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Environment, Food and Rural Affairs Committee

Implementation of the Nitrates Directive in England

Seventh Report of Session 2007–08

Report, together with formal minutes, oral and written evidence

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Environment, Food and Rural Affairs Committee

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Summary

The implementation of the Nitrates Directive in England might appear to be a technical and specialist subject, but its importance to the 195,500 farmers who could be affected, and its wider significance in terms of the water quality that we all enjoy, are considerable. The Directive was adopted in 1991 to reduce water pollution caused by nitrates from agricultural sources. It requires member states to designate as Nitrate Vulnerable Zones (NVZs) areas of land that drain into polluted waters and to set up Action Programme in these zones. The European Commission is still not satisfied with the Department for Environment, Food and Rural Affairs’ (Defra’s) implementation of the Directive.

The Directive is flawed. Unlike more recent legislation, such as the Water Framework Directive, it imposes prescriptive rules to achieve its aim. Moreover, the scientific basis for some of the figures mentioned in the Directive is at best unclear. However, despite its shortcomings, it appears to be here to stay and Defra must convince the Commission that it is complying with the Directive’s terms, especially as other member states have managed to do so.

In the summer of 2007, Defra launched a consultation on the Nitrates Directive and proposed a number of changes. We conclude that there is insufficient evidence to assess how effective the current Action Programme in England has been in reducing nitrate pollution. However, in the light of the Commission’s legal action against Defra, we agree that changes need to be made to bring England into compliance with the Directive.

Some of Defra’s proposals are welcome and sensible. Others, such as those relating to the storage of manure, need further refinement. The proposal to require farmers to sow cover crops on land that would otherwise be left bare over winter should be dropped from the Action Programme altogether. Cover crops are not required under the Directive, would have a negative impact on biodiversity, and are not suitable for all soil types.

The proposed new Action Programme will place a considerable financial burden on livestock and dairy farmers at a time when they are ill-equipped to meet these costs. The Report recommends that Defra should make representations to the Treasury on the need for support in the form of tax relief for the construction of slurry storage facilities.
1 Introduction

1. In a Westminster Hall debate on 8 January 2008, the Minister for the Environment, Mr Phil Woolas MP, told the House that he was receiving more letters on the Nitrates Directive than on any other matter in his portfolio “including international climate change”.1 The implementation of the Nitrates Directive in England might at first glance seem like a specialist subject, but its importance to the 195,500 farmers who could be affected, and its wider significance in terms of the water quality that we all enjoy, are considerable.2

2. With this in mind, the Committee decided to inquire into the changes proposed by the Department for Environment, Food and Rural Affairs (Defra) in its consultation document of August 2007 on the Nitrates Directive. Defra’s proposed changes reflect the fact that the European Commission does not believe that the Directive was properly implemented in the first place. The proposals would have a significant impact on farmers in the affected zones, requiring them to alter practices for storing and spreading livestock manure and for applying chemical fertiliser. The financial outlay would be considerable. Against this there is the necessity of complying with the terms of the Directive and the understandable desire to keep nitrate levels in surface and ground waters to a safe level. Our terms of reference were framed to cover the key issues raised by Defra’s proposals.

Terms of reference for the Committee’s inquiry

a) Has Defra’s implementation of the 1991 Directive been adequate?
b) How have levels of nitrate pollution changed since the Directive came into effect?
c) How effective has the current Action Programme been in reducing nitrate pollution?
d) Defra says that the area designated as Nitrate Vulnerable Zones needs to increase from 55% to 70% of England: is it right?
e) Whether the proposed Nitrates Action Programme measures should apply throughout the whole of England, rather than only on land designated as Nitrate Vulnerable Zones.
f) What should be the timetable for introducing any changes in the way the Nitrates Directive is implemented?
g) What are the costs and benefits of Defra’s individual key proposals for the revised Action Programme, namely:
   • Whole farm manure nitrogen loading limit
   • Closed period (organic manures)
   • Manure storage
   • Closed period (manufactured nitrogen fertilisers)
   • Crop nitrogen requirement limit
   • Spreading locations
   • Spreading techniques
   • Record keeping
   • Cover crops
h) What advice and support farmers will need from Defra to implement a revised Action Programme.
i) How can Defra encourage greater adoption of anaerobic digestion as a way of managing manure?
j) How the proposed new Nitrates Action Programme is affecting those with existing Entry Level Stewardship agreements in existing Nitrate Vulnerable Zones.

3. On 18 December 2007, we issued an invitation to submit written evidence. We received submissions from 16 organisations and individuals, spanning both agricultural and

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1 HC Deb, 8 January 2008, col 45WH
2 HC Deb, 17 December 2007, col 988W
environmental interests. There were some points of contention between the different submissions, but, interestingly, opinion was not always split along agricultural and environmental lines, and, on the key issues, it was usually possible to detect a majority view, if not a consensus. On 5 March 2008, we held an oral evidence session with the National Farmers’ Union (NFU) and the Minister at which we were able to explore in greater depth the points raised in the written evidence.
2 Background

The purpose of the Nitrates Directive

4. The Nitrates Directive was adopted on 12 December 1991 with the objective of “reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution”.

5. There are health and environmental reasons for concern about the level of nitrates in water. Under the Drinking Water Directives of 1980 and 1998, drinking water is required to have a nitrate concentration of less than 50 mg/l. Defra estimates that, between 2005 and 2010, the cost of treating nitrates in drinking water will be £288 million in capital expenditure and £6 million a year in operating costs. In addition, nutrients such as nitrates can contribute to the eutrophication, or enrichment, of water. Eutrophication can lead to the accelerated growth of plant life such as algae, which in turn can have a negative impact on biodiversity and affect the recreational value of the water. At the time of the Directive’s introduction, the Council of Ministers judged it necessary “in order to protect human health and living resources and aquatic ecosystems and to safeguard other legitimate uses of water”.

6. Defra estimates that agriculture contributes more than 60% of the nitrates found in surface waters. Other sources of nitrate pollution include sewage treatment works and urban drainage systems.

The terms of the Nitrates Directive

Nitrate Vulnerable Zones

7. The Nitrates Directive requires member states to designate as vulnerable zones areas of land that drain into waters “affected by pollution and waters which could be affected by pollution” if action is not taken. Polluted waters are defined as:

- surface freshwaters and ground waters with nitrate concentrations of greater than 50 mg/l, and
- natural freshwater lakes, other freshwater bodies, estuaries, coastal waters and marine waters that are eutrophic.

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4 Council Directives 80/778/EEC, Annex 1, Table C, and 98/83/EC, Annex 1, Part B
5 Ev 12
6 The Nitrates Directive defines eutrophication as follows: “the enrichment of water by nitrogen compounds, causing an accelerated growth of algae and higher forms of plant life to produce an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned” (Council Directive 91/676/EEC, Article 2(i)).
8 Ev 12
The 50 mg/l limit referred to in the Directive is perceived as one of its principal shortcomings. Several submissions expressed concern about its rationale. Natural England commented that the 50 mg/l limit had no ecological relevance.\(^\text{11}\) The National Pig Association argued that “there is no scientific justification from an environmental or human/animal health perspective for the level to be set at 50 mg/l.” It stated that this was “an arbitrary figure chosen by the EU Commission.”\(^\text{12}\) The Tenant Farmers Association described the inclusion of the 50 mg/l limit as one of the Directive’s flaws.\(^\text{13}\) None of the submissions expressed a view about whether the appropriate limit should be higher or lower than 50 mg/l. **We are concerned that the 50 mg/l limit continues to be the basis of the Directive. We are also concerned that the Directive’s implementation methodology does not reflect current European Union best practice. We recommend that Defra raise in the Council of Ministers the need to review the scientific evidence that underpins the Directive. If the evidence is found wanting, Defra should try to build an alliance with other member states to persuade the Commission to re-evaluate the Directive’s basis.**

**Action Programmes**

8. The Directive requires member states to establish voluntary codes of good agricultural practice\(^\text{14}\) throughout their territory and to set up Action Programmes in the designated Nitrate Vulnerable Zones (NVZs). Member states can choose whether to establish a single Action Programme or different Action Programmes for different zones or parts of zones. Alternatively, member states can apply Action Programmes throughout their territory, in which case there is no obligation to identify specific vulnerable zones. Seven of the 15 member states at the time the Directive was agreed have adopted the whole-territory approach: Austria, Denmark, Finland, Germany, Luxemburg, the Netherlands and Ireland.\(^\text{15}\) The others have chosen to designate discrete NVZs, with coverage ranging from 1.2% in Portugal to 44.1% in France.\(^\text{16}\) In the UK, different Action Programmes operate in England, Northern Ireland, Scotland and Wales. This inquiry is concerned with the Action Programme in England, for which Defra has responsibility.

9. Action Programmes are required to take into account “available scientific and technical data, mainly with reference to respective nitrogen contributions originating from agricultural and other sources” and “environmental conditions in the relevant regions of the Member State concerned”.\(^\text{17}\)

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11 Ev 41
12 Ev 49
13 Ev 63
14 The Directive specifies the types of provision that should be included in the code of good agricultural practice. They relate to where, when and how fertiliser can be applied and to the storage of manure. For further information, please see Annex II of Council Directive 91/676/EEC.
10. The Directive states that Action Programmes must include the measures in the code of good agricultural practice and rules relating to:

- Periods during which the application of certain types of fertiliser is prohibited.

- The capacity of storage vessels for livestock manure, which “must exceed that required for storage throughout the longest period during which land application in the vulnerable zone is prohibited”, unless it can be demonstrated that the excess will be disposed of in a manner that is not environmentally harmful.

- Limitations on the application of fertilisers, consistent with good agricultural practice and taking into account: soil conditions, soil type and slope; climatic conditions, rainfall and irrigation; and land use and agricultural practices. There must be a balance between the nitrogen requirement of the crops and the nitrogen supply from the soil and from fertilisation.

