

ANNEX A: CUMULATIVE IMPACT OF FORTHCOMING REGULATORY PROPOSALS ON THE ECONOMICS OF FARMING

1. EXECUTIVE SUMMARY

Introduction

1.1. This note summarises the latest analysis of the likely economic impacts of new regulation and charging proposals on the English farming industry.

1.2. The analysis focuses on compliance costs and considers farm-specific measures that are likely to have a significant¹ impact on current production costs and farm business incomes over the next decade.

Effect of regulation on farm costs and incomes

1.3. We estimate that by 2017, compliance with new regulations for which Defra is responsible could increase farm costs by around £170m per year. This would represent a rise in annual production costs of about 2% for the average farm business, and is equivalent to around 8% of current (2007/08) Farm Business Income². The benefits stemming from these new regulations are much harder to estimate and do not always accrue to farmers, but are expected to be around £300-400m.

1.4. In addition to those introduced by Defra, regulations brought in by other government departments will also have an impact on farmers. However, the only one of which we are currently aware that will have a marked impact on farming compared with other sectors is the new EU emission standards for tractors. This could increase farm costs by around £25m pa by 2017.

1.5. As a result of a number of factors such as input price volatility and weather conditions, the farming industry faces significant fluctuations in costs and the headline changes arising from the impacts of regulation fall well within the range of year to year variation. However, the impacts of regulation come on top of the effect of all these other factors so that in the absence of any mitigation, the costs of additional regulation will reduce Farm Business Income substantially below what it might otherwise have been. Although regulatory effects are relatively small when compared with the inherent variability in farm income, it must be remembered that this variability arises from factors that are largely outside the direct control of government while regulatory costs are determined almost entirely by government intervention.

¹ Proposals have been defined as significant if they are expected to impose annual costs of over £20m for the farming industry in England or over £5m for a particular farming sector.

² Farm Business Income represents the financial return to all unpaid labour and on the farmer's own capital invested in the farm business. It is a broad measure of the income received from all the activities of the farm, including diversified activities - after costs have been paid.

1.6. The effect of regulation on costs is likely to vary slightly among sectors but no sector is likely to see cost increases of more than 4½% by 2017 and they are likely to be in the range of 1½% to 3%, other than for horticulture and poultry businesses.

1.7. The majority of the new regulatory costs affecting farming are a result of water and waste regulations. This is true for both arable and livestock farms, except for poultry farms which will be most significantly affected by the Meat Chicken and Laying Hens directives. Proposals under the Nitrates Directive are likely to have the most significant effect on pig and dairy farms, while cereal and general cropping farms will be most affected by the Diffuse Pollution measures. Disease cost sharing measures and Sheep EID will also have an impact on livestock farms.

1.8. These headline figures conceal differential effects at farm-level and, in assuming that farmers bear all such costs, with no scope for mitigation or any transmission up or down the supply chain, represent a worst-case assessment. In practice, individual farm businesses will attempt to mitigate the costs of regulatory compliance through changes in the scale, type or mix of production, or through changes to farm practice. The actual impact of new regulatory costs is therefore more likely to fall below our estimates.

Regulation and charging proposals in context

1.9. Given the dynamic environment within which the sector operates, it is not straightforward to determine the effects of the additional regulation on its competitiveness: in particular, other countries will also have changing regulatory requirements. How the specific regulations considered here compare with those in other EU member states is addressed later in this note.

1.10. Although this note focuses on the costs of regulation to farmers, it is important to keep in mind that Government regulates to benefit society, not to impose costs on farmers. However, while costs may be relatively large average amounts borne by a relatively small number of farm businesses, benefits will often be relatively small amounts on average but accruing to large numbers of households and businesses.

1.11. The overall effect on total farm household incomes will be less marked than on farm business incomes as many farming households have additional sources of income and assets which they may use to help support their businesses. These resources, together with the high asset-value of farm businesses, are likely to contribute to the low levels of indebtedness and the lower rates of bankruptcy and insolvency which are characteristic of farming compared with other sectors.

2. HEADLINE IMPACTS

Background to the assessment of cumulative impacts

2.1. Assessments of the cumulative impact of new regulatory proposals started in 2005. This update reflects the state of play as at October 2009 with respect to regulatory proposals and the latest Farm Business Survey data, relating to 2007/08. The assessment will continue to be refined and updated as individual measures are developed further.

2.2. All policies are considered against a baseline of financial year 2007/08 – that is, if a regulation is already in force, its effect will be captured within the Farm Business Survey data that have been used; whereas if it starts (or if regulatory changes cause an increase in costs) in 2008/09 or later, it is treated as “future” regulation because any impacts will not be reflected in the baseline data (except possibly to the extent that farmers might have anticipated regulatory changes in their business decisions and already incurred some costs).

2.3. Inevitably, there are great uncertainties in forecasting costs so far into the future. Some of the proposals are at a very early stage of development, and many will be subject to public consultation on their exact nature and timing so that the design of regulations, as well as costs and benefits, may evolve over time.

Aggregate impact of regulations

2.4. This note considers the impact of future regulation and charges on the farming sector over the next decade. The analysis has been limited to major proposals for which Defra is responsible, defined as those expected to have either a significant impact on the farming industry as a whole (>£20m cost per annum) or a disproportionate effect on any particular farming sector (>£5m pa).

2.5. **Very early point estimates** of the aggregate costs and benefits of each of these proposals for farmers in England are given in Table 1; these are necessarily a ‘snapshot’ and reflect the stage of policy development as at October 2009. The table has been formatted to show the separate impacts of EU and Domestic regulations. Annual impacts are illustrated for 2008 and for two years in the next decade to highlight the differences arising from the phasing of the various measures. Positive figures indicate cost increases; negative figures represent cost savings to farmers. More details are given in Annex A, and in proposals’ individual Regulatory Impact Assessments (RIAs) or Impact Assessments (IAs). During the consultation stages, Impact Assessments normally consider a range of options and uncertainties for each proposal and the range of costs can be very wide; these are refined as final options are agreed. To make it more tractable this analysis typically takes the cost figures for the preferred option or a mid-point estimate.

