Title: The Agriculture (Calculation of Value of Compensation) (Revocation) (England) Regulations 2015 **IA No:** DEFRA1698 **Lead department or agency:** Defra **Other departments or agencies:** N/A	Impact Assessment (IA) **Date:** 05/02/2015 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Secondary legislation **Contact for enquiries:** Tom Murray (0207 2385292) or Jenny Barker (0117 3723638)

Summary: Intervention and Options

RPC Opinion: RPC Opinion Status

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**
£0m	£0m	£0m	Yes	Zero Net Cost

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

The Agriculture (Calculation of Value for Compensation) Regulations 1978 (and amending regulations) sets out a method to calculate compensation payable to outgoing tenants with holdings that come under the Agricultural Holdings Act 1986. The Compensation Regulations were last updated in 1983 and specify prices fixed to the same year. They accordingly no longer compensate tenants adequately for the value of certain improvements they have made to the land. This means tenants have less incentive to farm the land sustainably in the last years of their tenancy. In addition, the prescribed methodology is inflexible to the varied circumstances of agricultural holdings today.

What are the policy objectives and the intended effects?

The policy objective is to encourage tenants to farm sustainably in the last years of their tenancy. By revoking the Agriculture (Calculation of Value for Compensation) Regulations 1978 (and amending regulations) landlords and tenants will have the ability to settle compensation claims (governed by the Agricultural holdings Act 1986) using current market values and calculation methods that best suit their individual circumstances.

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: Revoke the Agriculture (Calculation of Compensation) Regulations 1978 (and amending regulations).

The preferred option is Option 1. This option is deregulatory and gives landlords and tenants flexibility to settle compensation claims at current market values using a calculation method that best suits their individual needs. It also received the support of 73% of respondents to the public consulation.

Will the policy be reviewed? It will not be reviewed. **If applicable, set review date:** Month/Year

Does implementation go beyond minimum EU requirements?			No		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro** Yes	**< 20** Yes	**Small** Yes	**Medium** No	**Large** No
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** N/A	**Non-traded:** N/A	

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: 15th February 2015

Summary: Analysis & Evidence

Policy Option 1

Description: Revoke the Agriculture (Calculation of Value for Compensation) Regulations 1978 and its amending regulations

FULL ECONOMIC ASSESSMENT

Price Base Year 2015	PV Base Year 2015	Time Period Years 45	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:** £0m

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0		Optional	**£58.4m**
High	0	45	Optional	**£207.6m**
Best Estimate	0		£5.6m	**£108.8m**

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

Revoking the Compensation Regulations is expected to generate two monetised costs on main affected groups. 1) Compensation for certain materials will cost landlords an additional £105.4m as it changes to reflect current values rather than being fixed in 1983 prices. 2) There will be a negotation cost to agree new prices. This may require a small amount of additional agricultural valuer time beyond what is already required at the end of an agricultural tenancy at a present value cost of £3.3m

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

Such a change, after nearly 40 years, could 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 the Compensation Regulations.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional		Optional	**£58.4m**
High	Optional	45	Optional	**£207.6m**
Best Estimate	0		£5.6	**£108.8**

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 better condition than it would otherwise have been under the current regulations, avoiding the need for immediate remedial action. This is estimated to be equivalent to the landlords' expenditure, i.e. a present value best estimate of £105.4m. Benefits will also occur from avoiding delays to productivity gains and expected to be at least the size of negotiation costs (≥£3.3m)

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

Non-monetised benefits are anticipated to occur from revoking the Compensation Regulations through improvements in environmental practice from better land management.

Key assumptions/sensitivities/risks **Discount rate (%)** 3.5%

Key assumptions are made about future projections of farm business income and total factor productivity. For this reason the analysis takes a conservative approach. Further assumptions are made about the rate at which AHA tenancies will decline and how fertiliser price 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: 3.5	**Benefits:** 3.5	**Net:** 0.0	Yes	Zero net cost

Evidence Base (for summary sheets)

Problem under consideration

We wish to revoke the Agriculture (Calculation of Value for Compensation) Regulations 1978 as amended (the "compensation regulations"). The legislative change proposed covers England and so this impact assessment focusses on England only.

The Compensation Regulations apply to agricultural tenancies governed by the Agricultural Holdings Act 1986 (the "1986 Act") i.e. agreements entered into before 1 September 1995 (and any succession tenancies granted after that date). Agricultural tenancies governed by the 1986 Act and to which the proposed changes would apply are henceforth referred to as 'AHA' tenancies. It is estimated that nearly 17% of England's agricultural area is still covered by AHA tenancies.[1]

The Compensation Regulations make provision in England and Wales for calculating the compensation payable to the outgoing tenant of an agricultural holding in respect of "improvements" and "tenant-right matters" as set out in the 1986 Act. The regulations set out both the calculation method and fixed prices for determining the compensation due. As they were last amended in 1983 the fixed prices are now undervalued which means outgoing tenants are inadequately compensated.

The 1986 Act stipulates the amount of compensation "*shall be the value of the improvement or matter to an incoming tenant*". By revoking the compensation regulations, agricultural tenants and landlords will be free to agree the method for calculating compensation that best suits their particular circumstances and to settle compensation claims at current market values. This would better incentivise good land management by the tenant and modernise the compensation arrangements for 1986 Act tenancies, and bringing them in line with current tenancies set up under the Agricultural Holdings Act 1995.

