital assets and to invest in them adequately. UK soils are estimated to store some 10 billion tonnes of carbon in the form of organic matter,¹⁰⁷ and changes in land use, such as draining peat and converting grassland to crops, release carbon dioxide with negative implications for climate change. Soil compaction can reduce crop yields and lead to the loss of nitrogen, and can also lead to off-site costs associated with flood damage and flood risk management costs.¹⁰⁸ Soil erosion, which affects around 17% of land in England and Wales, can also have significant off-site costs, mainly as a result of the transfer of sediments and nutrients from the land to the water environment.¹⁰⁹

What is the likely evolution without the programme?

Whilst soil loss is generally low in the UK, some areas are at risk. Without the draft Programme, intensification of land use or inappropriate agricultural practices may exacerbate this risk. Changing land use to arable production can release soil carbon stocks and, conversely, changing from arable use can increase soil carbon stocks. Any increases in arable land use as a result of the draft Programme would increase this release.

As the climate (including temperature and rainfall patterns) changes in the future, it is likely that soils may be further degraded, as a result of both direct and indirect impacts of climate change, for example as land managers adapt their land use practices and the crops that they grow.

¹⁰⁷ Defra (2009) Safeguarding our Soils: A strategy for England [online] available at: <http://archive.defra.gov.uk/environment/quality/land/soil/documents/soil-strategy.pdf> (accessed 11/2012)

¹⁰⁸ Graves, A., Morris, J., Deeks, L., Rickson, J., Kibblewhite, M., Harris, J. and Fairwell, T. (2011) *The Total Costs of Soils Degradation in England and Wales*. Cranfield University

¹⁰⁹ Graves, A., Morris, J., Deeks, L., Rickson, J., Kibblewhite, M., Harris, J. and Fairwell, T. (2011) *The Total Costs of Soils Degradation in England and Wales*. Cranfield University

What is the effect of the draft Programme?

Soil degradation as a result of erosion by wind and water, the loss of soil organic matter and compaction, is estimated to cost the economy of England and Wales between £0.9 bn and £1.4 bn per year, with a central estimate of £1.2 bn.¹¹⁰ Furthermore, land managers do not always have the knowledge or expertise required to identify soil degradation, understand what action to take, or how to implement it. Recent evidence has suggested that average soil organic matter content has declined across all land uses in England and Wales.¹¹¹ However, other soil monitoring schemes have not found the same decline.¹¹²

Compared with the current Environment Stewardship schemes, it is likely that an increased level of priority will also need to be given to the soil and water agendas.¹¹³ The draft Programme's new environmental land management scheme (NELMS) is proposed to be a 'multi-objective scheme' contributing **directly** to the delivery of positive outcomes for soil. Priority under NELMS will be given to enhancing and protecting soil quality. The draft Programme will also be looking to provide investment for skills development in environmental topics including soil management.

Evidence has shown that for Productivity, a large proportion of the benefits (SROI¹¹⁴) are *inter alia* improvements to soil and land management practices through improvements in farm efficiency, reduced inputs and more efficient use of resources.¹¹⁵ Activities, including those around water, biodiversity and soils are proposed to be carried out with consideration of projected climate impacts and in such a way as to increase resilience to climate change. Afforestation of soils susceptible to erosion would also help reduce sedimentation and ameliorate flood risk.

Direct benefits for measures under priorities 4C, 5A, 5B, 5D and 5E and indirect benefits through priorities 4A, 4B would contribute towards effective soil management (see **Annex F** for list of draft Programme priorities).

Overall, it is considered that there are likely to be **positive effects** on soil management through reducing significant erosion risk, a focus on quantity and quality (retaining good quality top soil), crop diversification (e.g. crop rotation) and improved soil management

¹¹⁰Graves, A., Morris, J., Deeks, L. K., Rickson, J., Kibblewhite, M. G., Harris, J. A. and Farewell, T. S. 2011. The total costs of soil degradation in England and Wales. Final Report: Defra SP1606.

¹¹¹ Bellamy P. H., Loveland P. J., Bradley R. I., Lark R. M., & Kirk G. J. D. (2005) Carbon losses from all soils across England and Wales 1978–2003, *Nature*, 437, 245-248

¹¹² Defra Countryside Survey 2007. Available at: <http://www.countrysidesurvey.org.uk/outputs/soils-report-from-2007>

¹¹³ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

¹¹⁴ SROI is Social Return on Investment as developed by the New Economics Foundation and used in "An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England"

¹¹⁵ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p7. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

(e.g. management of maize crops to reduce soil erosion).¹¹⁶ It is also likely that these effects will be long lasting; particularly investment and knowledge exchange as farmers can use this to inform their long term planning.¹¹⁷

The inclusion of LEADER measures to promote and improve the overall performance and sustainability of farm enterprise should contribute to the protection and improved management of soils.

Cross-cutting effects

- **Carbon release / storage:** Greenhouse gas emissions decreased by 4% in the period 2006 – 2011. In 2011 greenhouse gas (GHG) emissions from agricultural soils and livestock were down 20% over the base year of 1990.¹¹⁸ Better soil management, including management and restoration of peatland, can contribute to climate change mitigation through enhanced CO₂ sequestration. Also, better management, including drainage of soils and reduction of compaction, can contribute towards reducing surface water run-off and associated flood risk.
- **Water quality and resources:** High levels of nitrogen and phosphorus in agricultural soils, the use of pesticides and the risk of soil erosion after cultivation increase the risk of downstream water pollution through run-off of chemicals and sediments. The Defra Impact Assessment SWOT analysis¹¹⁹ indicates that improvements in soil management and irrigation to reduce water use and the promotion of good soil management techniques could significantly reduce the need for irrigation. There is also good evidence that farmers are using fertilisers and manures more efficiently and effectively particularly on grasslands - average nitrogen application rates of nitrogen fell from 147 kg/ha in 1987 to 95 kg/ha in 2008.¹²⁰

¹¹⁶ FERA (2010) Estimating the Wildlife and Landscape Benefits of Environmental Stewardship. Available at: <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/estimatingthewildlife.pdf>. Accessed 18/2/2014.

¹¹⁷ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹¹⁸ Salisbury et al. June 2013. Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1990-2011.

¹¹⁹ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

¹²⁰ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

Soil management summary	Potential effects of Draft RDP compared with:	
Question (will the draft Programme...?)	Do minimum	Business-as-usual
<ul style="list-style-type: none"> • Help maintain the function of agricultural soil? 	+ focus on improved soil management	? level of input/targeting relative to extant RDP is unclear
<ul style="list-style-type: none"> • Encourage the retention, protection and utilisation of high quality agricultural soil? 	+ focus on improved soil management	? level of input/targeting relative to extant RDP is unclear
<ul style="list-style-type: none"> • Increase carbon storage capacity in soils and enhance organic matter content in soil? 	+ focus on improved soil management	? level of input/targeting relative to extant RDP is unclear
<ul style="list-style-type: none"> • Facilitate knowledge transfer in soil management techniques? 	+ investment in knowledge exchange	? level of input/targeting relative to extant RDP is unclear
<ul style="list-style-type: none"> • Deliver improvements in the quality of advice given to land managers, so they are better placed to recognise carbon related issues on their holdings and pursue cost-effective soil management? 	+ investment in knowledge exchange; focus on improved soil management	? level of input/targeting relative to extant RDP is unclear
<ul style="list-style-type: none"> • Provide support for innovations in soil management e.g. using agro-ecological approaches to farming? 	+ investment in knowledge exchange; focus on improved soil management	? level of input/targeting relative to extant RDP is unclear

Assessment comments:

Against the do-minimum scenario the draft programme should result in significant **positive effects** for soil management through NELMS and Productivity schemes.

Relative to the business-as-usual scenario the picture is **uncertain** due to lack of evidence in evaluations of the extant RDP.

Investments in improved soil management may lead to significant **medium – long-term positive effects** if farmers integrate this into their forward planning.

Waste

What is the scope?

The regulations governing the (broadly, non-organic) solid waste component of agricultural waste have recently changed significantly to require treatment of such waste in line with that generated by other sectors. This essentially means that farm-generated wastes are no different to any other wastes and therefore uncontrolled disposal is not an option. The landfill tax, introduced to make other disposal options more economically attractive, currently stands at £72 / tonne for active waste (as distinct from construction waste), and is due to rise by £8 to £80/tonne in 2014.¹²¹ Disposal costs are also rising due to the need to meet increasingly stringent environmental management standards.

There are two implications of this. Firstly, the cost of farm waste disposal will rise and, secondly, there may be opportunities at local level to develop new services based on waste management, particularly with respect to compostable wastes. Take-up of anaerobic digestion (AD) for farm wastes has not been as high as anticipated; as of September 2013, there were only 49 farm-fed anaerobic digestion plants operating across the UK.¹²² In terms of links with other SEA topics, waste has a particularly important inter-relationship with climate change mitigation (due to its contribution to methane gas release via biodegradation).

What is the likely evolution without the programme?

The amount of waste sent to landfill has decreased since 2008 as the landfill tax escalator increases the cost of waste disposal in landfills. It is therefore likely that this trend will continue with or without the draft Programme. There is potential for AD to increase and for increased energy from waste to be generated. While this would happen without the draft Programme, the draft Programme may be able to provide further impetus for the take-up of AD for farm wastes. Furthermore, although the AD sector is growing in general, Defra has indicated that take up in terms of agricultural wastes has been slower than for food waste. Defra held a workshop in April 2013 to look at the specific challenges for on-farm AD (particularly small-scale AD). Amongst the issues identified were that AD technology is expensive so access to finance is important. Furthermore, the structure of incentives, particularly the feed-in tariffs where reduction of incentives may hinder future growth, was also seen as significant. Defra announced in its

¹²¹ HMRC (2013) *A general guide to Landfill Tax*. Available online: http://customs.hmrc.gov.uk/channelsPortalWebApp/channelsPortalWebApp.portal?_nfpb=true&_pageLabel=pageExcise_ShowContent&propertyType=document&id=HMCE_CL_000509#P33_2997. Accessed 9/9/2013.

¹²² Latest information available at <http://biogas-info.co.uk/maps/index2.htm#>

response to the Ecosystem Markets Task Force report a range of measures to support on-farm AD. These included extending the AD Loan Fund to farm-scale AD.¹²³

What is the effect of the draft Programme?

Waste management addresses the management of waste generated on farms, waste generated through wider rural activities (reducing waste and moving up the 'waste hierarchy') and waste disposal.

The draft Programme recognises that improving efficiency in natural resource use and utilising waste products, for example the use of AD technology, are important opportunities. This link was drawn out in the CCRI evaluation of the extant RDP with a particular example in Lincolnshire cited where funding had led to improved resource efficiency, particularly relating to reductions in energy and water usage. The study went on to state that *"in most Axis 1 and 3 projects there was an expectation that **waste minimisation**, and resource efficient water recycling activities would be included"* [our emphasis]. The evidence also indicates that through the extant RDP, arable and livestock farmers are likely to experience *"greater consideration of on-farm resource... reduced input costs through improved resource use; more efficient management of on-farm resources including energy, water, air and **non-organic wastes**"* [our emphasis]. Woodland management, particularly for woodfuel production, has turned what was previously considered a waste product into woodchip, a valuable commodity that reduces demand for conventional fossil fuels and reduces waste production.¹²⁴

While the use of AD would happen without the draft Programme, there is the potential for the draft Programme to generate further impetus for the uptake of AD. Implementation of better on-farm waste management infrastructure including AD is also likely to improve odour-related issues. With regard to the draft Programme, it is considered that, as a result of increased resource efficiency and waste minimisation, less farm waste should be generated, and that waste may be increasingly used to better effect e.g. through encouraging energy from waste practices, fertiliser replacement and improved nutrient management and therefore result in an overall **positive effect**.

With regard to the wider rural economy, tonnages of waste to landfill have decreased since 2008 as the landfill tax receipts and the landfill tax escalator are increasing the cost of landfill disposal.

