

Title: Amendment to Part I Schedule 8 of the Agricultural Holdings Act 1986 as regards its application in England - End of Tenancy Compensation for Improvements IA No: DEFRA1942 Lead department or agency: Department for Environment, Food and Rural Affairs Other departments or agencies: N/A	Impact Assessment (IA)		
	Date: 29/05/2015		
	Stage: Final		
	Source of intervention: Domestic		
	Type of measure: Primary legislation		
Contact for enquiries: Tom Murray (0207 2385292) or Jenny Barker (0117 3723638)			
Summary: Intervention and Options			RPC Opinion: GREEN

Cost of Preferred (or more likely) Option			
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCB on 2009 prices)	In scope of One-In, Two-Out? Measure qualifies as
-£2.56m	-£2.56m	£0.08m	Yes IN

What is the problem under consideration? Why is government intervention necessary?

The Agriculture Holdings Act 1986 ("the 1986 Act") provides outgoing tenants compensation for the value of fertilised land or crops they leave behind. The list of improvements and tenant right matters that can be compensated for is out of date compared to current farming practices. The provision limits compensation to purchased items which is not helpful in achieving the policy outcome. Government intervention is necessary as the provisions of the 1986 Act are incorporated into every agricultural tenancy agreement made under it unless alternative arrangements are made in a written agreement.

What are the policy objectives and the intended effects?

The policy objective is to encourage tenants to adopt good land management practices and farm sustainably in the last years of their tenancy by ensuring they are adequately compensated for the value of fertilised land and crops they leave behind. This will be achieved by amending Part 1 Schedule 8 of the 1986 Act to broaden the scope of improvements that tenants can be compensated for to include items used in current farming practices, and no longer restricting compensation for eligible improvements to those derived by the application of purchased inputs only.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Baseline Option: Do Nothing

Option 1: Amend Part 1 Schedule 8 of the 1986 Act to broaden the scope of items that an outgoing tenant can be compensated for and remove the restriction for compensation to purchased inputs only.

The preferred option is Option 1. It has the support of industry representatives of landlords, tenants and agricultural valuers on the Tenancy Reform Industry Group and 63% of respondents to the public consultation.

Will the policy be reviewed? It will not be reviewed. If applicable, set review date: Month/Year					
Does implementation go beyond minimum EU requirements?				N/A	
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.		Micro No	< 20 Yes	Small No	Medium No
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)				Traded: 0	Non-traded: 0

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) that the benefits justify the costs.

Signed by the responsible Minister: George Eustice Date: 24th November 2015

Summary: Analysis & Evidence

Policy Option 1

Description: Amend Schedule 8 of the Agricultural Holdings Act 1986

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	High: Optional	Best Estimate: -£2.56m

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0.0	£0.2m	£4.3m

Description and scale of key monetised costs by 'main affected groups'

Amending Schedule 8 of the Agricultural Holdings Act 1986 is expected to generate two monetised costs on main affected groups. 1) Compensation for additional materials will cost landlords an additional £1.7m. 2) There will be a negotiation cost to agree the value of compensation. This may require a small amount of additional agricultural valuer time beyond what is already required at the end of a tenancy at a cost of £2.6m.

Other key non-monetised costs by 'main affected groups'

Such a change, after nearly 40 years, could initially see some disputes that need to be resolved through arbitration or new provisions for third party determination. There is insufficient evidence to conclude what the probability of such an event occurring or indeed whether it is greater than zero. It is therefore simply acknowledged to be a potential non-monetary cost of amending Schedule 8.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate	0	£0.1m	£1.7m

Description and scale of key monetised benefits by 'main affected groups'

Incoming tenants will benefit from landlords' increased expenditure in compensation payments. They now receive land in a more productive condition than it would otherwise have been under current regulations, avoiding the need for remedial action. This is estimated to be equivalent to the landlords' expenditure, i.e. a present value best estimate of £1.7m.

Other key non-monetised benefits by 'main affected groups'

Non-monetised benefits are expected to occur through improvements in environmental practice from better land management of 1986 Act agricultural tenancies.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5%
Key assumptions are made about the rate at which AHA tenancies will decline and how the implicit value of manures, soil improvers and digestate are estimated and change in the future. These assumptions are discussed and varied across 4 Scenarios for purposes of sensitivity testing and transparency.		

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:	In scope of OITO?	Measure qualifies as
Costs: £0.1m Benefits: £0.1m Net: -£0.1m	Yes	IN

Evidence Base (for summary sheets)

Problem under consideration

We wish to amend the Agricultural Holdings Act 1986 (the “1986 Act”) to broaden the scope of matters for which end-of-tenancy compensation is paid so that outgoing tenants are incentivised to farm sustainably.