The Tenancy Reform Industry Group ("TRIG" an advisory group comprising key stakeholder organisations representing the interests of agricultural tenants and landlords) recommended the Compensation Regulations were scrapped because of the limitations described above. The proposed change has been subject to an 8-week consultation. The TRIG and the majority of respondents to the public consultation support the proposed change. It is not our intention to go out to consultation again, unless there are specific questions raised by RPC which require us to do so.

Rationale for intervention

Compensating an outgoing tenant for the value of fertilised land or crops left behind encourages the tenant to farm sustainably in the last years of a tenancy. It therefore assists an incoming tenant or other farming occupier whose tenancy may start too late in the year to cultivate the land effectively or to remedy any deficiencies in soil status.

The statutory instruments referring to compensation 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.[2] These three parties are considered separate businesses participating in the same market. Changes in the price of key factor inputs to the land over time, such as fertilisers, mean that the prices fixed in the statutory instruments of 1978 to 1983 are not a true reflection of their present day value.[3]

Outdated fixed prices are set for residual sod fertility, the residual value of feeding stuffs for cattle, sheep, horses, pigs and poultry and the unexhausted manurial values of previous fertilisers. These values were originally set on the basis of the cost of nitrogen, phosphate and potash fertilisers.

AHA tenant farmers today and in the future are undercompensated for investment they make in the land at the end of their tenancy. This reduces the incentive to continue best practices to maintain land productivity at the end of their tenancy because it imposes a cost and yields no benefit to them. If an outgoing tenant was to invest more than the compensation they are legally entitled to recover then it produces a benefit to the incoming tenant or subsequent farming occupier.

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[1] Based on Defra analysis of the 2013 June Survey of Agriculture and Horticulture.

[2] TRIG advise that broadly speaking that the agricultural land left by outgoing 1986 Act tenants will be taken over by incoming 1995 Act Farm Business Tenancy tenants.

[3] Note that many aspects of compensation are not fixed in the statutory instruments and updated annually by the Central Association of Agricultural Valuers.

The current compensation regulation generates a sub-optimal outcome whereby there is a disincentive to maximise sustainable long-term output in favour of the less sustainable short-term interests of outgoing AHA tenants. This could also denigrate standards of environmental practice.

This sub-optimal outcome is not in the best use of agricultural resources. Incoming tenants will face the burden of restoring remedial land to its fully productive condition. This will not only require upfront financial investment but also will delay the productive gains of farming the land. The latter inhibits the profitability of new tenant farmers in the early years of their tenancies.[4] Overcoming a delay in productive gains could serve to improve incomes and generate greater future investment in the business.

In this sense there is a problem of asymmetric information where the incoming tenant does not have the full information of the land they will be farming. Revoking the Compensation Regulations will incentivise outgoing tenants to act in the best interests of the land and bring the true value of the land closer towards to the rental value that the incoming tenant will pay.

The economic framework for this impact assessment anticipates the following impacts on the main affected parties from revoking the compensation regulation:[5]

a) Outgoing tenants will have the financial incentive to keep the land in good condition at the end of their tenancy and therefore invest adequate resources. They will be compensated for their increased investment and therefore no change in welfare is expected. However, there will be some additional cost to negotiate agreed compensation with landlords.

b) Landowners face an increased cost from paying greater compensation. There will also be some additional cost to negotiate agreed compensation with the outgoing tenant.

c) An incoming tenant will benefit from no longer needing to make a financial investment to restore remedial land. They will also no longer suffer from the delay productivity gains following investment from the outgoing tenant.

It is important to note that the size of the financial cost to landlords and the corresponding saving to incoming tenants is likely to be dependent on the ability of landlords to recover their costs through increasing land rents.[6] If compensation costs can wholly be 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. Following this advice, no further consideration is given in this impact assessment.

Changes in compensation payments are expected to act effectively as a transfer between two parties (the landlord and the incoming tenant) and lead to no overall change in societal welfare. Nevertheless, this impact assessment quantifies the welfare transfer to understand the consequences of revoking the compensation on individual parties.

Net impacts, which determine the Equivalent Annualised Net Cost to Business (EANCB), will be driven by a) the additional cost of negotiation between outgoing tenants and the landlord and b) avoiding the delay in productivity on the part of the incoming tenant. These are also quantified in this impact assessment.

Revoking the Compensation Regulations may also to have other impacts. Benefits may be realised through improving the sustainability of farming at the end of an AHA tenancy. However, there may be a cost if the policy change leads to an increase in arbitration cases or new provisions for expert

[4] It is theoretically feasible that consumers may indirectly be worse off under current 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 landand b) the UK is a small open economy. For this reason 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.

determination. There is insufficient evidence to what extent these impacts will occur and so they are not monetised.

Policy objective

The policy objective is to ensure an outgoing tenant is compensated sufficiently for the investment they make to the agricultural land that they will not directly benefit from, but which will benefit others, to incentivise good agricultural practices for the long term.

Summary of preferred option

The preferred option is to revoke the Agriculture (Calculation of Value for Compensation) Regulations 1978 and its amending regulations.

Changes to calculating compensation were compared against a baseline of doing nothing. Revoking the Compensation Regulations was preferred for the following reasons. It was also the option preferred by the majority respondents to the public consultation.