- The amount of livestock manure applied to the land each year, which must not exceed 210 kg of nitrogen per hectare (N/ha) during the first four-year Action Programme and 170 kg N/ha thereafter.\(^{18}\)

The Directive also instructs member states to take any additional measures necessary to achieve its objective of reducing water pollution by nitrates from agricultural sources. It states: “In selecting these measures or actions, Member States shall take into account their effectiveness and their cost relative to other possible preventive measures.”\(^{19}\)

11. Although the Directive is specific about the kind of measures that must be included in the Action Programme, it is less prescriptive about the precise detail of their implementation. For example, it does not lay down particular dates for the closed periods for the application of fertiliser. It does not even specify the length of the closed periods. The 170 kg N/ha whole-farm limit on the spreading of livestock manure is the exception to this lack of specificity, and we return to this in paragraph 17. In oral evidence, Defra pointed out: “We have got wriggle room insofar as the Directive does allow Member States discretion in defining the very detail of some of the mandatory measures which the Directive requires us to put in place.”\(^{20}\)

The initial implementation of the Nitrates Directive in England

12. The Minister for the Environment and Countryside at the time the Directive was being negotiated, David Trippier, stated that he wanted it “to strike a fair balance between improving water quality and maintaining an efficient agriculture”.\(^{21}\) The initial approach to implementation certainly does not appear to have been over-zealous. Member states were required to designate vulnerable zones within two years of the Directive coming into force in 1991. However, it was not until March 1996 that regulations were made applying NVZ designation to 8% (approximately 600,000 hectares) of England. The focus of the

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20 Q 82 [Ms Nowak]
21 Ev 30
designation was “the protection of drinking water sources”—something that was to cause problems later. In December 1998, an Action Programme came into force.

**The terms of the 1998 Action Programme**


**Key points of the 1998 Action Programme**

- The application of nitrogen fertiliser shall take account of soil conditions, soil type and slope; climatic conditions, rainfall and irrigation, land use and agricultural practice.
- Nitrogen fertiliser and organic manure shall not be applied to any land in excess of the crop requirement.
- Chemical fertiliser shall not be applied to grassland between 15 September and 1 February, and to any other land between 1 September and 1 February, expect where the nitrogen requirement of the crop between the specified dates can be met only by applying fertiliser.
- Nitrogen fertiliser and organic manures shall be applied to land as accurately and uniformly as possible. They shall not be applied to steeply sloping fields, waterlogged soil, flooded land, frozen soil, or land covered by snow.
- Chemical fertilisers shall not be applied in a location or manner that makes it likely that they will directly enter surface water.
- Organic manure loadings must not exceed 250 kg N/ha a year, averaged over the area of grass on the farm, and 170 kg N/ha a year averaged over the area of the farm not in grass.
- Organic manure shall not be applied to any field at a level above the 250 kg N/ha a year limit.
- Organic manure shall not be applied to any land less than 10 metres from surface water.
- Organic manure shall not be applied to sandy or shallow soil between 1 September and 1 November where the land is in grass or is to be sown with autumn sown crop, and between 1 August and 1 November in any other case.
- The capacity of storage vessels for livestock manure shall exceed that required by the longest period during which application is prohibited, except where it can be demonstrated that excess manure will be disposed of in a way that will not harm the environment.
- Sufficient records shall be maintained to enable inspection to take place.

14. Under the Directive, Action Programmes must be reviewed every four years. Defra told us that it had insufficient data to carry out a review of the 1998 Action Programme in 2002. In oral evidence, the Minister appeared to be under the impression that Defra had “never ever” had a four-yearly review, but in fact Defra’s first review of the Action Programme was undertaken in 2006. No changes have been made as yet, and thus the 1998 Action Programme is still the current Action Programme.

**European Commission legal action**

15. In December 2000, the European Court of Justice ruled that the UK had failed adequately to implement the Directive, because it had focused on deep ground waters used for the abstraction of drinking water, rather than considering all surface and ground

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23 Ev 12
24 Q 56; Ev 26
waters. As a result, in October 2002, Defra applied NVZ designation to a further 47% of England, bringing the total designation to 55%. The 1998 Action Programme was applied to the newly designated NVZs in December 2002.

16. Despite the increases, the European Commission indicated in 2003 that it was still dissatisfied with implementation of the Directive in the UK. The Environment Agency noted that a Reasoned Opinion is currently outstanding against the Government “for failure to adequately implement the Nitrates Directive”, Defra told us: “The EU Commission has concerns about some aspects of our current Action Programme and designated areas and these have been formalised in ongoing legal proceedings.”

17. The NFU expressed concern about the rationale behind the European Commission proceedings. However, in one respect, the reason for the Commission’s dissatisfaction could not be clearer. It relates to the whole-farm limit for the spreading of livestock manure, which the Directive specifically sets at 170 kg N/ha. It is possible to apply for a derogation from this limit, but England has not done so. Despite this, it currently operates a 250 kg N/ha limit for grassland in NVZs. The NFU itself told us that the limit currently being applied “which the Commission would contend was illegal, is 250”.

18. The 170 kg N/ha limit could be regarded as another of the Directive’s shortcomings in that there appears to be a lack of robust evidence to justify it. We asked the Minister whether there was a scientific basis for this figure. Defra subsequently explained that its records “do not show how or why the Commission proposed this figure”, although it commented that there is some indication that rainfall levels were a significant factor. It told us that the UK “saw the 170 limit as too tight”, and “argued for a much more differentiated approach to limits but did not win the argument”. However, while the apparent lack of evidence supporting a 170 kg N/ha limit is a cause for concern, it does not alter the fact that this is the limit set down in law and that Defra is not applying it.

19. The Nitrates Directive is nearly 17 years old and is, as Defra put it, “universally unpopular […] because it is trying to impose very prescriptive rules onto something which should really be fairly flexible”. The UK is not alone in facing legal proceedings. The latest European Commission report on the implementation of the Directive, which stated the position as it was in November 2006, noted that infringement proceedings were also ongoing against Belgium, Germany, Spain, Ireland, Italy and Portugal. Since then, the

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25 Defra, Consultation on implementation of the Nitrates Directive in England, p 11
27 Ev 59
28 Ev 13
29 Ev 1
30 Q 40
31 Q 55
32 Ev 26
33 Q 89
34 European Commission, Accompanying document to Report from the Commission to the Council and the European Parliament, Annexe 1, p 23
cases against Belgium, Germany and Ireland have been closed, but infringement proceedings have been opened against Luxembourg.\textsuperscript{35}

20. The Directive may be unpopular, but it does not follow that it is incapable of implementation, as Defra itself admits:

However the point that is made is that other countries have managed to put in place measures which make them compliant with the Directive, which achieve the Directive’s objectives, and have done so. We should be on our third review of the Action Programme had we implemented in accordance with the timetable set down in the Directive. We are only doing our first review of the Action Programme.\textsuperscript{36}

The Minister told us that when it comes to implementing the Directive, “we are in a bad position […] I think we are at the back of the queue with Spain just in front of us”.\textsuperscript{37}

21. Moreover, despite its unpopularity, the Directive appears to be here to stay. Defra told us that it thought that the Directive was considered for repeal at the time the Water Framework Directive was being negotiated in 2000, but that a decision was made to keep it in place, leading Defra to conclude that “we may have to learn to live within the constraints of the Directive”.\textsuperscript{38}

22. We recognise that Defra, and its predecessor Departments, have tried to avoid unnecessarily prescriptive solutions to the implementation of what could be regarded as an out-dated and imperfect Directive, and that differences of interpretation have caused problems with the European Commission. However, it is clear that Defra has failed adequately to implement the Directive in so far as England is currently not applying the 170 kg N/ha limit to grassland.

\textbf{Trends in nitrate levels in surface and ground waters}

23. The Directive’s purpose is to reduce water pollution from nitrates. An accurate picture of trends in nitrate levels in surface and ground waters thus seems a prerequisite for assessing whether the current Action Programme is achieving this objective. We recognise that, as Defra pointed out, this is a very complex area.\textsuperscript{39} However, we were struck by the different conclusions that the NFU, the Environment Agency and Defra drew about trends in nitrate levels, particularly as they appeared to be using the same data.

24. The NFU gave the most positive account of the situation. It noted that Environment Agency sampling data showed that a significant number of important rivers in the Midlands, with large catchments in NVZs, showed downward trends of up to 20% over the 15 years from 1990 to 2005. It gave the examples of the Rivers Trent (20% reduction),

\textsuperscript{35} This is the position as detailed by the Commission in unprinted correspondence with the Committee. At first, there appeared to be differences between the list provided by the Commission and the list provided by Defra in Q 88 (see Ev 27), but subsequent correspondence with the Commission confirmed that the member states currently facing infringement proceedings are: Spain, Italy, Luxembourg, Portugal and the UK. This tallies with Defra’s list.

\textsuperscript{36} Q 89

\textsuperscript{37} Q 88 [Mr Woolas]

\textsuperscript{38} Q 89

\textsuperscript{39} Q 71
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Thames (10% reduction), and Warwickshire Avon (15% reduction). It explained that there is "a large block of downward trending rivers whose catchments extend from Derbyshire in the north to Surrey in the south, and from Worcestershire in the west to Cambridgeshire in the east." It commented that other major rivers that adjoin this block, such as the Rivers Severn and Great Ouse, have flat 15-year trends.  

25. The NFU did admit that elsewhere in the country "the position is much more mixed". It found some rivers with upward trends, such as the River Wensum in Norfolk. However, it noted that the Wensum is ground-water fed and that a long percolation time applies to ground water. Promar International, in a research document for Dairy UK, argued that "there is significant evidence that increases in nitrate levels in recent years were largely caused by the ploughing out of permanent pasture during and following the Second World War, and the subsequent intensification of the industry". Defra agrees that nitrates from agricultural land take decades to reach ground water abstraction points, as opposed to days to reach surface waters.

26. The Environment Agency told us that "the evidence is that nitrate pollution has not changed significantly since the Directive came into force" and noted that "in some areas, particularly in the south and east of England, nitrate levels in groundwater have increased and are still rising." It also reported that about 17% of its 7,300 river monitoring points exceeded the 50 mg/l drinking water limit at least once during the winter months.

27. The inverse of 17% of monitoring points exceeding the 50 mg/l limit is that the vast majority of monitoring points—83%—do not. It could be argued that this is an encouraging picture, but Defra said that the situation is "getting worse". It, too, noted that "the trends on nitrogen are still going up in most groundwaters and some coastal waters". However, given the time lag between changes in agricultural practice and nitrate levels in ground water, this is not unexpected.

28. Commenting on trends in nitrate levels in surface water, Defra noted that data for the years 1999 to 2004 show that 77% of sites have a declining trend, while 23% have a rising trend. However, it states that very few of these trends are statistically significant "because of the short time period used". Defra’s view that five years is too short a time for trends in surface water to be judged statistically significant is interesting because the current Action
Programme has been in place for little more than five years in the majority of NVZs and yet Defra feels able to assert that the Action Programme “has not had a significant impact on nitrate pollution.”\textsuperscript{50} When we asked the Minister whether there had been sufficient time to assess the effectiveness of the current Action Programme, he replied candidly: “No, I do not think there has.”\textsuperscript{51}

29. The National Pig Association summed up concerns about the evidence base for the proposed changes to the Action Programme:

> The more onerous requirements are being proposed on the back of increases in nitrate levels due to farming practices over 20 years ago. The systems that are now in place will lead to further nitrate reduction when it has had sufficient time to feed through the aquifers […] The NVZ’s designated in 2002 have been measured against an insufficient period of monitoring data for Defra to be confident in making the claim that more onerous measures are needed.\textsuperscript{52}

30. There seems to be general agreement that nitrate levels in some ground waters are on an upward trend, but this may be the result of agricultural practices dating back decades. Trends in ground waters should not be used to justify changes to an Action Programme that was introduced only in 1998 and extended in 2002. We regret that it is not possible to ascertain a clearer picture of trends in nitrate levels in surface waters and recommend that Defra and the Environment Agency supply more information on this matter in future reviews of the Action Programme.

