

Paying for public goods from land management: How much will it cost and how might we pay?

Working Paper 1 – Updating the ELM Costings Model

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Introduction

In 2017 the RSPB, the National Trust and The Wildlife Trusts commissioned Matt Rayment to provide an assessment of the costs of meeting environmental land management priorities in the UK. The work involved building an MS Excel spreadsheet model, which estimated the land management actions required to meet a range of defined environmental priorities (including for biodiversity/ ecosystems, soil, water, landscape and the historic environment), and estimating the costs of delivering these actions using appropriate unit cost estimates. Two cost estimates were made – the first (termed “current costs”) applied current agri-environment and woodland grant payment rates in the four countries, while the second (termed “adjusted costs”) re-estimated these costs based on drivers of costs and income forgone (farm output prices and input costs). The overall cost of meeting UK environmental land management priorities was estimated at £2.2bn (based on “current costs”) to £2.3bn (based on “adjusted costs”) per annum¹.

The current study is undertaking further research and modelling work designed to help to improve our understanding about how and how much land managers should be paid by the Government to meet environmental land management priorities across the UK. The work builds on and further develops the model developed in 2017 to assess the financial costs of land management in the UK after Brexit, as well as strengthening the analysis in key areas (notably advisory services, the costs of securing long term changes in land management, and the costs of maintaining land management on marginal high nature value farms). The study is also examining the financial implications of moving from the current costs and income forgone approach to calculating land management payments, to test alternative approaches such as payments based on natural capital values.

The different elements of the work are introduced through a series of working papers. This paper presents an update of the overall estimates of the financial costs of meeting environmental land management priorities in the UK.

Method

The 2017 estimates of environmental land management costs were based on estimates of the unit costs of land management actions from that year. The model was designed to enable the unit costs applied to be updated to reflect future changes in farm output prices and input costs. Further details are provided in the 2017 report and in the model itself.

In the current study, the model has been updated to reflect latest available data on output prices and input costs, including crop and livestock prices and yields, and the costs of labour, machinery, seeds, fertilisers and sprays. The data were taken from the latest (2019) edition of the John Nix Farm Management Pocketbook².

Based on these input and output data, the model calculates updated estimates of the “adjusted” unit costs of land management actions and combines these with the (unchanged) estimates of the extent

¹ Rayment M (2017) Assessing the costs of Environmental Land Management in the UK. Final Report for the RSPB, the National Trust and The Wildlife Trusts. <https://nt.global.ssl.fastly.net/documents/assessing-the-costs-of-environmental-land-management-in-the-uk-final-report-dec-2017.pdf>

² Redman G (2018) John Nix Pocketbook for Farm Management – for 2019. 49th edition. Agro Business Consultants Ltd, Melton Mowbray, Leicestershire.

of different land management practices required, to estimate the overall costs of land management requirements.

Updated Unit Cost Estimates

The prices of most agricultural crops and livestock have increased since 2017. Most input costs have also increased (Table 1).

Table 1: Changes in selected output prices and output costs, 2017-2019

Outputs	Nix (2019)	Nix (2017)	% change
Feed winter wheat (£/te)	150	130	+15%
Winter oilseed rape (£/te)	335	300	+12%
Spring suckler calf (£/kg, live weight)	1.95	1.80	+8%
Dairy finishing (£/kg, live weight)	1.80	1.77	+2%
Upland spring lamb (£/kg, live weight)	2.00	1.75	+14%
Labour costs (£/hr)	12.80	10.13	+26%
Tractor costs (185 hp, £/hr)	32.34	30.49	+6%
Fertiliser costs (N, £/kg)	0.652	0.49	+33%

As a result, the costs incurred and income forgone from undertaking most environmental land management practices has increased since 2017. This is reflected in general increases in the “adjusted” unit costs of a range of land management practices in the costings model. This in turn is reflected in increases in the “adjusted” costs of addressing environmental land management priorities in the UK.

There are estimated increases in the “adjusted” costs of all management options for arable farmland, boundary and historic environment features, and restoration and creation of priority habitats. For the management of priority habitats and grassland, the costs have increased for some habitats and grassland management options and decreased for others. This reflects the increases recorded in both livestock prices and input costs. As a result, gross margins have declined for some livestock and increased for others (with mixed effects on income forgone), while costs of labour and other inputs have increased.

Updated Overall Cost Estimates

The overall result is to increase the UK “adjusted” cost estimate from £2,307 million to £2,538 million. This compares to the (slightly updated) estimate of “current” costs, based on current agri-environment and woodland grant payment rates (most of which were set several years ago) of £2,155 million.

Table 2: Summary of overall annual costs of meeting environmental land management priorities, based on “adjusted” costs (£m)

	England	Northern Ireland	Scotland	Wales	UK
Priority habitats	518	42	381	120	1,061
Boundary features	261	50	77	49	437
Historic environment	50	4	39	8	102
Arable land	486	18	47	5	556
Grassland	187	54	75	40	356
Organic	17	0	3	5	26
Total	1,520	168	622	227	2,538

Table 3: 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	47	56	32	298
Organic	17	0.5	3	5	26
Total	1,352	143	456	205	2,155

As might be expected, the “adjusted” estimates of environmental land management costs diverge from the “current” cost estimates over time, as the prices of farm outputs and inputs diverge from the base levels which were used to estimate costs and income forgone when the payment rates were set.

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