2.6. On top of these costs, there may be regulations introduced by other government departments which also impact on farmers. The only example of which we are currently aware which will have a marked impact on farming, compared with other sectors, is the new EU emission standards

for tractors, overseen by the Department for Transport. This is expected to cost farmers around £13m by 2013, rising to around £25m by 2017.

Although it is not included alongside Defra's regulations in the headline analysis, its effect is considered where appropriate throughout this paper.

Table 1: Early estimates of the cost of key regulatory proposals to agriculture prior to adjustment and mitigation, selected years, England

EU Regulations	Impact on farm businesses in England (£m)		
	2008	2013	2017
Water Framework Directive (Diffuse Pollution measures)	0	86	86
Changes to the NVZ Action Programme (after mitigating measures)	33	35	35
Meat Chicken Welfare Directive	0	7	7
Sheep Electronic Identification ³	-1	3	3
Laying Hens Directive	0	13	12
Thematic Strategy on Pesticides	T.B.D. ⁴	T.B.D.	T.B.D.
Total (EU)	31	143	143

Domestic Regulations			
Changes to the Older Cattle Disposal Scheme	-2	-10	-10
Animal Health Responsibility and Cost Sharing ⁵	0	24	24
TSE cost sharing	1	14	14
Total (Domestic)	-1	28	28

GRAND TOTAL	31	171	171
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NB: Figures have been rounded and may not sum exactly to totals shown.

Farm Type	Impact on farm businesses in England (£m)		
	2008	2013	2017
Primarily Livestock ⁶	26	86	86
Primarily Arable ⁷	1	65	65
Other ⁸	4	20	20
GRAND TOTAL	31	171	171

NB: Figures have been rounded and may not sum exactly to totals shown.

2.7. Estimates of impact are particularly uncertain at this stage. In the case of some regulations, the specifics of implementation have yet to

³ The baseline for this regulation includes the requirement for S-tags. There is an estimated saving of around £2.5m now that this has been lifted which offsets the costs of EID.

⁴ To be determined.

⁵ This figure represents farmers' contribution to preparedness and collection costs only.

⁶ 'Primarily livestock' comprises dairy, grazing, pig and poultry farms.

⁷ 'Primarily arable' comprises cereal, general cropping and horticulture farms.

⁸ 'Other' comprises mixed farms along with any others which don't fall into the categories above.

be confirmed, limiting the extent to which impacts can be estimated. Many, such as Responsibility and Cost Sharing for Animal Health, will be subject to further public consultation on their nature and timing; hence their design, as well as estimated costs and benefits, may change as a result. Even where regulations have been finalised, it is still difficult to establish how much change will be required, given uncertainty about the extent to which farms already meet the requirements.

2.8. Changes in the assessments of costs since the last update are a result of progress on policy development and impact assessments, combined with improvements in modelling and data. Proposed regulations which were modelled previously but which were already in force during 2007/08 are now absorbed in the baseline and hence no longer appear in this table (as their effects will already be reflected in costs and incomes for that year).

2.9. The headline figures in Table 1 represent the *initial* impact costs arising from compliance and don't incorporate the potential for costs to be mitigated by the second round impacts of any cost-price squeeze caused by an increase in regulatory costs (e.g. possible reductions in input prices and rents). Also, we expect that farm businesses will attempt to mitigate the costs of regulatory compliance through changes in the scale, type or mix of production, or to farm practices. As such these figures are likely to **over-estimate** the *final* impact on farmers.

The benefits of regulation

2.10. Although this paper focuses on the costs of regulation to farmers, it is important to keep in mind that Government regulates to benefit society, not to impose costs on farmers and that new regulations are subject to detailed appraisal through the impact assessment process. However, direct costs are often easier to identify and relate to than benefits. The latter can vary considerably in their nature, may accrue to a different sector, or even be inferred or estimated monetary values applied to intangible benefits, e.g. public assurance in the quality of welfare standards. It is also often the case that the benefits take the form of relatively small average amounts accruing to large numbers of people while the costs take the form of relatively large average amounts for fairly small numbers of people. An estimate of the benefits associated with the regulations is shown in Table 2.

The aggregate impact in context

2.11. Many of the future regulations considered here originate from an EU requirement and therefore similar regulations will be implemented by our main European competitors. In these cases, the introduction of the regulations should not put UK farmers at a competitive disadvantage relative to other member states. A summary of how the expected impacts of relevant regulations in England compare to the rest of the EU is shown in Table 3.

Table 2: Details of the costs and benefits expected from regulations⁹

	2017 Cost (£m)	Benefit ¹⁰ (£m)	Form of benefit
Water Framework Directive	86	156 [120-192]	Reduced cost of treatment for drinking water; clean bathing water; healthy fisheries; improved living environment.
Changes to NVZ Action Programme	35	10 [2-18]	Reduced cost of treatment for drinking water; clean bathing water; healthy fisheries; improved living environment.
Meat Chicken	7	87	Public assurance of welfare.
Sheep EID	3	2	Reduction in potential disease outbreak costs.
Laying Hens Directive	12	T.B.D.	Public assurance of welfare.
Thematic Strategy on Pesticides	T.B.D.	T.B.D.	Protection of human health and the environment.
Changes to the OCDS	-10	N/A	End of regulation intended to protect human health through excluding from the food chain older cattle then deemed to present a higher risk of carrying BSE with possible onward transmission as nvCJD.
Animal Health RCS	24	57 [0-114]	Reduction in potential disease outbreak costs (both endemic and exotic).
TSE cost sharing	14	N/A	Straight transfer of existing costs to industry.
Total	171	312	

Table 3: Details of how new regulations are likely to affect the UK's competitiveness relative to other EU member states

	Effect on compliance costs relative to other EU countries	Comments
Water Framework Directive	Possible increase	The UK is well in advance of at least half the other member states in terms of implementation. Any competitiveness impacts therefore likely to be temporary.
Changes to NVZ Action Programme	Mixed	Proportions of land designated as NVZs in other member states ranges from 2%-100%, compared with the proposed 70% in England (currently 50%).
Meat Chicken Welfare Directive	None	To be implemented in all member states.
Sheep Electronic Identification	Possible increase	To be implemented in all member states. The UK has the biggest EU sheep flock so will face the greatest total costs/disruption.
Laying Hens Directive	None	To be implemented in all member states.
Thematic Strategy on Pesticides	Possible increase	Applies to all member states. However, varying levels of usage between states and the effect of the UK's maritime climate may result in greater impacts.
Animal Health RCS	Mixed	Some states already have similar/related schemes in place. The Commission has said it will be bringing forward formal proposals to harmonise cost-sharing arrangements across member states in 2011.