Doing nothing will result in the calculation of compensation becoming further out of date. It is expected to exacerbate the rationale for intervention and reduce even further the incentives for outgoing tenants to invest appropriately in the land. This will have implications for the future productivity of the land as outlined in the rationale for intervention section.

Revoking the Compensation Regulations will remove the current prescriptive approach and allow the landlord and tenant to meet a privately agreed outcome at the end of the tenancy agreement. Reaching a fair outcome should be in the interests of both the landlord and the outgoing tenant because it provides appropriate incentives to manage the land properly.

There are not expected to be additional familiarisation costs from revoking the Compensation Regulations. Interested parties are unlikely to be immediately familiar with the regulations until the end of a tenancy and may seek to instruct professional advisers such as agricultural valuers for these issues. Following TRIG advice, these familiarisation costs will occur regardless and therefore do not change under the preferred option.

Description of costs and benefits

The focus of monetised costs and benefits in the preferred option are synonymous with the difference between existing compensation levels determined by fixed prices and compensation calculated using current prices. This should lead to a redistribution of welfare between the three interested parties. It should also improve the long-term productivity of the land and therefore overall economic performance. There are also expected to be the costs to the outgoing tenant and landlords associated with negotiation of the level of compensation and benefits to the incoming tenant from avoiding the delay in productivity gains.

Outdated prices are mainly expected to affect the compensation payments to outgoing tenant farmers in the following three items:

- **Unexhausted manurial values**
- **Residual value of feeding stuffs consumed**
- **Residual sod values**

The quantified parts of this impact assessment is based on underpinning data on projected fertiliser prices, the rate at which AHA tenancies fall, the cost of negotiating compensation payments and the value of productivity gains.

Fertiliser Prices

The original compensation values for the three items listed above were set on the basis of the cost of nitrogen, phosphate and potash fertilisers in 1983. Outgoing AHA tenants therefore are compensated in values fixed to this year. Table 1 illustrates the variation in nominal prices of these fertilisers over time. Prices have been volatile, peaking for all three fertilisers in 2008/9. In real terms prices have risen on average by 4.98% per year over this period. However, this value is almost solely driven by a price spike

in 2008/2009.[7] Between 1978 and 2008 prices remained almost exactly constant in real terms.[8] However, the parties are currently bound by nominal prices set over three decades ago when the increased value of agricultural produce has seen fertiliser prices that are both higher and more volatile.

Table 1: Illustration of changing fertiliser prices over time

	Nominal price (£/tonne) in any given year							
Fertiliser	**1983**	**1986**	**1993**	**2001**	**2007**	**2009**	**2011**	**2015**
Ammonium Nitrate (34.5% N)	£138	£149	£110	£115	£156	£368	£340	£265
Triple Superphosphate (45% P)	£141	£179	£110	£127.5	£148	£690	£435	£275
Muriate of Potash (60% K)	£91	£107	£105	£112.5	£145	£580	£350	£275

Source: 1983 to 2015 editions of the John Nix Farm Management Pocketbook. N, P and K are chemical symbols for Nitrogen, Phosphorous and Potassium respectively.

This IA uses published data on the change in prices of ammonium nitrate, triple superphosphate and muriate of potash to project the difference between existing and future compensation following implementation of the preferred option. Given the heterogeneous nature of farms in England it is not possible to calculate potential compensation claims for individual AHA agreements. Instead, a textbook example of a compensation claim from Williams (2008) for a mixed grass and arable dairy farm is used as a proxy for a typical farm.[9] This is clearly a limitation of the analysis but it is the only observable source of evidence available for a compensation claim.

Table 2 provides the total compensation this farm is entitled to under the provisions of the current regulations, fixed to 1983 prices.[10] It also estimates what it would be in 2015 values assuming that compensation for the three items is perfectly correlated with the average change in fertiliser prices over time. For an outgoing AHA tenant in identical circumstances to a mixed grass and arable dairy farm in 2015, total compensation risks being undervalued by over £5,200 due to outdated prices.

The presence of fixed prices in the Compensation Regulations generates a cost to incoming tenants because they are faced with remedial action to return the land to where it was. This is caused by the failure of the regulations to require landlords to compensate outgoing tenants appropriately. Revoking the compensation regulations will move this cost from the incoming tenant to the landlord as outgoing tenants will now receive compensation commensurate with the cost of applying beneficial materials to the land.

Table 2: Current and projected compensation values for a mixed grass and arable dairy farm.

Compensation claim	1983	2015[11]	Difference
Residual sod values.	£468	£1,364	£896
Residual value of feeding stuffs consumed	£987	£2,877	£1,890
Unexhausted manurial values	£1,263	£3,681	£2,418
Total compensation	**£2,718**	**£7,922**	**£5,204**

The rate AHA tenancy agreements fall over time

Under statute, this compensation is only paid to outgoing AHA tenants. This impact assessment is therefore interested in the rate at which AHA tenancies are terminated in the future. Notwithstanding the difficulties of projecting this, two methods are considered here to provide a plausible upper and lower bound as well as a best estimate.

The first method is to project the amount of time AHA tenancies could feasibly exist for and to work backwards. Statutory succession rights for all AHA tenancies in existence before 12 July 1984 require

[7] To illustrate the extent of price volatility, the Triple Superphosphate increased in price from £250 per tonne in 2008 to £690 per tonne in 2009. It then fell to £210 per tonne in 2010.