The 1986 Act applies to agricultural tenancy agreements entered into before 1 September 1995, and to such tenancies passed to a successor after that date which are specifically excluded from the Agricultural Tenancies Act 1995.¹ (“AHA tenancies”). In 2013, there were about 21,500 AHA tenancies covering 17% of England’s agricultural area.²

The 1986 Act provides that an outgoing tenant shall be compensated for the “*Application to land of purchased manure and fertiliser, whether organic or inorganic*”. This list needs revising to include inputs that have come into common use since the legislation was drafted to incentivise good land management. The restriction on ‘purchased’ inputs is also unnecessary in achieving the policy aim.

The matters which we propose to be eligible for end-of-tenancy compensation include the application of:

- inputs that have not been purchased
- digestate
- soil conditioners-including compost; and
- manure produced by certain livestock species.

The proposed changes have been subject to an 8-week consultation. The Tenancy Reform Industry Group (TRIG) and the majority of respondents to the public consultation support the proposed change. Where possible this impact assessment has been informed by observable data and evidence. However, where this has not been possible, expert opinion has been obtained by TRIG.

Policy objective

The policy objective is to encourage tenants to adopt good land management practices and farm sustainably in the last years of their tenancy. It ensures appropriate compensation for the value of fertilised land and crops they leave behind.

Currently Schedule 8 Paragraph 5 of the 1986 Act provides that an outgoing tenant shall be compensated for the “*Application to land of purchased manure and fertiliser, whether organic or inorganic*”.

Furthermore, Schedule 8 Paragraph 6 of the 1986 Act provides for compensation for “*Consumption on the holding of corn (whether produced on the holding or not) or of cake or other feeding stuffs not produced on the holding by horses, cattle, sheep, pigs or poultry.*”

We propose amending Schedule 8 as follows:

- 1) No longer restricting compensation to “purchased” items. This has no bearing on the benefits derived and is not in keeping with the policy to incentivise good land management by offering adequate compensation at the end of a tenancy.
- 2) Broaden the list of improvements for which compensation is payable to tenants, to include “soil improvers” and “digestate” which are now in common use to improve soil fertility and structure for the same policy reason as above.
- 3) To compensate for manure produced from a wider range of animals held for agricultural purposes.

These changes will directly affect the outgoing tenant and the landlord as the two parties to an expiring tenancy and then also the incoming tenant or other farming occupier. These three parties are considered separate businesses participating in the same market.

¹ Statutory succession rights under the 1986 Act allow for two tenancies by succession upon death or retirement. A summary of succession rights for 1986 Act agricultural tenancies can be found online at <https://www.gov.uk/agricultural-tenancies>

² Based on Defra analysis of the 2013 June Survey of Agriculture and Horticulture.

Rationale for intervention

The current Schedule 8 generates a market failure whereby there is a disincentive to maximise long-term output in favour of the less sustainable short-term interests of outgoing AHA tenants. The market failure is likely to reduce future output from the land or require remedial action by the incoming tenant.³ This is a sub-optimal outcome which is not the best use of agricultural resources.⁴

Government intervention is necessary to implement these changes because the provisions of the 1986 Act are incorporated into every agricultural tenancy agreement made under it (unless alternative arrangements are made in a written agreement).

The economic framework for this impact assessment anticipates the following impacts on the relevant parties from amending the 1986 Act:⁵

- a) Outgoing tenants will receive appropriate financial incentives to keep land in good condition at the end of their tenancy. They will be compensated for their increased investment.
- b) Landowners face an increased cost from having to compensate outgoing tenants at the going market value for a larger number of improvements eligible for end-of-tenancy compensation.
- c) An incoming tenant will benefit from receiving land in a more productive condition following investment from the outgoing tenant.

The financial cost to landlords and productive benefits to incoming tenants depends on the ability of landlords to recover their costs through increasing land rents.⁶ If compensation costs can be wholly recovered through future land rents then landlords and incoming tenants are not expected to experience any welfare changes. However, it is the expert opinion of TRIG that rental prices will not be sensitive to the level of compensation paid. Therefore no further consideration is given in this assessment.

There are also anticipated to be costs imposed on outgoing tenants and landlords to negotiate compensation for the additional materials. This will require some of a professional agricultural valuer's time to deliver advice on the appropriate level of compensation.

Summary of preferred option

The preferred option is to require compensation be paid for:

- improvements arising from the application to the land of soil improvers and digestate, as well as manure and fertiliser.
- manure from the consumption of corn (whether produced on the holding or not) or of cake or other feeding stuff not produced on the holding by a wider range of animals held for agricultural than is currently permissible.

Description of costs and benefits

The focus of costs and benefits is the difference between existing eligibility criteria for compensation and the preferred option. Three new elements either purchased or non-purchased are identified in the preferred option. These are:

- manure from 'other' livestock (where other covers all agricultural livestock apart from pigs, poultry, horses, cattle and sheep)⁷
- digestate and

³ Additional benefit may also be forthcoming through avoiding the delay in productivity gains associated with undertaking remedial action. However, the value of this benefit has been captured in a previous impact assessment (RPC15-FT-DEFRA-2361) and so we omit here to avoid double counting.

