

<b>Title:</b> <b>Council Directive 2007/43/EC laying down minimum rules for the protection of chickens kept for meat</b> <b>Lead department or agency:</b> Defra <b>Other departments or agencies:</b>	<b>Impact Assessment (IA)</b>
	<b>IA No:</b> DEFRA1000
	<b>Date:</b> 13/05/2010
	<b>Stage:</b> Final
	<b>Source of intervention:</b> EU
	<b>Type of measure:</b> Secondary legislation
<b>Contact for enquiries:</b> Alison Maydom 020 7238 5815	

## Summary: Intervention and Options

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

There is a high level of public concern about the welfare of conventionally reared broilers (meat chickens) and a need for the same set of standards for all EU producers. There is also the need to provide more detailed level of protection for the broilers themselves; there are currently more than 600 million produced in England each year. In 2007 new EU rules were agreed (Council Directive 2007/43/EC) for protecting the welfare of broilers. The Directive comes into force across the EU on 30 June 2010.

### What are the policy objectives and the intended effects?

The Directive aims to improve welfare conditions for broilers across the EU, whilst balancing economic, social and environmental impacts. The Directive takes into account the latest scientific evidence, veterinary advice, consumer concerns and industry practice, setting conditions for the keeping of broilers from the time chicks are brought to production sites until they leave for slaughter. It is unique in that it measures welfare outcomes and provides for a feedback mechanism between delivery agents and the producer, thus helping to improve the overall welfare of the birds.

### What policy options have been considered? Please justify preferred option (further details in Evidence Base)

We consulted on two options. The first option proposed fully implementing the Directive (Option 1) through new Regulations whilst the second (Option 2) exercised national discretion not to take up the derogation to allow the use of a higher stocking density (over 39 kg/m<sup>2</sup> and up to 42 kg/m<sup>2</sup>) within the Regulations. There was also an additional option regarding the use of a "Grandfather Rights" scheme with respect to recognition of prior experience in lieu of training for stock-keepers but the differential in costs was not great so there was no separate high level analysis. The decision was taken post consultation to take up Option 2 given that there was evidence to suggest that meat chicken welfare could be compromised at higher densities and that few producers (less than 10% volume of UK meat chicken production) currently operated at stocking densities higher than 38kg/m<sup>2</sup>. It was also decided to operate a "Grandfather Rights" scheme where keepers can apply for Grandfather Rights for a limited period of time

<b>When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?</b>	It will be reviewed 06/2013
<b>Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?</b>	Yes

**SELECT SIGNATORY Sign-off** For final proposal stage Impact Assessments:

***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) the benefits justify the costs.***

Signed by the responsible Minister: Jim Paice..... Date: 14<sup>th</sup> June 2010 .....

# Summary: Analysis and Evidence

# Policy Option 1

## Description:

Implementation of the Directive in full with the exception of the Annex V Derogation

Price Base Year 2009	PV Base Year 2009	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low:	High:	Best Estimate: 796

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low		1		
High				
Best Estimate	17.0		5.7	60.9

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

- (a) Industry: (i) Cost of compliance (transition £14.7m; annual £5.1m p.a.) (ii) Training/ admin costs (transition £2.2m; annual £0.49m)  
 (b) Government: Inspection and Enforcement (transition £0.12m; annual £0.16m)

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

Impact of regulation on consumers via potential price adjustment

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low		1		
High				
Best Estimate	0		103	857

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

Benefits are public's stated welfare gain from improvements in broiler welfare (NB. estimates were obtained through an externally commissioned study and are adapted to reflect subsequent Directive changes: adapted 95% Confidence Interval £73m - £136m p.a., see section 5)

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

Quality of management, the same standards for all producers (nationally and within EU)

### Key assumptions/sensitivities/risks

Discount rate (%) 3.5

Assumptions - Total industry square metres held constant at 4.7 million; 7 flocks per house assumed per year

Risks - increased imports from other Member States, non-compliance by industry, no continued improvement in bird welfare, producers go out of business.

Impact on admin burden (AB) (£m):		Impact on policy cost savings (£m):		In scope
New AB: 0.008	AB savings: 0	Net: 0.008	Policy cost savings: -5.61	Yes

## Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?	England				
From what date will the policy be implemented?	30/06/2010				
Which organisation(s) will enforce the policy?	Animal Health, Food Standards Agency Operations & Local Authorities				
What is the annual change in enforcement cost (£m)?	0.160				
Does enforcement comply with Hampton principles?	Yes				
Does implementation go beyond minimum EU requirements?	Yes				
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)	Traded: N/A		Non-traded: N/A		
Does the proposal have an impact on competition?	No				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	Costs: N/A		Benefits: N/A		
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	Micro 0.002	< 20 0.002	Small 0.002	Medium	Large
Are any of these organisations exempt?	No	No	No	No	No

## Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
<b>Statutory equality duties</b> <sup>1</sup> <a href="#">Statutory Equality Duties Impact Test guidance</a>	No	22
<b>Economic impacts</b>		
Competition <a href="#">Competition Assessment Impact Test guidance</a>	No	18
Small firms <a href="#">Small Firms Impact Test guidance</a>	Yes	19
<b>Environmental impacts</b>		
Greenhouse gas assessment <a href="#">Greenhouse Gas Assessment Impact Test guidance</a>	No	22
Wider environmental issues <a href="#">Wider Environmental Issues Impact Test guidance</a>	No	22
<b>Social impacts</b>		
Health and well-being <a href="#">Health and Well-being Impact Test guidance</a>	No	22
Human rights <a href="#">Human Rights Impact Test guidance</a>	No	22
Justice system <a href="#">Justice Impact Test guidance</a>	No	22
Rural proofing <a href="#">Rural Proofing Impact Test guidance</a>	No	22
<b>Sustainable development</b> <a href="#">Sustainable Development Impact Test guidance</a>	No	22

<sup>1</sup> Race, disability and gender Impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the Equality Bill comes into force. Statutory equality duties part of the Equality Bill apply to GB only. The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

## Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

### References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final, Enactment).

No.	Legislation or publication
1	<a href="http://www.defra.gov.uk/foodfarm/farmanimal/welfare/onfarm/documents/broiler-consult09/annex-f.pdf">http://www.defra.gov.uk/foodfarm/farmanimal/welfare/onfarm/documents/broiler-consult09/annex-f.pdf</a> Consultation version of the Impact Assessment
2	<a href="http://www.defra.gov.uk/foodfarm/farmanimal/welfare/onfarm/documents/broiler-consult09/annex-a.pdf">http://www.defra.gov.uk/foodfarm/farmanimal/welfare/onfarm/documents/broiler-consult09/annex-a.pdf</a> Council Directive 2007/43/EC Page 1 – problem under consideration
3	<a href="http://www.opsi.gov.uk/si/si2007/uksi_20072078_en_1">http://www.opsi.gov.uk/si/si2007/uksi_20072078_en_1</a> Welfare of Farmed Animals (England) Amendment Regulations 2007 Page 6 –paragraph 6

### Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

#### Annual profile of monetised costs and benefits\* - (£m) constant prices

	Y <sub>0</sub>	Y <sub>1</sub>	Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>4</sub>	Y <sub>5</sub>	Y <sub>6</sub>	Y <sub>7</sub>	Y <sub>8</sub>	Y <sub>9</sub>
<b>Transition costs</b>	0.12	16.9								
<b>Annual recurring cost</b>		5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
<b>Total annual costs</b>	0.12	22.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
<b>Transition benefits</b>										
<b>Annual recurring benefits</b>		103	103	103	103	103	103	103	103	103
<b>Total annual benefits</b>		103	103	103	103	103	103	103	103	103

\* For non-monetised benefits please see summary pages and main evidence base section



Microsoft Office  
Excel Worksheet

# Evidence Base (for summary sheets)

## Summary and preferred option with description of implementation plan

1. There has been increased public awareness and concern regarding meat chicken welfare over the last few years. Council Directive 2007/43 is a package of measures for improving meat chicken welfare and sets conditions (including stocking densities) from the time chicks are brought to production sites until they leave for slaughter. In addition, all birds will be subject to post mortem inspections in the slaughterhouse for possible indications of poor welfare on farm. This will be done in England by the setting of specific trigger levels in slaughterhouses for certain post mortem conditions and the flock cumulative daily mortality rate. If these levels are exceeded then Animal Health and the producer will be notified and appropriate action taken. This could include a visit to the production site by Animal Health and the drawing up of an Action Plan in conjunction with the keeper. This will help Animal Health to better target their resources and improve overall bird welfare.

