



Protecting wildlife for the future

Assessing the costs of Environmental Land Management in the UK: Briefing for policy makers

Summary

The RSPB, National Trust and The Wildlife Trusts have commissioned an independent assessment of the costs of environmental land management in the UK. The objectives of this project were to estimate the financial needs associated with environmental land management, and develop a model that could be used to refine and update these costs in the future.

The land management needs identified were based on existing strategies, objectives and commitments. They do not necessarily reflect the level of ambition needed to improve the environment for the next generation. The costs identified were based on the income foregone and costs associated with the relevant land management interventions.

The estimates provided are based on ‘current’ costs taken from existing UK agri-environment schemes, and ‘adjusted’ costs, derived from a range of different drivers. The latter will enable us to update the estimates based on different economic circumstances.

The current UK costs associated with the environmental land management needs identified in this iteration of the model are £2188m per year, and the adjusted costs are £2307m per year, calculated over a ten year period.

These costs are focused on land management interventions, and do not reflect the total costs associated with either future farming or environmental objectives. For example, continued public investment needs for agriculture in order to promote innovative and sustainable production may be significant, and environmental targets will need more than land management if they are to be met.

This work has a range of implications for future policies, including the need for:

Better integration between environmental targets and farming and land management policies and payments	A budget allocation between the four UK countries outside the Barnett Formula
A significant increase in funding for environmental land management	An appreciation that costs vary significantly depending on different Brexit scenarios, market conditions and levels of ambition
A consideration of other costs beyond the scope of this project when designing future farming and environmental policies	A consideration of how to secure agricultural land uses in the absence of direct payments, where necessary to deliver environmental outcomes

These implications, the evidence of need provided by this work and a consideration of other costs associated with future farming and land management policy objectives leads to a series of recommendations at the end of this briefing. First amongst these is the need to maintain but repurpose current levels of investment associated with the Common Agricultural Policy, particularly for an initial ten year period.

Purpose and objectives of the work

The RSPB, National Trust and The Wildlife Trusts commissioned this work to understand the potential environmental land management costs associated with a range of existing environmental objectives. The purpose of this was to provide an evidence-base for future environmental land management funding needs, specifically with regard to farming and land management policies in the UK following our departure from the European Union's (EU) Common Agricultural Policy (CAP).

Environmental land management is understood in this report as being activities undertaken by farmers and land managers to address existing environmental commitments as currently recognised in national datasets, commitments and strategies.

The objectives of the project were therefore –

1. To quantify the financial needs for environmental land management to meet existing environmental commitments and targets after Brexit, for the UK and each of the four countries, based on income-foregone and costs-incurred.
2. To provide a model for estimation of these costs that is transparent and user friendly, and can easily be updated to change the estimates based on different targets, assumptions, cost factors and levels of ambition.

In particular, the model used to estimate these costs has been designed to provide 'current' cost estimates, based on existing agri-environment scheme costs, and 'adjusted' costs estimates, taking into account changes in inputs and outputs such as labour and commodity prices. The latter will enable us to update these cost estimates as our understanding of what's needed to achieve environmental restoration improves, and as the economic implications of Brexit become apparent, providing a powerful tool to inform future policy development.

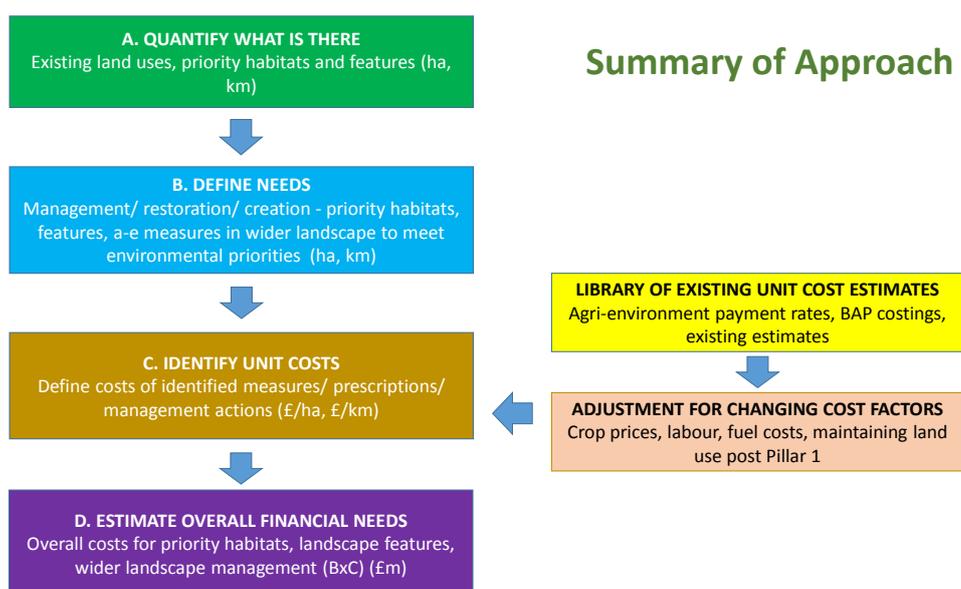
Various costs associated with future farming and environmental policy were outside the scope of this work. Three major areas not covered that are likely to entail significant future costs are explained below:

1. The project does not seek to cost future farming and land management policies in the UK in their entirety, which will clearly include significant costs associated with interventions other than land management. For example, policy positions developed by the UK Environment Links in [England](#), [Scotland](#), [Wales](#) and Northern Ireland envisage significant investment in areas other than environmental land management such as grants and loans to build resilience, drive innovation and improve animal welfare. This project concerns the evidence to underpin the increased scale of investment in environmental land management required to meet current government commitments, and does not seek to 'cost' these policy proposals as a whole.
2. The cost estimates are based on existing or previous UK Government and devolved administration strategies, commitments and obligations such as the UK Biodiversity Action Plan, data on historic environment assets and the England Biodiversity Strategy to 2020, to name a few examples. It is beyond the scope of this report to comment on whether meeting these commitments, obligations or strategies would be sufficient to achieve a halt in the decline of the UK's wildlife and natural capital, but it is likely that a higher level of ambition will be needed. In terms of the scale of need, the UK has failed to meet its commitments (e.g. for the 2020 Aichi targets) year-on-year and as such, the scale of investment needed now reflects this backlog of underspending and missed targets. As our shared objectives become more ambitious, we will be able to use this model to understand what the potential costs of this may be with regard to land management interventions in the future.

- With a focus on land management costs, it does not include costs associated with advice, monitoring and evaluation, nor does it include costs associated with interventions such as targeted species recovery, cross-border cooperation and public engagement, much of which is currently funded by a diversity of difference sources, such as LIFE, the Heritage Lottery Fund and INTERREG.

Approach

The approach to the project is summarised in the figure below. It has been developed as an objective assessment, with the identification of land uses and environmental need based on the available data, and consultation with environmental organisations, governments and statutory agencies. All costs are developed using the same methodology in order to provide consistency, and based purely on environmental land management interventions.



Estimated costs

A summary of the estimated costs is included in the tables below. The total costs for the UK range from £2188m to £2307m per year for the needs identified. These reflect the current iteration of the model.

Summary of overall annual costs of meeting environmental land management priorities, based on current costs (£m)					
	England	Northern Ireland	Scotland	Wales	UK
Priority habitats	471	32	252	120	876
Boundary features	255	46	65	35	402
Historic environment	41	3	40	7	92
Arable land	403	14	40	5	461
Grassland	164	80	56	32	331
Organic	17	0.5	3	5	26
Total	1,352	176	456	205	2,188

Summary of overall annual costs of meeting environmental land management priorities, based on adjusted costs (£m)					
	England	Northern Ireland	Scotland	Wales	UK
Priority habitats	493	40	383	113	1029
Boundary features	226	44	63	42	375
Historic environment	41	3	33	7	84
Arable land	379	14	38	4	436
Grassland	170	75	73	39	358
Organic	17	0.5	3	5	26
Total	1,326	177	594	210	2,307

This scale of expenditure can be expected to provide a range of significant benefits. Although quantifying the exact benefits of the identified costs was not within the scope of the project, the final report does include a brief assessment of the evidence. This concludes that “...the benefits of environmental land management can be substantial, and significantly exceed the costs”, a finding consistent with a range of other recent assessments. For example, the Impact Assessment undertaken for the 2014-2020 Rural Development Programme for England found that an environmental focus with maximum inter-pillar transfer would provide the best value for money, with a benefit:cost ratio of 2.7:1, with £5089m of benefits against £1867m of costs.

Implications for future policies

The estimated costs of environmental land management produced by this project have significant implications for future farming and land management policies across the UK. These can be summarised under following six headings.