¹²³ Defra (2013) Realising nature's value: The Final Report of the Ecosystem Markets Task Force Government Response. Available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/236879/pb13963-government-response-emptf-report.pdf. Accessed 20/2/2014.

¹²⁴ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

Cross-cutting effects

- **Soil management:** Defra are aware that purpose grown AD crops can be prone to soil erosion. Defra will be publishing a voluntary code with industry to mitigate any **negative effects** on soil erosion and water as a result of the AD strategy.

Waste summary	Potential effects of Draft RDP compared with:	
Question (will the draft Programme...?)	Do minimum	Business-as- usual
<ul style="list-style-type: none"> • Help ensure that rural activities adhere to the waste hierarchy? 	+ focus on improving natural resource efficiency and reuse	? effect relative to extant RDP is unclear
<ul style="list-style-type: none"> • Encourage waste minimisation / reuse? 	+ provide added impetus to AD uptake	? effect relative to extant RDP is unclear
<ul style="list-style-type: none"> • Ensure the safe management of agricultural waste? 	+ will encourage improved nutrient management	? effect relative to extant RDP is unclear
<ul style="list-style-type: none"> • Encourage energy from waste practices? 	++ strong focus on anaerobic digestion	+? this is dependent on more support/finance being provided for on-farm AD
<p>Assessment comments:</p> <p>Compared to the do-minimum scenario, there are likely to be significant positive effects through resource efficiency measures and a focus on anaerobic digestion.</p> <p>Relative to the business-as-usual scenario, the situation is less clear. Generally speaking there are likely to be positive effects (at least relative to 'do minimum') on waste management practices. These could be secured over the relatively short-term with significant impacts on energy from waste taking longer to realise due to the need to secure finance, infrastructure and training, and operationalise anaerobic digestion on multiple farms.</p>		

Water management

What is the scope?

Water management (e.g. improving water quality, drought resilience and flood risk management) has significant inter-relationships with other SEA topics, in particular biodiversity and nature conservation, human health, soil management and climate change adaptation. Critically, water management and the purification and detoxification of water are 'regulating' ecosystem services delivering final goods in terms of pollution control. There is a further link between land-use and hydrology – better soil management has the potential to improve water retention in soils, slowing run-off for example. This has a bearing on water resources and flood alleviation.

Water abstraction by the agricultural sector is locally important in the context of climate change. In 2011, the recorded agricultural abstraction rate in England and Wales was 144 million cubic metres per year, 12% higher than in 2010 (although 2011 was a drought year in some parts of England).¹²⁵ This level reduced significantly in 2012 with an abstraction figure of some 74 million cubic metres abstracted for agricultural use.¹²⁶ Agriculture is likely to require water for crop irrigation during periods of low rainfall (especially for potatoes and horticultural crops),¹²⁷ when supplies are generally under greater pressure and this, in turn, increases competition with water abstraction for human consumption in urban and rural areas. In general, pressure on water supplies is greater in the South East and the East of England; however, annual agricultural water use differs from region to region (see **Figure 6.4**).

¹²⁵ Agriculture in the UK. Defra 2012

¹²⁶ Defra (2014) DA5 Water abstraction for agriculture [online] available at:

<https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

¹²⁷ Note that an ADAS study concluded that about 50% of abstracted water is used for irrigation (of which, about 50% is on potatoes). This ADAS study needs a proper reference

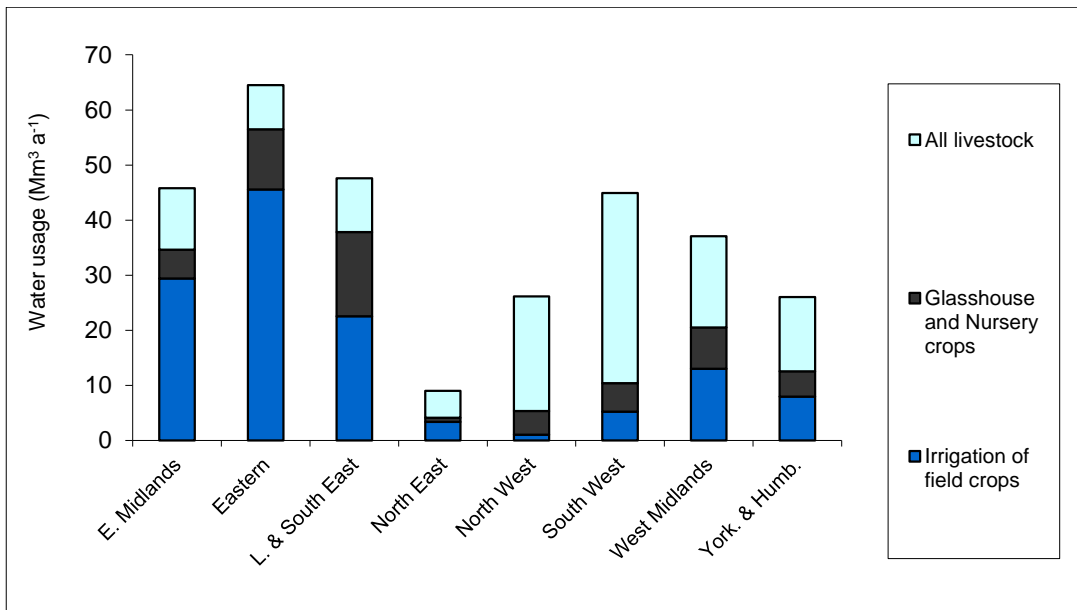


Figure 6.4: Annual water use by agriculture according to GOR regions in England ($M m^3 a^{-1}$). The proportion of the total contributed by the three largest sector categories of field irrigation, all livestock and glasshouse and nursery crops, are shown.¹²⁸

Pollution from agriculture is a key pressure on water quality, related to the run-off of fertiliser and livestock manures, faecal indicator organisms, sediment and pesticides. It has been estimated that over two thirds of nitrogen emissions¹²⁹ to surface and marine waters and one third of phosphorus emissions¹³⁰ result from agricultural activities. Biological water quality has improved steadily, if not dramatically, since 1990 with over 70% of total river length in good biological condition in 2009).¹³¹ Similarly, chemical water quality has increased from 1990 with over 80% of river length in England of good chemical quality in 2009.¹³² Biological and Chemical water quality was previously used as a guide to the level of pollution present in the water, however, government is now subject to the more challenging targets of Good Chemical and Good Ecological Status under the Water Framework Directive. Sediment from diffuse agricultural sources is also a significant contributor (over 70%).¹³³ Catchment Sensitive Farming (CSF), a joint project between the Environment Agency and Natural England funded by Defra through the

¹²⁸ King, J., Tiffin, D., Drakes, D. & Smith, K. (2006) Water Use in Agriculture: Establishing a Baseline. Available online at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=14404#Description>. Accessed 25/02/2014

¹²⁹ Lord, E.I., Hughes, G.O., Wilson, L., Gooday, R., Anthony, S.A., Curtis, C. and Simpson, G., (2008) Updating Previous Estimates of the Load and Source Apportionment of Nitrogen to Waters in the UK. Final Report for Defra Project WQ0111, 104pp

¹³⁰ P. J. White and J. P. Hammond, J.P., The Sources of Phosphorus in the Waters of Great Britain. J. Environ. Qual. 2009, 38, pp. 13-26.

¹³¹ Defra (2012) DA1 Biological quality of rivers [online] available at:

<https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

¹³² Defra (2012) DA2 Chemical quality of rivers [online] Available at:

<https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

¹³³ A. L. Collins and S. G. Anthony, Assessing the likelihood of catchments across England and Wales meeting 'good ecological status' due to sediment contributions from agricultural sources. Environmental Science and Policy 2008, 11, pp. 163-170.

extant RDP, aims to reduce pollution from farming in surface waters, groundwaters, and other aquatic habitats, both in immediate catchments and further downstream.¹³⁴ It is currently operating in priority catchments across 46% of the total utilisable agricultural area in England. Environmental Stewardship measures under the extant RDP such as buffer strips and arable reversion have also had a role to play in water management.

What is the likely evolution without the programme?

Whilst water abstraction from agriculture accounts for a relatively small proportion of England's total abstraction, it is nonetheless an important element. Levels of abstraction and agricultural activity are closely linked to climate change as all factors contribute to water scarcity. In areas such as the South East and the East of England, the availability of water for agriculture is likely to come into conflict with the availability of water for domestic use as the population and the number of households increases. This is likely to be exacerbated by any increase in the demand for food, particularly that grown in England i.e. water resources face a joint demand from an increasing population and an increasing demand for food. With or without the draft Programme, this is likely to lead to increasingly unsustainable demand for water (although changes to the abstraction regime could help mitigate this).

Similarly, the demand for food and agricultural produce, combined with soil degradation may lead to increased application of fertilisers and a corresponding increase in pollution through run-off and a consequent reduction in water quality.

What is the effect of the draft Programme?

In the draft Programme, water cuts across all areas of proposed intervention. Compared with the current Environment Stewardship schemes, an increased level of priority is given to the water agenda in the draft Programme, specifically to meeting obligations under the Water Framework Directive. There is also a statement encouraging a range of activities to improve resource efficiency and management through Productivity schemes (e.g. improved water storage, rainwater harvesting, irrigation, drainage and water recycling).

The draft Programme set out that water is the second highest priority for the NELMS (after biodiversity). The new scheme can include options designed to address water quality issues and will be able to target areas that are high risk in water quality terms, as well as those that are priority in terms of biodiversity – this is in keeping with the overall targeted approach of the draft Programme. However, it should be borne in mind that the estimated impact on air and water quality pollutants of the Mid-tier and Upper-tier new schemes is very small compared with the payment a farmer receives, leading to benefit to cost ratios very close to zero.¹³⁵ The targeting of the new scheme to priority areas

¹³⁴ Natural England (2013) *Catchment Sensitive Farming*. Available at: <https://www.gov.uk/catchment-sensitive-farming>. Accessed 9/9/2013.

¹³⁵ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

meets a recommendation to improve Environmental Stewardship “by better targeting of high risk areas, better incentivisation, and implementation at a catchment or sub-catchment scale”¹³⁶ Woodland creation (in appropriate places) can also lead to landscape and water benefits (e.g. tackling diffuse pollution through both barrier and intercept functions) depending on the siting of the woodland.¹³⁷

The Defra Impact Assessment identifies the potential for capital grants for CSF and advice that would be available where needed. The evidence indicates that CSF “has an important role in encouraging farmers to select options that benefit water quality”.¹³⁸ Prioritisation of water within NELMS should result in a **positive effect** given that the influence of the CSF went well beyond the improvements it directly funded.¹³⁹ CSF is being reviewed as part of the draft Programme to ensure that “any future scheme dovetails with the capital grants and multi-annual agreements offered under the new Programme”.

It should be noted that the FERA evaluation of the extant RDP concluded that there was little direct evidence of the benefits of Environmental Stewardship on water quality. This was largely due to the fact that the extant Programme focused primarily on biodiversity and was less targeted than the proposed draft Programme. For action to be effective in delivering improvements in water quality, the draft Programme should ensure that the right actions in the right places are supported by appropriate advice.

Productivity schemes could support water resources management and promote water efficiency, flood risk management and good nutrient management.¹⁴⁰

The SROI impact maps for Axis 1 reveal that a large proportion of benefits are derived through improvements in farm efficiency, in terms of reduced inputs (e.g. energy, nutrients) and more efficient utilisation of resources (e.g. soil and water). This should have a corresponding **positive effect** in terms of water resource efficiency and potentially reduced nutrient run-off (through the more efficient use of fertilisers) and therefore diffuse pollution.

¹³⁶ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

¹³⁷ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

¹³⁸ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

¹³⁹ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹⁴⁰ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

In an example taken from the CCRI evaluation, the view was that RDP funding “*had led to improved resource efficiency, particularly relating to reductions in energy and water usage.*” In most Growth and Productivity projects “*there was an expectation that resource efficient water recycling activities would be included.*”¹⁴¹

The evidence indicates that factors such as soil type, climate and previous cropping history can have a greater influence than management practices in determining impacts on water quality¹⁴²; hence a targeted scheme which takes into account local circumstances is likely to see improved environmental outcomes. Also, whilst NELMS has the potential to improve water quality, implementation and take-up could vary the success of schemes.¹⁴³ Overall, it is reasonable to conclude that the RDP should have a **positive effect** with regards to water management but this is subject to a **high level of uncertainty**.