2. A 12 week public consultation was carried out between January-April 2009 on draft Regulations to implement the Directive in England. The accompanying consultation Impact Assessment contained two options. The first option proposed fully implementing the Directive (Option 1) through new Regulations whilst the second (Option 2) did not allow the use of a higher stocking density (over 39 kg/m<sup>2</sup> and up to 42 kg/m<sup>2</sup>) within the Regulations. There was also an additional option regarding the use of a “Grandfather Rights” scheme with respect to recognition of prior experience in lieu of training for keepers but the differential in costs was not great so there was no separate high level analysis. Table 1 sets out the summary costs and benefits of these options. The question was asked during the consultation as to whether the legislation should allow for producers to keep chickens up to a maximum stocking density of 42kg/m<sup>2</sup>. Opinion was divided

Table 1: Summary costs and benefits of options included in the consultation IA

	<b>Option 1 – Full implementation of the directive</b>	<b>Option 2 – Implementation of the Directive in full with the exception of the Annex V Derogation</b>
<b>Costs</b>		
One-off costs	£15.8m	£17.2m
Annual costs	£4.5m	£5.9m
<b>Total PV Costs (10 years)</b>	<b>£53.6m</b>	<b>£68.4m</b>
<b>Benefits</b>		
Annual benefits	£38m – 103m	£103m
<b>Total PV Benefits ( 10 years)</b>	<b>£316m - £857m</b>	<b>£857m</b>
<b>Net benefit PV best estimate (10 years)</b>	<b>£537m</b>	<b>£790m</b>

3. As summarised in Table 1, Option 2 had higher costs than Option 1. These higher costs represented the additional costs to producers that currently operate at stocking densities above 38kg/m<sup>2</sup> of reducing their stocking density to 38kg/m<sup>2</sup>. These were partially offset by lower costs to authorities due to fewer inspections, as they would not need to additionally inspect producers who would have chosen to apply the Annex V derogation under Option 1. The overall additional costs of Option 2 were £14.8m over 10 years.

4. However as shown in Table 1, Option 2 benefits are at least equal to Option 1 benefits. As described later in this Impact Assessment these benefits represent the public’s valuation for improvements in meat chicken welfare. They were calculated from a study that was commissioned to estimate the public’s “willingness to pay” for welfare improvements from the original proposed Directive on meat chicken welfare. Further details of how this was calculated are in the benefits section of this IA.

5. This study did not explicitly consider the public’s valuation of the benefits of the Annex V Derogation. Therefore, in the Consultation IA we assumed that the maximum benefit under Option 1 was equivalent to that under Option 2, i.e. that the Annex V criteria offset the effect of the higher stocking density on public welfare. However, it may be the case that this equivalence does not hold. So the

minimum benefit can therefore be assumed to be the case where the Annex V criteria has no impact on public welfare i.e. that public welfare is lower due to the potential for increased stocking densities. Drawing on the original study, it can be shown that the benefits associated with moves from 38kg/m<sup>2</sup> to 34kg/m<sup>2</sup> (£1.91/kg) and 38kg/m<sup>2</sup> to 30kg/m<sup>2</sup> (£3.89/kg) suggest an approximately linear relationship of benefits changing per kg of stocking density reduction (£0.48 per kg). Assuming that this linear relationship extends to stocking densities above those originally considered, the benefit from Option 1 was estimated to be, at a minimum, approximately £38m. The overall additional benefits of Option 2 were £0m - £541m over 10 years, with a best estimate of £271m.

6. Considering both the higher costs and benefits of Option 2 compared with Option 1, Option 2 provides an additional net benefit of (-)£14.8m - £526m over 10 years, with a best estimate of £256m.

### **Preferred Option**

7. The decision was taken post consultation to take up Option 2 given that there was evidence to suggest that meat chicken welfare could be compromised at higher densities and that not many producers (16% of all businesses, less than 10% volume of UK meat chicken production) currently operate at stocking densities higher than 38kg/m<sup>2</sup>. Defra funded a project at Oxford University to investigate the relationship between stocking density and the welfare of meat chickens. Densities of chickens between 30 and 46 kg/m<sup>2</sup> were stocked on commercial sites. The study was carried out with the support of the meat chicken industry who provided facilities and 2.7 million chickens. Stocking density had no significant effect on some important measures of welfare such as mortality and leg defects but the highest stocking densities (42, and 46 kg/m<sup>2</sup>) did affect other measures, such as jostling and number of paces walked. The results do not show that stocking density has no effect on meat chicken welfare but they do demonstrate that the effects of stocking density were overshadowed by much larger effects on welfare by management and environmental factors. Important environmental factors identified in the study were air and litter quality. In addition, the Farm Animal Welfare Council (FAWC), the advisory body who provides independent advice on animal welfare to Ministers, felt that a maximum stocking density option of 42kg/m<sup>2</sup> (i.e. the Annex V derogation) should not be adopted in the light of the Oxford University research which indicated that welfare problems increased as stocking densities of 40kg/m<sup>2</sup> and higher were approached.

8. The benefits of the Annex V derogation concerning monitoring, codes of conduct and flock cumulative daily mortality rates will still be realised to a greater extent. Animal Health will carry out inspections of producers on a risk basis in response to information received from slaughterhouses linking post-mortem results and flock cumulative daily mortality rate to potential poor on-farm welfare. This will be achieved through the setting of specific trigger levels. In addition they will carry out a number of random visits. The Welfare of Farmed Animals (England) Regulations 2007 require those who are responsible for looking after animals to be acquainted with any relevant codes of practice and have access to the codes while attending to the animals. This would include the Code of Recommendations for the Welfare of Meat Chicken issued by Defra.

9. It was also decided to operate a Grandfather Rights scheme where keepers could apply for Grandfather Rights for a limited period of time (up to six months after the implementing Regulations come into force).

10. Regulations to transpose the Directive will be made under the Animal Welfare Act 2006 and debated in both Houses. A revised meat chicken welfare code will also be published. Animal Health and Food Standards Agency Operations will introduce appropriate inspection regimes and data handling systems, particularly in respect of communication of indications of poor on-farm welfare identified at slaughterhouses. A series of workshops have also been run by ADAS to help inform producers about the Directive's requirements. In addition, a dedicated Defra website has been set up which provides a one stop shop for all information relating to compliance with the Directive.

11. For most meat chicken producers we envisage that the Directive's requirements will simply build on systems, processes and best practice that are already in place on the ground. Assured Chicken Production are introducing the requirements into their assurance scheme. In both the negotiation and implementation stages of the Directive we have obtained information and views from a wide range of stakeholders. This has been in the form of formal consultation and informal meetings and discussions. A "Core Stakeholder Group" composed of representative of industry bodies, welfare groups and veterinarians, but acting in a personal capacity, provides on-going advice on issues raised during the implementation process.

**Table 2:** Summary of costs and benefits of the Preferred Option

	<b>Preferred Option</b>	<b>Location (Paragraph)</b>
<b>Costs</b>		
<b>Annex 1 – lighting requirement</b>		
One-Off	£1,706,474	32
Ongoing	£552,269	33
<b>Annex 2 – ammonia and humidity levels, temperature requirements and additional documentation</b>		
One-Off	£8,630,472	35-36
Ongoing	£161,020	37
<b>Stocking Density</b>		
One-Off	£4,375,630	41
Ongoing	£4,421,593	42
<b>Training</b>		
One-Off	£2,157,954	47
Ongoing	£478,020	48
<b>Inspection and Enforcement</b>		
One-off	£121,288	50-52
Ongoing	£159,955	50-52
<b>Admin Burden</b>		
One-off	£8,032	83
PVC Ongoing (8 years)	£43,918,079	
<b>Total PVC</b>	<b>£60,917,928</b>	
<b>Benefits</b>		
Ongoing	£103,000,000	68
Total PVB	£856,610,348	
<b>NPV</b>	<b>£795,690,294</b>	

### **Problem under consideration**

12. General welfare legislation (Council Directive 98/58/EC transposed through the Welfare of Farmed Animals (England) Regulations 2007) applies to all farm animals. Additionally the EU has agreed specific rules for pigs, calves and laying hens. Meat chickens (broilers) are a major sector not to have their own rules and the Directive fills that gap. Diverging legislation and quality assurance schemes (containing certain welfare related aspects) exist at national level throughout the EU. The latest Defra Welfare Code for meat chickens was published in 2002.