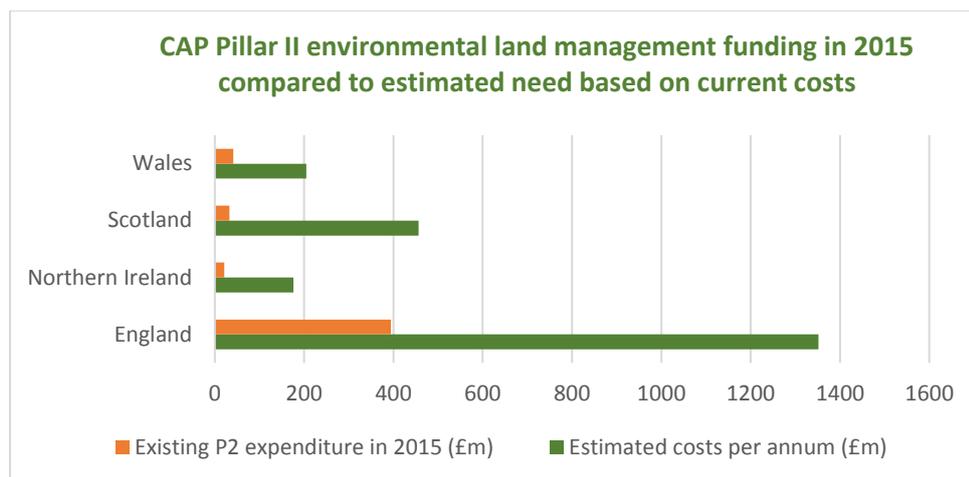
1. There is a need for better integration between environmental targets, and farming and land management policies and payments

This report and model connects the cost of land management practices with existing environmental commitments and targets. This is not the way that the current CAP payments regime works, as EU environmental commitments do not drive or determine the level of funding associated with existing agri-environment schemes at the EU level. Future policy and payments must be more clearly connected to the environmental targets that they are seeking to meet. Public payments for land management should be targeted to achieve our international and domestic environmental commitments as set out in existing legislation and commitments, as well as a future Environment Act (and any devolved equivalents), and these should be referenced in the proposed Agriculture Bill (and any devolved equivalents).

2. A significant increase in environmental land management funding is needed

The estimates produced suggest that a significant increase in the scale of funding associated with environmental land management is needed across all four countries of the UK. For the UK as a whole, this equates to an approximately 450% increase when comparing estimates based on ‘current’ costs to existing agri-environment expenditure, and support for organic conversion and maintenance. This is illustrated in the figure below, which compares estimated costs with public funding in 2015¹.

¹ Defra (2017) Agriculture in the UK. Spending on agri-environment schemes and organic conversion and maintenance payments across the UK in 2015 was £489m. This was higher than 2016, with provisional figures indicating equivalent spending at £405m.



In Northern Ireland and Scotland the increase needed is eight fold and fourteen fold respectively, compared to over three fold in England and five fold in Wales. Even if the Pillar I Greening payment is included in this comparison², funding would still need to be increased by nearly 100% across the UK³.

This suggests that future farming and land management payments should be refocused toward the provision of environmental goods and services, given the importance of farming to the successful delivery of the interventions identified by this project.

3. There are a range of costs associated with land management, and other costs not within the scope of this research that will be associated with future farming and land management policies

In order to deliver a farming and land management policy successfully it will be necessary to provide advice and fund monitoring and evaluation. These activities are spatially explicit and entail a potentially significant cost. For example, Natural England estimate⁴ that advice costs 1% of the total cost of land management. In our case this would add a further £22 million to the total cost. However the amount currently spent is based on budgets rather than needs, and we cannot be certain that they would scale simply with the ambition of the work.

Aligned to advice will be the need for applied science. In 2006 DEFRA spent £300 million on science, and in the four years leading up to the financial crisis, DEFRA spent an average of £253m per year. To successfully deliver an ambitious land management policy for the environment some science funding will be necessary to convert the cutting edge understanding of the natural environment into workable policy.

Whilst costs associated with advice and monitoring are poorly quantified, and modest relative to the overall scale of expenditure identified by this project, they can be expected to add additional costs, with evidence suggesting that investment should increase from existing levels.