⁴ It is theoretically feasible that consumers may indirectly be worse off under these circumstances if the discrepancy from maximum long-term output has any impact on market prices for individual products. However, this is considered extremely unlikely given a) the number of AHA agreements ending in any given year will be a very small proportion of total farmed land and b) the UK is a small open economy. For these reasons it is not considered any further.

⁵ This outcome assumes all parties are privy to perfect information about the quality of the land and tenant farmers act in an economically rational manner. These may not hold in practice and could lead to welfare gains of one party at the expense of another. There is no impact from societal perspective and so is not given further attention here.

⁶ At the extreme, foregone rents through undervalued compensation could act as driver for landowners to change the use of their agricultural land to more profitable enterprises.

⁷ Analysis of purchased and unpurchased manure from pigs, poultry, horses, cattle and sheep is not required in this assessment because it is already covered in the existing regulations.

- compost (the principal soil improver)

There will also be costs imposed on outgoing tenants and landlords to negotiate compensation for these additional materials.

The preferred option is not expected to generate additional familiarisation costs. Interested parties are unlikely to be immediately familiar with the regulations until the end of a tenancy and instead seek to instruct professional advisers such as agricultural valuers. TRIG advise that the familiarisation costs for the new Schedule 8 would be the same as for the current Schedule 8 and therefore do not change for the preferred option. For this reason we do not consider them further in this impact assessment.

Projecting the key uncertainties

The costs and benefits require a projection of the future state of AHA agreements. This will principally be determined by a) the rate at which AHA tenancies fall over time and b) the projected future value of manure, digestate and compost. This introduces a large degree of uncertainty into the analysis.

a) The rate at which AHA agreements fall over time

Under statute, compensation is only paid to outgoing AHA tenants. We therefore are interested in the future rate at which AHA agreements terminate. Notwithstanding the difficulties of projecting this, we use two methods to provide a plausible upper and lower bound and derive a best estimate. These methods are based on June Survey data which publishes annual statistics on the estimated total number of AHA agreements in England (see Table 1).

The first method projects the length of time AHA tenancies could feasibly exist for and work backwards. Statutory succession rights for AHA tenancies in existence before 12 July 1984 require the analysis to account for the very long-term.⁸ An AHA signed in early 1984 could credibly remain in place for another 99 years from the proposed commencement date (October 2015) should succession rights be invoked and each generation farm the land for 40 years. From a baseline of 21,500 agreements in 2013, this corresponds to an average fall of 213 AHA agreements per year.

The second method uses the past decline of AHA tenancies to predict the future. Table 1 gives the total area and number of AHAs is falling over time, a natural result of the AHA being superseded by the 1995 Act.⁹ Between 2000 and 2013 the total number of AHA agreements fell by over 10,000, or 30%, at an average of 717 per year, although this fall appears to have slowed considerably in recent years. A fall in 717 per year would cause an end to AHAs by 2042.

We take the midpoint between the two methods (465 AHAs) as a best estimate although individually consider both bounds in the analysis. The rate at which AHA tenancy agreements fall over time has implications from a social discounting perspective because it affects the length of the appraisal period. For this reason the monetary estimates for the bounds are considered separately.

Table 1: Estimated number of AHA agreements (England only)

Year	2000	2001	2002	2003	2004	2005	2006
Area ('000 hectares)	2,157	2,191	1,999	1,940	1,894	1,859	1833
Number of holdings	30,826	30,316	27,629	28,369	27,790	26,597	25,838
Annual fall in tenancies	-	510	2,687	-740	579	1,193	759
Year	2007	2008	2009	2010	2011	2012	2013
Area ('000 hectares)	1,767	1,727	1,637	1,590	1,592	1,592	1,565
Number of holdings	24,923	24,755	23,068	21,675	21,670	21,618	21,509
Annual fall in tenancies	915	168	1,687	1,393	5	52	109

Source: June Survey of Agriculture and Horticulture

⁸ Between 12 July 1984 and 1 September 1995, new tenancies agreements fell under the 1986 Agricultural Holdings Act, but without succession rights.

⁹ Note that between 2002 and 2003 the number of tenancies increased. This is due to sample variation caused as the June Survey consists of a sample and is not a census.

b) The projected future value of manure, digestate and compost

Prices are particularly difficult to project for these products because markets are in their infancy. Whilst the Waste and Resource Action Programme (WRAP) estimate current values based on their nitrogen, phosphate and potassium contents, there is no time series on which a model can be extrapolated. In the absence of any robust evidence the projected values of manure, digestate and compost are simply estimated to vary between +/-2.5% per year in real terms to reflect this uncertainty. Both TRIG and WRAP have confirmed they believe this assumption to be fair.¹⁰ This forms a range over the relevant time period for both scenarios. For example, in the upper bound scenario monetary values of manure, digestate and compost all rise at real rate of 2.5% per year. We discount all present value compensation estimations in accordance with the HM Treasury Green Book.