13. UK meat chicken production is expected to continue at around 850 million birds per annum for the next 2 years with a value of about £1.2 billion per annum. So it is a significant economic activity and also important as one of the best value and most popular sources of meat protein for consumers. Chicken represents almost 40% of meat sold as weight and the consumption of chicken meat exceeds that of any other meat. Net imports of chicken meat (mostly in the processed form) have increased by approximately 40% over the last 10 years.

### **Rationale for intervention**

14. The rationale for Government intervention relates to public concern about the welfare of broilers, the need for the same set of standards for producers and the risk to the welfare of broilers themselves. Provision of chicken welfare is a case of market failure, as defined in the Treasury Green Book. Good

chicken welfare provides an intrinsic benefit to people who care about animal welfare status. This means that if chicken welfare is improved, then such people will benefit, whether or not they make any commensurate payment to the supplying producers. This public benefit means that the returns to producers would be less than society as a whole would be willing to pay collectively for better animal welfare. Since producers cannot capture all the benefits of improved animal welfare in the price of their products, chicken welfare will typically be undersupplied compared with what would be economically efficient. Meanwhile on the demand side those members of the public who care about the welfare of broilers typically cannot easily transact with numerous farmers for the supply of welfare they demand. This inefficient outcome provides the rationale for Government to intervene by defining Regulations that mandate a specific level of welfare related activities.

15. The welfare status of meat chickens is reflected by the results of welfare inspections carried out by Animal Health (AH). Each welfare inspection is given an overall welfare score based on the poorest of the individual scores recorded against the eleven welfare criteria assessed. The score identifies either: A) full compliance with legislation and Defra welfare codes of practice; B) compliance with legislation only; C) non-compliance with legislation; or D) non-compliance with legislation with the presence of unnecessary pain or distress. In 2009 inspections of broiler enterprises conducted where there was prior reason to believe that animal welfare might be compromised (complaint, targeted, cross-compliance targeted and cross-compliance scored risk visits) detected a level of 19.1% failure to comply with legislation (i.e. a C or D score), whereas the remaining inspections (programme, elective and cross-compliance random visits) recorded a failure rate of 2.2%. These figures show that the majority of the industry is complying with current legislation but that a minority of producers are not meeting requirements.

16. The Directive will give us better tools to target these under-performing producers by using information from the slaughterhouses to help identify potential poor on-farm welfare (see paragraph 1.) Although some feedback between slaughterhouses, producers and Animal Health does occur at present, the Directive will allow us to introduce a more harmonised and consistent approach.

### **Policy Objective**

17. The Directive lays down, for the first time, specific EU wide standards for the welfare of meat chickens. It attempts to address commercial issues with solutions based on scientific evidence. It sets conditions for the keeping of chickens for meat production from the time chicks are brought to production sites until they leave for slaughter. It does not cover parent flocks, hatching of chicks, or birds marketed as extensive indoor, free range or organic. The proposal focuses on animal welfare in conventional farming systems with a minimum threshold of 500 chickens: those producers with fewer than 500 chickens are exempt from the proposal.

18. The Directive is unique in that it measures welfare outcomes and provides for a feedback mechanism between enforcement bodies and the producer, thus identifying those who are operating at unsatisfactory levels of stockmanship.

19. Three sets of standards are set, using stocking density as a criterion for the level of intensity of production:

i) **producers who stock up to a maximum of 33kg live weight per m<sup>2</sup>**: would have to comply with standards relating to drinkers, feeding, litter, ventilation and heating, noise, light, inspection, cleaning, record keeping, training and surgical interventions.

ii) **producers who stock beyond a limit of 33kg live weight per m<sup>2</sup> up to a maximum of 39kg**: would have to comply with an additional set of standards (hereafter referred to as Annex II requirements). These include notification and documentation requirements as well as controls on holding environmental parameters such as ammonia concentrations, temperature levels and humidity standards.

iii) **producers who stock beyond a limit of 39kg live weight per m<sup>2</sup> up to a maximum 42kg**: would have to comply with a further set of standards (hereafter referred to as Annex V requirements) as well as those highlighted in Annex II. These include requirements relating to the satisfaction of the relevant monitoring authorities over a number of years, the following of Codes of Conduct and specific flock cumulative daily mortality rates.



All producers will need to comply with certain monitoring conditions at the slaughterhouse (hereafter referred to as Annex III requirements).

20. These Annex III requirements build on the new “farm to fork” EU Hygiene Regulations which provide a framework for the collation and sharing of data between farms and slaughterhouses. It allows the competent authorities (i.e the central authority of a Member State competent to carry out veterinary or zootechnical checks or any authority to which it has delegated that competence) to use this data to monitor and where necessary improve on farm welfare by optimising the feedback of welfare information collected at the slaughterhouse. This will be done through the setting of trigger levels for certain post mortem conditions and the flock cumulative daily mortality rate which we believe will give a good indication of potential poor welfare on-farm. This information will be passed to the producer and Animal Health for appropriate follow up action.

21. Additionally the Directive sets out training and guidance requirements for member states for those persons dealing with chickens. Training and guidance should be offered such that keepers have sufficient knowledge of stockmanship, especially with reference to welfare aspects. Keepers should be in possession of a certificate recognised by the competent authority, attesting to the completion of such training courses as required. The Directive allows for experience of dealing with chickens before the 30th June 2010 to be equivalent to training.

### **Description of options considered**

22. Two main options were considered during consultation:

- The first involved implementing the Directive fully and applying all available derogations, including allowing producers to stock up to 39 kg/m<sup>2</sup> where Annex II conditions are met and up to 42 kg/m<sup>2</sup> providing the conditions set out in Annex V are met
- The second option involved implementing the Directive and not applying the Annex V derogation therefore restricting producers to a maximum stocking density of 39 kg/m<sup>2</sup>.

In addition to the two main options highlighted above, there was a further decision required relating to the potential approach taken by the Government towards provision of training for those directly responsible for broiler welfare on-farm. Keepers who look after birds on-farm will have to have completed appropriate training that matches National Occupation Standards set by Lantra (the Sector Skills Council for environmental and land-based industries) and awarded and delivered by an accredited body. The training must cover all the requirements set out in the Directive. The main option was whether in addition, the Government would run a scheme which recognised prior experience of existing stock-keepers in lieu of formal training. Such a system is commonly known as a “Grandfather Rights” scheme and the option for Member States to provide such a scheme is contained in Article 4 of the Directive. The choice as to whether to have such a Grandfather Rights scheme will impact on the costs facing industry.

### **Costs of the preferred option**

23. ADAS and the University of Exeter were commissioned to assess the likely costs to the broiler chicken industry in England of a welfare Directive for broilers. Their work involved a survey in summer 2005 of a representative sample of 82 conventional broiler producers in England, 30 by on-farm interviews and 52 by telephone. This updated an earlier 2002 study by the University of Exeter<sup>2</sup>. Producers were asked about their current chicken housing and management, whether they would need to make changes to these as a result of a Directive and what they would estimate the costs of any changes to be.

24. Producers reported an average sale price of 123.9p/bird and total costs of production of 122p/bird in their most recent flock. Net margin was thus about 1.9 p/bird, compared with 3p/bird in 2002. An earlier series of workshops conducted by ADAS in 2004 with broiler producers resulted in all workshop groups stating it would be uneconomical to stock at a limit of 30kg/m<sup>2</sup>. Hence it is expected that almost all conventional producers would choose to apply the higher stocking density limit and comply with the Annex II requirements.

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<sup>2</sup> “The structure and Economics of Broiler Production in England” Andrew Sheppard, June 2004

25. Costs have been updated to take account of changes in the prices since 2005 of the different goods and services which were considered in the ADAS survey. This was done using an index of prices for private industrial construction, fuel and light, agricultural input prices, poultry prices and agricultural wages so that all costs are now in a 2009 price base.