Water management summary	Potential effects of Draft RDP compared with:	
	Do minimum	Business-as-usual
<ul style="list-style-type: none"> Ensure adequate water supply and quality to meet environmental and other uses as well as those of agriculture? 	+ Positive effects through water prioritisation within NELMS	+ Positive effects through water prioritisation within NELMS
<ul style="list-style-type: none"> Create businesses resilient to future water scarcity? 	+ Positive through measures on water / resource efficiency	+ Positive through measures on water / resource efficiency
<ul style="list-style-type: none"> Encourage water resource efficiency? 	+ Positive through measures on water / resource efficiency	+ Positive through measures on water / resource efficiency
<ul style="list-style-type: none"> Reduce rates of abstraction? 	+ Positive through measures on water / resource efficiency	+ Positive through measures on water / resource efficiency

¹⁴¹ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹⁴² FERA (2010) Estimating the Wildlife and Landscape Benefits of Environmental Stewardship. Available at: <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/estimatingthewildlife.pdf>. Accessed 18/2/2014.

¹⁴³ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

<ul style="list-style-type: none"> Reduce water pollution, in particular diffuse pollution? 	+ through measures to tackle pollution source, pathway and receptor	+ through measures to tackle pollution source, pathway and receptor. + through NELMS measures such as buffer strips, arable reversions to grassland etc
<ul style="list-style-type: none"> Promote better environmental practice amongst farmers and land managers? 	+ implicit through NELMS	+ implicit through NELMS
<ul style="list-style-type: none"> Reduce surface water runoff? 	+through various options	+ through various options
<ul style="list-style-type: none"> Support progress towards achievement of favourable condition in aquatic and wetland priority habitats and the species they support? 	+ indirect where reduced run-off	+ indirect where reduced run-off
<ul style="list-style-type: none"> Promotes nutrient use efficiency or the use of integrated pest management to reduce the use of Plant Protection Products (PPPs)? 	+ where goes over and above basic good practice measures	? + where goes over and above basic good practice measures

Assessment comments:

Compared against the do-minimum scenario there are likely to be **significant positive effects** over-and-above the legal minimum through their implementation of NELMS and Catchment Sensitive Farming (CSF) (and particularly through prioritisation of water within NELMS).

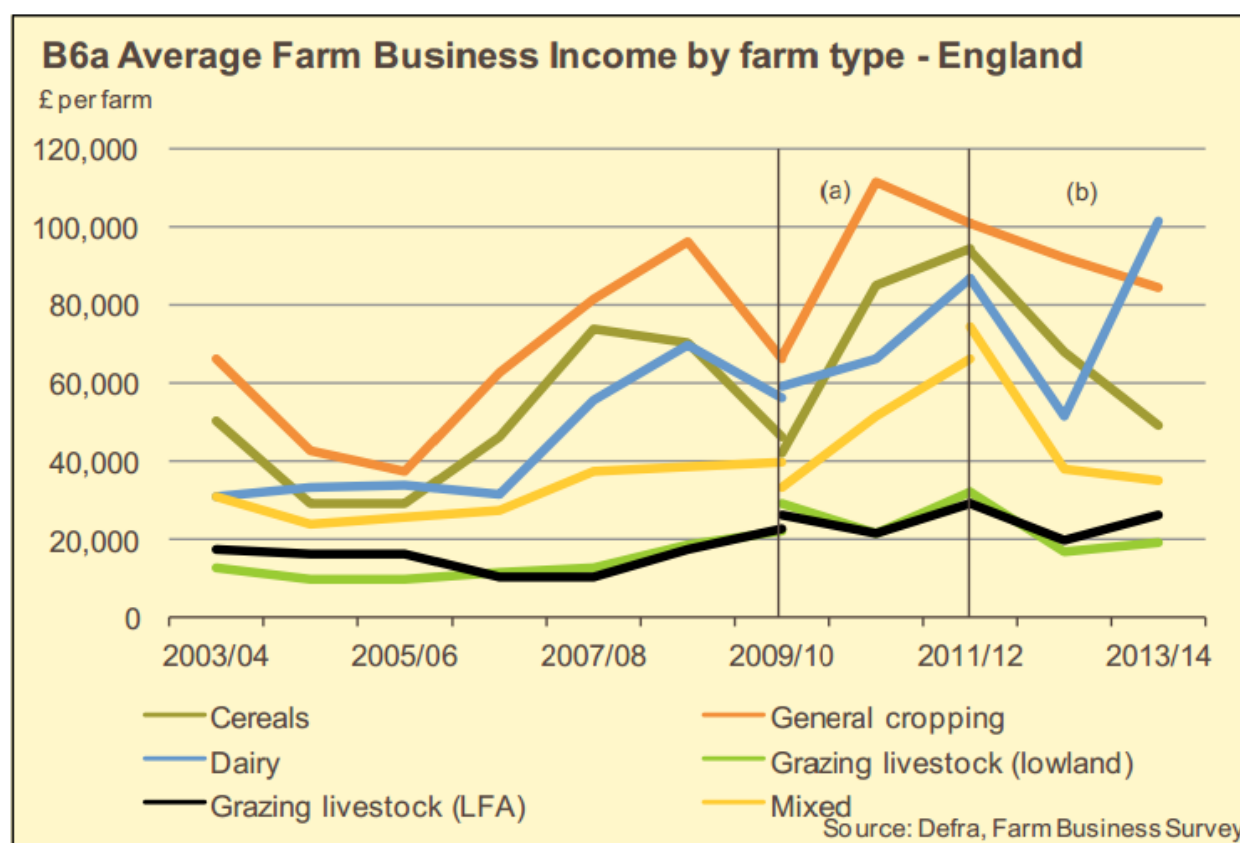
Relative to the business as usual scenario, **positive effects** are projected compared to the extant RDP through the continuation of CSF and the prioritisation of water within NELMS.

The effects predicted are in the main direct and long-term (there is a “time-lag” effect - the speed of groundwater flow can be so slow that it can take several decades to see an overall improvement in groundwater quality or in the quality of groundwater dominated streams or lakes). They are also likely to be reversible, although this is unlikely. There are likely to be **positive cumulative effects** through the inter-relationships with other SEA topics including biodiversity, woodlands, population and human health and soil management.

Rural economy

What is the scope?

Businesses in rural areas make a substantial contribution to the national economy. Gross Valued Added from Predominantly Rural Areas was £211bn in 2010 (19% of the total for England) and rural areas provide around 20% of England's employment.¹⁴⁴ Average farm business income has fluctuated since 2003/2004 with a recent reduction of about 29% in the period 2011/2012 – 2012/2013. Within this, dairy increased the most, whilst cereals decreased the most dramatically.¹⁴⁵



Notes – Years ending February

(a) From 2010/11 the threshold changed to include those farms with a standard output of $\geq 25,000\text{€}$. In addition changes were made to the classification of farms. These changes were backdated to 2009/10 and therefore earlier years are not directly comparable.

(b) Revised weighting framework separating specialist poultry meat from specialist poultry layers, backdated to 2011/12.

Figure 6.5: B6a Average Farm Business Income by farm type - England¹⁴⁶

¹⁴⁴ Defra (2013) *Rural Productivity* [online] available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/226750/Productivity_Aug2013.pdf (accessed 09/09/2013)

¹⁴⁵ Defra (2014) B6 Farm income [online] available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

¹⁴⁶ Defra (2014) B6 Farm income [online] available at: <https://www.gov.uk/government/statistical-data-sets/agri-environment-indicators>

There are a wide range of barriers and market failures in the rural economy which limit private sector investment and productivity remains lower in rural than in urban areas. One of the fundamental differences is that rural areas tend to be more distant from concentrated economic activity and associated benefits to productivity such as the capacity for knowledge transfer, 'thick' labour markets, and access to both suppliers and customers. As a consequence, in rural areas, knowledge transfer is weaker, labour and skills are more sparsely spread, and upstream and downstream markets are more difficult to access.¹⁴⁷

Market failures can also hamper the uptake of new technologies, the development of skills and generally hold back the performance of the rural economy. The rural economy has important inter-relationships with other sustainability topics, in particular tourism and countryside access, biodiversity and nature conservation, human health, landscape and cultural heritage and climate change adaptation.

What is the likely evolution without the programme?

It is likely that rural areas will continue to experience little change in productivity. Rural areas may continue their recent trend of decline in terms of the number of businesses (measured in terms of the number of businesses per 10,000 population) and urban areas may not necessarily pick up the slack. It is also likely that business start-ups will remain lower in rural than in urban areas, reflecting a more recent trend.

A key issue for the SEA will be to consider the extent to which the new RDP secures an appropriate balance between agricultural intensification and environmental protection. As such, the assessment has taken into account the latest thinking on sustainable intensification, including Defra's under the new Sustainable Intensification Research Platform.¹⁴⁸

What is the effect of the draft Programme?

The promotion of rural economic growth will be delivered through Local Enterprise Partnerships (LEPs) and LEADER local development strategies. The Growth programme will support diversification of the rural economy and provide support to non-agricultural micro/small business and tourism-related activities. Specific measures include knowledge transfer and information actions (Measure 1); advisory services, farm management and farm relief services (Measure 2); investments in physical assets (Measure 4); farm and business development (Measure 6); basic services and village renewal in rural areas (Measure 7); and co-operation (Measure 16).

A conservative approach has been taken to estimating anticipated job creation figures under the Growth programme and LEADER. It is estimated that together the Growth

¹⁴⁷ Defra (2013) Impact Assessment for the Rural Development Programme for England, 2014 to 2020. Available at: <https://consult.defra.gov.uk/agricultural-policy/cap-consultation>. Accessed 20/2/2014.

¹⁴⁸ Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/166323/Sust-Int-platform-working-paper8.pdf.pdf (accessed 1 July 2013).

Programme and LEADER will create approximately 6,500 jobs and bring 50,000 participants into training in rural areas, although the figure for participants in training is likely to be an overestimate due to data availability. It is estimated that Productivity will bring approximately 33,700 participants into training, but job creation figures are unknown at this stage. There are however **significant uncertainties around** these estimates and they should be viewed as illustrative.

In co-ordination with the Growth scheme, the new Productivity scheme will include funding support for equipment and infrastructure, training courses and the development of co-operative groups. The new Productivity scheme aims to deliver better and more effective training.

In the short term, the greatest impact in terms of improving economic activity is likely to result from small-scale support through the availability of grants/investment in equipment and infrastructure, in particular for small businesses.¹⁴⁹ The extant RDP identified the cost of administration of grants was an issue in a number of cases and a simpler set of rules for small grants would present a better approach.¹⁵⁰ Nonetheless, funding has been effective. Evidence from the Woodfuels East Programme in the East of England notes that a total of 90 micro-businesses were either assisted at start-up or supported to grow under the extant RDP which assisted not only those businesses directly but also helped develop a sustainable supply chain. In this case, co-benefits included better woodland management and improved deer control.¹⁵¹ The availability of physical assets (such as equipment) creates the additional benefit of short term effects for business start-ups and the securing of long-term farming business. Maintaining such investments streams will continue to deliver and support local business opportunities which will result in **positive effects** for economic activity and correlating **positive effects** due to the link between economic activity and health (addressing the wider causes of poor health and wellbeing – the so-called determinants of health)¹⁵².