⁹ This table shows the costs to farmers only. Government will also incur some costs as a result of some of these regulations.

¹⁰ These figures are taken from the most recent Impact Assessments as at October 2009. For some regulations, uncertainty over outcomes has led to benefits being estimated as a range. In these cases the best estimate has been quoted, with the range of expected values given in square brackets below.

2.12. Typically, technical advances have allowed the industry to enhance its productivity over time and we would expect this trend to continue; this would help to counteract the increase in costs due to regulation.

2.13. Although no attempt has been made to model future changes in costs arising from factors other than regulation, such as those attributable to fluctuations in the prices of inputs like feed, fuel and fertiliser, the impact of future regulatory activity on costs is relatively small when compared with these historic variations. However, these regulatory costs are in addition to any other fluctuations and the government is committed to working with stakeholders to improve the way it regulates, making savings where possible.

2.14. All the costs used in this analysis are at current prices with no allowance made for potential future reductions in the cost of specific requirements. For example, a large proportion of the costs from the regulation on emission standards for tractors is due to the extra cost to manufacturers of designing and making engines to meet the new standards; we would expect them to absorb some of these costs themselves and/or drive them down over time, but since we have no way of modelling this, it is not included in the analysis.

3. ASSESSMENT OF IMPACTS AT SECTOR LEVEL

Modelling the impact of regulation

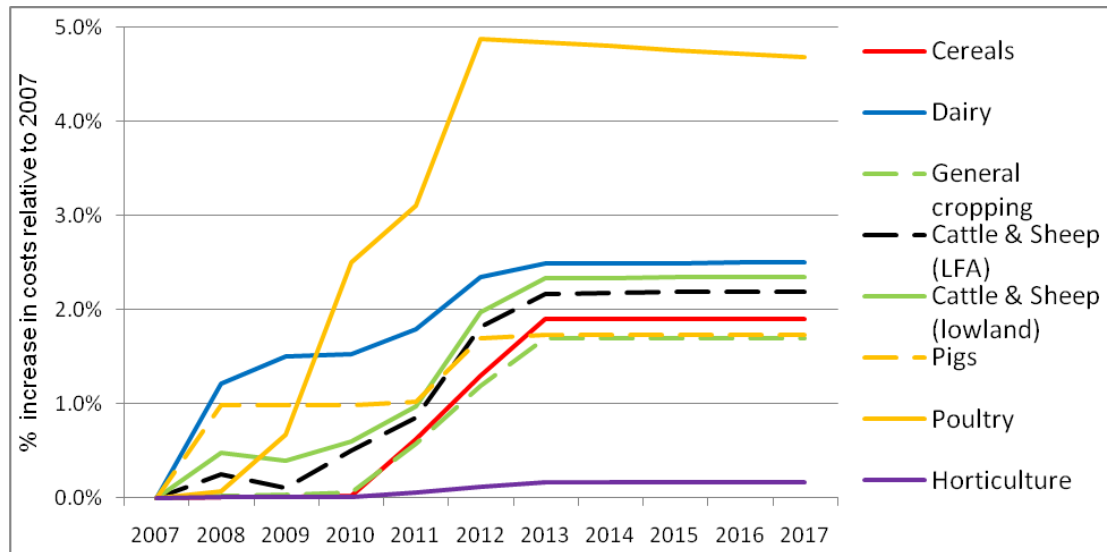
3.1. The 2007/08 Farm Business Survey¹¹ has been used to explore the differential impact of regulation on individual enterprises and farming households. The financial impacts of expected changes in behaviour have been linked with individual farm characteristics (land area, livestock numbers, location in a Nitrate Vulnerable Zone, etc.) for each of the 1826 farms in the 2007/08 survey to calculate annual compliance costs. Further information on the modelling of each proposal is given in Annex A. As noted earlier, it is difficult to predict the impact of future policies with any certainty at this stage. The analysis presented here is therefore only an initial assessment and serves to highlight areas where cost pressures may be significant.

The impact of regulation on the costs of production

3.2. Figure 1 below illustrates the variation in future regulatory costs over time for the different farm-types, prior to any adjustment and mitigation.

¹¹ The Farm Business Survey is an annual survey of about 1,850 farms in England which collects a wide range of physical and financial data.

Figure 1: Increase in average farm costs over time by farm-type as a result of future regulatory costs



3.3. In the next few years, the greatest relative impacts on costs are expected for the dairy sector as a result of the EU Nitrates Directive and TSE cost sharing, and for the poultry sector as a result of Meat Chicken Welfare and Laying Hens regulations. Diffuse Pollution costs are assumed to be fully realised from the start of 2013; they are assumed to build up over the previous two years and this results in rising costs for cropping and grazing livestock farms.

3.4. Tables 4 and 5 below show respectively how the cost increases for individual regulations compare to total farm costs and to FBI for the different farm-types. It is likely that farmers will make adjustments to their business over time to reduce the regulatory impact; nevertheless, it can be seen that the impact of regulation on Farm Business Income is likely to be significant for most farm types.