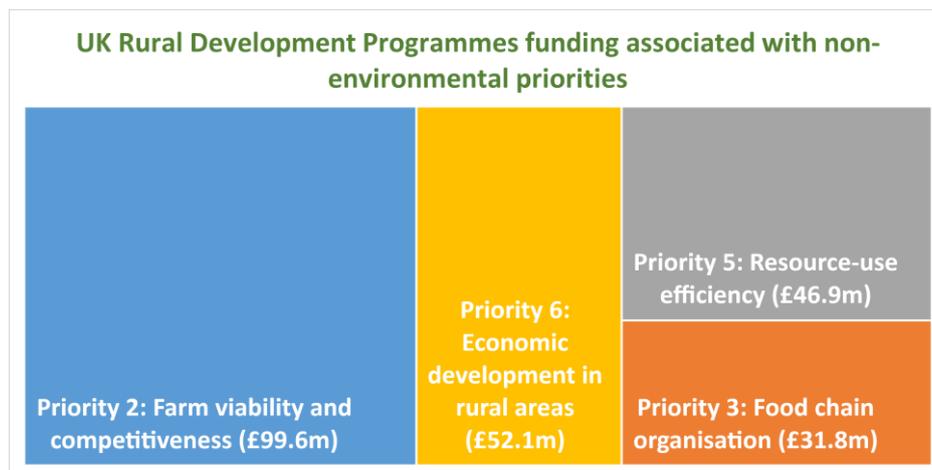
In addition to these costs directly associated with supporting land management interventions, there will be broader costs associated with farming and land management policies, specifically those associated with supporting innovation, improved productivity and higher animal welfare.

² Under reform of the Common Agricultural Policy, it is mandatory for applicants to the Basic Payment Scheme to comply with Greening requirements, where relevant on their land. In return for this, an additional Greening payment is made. The Greening requirements cover: permanent grassland; crop diversification and Ecological Focus Areas (EFAs).

³ At 30% of the total Basic Payment Scheme payment, the greening payment amounted to approximately £770m in 2016 across the UK

⁴ Pers comm

Currently, spending programmed against Priorities 2, 3, 5 and 6 in the UK Rural Development Programmes (RDPs) amounts to £230m per year averaged across the seven years of the 2014-2020 programmes⁵. These annual totals are illustrated in the figure below.



These figures do not reflect the costs required to meet these objectives, and are therefore not comparable with the environmental land management costs identified by this project. They are likely to be an underestimate, and more work is needed to quantify the financial need associated with non-environmental priorities that could conceivably fall within future farming, land management and, where relevant, broader rural development policies.

4. The budget allocation between the four countries of the UK should be based on need, not the Barnett Formula

Agriculture and the environment are devolved competencies, and the model therefore breaks the cost down across each of the four UK countries. The evidence provided by the model suggests that the distribution of funds across the UK should be allocated via objective criteria associated with need, and not the Barnett formula. The UK has international commitments and emerging domestic commitments and the UK and devolved governments will need to be held to account as regards progress towards these. It would not be viable to attempt to hold the devolved nations to account as regards achievement of these targets if the allocation of land management funding was based on anything other than need - if the Barnett formula were applied, there would be a significant imbalance in funding and shortfall of funding in Northern Ireland, Scotland and Wales.

This situation is illustrated by the summary analysis presented in the table below⁶.

	England	Northern Ireland	Scotland	Wales
£/year (000s)	1326	177	594	210
% total estimated costs	57%	8%	26%	9%
% land	50%	6%	34%	10%
% current CAP (P1 & P2)	65%	9%	17%	9%
% if Barnett formula	85%	3%	8%	4%

⁵ https://enrd.ec.europa.eu/policy-in-action/rural-development-policy-figures/rdp-summaries_en

⁶ Adjusted as opposed to current costs used, as they are a better reflection of potential future costs, and therefore more relevant to a discussion about allocation of future resources

5. Adjusted costs vary significantly based on different market conditions, Brexit scenarios and the level of environmental ambition

The adjusted costs provided above are based on current market conditions, and data from a range of current sources⁷. The model developed through the project can be updated to reflect changes in these cost drivers, and doing so reveals that this can lead to significant changes in costs. For example, a 10% increase in the price of arable crops and livestock, and 10% decrease in the cost of fertiliser increases the total UK environmental land management costs by £163m per year from £2307m to £2470m. Similarly, basing land management costs on high yields for arable and livestock, rather than the average, increases annual UK costs by £289m from £2307m to £2596m.

With the uncertainty created by Brexit, fluctuations of this kind are likely to occur in the coming years, and payments may have to respond accordingly. A policy choice may also be made to calculate payments based on high yields, in order to build in an incentive for uptake and allow for maximum flexibility in the deployment of measures.

As well as varying in response to market conditions, costs will vary greatly depending on the environmental land management interventions identified as necessary. As stated above, the measures that the reported costs are based on reflect existing commitments and strategies, and are therefore likely to reflect a ‘floor’ to the potential level of ambition needed.