With regard to broadband, the draft Programme Growth schemes would aim to target the 5-10% of premises in hard-to-reach locations. The Growth scheme would also support the development of small-scale renewable energy infrastructure through capital grants. The previous programme saw significant benefits accrue to local businesses through improved broadband access, more effective ICT use to market tourism, improved supplier opportunities and the promotion of niche activities.¹⁵³ ¹⁵⁴ Improved broadband

¹⁴⁹ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹⁵⁰ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹⁵¹ Sustainability East 2013. *Evaluation of Woodfuel East – Final Report*

¹⁵² Marmot, M. Fair society, healthy lives: the Marmot Review: strategic review of health inequalities in England post-2010. (2010) ISBN 9780956487001

¹⁵³ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at:

access is likely to promote competitiveness, growth and diversification and seeks to remove barriers and boost skills.

An increased and diverse tourist base should result in economic growth, increased job opportunities and stimulate further diversification and the emergence of new start-ups. This would have **positive effects** in terms of enhancing the rural economy including the number of businesses and jobs in rural areas. Small-scale renewable programmes offer opportunities for economic growth and job creation as there is significant potential for rural areas to make a meaningful contribution to renewable energy generation; however, significant up-front costs remain a barrier to their implementation which this funding measure can help to address.

The focus for investment through LEADER is on job creation and business development support focused on a variety of areas including rural services, tourism, cultural and heritage activities. The budget for LEADER under the draft Programme is expected to be similar to that under the extant RDP. Evidence of LEADER's effectiveness under the extant RDP indicates that whilst overall impacts in relation to employment and GVA are relatively modest, the benefits it creates are largely new and retained within local areas.¹⁵⁵ The Impact Assessment of LEADER reported that 55% of businesses surveyed identified financial benefits and 44% employment benefits that wouldn't have occurred without LEADER. In this regard it is likely that LEADER will continue to deliver **positive effects** in terms of supporting local economic growth; however, these are unlikely to be significantly different to those delivered under the extant RDP.

Wider business development support and training, and up-skilling of local populations should help both to improve opportunities for a more diverse rural economic base and increase opportunities to encourage young people to stay in rural areas. In particular, funding for improved broadband access and reducing the distance-to-markets through 'virtual' access should also contribute to increasing the attractiveness of rural areas for business development. A key productivity gap for rural economies is a result of distance from more concentrated economic activities and their productivity benefits. The draft Programme's bottom up approach to deliver funding in line with LEP strategies has the potential to address particular local need and build economies of scale and potentially overcome these barriers.

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹⁵⁴ Hyder Consulting, ADAS (2010) *Defra Rural Development Programme for England 2007-2013 Mid Term Evaluation, Volume One*. Available at: http://ec.europa.eu/agriculture/rurdev/countries/uk/mte-rep-uk-england_en.pdf?bcsi_scan_AB11CAA0E2721250=0&bcsi_scan_filename=mte-rep-uk-england_en.pdf.

Accessed 20/2/2014.

¹⁵⁵ ekosgen (2011) National Impact Assessment of LEADER. Impact Report – Final. Available at: <http://rdpenetwork.defra.gov.uk/assets/files/Impact%20of%20Leader/National%20Impact%20Assessment%20of%20LEADER.pdf>. Accessed 18/2/2014.

Rural economy summary	Potential effects of Draft RDP compared with:	
Question (will the draft Programme...?)	Do minimum	Business as usual
<ul style="list-style-type: none"> Ensure a vital and vibrant rural economy? 	+ rural economic growth promoted through LEADER, LEPs, Productivity and Growth schemes	~ ? LEADER funding similar to extant RDP, albeit more focused on supporting economic growth; significant reductions in growth and particularly productivity funding (by over 50%) that may be difficult to offset by improved efficiencies and targeting
<ul style="list-style-type: none"> Increase rural economic productivity? 	+ rural economic growth promoted through LEADER, LEPs, Productivity and Growth schemes	- ? reduction in productivity scheme funding by over 50% may be difficult to offset through improved targeting and efficiencies; other funding is at similar or reduced levels
<ul style="list-style-type: none"> Increase the number of businesses in rural areas, including start-ups? 	+ rural economic growth promoted through LEADER, LEPs, Growth scheme	~ ? LEADER funding similar to extant RDP, albeit more focused on supporting economic growth; growth funding supporting diversification is reduced (by 18%) but this may be offset by improved efficiencies
<ul style="list-style-type: none"> Increase or safeguard the number of jobs? 	+ rural economic growth promoted through LEADER, LEPs, Productivity scheme	~ ? no significant difference due to LEADER funding similar to extant RDP, albeit more focused on supporting economic growth and jobs; growth funding supporting diversification is reduced (by 18%) but this may

		be offset by improved efficiencies
<ul style="list-style-type: none"> • Increase renewable energy production in rural areas? 	+ support to small scale renewables is proposed	? overall level of input / support to renewables relative to extant RDP is unclear
<ul style="list-style-type: none"> • Increase the level of capital investment to rural areas? 	+ investments in physical assets through Productivity and to Growth programmes	- ? reduction in productivity scheme funding by over 50% may be difficult to offset through improved targeting and efficiencies; other funding is at similar or reduced levels
<ul style="list-style-type: none"> • Increase the competitiveness of the farming, food and drink sector? 	+ rural economic growth promoted through LEADER, LEPs, Productivity and Growth schemes	~ ? no significant difference due to LEADER funding similar to extant RDP, albeit more focused on economic growth; and significant reductions in growth and particularly productivity funding but this potentially partly offset by improved efficiencies and targeting
<ul style="list-style-type: none"> • Increase levels of innovation in the farming, food and drink sectors and within rural areas? 	+ through support for training, infrastructure, broadband	? overall level of input / support focused on innovation relative to extant RDP is unclear

Assessment comments:

Compared to the do-minimum scenario it is likely that there will be **significant positive effects** on the local economy through the Growth and Productivity schemes, in addition to the influence of funding through LEADER.

Relative to the business-as-usual scenario, the picture is **uncertain** and highly dependent on wider social and economic dynamics.

Tourism and countryside access

What is the scope?

Total spend by visitors to the natural environment in England between March 2009 and February 2012 was estimated to be £58 billion and average spend per person for those visits that involved spend was £28.¹⁵⁶ Tourism in rural areas also creates employment and opportunities for business growth where other opportunities may be limited, as well as maintaining and protecting existing jobs, supporting micro-businesses and those self-employed in rural areas. Access to the countryside can also have educational benefits for children. However, there is inequality in terms of access to the countryside, and levels of participation are lower for those aged 65 and over, the Black and Minority Ethnic (BAME) population, and those in lower paid professions.¹⁵⁷ The evidence is not clear on the barriers to access for these groups, but evidence indicates that there is more to be done through the RDP process. There are significant inter-relationships between tourism and countryside access and other topics, including biodiversity and nature conservation, human health, landscape and cultural heritage and climate change adaptation.

What is the likely evolution without the programme?

Trips to the countryside appear to be on an upwards trend. This could, in part, reflect the current economic climate and the rise of 'staycation' tourism or result from advertising and other publicity in relation to the English countryside. Either way, it can reasonably be assumed that there will be an increase in demand for tourism in rural areas and therefore increased pressure on the natural environment.

What is the effect of the draft Programme?

By targeting improvements and maintaining landscapes, the draft Programme is supporting the critical elements that underpin rural tourism. Around £20m of funding allocated to Local Enterprise Partnerships (LEPs) will support tourism activities; 20% of the LEADER budget is also allocated to supporting rural tourism.

The draft Programme SWOT analysis highlights the intrinsic link between landscape, the historic environment and tourism: *"public goods supplied by landscape and the historic environment in rural areas provide a major contribution towards the rural economy, through tourism and recreation, health and wellbeing and personal development and fulfilment."*

¹⁵⁶ Natural England (2013), 'Monitor of Engagement with the Natural Environment: The national survey on people and the natural environment', Natural England Commissioned Report NECR122.

¹⁵⁷ Natural England (2011), 'Summary of evidence: Access and Engagement', Draft for consultation Version: First draft March 2010. Reviewed February 2011, November 2011.

The draft Programme, through improving the quality of the natural and / or historic environment, can have a **positive effect** on rural tourism given that the rural economy depends to a significant extent on the quality of the natural environment.

Tourism is supported through the draft Programme under Priorities 6B and 6C (both directly) which address the need to provide support for tourism activities in rural areas and 'basic services' with a focus on access to services, broadband investment, tourism and potentially supporting renewable energy and village infrastructure projects.

The ekosgen evaluation of LEADER indicated that *"conservation, tourism and heritage projects have attracted an average of 6,665 additional visitors per project per annum to date"*.¹⁵⁸ It is unclear what the projection is for the draft Programme.

The SROI impact map reveals that a large proportion of the benefits are in the form of the following outcomes:¹⁵⁹

- *"Improved potential of the natural and built environment as a basis for economic growth (especially through recreation and tourism)*
- *Improvement in tourism service provision; more effective use of ICT in tourism marketing; development of niche markets (i.e. green tourism)."*

Cross-cutting effects

- Tourism can also help rural economies diversify and become more resilient and so support rural communities.

Improving access was one of the aims of Environmental Stewardship (ES) under the extant RDP. However, the Countryside and Rights of Way Act (CROW) in 2000 has *"reduced the need for an access element, other than educational access, within ES"*.¹⁶⁰ England also has an extensive network of public rights of way and permissive access available for a range of users. Notwithstanding this, there are still areas where there is little CROW land and/ or where there are strategic gaps in the public rights of way network.

The draft Programme identifies the opportunity to include *"support of access and education linked to appreciation and enjoyment of the natural environment."* The draft Programme includes educational access under the NELMS.

¹⁵⁸ ekosgen (2011) National Impact Assessment of LEADER. Impact Report – Final. Available at: <http://rdpenetwork.defra.gov.uk/assets/files/Impact%20of%20Leader/National%20Impact%20Assessment%20of%20LEADER.pdf>. Accessed 18/2/2014.

¹⁵⁹ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

¹⁶⁰ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

With regard to educational access, the FERA Report states that while ES educational access can be effective, there has not been a full evaluation since 2006 and the evidence available is limited (so the precise impact is unclear).¹⁶¹ The report goes on to state that *“targeting of educational access has improved since 2009”* and that *“access options have resulted in additional access to the countryside.”* The study did state also that *“ES options to increase access for the less mobile had provided a significant level of improved access on those sites taking part.”*

ES provided other benefits by providing additional countryside access and possible improvements in human physical and mental health e.g. through previously sedentary people undertaking exercise on HLS land subject to access agreements.¹⁶² However, access arrangements through HLS no longer apply on agreements in place since 2010 as these have not included payment for permissive access options.

Overall, it is reasonable to conclude that the draft Programme is likely to have **positive effects** on rural tourism through the provision of funding through LEPs, LEADER and the NELMS supporting the underpinnings of the rural tourist economy. With regard to access, it seems that good progress has been made under the extant RDP but that some of the evidence has not been integrated into the measures. For example, a recent report highlighted that *“there is still room for improvement”* and that *“issues around awareness and advertising remain an issue to ensure increased utilisation.”*¹⁶³ The report also recommend that *“there is scope for extending the availability of access to under-represented groups, namely in the 6 groups¹⁶⁴ identified by ‘Active England’.”*¹⁶⁵ The omission of access in the draft Programme runs the risk of undermining the gains which have been made.

¹⁶¹ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

¹⁶² FERA (2010) Estimating the Wildlife and Landscape Benefits of Environmental Stewardship. Available at: <http://archive.defra.gov.uk/evidence/economics/foodfarm/reports/documents/estimatingthewildlife.pdf>. Accessed 18/2/2014.

¹⁶³ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

¹⁶⁴ People on low incomes. People with disabilities. Women and girls. Black and minority ethnic (BME) groups (BME is a demographic category used to refer to people who do not define themselves as being White using the UK Census definitions). People over 45 years of age. Young people under 16 years of age.

¹⁶⁵ FERA (2013) Evidence requirements to support the design of new agri-environment schemes. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18316>. Accessed 18/2/2014.