26. The stocking densities and a number of the Annex II requirements have changed from the original directive proposal on which the consultation Impact Assessment and the ADAS/UofE research was based. Using a number of assumptions we have approximated how this would affect the costs given in the report to make it relevant to the final Directive. For more detail on the method used to approximate the new figures please see annex B.

### Businesses affected

27. It was estimated that there are approximately 1,338 holdings with meat chickens in England and currently, over 600 million chickens are produced for meat in England each year, of which the ADAS/UofE study estimated:

- Approximately 4 % are produced at stocking densities below 30kg/m<sup>2</sup> - these establishments would need to comply with the minimum standards set out in Annex 1 of the Directive.
- Approximately 80% are produced at stocking densities between 30kg/m<sup>2</sup> and 38kg/m<sup>2</sup> - these establishments would need to comply with the enhanced Annex II standards.
- Approximately 16% are produced at stocking densities above 38kg/m<sup>2</sup> - these establishments would need to reduce stocking density and comply with the Annex II requirements or maintain their stocking density and comply with the Annex V requirements if this option is open to them.

28. Five companies control 80% of UK chicken production. A significant proportion of chickens are reared on integrator-owned farms with the remainder reared by independent farmers on contract to one or more integrated companies.

### Annex I Costs

29. Annex I costs refer to the various costs of additional requirements applicable to all broiler producers. In the original ADAS/UofE study, the costs of these requirements were assumed to be negligible.

30. Since the ADAS/UofE study however, one of the requirements relating to lighting originally required under Annex II (see below) has since become an Annex I requirement, and hence applicable to all producers. This means that the 4% of producers that stock broilers below 33kg/m<sup>2</sup> will now face the costs of potentially having to upgrade lighting, as well as those stocking at greater than 33kg/m<sup>2</sup> levels.

31. It has been assumed that the original proportion of producers who would have to upgrade to comply with the lighting requirements for Annex II, 48%, is likewise the same for those producers currently stocking below 33kg/m<sup>2</sup>. Hence the Annex II lighting costs have been amended to reflect the additional producers that would be required to upgrade lighting following the adjustment to the Directive.

#### Transition costs

32. Taking account of the proportion of producers who indicated they would need to upgrade their capital equipment to comply with this lighting requirement, the transition costs to the industry as a whole will be £1.71m. For a typical 100,000 bird unit, taking into account the likelihood of change this cost was £2,000.

**Table 3:** One-off Annex I capital costs

	Proportion of Original Costs from Study that Apply	Percentage of producers who would have to upgrade to comply	Lowest individual cost given (per sq m)	Highest individual cost given (per sq m)	Mean Cost (per sq m)	Max Mean Cost typical 100,000 bird unit	Cost to "typical" unit - taking into account likelihood of change	Mean Cost to industry (allowing for % in need of upgrade)
<b>Lighting requirement</b>	100%	47.92%	£0.22	£6.04	£0.76	£4,149	£1,988	£1,706,474

#### Annual costs

33. For the holdings that need to upgrade their capital in order to comply with the Annex I criteria there will also be an increase in annual production costs. For the industry this is estimated to be approximately £552,000 per annum. Taking into account the likelihood of needing to upgrade their capital, this works out as a cost to a typical 100,000 bird unit of approximately £643 per annum.

**Table 4: Ongoing Annex I lighting costs**

	Proportion of Original Costs from Study that Apply	Percentage of producers who would have to upgrade to comply	Cost (£) per sq m	Cost to typical unit	Cost to "typical" unit - taking into account likelihood of change	Cost to industry (allowing for % in need of upgrade or change)
<b>Lighting requirement</b>	100%	47.92%	£0.25	£1,342.86	£643	£552,269

## Annex II Costs

34. Annex II costs refer to the various costs of additional requirements applicable to those producers wishing to stock at density levels greater than 33 kg/m<sup>2</sup>. These include ammonia and humidity levels, temperature requirements and additional documentation. This IA extrapolates from the ADAS/UofE survey responses to estimate total costs to broiler producers in England at industry level.

### Transition Costs

35. In order to comply with Annex II requirements and be allowed to stock at the higher level it was determined in the ADAS/UofE study that a number of holdings would have to upgrade their capital in order to comply. Complying with the Annex II requirements entails a number of capital costs arising from the need to improve ventilation, heating and documentation to ensure the minimum welfare standards as laid out in Annex II are being met.

36. Taking account of the proportion of producers who indicated they would need to upgrade their capital equipment to comply, the one-off capital cost to industry was estimated at £8.6m. For a typical 100,000 bird unit taking account of the likelihood of change the cost was estimated to be £10,000.

**Table 5: One-off Annex II requirement costs**

	Proportion of Original Costs from Study that Apply	Percentage of producers who would have to upgrade to comply	Lowest individual cost given (per sq m)	Highest individual cost given (per sq m)	Mean Cost (per sq m)	Max Mean Cost typical 100,000 bird unit	Cost to "typical" unit - taking into account likelihood of change	Mean Cost to industry (allowing for % in need of upgrade)
<b>Ammonia &amp; humidity</b>	100%	20%	£0.34	£5.66	£2.07	£11,338	£2,268	£1,946,195
<b>Temperature lift</b>	100%	30%	£0.35	£14.82	£4.63	£25,364	£7,609	£6,530,788
<b>Recording (of humidity etc)</b>	0%	60%	£0.07	£16.99	£1.06	£0	£0	£0
<b>Documentation</b>	30%	10%	£0.02	£0.57	£0.18	£298	£179	£153,489
					<b>Total</b>	<b>£36,999</b>	<b>£10,055</b>	<b>£8,630,472</b>

### Annual Costs

37. For the holdings that need to upgrade their capital in order to comply with the Annex II criteria there will also be an increase in annual production costs. For the industry this is estimated to be approximately £161,000 per annum. Taking into account the likelihood of needing to upgrade their capital, this works out as a cost to a typical 100,000 bird unit of approximately £188 per annum.

**Table 6: On-going Annex II requirement costs**

	Proportion of Original Costs from Study that Apply	Percentage of producers who would have to upgrade to comply	Cost (£) per sq m	Cost to typical unit	Cost to "typical" unit - taking into account likelihood of change	Cost to industry (allowing for % in need of upgrade or change)
Ammonia	100%	20%	£0.09	£494	£99	£84,747
Temperature lift	100%	30%	£0.05	£296	£89	£76,272
Recording (of humidity etc)	0%	60%	£0.00	£0	£0	£0
			<b>Total</b>	£790	£188	£161,020

### Stocking Density Requirement Costs

38. The Directive allows stocking of up to 39 kg/m<sup>2</sup> provided the welfare criteria set out in Annex II of the Directive are met. In practice most holdings will stock at 38 kg/m<sup>2</sup> in order to provide a safety net to assure they do not accidentally exceed the maximum stocking density. The need for a safety margin was set out in the ADAS/UofE study and the cost of meeting this requirement is extracted from that report. For the preferred option, all producers who stock above 39 kg/m<sup>2</sup> will have to come down to a level of 38 kg/m<sup>2</sup>.

#### Cost of Reducing Stocking Density

39. For the 84% of the industry which stock at 38 kg/m<sup>2</sup> or below, there will be no cost in terms of complying with the stocking density requirement.

40. Under the proposed legislation, the remaining 16% of holdings stocking at 42 kg/m<sup>2</sup> cannot take advantage of the Annex V derogation to stock up to 42 kg/m<sup>2</sup> and therefore all holdings will have to reduce stocking densities to 38 kg/m<sup>2</sup> (this includes a 1 kg/m<sup>2</sup> safety margin). For those producers reducing stocking density, there are two responses available – either they could choose to raise fewer birds in the same houses or they could extend their accommodation to replace the capacity lost and rear the same number of birds. Regardless of their choice, producers who reduce stocking density would face higher production costs, as the same fixed costs per square metre (heating, lighting etc) are spread over fewer birds. If they choose to raise fewer birds then their turnover would fall and total net margin would be reduced. If the accommodation is extended or more houses are built to replace lost capacity then there would be capital costs incurred.

41. It is assumed that 30% of holdings stocking at 42kg/m<sup>2</sup> will build new capacity at a one-off capital cost of £4.4m.