31. We believe that, as Defra admitted, there is insufficient evidence to assess how effective the current Action Programme has been in reducing nitrate pollution, but, in the light of legal action on the part of the European Commission, we agree that changes need to be made in order to bring the UK into compliance with the Directive.

\textsuperscript{50} Defra, Consultation on implementation of the Nitrates Directive in England, p 11
\textsuperscript{51} Q 59
\textsuperscript{52} Ev 47–48
3 Defra’s proposals

Defra’s consultation and the implementation timetable

32. In the summer of 2007, Defra launched a consultation on the implementation of the Nitrates Directive in England. It published a partial Regulatory Impact Assessment in July and a consultation document in August. The consultation sought views on whether to increase NVZ coverage from 55% to 70% of England or whether to apply the Action Programme throughout England, and on the circumstances under which de-designation of NVZs should be possible. It also asked for comments on a number of changes to the current Action Programme, which we consider below, on the partial Regulatory Impact Assessment, on advice and support, and on anaerobic digestion.

33. The consultation period was due to end on 2 November 2007, but was extended to 13 December in the light of the Foot-and-Mouth and Bluetongue outbreaks. Defra received information from 609 respondents, three quarters of whom were farmers. A summary of the consultation responses was published in March 2008.

34. Defra had originally intended the Statutory Instrument introducing changes to NVZ coverage and the Action Programme to come into force on 6 April 2008, but had to revise this timetable in the light of the extension to the consultation period and the level of interest the issue generated. The Minister indicated in a Westminster Hall debate on 8 January 2008 that he was not committed to 6 April.53 It its written evidence, Defra told us that the Statutory Instrument was not expected to come into force “until later in the Spring”.54 When we pressed the Minister on this point in the oral evidence session, he said that the changes would be implemented by the summer recess, which is due to start on 23 July 2008.55 We recommend that Defra keep farmers apprised of the proposed implementation date for the changes to NVZ coverage and the Action Programme so that they know where they stand and can plan accordingly.

The extent of NVZ coverage

35. The consultation put forward two options in relation to NVZ coverage: Defra could continue to designate discrete NVZs, but increase the area covered from 55% to 70% of England, or it could apply the Action Programme across the whole of England.

36. Three of the 16 submissions we received came down firmly in favour of a whole-territory approach. The Salmon and Trout Association and the Royal Society for the Protection of Birds (RSPB) both believed that a whole-territory approach would create “a level playing field for all farmers”56 and “would send a clear and simple message to everyone that this is a serious problem which requires attention now”.57 The Salmon and

53 HC Deb, 8 January 2008, col 47WH
54 Ev 13
55 Qq 76–81
56 Ev 36
57 Ibid.
Trout Association also stated that a whole-territory approach would avoid any difficulties associated with identifying the correct land to designate, while the RSPB commented that such an approach would provide “significant benefits through ease of administration and enforcement for the Environment Agency.” It cited related Directives, such as the Water Framework Directive, and stated that a whole-territory approach would support compliance with their terms. Natural England also favoured 100% designation, stating that it considered “the science and methodology behind the proposed 70% designation to be imprecise”.

37. As we mentioned in paragraph 8, seven of the 15 member states at the time the Directive was agreed have decided that the advantages of 100% designation outweigh the disadvantages and have adopted the whole-territory approach. However, the majority of respondents to our inquiry, including the Environment Agency, were in favour of the continuation of discrete NVZs in England:

The Environment Agency supports the targeted approach to designation as determined by our environmental monitoring information and scientific analysis, which takes a modern approach to regulation, targeting action and regulation where it is most needed. Applying the Action Programme throughout England would place an excessive and unnecessary financial burden on farmers in “low nitrate” areas.

The Environment Agency agreed that the Water Framework Directive means that there will be a need to control nitrate pollution outside NVZs in some areas, but said that it was “working to identify the need for and scale of any wider measures to meet this gap between the two Directives”. The NFU commented that the level playing field argument “ignores the discontinuities which would occur at the Welsh and Scottish borders”. Scotland and Wales both have discrete NVZs, rather than a whole-territory approach.

38. Although the NFU supported a targeted approach to NVZ designation, it was critical of the identification methodology used in 2002, which it said “was based on both poor quality and inadequate data”. It cited the example of monitoring results for a block of boreholes being wrongly ascribed to sites 100 km distant from their true position. A supporting paper to Defra’s consultation document explains the new method that was followed in 2006 to review the designation of NVZs. It states that the Environment Agency has developed a revised way of identifying polluted waters, which it goes on to describe, along with setting out how land draining into those waters has been identified. The NFU commented that 6% of England that was previously designated “does not in fact meet the designation criteria under the improved methodology used for the current round of designations”.

58  Ev 38
59  Ev 42
60  Ev 60
61  Ibid.
62  Ev 3
63  Ev 2
64  Supporting document G1
65  Ev 2
39. When we asked the NFU whether it was satisfied with the improved methodology, it said “not entirely”, although it conceded that it was “a substantial improvement on the methodology last time”. The aspects of the methodology that the NFU described as “unfortunate” included “the decision to include the whole of a river catchment, including uplands which contribute very little nitrate”. It noted that the inclusion of uplands would have major financial implications for farmers, but would yield little benefit in terms of nitrate reduction since these parts of the river would already have low levels of nitrates.

40. Defra told us:

Making the designations and identifying the polluted waters is really quite difficult […] so we set up a group of very eminent people who we felt had the knowledge and the expertise to be able to look at our existing methodology. We did have NFU representation on that group. The methodology that was finally decided upon took the view that if there was a polluted waterway at the lowest point on the catchment then it was one-out all-out. The alternative would be […] to do what many other Member States have done which is to apply the Action Programme across the whole territory.

The NFU stressed in supplementary evidence that it had “considerable reservations” about the methodology, which it made known to Defra at the time. When we put the NFU’s concerns about the designation of entire river catchments to the Minister and asked him whether he was looking to review the situation, he told us that the suggestion carried “commonsense” and agreed that “it is something that we will look at”.

41. Defra should avoid unnecessary regulation by continuing to designate specific NVZs, rather than adopting a whole-territory approach. However, in the light of continuing concerns about the decision to apply NVZ coverage to the whole of a river catchment, even if the upland part of the river has low nitrate levels, Defra should consider whether its designation methodology is as well-targeted as is practicable and publish a report as soon as possible on its conclusions about this matter.

42. Concerns over the designation methodology raise the issue of whether it should be possible to de-designate NVZs. Defra’s consultation proposes an appeals mechanism whereby farmers whose land is in a newly-designated NVZ can challenge the decision if they can demonstrate that the land does not drain into polluted waters. Several of those who submitted evidence commented that there should be a mechanism whereby existing NVZs can be de-designated, if appropriate. Dairy UK stated: “A targeted approach also inherently justifies de-designation when the evidence no longer warrants the inclusion of an area within an NVZ.”

Mr Philip Dunne, Member for Ludlow, commented: “If
Ministers are considering expanding zones, they should also, under administrative law, consider the possibility of reducing a zone if the objective evidence supports such a reduction.”

43. In a Written Answer on 16 January 2008, the Minister said that he was “considering under what circumstances removal of land from within an existing Nitrate Vulnerable Zone may be possible in future”. The danger with a de-designation policy is, as Defra’s consultation document noted, that areas may be subject to a “ping-pong” effect of de-designation and re-designation. However, if NVZs have been mis-identified in the first place, it seems only fair that there is an opportunity to put this right. When we asked the Minister whether the appeals mechanism would be open to existing NVZs he said: “The ball is bouncing in that direction.”

We recommend that NVZs that were designated under the 2002 methodology but would not qualify for designation under the new methodology should be de-designated, and that the appeals mechanism should be open to existing, as well as new, NVZs.

The proposed new Action Programme

Limiting the amount of nitrogen applied to the land

Whole-farm limit for livestock manure

44. As we noted above, England has been applying a 250 kg N/ha limit to grassland, despite not having secured a derogation from the 170 kg N/ha limit set out in the Directive. Defra’s consultation document proposes the introduction of a 170 kg N/ha limit and an application for a derogation from such a limit. This is readily explained by the “reality that you can only apply for a derogation from something which you have in place”. The latest European Commission report makes it clear that: “Appropriate designation of nitrate vulnerable zones and action programmes fully in conformity with the Nitrates Directive are prerequisites to any derogation.” Derogations are temporary and apply only for the duration of the Action Programme.

45. The Environment Agency told us:

Currently, we believe there is no justification for a derogation from the Whole Farm Limit (170kg/N/ha/yr) for livestock manure. We also believe that the current Action Programme is not compliant with the objectives of the Directive, and therefore a derogation cannot be granted at this time.

73 Ev 66
74 HC Deb, 16 January 2008, col 1239W
75 Defra, Consultation on implementation of the Nitrates Directive in England, p 17
76 Q 75
77 Q 94
79 Ev 60
When we asked the Minister whether he took a different view and why, he talked about the importance of providing flexibility. However, as the Environment Agency implies, and as Defra itself acknowledged in answers to subsequent questions, any application for a derogation will need to be backed up by convincing evidence. The Directive permits derogations from its specified limit only when this is justified by criteria such as long growing seasons, crops with a high nitrogen uptake, high net precipitation, or soils with an exceptionally high denitrification capacity. In addition, the derogation must not prejudice the achievement of the Directive’s objectives. In other words, as Defra put it: “The fundamental core of our case has to be that by granting the derogation no environmental damage will be caused.”

46. According to the NFU, the 170 kg N/ha limit would create problems for specialist dairy farmers because normal stocking rates often result in this limit being exceeded. Dairy UK told us that a 170 kg N/ha limit “will affect about half of all dairy farmers in Nitrate Vulnerable Zones, some of them severely”. It explained that farmers who cannot meet the limit will have either to acquire more land or to reduce their stocking density, both of which will have cost impacts.