Tourism and countryside access summary	Potential effects of Draft RDP compared with:	
Question (will the draft Programme...?)	Do minimum	Business-as-usual
<ul style="list-style-type: none"> • Enable increased access to the countryside? 	+ draft RDP includes educational access	? Good progress under extant RDP. Educational access provisions in draft Programme
<ul style="list-style-type: none"> • Maintain, diversify and increase rural tourism? 	+ direct support to tourism activities	? overall level of input / targeting relative to extant RDP is unclear from text
<ul style="list-style-type: none"> • Increase information available to the public on access routes and open spaces? 	+ draft RDP includes educational access	? overall level of input / targeting relative to extant RDP for this specific issue is unclear
<ul style="list-style-type: none"> • Enable communities to plan and manage their tourism assets? 	+ LEADER would be provided as a legal minimum	~ ? no significant difference due to LEADER funding similar to extant RDP
<ul style="list-style-type: none"> • Encourage educational visits to increase knowledge of the countryside and rural issues? 	+ LEADER would be provided as a legal minimum and educational access provide through NELMS	~ ? no significant difference due to LEADER funding similar to extant RDP. Education access included through NELMS

Assessment comments:

Compared to the do-minimum scenario there are likely to be **significant positive effects** across the SEA questions in this topic, particularly in regard to education access. Relative to the business-as-usual scenario there is a significant degree of **uncertainty**. There is the added complication of the removal of access options from HLS from 2010 (so the baseline does not include these). Either way, there is an identified opportunity to increase access to those identified by Active England (and arguably to those covered by the nine protected characteristics set out in the Equality Act 2010).¹⁶⁶

Trips to the countryside are not static but have increased year-on-year since 2010. It is likely that the proposed measures will further support rural tourism in the **long-term**

¹⁶⁶ age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex; sexual orientation.

relative to the do minimum. Impacts relative to business-as-usual and for access are more **uncertain**. However the removal of permissive access agreements in HLS since 2010 in combination with no specific public access provision in the draft RDP might create long-term accessibility issues.

Woodland

What is the scope?

The area of woodland in England at 31 March 2013 was estimated to be 1,300 thousand hectares, or 10 % of England's total land area.¹⁶⁷ The type and density of woodland vary considerably across England – overall 74% of the forest area is broadleaved but within the non-State owned component this rises to 83%. A very significant proportion of this broadleaved area, 57%, is ancient or semi-natural (priority habitats).¹⁶⁸ The high density of woodland in the South East includes large numbers of small broadleaved woods, whereas the large forests in the North East are predominantly coniferous. Woodland has important cross-cutting relevance to a number of other SEA topics. For example, woodlands are home to significant biodiversity: a quarter of all UK Biodiversity Action Plan priority species are associated with trees and woods.¹⁶⁹ Furthermore, the National Ecosystem Assessment indicated that carbon sequestration is one of the most important regulating services provided by woodlands, with the total carbon (C) stock of UK forests (including soils) around 800 megatonnes (2,900 Mt of carbon dioxide (CO₂) equivalent).¹⁷⁰ Woodlands are also highly valued by people for social and cultural services; there are approximately 250–300 million day visits to woodlands per year, but only 55% of the population has access to woods larger than 20 ha within 4 km of their home.¹⁷¹ Increasing the woodland cover across England and increasing levels of woodland management are key government aims.¹⁷²

In woodlands, a reduction in management in recent decades has led to shadier, more closed and less structurally diverse forests and has had a significant impact on the wildlife that woodlands support. Many light-loving woodland plants have declined, and

¹⁶⁷ Forestry Statistics 2013. Available online:

<http://www.forestry.gov.uk/website/forstats2013.nsf/LUContentsTop?openview&RestrictToCategory=1>. Accessed 20/2/2014.

¹⁶⁸ Ancient woodland is woodland that has been in continuous existence since 1600. Semi-natural woodland is woodland with natural characteristics (predominantly native species of trees, ground plants and animals).

¹⁶⁹ Quine, C. Cahalan, C., Hester, A., Humphrey, J., Kirby, K., Moffat, A. and Valatin, G. (2011). Woodlands In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge.

¹⁷⁰ Quine, C. Cahalan, C., Hester, A., Humphrey, J., Kirby, K., Moffat, A. and Valatin, G. (2011). Woodlands In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge.

¹⁷¹ Quine, C. Cahalan, C., Hester, A., Humphrey, J., Kirby, K., Moffat, A. and Valatin, G. (2011). Woodlands In: The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge.

¹⁷² Defra (2013) Government Forestry and Woodlands Policy Statement, Incorporating the Government's Response to the Independent Panel on Forestry's Final Report. Available online: www.gov.uk/government/publications/government-forestry-policy-statement. Accessed 20/2/2014.

three-quarters of specialist woodland plants have declined, while the few shade-tolerant plant species have tended to increase.¹⁷³

What is the likely evolution without the programme?

In the absence of intervention through the draft Programme, rates of woodland creation and woodland management are unlikely to increase in line with the government's aspirations. For example, new woodland planting has averaged 2,600 ha per year over the last few years and 2,600 in 2010/11¹⁷⁴ whereas the government estimates that an average planting rate of 5,000 hectares a year will be necessary to achieve 12% woodland cover by 2060.¹⁷⁵ With respect to woodland management, just over half of English woodlands are in active management (54%)¹⁷⁶ against a government ambition of 80%.¹⁷⁷

A number of alternative funding sources to support woodland creation are starting to develop; particularly a developing market for carbon through the Woodland Carbon Code, as well as through providing biodiversity offsets and via corporate social responsibility agendas. These, together with support under the draft Programme, will be required if the aspiration for 12% woodland cover in England is to be achieved.

What is the effect of the draft Programme?

For the draft Programme, forestry projects mainly fall into two categories: woodland creation and woodland management.

The draft Programme SWOT analysis identified opportunities (note that it should be possible to deliver a number of these benefits simultaneously) for:

- targeted *land* use change to woodland that can contribute to biodiversity enhancement, carbon sequestration, water quality, flood risk management and enhanced recreation provision.
- Enhancing the provision of ecosystem services from forestry.

¹⁷³ Draft Programme

¹⁷⁴ Smith, S., Crabtree, R., Glynn, M., Quick, T., Quine, C and Rowcroft, P. (2012) Evidence on Woodland Economy, Woodland Creation and Woodland Management in England. Final Report to the Independent Panel on Forestry. URS, London.

¹⁷⁵ Defra (2013) Government Forestry and Woodlands Policy Statement, Incorporating the Government's Response to the Independent Panel on Forestry's Final Report. Available online: www.gov.uk/government/publications/government-forestry-policy-statement. Accessed 20/2/2014.

¹⁷⁶ Forestry Commission England (2013). Corporate Plan Performance Indicators: Headline Performance Update 31 December [online] available at: [http://www.forestry.gov.uk/pdf/FCE_HEADLINE_PERFORMANCE_INDICATORS_31DEC13.pdf/\\$FILE/FCE_HEADLINE_PERFORMANCE_INDICATORS_31DEC13.pdf](http://www.forestry.gov.uk/pdf/FCE_HEADLINE_PERFORMANCE_INDICATORS_31DEC13.pdf/$FILE/FCE_HEADLINE_PERFORMANCE_INDICATORS_31DEC13.pdf)

¹⁷⁷ Defra (2013) Government Forestry and Woodlands Policy Statement, Incorporating the Government's Response to the Independent Panel on Forestry's Final Report. Available online: www.gov.uk/government/publications/government-forestry-policy-statement. Accessed 20/2/2014.

- But
 - that climate change posed the greatest threat to the ability of woodlands to continue to deliver ecosystem services.

Priorities 5D and 5E address the direct need and 4A the indirect need to support carbon sequestration through woodland management. There are also other direct (Priorities 3A, 5C and 5D) relationships between need and investment through supporting the woodland enterprise supply chain and the venison supply chain to increase the area of woodland under management and associated benefits.

The England Woodland Grant Scheme will be incorporated into the NELMS, which will include support to encourage improved woodland management, extended to address plant health issues, and woodland creation which can deliver a wide range of benefits as detailed above (biodiversity benefits may be maximised if semi-natural woodland is established).

Through Productivity measures, including establishing a venison supply chain and re-establishing a woodfuel supply chain, woodland management is anticipated to increase. The increase in the level of woodland under management should help to address the declining biodiversity values of woodlands which can result from a lack of management.

The CCRI evaluation identified that the forestry sector is one where applicants required more hand-holding through some of the application processes. The evaluation also identified that the extant RDP rules¹⁷⁸ “*constrained effective delivery of increased competitiveness in the farming, food and forestry sectors.*”¹⁷⁹ Finally, the CCRI study addressed the issue of timescales and emphasised that the forestry sector required a longer-term time horizon for intervention.

Overall, it is likely that there will be **positive effects** from the draft Programme with respect to woodland creation and management; however, the magnitude of these is **uncertain** as they will largely depend on the budgetary allocations to woodlands from Environment and Productivity.

Cross-cutting effects

It has been identified that afforestation and woodland management can contribute to biodiversity enhancement, climate change mitigation (through carbon sequestration) and adaptation (through increased flood attenuation), the uptake of pollutants through barrier and interception functions, and improved recreational opportunities.

¹⁷⁸ For example, in the forestry sector the restriction of assistance to primary production and processing was criticised as it cut off funding halfway along the supply chain and ignored the secondary processing sector, which some interviewees saw as a missed opportunity to stimulate growth in an area experiencing market failure.

¹⁷⁹ Powell, J. and Courtney, P. (2013) An assessment of the Social Return on Investment of Axes 1 and 3 of the Rural Development Programme for England, p77. CCRI, Gloucestershire. Available at: <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=18500#Description>. Accessed 20/2/2014.

Woodland summary	Potential effects of Draft RDP compared with:	
Question (will the draft Programme...?)	Do minimum	Business as usual
<ul style="list-style-type: none"> Promote a significant level of new woodland creation to support the development of a coherent and resilient ecological network targeted to deliver multiple environmental benefits (e.g. flood alleviation, improvement in water and air quality, provision of riparian shade and cooling, extension of habitats to aid species migration and the protection of soil resources)? 	+ support for afforestation, with significant wider benefits, including for biodiversity if semi-natural woodland is targeted	+ continued support for afforestation plus woodland management and supply chain development
<ul style="list-style-type: none"> Effectively encourage private woodland owners to increase levels of management? 	+ Productivity measures aim to increase area of woodland under management	? effect relative to extant RDP is uncertain
<ul style="list-style-type: none"> Promote the protection and restoration of ancient and semi-natural woodlands? 	+ woodland creation and management	? effect relative to extant RDP is uncertain
<ul style="list-style-type: none"> Effectively promote woodland access for a greater number of people? 	? uncertain	? effect relative to extant RDP is uncertain

Assessment comments: Comparing against the do-minimum scenario there are likely to be **significant positive effects** across all the SEA questions for this topic. However, it is still unlikely that the government will reach the 12% indicative target for woodland; however, it has always been maintained that this could not be delivered through the RDP alone.

Relative to the business-as-usual scenario, it is likely that there would be **positive effects** on woodland creation and management, however the magnitude is **uncertain** and the full benefits would only be realised in the **medium to long term**. Effects could be temporary e.g. woodlands can be clear felled in some circumstances.

Chapter 7: Conclusions and ‘what happens next?’

This section provides some overall conclusions on the likely effects of the draft Programme and sets out the next steps in the development of the Rural Development Programme and the accompanying SEA process. This section also sets out some potential measures, identified in light of the SEA, for monitoring the significant effects of the draft programme.

Conclusion

Overall, the draft Programme is likely to result in a range of **significant positive effects** against the do-minimum scenario. This is to be expected given that the do-minimum scenario sets a ‘low’ baseline. Even so, the potential exists for a small number of **negative effects** relating to air quality and landscape and cultural heritage – how these might be monitored is covered in more detail in **Table 7.2**.

The effects of the draft Programme when assessed against the business-as-usual scenario are not so clear. In this aspect of the assessment, the draft Programme is likely to have minor **positive effects** on the environment. There are again, two areas of potential **negative effects**, air quality and landscape. There are a range of unknown effects identified and there are a number of areas for further investigation or monitoring that have been suggested (see **Tables 7.1** and **7.2**). Monitoring actions should also be undertaken to understand the links between actual spend and subsequent effects on the environment.