Table 4: Average increase in farmers' costs of production from forthcoming regulation and charging in 2017, prior to adjustment and mitigation

	Cereals	Dairy	General cropping	Cattle & Sheep (LFA)	Cattle & Sheep (lowland)	Pigs	Poultry	All farms
Average Farm Business Costs (05/06 - 07/08)	£ 152,000	£ 174,000	£ 237,000	£ 52,000	£ 54,000	£ 289,000	£ 497,000	£ 163,000
Changes to OCDS	0.0%	-0.2%	0.0%	-0.5%	-0.5%	0.0%	0.0%	-0.1%
EU Water F/W: Diffuse Pollution measures	1.8%	0.4%	1.5%	1.0%	1.1%	0.1%	0.0%	0.9%
EU Nitrates Directive	0.0%	1.3%	0.0%	0.4%	0.6%	1.0%	0.1%	0.4%
Meat Chicken Welfare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.1%
Sheep EID	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%
TSE cost sharing	0.0%	0.6%	0.0%	0.3%	0.3%	0.0%	0.0%	0.2%
Animal Health RCS	0.1%	0.4%	0.1%	0.6%	0.6%	0.6%	0.9%	0.3%
Laying Hens	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	0.1%
Net effect of regulations	1.9%	2.5%	1.7%	2.2%	2.3%	1.7%	4.7%	1.8%
Net cost of regulations	£ 2,900	£ 4,370	£ 4,020	£ 1,130	£ 1,270	£ 5,020	£ 23,270	£ 3,000

Table 5: Cost of each major new regulation at 2017 as a proportion of Farm Business Income

	Cereals	Dairy	General cropping	Cattle & Sheep (LFA)	Cattle & Sheep (lowland)	Pigs	Poultry	All farms
Average Farm Business Income (05/06 - 07/08)	£ 54,000	£ 42,000	£ 61,000	£ 12,000	£ 12,000	£ 20,000	£ 111,000	£ 39,000
Changes to OCDS	-0.1%	-1.0%	0.0%	-2.0%	-2.1%	0.0%	0.0%	-0.5%
EU Water F/W: Diffuse Pollution measures	5.1%	1.8%	5.8%	4.2%	5.0%	1.8%	0.1%	3.9%
EU Nitrates Directive	0.1%	5.6%	0.1%	1.8%	2.8%	14.0%	0.3%	1.6%
Meat Chicken Welfare	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.5%	0.3%
Sheep EID	0.0%	0.1%	0.0%	1.4%	0.6%	0.0%	0.0%	0.1%
TSE cost sharing	0.1%	2.3%	0.1%	1.2%	1.5%	0.0%	0.0%	0.6%
Animal Health RCS	0.2%	1.6%	0.3%	2.6%	2.8%	8.8%	4.2%	1.1%
Laying Hens	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	10.9%	0.5%
Net effect of regulations	5.4%	10.5%	6.6%	9.1%	10.8%	24.6%	20.9%	7.7%
Net cost of regulations	£ 2,900	£ 4,370	£ 4,020	£ 1,130	£ 1,270	£ 5,020	£ 23,270	£ 3,000

3.5. Table 6 shows the effect of additional regulatory cost in 2017 on the proportion of farms that would make losses starting on the basis of 2007/08 Farm Business Income levels. In this context, it is important to note that FBI is highly variable from year to year, so that the figures and percentages shown will be similarly volatile.

Table 6: Predicted change in proportion of farms with negative Farm Business Income

	% of farms with negative Farm Business Income	
	Current	With future regulation
Cereals	4%	4%
Dairy	6%	10%
General Cropping	6%	6%
Horticulture	11%	11%
LFA Grazing Livestock	21%	23%
Lowland Grazing Livestock	23%	26%
Mixed	17%	18%
Pigs	36%	39%
Poultry	14%	28%
All farms	12%	14%

3.6. It should be noted that the impact of changes to pesticides regulations has not been calculated due to the levels of uncertainty over the exact nature of the changes and their likely impacts. However, the effect is expected to be significant for all types of farm. While this will be particularly marked in the case of cropping farm types, there is also likely to be a significant impact for livestock farms arising principally from higher feed costs.

Cattle and Sheep

3.7. The cattle and sheep sector will be affected by a range of regulation: the highest impacts are expected from the proposed diffuse pollution measures which must be fully in place by 2012. The EU Nitrates directive, Animal Health Responsibility and Cost Sharing proposals and the new emission standards for tractors will also give rise to higher costs for this sector, as will the TSE cost-sharing proposals which will primarily affect farmers with older cattle. Conversely, some benefit is expected for the sector from the finishing of the Older Cattle Disposal Scheme.

3.8. The introduction of compulsory sheep electronic identification by the end of 2009 will have a much smaller impact than previously expected due to the new derogation which allows third party reading. The derogation, however, will not result in an even reduction in expected costs across the board, but will produce a very significant reduction for the majority of sheep keepers with a minority experiencing no change. The Less Favoured Areas are likely to be affected more than the lowlands.

Dairy

3.9. The intensive nature of dairy farming is likely to give rise to substantial compliance costs from the extension of restrictions for farmers in NVZs, although the mitigating measures proposed do much to reduce these costs. The Animal Health and TSE cost-sharing proposals will also add significant extra costs to dairy farms.

Pigs

3.10. The greatest regulatory pressures for pig production are likely to arise from changes to the NVZ Action Programme and from Animal Health Responsibility and Cost Sharing.

Poultry

3.11. The future regulatory picture for meat chicken production is dominated by the EU Meat Chicken Directive which will apply to all meat chicken producers (except those that produce free-range, organic or extensive indoor chicken) from June 2010. Together with the Animal Health Responsibility and Cost Sharing proposals, this is likely to have a significant impact on the profitability of meat chicken production.

3.12. In the case of egg producers, the Laying Hens directive will have far and away the most significant impact. The costs of this regulation will vary considerably across the industry since some producers already meet the

new minimum standards and, where they don't, the costs of compliance will be very different for free-range and battery producers.