47. The limit Defra suggests applying for in its consultation document is 250 kg N/ha. Beyond the fact that this is the limit currently being operated on grassland in England, the rationale for alighting on this figure appears almost as unclear as the rationale for the Commission alighting on a baseline figure of 170 kg N/ha. However, a 250 kg N/ha limit would certainly be in line with the derogations that the Commission has already granted. Limits of between 230 kg N/ha and 250 kg N/ha currently apply, under specified circumstances, in Denmark, the Netherlands, Austria, Germany, Ireland, Northern Ireland and Belgium. Cattle farms are specifically mentioned in some of the derogations. In supplementary evidence, Defra told us: “The derogation limit we seek will be determined by the evidence we are able to put forward which may or may not support a 250 limit.”

48. Defra should implement the 170 kg N/ha limit to bring England into compliance with the Directive, but, given the difficulties such a limit will cause some dairy farmers, it should apply for a derogation to enable a higher limit to be operated where this is justified by the evidence. The derogation application should be made as swiftly as possible so that, if it is granted, any gap between implementation of the 170 kg N/ha limit and the return to a higher limit is kept to a minimum.
Crop requirement limitation

49. Under the current Action Programme, nitrogen fertiliser must not be applied to any land in excess of the crop requirement. Defra’s consultation proposes to require farmers to undertake the following mandatory steps when planning their nitrogen fertiliser applications:

- assess the soil nitrogen supply, the nitrogen requirement of the crop, and the nitrogen supplied to the crop from applications of organic manures, and
- calculate the need for manufactured fertiliser nitrogen by deducting the contribution from organic manures from the nitrogen requirement of the crop.\(^87\)

The calculation procedure is summarised as follows: “Crop requirement (Nmax) > supply from organic manure (Total manure N x manure N efficiency) + supply from manufactured fertiliser.”\(^88\) Defra’s consultation document defines Nmax as “the maximum nitrogen application rate that can be applied to a particular crop” and states that farmers will have to use standard reference figures to calculate the Nmax for the main arable crops and grass.\(^89\)

50. These measures appear relatively uncontroversial. Mr Payne, a consultant to the NFU, told us:

I think the requirement to stick to the crop nitrogen limit, or what is needed for the individual crop, must be a sound and responsible thing for the industry to do, which many farmers would already be doing. I do not think there would be any argument that that is a sensible and cost-effective measure to take.\(^90\)

The Environment Agency expressed concern “that using NMax may lead to over-application of nitrogen” and stated that “Defra needs to provide greater clarity on the difference between NMax and the nitrogen requirement of the crop.”\(^91\) We recommend that Defra proceed with the crop requirement limitation proposals, subject to providing clarification on the difference between Nmax and the nitrogen requirement of the crop, as requested by the Environment Agency.

Controlling where and how nitrogen is applied

51. The current Action Programme prohibits farmers from spreading manufactured fertiliser or organic manure in locations, or in a manner, that “will cause either nitrogen-enriched surface run-off to enter, or nitrogen compounds to directly contaminate, surface waters.”\(^92\) The Action Programme for Nitrate Vulnerable Zones (England and Wales) Regulations 1998 state that organic manure shall not be applied to land less than 10 metres

\(^{87}\) Defra, Consultation on implementation of the Nitrates Directive in England, p 29
\(^{88}\) Ibid.
\(^{89}\) Ibid.
\(^{90}\) Q 10
\(^{91}\) Ev 61
\(^{92}\) Defra, Consultation on implementation of the Nitrates Directive in England, p 30
from surface water, that nitrogen fertiliser must not be applied to steeply sloping fields and that, where it is used, it must be applied as accurately and uniformly as possible.

52. Defra’s consultation document fleshes out these measures and proposes several additional specific requirements. For example, a steep slope is defined as “an incline greater than 12 degrees” and there is a prohibition on the use of “high trajectory, high pressure techniques for making applications of organic manures.”

53. In general, those who submitted evidence seemed to find the proposed changes acceptable. When we asked the NFU whether it thought that there were any elements of the proposed new Action Programme that were justifiable, it told us that “making sure that you are spreading your nitrogen accurately is an appropriate measure and keeping up with modern techniques as developments take place.”

The Environment Agency was concerned that some of the terms were not adequately defined and stated that, rather than referring to “high trajectory” and “high pressure” it would be clearer to say: “no rain guns, no splash plates greater than ‘x’ degrees or that the pressure must be less than ‘y’.”

We recommend that Defra proceed with its proposals on controlling where and how nitrogen should be applied, although it should clarify the meaning of some of the terms it uses in its consultation document, such as “high trajectory” and “high pressure”.

**Cover crops**

54. Defra’s consultation document proposes a requirement to sow cover crops “where ground would otherwise be left bare over winter, except in the case of crops harvested after 1 September (e.g. sugar beet)”.

The cover crops measure attracted considerable criticism in the responses to Defra’s consultation. Some 335 of the 609 respondents mentioned cover crops, making it the single most common issue for comment, and 78% were against the inclusion of the measure in the Action Programme.

55. Cover crops also attracted significant attention in the responses to our inquiry. The Environment Agency was generally supportive of their inclusion in the Action Programme, stating that “scientific studies show that cover crops are effective at taking up nitrate that would otherwise be lost to the environment.”

The Salmon and Trout Association was also in favour of the use of cover crops. However, most respondents were against the proposal.

56. One obvious cause for concern was that the Nitrates Directive does not require cover crops to be included in the Action Programme, making it possible for Mr Philip Dunne,
Member for Ludlow, to argue that the measure “bears all the hallmarks of Whitehall gold-plating”. The consultation document justifies the inclusion of cover crops on the grounds that “the evidence indicates that they are a cost-effective measure for tackling diffuse water pollution”. Defra’s partial Regulatory Impact Assessment estimates that the cover crops requirement would result in a reduction in nitrates of between 4 and 7%, meaning that it would be the most effective measure in the Action Programme. However, the NFU questioned the basis on which this estimate was made, commenting that the evidence cited in support of the proposal derived from the Nitrate Sensitive Areas scheme and that soils involved in that scheme were “principally sandy and shallow soils”. The NFU’s response to Defra’s consultation stated: “Such soils are not representative of soil types in NVZs throughout England and it is not valid to extrapolate the evidence […] to the rest of England.”

57. The NFU also raised concerns about the practical implications of sowing cover crops. Its president, Mr Kendall, told us that “on heavy soils you do plough the land early because the weather breaks it down […] Ploughing a shallow or a light soil in January is feasible, but with my heavy Bedfordshire clay you are going to get stuck.”

58. Natural England and the Royal Society for the Protection of Birds (RSPB) were both against the cover crops proposal because of concerns over loss of habitat. The RSPB commented that legislating against over-winter stubble would expose Defra to accusations of poor environmental leadership:

The proposed requirement for cover crops in the NVZ Action Programme will cause a loss of seed resources for seed eating farmland birds which depend upon uncropped stubbles left over winter. This would threaten Defra’s ability to meet its target to reverse the decline in farmland birds, which contributes to its new Natural Resources PSA [Public Service Agreement] target. The proposal is also in direct conflict with many Biodiversity Action Plan targets for farmland wildlife which rely on winter stubble fields.

It suggested “a risk based approach whereby the requirement for cover crops applies only to bare soils or to maize stubbles (a crop with high erosion risk)”. The NFU commented on the conflict between the cover crop proposal and Entry Level Stewardship agreements.
to maintain over-winter stubble.\textsuperscript{108} It also noted that “you might well end up having to use extra herbicides to kill off […] green cover”.\textsuperscript{109}

59. Defra told us that, in the light of the response it had received, it was “considering revisiting” the cover crops proposal.\textsuperscript{110} \textbf{We urge Defra to leave the universal use of cover crops out of the Action Programme. Cover crops are not required under the Directive, would have a negative impact on biodiversity, and are not suitable for all soil types. However, given that there is evidence to suggest that cover crops have benefits in specific circumstances, we recommend that Defra evaluate an alternative method of encouraging their uptake in targeted areas.}

\textit{Controlling when nitrogen is applied}

\textbf{Closed periods for manufactured fertiliser}

60. Defra does not propose to change the periods during which farmers are prohibited from applying manufactured fertiliser to their land. Under the new Action Programme, the closed periods would remain 15 September to 31 January for grassland, and 1 September to 31 January for arable land.

61. The current Action Programme allows farmers to override the closed period if there is an agronomic justification for doing so. The new Action Programme would tighten this provision by listing which crops have an agronomic nitrogen requirement during the closed period, although it would also permit applications during the closed period on a case-by-case basis, “provided written advice is obtained from a FACTS [Fertiliser Advisers Certification and Training Scheme] qualified adviser”.\textsuperscript{111} Defra also proposes to prohibit farmers from applying fertiliser to their land when heavy rain is forecast within 48 hours.

62. Perhaps unsurprisingly, given the minimal nature of the changes, this section of the Action Programme attracted little comment in the evidence, although the Environment Agency suggested that Defra should consider extending the closed periods to reduce leaching to surface waters.\textsuperscript{112} The NFU’s response to Defra’s consultation makes the common-sense point there would be “serious difficulties in framing a practical or enforceable rule to prohibit the application of fertiliser when heavy rain is forecast within 48 hours”.\textsuperscript{113} \textbf{Defra should reconsider the practicality of the prohibition on applying nitrogen fertiliser if heavy rain is forecast within 48 hours. However, it should liaise with the Met Office to evaluate the practicality of having incorporated into the weather forecasts that are provided to the farming media information to guide farmers on the optimum periods when it would be safe to apply fertilisers.}

\begin{flushleft}
\textsuperscript{108} Ev 5  \\
\textsuperscript{109} Q 49  \\
\textsuperscript{110} Q 114 [Mr Ryder]  \\
\textsuperscript{111} Defra, \textit{Consultation on implementation of the Nitrates Directive in England}, p 25  \\
\textsuperscript{112} Ev 61  \\
\textsuperscript{113} NFU, \textit{Policy Statement}, p 14
\end{flushleft}
Closed periods for organic manure

63. The current Action Programme prohibits the application of organic manure to sandy or shallow soil between 1 September and 1 November for grassland or land to be sown with an autumn sown crop, and between 1 August and 1 November in all other cases. The new Action Programme would apply closed periods to all soil types, not just sandy and shallow soils:

<table>
<thead>
<tr>
<th>Average Annual Rainfall (mm per year)</th>
<th>Grassland</th>
<th>Arable land</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Sandy and shallow soils</td>
<td>All other soils</td>
</tr>
<tr>
<td>Up to 1050</td>
<td>1 Sep to 15 Dec</td>
<td>15 Oct to 15 Jan</td>
</tr>
<tr>
<td>Over 1050</td>
<td>1 Sep to 31 Dec</td>
<td>1 Oct to 31 Jan</td>
</tr>
</tbody>
</table>