42. The remaining 70% would reduce stocking density by rearing fewer birds. This would impact on their annual production costs and net margin. The increased annual production cost and loss of net margin for both holdings rearing fewer birds and those investing in new capacity was estimated to be £4.4m. For a typical broiler unit of 100,000 birds this is a one-off capital cost of around £84,000 with annual costs of around £28,000 per annum.

Table 7: Cost of Reducing Stocking Density

Percentage Not Adopting Annex 5 Derogation	100%		
Impact on Capital Costs (one-off)			
	Typical 100k	Cost per Bird needing rehousing	Total Industry
Currently stock at 38	£0	£0.00	£0
Over 38 (30% build new capacity)	£84,311	£8.85	£4,375,630
Impact of Production costs (pa)			

	Typical 100k	Cost per Bird	Total Industry
<b>Currently stock at 38</b>	£0	£0.00	£0
<b>Over 38</b>	£24,333	£0.03	£4,200,356
<b>Impact on net margin (pa)</b>			
	Typical 100k	Cost per Bird	Total Industry
<b>Currently stock at 38</b>	£0	£0.00	£0
<b>Over 38 (70% reduce capacity)</b>	£1,764	£0.00	£221,238
<b>Totals</b>	£110,408		£8,797,223
		One off	£4,375,630
		Ongoing	£4,421,593

## Training Costs

43. The Directive states that member states must be responsible for ensuring that keepers have received sufficient training in their tasks. It is expected that training costs will be unaffected by the choice of option.

44. The costs associated with training fall primarily on the industry. It is expected that keepers will have completed appropriate training that matches National Occupation Standards set by Lantra (the Sector Skills Council for environmental and land-based industries) and awarded and delivered by an accredited body. The training must cover all the requirements set out in the Directive. An example of one such qualification that meets this criteria is the NVQ Level 2 in Livestock Production (Poultry), which is designed by Lantra (the sector skills council for agriculture) and awarded by the National Proficiency Tests Council (NPTC). This course will be replaced in the near future by the Level 2 Work-based Diploma in Agriculture (Poultry Production). This links in with the work of the poultry industry's "Poultry Meat Training Initiative".

45. The main costs involved relate to the NVQ "assessment of competence", which is estimated to cost around £1500 per applicant. It is not envisaged that the level of training required to successfully complete the NVQ will be substantially greater than that developed via on-the-job training, although the estimated ongoing costs for individuals joining the industry allows for additional time requirements related to NVQ specific activities.

46. An exception to the formal qualification requirement for keepers concerns the potential for existing skilled keepers to have their prior experience recognised. This is frequently known as a "Grandfather Rights" scheme and is provided for in Article 4 of the Directive. In this instance keepers working within the industry would be eligible to apply for Grandfather Rights for a limited time period (six months after the implementing Regulations come into force)

47. There are around 2,000 people working in the broiler industry. Of which we estimate that around 20% of those keepers currently involved in the industry would apply for Grandfather Rights, with 70% choosing to undertake formal training and 10% already having the required qualification. We expect around 1,400 people already working in the industry will choose to undertake the formal NVQ Level 2 training. This means that there will be an estimated one-off cost to industry of around £2.15m of undertaking this training. We estimate that around 800 people will apply for Grandfather Rights. Whilst no application fee will be charged to these applicants, there will be a small time burden to these applicants of completing the application, and an administrative cost to AH of processing these applications. We estimate that the one-off cost to applicants will be £3,350. There will be a one-off cost to AH of processing these applications which is covered below in the *Costs to Government* section.

48. On an ongoing basis, the costs to industry are dependent on the number of new keepers expected to join the industry, estimated to be around 300 per year. The ongoing costs reflect both the costs of assessment, £1500 per applicant, as well as additional costs of applicant time regarding the qualifications above and beyond standard industry training, 10 hour per applicant assuming an average

poultry industry wage of £9 per hour. Assuming that all of these new keepers will undertake the NVQ Level 2 qualification, the ongoing costs are estimated at £480K per annum.

**Table 8: Training costs**

<b>Training costs</b>	
<b>Transition</b>	
NVQ Level 2 applicants	£2,154,600
Processing Grandfathering rights applications	£3,350
<b>Total transition costs</b>	<b>£2,157,950</b>
<b>Ongoing</b>	
New keepers NVQ Level 2	£478,020
Ongoing PVC (10 years)	£3,975,504
<b>Total training costs</b>	<b>£6,136,454</b>

### **Inspection and Enforcement**

49. This would involve implementing the directive with the inspection regimes and data systems of the Food Standards Agency Operations Group (FSA Ops) and Animal Health (AH). These bodies would be responsible for checking compliance with the Annex II and V criteria to allow the use of derogations permitting higher stocking densities.

#### Costs to Government (Inspection and Enforcement)

50. The FSA Ops has produced estimates of what it would cost them for their part in enforcing the Directive. They have revised these costs downwards since the Consultation IA, as they now have a clearer understanding of the actual enforcement costs. Based on current OVS and PMHI charge-out rates, they suggest start up costs would be £104,000. These costs are based on initial data collection and monitoring costs prior to the policy start date (£36k), training costs (£10k), IT Implementation costs (£45k), Policy work (£8k) and Manual for Official Control Amendment (£5k). The ongoing costs to the FSA Ops are estimated to be £32,000, based on data collection and monitoring costs.

51. The transition costs for AH are based on registration costs (£14k), system development costs (£18k) and processing grandfather rights applications (£6k). Together these costs total £37,000. On an on-going basis, around 270 visits to holdings due to non-compliance issues generated by inspections at the slaughterhouses are expected, with an additional 30 holdings receiving telephone based interviews. AH will also undertake 100 random based inspections. The annual costs of these inspections are estimated to be £132,000.

52. Thus the total annual enforcement cost is expected to be £186,000, with one-off costs of £141,000. These costs are estimated on a GB basis. Apportioning this total, the anticipated enforcement cost in England is expected to be £160,000 per year, with initial implementation costs of £121,000.

#### Animal Health Inspection and Enforcement using ACP for Risk Based Inspections

53. We are currently considering a possible role for assurance schemes such as Assured Chicken Production in enforcement bodies risk based inspection models.

#### **Costs: environmental**

54. The potential additional environmental impact relates to the impacts of the additional capital requirements, such as the impact of additional lighting or heating regulation. The impacts are estimated to be negligible however.

#### **Summary of Costs**

55. Table 9: Summary of costs of Preferred Option

	<b>Costs</b>
<b>Annex 1</b>	
One-Off	£1,706,474
Annual	£552,269
<b>Annex 2</b>	
One-Off	£8,630,472

Annual	£161,020
<b>Stocking Density</b>	
One-Off	£4,375,630
Annual	£4,421,593
<b>Training</b>	
One-Off	£2,157,954
Annual	£478,020
<b>Inspection and Enforcement</b>	
One-off	£121,288
Annual	£159,955
<b>Admin Burden</b>	
One-off	£8,032
PVC Ongoing (10 years)	£43,918,079
<b>Total PVC</b>	<b>£60,917,928</b>

### Summary of Costs to a Typical (100K) Broiler Unit

56. All producers will be required to fulfil the requirements set out in Annex I of the Directive. For a typical producer, who produces seven flocks of 100,000 broilers a year, the capital costs (spread evenly over 10 years) is estimated to be £840. If, as would be the case for the minority of producers, full investment in capital costs were required, then the producer could face costs of £1,800.

57. Almost all producers are expected to apply for the higher 39kg/m<sup>2</sup> density limit and comply with the Annex II requirements. The likely cost of the Annex II requirements in the Directive to a typical producer, who produces seven flocks of 100,000 broilers a year at a maximum stocking density of 39kg/m<sup>2</sup>, (spreading the capital costs evenly over 10 years) is estimated to be £1,200 per annum. If, as would be the case for a minority of producers, all aspects of the Annex II requirements were currently unfulfilled then the producer could face costs of approximately £4,500 per year.

58. For the majority of producers, around 84%, that stock up to 38kg/m<sup>2</sup> there would be no additional cost requirements relating to stocking levels. For the 16% of producers that stock above 39kg/m<sup>2</sup>, the costs of meeting the stocking density limit of 39kg/m<sup>2</sup> would vary depending upon whether fewer birds are kept or additional capacity is constructed. In the first instance yearly costs would be approximately £26,100; where capacity is increased costs spread over a 10 year period would be £8,400, plus the same annual production costs of £24,300. Based on this evidence reducing bird numbers appears the sensible choice for the average producer that will reduce stocking density.