General Cropping & Cereals

3.13. The current proposals for diffuse pollution measures will increase costs significantly for cereal and general cropping farms. This is also the sector where the costs arising from the new emissions standards for tractors are likely to have the largest impact, although the effect will be much smaller than the diffuse pollution costs.

Horticulture

3.14. The information available on horticulture businesses is more limited and analysis of regulatory impacts is therefore less well developed for this sector. Of the forthcoming measures, it is expected that the water, NVZ and tractor emission standards will have particular impact, but the cumulative effects are not expected to be large.

ANNEX A

OVERVIEW OF REGULATIONS

- A1. This annex provides more detail on the regulations discussed in the paper. Each regulation is discussed in terms of its aims and the compliance activity expected of farmers. Further information is also available in the Regulatory Impact Assessment or Impact Assessment for each regulation.
- A2. The analysis reflects the policy position at October 2009. It does not take into account any further policy development or consultation responses.
- A3. Where compliance with regulations involves capital investment, it is assumed that farmers will annualise this over the lifetime of the equipment or building that the cost represents. An interest rate of 6% has been used throughout this analysis as an estimate of the average cost to farmers of borrowing.

EU Water Framework Directive (Diffuse Sources measures)

- A4. The EU's Water Framework Directive (WFD) has introduced new requirements to tackle diffuse pollutants such as phosphorus by 2015. For agriculture, the Government aims to achieve this target through a Catchment Sensitive Farming (CSF) approach.
- A5. In 2007, Defra consulted on measures proposed for tackling diffuse pollutants. The consultation looked at how far current and planned action will go toward tackling diffuse phosphorus pollution from agriculture by the 2015 target and proposed three options ('policy packages') to tackle the problem where further action is likely to be needed. The three options were:
- Water Protection Zones (regulation only)
 - Water Protection Zones + Scheme (regulation + support)
 - Water Protection Zones + Scheme + Advice (regulation + increased support)
- A6. All options featured the introduction of Water Protection Zones where it will be necessary to prohibit polluting activities and/or require best practice measures to tackle specified diffuse agricultural pollutants. Two of the options also featured an additional supportive element – either advice on best practice, which is based on an extension of the current England Catchment Sensitive Farming Delivery Initiative nationwide, or the inclusion of more water quality-related options in the Entry Level and Higher Level Environmental Stewardship schemes within the Rural Development Programme for England (RDPE).
- A7. Following the consultation, Defra accepted the third option. A subsequent consultation on WPZs and the necessary legislative changes to implement them was run in 2008. Defra is currently exploring longer term options to provide more use of existing

Environmental Stewardship schemes ('Scheme' in the terms above) for water protection. 'Advice' delivery was enhanced in 2008 by the addition of another 10 catchments to the existing 40 catchments in the ECSFDI. Defra is also looking at transferring aspects of the ECSFDI into the RDPE to provide longer term, and national delivery of advice.

- A8. The intention is that in 2010 the Environment Agency will begin preliminary work on 7 'Proof of concept' WPZs, covering a range of rural, urban, and pollutant problems. Depending on the results of the study and of the impacts of voluntary measures on water pollution in the candidate areas during the pre-designation period, there is no certainty that any or all of these will progress to full WPZ designation.
- A9. Overall costs were identified in the RIA for implementation of the WFD, but apportioning costs for WPZs individually is extremely difficult. This is because there is no information currently available as to final numbers, size or location of proposed WPZs, or the intensity of measures that will be imposed within them. It is for that reason that each WPZ application will be accompanied by an individual Impact Assessment.
- A10. As a result of the different assumptions and coverage the figures in this analysis may differ slightly to those in the RIA. Figures given in the RIA should take precedence over the cost estimates given here. These estimates show that compliance is likely to impose very significant burdens on farmers – around £85m per year by the end of 2012, with measures starting to be established in the preceding years. However, it should also be borne in mind that WPZs may be used against diffuse pollution arising from other sectors other than agriculture. For the purposes of this paper, we have assumed the full costs will apply from 2013 (i.e. the first full year after the end of 2012), 2/3 of full costs in 2012 and 1/3 of costs will apply in 2011.

EU Nitrates Directive

- A11. The Nitrates Directive requires that an Action Programme of measures be implemented in Nitrate Vulnerable Zones to prevent nitrate pollution of waters caused by agricultural sources. Measures aimed at controlling the application of Nitrate to land are reviewed every four years, and currently include a combination of nitrate loading limits and closed periods for manure application. This means farmers may have to export excess manures off-farm, reduce herd sizes or build new/additional storage facilities.
- A12. Following a review of the NVZs which showed that the current Action Programme had not had a significant effect on nitrate pollution at the national scale, Defra consulted on revised measures in 2007. As a result of this consultation, the area of England covered by NVZs was increased from 55% to 70%. This increase came into effect from the 1st of January 2009.
- A13. Key changes to the Action Programme were also introduced including:

- Establishing a lower **whole farm manure N loading limit** of 170 kg/ha of total N from livestock manures per calendar year, averaged across the farmed area.
- Extending the length of the **closed spreading periods for organic manures** with high available N, and applying it to **all soil types**.
- Increasing the **manure storage capacity** requirement, for manure with high available N, to 26 weeks for pigs and poultry, and 22 weeks for cattle.
- Requiring farms to limit applications of nitrogen to **crop requirement** and assume a level of efficiency of nitrogen supply from any manure applications.
- Requiring farmers to undertake a **risk assessment** and prohibiting the application of nitrogen fertiliser to areas identified as posing a high risk of causing water pollution.
- Prohibiting the use of high trajectory, **application techniques** for spreading slurry, and requiring incorporation of organic manure applied to bare soil or stubble in certain situations.

A14. Estimates of the cost of these changes to the Action Programme indicate a figure of around £55m per year to the English farming industry by 2017. See cost estimates in final IA
http://www.opsi.gov.uk/si/si2008/em/uksiem_20082349_en.pdf.