Source: Defra’s Consultation on implementation of the Nitrates Directive in England, p 25

64. Defra’s partial Regulatory Impact Assessment estimates that the changes to the closed periods for organic manure will result in changes to nitrate levels of between 0.5 and 1%.\(^\text{114}\) The National Pig Association commented that the benefits were “very small in comparison to the costs”, which it states are estimated to be at least £40 million for the pig sector.\(^\text{115}\) The costs arise from the requirement for increased storage capacity. The NFU also considered the cost of the closed periods for organic manure to be “high” and the effectiveness of the measure to be “very low”.\(^\text{116}\) Natural England expressed concern about the potential 0.2 to 2% increase in ammonia emissions as a result of the proposed new closed periods.\(^\text{117}\) Defra’s submission stated that these figures were “likely to be an overestimate”.\(^\text{118}\) When the Minister discussed the closed periods for organic manure, he spoke of what would happen “if they were to be gone ahead with”, adding, “we have not made our minds up yet”. He assured us: “The cost/benefit […] in terms of the reduction of nitrogen is at the forefront of my mind.”\(^\text{119}\)

65. Several submissions called for more flexibility in relation to closed periods. The Association of Chief Estates Surveyors and Property Managers in Local Government (ACES) stated that some areas, such as Cornwall, can achieve 12-month growing seasons “and would therefore require the ability to spread throughout”.\(^\text{120}\) Dairy UK called for farmers to be able to apply slurry during December and January if conditions were suitable, stating that this would “avoid the risk of a national slurry spreading day (or days) and allow farmers to use periods of drier weather within the closed period when the risk of soil

\(^{114}\) Defra, Partial Regulatory Impact Assessment, p 15
\(^{115}\) Ev 47
\(^{116}\) Ev 3
\(^{117}\) Ev 42
\(^{118}\) Ev 14
\(^{119}\) Qq 102–4
\(^{120}\) Ev 55
damage would be lower.” The Tenant Farmers Association commented on the need for flexibility in relation to the early part of the closed period “as relatively warm, dry autumns [...] would provide the right circumstances to allow spreading of organic manures without the risk of leaching.” The Meat and Livestock Commission also wanted a flexible, risk-based approach.

66. We welcome Defra’s open-minded approach to the closed periods for the spreading of organic manure and recommend that it publish a short cost-benefit analysis of its proposals to establish whether the new closed periods would be disproportionately costly to the farming industry. If Defra decides to proceed with the changes to the closed periods, it should get the best possible advice on the potential for building flexibility into the requirements.

Provisions for the storage of livestock manure

67. The Nitrates Directive states that storage capacity for livestock manure “must exceed that required for storage throughout the longest period during which land application in the vulnerable zone is prohibited”, but it does not specify by how much. The guidelines for the current Action Programme state: “The storage capacity available for those animal manures which cannot be applied during the autumn closed periods must be sufficient to cover these periods unless other environmentally acceptable means of disposal are available.”

68. Under the new Action Programme, farmers would have to provide 26 weeks’ storage capacity for pig slurry and poultry manure and 22 weeks’ storage capacity for all other slurry, regardless of the closed period. The NFU stated that Defra should “not impose storage requirements unrelated to closed periods”. Dairy UK commented:

There should be a closer alignment between the storage capacity requirement and the proposed closed period. The proposal for dairy farmers is for five months capacity whilst the closed period for grassland ranges from three to four months. This represents an excessive and costly level of insurance.

69. Defra stressed that it had developed a methodology that would mean it could say to farmers: “You will only be asked to store what you actually need to store.” It commented that this methodology “may not have been fully taken on board”. The methodology in question is set out on page 26 of the consultation document. It involves calculating the

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121 Ev 58
122 Ev 63
123 Ev 47
125 Defra, Guidelines for Farmers in NVZs, revised edition, July 2002, p 16
126 Ev 4
127 Ev 58
128 Q 105
129 Ibid.
130 Defra, Consultation on implementation of the Nitrates Directive in England
volume of excreta produced over the 22 or 26-week period, using standard excreta volumes, and the volume of water collected and stored during this period. The sum of these two amounts represents the capacity required. Deductions are permitted for the volume of manure exported off the farm, the volume of solids separated from the slurry and the amount of poultry litter that is stored in an appropriately located temporary field heap.

70. We agree with Defra that the storage calculation methodology is important in that it enables farmers to work out 22 or 26 weeks’ capacity according to the circumstances on their own farms. Defra must address its own criticism: namely, that the calculation methodology may not have been fully taken on board by farmers. It must outline the information programme it proposes to adopt to deal with this issue. However, Defra may be over-stating its case when it claims that the methodology means that farmers will have to store only what they need to store. The methodology does not alter the fixed 22 or 26-week limit. In this respect, it does not answer the objection raised by Dairy UK: a dairy farmer with a three-month closed period would still be required to provide five months’ storage.

71. Defra noted that “many other Member States have got much longer storage requirements than we have.” Germany, for example, has a storage requirement of six months and France has storage requirements of between four and six months. However, it is not the length of the storage periods Defra proposes, but the absence of any direct correlation between storage periods and closed periods that is the principal cause for concern and that will seem “quite illogical to many farmers.” We recommend that Defra recognise farmers’ concerns about the relationship between the storage capacity requirements and the length of the closed periods. Defra should re-evaluate and publish the evidence for relating storage requirements to a fixed period of 22 or 26 weeks, rather than the closed periods that apply on individual farms. Consideration should be given to relating storage requirements directly to the closed periods that apply on individual farms.

72. Both the Environment Agency’s submission and the NFU’s response to Defra’s consultation questioned the rationale behind the different requirements for pig slurry and poultry manure, compared with other slurries. Defra told us that more “out-grazing” of cattle meant that there was “less manure collected and needing storage”, and that cattle were “more usually on grassland where there are more opportunities for spreading manure”. The NFU said that it had “found no evidence suggesting that pig and poultry manures are significantly more likely to cause nitrate leaching” and commented that pig and poultry producers would be unfairly penalised by the six-month storage requirement. The Environment Agency could see “no justification” for the difference. In the light of criticism from both the NFU and the Environment Agency, we urge

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131 Q 110
132 Confirmed in unprinted correspondence between the Committee and the European Commission.
133 Q 37
134 Ev 26
135 NFU, Policy Statement, p 16
136 Ev 61
Defra to reconsider the necessity for the longer storage times it proposes for pig slurry and poultry manure.

73. The implementation timetable for the storage requirements is another concern. Defra proposes to give farmers two years to comply with the new storage regulations, but the NFU stated that farmers will need four years. An NFU briefing paper, discussing the two-year timetable for the storage measures, commented:

The NFU believes that this timetable is far too ambitious in terms of the investment and management action required by farmers, the ability of contractors to construct the necessary high-specification storage and in terms of the Environment Agency and local planning authorities to authorise the construction of new stores across 70% of England’s farmland.\footnote{137}

ACES, Dairy UK and the Meat and Livestock Commission also supported a four-year timetable, while the Tenant Farmers Association and the National Pig Association called for five years.

74. Defra said that it proposed a two-year timetable “so that we would have some time for it [the measure] to be in place to be reviewed in four years’ time”.\footnote{138} This is a sensible point taken in isolation, but, in the light of the practicalities, there is some doubt about whether the storage facilities could actually be in place within two years. The Minister admitted that he had “seen some examples in correspondence that have been sent to me by Members of Parliament of planning permission delays”.\footnote{139} Given the need to arrange finance, obtain planning permission, and commission and construct slurry stores, two years is an unrealistically short time in which to expect farmers to comply with the new storage measures. We recommend that they be given four years.

**Anaerobic digestion**

75. Anaerobic digestion involves the bacterial fermentation of organic material under controlled conditions in a closed digester to produce biogas, which can be used for electricity and heat generation. The other main product of anaerobic digestion is an odour-free digestate, which can be used as a fertiliser.\footnote{140} Defra’s consultation document states:

A number of Regulations, including the proposed Action Programme, are likely to mean that farmers will have to make substantial changes to the manner in which they manage manure. The role of innovative solutions and technologies, such as anaerobic digestion (AD), could, in some circumstances, become critical in enabling farmers to comply with these Regulations.\footnote{141}
Defra told us about the measures the Government is taking to stimulate markets for anaerobic digestion, such as the announcement on 10 January 2008 that anaerobic digestion will receive additional support in the form of two Renewable Obligation Certificates per MWh.\textsuperscript{142} On 9 April 2008, Defra announced a £4 million fund to support the installation of biomass-fuelled heating and combined heat and power projects, including anaerobic digesters.\textsuperscript{143}

76. As a source of renewable energy and a way of reducing greenhouse gas emissions, anaerobic digestion is to be welcomed, but it is not immediately apparent how it could help farmers to comply with the Action Programme. Defra's consultation document does not make this clear and anaerobic digestion is not mentioned specifically in the draft regulations for the proposed new Action Programme. The Environment Agency said that it supported the uptake of anaerobic digestion and its wider environmental benefits, but expressed the view that “within the strict context of the Nitrates Directive and the Action Programme rules anaerobic digestors will not directly benefit farmers”.\textsuperscript{144}

77. Defra's answer to our question about whether anaerobic digesters could count towards the storage requirements under the Action Programme was a less than ringing endorsement of this concept:

> The Directive is concerned with the sufficiency of capacity and does not define requirements as to the form the storage must take. So, the short answer must be yes. Whether Anaerobic Digestion could indeed be useful in helping farmers manage the storage of manures for purposes of the NVZ Action Programme is another matter; the potential is being considered within the Department and, I understand, by the agricultural sector itself.\textsuperscript{145}

Even were the value of anaerobic digestion in the context of the Action Programme to be made clearer, there would still be important considerations to be borne in mind. The NFU commented that anaerobic digestion plants “are expensive and also take longer to plan and build than slurry storage”. It stated that they would not be feasible within Defra’s two-year implementation timetable and possibly not within a four-year timetable. The NFU also noted that forcing farmers to spend heavily on slurry storage now may reduce the likelihood of their taking up anaerobic digestion in the future.\textsuperscript{146}

78. We welcome Defra’s commitment to anaerobic digestion, but we caution against portraying it as something that will help farmers to comply with the Action Programme until such time as it can be demonstrated precisely how it is helpful in this context. We recommend that Defra prioritise its consideration of the role anaerobic digestion could play in helping farmers to manage the storage of manure under the Action Programme and make its conclusions public before the statutory instrument.
implementing the changes comes into force, so that farmers can make an informed decision.