In many ways, the draft Programme can be seen as a mitigation strategy for ameliorating the impacts of agricultural production and wider activity in the rural economy on the environment, i.e. it endeavours to address the adverse environmental effects associated with Pillar 1. In this regard it is worth providing some commentary on the proposed ‘Greening’ under Pillar 1.

From 2015, the Basic Payment made to farmers under Pillar 1 will, for the first time, include an element (30%) conditional upon meeting three Greening requirements. These requirements are: (i) crop diversification (ii) the protection of permanent grassland; and (iii) the need for 5% of arable land to be maintained as Ecological Focus Areas. All claimants are required to meet these requirements, although there are a number of exemptions. The environmental benefits of the Greening measures are expected to be relatively low, but widespread, and Greening will now provide the baseline in terms of anticipated environmental practice on farms. At the same time, negotiating of new Entry Level Stewardship agreements will cease and Greening under Pillar 1 will deliver environmental measures on farms across the country. In the future, Defra's approach to the natural environment will be a combination of the compulsory Greening measures and a much more targeted Rural Development Programme through the NELMS, together with any voluntary measures which farmers may take to fill the space in between.

There is a need therefore to monitor the effects of 'Greening' in order to determine if it provides suitable environmental improvements in the absence of ELS.

Trans-boundary effects

The SEA Regulations require the assessment to assess the potential for trans-boundary effects. These are between member sites and administrative areas.

We consider that there are two potential topics with the potential for trans-boundary effects. We have set out these areas and a discussion of effects below.

- **Air Quality** – It is recognised that ammonia emissions are a trans-boundary issue under the Gothenburg Protocol. Any change in the concentration of emission of this may be a concern for neighbouring areas. The assessment concluded that for ammonia, it is likely that the draft Programme will have a positive effect i.e. it will promote reductions in ammonia. Further, the other pollutants (PM and NO₂) are considered to be locally relevant but not regionally or international relevant. We are not of the view that any trans-boundary effects would occur.
- **Biodiversity flora and fauna** – the Natura 2000 network is made up of a trans-European set of protected areas. Supporting these areas would help support the network. The provision of a Mid-tier support including addressing fragmentation and landscape scale interventions should provide a robust support for these protected sites. Whilst not significant, it could be supportive in terms of the broader Natura 2000 network.
- **Climate change** is a truly trans-boundary issue. The draft Programme is estimated to result in 10.2 – 11 million tonnes of carbon savings and is considered to have a positive trans-boundary effect i.e. it will reduce carbon

Recommendations

There were no **significant negative effects** identified in the assessment. However, there were a number of potential **negative effects**, **uncertain** conclusions and areas identified for improvement in finalising the draft Programme. These have been highlighted below.

Table 7.1: Recommendations from the assessment

Topic	Recommendations	Response	Evaluation question / EC indicator cross check
Biodiversity and nature conservation	1. Investigate the effect of Pillar 1 Greening on the aspects of the natural environment also affected by the draft Programme (e.g. what overall cumulative effect will the combination of Greening and the draft Programme have on the natural environment and how does it compare with the Entry Level Environmental Stewardship?)	Defra will evaluate the impact of Pillar 1 Greening on the natural environment during the programming period	N/A
Population and human health	2. Investigate the link between young farmers undertaking training and the proportion that stay in farming.	As part of the new Programme's evaluation plan Defra will evaluate support delivered under Pillar 2 for young farmers and new entrants	C22 'Farm labour force' C23 'Age structure of farm managers' R3 'percentage of agricultural holdings with RDP supported business development plan/investments for young farmers (focus area 2B)'

			<p>T5 'R3 'percentage of agricultural holdings with RDP supported business development plan/investments for young farmers (focus area 2B)'</p> <p>Priority 1(3) 'To what extent have RDP interventions supported lifelong learning and vocational training in the agriculture and forestry sectors?'</p> <p>Priority 2 (5) 'To what extent have RDP interventions supported the entry of adequately skilled farmers into the agricultural sector and in particular, generational renewal?'</p>
<p>Tourism and countryside access</p>	<p>3. Extend the accessibility of access to under-represented groups.</p> <p>4. In order to address the lack of specific access options in the new</p>	<p>Defra will consider accessibility as part of the criteria for any access projects funded under the programme.</p>	<p>N/A</p>

	<p>Environment scheme it is recommended that the scheme be developed in a way that rewards those who offer new or upgraded access for no payment, particularly where that access enhances access for the six groups identified by Active England and the nine protected characteristics in the Equalities Act 2010.</p>	<p>Defra will consider how it might assess proposals on a value for money basis if access is a part of the offer proposed by beneficiaries</p> <p>Defra will undertake further analysis which will look at the impact of funding for access under the programme</p>	
Woodland	<p>5. Further research into the non-RDP drivers required to meet the 12% woodland cover target.</p>	<p>Defra will undertake further analysis which will look at non-RDP drivers for increasing woodland cover during the programming period</p>	<p>C29. Forest and other wooded land (FOWL).</p> <p>R6: percentage of forest or other wooded areas under management contracts supporting biodiversity (focus area 4A)</p> <p>T8: percentage of forest/other wooded area under management contracts supporting biodiversity (focus area 4A)</p>
All	<p>6. Cross-cutting synergies should be maximised, possibly using a matrix scoring approach for</p>	<p>Defra is developing a scoring matrix for funding and will look to maximise</p>	N/A

	funding	cross cutting synergies through the Environment scheme and across the programme	
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Monitoring

Table 7.2: Monitoring measures

Defra will be undertaking wider monitoring and evaluation across the programme, including collating a suite of agreed indicators at EU level. They are also developing a more detailed Evaluation Plan to evaluate the programme further. Below is a list of recommendations on monitoring as a result of the analysis undertaken for the Environmental Report.

Topic	Significant effect identified	Monitoring measure	Responsible organisation	Evaluation question / EC indicator cross check
Air quality	1. Potential negative effects on local air quality in rural towns and villages.	PM and NO ₂ monitoring in rural towns / villages. Identification of potential 'pinch points'.	Defra	R18: Reduced emissions of methane and nitrous oxide (focus area 5D)* R19: Reduced ammonia emissions (focus area 5D)* T17: LU concerned by investments in live-stock

				<p>management in view of reducing GHG and/or ammonia emissions (focus area 5D)</p> <p>T18: percentage of agricultural land under management contracts targeting reduction of GHG and/or ammonia emissions (focus area 5D)</p> <p>Priority 5 (4) To what extent have RDP interventions contributed to reducing GHG and ammonia emissions from agriculture?</p>
Biodiversity	2. Unknown effects of woodland creation and management on woodland bird populations.	Monitor the effect of woodland creation and management elements of the draft	Defra	N/A

		Programme to establish the relationship to woodland bird populations.		
Soil management	3. Recommendation from the Environment Agency based on lack of evaluation of the extant programme.	To be agreed	Defra	<p>C41. Soil organic matter in arable land*</p> <p>C42. Soil erosion by water*</p> <p>R10: percentage of agricultural land under management contracts to improve soil management and/or prevent soil erosion (Focus area 4C)</p> <p>R11: percentage of forestry land under management contracts to improve soil management and/or prevent soil erosion (focus area</p>

				<p>4C)</p> <p>T12: percentage of agricultural land under managemen t contracts to improve soil managemen t and/or prevent soil erosion (focus area 4C)</p> <p>T13: percentage of forestry land under managemen t contracts to improve soil managemen t and/or prevent soil erosion (focus area 4C)</p> <p>P5 (O.5) Agricultural land under managemen t contracts contributing to biodiversity (focus area 4A) + improving water managemen</p>
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				<p>t (focus area 4B) + improving soil management and/preventing soil erosion (focus area 4C)</p> <p>Priority 4 (10) To what extent have RDP interventions supported the prevention of soil erosion and improvement of soil management?</p>
Tourism and countryside access	4. Unknown effects of support for access to under-represented groups	Monitor the provision of access for the six groups identified by Active England across the draft Programme to determine take up and impact across RDP funding. Also, extend this to include the nine protected characteristics in the Equalities Act	Defra	N/A

		2010.		
Landscape and cultural heritage	<p>5. Potential negative effects on the landscape through intensification of rural activities.</p> <p>6. Potential negative effects on cultural heritage</p>	<p>Evaluate the change on National Character Areas of the implementation of the draft Programme.</p> <p>Evaluate the effect changes in landscape character have on rural tourism</p> <p>Evaluate the effects of the draft Programme on cultural heritage assets.</p>	Defra	N/A
Ecosystem services	7. The effect of the RDP on ecosystem services is difficult to determine at this stage	Monitor the effects of the RDP on natural capital and the flow of ecosystem services.	Defra	N/A

Annex A: Regulatory Requirements

Annex 1

The report must include...

(a) an outline of the contents, main objectives of the programme and relationship with other relevant plans and programmes;
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the programme
(c) the environmental characteristics of areas likely to be significantly affected;
(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;
(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the programme and the way those objectives and any environmental considerations have been taken into account during its preparation;
(f) the likely significant effects on the environment including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the programme;
(h) an outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information
(i) a description of the measures envisaged concerning monitoring.

Interpretation of Annex I

The report must include...

An outline of the contents, main objectives of the programme and relationship with other relevant plans and programmes	i.e. answer - What's the Programme seeking to achieve?	i.e. answer - What's the scope of the SEA?
Any existing environmental problems which are relevant to the programme including, in particular, those relating to any areas of a particular environmental importance	i.e. answer - What's the 'context'?	
The relevant environmental protection objectives, established at international or national level	i.e. answer - What's the 'baseline'?	
The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the programme'		
The environmental characteristics of areas likely to be significantly affected	i.e. answer - What are the key issues & objectives?	
Any existing environmental problems which are relevant to the programme including, in particular, those relating to any areas of a particular environmental importance		
Key environmental problems / issues and objectives that should be a focus of assessment		
An outline of the reasons for selecting the alternatives dealt with (i.e. an explanation of the 'reasonableness of the approach)	i.e. answer - What has Programme-making / SEA involved up to this point?	
The likely significant effects associated with alternatives, including on issues such as...		
... and an outline of the reasons for selecting the preferred approach in light of the alternatives considered / a description of how environmental objectives and considerations are reflected in the draft programme.		
The likely significant effects associated with the draft programme	i.e. answer - What are the assessment findings at this current stage?	
The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects of implementing the draft programme		
A description of the measures envisaged concerning monitoring	i.e. answer - What happens next?	

Annex B: Ex-ante SEA checklist

As part of the Ex-Ante review of the RDPE and its SEA, LUC has reviewed the current draft SEA Report being prepared by URS, against the requirements of the SEA Directive (which have been transposed into UK law by the SEA Regulations 2004). **Table AB1** below refers to the relevant sections of the draft SEA Report that are considered to have addressed the SEA Directive requirements.