A15. Defra has also presented a range of mitigation measures, which substantially reduce the costs – particularly to the Dairy sector. These include a derogation from the 170kg/ha Nitrate loading limit for dairy farms, reduced stocking rates, and improved manure N efficiency. After derogations are applied, the estimate of the total additional cost to farms in England falls to around £35m by 2017. This analysis assumes the derogation is granted and renewed over the whole period to 2017, although this is by no means certain.

EU Meat Chicken Welfare Directive

A16. The meat chicken sector is the one major area of intensive livestock production not so far covered by the programme of EU farm animal welfare standards. An EU Meat Chicken Welfare Directive has now been agreed, and will come into force in June 2010. It sets minimum standards of protection for meat chickens. The key provisions of the proposals are:

- minimum welfare standards for establishments keeping meat chickens at stocking densities up to a maximum of 33kg/m²;
- enhanced welfare standards for establishments keeping meat chickens at stocking densities above 33kg/m² to an upper limit of 39kg/m² (plus an additional 3kg/m² if certain criteria are met);
- new requirements for training flock- keepers;
- monitoring at slaughterhouses.

A17. Two options for the implementation of the directive are currently being considered – one which applies all available derogations, including

allowing producers to stock up to 42kg/ m² and one which restricts producers to the maximum stocking density of 39kg/m². Estimates for the costs to industry of this Directive have been made for both these options and the average of £7m per annum for England has been used in this analysis.

Electronic tagging of sheep (Sheep EID)

- A18. The 2001 Foot and Mouth outbreak demonstrated the need for improvements to the existing identification and traceability rules that apply to sheep. Consequently, EC Regulation 21/2004 mandated electronic identification for all sheep born after 1st January 2008 that are not intended for slaughter before 12 months of age, subject to a Commission report and proposal confirming or deferring this date. On 17 December 2007, the Council of Ministers adopted the Commission's November 2007 proposal for EID to become mandatory for sheep and goats from 31 December 2009. From 31 December 2009 keepers will need to purchase electronic tags and some will also need to purchase electronic equipment (readers, computers and printers), as well as the training to use this equipment.
- A19. However, the UK recently secured a concession for central point recording, which allows for premises such as markets and abattoirs to read animals on behalf of keepers. This concession means that many keepers will not need to purchase reading equipment, which would potentially reduce annual costs for keepers by between 35 to 40%.
- A20. The costs of electronic tagging have been estimated by this analysis to be £3m per year by 2012. Costs include training and reading equipment costs, as well as the cost of electronic tags; offset against this is the saving as a result of the fact that the requirement for farmers to use S-tags (which still applied for the baseline data used in this analysis) has been lifted. This latest assessment uses revised equipment and tag cost estimates since the last assessment was made. This analysis also assumes that all farms included in this analysis will use the EID equipment rather than taking manual tag readings. The Sheep EID Impact Assessment (IA) makes more sophisticated estimates of which farms are likely to use manual as opposed to electronic readings. This has not been possible in this analysis because of limitations in the data available.
- A21. The total sheep EID costs included in this analysis are only for those farms included in the Farm Business Survey, i.e. those with a labour requirement of at least half a full time equivalent. The costs that will be incurred by small, part-time sheep farms are therefore not included in this analysis. The IA will however look at costs for all farm sizes, i.e. including the costs that will be incurred by part-time farms.
- A22. As a result of the different assumptions and coverage the figures in this analysis may differ slightly to those in the partial IA. Figures given in the partial IA should take precedence over the cost estimates given

here. This analysis will be developed further for a Final IA which is to be produced by the end of 2009

EU Laying Hens Directive

- A23. The Welfare of Laying Hens Directive came into force in 2002 and includes a number of minimum standards for protecting laying hens, including:
- A ban on conventional cages from 1st January 2012;
 - Minimum standards for barn and free-range systems from 1st January 2007; and
 - Minimum standards for hens kept in enriched cages from 1st January 2002.
- A24. The most significant of these measures is the move, by 2012, from conventional cages to alternative systems such as enriched cages which provide extra facilities such as nest boxes, perches and litter to allow pecking and scratching.
- A25. The Directive required the Commission to produce a report by 1 January 2005 on the various systems of rearing laying hens, particularly those covered by the Directive. This report was eventually published in January 2008. It recommended the 2012 deadline for ending the use of conventional cages should remain and recognised the welfare benefits of enriched cages and supported their continued use. In July 2009, ministers restated their commitment to the 2012 deadline.
- A26. The cost to industry of converting to enriched cages, lower maximum stocking densities for free-range hens and the increased production costs associated with these changes have been estimated in this analysis to peak around £13m per annum, falling slightly to £12m per annum by 2017. This does not include an assessment of the possibility of any price premium which could result from improved conditions.

EU Thematic Strategy on Pesticides

- A27. Under the European Community's Thematic Strategy for Pesticides, two new pieces of pesticides legislation which have recently been adopted will come into operation in 2011:
- A Directive of the European Parliament and of the Council establishing a framework for Community action to achieve the sustainable use of pesticides ('the Sustainable Use Directive' or SUD) which will need to be transposed and implemented by member States;
 - A Regulation of the European Parliament and of the Council concerning the placing of plant protection products on the market (PPP Regulation) which is directly applicable in all the Member States. Some of the provisions in the PPP Regulation will need to be implemented by domestic Regulations which are required to define

offences and penalties, with some additional provisions necessary for enforcement.