Financial support and advice

79. Defra estimates the overall cost to the agriculture sector from its proposed revisions to the Action Programme to be “between £35.5–£80.8 million and £52.8–£105.9 million (the lower range taking account of savings from mitigation measures).”147 The most costly provisions are the whole-farm nitrogen loading limit of 170 kg N/ha—because farmers may have to purchase or rent additional land and/or reduce livestock numbers—and the slurry storage capacity requirements. An estimate from the British Pig Executive put the capital cost of complying with the storage requirements at £30,000 for the average pig farm.148 Promar International, carrying out research for Dairy UK, estimated the capital cost to be £40,000 for the average dairy farm.149 However, the NFU commented that in the light of its research into the amount of existing storage dairy farmers possessed, this figure should be adjusted to £55,000.150 The Environment Agency told us: “Provision of financial assistance, at an appropriate level, to offset capital costs would be the single biggest thing that would help farmers comply with the revised measures.”151

80. Several submissions noted that grant aid was available in other member states and even in other parts of the UK. Northern Ireland, for example, offers 60% grant aid.152 In the past, farmers in NVZs in England could apply for financial assistance for constructing slurry storage facilities under the Farm Waste Grants Scheme. The scheme was introduced in 1996, when the first NVZs were designated, and expanded in 2002, when NVZ designation was increased. It ended on 31 March 2006.

81. Defra told us that it does not intend to establish a new capital grant scheme to help with the cost of constructing slurry storage facilities “because past experience has shown that this can lead […] to increased supply prices and merely postpone the impact of market forces”.153 Given that Defra needs to make substantial cuts over the next three years to address the shortfall in its budget, it is unlikely that it could afford to introduce such a scheme, even if it were minded to do so.

82. Defra also cited the polluter pays principle as an “important point”.154 The NFU commented that, under that principle, “the costs of pollution are internalized and passed through into the price of goods and services” but argued that this would not work in an

147 Ev 14
148 Ev 67
149 Tim Harper (Promar International), Research into the impact of changes to the England NVZ Action Plan: Costs to Dairy Farmers, September 2007, p 16
150 NFU, Policy Statement, p 16
151 Ev 62
152 Ev 4, 50
153 Ev 14
154 Q 90
agricultural context because “it is widely accepted that agriculture is a price taker rather than a price maker on account of the structure of the industry”.155

83. The proposed new Action Programme places a considerable financial burden on livestock and dairy farmers at a time when their ability to absorb these costs is questionable, given high feed prices and the phasing out of the Agricultural Buildings Allowance. We regret that Defra is not in a position to provide the kind of financial support offered under the Farm Waste Grants Scheme and recommend that it make representations to the Treasury on the need for financial support in the form of enhanced tax allowances for the construction of slurry storage facilities.

84. Defra told us that it has planned “an extensive programme of advice and guidance” to ensure that farmers are aware of their obligations under the proposed new Action Programme.156 Both the Environment Agency and the NFU commented on the importance of the written guidance being simple and concise.157 The NFU supported the use of workshops and seminars, and also suggested that Defra should provide a “confidential one-to-one free advice service, particularly for severely impacted businesses”.158 Dairy UK cited the Catchment Sensitive Farming initiative as an example of an effective way of communicating with farmers. Under the initiative, 40 catchments across England have been identified as priority areas for action to reduce water pollution from agriculture and improve farm practices. Advisers work on a one-to-one basis with farmers and also lead workshops and farm demonstrations. The initiative was initially intended to run from 2006 to 2008. In February 2008, Defra announced that it will “continue to support farmers on catchment sensitive farming” for a further three years.159 Dairy UK stated: “It is important that this programme is retained and the network of advisors under this programme is built on to provide advice and guidance to farmers caught within NVZs.”160 We urge Defra to adopt a pro-active approach to explaining the changes to the Action Programme by circulating written guidance that is as simple and concise as possible, providing workshops and seminars, and offering farmers the chance to obtain one-to-one advice. It should also provide an online advice service for farmers affected by the changes.

Record keeping

85. The current Action Programme requires farmers to keep records that include the following information:

- the area of the farm;
- the quantity, nitrogen content and date of application of any chemical fertiliser;

155 NFU, Policy Statement, p 8
156 Ev 14
157 Ev 4, 62
158 Ev 4
160 Ev 59
the quantity, type and date of application of any organic manure;

- the type of crop and the date it was sown;

- the number and type of livestock kept on the farm and the length of time they were kept there, and

- the quantity of livestock manure moved off the farm, the date it was moved and the name and address of the recipient.

86. Defra’s consultation document sets out several additional record-keeping requirements, most of which relate to the proposed new Action Programme provisions. For example, farmers would have to keep a record of the storage capacity calculation. The Tenant Farmers Association said that it was “greatly concerned about the capacity on farms to deal with the amount of bureaucracy that will be involved in recording all that is required under the new regulations”.¹⁶¹ The NFU stated that a major reduction in proposed bureaucracy was needed.¹⁶² Mr Philip Dunne, Member for Ludlow, commented that the record-keeping regime “takes red tape to new dimensions” and argued that farmers should not be “tied up in keeping essentially pointless records”.¹⁶³

87. We agree that farmers should not have to keep pointless records. However, we also accept the Environment Agency’s point about the importance of record keeping in assessing compliance and its assertion that good record keeping is “an essential part of running an efficient business and can only be in the interests of the farmer”.¹⁶⁴ Adequate records should be kept to enable the Environment Agency to assess whether the provisions in the final version of the Action Programme are being complied with. However, the record-keeping requirements should be as straightforward as possible to avoid placing an unnecessary burden on farmers. They should comply with best practice, as set out by the Better Regulation Executive in its five principles of good regulation, which state that any regulation should be transparent, accountable, proportionate, consistent and targeted.

¹⁶¹ Ev 64
¹⁶² Ev 4
¹⁶³ Ev 68
¹⁶⁴ Ev 61
4 Conclusion

88. The Nitrates Directive is undoubtedly flawed. Unlike the Water Framework Directive, which, as its names suggest, provides a framework to achieve a common goal, but leaves much of the detail of implementation to member states, the Nitrates Directive imposes prescriptive rules in an attempt to achieve its aim of reducing water pollution by nitrates from agricultural sources. Moreover, the scientific justification for the figures mentioned in the Nitrates Directive—specifically the 50 mg/l limit for nitrates in surface and ground waters and the 170 kg N/ha whole-farm limit for livestock manures—is at best unclear. The European Commission should carry out post-legislative scrutiny of the Directive to learn lessons about the way in which it was designed in the first place, the effectiveness of its results, and the difficulties member states have had in implementing it.

89. However, for the time being at least, Defra must find a way of satisfying the Commission that it is complying with the Directive. Defra’s plan to implement the 170 kg N/ha whole-farm limit is a sensible first step, given that this is one area where England is incontrovertibly in breach of the Directive. Some of the proposals, such as the closed periods for organic manure and the storage provisions, need refinement, and the cover crops requirement should be dropped altogether. Defra must convince the Commission that it is implementing the Directive while convincing farmers that the changes to the Action Programme are fair and proportionate. It is a difficult task but, as other member states have proved, not an impossible one.
Conclusions and recommendations

Nitrate Vulnerable Zones

1. We are concerned that the 50 mg/l limit continues to be the basis of the Directive. We are also concerned that the Directive’s implementation methodology does not reflect current European Union best practice. We recommend that Defra raise in the Council of Ministers the need to review the scientific evidence that underpins the Directive. If the evidence is found wanting, Defra should try to build an alliance with other member states to persuade the Commission to re-evaluate the Directive’s basis. (Paragraph 7)

Trends in nitrate levels in surface and ground waters

2. There seems to be general agreement that nitrate levels in some ground waters are on an upward trend, but this may be the result of agricultural practices dating back decades. Trends in ground waters should not be used to justify changes to an Action Programme that was introduced only in 1998 and extended in 2002. We regret that it is not possible to ascertain a clearer picture of trends in nitrate levels in surface waters and recommend that Defra and the Environment Agency supply more information on this matter in future reviews of the Action Programme. (Paragraph 30)

3. We believe that, as Defra admitted, there is insufficient evidence to assess how effective the current Action Programme has been in reducing nitrate pollution, but, in the light of legal action on the part of the European Commission, we agree that changes need to be made in order to bring the UK into compliance with the Directive. (Paragraph 31)

Defra’s consultation and the implementation timetable

4. We recommend that Defra keep farmers apprised of the proposed implementation date for the changes to NVZ coverage and the Action Programme so that they know where they stand and can plan accordingly. (Paragraph 34)

The extent of NVZ coverage

5. Defra should avoid unnecessary regulation by continuing to designate specific NVZs, rather than adopting a whole-territory approach. However, in the light of continuing concerns about the decision to apply NVZ coverage to the whole of a river catchment, even if the upland part of the river has low nitrate levels, Defra should consider whether its designation methodology is as well-targeted as is practicable and publish a report as soon as possible on its conclusions about this matter. (Paragraph 41)

6. We recommend that NVZs that were designated under the 2002 methodology but would not qualify for designation under the new methodology should be de-
designated, and that the appeals mechanism should be open to existing, as well as new, NVZs. (Paragraph 43)

Whole-farm limit for livestock manure

7. Defra should implement the 170 kg N/ha limit to bring England into compliance with the Directive, but, given the difficulties such a limit will cause some dairy farmers, it should apply for a derogation to enable a higher limit to be operated where this is justified by the evidence. The derogation application should be made as swiftly as possible so that, if it is granted, any gap between implementation of the 170 kg N/ha limit and the return to a higher limit is kept to a minimum. (Paragraph 48)

Crop requirement limitation

8. We recommend that Defra proceed with the crop requirement limitation proposals, subject to providing clarification on the difference between Nmax and the nitrogen requirement of the crop, as requested by the Environment Agency. (Paragraph 50)

Controlling where and how nitrogen is applied

9. We recommend that Defra proceed with its proposals on controlling where and how nitrogen should be applied, although it should clarify the meaning of some of the terms it uses in its consultation document, such as “high trajectory” and “high pressure”. (Paragraph 53)

Cover crops

10. We urge Defra to leave the universal use of cover crops out of the Action Programme. Cover crops are not required under the Directive, would have a negative impact on biodiversity, and are not suitable for all soil types. However, given that there is evidence to suggest that cover crops have benefits in specific circumstances, we recommend that Defra evaluate an alternative method of encouraging their uptake in targeted areas. (Paragraph 59)

Closed periods for manufactured fertiliser

11. Defra should reconsider the practicality of the prohibition on applying nitrogen fertiliser if heavy rain is forecast within 48 hours. However, it should liaise with the Met Office to evaluate the practicality of having incorporated into the weather forecasts that are provided to the farming media information to guide farmers on the optimum periods when it would be safe to apply fertilisers. (Paragraph 62)