[8] The real value of fertiliser prices is estimated by adjusting into constant prices (in 2013 pounds) using the GDP deflator.

[9] Williams, R.G. (2008) 'Agricultural Valuations: A Practical Guide' 4th Edition, EG Books, London.

[10] The Agriculture (calculation of Value for Compensation) (Amendment) Regulations 1983 contain tables that provide the level of compensation for fertilisers in the case after the outgoing tenant has no crop-off, one growing season, two growing seasons and three growing seasons. The level of compensation due falls with each growing season, reflecting the residual value of the fertiliser.

[11] Calculated by estimating the average percentage change in nitrate, triple superphosphate and muriate of potash between 1983 and 2015 and then weighting equally.

the analysis to account for the very long-term.[12] An AHA signed in early 1984 could credibly remain in place for another 99 years from the commencement date of compensation reforms should succession rights be invoked and three generations each farm the land for 40 years. This is the equivalent to an average fall of 213 AHA tenancies per year.

The second method is to rely on June Survey data which publishes annual statistics on the estimated total number of AHA tenancies in England. These are provided in Table 3 below. There remain an estimated 21,509 AHA tenancies across England in 2013.The total area and number of AHAs is falling over time, a natural result of the AHA being superseded by the 1995 Act.[13] Between 2000 and 2013 the total number of AHA tenancies has fallen 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 and end to AHAs by 2042.

Table 3: 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

Both estimates lead to large differences in the relevant appraisal period over which AHAs will continue. In the absence of more definitive information, these estimates are considered suitable upper and lower bounds. The midpoint of 465 AHAs per year is taken as a suitable best estimate.

The cost of negotiating compensation payment

Expert advice from TRIG provides the basis for the negotiation cost to agree compensation for the negative changes to the statutory instruments in the preferred option. This advice is that:

- In the first year after the revoking the Compensation Regulations, each terminated AHA requires two hours of professional agricultural valuers' time to prepare the claim.
- A further two hours 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 (one third) with support from an associate/assistant (two thirds). This hourly rate is expected to remain constant over time in real terms.
- In most cases the outgoing tenant will be responsible to pay the additional valuation time, but in some instances the landlord could pay or contribute. On average it is estimated the tenant will cover two thirds of the cost and landlords one third.
- Over time, agricultural valuers will learn how to apply these additional requirements reducing the total number of hours to calculate compensation. Time requirements are expected to remain at 4 hours for years 0 and 1, 3.5 hours for year 2, 3 hours for year 3 and 2.5 hours for all subsequent years.[14]

The value of avoiding the delay in productivity gains

Under the existing regulations, incoming tenants may face an immediate fall in farm business income compared to the outgoing tenant because end of tenancy compensation for beneficial materials do not

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

[13] 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.

[14] This is clearly some uncertainty associated with these estimations provided by TRIG. The cost in the absence of learning is therefore considered in the risks and assumptions section.

reflect current market values. Incoming tenants face a cost as they take remedial action to return farm productivity, and therefore farm business income, to its full level. Revoking the Compensation Regulations will increase the cost to the landlord who must now pay compensation at current market values and remove the need for remedial action by the incoming tenant. It should also result in avoidance of an unnecessary productivity cost to the incoming tenant.

To quantify the size of this avoided cost to incoming tenants we use historical data on tenanted farm business incomes and historical total factor productivity (TFP) growth. Total factor productivity is a well-established economic measure of how much output is produced from factor inputs.

Farm business income estimates for tenant farms in England available from Defra's Farm Business Survey.[15] To overcome short-term fluctuations in farming income we take an average of the previous five years estimates and convert to a 2014/15 average real value using the GDP deflator.[16] This is summarised in in Table 4 below and gives an average annual farm business income of about £40,300. This is taken as a reasonable average income for relevant farmers in the 2015 calendar year.

	2009/10	2010/11	2011/12	2012/13	2013/14	Average	Average (2014/15 est)
Current values	£37,137	£43,466	£50,874	£29,300	£28,300	£37,876	£38,671
Real Values	£40,313	£45,913	£52,792	£30,228	£28,300	£39,509	£40,339

TFP is also measured annually by Defra.[17] Given the long-term nature of forecasting future TFP we prefer to rely on long-term historical averages. Defra statistics estimate that TFP has risen by about 14.5% in the last 20 years at an average of 0.75% per year. However, in recent year's farm productivity as measured by TFP has fallen slightly, mainly reflecting adverse weather impacts. To account for this we choose to take a more conservative estimate of 0.5% for future TFP growth.

These figures are then used to quantify the total benefit of avoiding unnecessary delays in productivity gain. For each terminating AHA agreement an incoming tenant will benefit by 0.5% of farm business income in the first year of their tenancy. Hence, revoking the Compensation Regulations will increase TFP by 0.5% more than it otherwise would have been in the first year of the tenancy. This is estimated to be about £200, or 0.5% of £40,300 per incoming tenant.[18]

Account must also be taken of the fact that many materials applied to the land will generate benefits not only in the year of application but also in subsequent years. This is clearly described in the existing Compensation Regulations for unexhausted manurial values for feeding stuffs.[19] Compensation may be claimed equal to the prescribed values if no crop has been taken off the land. After one growing season 50% of the prescribed value can be claimed and after two growing seasons 25%. It is therefore reasonable to assume that the delay in productivity gain of maintaining best practice will last longer than one year and will partially determine productivity in the second and third seasons. We follow the method prescribed in the existing Compensation Regulations because it is based on the added value that beneficial materials bring. This estimate is then aggregated to represent all AHA agreements that terminate in each year.