- A28. The SUD is intended to establish a framework to achieve a sustainable use of pesticides by reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of integrated pest management and of alternative approaches or techniques such as non-chemical alternatives to pesticides.
- A29. The PPP Regulation will replace an existing Directive (Council Directive 91/414/EEC) on the authorisation and marketing of plant protection products (i.e. agricultural pesticides) in the Community. It revises the standards for authorising plant protection products and aims to increase the level of protection given to human health, animal welfare and the environment. It also aims to speed up decision-making, provide clearer rules for the crop protection industry and offer a greater choice of products to farmers and growers.
- A30. Some elements of the PPP Regulation have the potential to improve product availability for growers. These include arrangements for authorising pesticides within three zones, rather than individually within 27 member States, thereby helping to level the playing field in product availability. There are also provisions to support minor uses, which should be of particular benefit to the horticultural sector. How far these benefits are realised will depend to a large extent upon the commercial decisions of pesticide companies.
- A31. Other aspects of the new regime may give rise to significant compliance costs. Of particular concern are criteria for approval of active substances including toxicity and environmental 'hazard triggers'. These will eliminate substances from use in plant protection products on the basis of their intrinsic properties, rather than their actual risks in use. UK impact assessments indicate that around 15% of currently available active substances may be eliminated by these criteria, some of which are particularly important in the UK for protection of both minor crops, such as carrots and parsnips, and major crops, such as cereals. One group of fungicides (the triazoles) is crucial for protection against *Septoria*, the major fungal disease of wheat in the UK. Withdrawing them could result in yield losses in cereals of up to 20%.
- A32. In the UK, the transposition of the Directive and the implementation of certain additional provisions arising out of the PPP Regulation will be the subject of a stage one consultation exercise planned for end 2009/beginning 2010. The implementation of this legislation offers an opportunity to consider afresh the UK's approach to the regulation of pesticides and, as such, will involve an open consultation which presents a range of implementation options which, in effect, encompass a very broad spectrum of potential approaches.
- A33. The wide-ranging costs in the impact assessments accompanying the consultation document will reflect the breadth of scope of the available

implementation options. How the legislation will be implemented, and consequently the potential costs, will be determined by the outcome of the public consultation. It is not possible to include an overall figure for costs at this stage but, once the options have been refined, it will be possible to update this section.

Changes to the Older Cattle Disposal Scheme

- A34. The Older Cattle Disposal Scheme (OCDS) is an exceptional market support measure which provided for disposal of and compensation for cattle born before 1 August 1996. It started on 23 January 2006 and ended on 31 December 2008.
- A35. For this paper, the benefits have been assessed by comparing the average OCDS rate in sterling for 2008/09, with an average market price. The difference between these figures has then been used to estimate the increased income to farmers in England at £10m per annum once the scheme has ended.
- A36. Additional costs of BSE testing (estimated at £10/head with €5 of this paid by Defra) and removal of the vertebral column (estimated at £2/head) have been included in this assessment
- A37. Note that in future years the effects of the end of the OCDS will be largely captured within farms' income data.

Animal Health Responsibility and Cost Sharing

- A38. The aim of responsibility and cost sharing is to deliver lasting and continuous improvements in animal health and welfare, whilst protecting the public, the economy and the environment from the effects of animal disease by giving animal keepers a greater say in, and ownership of, the policies that affect them and to provide greater incentives for them to improve their management of disease risks.
- A39. A public consultation was held in December 2007, describing a broad approach to responsibility and cost sharing. The consultation set out a number of possibilities of how responsibilities and costs might be shared more fairly between Government and Industry in future, and described ways in which the relationship between Government and Industry might be reshaped.
- A40. A further consultation was undertaken in 2009 to explore options for setting up an independent body responsible for animal health issues currently undertaken by Defra and how exotic disease preparedness and outbreak costs could be shared with animal keepers.
- A41. Final decisions have not yet been made, but it is expected that the cost sharing element will be addressed by levy payment by livestock farmers to meet the costs of managing exotic animal diseases, particularly those of a readily transmissible nature. Analysis from the IA which accompanied the consultation suggests this would add £22m of exotic disease preparedness costs to industry costs while the

“averaged” annual outbreak costs were estimated as £32m (assuming 50% of government costs are transferred to industry in these cases); in practice, annual outbreak costs vary significantly and cannot be predicted for any one individual year so they have not been included in the main analysis.

A42. It is also expected that the cost of collection would be borne in full by industry. This is currently estimated at £2m.

TSE Cost Sharing

A43. Specific TSE proposals were set out in Part Two of the December 2007 consultation on responsibility and cost sharing. The primary proposals consulted on were to

- transfer to industry the responsibility for arranging and paying for BSE tests on cattle aged over 30 months slaughtered for human consumption;
- transfer to industry the responsibility for arranging and paying the collection and disposal of fallen cattle aged over 24 months;
- work with the Food Standards Agency (FSA) to charge industry for more of the costs incurred by the Meat Hygiene Service (MHS) which is currently funded by Defra in processing cattle aged over 30 months in fresh meat abattoirs. A decision on the possible introduction of charges for MHS SRM and TSE testing official controls has been deferred. This issue may be reviewed in future, possibly following an evaluation of the new charging system for official meat hygiene controls that came into effect from 28 September 2009.

A44. The proposals could result in additional costs to farmers with older cattle of around £14m per year by 2009. The calculation in this analysis follows the post-consultation IA but uses reduced estimates for the cost of analysing BSE samples (£5 per sample) and for the cost of collecting and disposing of fallen cattle (£90 per head); it assumes no mitigating activity – e.g. earlier culls when older cattle are still fit for human consumption, or efficiency gains that might be achieved through greater industry responsibility.

A45. For the purpose of this analysis, two thirds of any costs to abattoirs have been assumed to be passed on to farmers.

EU Emission Standards for Tractors and Non-Road Mobile Machinery

A46. This section covers two EU Directives for which the Department for Transport is responsible, but which largely impact on farming. One directive is for tractors and one for non-road mobile machinery (NRMM) (such as bulldozers, excavators, forklifts and loading shovels). The aim of these two Directives is to help enable the UK to achieve air quality objectives by reducing the emissions of oxides of nitrogen and particulate matter from the engines of new tractors and non-road mobile machinery. The requirements imposed by the Directives are

above and beyond the restrictions currently in force (Stages I, II and IIIA) and are given below:

- A47. Stage IIIB: Comes into force in 2010-12 with the aim to reduce particulate matter emissions by around 90% relative to stage II and III. This will require the adoption of diesel particulate filters and will probably also require the use of 'sulphur free' fuel with these engines.
- A48. Stage IV: Expected to come into force around 2014 with the aim of further reducing oxides of nitrogen emissions. This will require the adoption of 'selective catalytic reduction' technology.
- A49. These requirements only apply to purchases of new tractors and NRMM. They will increase the cost of manufacturing engines/machines, which is likely to lead to an increased cost for farmers of purchasing new tractors and NRMM. The analysis assumes that all cost increases are passed on to farmers. The cost of 'sulphur free' fuel is also marginally more expensive to produce than diesel, which will also lead to increased costs for farmers. These estimated costs for Stages IIIB and IV are reflected in the calculated costs for these Directives of £26m per year by 2017.