Closed periods for organic manure

12. We welcome Defra’s open-minded approach to the closed periods for the spreading of organic manure and recommend that it publish a short cost-benefit analysis of its proposals to establish whether the new closed periods would be disproportionately costly to the farming industry. If Defra decides to proceed with the changes to the
closed periods, it should get the best possible advice on the potential for building flexibility into the requirements. (Paragraph 66)

Provisions for the storage of livestock manure

13. We agree with Defra that the storage calculation methodology is important in that it enables farmers to work out 22 or 26 weeks’ capacity according to the circumstances on their own farms. Defra must address its own criticism: namely, that the calculation methodology may not have been fully taken on board by farmers. It must outline the information programme it proposes to adopt to deal with this issue. (Paragraph 70)

14. We recommend that Defra recognise farmers’ concerns about the relationship between the storage capacity requirements and the length of the closed periods. Defra should re-evaluate and publish the evidence for relating storage requirements to a fixed period of 22 or 26 weeks, rather than the closed periods that apply on individual farms. Consideration should be given to relating storage requirements directly to the closed periods that apply on individual farms. (Paragraph 71)

15. In the light of criticism from both the NFU and the Environment Agency, we urge Defra to reconsider the necessity for the longer storage times it proposes for pig slurry and poultry manure. (Paragraph 72)

16. Given the need to arrange finance, obtain planning permission, and commission and construct slurry stores, two years is an unrealistically short time in which to expect farmers to comply with the new storage measures. We recommend that they be given four years. (Paragraph 74)

Anaerobic digestion

17. We welcome Defra’s commitment to anaerobic digestion, but we caution against portraying it as something that will help farmers to comply with the Action Programme until such time as it can be demonstrated precisely how it is helpful in this context. We recommend that Defra prioritise its consideration of the role anaerobic digestion could play in helping farmers to manage the storage of manure under the Action Programme and make its conclusions public before the statutory instrument implementing the changes comes into force, so that farmers can make an informed decision. (Paragraph 78)

Financial support and advice

18. The proposed new Action Programme places a considerable financial burden on livestock and dairy farmers at a time when their ability to absorb these costs is questionable, given high feed prices and the phasing out of the Agricultural Buildings Allowance. We regret that Defra is not in a position to provide the kind of financial support offered under the Farm Waste Grants Scheme and recommend that it make representations to the Treasury on the need for financial support in the form of enhanced tax allowances for the construction of slurry storage facilities. (Paragraph 83)
19. We urge Defra to adopt a pro-active approach to explaining the changes to the Action Programme by circulating written guidance that is as simple and concise as possible, providing workshops and seminars, and offering farmers the chance to obtain one-to-one advice. It should also provide an online advice service for farmers affected by the changes. (Paragraph 84)

**Record keeping**

20. Adequate records should be kept to enable the Environment Agency to assess whether the provisions in the final version of the Action Programme are being complied with. However, the record-keeping requirements should be as straightforward as possible to avoid placing an unnecessary burden on farmers. They should comply with best practice, as set out by the Better Regulation Executive in its five principles of good regulation, which state that any regulation should be transparent, accountable, proportionate, consistent and targeted. (Paragraph 87)

**Conclusion**

21. The Nitrates Directive is undoubtedly flawed. Unlike the Water Framework Directive, which, as its name suggests, provides a framework to achieve a common goal, but leaves much of the detail of implementation to member states, the Nitrates Directive imposes prescriptive rules in an attempt to achieve its aim of reducing water pollution by nitrates from agricultural sources. Moreover, the scientific justification for the figures mentioned in the Nitrates Directive—specifically the 50 mg/l limit for nitrates in surface and ground waters and the 170 kg N/ha whole-farm limit for livestock manures—is at best unclear. The European Commission should carry out post-legislative scrutiny of the Directive to learn lessons about the way in which it was designed in the first place, the effectiveness of its results, and the difficulties member states have had in implementing it. (Paragraph 88)

22. However, for the time being at least, Defra must find a way of satisfying the Commission that it is complying with the Directive. Defra’s plan to implement the 170 kg N/ha whole-farm limit is a sensible first step, given that this is one area where England is incontrovertibly in breach of the Directive. Some of the proposals, such as the closed periods for organic manure and the storage provisions, need refinement, and the cover crops requirement should be dropped altogether. Defra must convince the Commission that it is implementing the Directive while convincing farmers that the changes to the Action Programme are fair and proportionate. It is a difficult task but, as other member states have proved, not an impossible one. (Paragraph 89)
Formal Minutes

Wednesday 21 May 2008

Members present:

Mr Michael Jack, in the Chair

Mr David Drew, Lynne Jones, David Lepper, Miss Anne McIntosh, Dr Gavin Strang, David Taylor, Paddy Tipping, Mr Roger Williams

Draft Report (*Implementation of the Nitrates Directive in England*), proposed by the Chairman, brought up and read.

*Ordered*, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 89 read and agreed to.

Summary agreed to.

*Resolved*, That the Report be the Seventh Report of the Committee to the House.

*Ordered*, That the Chairman make the Report to the House.

*Ordered*, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No.134.

Written evidence was ordered to be reported to the House for printing with the Report.

***

[Adjourned till Wednesday 4 June at 4.15pm]
Witnesses

Wednesday 5 March 2008

Mr Peter Kendall, President, Mr Andrew Clark, Head of Policy Services, and Mr Michael Payne, Consultant to the NFU, National Farmers’ Union  
Mr Phil Woolas MP, Minister of State (Environment), Mr Chris Ryder, Head of Water Quality Division, and Ms Maureen Nowak, Team Leader on implementation of the Nitrates Directive, Department for Environment, Food and Rural Affairs

List of written evidence

Alan S Monckton  
Association of Chief Estates Surveyors and Property Managers in Local Government, Rural Practice Branch  
Country Land and Business Association  
Dairy UK  
Department for Environment, Food and Rural Affairs  
Mr Philip Dunne MP  
Environment Agency  
Meat and Livestock Commission  
National Farmers’ Union  
National Pig Association  
Natural England  
Natural Organic Fertiliser Company Ltd  
RSPB  
Salmon and Trout Association  
Tenant Farmers Association  
Woodland Trust
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Oral evidence

Taken before the Environment, Food and Rural Affairs Committee

on Wednesday 5 March 2008

Members present:

Mr Michael Jack, in the Chair
Mr David Drew
Mr James Gray
David Lepper
Miss Anne McIntosh
Dr Gavin Strang
David Taylor
Paddy Tipping
Mr Roger Williams

Memorandum submitted by the National Farmers’ Union

INTRODUCTION
1. The National Farmers Union (NFU) welcomes the Committee’s inquiry and this opportunity to comment on these important Defra proposals to amend the extent of Nitrate Vulnerable Zones (NVZs) and the Action Programme applying in these zones. The NFU represents over 50,000 professional farmers and growers many of whom, potentially all (should Defra opt for whole territory designation) will be affected by these proposals.

2. The NFU does not seek to avoid addressing genuine pollution issues arising from agriculture. However, it does seek to ensure that there is a good case for action, that the range of interventions chosen to address the “problem” are appropriate and wide ranging and that measures, as well as being proportionate and practical, demonstrate good cost effectiveness. Having considered the range of changes proposed, the environmental benefits and dis-benefits likely to result as well as the costs of these changes to the industry, it is our contention that Defra’s proposals are unreasonable and disproportionate.

3. The NFU has submitted a substantial response to the recent Defra consultation on NVZs, a copy of which has been submitted to the Committee.¹ This evidence to the Committee is as brief as possible, and for further information reference should be made to our response to Defra. We would be happy to respond to any further queries the Committee may have.

QUESTION 1. HAS DEFRA’S IMPLEMENTATION OF THE 1991 DIRECTIVE BEEN ADEQUATE?

4. In the NFU’s view, Defra has designated more land than is necessary to implement the Directive. (See Question 3).

5. We also believe that implementation of the Action Programme has been adequate except for the failure to apply the whole farm manure loading limit of 170kg N/ha after the first four years of the first Action Programme.

6. From our perspective there appears a clear tension between member states’ and the Commission’s evolving interpretation as to the Nitrates Directive’s requirements. This “tension” has resulted in European Court proceedings and referrals, the rationale for which the NFU and farmers and growers only know in outline.

7. There are no prescribed figures in Annex III of the Directive relating to the other shortcomings we understand are alleged by the Commission, such as those relating to the length of closed periods for slurry application and the amount of slurry storage capacity. We believe that the Directive permits member states discretion in setting the appropriate figures for these. We are not aware of any provision of the Directive which the UK has breached through its exercise of this discretion in the existing Action Programme. If there is a need to make changes for legal reasons, these reasons should be clearly and publicly explained.

8. Defra is clear that the objective of the Directive is to achieve a declining trend in nitrate concentrations. Since many NVZ areas already satisfy this (see Question 2 below), little or no further action would appear to be necessary in those areas. It would therefore seem logical to assess whether nitrate trends are meeting the Directive’s objective in deciding whether the existing measures need to be strengthened or new measures added (as required in Article 5 (5)). We believe this would be better than Defra’s approach of applying strengthened and additional measures throughout the NVZs, including in catchments where the objective is already being achieved.

¹ Not printed.
9. The difficulty for Defra is that the Commission is focused on prescribing the detail of how the measures are implemented (e.g., five or six months storage) rather than achieving the Directive's objective in the most cost-effective way. This debate has major implications for many farmers' livelihoods; hence the NFU's lengthy response to Defra's proposals and our unease at the way the Commission is pressing Defra to implement measures that offer such poor cost effectiveness.

**Question 2. How have levels of nitrate pollution changed since the Directive came into effect? How effective has the current Action Programme been in reducing nitrate pollution?**

**How have levels changed?**

10. Environment Agency nitrate sampling data from monitoring points on rivers across England between 1990 and 2005 show trends are downwards in many rivers, but are still upwards in some. Defra itself accepts that 77% are static or declining over the five years from 1999–2004, although it has apparently not looked back further.

11. The NFU's analysis has not reviewed nitrate levels for groundwaters as these respond more slowly and are likely to be reflecting farming practice as implemented some decades previously (i.e., before the introduction of NVZ controls).

12. For those surface water we have analysed a significant number of important rivers with large catchments in NVZs have downward trends of up to 20% over the 15 years. Examples are the Rivers Trent (20% reduction), Thames (10% reduction) and Warwickshire Avon (15%). There is a large block of downward trending rivers whose catchments extend from Derbyshire in the north to Surrey in the south, and from Worcestershire in the west to Cambridgeshire in the east. Other major rivers which adjoin this block, such as the Rivers Severn and Great Ouse, have static 15-year trends.