Manure from 'other' livestock

The current Schedule 8 ignores non-purchased manurial value of livestock other than horses, cattle, sheep, pigs and poultry. This will leave farmers undercompensated at the end of their tenancy if they currently apply manure from other livestock to their land. We define other livestock according to the June Survey which includes goats, farmed deer, alpacas, llamas and 'unspecified' livestock.

No market exists for these materials and so its monetary value is difficult to attain. As a proxy we use the feeding cost of the animal to estimate its value. This is clearly limited by the likelihood that other livestock provide benefits other than a source of manure. For this reason, these estimates should be considered the **maximum possible cost**. In the presence of uncertainty we prefer to overestimate these costs rather than risk underestimating them.

Table 2 presents June Survey data for other livestock in England on holdings which contain some land with an AHA agreement. In 2013, 652 of 21,509 AHAs, or 3%, were estimated to hold other livestock.

Table 2: Holdings with AHA land and with other livestock in England

	Holdings with an AHA agreement and other livestock		All holdings with an AHA agreement		Percentage of AHA agreements with other livestock	
	June 2012	June 2013	June 2012	June 2013	June 2012	June 2013
Total	642	652	21,618	21,509	2.97%	3.03%

Table 3 summarises the estimated number of other livestock in England (again from the June survey) and the average feed costs (from the 2014 Nix Farm Management Pocketbook). The number of livestock on AHA land is assumed to be proportionate to the number of holdings (3%). The majority of other livestock are goats, with small numbers of farmed deer, alpacas, llamas and unspecified livestock.

We estimate goats have the highest total feed costs in 2013, at almost £0.5m. Much smaller total feed costs are estimated for farmed deer, alpacas, llama and the remaining unspecified livestock. The total cost to all AHAs is estimated to be just under £0.6m

The final two columns of Table 3 present the average number of other livestock estimated to be on each of the 652 AHA tenancies and their cost. This corresponds to nearly 6 livestock on each tenancy with a total feeding cost of about £920.

¹⁰ WRAP suggest that in the long-run there may be a modest upward trend in values from ongoing effort to increase its use in the food supply chain. However, this could be offset through increased supply as, for example, more Anaerobic Digesters come online.

Table 3: Estimate of feed costs for 'other' livestock on AHAs

Livestock Type ¹¹	Estimated no. (England 2013)	Estimated no. (AHAs 2013)	Estimated feed cost (animal/year)	Estimated total feed cost (AHAs 2013)	Average no. (per AHA)	Estimated cost (per AHA)
Goats	79,987	2,425	£202.50 ¹²	£490,989	3.72	£753.16
Farmed Deer	21,834	662	£39.90 ¹³	£25,194	1.02	£40.51
Alpacas	9,901	300	£92.70 ¹⁴	£27,822	0.46	£42.65
Llama	1,119	34	£134.84 ⁵	£4,572	0.05	£7.03
Unspecified	10,122	307	£160.38 ¹⁵	£49,208	0.47	£75.52
Total	122,963	3,728	£160.38	£597,786	5.72	£918.88

Purchased and non-purchased soil improvers and digestate

The addition of soil improvers and digestate requires an estimation of their value and scale of application. The major soil improver is compost and is assumed here for simplicity to be the only one. WRAP publish the equivalent market value of compost and digestate in 2014 based on their expected nitrogen, phosphate and potash content. This is estimated to be £2.83 per tonne of green compost and rises to £4.36 per tonne based on a mixture of green and food compost. It is not known if compost is more likely to be green or a mixture of green and food. Therefore, an average of £3.60 is taken as an estimated price. WRAP estimate the value of digestate to be £3.80 per tonne.¹⁶

For the scale of application we downscale national figures of compost application from the UK level to English AHA agreements according to land area. Although this method is coarse we consider it proportionate to the scale of the problem. WRAP (2012) estimated that 2.35m tonnes of compost were destined for agriculture and field horticulture in the UK.¹⁷ England accounts for 52.7% of agricultural land in the UK of which about 17.5% is subject to AHA agreements.^{18,19} This approach leads us to estimate an average of 10.1 tonnes per agreement in 2013, or £36 based on the average compost value above.

WRAP (2012) also estimate that 1.44 million tonnes of digestate was produced in the UK in 2012, after deducting for industrial facilities that discharge their treated output to sewer.²⁰ We cannot be certain that this was all utilised in agriculture but prefer to take the maximum value to avoid underestimating the financial value. We downscale the tonnage of digestate based on the proportion of UK digestate production concentrated in England and the percentage of agricultural land under the 1986 Act.

WRAP (2012) estimate that 91%, or 1.28 million tonnes, of digestate produced in the UK was recorded as being produced in England. Using the same approach for compost, we estimate on average that an estimated 10.5 tonnes of digestate are applied per AHA. This amounts to compensation of £40 per tenancy based on value of digestion above.