[15] The most recent two years' data can be found online at: https://www.gov.uk/government/statistics/farm-accounts-in-england-201314

[16] GDP deflator figures, including a 2014/15 estimate has been obtained from www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-december-2014-quarterly-national-accounts

[17] Published online at https://www.gov.uk/government/statistics/total-factor-productivity-of-the-agricultural-industry

[18] It should be noted, however, that TFP need not be positive for the revocation of the Compensation Regulations to provide a benefit to incoming tenants. Instead, it is the difference between actual and potential TFP that will determine the benefit of avoiding unnecessary delays in productivity.

[19] The Agriculture (Calculations of Value of Compensation) Regulations 1978 can be found online at: http://www.legislation.gov.uk/uksi/1978/809/pdfs/uksi_19780809_en.pdf

Costs and benefits of preferred option

To estimate the present value costs and benefits of the preferred option an economic model is developed which projects all additional compensation that will be due to outgoing tenants and the corresponding negotiation costs until all AHA tenancies have expired. Table 5 summarises the main assumptions and the evidence on which these are based. This is especially important given the provision of succession rights for AHA tenancies which requires the analysis to consider the very long-term.

Table 5: Assumptions and initial values for analysis

Issue	Evidence	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. The June Survey can be used to project the future rate at which AHAs will decline	AHA agreements are assumed to decrease at a constant rate of 213 per year, with final agreements expiring in 99 years' time to reflect succession rights.
What is the future rate of growth of fertiliser prices?[20]	Nix Farm Management Pocketbook editions 1983-2015 give annual changes in key fertiliser prices	Average real price change between 1983 and 2015 is 0% per year when omitting 2008/9 price spike.
What is the relationship between fertiliser prices and compensation payments?	Original regulations were calculated based on fertiliser prices from 1983.	Perfectly correlated. A 1% rise in fertiliser prices leads to a 1% rise in compensation.
How many AHAs are in scope of receiving compensation from sod values, residual value of feeding stuffs consumed and unexhausted manurial values?	Evidence on compensation is based on the farm level rather than an individual holding. Agricultural holdings are not the same as farms. A single farm could have more than one AHA tenancy. It cannot have less than one.	Each farm is assumed to have one holding. Hence, all ending AHA tenancies are in scope of compensation.

Four scenarios are modelled in this IA to demonstrate the uncertainty in projected costs and benefits of revoking the compensation regulations. The best estimate is calculated in Scenario 4. These focus attention on varying the rate at which AHAs decline, the price of fertilisers as well as the negotiation cost of agreeing compensation. Expected non-monetised benefits and costs are also explained. The assumptions not varied in these Scenarios are instead tested in the Risks and Assumptions section.

Scenario 1: Basic model

AHAs are assumed to decline at a constant rate of 213 per year and fall to zero in 99 years' time. This should be considered the lower bound rate at which AHAs decline. Discount rates are applied in line with the HM Treasury Green Book (3.5% for 0-30 years, 3.0% for 31-75 years and 2.5% for over 75 years).[21] All terminating AHA tenancy agreements are assumed to be eligible for compensation and all claim the same amount as the mixed grass and arable dairy farm, as given in the text book example of Williams (2008). It assumes that the textbook example represents exactly one AHA holding. All values are discounted to 2015 following HM Treasury Green Book guidelines.

The baseline of the model assumes farmers will choose only to invest in the land at the end of their tenancy agreement up to the point where compensation is paid. This is determined by fertiliser prices fixed in value since 1983. Table 2 above estimates this leads to under compensation equal to £5,204 per outgoing AHA tenant when compared against 2015 values.

Fertiliser prices have been volatile in recent history, with Table 1 demonstrating they have risen and fallen over time. Using data from the Nix Farm Management Pocketbook, the average real change in price over time between 1983 and 2015, in the absence of a single price spike in 2009, has remained constant in real terms. Scenario 1 therefore assumes that fertiliser prices remain constant after adjusting for inflation. This assumption is later relaxed in Scenario 3.

[20] To illustrate the extent of price volatility, the Triple Superphosphate increased in price from £250 per tonne in 2008 to £690 per tonne in 2009. It then fell to £210 per tonne in 2011.

[21] 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-governent

Revoking the compensation regulations will impose additional negotiation costs on the outgoing tenant and landlord at the termination of any AHA. Following TRIG advice, this revoking the Compensation Regulations will initially requires 4 hours of professional time per agreement and fall gradually to 2.5 hours per agreement by year 4.

There will be additional benefit as incoming tenants now avoid delays in productivity gain. On average, productivity is estimated to increase real business income of tenanted farms by 0.5% per year, from a base of £40,000 in 2015. The benefit apportioned to the revoking of Compensation Regulations is estimated to be equal to the full productivity gain in the first year of the new tenancy, 50% of the gain in the second year and 25% of the gain in the third year. All other future productivity gains are expected to have occurred in the do nothing baseline.