59.. All holdings would also have to pay for staff training, which would amount to around £570 per annum and a one-off cost of £2,600. This assumes 2.34 individuals working on the typical Broiler unit and an industry turnover of 300 per year.

60. Additionally there would be an industry admin burden from the new regulation, but for a typical unit these costs are negligible.

61. Thus the overall cost of the Directive (including training and enforcement costs) to a typical conventional producer is approximately £2,800 per annum (spreading the capital costs evenly over 10 years). These costs increase substantially with the number of Annex II requirements that are unfulfilled and if the holding stocks at levels greater than 39kg/m<sup>2</sup>. These costs are significant when compared to estimated net margins for a typical 100K broiler unit of £13,300 per annum, although this excludes any potential efficiency gains as a result of the Directive, which would help to partially offset some of these costs.

### Benefits

62. As a result of the Directive, the welfare of chickens kept for meat would be improved. Consumers would have greater reassurance as to the welfare standards, which have been applied in the production of chickens for meat. The welfare of broilers can be considered a public good. The original Regulatory Impact Assessment commissioned research to estimate the size of this public good by carrying out economic analysis to elicit the public's "willingness to pay" for welfare improvements, as recommended by the Treasury Green Book. As the Directive has changed since then we have sought to approximate what these changes would mean in terms of benefits.

63. This research utilised stated preference techniques (both contingent valuation and choice experiment methodology) and a survey of a representative sample of the English public to estimate the non market benefits of the whole Directive to the public, and the benefits of the various aspects contained within it. The use of these techniques is fully discussed in the Treasury Green Book.

64. The study estimated the overall value of the original proposed Directive using the survey-based method of “contingent valuation”. Respondents were asked how much they would be willing to pay in the form of additional taxation per year to improve the welfare of chickens in line with the Directive proposals. The aggregate policy benefit was estimated to be £158 million per year (with 95% confidence interval £112 million to £209 million). The annual willingness to pay per household was £7.53.

65. The study also used a choice experiment to explore preferences for different welfare attributes (stocking density, incidence of footpad lesions, ventilation and period of darkness). Respondents made choices between paired options with differing welfare attributes and prices. Analysis of the choices then allowed the different attributes to be ranked according to importance to the public.

66. As shown in Table 10 the general public place the highest value on reducing stocking density. The second most valued attribute is a reduction in footpad lesions, followed by ventilation and, lastly, periods of darkness.

**Table 10:** Weighting the benefits of movement between attribute levels

<b>Attribute</b>	<b>Weighting</b>
Stocking density: Change from 38 kg/m <sup>2</sup> to 30 kg/m <sup>2</sup>	1.00
Footpad lesions: Change from 15% of flocks failing to 5%	0.77
Ventilation: Change from low to high	0.69
Period of darkness: Change from 4 hours to 8 hours continuous	0.25

67. The whole Directive was then assessed using the choice experiment data to compare the public valuation of the benefits for different alternative packages of welfare standards in the Directive. This choice experiment is used to help approximate how the original contingent valuation figure for benefits would change given the changes present in the final Directive compared with the proposal on which the benefits study was originally based.

68. It is important to note that the welfare standards of the final Directive could not be exactly matched to those on which the valuation study was based. It has therefore been necessary to adjust the benefit value to generate the closest approximation of the welfare gain. The adjustment has been calculated using estimates obtained from the Choice Experiment: it transpires that the estimated value to the public of the final Directive is approximately the 65% (£3.06/£4.69 \* 100%) of the original benefits (see Table 11).

**Therefore applying this to the contingent valuation estimation of benefits gives an overall benefit from this legislation of £103m per annum.**

**Table 11:** Additional benefit

<b>Chicken welfare standards</b>	<b>Additional benefit <sup>(a)</sup> (£/kg chicken)</b>
Current situation	£0
Original Proposed Directive, all producers 38kg/m <sup>2</sup> , 5% of Chickens with footpad lesions, Ventilation High	£4.69
Final Directive (closest approximation), all producers 38kg/m <sup>2</sup> , 10% of	£3.06



(a) Note that these should be used as relative values to compare different attributes. They may be overestimates of absolute value derived. The assessment is not complete because not all the elements of the regulations were included in the research.

69. The study found that the public's valuation of the benefits were approximately the same whether producers chose to produce at 30kg/m<sup>2</sup> or apply the Annex II derogation and stock at a higher level. The general public consider the benefits of the Annex II requirements to be approximately the same as those of a reduction in stocking density from 38kg/m<sup>2</sup> to 30kg/m<sup>2</sup>. This assessment supports the element of flexibility within the Directive, which effectively allows producers to provide an equivalent level of welfare benefits to the public whilst minimising their own costs (producers would decide on which option they take based on their costs).

70. Using sensitivity analysis to consider the robustness of this benefits estimate, we estimate that with 95% confidence, the actual benefit will lie within £75m and £136m per annum, which is known as a 95% Confidence Interval. The minimum annual benefit required to make the policy worthwhile (cost-benefit neutral) would be £7.6m per annum; this is equal to the total annual costs plus the annualised transition costs (one-off costs split equally over the 10 year time period). This minimum benefit lies significantly outside the 95% Confidence Interval.

#### Additional benefits compared to the Annex V derogation

71. By not allowing the Annex V derogation, as proposed under Option 1 in the Consultation IA, we anticipate that the public's valuation of the benefits could be higher than if producers did apply this derogation and stock up to 42 kg/m<sup>2</sup>. The original valuation study research did not explicitly consider the benefits of the Annex V criteria; although its findings can be applied to estimate the extremes of the additional benefits from not allowing the Annex V derogation.

72. As described above, the study found that the public's valuation of the benefits was approximately the same whether producers chose to produce at 30kg/m<sup>2</sup> or apply the Annex II derogation and stock at a higher level. Whilst the Annex V requirements (monitoring, codes of conduct and flock cumulative daily mortality rates) are significantly different to the Annex II requirements, in the absence of a specific study considering the value of the Annex V requirements, an extreme case for could be that this equivalence holds for the Annex V criteria. This would mean that the loss in public welfare from allowing a higher stocking density up to 42 kg/m<sup>2</sup> is offset by the additional public welfare from the welfare standards and monitoring required by the Annex V criteria. This implies that the benefits are approximately the same whether producers chose to produce at 38kg/m<sup>2</sup> or apply the Annex V derogation and stock at the higher level. This means that as a minimum there would be no additional benefit from not allowing the Annex V derogation.

73. However, Animal Health will carry out inspections of producers on a risk basis so the benefits of the Annex V derogation concerning monitoring, codes of conduct and flock cumulative daily mortality rates will still be realised to a greater extent at lower stocking density. This means that it is more likely to be the case that the public's valuation of the additional benefits of the Annex V criteria are smaller than assumed in the previous paragraph, and as such the equivalence does not hold. The maximum additional benefit of not allowing the Annex V derogation would therefore be the case when the additional welfare standards and monitoring have no impact on public welfare, so that the public welfare benefit under the Annex V derogation is lower due to the potential for increased stocking densities.

74. Drawing on the original study, it can be shown that the benefits associated with moves from 38kg/m<sup>2</sup> to 34kg/m<sup>2</sup> (£1.91/kg) and 38kg/m<sup>2</sup> to 30kg/m<sup>2</sup> (£3.89/kg) suggest an approximately linear relationship of benefits changing per kg of stocking density reduction (£0.48 per kg). Assuming that this linear relationship extends to stocking densities above those originally considered, allowing the Annex V derogation would reduce the benefit by, at a maximum, around £65m, with a 95% Confidence Interval of £53m to £76m.

75. So overall, we estimate that by not allowing the Annex V derogation the annual benefits from the public's valuation of improvements in chicken welfare will increase by £0m - £65m.