Uplifting for previous applications for manure, compost and digestate

Manure, compost and digestate contain nutrients that benefit the land over more than one season. The existing regulations calculate the value of manure to the land at its market price if it is applied before any crops can be taken. If one crop has been taken from the land it is valued at 50% of the market price and if two have been taken it is valued at 25%. A similar approach should also apply to the value of applied compost and digestate depending on their nutrient content and how long they remain in the soil.

¹¹ The June Survey also considers horses as other livestock. However, horses are disregarded for the purposes of this analysis because they are explicitly covered in the existing regulations.

¹² Taken as the combined variable costs of concentrates and forage from the Nix (2014) Farm Management book of dairying goats. There are a small number of Angora goats, although the 2014 Nix Farm Management book estimates there to be only about 1,350 across the whole UK.

¹³ Taken as the average concentrate and forage costs across breeding and finishing hinds, breeding and selling store calves, finishing stag calves and deer park.

¹⁴ No feeding cost information was available for camelids. For alpacas it is simply assumed that farmers face the same concentrate and forage costs of Angora goats. For Llamas, the Angora goat figure is simply upscaled according to the recommended stocking density.

¹⁵ Calculated as the weighted average of the population and feed costs of goats, deer, alpacas and llamas.

¹⁶ An explanation of the constituent parts of these values and how they are calculated is available online at:

<http://www.wrap.org.uk/content/compost-calculator>

¹⁷ Wrap (2012) 'A survey of the UK organics recycling industry in 2012' available online at:

<http://www.wrap.org.uk/sites/files/wrap/ASORI%202012.pdf>

¹⁸ Agriculture in the United Kingdom 2013, Department for Environment, Food and Rural Affairs, 2014

¹⁹ Farm Rents 2012/13 – England, Department for Environment, Food and Rural Affairs, 2014

²⁰ Wrap (2012) 'A survey of the UK organics recycling industry in 2012'

For compost, we follow the same approach as manure because of their similar nutrient content.²¹ For digestate this assessment takes a different approach to reflect evidence from WRAP that its main nutrient benefit is from readily available nitrogen.²² Most benefits of readily available nitrogen are obtained from the first crop-off the land rather than subsequent growing periods. For this reason, notwithstanding the modest potassium and phosphate contained in digestate, it is assumed that the full value of compensation is due if no crop has been taken from the land, 25% is due after one crop and no further compensation for more than one crop. The effect of this uplifting is given in Table 4.

Table 4. Compensation uplift to account for number of crops off the land

Material	Initial estimate	Percentage increase	Total compensation
Manure from other livestock	£920	75%	£1610
Compost	£36	75%	£64
Digestate	£40	25%	£50

The cost of negotiating compensation payment

There will be an additional cost between landlords and outgoing tenants to negotiate the value of compensation. Professional agricultural valuers need to be hired to prepare a claim.

We use expert advice from TRIG to estimate this negotiation cost. This advice is that:

- Each terminated AHA requires one hour of professional time to prepare claim.
- A further hour is required for further review and discussion.
- Tenancy work is overwhelmingly charged on a time basis and a reasonable charge out rate is £120 per hour. This is based on a weighted average of an hourly rate of a partner/associate (33.33%) with support from an associate/assistant (66.7%).
- This cost remains constant in real terms over time.

The estimated negotiation cost in any given year is dependent on the number of terminated AHA agreements. In the case of 717 terminations the negotiation cost for a single year is £0.17m. For 213 terminations it is £0.05m and for 465 terminations it is £0.11m.

Costs and benefits of preferred option

To estimate the present value compensation of the preferred option we project the additional compensation that will be due to outgoing tenants until all AHA tenancies terminate. Table 5 summarises the key assumptions. It provides the starting values which are assumed in Scenario 1. These are then relaxed in subsequent scenarios or in the Risks and Assumptions section. All scenarios are compared against the baseline that no compensation for purchased and non-purchased soil improvers, digestate, and manure from other livestock is currently being paid.

Table 5: Assumptions and initial values for analysis

Issue	Explanation	Initial values for Scenario 1
At what rate will AHA agreements fall over time and when will they fall to zero?	AHA tenancies have a finite lifetime as farmers retire or succession rights end.	AHA tenancies are assumed to decrease at a constant rate of 213 per year, with final agreements expiring in 99 years.
What is the future rate of growth of compost, manure of other animals and digestate value?	The additional compensation due to tenants is calculated on the basis of the value of compost, manure and digestate so the rate at which these	We estimate prices will remain constant in real terms.