Table 6 shows the annual compensation, negotiation costs, productivity benefits, the present value net benefit and the EANCB for Scenario 1. For brevity it shows 2015 to 2018 results only as well as the total present values. In 2015 the present value compensation is estimated to be paid to 53 tenancy agreements only. This is because the planned policy commencement date is 1 October 2015. It is therefore assumed that 25% of the 213 tenancy agreements ending in 2015 fall between October and December. Table 6 shows that the present value of the total changes to compensation is falling gradually over time, from £1.07m in 2016 to £1.03m in 2017 to £1.00m in 2018.

In this scenario the additional compensation will lead to an estimated financial transfer between landlord and incoming tenant of £32.2m over 99 years. Thus it represents a present value cost of £32.2m to landlords and a present value benefit of £32.2m to incoming tenants. This value also gives the estimated foregone investment that should occur on all outgoing AHA tenancies but which currently lacks the private incentive do so.

The cost of negotiating appropriate compensation through the need for additional time of agricultural valuation professionals is estimated to be equal to £1.9m over the 99 year period, of which £1.3m falls on outgoing tenants and £0.6m on landlords. Reform of the compensation regulations will help ensure farming practice is in the long-term interests of the land and removes potential incentives for outgoing tenants to act with short-term interests.

The benefit of overcoming delayed gains in productivity is estimated to be £2.5m to incoming tenants over the appraisal period.

Table 6. Methodology for estimating total compensation for all AHA agreements (Scenario 1)

Year	No. AHAs	Annual fall in AHAs	PV[22] compensation **cost:** landlords	PV compensation **benefit:** incoming tenants	PV negotiation **costs**	PV productivity benefit[23]
2015 (Oct-Dec)	21,083	53	£0.28m	£0.28m	£0.03m	£0.01m
2016	20,870	213	£1.07m	£1.07m	£0.10m	£0.05m
2017	20,657	213	£1.03m	£1.03m	£0.09m	£0.06m
2018	20,444	213	£1.00m	£1.00m	£0.07m	£0.07m
…	…	…	…	…	…	…
Total (over 99 years)			**£32.2m**	**£32.2m**	**£1.9m**	**£2.5m**
PV Net Benefit: £0.54m, EANCB = -£0.01m						

[22] PV is an acronym for present value

[23] Present value benefits will rise in the first few years after policy implementation because the productivity gains for incoming tenants will occur over three years.

In summary, revoking the Compensation Regulations has the following impact on interested parties in terms of compensation payments:

- All future outgoing AHA tenants will receive greater compensation worth a present value of £32.2m in this scenario. This will simply be in return for the same value of additional expenditure to manage land appropriately. Therefore outgoing tenants will face no change in welfare.

- Landlords will face a combined present value cost of up to £32.2m from paying higher levels of compensation. This is the equivalent of £5,204 per landlord in real terms in all years.

- Incoming tenants will benefit by up to £32.2m (or £5,204 per tenant in real terms) from receiving rented land which is in better condition.

From a societal perspective this redistribution of compensation represents a transfer and is zero net cost. This size of the transfer is modest at the individual AHA level and is not expected to lead to any subsequent indirect impacts.

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. Two thirds of this cost falls on outgoing tenants and one third on landlords. Overall, this equates to a present value cost of £1.9m. Incoming tenants will benefit through avoiding delay in productivity gains in the early years of their tenancy. This leads to an estimated present value benefit of £2.5m

Overall, the present value net benefit is £0.54m and the EANCB is -£0.01m in Scenario 1.

Non-monetised costs and benefits

Non-monetised benefits may arise through improvements in environmental practice from better land management. Non-monetised costs could occur if some additional disputes 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 updating the Compensation Regulations.

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 now estimated to fall at the average rate of 717 per year. This has the effect of causing AHA agreements to fall to zero by 2043. All other assumptions are remains the same as Scenario 1.

The results of Scenario 2 are shown in Table 7. The impact of increasing the rate at which tenancies end increases the total present value compensation payments to £66.9m. This represents a present value cost to landlords equal to £66.9m and a present value benefit of £66.9m to incoming tenants. Once again this redistribution through compensation is a transfer between landlord and incoming tenant and is zero net cost from a societal perspective. The size of the compensation payment at the individual AHA level is constant at £5,204 in real terms. 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 total compensation for all AHA agreements (Scenario 2)

Year	No. AHAs	Annual fall in AHAs	PV compensation **cost:** landlords	PV compensation **benefit:** incoming tenants	PV negotiation **costs**	PV productivity benefit
2015 (Oct-Dec)	20,075	179	£0.93m	£0.93m	£0.09m	£0.04m
2016	19,358	717	£3.61m	£3.61m	£0.33m	£0.16m
2017	18,641	717	£3.48m	£3.48m	£0.28m	£0.21m
2018	17,924	717	£3.37m	£3.37m	£0.23m	£0.23m
…	…	…	…	…	…	…
Total (over 28 years)			**£66.9m**	**£66.9m**	**£4.1m**	**£4.7m**
PV Net Benefit: £0.61m, EANCB = -£0.02m						

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. This corresponds to a net present value cost of £4.1m over the appraisal period. Again, the rise in negotiation costs relative to Scenario 1 is caused by the shortening of the relevant appraisal period. The present value benefit from avoiding the delay in productivity gains is estimated at £4.7m

Overall, the present value net benefit is £0.61m and the EANCB is -£0.02m in Scenario 2.