There is uncertainty in particular in the model over the ‘need’ associated with vital issues such as soil management, and flood risk management which is not addressed explicitly, given the inherent difficulty associated with modelling this due to the highly variable nature of the interventions needed across different catchments. As an example, whilst 100% of soils with ‘very strong erodibility’ are managed in the model, 0% of soils with ‘strong erodibility’ are. If the latter figure is increased to 100% as well, the total financial costs per year increase by £1130m from £2307m to £3437m.

6. Securing underlying land uses will add significant costs, depending on the extent and level of support

The costs in the model are based on income-foregone and costs-incurred. This reflects existing land management policies, and we feel it to be the best starting point for a future policy. However, in non-economic farming systems, it is limited, as there will often be very little income to ‘forego’, leading to low payments. This becomes an environmental issue when the underlying farming system is needed to secure a range of public goods, particularly those associated with landscape character and certain priority species and habitats such as curlew, marsh fritillary and upland hay meadows. A 2011 paper for the Land Use Policy Group explored this issue in depth⁸.

At this stage, the ‘costs’ associated with maintaining these systems, and where such payments will be needed, are not well quantified, and are therefore not included in the figures reported in the summary of costs above. However, they may be significant, and the model does provide a facility to arrive at an indicative estimate of these costs by applying a per ha payment over certain areas. For example, applying a payment of £80 per ha over 100% of upland priority habitats and 30% of upland rough grazing increases annual costs by £225m from £2307m to £2532m. If this payment was increased to £100 per ha, and applied to the same proportion of the uplands, as well as lowland priority habitats, this would increase the total annual costs by £383m from £2307m to £2690m.

⁷ See the full report for a comprehensive methodology

⁸ Barnes A.P., et al (2011), Alternative payment approaches for noneconomic farming systems delivering environmental public goods. Report for the Land Use Policy Group.

Recommendations for future policy

This work, and the implications for future policy have led us to make the following recommendations.

1. **Maintain existing levels of funding associated with the CAP, particularly for an initial 10 year period.** This would entail extending the current funding commitment from 2022 to 2029, assuming the UK adopts the flexibility to introduce new policies to deliver change from March 2019.
2. **Integrate environmental targets and milestones into future farming and land management policies across the UK.** One of the failures of the CAP is the lack of coherence and integration between the main funding stream for environmental land management, and the associated targets. Future legislation, such as the proposed Agriculture Bill, should address this discrepancy.
3. **Increase the proportion of funding associated with environmental land management within future farming and land management policies.** We argue elsewhere⁹ that the role of farmers and land managers in improving the environment provides the strongest rationale for public investment, and the best chance for a stable and certain policy given the strong public and political consensus that this commands. This work provides the evidence base for the scale of funding needed, and points to an urgent need to significantly increase funding for environmental land management compared to current levels of investment.
4. **Allocate funding across the UK based on environmental need, not the Barnett Formula.** It is clear that any future funding should be allocated on the basis of criteria other than the Barnett Formula, which is not appropriate in this instance.
5. **Undertake work to understand where funding beyond income-foregone and costs-incurred will be required to secure land use necessary for the provision of public goods.** In some areas, payments based on income-foregone and costs-incurred will not be sufficient to secure the target environmental outcome, particularly when associated with economically marginal but 'high nature value' farming systems. In these cases, payments may need to incorporate other costs, such as opportunity costs or the whole cost of production¹⁰.
6. **Continue to develop a better understanding of the specific environmental land management needs to deliver the commitment to improve the environment for the next generation, restore natural capital and safeguard ecosystem service provision.** The 'needs' identified in this work are based largely on existing government obligations and strategies, and do not necessarily reflect a true picture of what is needed to meet the commitment to improve the environment for the next generation. Further work will be needed to be understand this, and our model can be used in turn to then understand the implications that this will have for the total cost.
7. **Separately, maintain or increase environmental funding associated with LIFE+, INTERREG, the European Regional Development Fund and Heritage Lottery Fund.** Amongst others, these mechanisms and funding streams play an important role in environmental management, and drive actions and interventions not identified within the scope of this work, such as project and staff costs, targeted species recovery, public engagement and cross-border cooperation.
8. **Create a regulatory environment that enforces baseline environmental standards and encourages market-based solutions.** A firm regulatory baseline is needed for any future expenditure. Governments can also help catalyse private investment into natural capital using smart regulation, for example by establishing responsibilities on polluters that can help drive investment.

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⁹ Wildlife and Countryside Link (2017) A future Sustainable Farming and Land Management Policy for England: A Wildlife and Countryside Link discussion paper.

¹⁰ Barnes A.P., et al (2011), Alternative payment approaches for noneconomic farming systems delivering environmental public goods. Report for the Land Use Policy Group.