²¹ Section 2 of Defra's fertiliser manual, RB209, estimates broadly similar contents of potassium and potash. RB209 can be found online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69469/rb209-fertiliser-manual-110412.pdf

²² WRAP (2011) "Digestates: Realising the fertiliser benefits for crops and grassland" available online at <http://www.wrap.org.uk/sites/files/wrap/Farmer%20guidance%20final%20-%20Cymru.pdf>. It should be noted that the majority of anaerobic digestate will be food-based rather than manure-based.

	values change will influence the level of compensation paid.	
What is the relationship between the financial value of compost, manure and digestate and the level of compensation payments?	Compensation paid to tenants should be calculated with reference to its financial value although it may be difficult to estimate in practice.	Perfectly correlated. A 1% rise in the value of compost, manure and digestate leads to a 1% rise in respective compensation.
How many AHA tenancies are in scope of receiving compensation from manure of other livestock, compost and digestate?	Evidence on compensation is based at farm level rather than an individual holding. Holdings are not the same as farms. A single farm could have more than one AHA tenancy but not less than one.	Each farm is assumed to have one holding. Hence, all ending AHA holdings are in scope of compensation.

Scenario 1: Basic model

In the first scenario, AHAs decline at a constant rate of 213 per year and all agreements expire no later than in 99 years' time. This should be considered the lower bound. Discount rates are applied according to the HM Treasury Green Book.²³ Following Table 2, 3% of all ending AHA agreements are assumed to be eligible for compensation for manure from other livestock. All agreements are assumed to be eligible for compensation for compost and digestate.

Compensation for manure from other livestock is paid with an upper bound of £920 for all relevant agreements. For compost the estimated compensation is estimated to be £36 per agreement and for digestate it is £40. These compensation payments are assumed to remain constant in real terms over time.

Table 6 below demonstrates the methodology for estimating the total expected compensation for AHA tenant farmers. For brevity it shows 2015 to 2018 results only as well as the overall net present value of compensation. In 2015 the present value compensation is estimated to be paid to 3% of 53 tenancy agreements. This is because the policy commencement date will be 1 October 2015. It is assumed that 25% of the 213 tenancy agreements ending in 2015 fall between October and December. For all subsequent years the changes apply to all 213 tenancies which terminate.

In this scenario additional compensation generates a financial transfer between landlord and incoming tenant of £1.00m over 99 years in present value terms. It represents a present value cost of £1.00m to landlords and a present value benefit of £1.00m to incoming tenants. From a societal perspective this redistribution of compensation represents a transfer and is zero net cost. This transfer is modest at the individual AHA tenancy level and therefore no unanticipated indirect impacts are expected as a consequence of amending Schedule 8.

This compensation gives the estimated investment that should occur on all outgoing AHA agreements but which tenants lack the private incentive do so. This should be interpreted as the maximum possible compensation because in practice outgoing tenants may make decisions in the best interests of the land even if it does not benefit them privately.²⁴

Outgoing AHA tenants and landlords will also face modest negotiation costs for the professional time required for the preparation and review of compensation claims and negotiation. This cost is estimated to be £240 per AHA in real terms and is shared equally between both parties. This equates to a present value cost of £1.49m.

Overall the present value net benefit is -£1.49m and the EANCB is £0.04m.

²³ The discount rate is applied at 3.5% for 0-30 years, 3.0% for 31-75 years and 2.5% for over 75 years. The HM Treasury (2003) Green Book can be found online at: <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

²⁴ No evidence exists to account for what actions individual outgoing tenants might take in practice.

Table 6. Methodology for estimating total compensation for all AHA agreements

Year	No. AHAs	Annual fall in AHAs	PV compensation cost: landlords	PV compensation benefit: incoming tenants	PV negotiation costs	PV net benefit
2015 (Oct-Dec)	21,083	53	£0.09m	£0.09m	£0.013m	-£0.013m
2016	20,870	213	£0.033m	£0.033m	£0.049m	-£0.049m
2017	20,657	213	£0.032m	£0.032m	£0.048m	-£0.048m
2018	20,444	213	£0.030m	£0.030m	£0.046m	-£0.046m
...
Total (over 99 years)			£1.00m	£1.00m	£1.49m	-£1.49m
EANCB = £0.04m						

Non-monetised costs and benefits

Any such change, after nearly 40 years, may initially see some disputes needing to be resolved through arbitration or new provisions for third party determination. There is insufficient evidence to conclude what the probability of such an event occurring or indeed whether it is greater than zero. It is therefore simply acknowledged to be a potential non-monetary cost of updating Schedule 8.

Non-monetised benefits may occur through improvements in environmental practice from better land management.

Scenario 2: Assume an increased rate at which AHA agreements fall over time

In Scenario 1, 213 AHA agreements are assumed to fall per year. This reflects succession rights which conceivably mean AHA agreements continuing for the next 99 years. This assumption is now relaxed and AHA agreements are allowed to fall at the average rate of 717 estimated between 2000 and 2013 (see Table 1). This causes AHA agreements to fall to zero by 2042. All other assumptions remain the same as Scenario 1.