## Risks and assumptions

### Imports

76. The market for chicken meat is also subject to imports from other countries. Imports have increased significantly in recent years and account for around 30 % of the overall market supply. In 2008, the UK imported over 405,000 tonnes of poultrymeat and exported 278,000 tonnes. Every year poultry imports are worth £1.3billion to the UK economy and exports are valued at £350 million. The UK's main trading partner is the EU accounting for 71% of imports and 89% of exports. The main EU countries for exports are the Netherlands, Republic of Ireland, France, Germany and Spain. There are significant amounts of poultrymeat imported from Thailand and Brazil, almost entirely in frozen or processed form. The majority of all imports are frozen or processed, and typically move into catering and manufacturing. These are distinct sectors characterised by intense price competition. The costs of broiler production in the UK are currently slightly higher than those of other EU member states, and are significantly higher than those of the USA, Brazil & Thailand.

77. Research by Van Horne at LEI Wageningen ("Cost Price Development in Broiler Meat" – LEI, Wageningen, The Netherlands, 2002) set out to calculate the costs of broiler meat production (primary cost plus processing cost) in 4 European countries and to compare them with the corresponding costs in Brazil and the USA (Table 12).

**Table 12:** Comparative costs of broiler production, the UK, France, Germany, the Netherlands, USA and Brazil

Country	EUR per kg ready-to-cook weight*
UK	1.40
France	1.37
Germany	1.36
Netherlands	1.34
USA	1.05
Brazil	0.87

\*Ready to cook weight (RTC) is about 70% of live-weight.

78. Table 12 clearly shows the UK's small cost disadvantage compared to other EU countries (3% compared to the average of France, Germany and the Netherlands) and its considerable disadvantage compared to the USA (33%) and Brazil (61%).

79. Implementation of the Directive would inevitably increase production costs for UK broiler producers, both through increased production costs and the need to service new and additional capital investment. The competitive position of English broiler producers relative to their EU competitors will depend on the extent to which other Member States implement the Directive and over what timeframe. The Netherlands, Poland and Ireland have already decided to fully implement the Directive, allowing producers to stock up to 42kg/m<sup>2</sup>. Relative to these three countries the competitive position of English producers will slightly deteriorate. Although for 84% of producers that already stock at 39kg/m<sup>2</sup> or less this difference is unlikely to have a significant impact on these firms' competitive position. The competitive position of EU countries relative to the USA, Brazil and Thailand could be expected to further deteriorate. However, given the existing cost differentials, it is unlikely that this small increased disadvantage would have a significant effect on producers. This aspect will be considered as part of the post implementation review.

### **Non compliance by industry**

80. There is a risk that the industry will choose not to comply with the provisions of the Directive. This would impact on the level of enforcement activity and the welfare of the birds. There would also be a smaller benefit to the public who value the improvements in welfare. The likelihood of this happening is very low since Assured Chicken Production, a Red Tractor assurance scheme which accounts for over 80% of UK chicken production, will include the provisions of the Directive in its scheme requirements. In addition, a series of workshop have been run by ADAS, funded by Defra and with support from the NFU and the British Poultry Council, to highlight awareness of the Directive and its practical implications for producers. A dedicated Defra website has also been set up which provides a one stop shop for all information relating to compliance with the Directive.

### **Bird welfare does not continue to improve**

81. There is a risk that meat chicken welfare does not continue to improve as a result of implementing the provisions of the Directive. This is low given that a consistent approach to monitoring and feedback in the slaughterhouse will identify concerns of poor on-farm welfare which can then be passed to the producer and Animal Health. This will help to identify those keepers who are operating at unsatisfactory levels of stockmanship. Welfare triggers will be set for various post mortem conditions assessed in the slaughterhouse. Over time, we expect that these levels will be lowered as bird welfare moves to even higher levels through such factors as control of house environmental parameters and training of keepers. We will assess improvements in bird welfare as part of the post implementation review process.

### **Producers go out of business**

82. There is a risk that some producers will go out of business as a result of the additional requirements. However, the risk is fairly low as these will tend to be producers who were thinking of leaving the industry anyway as a result of low profitability, ageing facilities and diseconomies of small scale. The percentage that is expected to leave as a result of the Directive's requirements is in line with the percentage that has left over previous years for other reasons. We will look at the movement in industry as part of the post implementation review process.

### **Administrative burden and policy savings calculations**

#### Administrative Burden – costs to producers

83. Producers will be required to contact AH to register specific information with them. This information requirement is reduced by the fact that much of the information required has already been provided as part of the GB Poultry Register: indeed the primary additional information required would be house stocking levels. This will lead to an administrative burden to the farmer, which can be estimated as the costs of completing and returning a form provided by AH. Based on half an hour of an average farm manager /skilled farmer wage time at £12 per hour (including 30% overhead costs), the cost per farm is estimated to be £6. The cost to the industry overall is therefore estimated to be a one off cost of £8,000.

#### Policy cost savings

84. As seen in the costs section of the IA, this policy increases annual costs for businesses rather than introduces any policy cost savings for businesses affected. The total annual increase in business costs is £5.6 million.

### **Wider impacts**

#### Issues of Equity and Fairness

85. Although prior consideration of costs and benefits has focussed on aggregate levels, it is also necessary to take account issues of fairness relating to variation in consumer preferences and producer costs. Not all individuals are necessarily interested in or concerned about animal welfare and/or concur with the view that changing standards would bring welfare benefits.

86. As described above the average benefit from the Directive to the public was £4.89 per household per year following adjustment (65% of the original £7.53) under the preferred option. However this includes a range of different valuations of the benefits of the Directive. After eliminating “protest bids”, as is good practice in such research, there remained almost one in four respondents (23%) who expressed a willingness to pay of zero. If as the costs to producers rise the price of chicken rises then, assuming they eat chicken, these people would incur additional costs, for no benefit.

87. When the sample was analysed by social grade (a classification based on type of occupation), the higher social grades A, B and C1 showed average willingness to pay £7.21 per household per year, compared to £3.06 for social grades C2, D and E. Those in higher social grades were also less likely to give a willingness to pay response of zero.

Table 13: Non market benefits of the Directive to different social groups (option 2 only)

Consumer Group	Willingness To Pay (£ per household per year)	Aggregate benefit (£ per year)

ABC1 households	£7.21	£72.3 million
Other households	£3.06	£30.7 million
Total		£103 million

88. Those in higher social grades, roughly 50% of the population, would derive around 70% of the benefits from the Directive. Since social grade is used as a proxy for income this result is unsurprising – those in higher social grades would have a greater ability to pay for increased chicken welfare.

89. It is not easy to forecast the extent to which the industry costs would be passed on to consumers, as this depends on market conditions and the balance between demand and supply. The most likely outcome is that reductions in supply would result in producer prices higher than they would otherwise have been. If it is assumed that a price increase affects all products equally, that chicken consumption levels are broadly similar across social grades and that consumption levels are relatively unaffected by price changes, lower social grades may face a larger proportionate cost from the measure.

## Specific Impact Tests

### Competition Assessment

90. As previously mentioned, the UK poultry meat industry is characterised by a high degree of concentration, with five companies controlling 80% of chicken production. The main companies are vertically integrated, and have a diverse product range to include other meats and prepared foods. The majority of broilers are reared in units either owned or operated by one of the large companies or having a close contractual relationship. The industry is not characterised by rapid technological change.

91. The ADAS/Exeter study suggests that the impact of the Directive would not be evenly felt by producers. Large units owned by the major companies for example are relatively unconcerned about the temperature lift requirement, whereas small independent producers are more likely to have to upgrade to meet this requirement. The independent producers that would need to upgrade in order to meet the temperature lift requirement are also concerned about the lighting and humidity requirements. These small (typically approximately 40,000 birds per flock) non company producers therefore face much higher compliance costs compared to a large company producer with a typical flock size of over 100,000. It is unlikely that these small non company producers would chose to invest the money to upgrade their accommodation, since even if the cost to an average firm of the Directive could be passed on to consumers via higher prices, this would still not cover their costs. They would therefore leave the industry.

92. Table 14 below shows the estimated impact of the Directive on producers if half of the costs of the Directive are passed on to consumers through a general increase in the price of chickens equal for all producers.