OTHER REGULATIONS

- A50. Other forthcoming regulations likely to have an impact on farmers include: Regulation on the Protection of Animals at the Time of Killing; and MHS meat inspection charges. Negotiations are still ongoing at EU level on a draft EU Soil Framework Directive, which if agreed, could also potentially lead to additional burdens on farmers. Farmers will also be affected by changes to Cross-compliance conditions and could be impacted by the Campaign for a Farmed Environment – an industry-led voluntary initiative intended to recapture environmental benefits previously delivered by set aside.

Cross-compliance

- A51. The recent review of the CAP (Health Check) revised the EU legislation including the cross compliance framework and removed set-aside, thus requiring changes to domestic legislation. It also presented an opportunity to rationalise existing standards and introduce measures to recapture the environmental benefits of set-aside. Requirements on water abstraction licensing and nitrates action plan no spread zones represent minimum legal requirements. Other changes represent rationalisation/consolidation of existing requirements and build on analysis of cross compliance and stakeholder feedback. The proposed changes should secure or increase the level of benefit while minimising impact on farmers, through simplifying some existing standards in line with stakeholder feedback and analysis of effectiveness.
- A52. Following the ending of set aside, an industry-led voluntary scheme, the Campaign for a Farmed Environment, is being aimed at farmers and their advisers with the objective of promoting locally relevant

actions benefiting farmland birds, resource protection and wider biodiversity. As Professor Ian Hodge notes¹², land use changes that are introduced under the Campaign are likely to be made in relation to personal farmer preferences and to involve relatively marginal changes to farming systems, reflecting better information about environmental consequences. Hence, any costs borne by farmers are likely to be small.

EU Soil Framework Directive

- A53. The European Commission's proposal for an EU Soil Framework Directive could lead to additional burdens being placed on farmers and land managers if agreed in its current form. Negotiations on this dossier have continued since it was rejected at Environment Council in December 2007, but agreement has not been reached, and the UK has several remaining concerns.
- A54. Negotiations on the draft Directive will be revived under the Spanish Presidency in January 2010. Defra will be continuing to address UK concerns through negotiations and build support for our position within Europe.

Regulation on the Protection of Animals at the Time of Killing

- A55. On 22 June the EU Council of Ministers reached political agreement on the final text of a Council Regulation on the protection of animals at the time of killing. The Regulation will replace current Directive 93/119 and will apply from 1 January 2013.
- A56. The regulation will ensure common basic welfare standards will apply across Europe. Overall the overarching welfare protections in the Regulation are broadly the same as those in the current directive. However, welfare standards will improve in some key areas including a requirement for every slaughterhouse above a minimum size to have an Animal Welfare Officer and the need for all slaughterhouse staff to be trained and tested before being given a certificate of competence.
- A57. Under the regulation, all Food Business Operators (FBOs) will be required to take more responsibility for welfare within a less prescriptive regulatory regime. They will have more flexibility to establish their own operating procedures so long as they are consistent with the overarching welfare protection provided by the regulation. This will allow FBOs to develop standard operating procedures that are sensitive to the needs of their own individual business. This mirrors the approach in the hygiene regulations. The regulation allows Member States to maintain national rules where these currently provide for higher standards of welfare protection than those in the regulation.

¹² Hodge, I. (2009). Review of the NFU/CLA proposal 'Option B – a Campaign for the Farmed Environment'. Final report to Defra June 2009.

A58. In the main the provisions in the Regulation that introduce new burdens will impact on slaughterhouse operators. This could have an indirect impact on farmers if slaughterhouse operators attempt to recoup these additional costs from producers rather than consumers. However some aspects of the Regulation e.g. the need to develop and monitor standard operating procedures will have a direct impact on farmers. Initial estimates indicate that implementing the regulation could involve one off cost of some £14m and recurring costs of a further £14m per annum. Of these costs, the cost of the measures having a direct impact on farmers will be some £7.4m (one off) and £5.5m (recurring). These costs do not take account of the impact of revised electrical stunning currents and frequencies for poultry which will increase carcase damage and trimming losses. Work is ongoing in association with the poultry industry to assess the impact of these changes.

MHS Meat Inspection Charges

A59. The Meat (Official Controls Charges) (England) Regulations 2009 (SI 2009/1574) came into effect on 28 September 2009 and introduced a time-based system of calculating charges for meat hygiene and animal welfare at slaughter official controls carried out in approved slaughterhouses, game handling establishments, on-farm slaughtering facilities and meat cutting plants. The new system replaced the current arrangements through which the majority of approved meat businesses paid charges based on throughput. The level of time based charges for each plant has been calculated so that charges payable will not change on the introduction of the new scheme if the activity of the plant and the official control time at the plant remains constant. If official control time is reduced at a plant, due for example to improved compliance or more effective use of official control resources, the charges payable under the scheme may be lower than those payable previously. The Regulations also allow for charges to be introduced for meat hygiene official controls that are carried out on farm (as opposed to in meat plants) in certain circumstances prescribed in EU meat hygiene legislation. Equivalent legislation has been made in Scotland, Wales and Northern Ireland.

A60. A decision on the possible introduction of charges for MHS SRM official controls has been deferred. This issue may be reviewed in future, possibly following an evaluation of the new charging system for official meat hygiene controls that came into effect from 28 September 2009.