Table 7 demonstrates the methodology for estimating the total expected compensation for AHA tenant farmers for Scenario 2. Increasing the rate at which tenancies terminate increases the total present value compensation payments to £2.08m. Once again this is split quite evenly across manure (£0.62m), compost (£0.82m) and digestate (£0.64m). This represents a present value cost to landlords equal to £2.08m and a present value benefit of £2.08m to incoming tenants. Once again this is redistribution between landlord and incoming tenant and is zero net cost from a societal perspective. The rise in overall compensation is caused purely by the shortening of the relevant appraisal period from 99 to 28 years, reducing the time horizon over which future costs are discounted.

Table 7. Methodology for estimating compost compensation for all AHA agreements

Year	No. AHAs	Annual fall in AHAs (other animals)	PV compensation cost: landlords	PV compensation benefit: incoming tenants	PV negotiation costs	PV net benefit
2015 (Oct-Dec)	20,075	179 (5)	£0.03m	£0.03m	£0.04m	-£0.04m
2016	19,358	717 (22)	£0.112m	£0.112m	£0.166m	-£0.166m
2017	18,641	717 (22)	£0.108m	£0.108m	£0.161m	-£0.161m
2018	17,924	717 (22)	£0.105m	£0.105m	£0.155m	-£0.155m
...
Total (over 28 years)			£2.08m	£2.08m	£3.08m	-£3.08m
EANCB = £0.13m						

For the same reasons as Scenario 1, there will be additional negotiation costs from the increase in professional time required for the preparation and review of compensation claims and negotiation. Once

again this is estimated to be £240 per tenancy in current values. This corresponds to a net present value cost of £3.08m over the appraisal period. Again, the rise in negotiation costs relative to Scenario 1 is caused purely by the shortening of the relevant appraisal period.

Overall, the present value net benefit is -£3.08m and the EANCB is £0.13m in Scenario 2.

Non-monetised costs and benefits

Again there are potential non-monetised costs associated with the larger number of outgoing tenants and the possibility of more disputes needing to be resolved through arbitration or new provisions for third party determination. There are also non-monetised benefits through improvements in environmental practice from better land management

Scenario 3: Assume a positive increase in real values for manure, compost and digestate

Scenario 1 and 2 assume that the future values of manure, compost and digestate remain constant in real terms. In Scenario 3, prices are allowed to vary to between -2.5% and 2.5% per year. This potential variation in price is considered for both the case of 213 and 717 terminations per year.

The variation in real values over time creates an upper and lower bound around the present value point estimates calculated in Scenarios 1 and 2. These bounds are given in Table 8 below.

Table 8. Upper and lower bound ranges

Annual rate at which AHAs decline (relevant time period)	Size of present value compensation		Present value negotiation cost	Overall present value net benefit	EANCB
	Lower bound	Upper bound			
213 (99 years)	£0.66m	£2.49m	£1.49m	-£1.49m	£0.04m
717 (28 years)	£1.52m	£2.93m	£3.08m	-£3.08m	£0.13m

Table 8 demonstrates that uncertainty in the future value of manure from other livestock, compost and digestate also leads to uncertainty in the amount of additional compensation landlords will need to pay to outgoing tenants. However, even in the upper bound case the present value compensation is modest.

For the case of 213 terminations the present value compensation will generate a cost to landlords of between £0.56m and £2.49m. For 717 terminations the cost is between £1.52m and £2.93m. Once again these costs also correspond to a present value benefit to incoming tenants and therefore the net welfare change from a societal perspective is zero.

Negotiation costs will not change relative to Scenarios 1 and 2 respectively because they are not sensitive to the value of manure, compost and digestate. Therefore the present value negotiation cost remains at £1.49m for 213 terminations and £3.10m for 717 terminations.

For this reason there is no change relative to Scenario 1 and 2 on the overall present value net benefit and EANCB. It remains -£1.49m and £0.04m respectively for 213 terminations and -£3.08m and £0.13m for 717 terminations.

Non-monetised costs and benefits

Again there are potential non-monetised costs associated with the larger number of outgoing tenants and the possibility of more disputes needing to be resolved through arbitration or new provisions for third party determination. There are also non-monetised benefits through improvements in environmental practice from better land management.

Scenario 4: Best Estimate

In Scenario 1, 213 AHA agreements are assumed to fall per year and in Scenario 2 agreements are estimated to fall at the average rate of 717 per year. In Scenario 4 we take the mid-point rate of 465 per year. This has the effect of causing AHA agreements to fall to zero by 2060, an appraisal period of 45 years. Future values of manure, compost and digestate again remain constant in real terms. A range of -2.5% to 2.5% per year is still estimated for the purpose of comparison with Scenario 3.

Table 9 summarises the present value calculations for Scenario 4. Total present value of changes to compensation payments from landlord to incoming tenant is £1.71m. Like previous scenarios this corresponds to a present value cost to landlords and a present value benefit to incoming tenants. Allowing future prices of manure from other livestock, compost and digestate to vary between -2.5% and 2.5% provides a compensation range of between £1.13m and £2.80m.