Table 14: Costs to different categories of producer per holding per year

	Costs	Benefits (50%)	Net Costs
<b>Producers requiring significant investment</b>	£6,069	£1,853	£4,217
<b>Producers not requiring significant investment</b>	£3,518	£2,009	£1,509

93. This scenario demonstrates the differential impact according to whether or not the farmer needs to make significant investment to meet the Annex II requirement (particularly temperature lift). Those farmers needing to invest because of the condition and design of their buildings would experience a net loss from the Directive together equivalent to £1.7 million a year. Cash outflows would be concentrated in the first year of implementation as buildings were upgraded. The larger category (about two thirds) of producers who do not require major investment, would also experience a net loss but this would be considerably less damaging as this category includes more and larger units.

94. It is unlikely that there would be any significant extra set-up or ongoing costs to firms entering the industry when compared to the costs that existing firms would need to meet under the Directive. One potential area of difference relates to Grandfathering of training certification, whereby experienced poultry handlers may not have to complete the training requirements as specified by the regulator. The potential for on-the-job training, high industry turnover and the proportion of the current industry not expected to take up Grandfathering rights if offered helps to limit this cost.

95. The Directive would affect the mix of price and quality of products offered to consumers, in that chicken produced at lower cost in higher density units would be unavailable. The impact on retail prices would be relatively minor, however would impact on some low income consumers who express a lower willingness to pay for the benefits to chicken welfare.

96. In summary, although a few firms are likely to leave the industry as a result of the Directive, the majority of large company owned producers would stay. Although the Directive would impose higher costs on some firms, these are firms that were previously producing to a lower welfare standard, whilst those which have already invested in producing to high welfare standards would be less affected. The effects on competition would be few, since alternative products, and imported chicken, would continue to be readily available.

#### Small firms impact test

97. The nature of the broiler industry is such that most if not all individual holdings employ a very small numbers of individuals. Despite this however some consideration of the impact on small businesses is required, given that the majority of the industry is dominated by a small number of large producers, which maintain control of numbers of holdings. It could potentially be the case that the holdings under control of these large producers are affected in a different way to those independent holdings with greater than 500 birds (holdings with fewer birds are exempt from the legislation).

98. A significant proportion of broiler production is under the complete control of the processing companies, with production farms owned by the company and managed and run by company employees. Most of the remaining 30-40% of producers are individual growers supplying these same producers under contract (UFAW Farm Handbook 4th Edition). These individual growers will either own outright or rent their buildings. Any investments in building structure or equipment would normally be paid for by the individual grower. Whilst the processing companies will generally have more than 250 full time equivalent employees, virtually all of the contracted producers will fall within the small firm's definition.

99. Given that margins are already very tight in the UK broiler sector with average net margin per bird in 2005 estimated at less than two pence, any increase in the cost of production would impose financial difficulties on some producers. This could have a disproportionate effect on smaller producers who would not be able to take advantage of the benefits of scale that larger producers could use to drive input costs to a lower level to survive. A major concern expressed by non-company respondents (i.e. small firms) in the 2002 Exeter study was "profit margins insufficient to invest with confidence in the future."

100. ADAS held a series of workshops in early 2004 with small and large broiler producers in order to gain their thoughts on the implications of the possible content of an EU Broiler Welfare Directive. Concern was expressed by smaller producers/contract growers that there simply was insufficient profit being made from broiler production in the UK to fund projects involving significant amounts of capital.

101. The 2005 ADAS/Exeter survey found that approximately 12% of holdings, mostly comprising small non company producers, could leave the industry if the proposed Directive goes ahead (although they would account for a much smaller proportion of overall production). However, the survey also found that 12.4% had gone out of broiler production between 2002 and 2005. Although some of these were due to death or retirement, many of those that left the industry had concluded that their operation was too small to be economically viable. Most of the producers from the 2002 sample that had gone out of production were producers with smaller houses, and fewer birds, than average. This suggests that they were small and non company owned producers. Many companies were either closing or resting their less efficient sites.

102. Given this, it is felt that those producers that would leave the industry in the event of the proposed Directive would be those most likely to leave the industry anyway as a result of low profitability, ageing facilities and diseconomies of small scale. The percentage that is expected to leave as a result of the Directive is in line with the percentage that has left over the last three years for other reasons.

## Annexes

Annex 1 should be used to set out the Post Implementation Review Plan as detailed below. Further annexes may be added to provide further information about non-monetary costs and benefits from Specific Impact Tests, if relevant to an overall understanding of policy options.

### Annex 1: Post Implementation Review (PIR) Plan

A PIR should be undertaken, usually three to five years after implementation of the policy, but exceptionally a longer period may be more appropriate. A PIR should examine the extent to which the implemented regulations have achieved their objectives, assess their costs and benefits and identify whether they are having any unintended consequences. Please set out the PIR Plan as detailed below. If there is no plan to do a PIR please provide reasons below.

**Basis of the review:** [The basis of the review could be statutory (forming part of the legislation), it could be to review existing policy or there could be a political commitment to review];

As part of Defra's policy cycle, a post implementation review of new legislation is required to be carried out. The Commission will be publishing a report in 2012 which will look at the Directive's application and influence on chicken welfare.

**Review objective:** [Is it intended as a proportionate check that regulation is operating as expected to tackle the problem of concern?; or as a wider exploration of the policy approach taken?; or as a link from policy objective to outcome?]

This will include monitoring of implementation activity, consideration of actual costs and benefits and improvements in chicken welfare. This will help us to evaluate our policy position and if necessary, to make amendments.

**Review approach and rationale:** [e.g. describe here the review approach (in-depth evaluation, scope review of monitoring data, scan of stakeholder views, etc.) and the rationale that made choosing such an approach]

The approach will include monitoring of the welfare outcomes recorded in slaughterhouses, the effect of welfare triggers which have been set for various post mortem conditions and the result of Animal Health inspections. We will look at whether production levels and the proportion of imports have changed and at the movement of producers in and out of the industry. We will also want to look at compliance costs, training costs and administrative costs to the industry. We will consider running a similar study to the one carried out to inform the Initial Impact Assessment. Comparing the data collected about different welfare aspects after the implementation of the Directive with the equivalent that we have from before will also allow us to calculate the actual benefit to the public which is realised. We will also need to take account of the wider picture including the experience of other Member States and the results of future research.

**Baseline:** [The current (baseline) position against which the change introduced by the legislation can be measured]

A survey was carried out by ADAS and the University of Exeter in 2005 to assess the likely costs of the Directive to the broiler industry in England. We also have information from slaughterhouses on the current level of post mortem conditions and details of Animal Health on-farm inspections.

**Success criteria:** [Criteria showing achievement of the policy objectives as set out in the final impact assessment; criteria for modifying or replacing the policy if it does not achieve its objectives]

The policy objectives will have been achieved if there is a continued improvement in meat chicken welfare and enforcement bodies are better able to target those keepers operating at an unsatisfactory level of stockmanship.

**Monitoring information arrangements:** [Provide further details of the planned/existing arrangements in place that will allow a systematic collection of monitoring information for future policy review]

Animal Health and Food Standards Agency Operations are currently putting in place systems to collect information and compile reports on inspections in slaughterhouses and on farm.

**Reasons for not planning a PIR:** [If there is no plan to do a PIR please provide reasons here]

## **Annex 2: Outcome of Impact Tests not referred to in the Evidence Base**

### Legal Aid

The draft Regulations do not create any new criminal sanctions or civil penalties.

### Sustainable Development

The Directive is in accordance with the shared UK principles of sustainable development.

### Carbon Impact Assessment

The proposed Regulations will have no significant effect on carbon emissions, as in the main the nature and scale of conventional chicken production and marketing is likely to remain the same. There may be some change to the carbon footprint of individual businesses, but the overall impact for the industry as a whole is unlikely to alter substantially.

### Other Environmental Issues

As the nature of conventional chicken production and marketing is likely to remain the same, the proposed Regulations have no implications in relation to climate change, waste management, landscapes, water and floods, habitat and wildlife or noise pollution.

### Health Impact Assessment

The Regulations will not directly impact on health or well being and will not result in health inequalities.

### Race /Disability/Gender

A screening of the options against a checklist of questions as part of the Equality Impact Assessment has revealed that there is no unlawful discrimination and that they promote equality of opportunity and good relationships between people from different backgrounds.

### Human Rights

The Regulations are consistent with the Human Rights Act 1998.

### Rural Proofing

The majority of producers and many suppliers are based in rural areas and the Regulations will not have a negative effect on the rural community.