Non-monetised costs and benefits
Again there are non-monetised benefits from better land management leading to improvements in environmental practice. 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.

Scenario 3: Assume a real value change in fertiliser prices over time.
Scenarios 1 and 2 assume future fertiliser prices remain constant in real terms. This is because the estimated average annual change of 4.98% between 1983 and 2015 was driven by a single price spike in 2009. Scenario 3 assumes that fertiliser prices do rise in real terms by 4.98% per year. For the purposes of comparison, Scenario 3 is compared against both Scenario 1 and 2. This is to illustrate the range of uncertainty in projecting total compensation.

This change has a profound impact on the price profile of fertiliser over time. Table 8 summarises the overall present value compensation estimations. Scenario 3a presents the case of assuming a 4.98% rise in fertiliser prices for 213 AHA terminations per year. This leads a substantial rise in the present value compensation from £32.2m in Scenario 1 to £432.3m. Scenario 3b shows the case with 717 outgoing tenants per year leads to a rise in compensation from £66.9m in Scenario 2 to £163.2m.

Table 8: Comparison of present value compensation for Scenarios 1, 2, 3a and 3b

Scenario	Annual real change in fertiliser price	Annual fall in AHAs	Present value compensation	Negotiation cost	Productivity benefit
Scenario 1	0%	213	£32.2m	£1.9m	£2.5m
Scenario 2	0%	717	£66.9m	£4.1m	£4.7m
Scenario 3a	4.98%	213	£432.3m	£1.9m	£2.5m
Scenario 3b	4.98%	717	£163.2m	£4.1m	£4.7m

Table 8 clearly demonstrates the sensitivity of overall compensation to a) the rate at which AHA tenancies fall over time and b) the change in fertiliser prices over time. It is unsurprising that the level of compensation is particularly sensitive to fertiliser prices when the annual fall in AHAs is 213. This is

because the real term increases in prices are compounded over a very long appraisal period. For this reason, the compensation estimated in Scenario 3a should be considered for illustrative purposes only.

Overall, present value compensation from landlord to incoming tenant in Scenario 3 is to increase between £163.2m and £432.3m depending on the annual fall in AHA agreements. Compensation payments will increase at an annual rate of £4.98% per year from a base of £5,204 calculated for prices in 2015. This acts as a transfer between landlord and incoming tenant.

Negotiation costs and productivity benefits will not change in Scenarios 3a and 3b relative to Scenarios 1 and 2 respectively because they are not sensitive to fertiliser prices. Present value negotiation cost will be £1.9m for Scenario 3a and £4.1m for Scenario 3b. The present value productivity benefit will be £2.5m for Scenario 3a and £4.7m for Scenario 3b.

For Scenario 3a the present value net benefit is £0.54m and the EANCB is -£0.01m. For Scenario 3b the present value net benefit is £0.61m and the EANCB is -£0.02m.

Non-monetised costs and benefits
There may again be non-monetised benefits from better land management leading to improvements in environmental practice. There are potential non-monetised costs associated with possibly more disputes needing to be resolved through arbitration or new provisions for third party determination.

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 this scenario the mid-point rate of 465 per year is assumed. This has the effect of causing AHA agreements to fall to zero by 2060, an appraisal period of 45 years.

For projected fertiliser prices, Scenarios 1 and 2 assume they remain constant in real terms whereas Scenario 3 assumes they rise in real terms by 4.98% per year. For the purposes of a best estimate mid-point is taken with a modest 2.5% growth rate in prices assumed. A range of 0% to 4.98% is still estimated for the purpose of comparison with Scenario 3.

Table 9 summarises the present value calculations for Scenario 4. Under these assumptions the best estimate present value of changes to compensation payments is £105.4m. Like previous scenarios this corresponds to a present value cost of £105.4m to landlords and a present value benefit of £105.4m to incoming tenants. Allowing future fertiliser prices to vary between 0% and 4.98% per year provides a compensation range of between £55.0m and £204.2m.

Table 9. Methodology for estimating total compensation for all AHA agreements (Scenario 4)

Year	No. AHAs	Annual fall in AHAs	PV compensation **cost:** landlords	PV compensation **benefit:** incoming tenants	PV negotiation **costs**	PV productivity benefit
2015 (Oct-Dec)	20,579	116	£0.60m	£0.60m	£0.06m	£0.02m
2016	20,114	465	£2.43m	£2.43m	£0.22m	£0.10m
2017	19,649	465	£2.43m	£2.43m	£0.18m	£0.14m
2018	19,184	465	£2.44m	£2.44m	£0.15m	£0.15m
…	…	…	…	…	…	…
Total (over 45 years)			**£105.4m**	**£105.4m**	**£3.3m**	**£4.0m**
PV Net Benefit = £0.65m EANCB = -£0.02m						

There will be additional negotiation costs from the increase in professional time required for the preparation and review of compensation claims and negotiation. This corresponds to a present value cost of £3.3m over the appraisal period. There will also be a benefit from overcoming delays in productivity gains. This corresponds to a present value benefit of £4.0m over the appraisal period.