There will be additional negotiation costs from the increase in professional time required for the preparation and review of compensation claims and negotiation. This is estimated to be £240 in real terms for each AHA tenancy. This corresponds to a net present value cost of £2.56m over the appraisal period.

Overall, the present value net benefit is -£2.56m and the EANCB is £0.08m in Scenario 4.

Table 9. Methodology for estimating compost compensation for all AHA agreements

Year	No. AHAs	Annual fall in AHAs (other animals)	PV compensation cost: landlords	PV compensation benefit: incoming tenants	PV negotiation costs	PV net benefit
2015 (Oct-Dec)	20,579	116 (3)	£0.19m	£0.19m	£0.03m	-£0.03m
2016	20,114	465 (14)	£0.073m	£0.073m	£0.108m	-£0.108m
2017	19,649	465 (14)	£0.070m	£0.070m	£0.104m	-£0.104m
2018	19,184	465 (14)	£0.068m	£0.068m	£0.101m	-£0.101m
...
Total (over 45 years)			£1.71m	£1.71m	£2.56m	-£2.56m
EANCB = £0.08m						

Non-monetised costs and benefits

As with previous scenarios there are potential non-monetised costs associated with the larger number of outgoing tenants and the possibility of more disputes needing to be resolved through arbitration or new provisions for third party determination.

Conclusions

This impact assessment concludes that the preferred option will lead to a present value net benefit for the main interested parties of -£2.56m and an EANCB of £0.08m over 45 years. These estimates are driven only by the additional cost of negotiating the value of compensation through a professional agricultural valuer.

The amount of compensation transferred between interested parties is sensitive to future projections on the annual fall in AHA agreements and the value of manure, compost and digestate. This imposes a cost on landlords with AHA agreements in place and generates a benefit to incoming tenants. The best estimate for the size of compensation transfer between landlord and incoming tenant is £1.71m, with a low and high cost range of between £1.13m and £2.80m. This assumes AHAs decline at a rate of 465 per year over an appraisal period of 45 years.

Compensating for a wider range of beneficial materials will increase the value of financial transfers between parties. Landlords will face a financial cost when they pay outgoing tenants additional compensation. Incoming tenants or farming occupiers will benefit to the value of compensation costs from receiving land in which appropriate farming practice has been maintained by the previous tenant. The compensation transfers estimated in this impact assessment should therefore be considered as the overall value of future proofing Schedule 8. It aligns individual actors' private interests with best farming practice.

Risks and assumptions

The scenarios presented above test the two most sensitive assumptions in Table 4. This section presents a brief discussion on the sensitivity of some remaining assumptions.

1) The relationship between manurial values, compost values/prices and digestate value/prices and the level of compensation payments

The analysis assumes that the relationship between these prices and the level of compensation payments is perfectly correlated. That is a 1% rise in the average price of compost to a 1% rise in compensation paid for the application of manure. On balance this assumption should be broadly accurate because private negotiation of compensation should be based on market prices. However, short-run fluctuation in prices may lead to different values when the fertiliser was applied and when compensation is being claimed.

For example, if compost prices were to rise by an average of 2% annually, we estimate the present value of the change in compensation would rise from £1.71m to £2.03m. If the relationship between values of compost and compensation were not perfectly correlated the rise in compensation observed might be considerably smaller or larger. This 'disequilibrium' could lead to a welfare change for interested parties depending on whether prices move in their favour or not. This will not affect overall societal welfare as it is simply a redistribution from party to another. This impact will be heterogeneous and is likely to average out across all tenancy agreements.

2) How many holdings are in scope of receiving compensation?

The analysis assumes the ratio of farms to agricultural holdings is 1:1. That is, on average each farm is subject to an individual tenancy agreement. This means the textbook dairy farm covers the most number of tenancy agreements possible because it must have at least one AHA agreement. If the true ratio varies from this assumption then it will have a corresponding impact on the estimates for changes to compensation. The relationship between this ratio and the estimate obtained is simply multiplicative where for example, if there were 10% fewer farms than agreements, where one typical agreement would cover on average less than one farm, the present value of changes to compensation would simply fall by 10%. This holds for all scenarios. For example in Scenario 1, the change in compensation falls from £1m to £0.9m.

Direct costs and benefits to business calculations (following OITO methodology)

This policy is within the scope of One-In, Two-Out and has been classified as an IN. The change is regulatory because it is allowing for a wider range of beneficial materials to be compensated at the end of an AHA tenancy. This better reflects modern farming practices than the provisions made in the existing Schedule 8. The change has qualified as a low cost regulation and is therefore being fast-tracked.

There will be redistribution from landlord to incoming tenants as compensation will cover more beneficial materials. There will also be an economic cost as parties will require a small amount of additional professional advice from agricultural valuers.