Table AB1: Requirements of the SEA Directive and relevant Sections of the URS draft SEA Report for the draft RDPE 2014-2020 that address these requirements

SEA Directive Requirements	Covered in Final SEA Report ?
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated. The information to be given is listed below (Art. 5 and Annex I):	
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes;	Chapter 1 outlines the contents and main objectives of the draft RDPE. Chapter 2 outlines its relationship with other relevant plans and programmes.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Chapter 3 describes how the environmental baseline has been established, and the concept of likely evolution of the environment without the RDPE, based on an absolute minimum that meets the legal obligation to have a Rural Development Programme and for 30% of the funds drawn from the EU to be spent on environment and land management measures. Chapter 4 summarises the relevant aspects of the current state of the environment and in terms of the likely evolution of the current state of the environment on the basis of the absolute minimum that might be programmed.
c) The environmental characteristics of areas likely to be significantly affected;	Chapter 4 describes the environmental characteristics of areas likely to be significantly affected by the RDPE, i.e. the rural areas of England.
d) Any existing environmental problems which are relevant to the plan or programme including, in particular,	Chapter 4 summarises in the table at the end of the chapter the key environmental issues to be considered in the SEA,

SEA Directive Requirements	Covered in Final SEA Report ?
<p>those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.;</p>	<p>alongside the relevant SEA topics and assessment questions, which form the SEA framework.</p>
<p>e) The environmental protection, objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation;</p>	<p>International and national environmental protection objectives were presented under each of the SEA Topic chapters in the SEA Scoping Report prepared by URS (October 2013), and informed the SEA Framework assessment questions, which are in Chapter 4 of the SEA Report.</p>
<p>f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects);</p>	<p>Likely effects on the 12 environmental topics scoped in to the assessment are predicted and described in Chapters 4 and 5. Positive and negative effects are described in Chapter 4 and 5, and summary boxes for each SEA topic in Chapter 5 state whether effects are likely to be short/medium/long term, and permanent/temporary. The potential for cumulative effects is also identified. Potential trans-boundary effects have also been identified and discussed in Chapter 6.</p>
<p>g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;</p>	<p>No significant negative effects have been identified from the RDPE, therefore there is not much discussion needed of measures to prevent or reduce these effects within Chapters 4 and 5. Indeed, many of the effects of the RDPE are predicted as having positive effects and mitigating currently occurring negative trends. However, some recommendations for enhancing the RDPE are made in Chapter 6.</p>
<p>h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken</p>	<p>Chapter 4 includes an outline of the reasons for selecting the eight potential scenarios with different levels of funding transfer from Pillar 1 to Pillar 2 of the CAP,</p>

SEA Directive Requirements	Covered in Final SEA Report ?
<p>including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;</p>	<p>which were the alternatives dealt with as part of the consultation on the implementation of CAP reform in England and therefore the development of the RDPE. It also includes the findings of the assessment of these eight scenarios and Defra's Preferred Option against the SEA topics.</p> <p>Chapter 3 describes the assessment method, including difficulties encountered such as accurate prediction of effects when the RDPE is a high level document that does not set out spatial policies. Annex D lists five over-arching assumptions that the SEA has made in predicting effects.</p>
<p>i) a description of measures envisaged concerning monitoring in accordance with Art. 10;</p>	<p>Chapter 6 Conclusions and Monitoring includes one recommendation for monitoring relating to potential negative effects identified on local air quality in rural towns/villages.</p>
<p>j) a non-technical summary of the information provided under the above headings</p>	<p>Please see separate non-technical summary</p>
<p>The report shall include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Art. 5.2)</p>	
<p>Consultation:</p> <ul style="list-style-type: none"> • authorities with environmental responsibility, when deciding on the scope and level of detail of the information which must be included in the environmental report (Art. 5.4) 	<p>Consultation was undertaken on the SEA Scoping Report between October-December 2013. Annex C summarises the statutory environmental bodies' consultation comments and explains that amendments to the scope of the assessment have been made accordingly. A tracked change version of the Scoping Report has also been prepared, and Chapter 3 states that where applicable, the Environmental Report reflects the comments received (e.g. Table 3.2 presents the revised SEA Framework).</p>
<ul style="list-style-type: none"> • authorities with environmental responsibility and the public, shall be 	<p>The SEA Report will be made available alongside the draft RDPE consultation in</p>

SEA Directive Requirements	Covered in Final SEA Report ?
<p>given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Art. 6.1, 6.2)</p>	<p>Feb-March 2014.</p>
<ul style="list-style-type: none"> other EU Member States, where the implementation of the plan or programme is likely to have significant effects on the environment of that country (Art. 7). 	<p>Not required, as no significant trans-boundary effects have been identified in the SEA Report.</p>
<p>Taking the environmental report and the results of the consultations into account in decision-making (Art. 8)</p>	
<p>Provision of information on the decision: When the plan or programme is adopted, the public and any countries consulted under Art.7 must be informed and the following made available to those so informed:</p> <ul style="list-style-type: none"> the plan or programme as adopted a statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report of Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Art. 7 have been taken into account in accordance with Art. 8, and the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and the measures decided concerning monitoring (Art. 9) 	<p>To be completed following adoption of the RDPE 2014-2020.</p>
<p>Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10)</p>	<p>To be completed following adoption of the RDPE 2014-2020.</p>

Annex C: Scoping Report/Environmental Report consultation response summary.

Scoping Report

1 – Are there other policies, plans and strategies or relevant legislation or regulation that you feel may be relevant to the SEA of the Rural Development Programme?

Consultation responses requested that the following policies, plans, strategies and legislation were added to the Scoping Report or given greater emphasis:

- Biodiversity 2020; particularly the priority action for air pollution;
- The Birds and Habitats Directives, and domestic legislation such as the Wildlife and Countryside Act and Natural Environment and Rural Communities (NERC) Act;
- Strategic Goal C of the Aichi Biodiversity Targets;
- The Nitrates Directive;
- Open Habitats Policy and 'Keepers of Time: a statement of policy for England's ancient & native woodland';
- The 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage;
- The full recommendations of the Lawton Review;
- The National Emissions Ceiling Directive;
- The Renewable Energy Directive;
- The Natural Environment White Paper;
- The EU and UK Forest Strategy;
- The Climate Change Risk Assessment; and
- National Character Areas.

2 – Do you agree that the key environmental issues affecting rural England that are relevant to the Rural Development Programme have been identified? If not, are there others which you think should be included?

In terms of air quality, consultation responses indicated that there was a need to focus on ammonia and other agricultural air pollutants as these are the most relevant air quality issues for the RDPE. Natural England identified intensive pig and poultry units as the most significant contributors of such air pollution. Natural England requested that the impacts of air quality on the favourable conservation status of Annex I Habitats (under the Habitats Directive) be given greater consideration.

Biodiversity and nature conservation is seen as a cross-cutting issue across all chapters. Comments requested that the focus was widened from farmland birds to include wider biodiversity including other birds and taxon groups. Given the importance of pollinators to agriculture and nature conservation they should be given greater consideration in the SEA.

Effects on other habitats beyond SSSIs and Priority Habitats should also be taken into account, including evidence of where and why habitat loss and degradation was occurring. Semi-natural grassland provides a good example of a habitat that has suffered losses and declines in condition as a consequence of agricultural intensification. Natural England stated that there is a need to target agri-environment schemes and also operate at a landscape scale.

Consultation comments for climate change mitigation supported nutrient efficiency measures and the reduced use of animal manures. The NFU questioned the assertion that urea use was increasing in agriculture and affecting ammonia emissions. Methane and NO_x are key agricultural pollutants and there is considerable scope for agriculture to improve its resource efficiency. There is a recognised need to take into account the role of exporting agricultural production and emissions; and to include greater consideration of the carbon storage and sequestration roles of soils and vegetation.

In terms of climate change adaptation, there is a need to address the distinction between economic and environmental climate change adaptation. Natural England requested greater emphasis on the benefits of adaptation effort for environmental and economic resilience in rural areas. Peat has an important role in climate change adaptation through the ecosystem services it provides.

Consultees considered that the focus of the landscape and cultural heritage section was too heavy on designated landscapes, and that there is also a need to consider landscape impacts in non-designated areas. National Character Area Mapping is an opportunity to do this. There are considerable linkages from this topic to tourism, the rural economy, and population and human health. English Heritage supplied separate topic papers on 'The Historic Environment in the Rural Development Programme 2014-2020' and 'The Contribution of Heritage to Rural Economies'.

For soil, there is a need to address the impact that different agricultural practices can have on soil management, in addition to the impacts this can have on water pollution and greenhouse gas emissions. Natural England argued that the SEA should focus on the evidence of the economic benefits of soil management and improved quality; and the benefits that organic farming can have on soil management.

Diffuse pollution is by some way the largest problem relating to agriculture and water quality, and this should be explicitly recognised in the SEA. The impact of pesticides on water quality was not considered to be addressed sufficiently; nor the role of agriculture on river and watercourse morphology. Natural England argued that the impact of land drainage on water-dependent habitats needed to be added as a key issue; and water abstraction and quality key issues needed to be amended to reflect the negative environmental impacts of over-abstraction and pollution. The Environment Agency argued that despite washing down of areas and hygiene, especially in the dairy sector, and fruit and vegetable washing and processing, agriculture is a significant (but not the main) cause of water pollution.

In terms of the rural economy, there was a need to acknowledge that sustainable intensification is necessary to meet demand for food whilst protecting against environmental decline. Access to green spaces and wider environment has interrelationships with other topics such as population and human health, tourism and countryside access and the rural economy.

For woodland, the Environment Agency requested that the Scoping Report should include the addition of the potentially significant benefits of woodland management for reducing diffuse pollution, and the importance of restoring and recreating open habitats such as heathland, wetland and moorland from plantation forestry.

3 – Do you agree that the draft SEA objectives put forward provide an appropriate framework for assessing the environmental effects of the Rural Development Programme?

General feedback on the SEA Objectives and Framework was that the SEA Framework was broad, and would benefit from being made more specific and could be improved. The Environment Agency argued that flood risk should be given its own specific objective set; however increasing flood risk is considered to be an issue concerned with climate change adaptation. The NFU in particular was supportive of the selection of topics as it would lead to a 'more balanced assessment' across other social and economic issues. Specific comments on objectives and sub-objectives are considered below under question 4.

4 – Are the number, focus and level of detail of the proposed objectives and sub-objectives appropriate and proportionate given the aims, geographical scope and likely influence of the Rural Development Programme?

In terms of air and emissions, the NFU raised questions of the ability of the RDP to influence transport patterns and the more 'urban' forms of air pollution (PM₁₀, PM_{2.5} and NO₂); however the RDP is considered to affect travel movements for tourists and wider business, as well as transporting goods to market. English Heritage requested, under 'tourism and countryside access', to include questions to take into account active travel.

For biodiversity it was requested to expand the scope of assessment to include other priority species to farmland birds, and wider biodiversity and habitats including Section 41 of the NERC Act. The need to create a coherent and resilient ecological network was raised. Another question was requested to consider the RDPs influence on improving the resilience of wildlife, habitats and ecosystems to climate change; and the risk of deterioration and failure to meet restoration requirements for SSSIs and Natura 2000 sites.

For climate change mitigation; specific questions were suggested to assess the RDP's ability to reduce net emissions of greenhouse gases; increase land-based carbon sequestration; and the air quality impacts of increased anaerobic digestion.

The NFU argued that it was not necessary to include energy efficiency in the SEA Framework; however English Heritage believed that it should be included and expanded to resource efficiency. The Environment Agency concurred with this, requesting that a question was included to consider nutrient use efficiency and to reduce the use of Plant Protection Products (PPPs).

In terms of climate change adaptation, English Heritage requested that there be greater consideration of the need to ensure resilience for ecological networks to the effects of a changing climate. The Environment Agency requested that the scope of the questions were widened to include greater recognition of the climate change adaptation risks to agriculture as well.

For soil, an additional question was requested to take into account organic farming.

Consultees specified that the availability of water was also included under 'water management'; as well as the impacts of water management on other environmental and non-agricultural uses, habitats and species.

In terms of woodland, consultees (including English Heritage) requested that a question to be added for the RDPE to promote a significant level of new woodland creation to support the development of a coherent and resilient ecological network; targeted to deliver multiple environmental benefits.

5 – Do you agree with the broad approach outlined above for considering reasonable alternatives?

Comments were received relating to the assessment of ‘cumulative effects’ across topics. English Heritage were concerned that by considering topics separately in ‘rigid areas of assessment’ that cumulative effects may be missed. The Environment Agency said that more should be said at this stage on the methodology for assessing cumulative and synergistic effects assessment which could follow, for example the approach recommended in the Government (ODPM) guidance on SEA.

It is considered that the methodology section of the Scoping Report explains how cumulative and synergistic effects, meeting the requirements of the SEA Regulations, will be taken into account.

6 – Do you agree with integrating elements of an ecosystem services approach where appropriate as part of the SEA methodology?