Overall, the present value net benefit is £0.65m and the EANCB is -£0.02 in Scenario 4.

Non-monetised costs and benefits
As with previous scenarios there are non-monetised benefits from better land management leading to improvements in environmental practice. There are also 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 finds that the preferred option to revoke the compensation regulations will lead to a present value net benefit for the main interested parties of £0.65m and an EANCB of -£0.02m over the 45 year appraisal period.

We acknowledge there is uncertainty in forecasting the future state of the farming sector. This is reflected in the decision to choose a conservative TFP estimate for the analysis. We therefore conclude that the preferred option will be implemented at zero net cost with the expectation that the present value benefits of avoiding delays in productivity gains outweigh the negotiation costs. However, it is difficult to be certain of the magnitude to which this might occur.

These estimates presented in this impact assessment are driven by a) additional cost of negotiating the value of compensation through a professional agricultural valuer and b) the benefit of avoiding delays in productivity gains. The preferred option should also be considered in the wider context of the non-monetised impacts highlighted across the 4 scenarios.

The amount of compensation transferred between interested parties is sensitive to future projections on the annual fall in AHA agreements and the market prices of fertilisers. 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 £105.4m, with a low and high cost range of between £55.0m and £204.2m, over an appraisal period of 45 years. However, at the extreme, a range of between £32.21m and £432.29m is estimated in Scenarios 1 to 3 highlights the uncertainty in long-term projections, particularly for fertiliser prices.

Revoking the Compensation Regulations is expected increase the value of financial transfers between these 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. Whilst outgoing tenant farmers will now be eligible for the correct level of compensation at up-to-date market values, it is not expected that they are financially worse off under the current Compensation Regulations. Instead they will simply choose not to invest optimally in the land because it is not in their private interest to do so. The compensation transfers estimated in this impact assessment should therefore be considered as the overall value of future proofing the regulations. 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 the remaining assumptions in the model. All sensitivity analysis is compared against the best estimate in Scenario 4.

1) The level of compensation payable following the expiry of any individual tenancy agreement

Our analysis is based on a textbook example of a compensation claim from a mixed grass and arable dairy farm, which is used as a proxy for a typical farm. This is used to generate the projected levels of compensation paid under the preferred options and the size of the total transfer from landlords to tenants. The total level of compensation is sensitive to how this 'typical' example represents the average holding and it is important to clarify this sensitivity. The estimated change in compensation paid under the new regulations is £5,204, leading to a total transfer estimated at £105.43m for Scenario 4. Estimates were generated of the total redistribution for an average farm where the change in compensation was £4,000, and similarly for £6,000, bounds which are below and above our 'typical estimate'.

In the case of an average change to compensation of £4,000 the total present value of the redistribution estimated between landlords and outgoing tenants is £81.0m for Scenario 4 with an annual fall in tenancy agreements of 465 and fertiliser prices rising by 2.5% annually compared to £105.4m in the original Scenario. For the upper bound case of an average change to compensation of £6000, for scenario 4 the estimated transfer rose to £121.6m. This falls within the low and high cost range presented in the main analysis. This has no impact on the present value net benefit or the EANCB calculations.

2) The relationship between fertiliser prices and the level of compensation payments

The analysis assumes that the relationship between fertiliser prices and the level of compensation payments is perfectly correlated. That is a 1% rise in the average price of input fertilisers' leads to a 1% rise in compensation. 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. This 'disequilibrium' could lead to a welfare change for interested parties depending on whether prices move in their favour or not. For example in Scenario 4, it is projected that in 2020, the total change in compensation payable to outgoing tenants will have a present value of £2.45m. However, if fertiliser prices were to rise by 10% between 2019 and 2020 rather than 2.5%, the present value of the change in compensation payable would rise to £2.70m. 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.

3) 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. In practice a single farm may have in place more than one AHA agreement in which case the compensation provided in the textbook should be divided accordingly. If the true ratio varies from this 1:1 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 4, the change in compensation falls from £105.4m to £94.9m.

4) The time requirement of professional advice and the ability of agricultural valuers to learn

The analysis assumes the price per hour of professional help for valuation to be £120 based on expert advice, and additionally that, on average, 4 additional hours of advice will be needed. This accounts for the ability of agricultural valuers to learn and reduce the additional time required in future years. If learning was not to occur, or if there was greater learning than assumed in the analysis, negotiation costs would be higher (lower) than implied by the analysis and the EANCB would be higher (lower) than -£0.02m. The hourly rate would need almost to double, to £225, for the EANCB to fall to zero in the best estimate.

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 deregulatory; it is revoking the prescribed values under the Compensation Regulations because they are out of date. It also gives the parties concerned greater autonomy to agree the method of calculation that best suits their particular circumstances rather than having a "one size fits all" approach. This would bring the compensation arrangements for AHA tenancies more in line with Farm Business Tenancies (tenancy agreements set up post 1 September 1995 under the Agricultural Tenancies Act 1995) where landlords and tenants are free to agree the method for calculating end of tenancy compensation.

There will be redistribution from landlord to incoming tenants as compensation for certain items move from 1983 prices to current values. There will be an economic cost as parties will require a small amount of additional professional advice from agricultural valuers. However, this will be outweighed by the economic benefit from avoiding the existing delays to productivity gain that the Compensation Regulations impost on incoming tenants.