Feedback on Ecosystem Services (ES) was mixed. The NFU stated that taking an ES approach limits the topics that can be addressed, and does not address the majority of on-farm mitigation measures associated with improving productivity and so reducing GHG intensity’. The NFU also however stated that ‘the NFU support the ES approach and the idea of putting values on them’.

The RSPB cautioned that the identification of a priority as an ecosystem service does not necessarily justify that public money should be used to secure the service; and recognised that the role of the RDP will be ‘highly variable’ in securing the provision of the services identified in the Scoping Report.

Environmental Report

1 - With regard to ‘reasonable alternatives’; are there further reasonable alternatives, given the geographic scope, objectives, powers and the time period over which the programme extends?

Generally speaking, respondents were content that the breadth of the alternatives considered was adequate. Indeed, this is reinforced through the fact that no further alternatives were suggested for assessment in the Environmental Report.

2 - Are there any significant effects (positive and negative) that haven't been identified (please provide evidence).

With regard to significant effects, again, generally speaking respondents were content that the assessment had identified the relevant significant effects. There were a small number of exceptions to this, for example, English Heritage did *“not feel that the positive benefits of the current programme and Environmental Stewardship – principally for example the progress that it has made in removing sites from the Heritage At Risk*

Register (Heritage at Risk is a national statistic and English Heritage has a KPI set by the DCMS which relates to the number of such sites removed from the Register) – have been given sufficient weight or been adequately factored into the baseline for the assessment.” This point, and the follow-up point with regard to the assessment have been addressed in this updated report.

In terms of the ‘balance’ of the assessment, there was a concern that the economic and social benefits to the environment were not given due consideration. Article 1 of the SEA Directive indicates that the main objective of the legislation is for, *inter alia* “...a high level of protection of the environment...”. This being the case, the assessment is environmentally focused but draws upon a range of economic and social based evaluations and assessments in drawing conclusions.

3 - Is there any further evidence that should be considered in finalising the assessment?

There were a number of recommendations that the Cross-compliance framework be considered in the assessment. A text box has been added to reflect the status and consideration of this. The Environmental Report has been updated to reflect further evidence provided such as Defra’s agri-environment indicators and data on soil compaction, as identified by the Environment Agency.

How the comments have been taken into account

Amendments to the Environmental Report have been made in order to address the comments outlined from the consultation feedback. A ‘tracked changes’ version of the Environmental Report is available on request.

Annex D: Assessment assumptions

1. **The cross cutting focus of RDP, particularly for themes** - it is assumed that LEADER and Growth, with other EU Structural Funds should assist in the delivery of multiple benefits (environmentally, socially and economically) which will positively contribute to increasing the total impact of the schemes.
2. **RDP will deliver an increase in jobs and growth** - ergo it inherently should perform positively across the schemes for topics focused on rural economies and communities.
3. **There are no diminishing returns** with respect to RDP investment and there is an implicit assumption that the draft Programme will be at least as effective as the current programme.
4. **The focus of the SEA should look at the previous RDP evaluations (where possible)** - to see where the failings were. It can then be determined whether the new, more spatially focused RDP addresses any failings.
5. **The RDPE will save 10.2-11m tonnes CO₂** - ergo it inherently should perform positively across the schemes for the climate change mitigation topic.

Annex E: Performance of the extant RDP

There are a number of evaluation reports which analysis the performance of the extant RDP. These provide a useful benchmark against which the draft Programme can be assessed. We have provided summaries of these studies per intervention area below.

Environment¹⁸⁰

This study sought to assess the value of the wildlife, landscape and carbon benefits of ES (ELS and HLS) in England. It appraised ES on the basis of its assumed full implementation in 2013 relative to the counterfactual (based on forward projections of current agricultural policy without ES). An assessment of impacts on wildlife numbers/diversity and landscape appearance was used to provide information for a questionnaire survey to ascertain the public's willingness-to-pay (WTP) for ES.

Seventy six per cent of respondents stated a positive willing to pay (WTP) for ES as a whole (ELS and HLS). A conservative estimate of WTP for ES indicates that the average household in England is willing to pay £26.09 per year for ES as a whole, for the uptake of ES in 2013. Economic theory dictates that the number of households WTP a higher tax amount for ES should strictly decline as the tax price increases. Constraining the distribution of WTP responses to conform to this economic proposition produced a mean WTP per household per year of £22.41 for ES.

A cost-benefit analysis of ES in England included wildlife and landscape benefits of ES, plus carbon emissions mitigation.¹⁸¹ Based on only assessing perceived wildlife and landscape benefits, all the Benefit/Cost (B/C) ratios exceeded 1.0 except for the HLS scheme 'low' benefits case which was 0.99. The perceived benefits of ELS exceeded those of HLS; and, because costs of ELS are also lower than those for HLS, this produced a higher benefit/cost (B/C) ratio for ELS compared to HLS (1.32-3.09 compared to 0.99-2.33). The inclusion of gross carbon benefits results in higher B/C ratios for both ELS and HLS. Because more carbon savings occur in HLS than ELS, the inclusion of carbon results in a higher B/C ratio for HLS than ELS (1.87-3.20 compared to 1.57-3.34).

The survey results and analysis also indicated that in the trade-off between ELS and a proposed Enhanced ELS (EELS), there was a balance in utility towards ELS. This suggests that if ELS was replaced with an EELS scheme, then benefits to society would be lower than those with the existing ELS scheme. This assumes that total expenditure would remain constant, with payments to farmers increasing to an average of £60 per ha in EELS, but with half the number of hectares in the EELS option compared to the ELS.

¹⁸⁰ The Food and Environment Research Agency. 2010. Estimating the wildlife and landscape benefits of environmental stewardship. Final report. July 2010.

¹⁸¹ These carbon savings are likely to be an over-estimate as they do not account for any displacement effect in agricultural production.

Productivity and Growth¹⁸²

According to the SORI Impact Map, the ratio for 'Axis 1' evaluative impacts suggests that for every £1 of public money invested in projects, there is a return of £2.37. However the rate of return for total investment (public and private money), stands lower at £1.03. The impact map reflected the largest returns in investment on training and advice to enhance knowledge and skills. This helped to improve farm sustainability and resource efficiency. The benefits from Axis 1 are in the form of the following outcomes; improved on-farm environmental sustainability and lower carbon footprint; younger generation start up and business generation; improvements to soil and land management practices. The return ratio for 'Axis 3' evaluative impacts for public investment is £4.39 for every £1 invested and £2.16 for total investment. The benefits from this scheme include – improved well-being through culture, recreation and sports; improvement in tourism service provision and increased cross-community development and regeneration through integrated village initiatives. A difference to acknowledge between the two Axes – Axis 3 has greater potential for future benefits to arise than Axis 1. When comparing investment and outcomes in Axis 3, the highest values appear to support growth of micro-enterprise and community support.

Axis 1

The North West Livestock programme (NWLP) provided advice, support and small-scale grant funding to improve animal welfare, resource efficiency and nutrient management. An interview delivery body suggested that up to 60% of farmers in Cumbria will have attended one or more events over the programme period. Supporting this, there is evidence to indicate that farmers in Cumbria are changing management practices, in particular with grassland and nutrient management.

The South West Agricultural Resource Management (SWARM) project aimed to improve the efficiency of resource use. Success of this scheme has been measured by approx. 2,500 – 3,000 farm visits undertaken; resulting in 1,000 working farm grants. This scheme has raised awareness of resource issues and how they impact on the profitability of farm businesses.

In terms of woodland management programs, in the East of England, the Woodfuels East programme supported 90 micro-businesses. This included start-up support for 20 micro-enterprises. This programme is successful in developing a sustainable supply chain; support for small businesses and promoting better woodland management and biodiversity.

Axis 3

In Cumbria, the use of local action groups increased human capital and willingness to collaborate with value-added and connections within and throughout the supply chain. In

¹⁸² CCRI 2013 *An Assessment of the Social Return on Investment of Axes 1 and 3*

addition, local action groups, supported improvements in livelihoods through creation of jobs and support for continued provision of services.

LEADER¹⁸³

LEADER is a “bottom-up” approach used in the RDPE; involving the community in decision-making (Local Action Groups produce Local Development Strategies). It seeks to pilot activities with a view to rolling out and adopts a relatively holistic approach to rural development i.e. with social and environmental as well as economic objectives. Thus the projects will necessarily generate lower impacts when compared to some other forms of public intervention e.g. inward investment or high growth support that are highly targeted and are explicitly designed to maximise economic returns. The LEADER impact assessment focused on the local impacts of projects (largely RDPE) implemented since 2007, using a survey of 516 end-user beneficiaries (grant funding recipients).

Business impacts: The study calculated a total return on investment of £8.78 for every £1 invested in business projects. The GVA per job created/safeguarded through business projects was £36,098 (based on the regional and sector mix of supported businesses), generating £7,744,341 (to date) and £10,112,215 (future). Three in four supported businesses expected the LEADER support to have a significant positive impact on their business. Two thirds reported already having increased sales as a result of the LEADER project, and more than half have increased profits. Commercial benefits were modest, with average sales increases of £7,685 rising to £41,000 per business (including future returns). The number of new and safeguarded jobs was also relatively small; 652 (gross) jobs were generated for the 183 businesses surveyed (3.5 FTE per business). Some 55% of respondents stated that the business benefits were wholly additional; 44% stated that employment effects were wholly additional. Deadweight was low at 15-20% (compared to BIS benchmarks of 50%) and additionality was high at between 72-80% (highest in the agriculture and forestry sector). Overall levels of leakage were low at 4-11%. Displacement was also below average (8-16%) against business support benchmarks of 19%-20%.

Supporting communities: The study calculated a total return on investment of £3.71 for every £1 invested in community support projects.¹⁸⁴ Assuming that each net job represents the average GVA per worker, the community support projects generated £24,619,454 (based on jobs to date) and £17,653,475 (based on future jobs). Gross jobs generated in community based projects was estimated at 1131, with the highest number of gross jobs (both direct and indirect) related to the conservation, tourism and heritage activities. Levels of deadweight were typically low (17-23%), and project managers estimated that the majority of employment benefits would not have been achieved without the project (high additionality). Leakage data was not collected; displacement negligible.

¹⁸³ Ekosgen. 2011. National impact of LEADER. Impact Report. June 2011.

¹⁸⁴ These projects included ‘conservation, tourism and heritage’ projects, development of community centres/facilities, development of community services, transport improvements and ICT infrastructure.

Conclusion: Whilst overall impacts in terms of employment and GVA were quite modest, additionality was well above benchmarks, leakage was low, and the returns on investment compared well to other forms of support for both businesses and communities. This is despite the increased up-front costs and public investment required to build the Local Action Group and prepare Local Development Strategies (estimated at 20% of project activity costs). The perceived high administration costs for LEADER are partly offset by the level of volunteer community support in the development of the local partnership and the strategy preparation. However, effective Local Action Groups need sufficient capacity building to develop meaningful, effective partnerships and Local Development Strategies.

Annex F: Draft Programme priorities

The new Rural Development Regulation outlines six broad 'priorities' for the EU for rural development. Member States must aim to meet at least four of the priorities in the design on their programmes. These priorities are broken down into a number of 'focus areas' under which Member States are required to identify activity for funding through their programmes.

Member States have flexibility to design their programmes to best suit their needs and opportunities while delivering overarching objectives that support climate change adaptation and mitigation, innovation and the environment.

The six priorities are:

1. Fostering knowledge transfer and innovation in agriculture, forestry and rural areas;
2. Enhancing farm viability and competitiveness of all types of agriculture in all regions and promoting innovative farm technologies and sustainable management of forests;
3. Promoting food chain organisation, including processing and marketing of agricultural products, animal welfare and risk management in agriculture;
4. Restoring, preserving and enhancing ecosystems related to agriculture and forestry;
5. Promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors;
6. Promoting social inclusion, poverty reduction and economic development in rural areas.

To fulfil these priorities the regulation outlines 'measures' from which EU Member States can choose in the design of their domestic Rural Development Programmes. EU Member States must spend at least 30% of their EU funding on measures to protect and enhance the environment and at least 5% of their EU funds through the LEADER approach.