**How effective is the current Action Programme?**

13. According to ADAS's assessment for the government, the effect of the current Action Programme has generally been modest, reducing nitrate levels over the whole NVZ area by 2–7%.

14. The NFU does not feel able to endorse this finding as we have not been given the opportunity to discuss or probe the results. However, we do consider that other changes taking place in agriculture have contributed much improvement in nitrate levels, such as the 40% reduction in nitrogen fertiliser use since 1987, the decline in livestock numbers over the period which reduces quantities of manure, the introduction of new crop varieties which use nitrogen more efficiently, and improved equipment, skills and knowledge.

**Question 3. Defra says that the area designated as Nitrate Vulnerable Zones needs to increase from 55% to 70% of England: is it right?**

15. The NFU does not believe this increase is necessary.

16. The 70% figure includes 6% of England which, although previously designated, does not in fact meet the designation criteria under the improved methodology used for the current round of designations. The NFU has been very critical of the previous (2002) designation methodology since it was based on both poor quality and inadequate data. The Environment Agency has admitted this data was not quality checked, and major errors have subsequently been found, such as monitoring results for a block of boreholes being wrongly ascribed to sites 100 km distant from their true position. We therefore believe the 2002 designations were unreliable, and should not be used to retain NVZ designations where the latest method shows designation is not necessary.

17. The NFU also believes Defra goes further than is necessary by designating the entire upstream catchments of rivers and groundwaters even when large upstream sub-catchments of these are below 50mg/l nitrate—sometimes well below—and therefore do not exceed the threshold for designation. Such waters do not raise the concentrate of nitrate, in fact they reduce it.

18. Routinely designating entire upstream catchments was not a feature of the UK's original 1996 designation methodology, and this feature was not questioned by the Commission, even though it challenged other aspects of the methodology.

**Question 4. Whether the proposed Nitrates Action Programme measures should apply throughout the whole of England, rather than only on land designated as Nitrate Vulnerable Zones**

19. The NFU does not believe the AP measure should apply to the whole of England. The extra areas which would be affected are mainly livestock farming areas, and the revised AP bears heavily on the sectors concerned. There would therefore be heavy and unnecessary costs for the industry in extending the AP to areas which do not have nitrate problems.
20. The Defra argument for a consistent approach across England ignores the discontinuities which would occur at the Welsh and Scottish borders. The extra areas which would be designated in England are largely in the north and west and have strong similarities to farming systems just across the borders. Needless competitive disadvantage would be created for farmers in these areas, since only 3-4% of Wales and 15% of Scotland are to be designated as NVZ.

**Question 5. What should be the timetable for introducing any changes in the way the Nitrates Directive is implemented?**

21. The main timetable issue is how long farmers should be allowed to construct new slurry storage facilities. Defra proposes two years, but the NFU believes four years will be necessary; our reasoning is set out below.

22. **Planning permission.** Many slurry stores will require full planning permission. Obtaining this can be very time consuming, particularly where appeals and re-application are required. This is more likely to be a problem where public opposition is involved, which can be expected in situations such as where a number of farms in the same village all require large stores. Some local planning authorities may have difficulty meeting the work load within the normal time frame.

23. **Construction and commissioning.** A sizeable part of the two years proposed by Defra will be taken by arranging finance, designing and obtaining permissions, leaving much less time for the actual construction or adaptation of an estimated 5000 stores. Slurry stores have to meet demanding regulatory construction standards, so stores would require Environment Agency consent before commissioning to ensure that it meets the necessary standards. Building them requires skill, and there are a limited number of suitable firms. We understand at least some of these are already committed to work in Ireland and have full order books. Unless the timetable recognizes the constraints on the capacity of the available skilled resource, we consider the risks to the quality of the new stores to be unacceptable.

24. **Financing.** Capital costs are estimated typically at £50,000 per farm and around £300 million for the industry. Unlike previous NVZ designations, the government is offering no financial assistance and is withdrawing the Agricultural Buildings Allowance which relates to the investment being off-set against profits for tax purposes. Many livestock businesses have endured low profitability in recent years, and may have difficulty in raising finance from outside the business. If farmers cannot justify the cost of the investment, livestock numbers may have to be reduced, affecting the viability of businesses, or businesses may have to be closed to achieve compliance with the law. These will be difficult decisions and time will be required. It would be unreasonable for government to place a tight timetable on this in view of its lack of support for the industry where other governments are helping their farmers.

**Question 6. What are the costs and benefits of Defra’s individual key proposals for the revised Action Programme? Should any of these be abandoned or modified?**

25. Defra has prepared assessments of the costs and the reductions in nitrate resulting from the proposed AP. The NFU believes Defra has substantially understated some of the costs. For example, it has taken no account of the 25% reduction in spring crop yields which would result from the cover crop requirement, although this is included in one of Defra’s own documents.

26. We have summarized in Table 1 below our view of the costs, effectiveness and cost-effectiveness based on Defra’s work for the Nitrates Directive and for diffuse pollution, and on consultants’ reports. We have also summarized in Table 2 the main changes we recommend Defra should make to its proposals.

**Table 1**

<table>
<thead>
<tr>
<th>NFU ASSESSMENT OF THE COSTS AND EFFECTIVENESS OF NVZ AP MEASURES PROPOSED BY DEFRA</th>
<th>Cost</th>
<th>Effectiveness</th>
<th>Cost-effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole farm manure nitrogen loading limit</td>
<td>Very high</td>
<td>Very low</td>
<td>Very poor</td>
</tr>
<tr>
<td>Closed period (organic manures)</td>
<td>High</td>
<td>Very low</td>
<td>Poor</td>
</tr>
<tr>
<td>Manure storage</td>
<td>Very high</td>
<td>Very low</td>
<td>Very poor</td>
</tr>
<tr>
<td>Closed period (manufactured nitrogen fertilizers)</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Crop nitrogen requirement limit</td>
<td>Very low</td>
<td>High</td>
<td>Good</td>
</tr>
<tr>
<td>Spreading locations</td>
<td>Low</td>
<td>Low-moderate</td>
<td>Fair</td>
</tr>
<tr>
<td>Spreading techniques</td>
<td>Low</td>
<td>Negligible</td>
<td>Nil</td>
</tr>
<tr>
<td>Record keeping</td>
<td>Substantial</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Cover crops</td>
<td>Very high</td>
<td>High for lighter soils</td>
<td>Good to poor</td>
</tr>
</tbody>
</table>

Table 2

NFU RECOMMENDATIONS FOR THE MAIN CHANGES TO DEFRA’S NVZ AP PROPOSALS

<table>
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<th>Recommendation</th>
<th>Recommendation</th>
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</thead>
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<tr>
<td>Whole farm manure nitrogen loading limit</td>
<td>Make every effort to secure derogation for grassland at 250 kg N/ha.</td>
</tr>
<tr>
<td>Closed period (organic manures)</td>
<td>Do not exceed current closed periods, particularly in areas where objectives already being achieved.</td>
</tr>
<tr>
<td>Manure storage</td>
<td>Do not exceed current storage requirements, particularly in areas where objectives already being achieved. Do not impose storage requirements unrelated to closed periods.</td>
</tr>
<tr>
<td>Closed period (manufactured nitrogen fertilizers)</td>
<td>Allow organic farmers to meet crop requirement during closed period.</td>
</tr>
<tr>
<td>Crop nitrogen requirement limit</td>
<td>Abandon maximum nitrogen limits and do not impose artificially high manure efficiency factors.</td>
</tr>
<tr>
<td>Spreading locations</td>
<td>Major reduction in proposed bureaucracy needed.</td>
</tr>
<tr>
<td>Spreading techniques</td>
<td>Implement through Environmental Stewardship.</td>
</tr>
<tr>
<td>Record keeping</td>
<td></td>
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<tr>
<td>Cover crops</td>
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Question 7. What advice and support farmers will need from Defra to implement a revised Action Programme?

27. The NFU believes the advice and support farmers will need includes:
   — A dedicated telephone helpline staffed by knowledgeable experts.
   — A single clear concise guidance booklet and record keeping proforma that provide all the information necessary for a farmer to comply.
   — Easy to use software version of guidance booklet compatible with commercial farm systems.
   — Workshops and seminars as required to meet local demand.
   — A confidential one-to-one free advice service, particularly for severely impacted businesses.
   — Financial support for capital investment in slurry storage to match that provided to competitors in Southern Ireland (up to 80%), Northern Ireland (60%) and Scotland (up to 40%). Failing this, storage requirements must be cut back to make them affordable.
   — Investment in slurry storage and associated works, a form of environmental protection, to be fully tax deductible.

Question 8. How can Defra encourage greater adoption of anaerobic digestion as a way of managing manure?

28. Slurry storage and anaerobic digestion are seen as alternatives and may therefore be competing investments. AD plants are expensive and also take longer to plan and build than slurry storage, and would not be feasible within Defra’s two year proposed time horizon for slurry storage (they may well take longer than the four years we recommend). Forcing farmers to spend heavily on slurry storage now may reduce the likelihood of these farmers taking up AD.

29. Defra could encourage adoption of AD by:
   — Providing temporary exemption from slurry storage requirements for farmers committing to AD.
   — Providing financial guarantees for electricity generated from AD to underpin the investment, such as the 20 years provided in Germany where farm AD plants are being established at a rate of 500 per annum.
   — Simplifying the connection and infrastructure arrangements.
   — Reducing the burden of the multiple regulatory regimes imposed on AD plants.
   — Classifying the resulting digestate as mineral fertiliser.

Question 9. How the proposed new Nitrate Action Programme is affecting those with existing Entry Level Stewardship agreements in existing Nitrate Vulnerable Zones

30. We have been in discussion with Defra since it became clear that the Commission would approve the draft RDPE only if all reference to management plans was removed from the Environmental Stewardship scheme. We understand that this decision will impact on about 2,700 provisional agreement holders and applicants to Environmental Stewardship.
31. Farmers who have applied for ELS agreements in 2007 have been given provisional agreements which may be changed retrospectively. There are several interactions between the proposed AP and ELS which have the potential to affect these provisional agreement holders, some of which we believe are being addressed. The issues are:

- The removal of nutrient and manure management plans from ELS. This is allegedly due to overlap with the requirements of the Nitrates Directive. In fact the requirements of the Directive are to plan nitrogen applications—a requirement that is substantially exceeded by manure and nutrient management plans under ELS.

- The insertion in Environmental Stewardship agreements that the AP manure loading limit of 170kg N/ha should apply. This is duplication within NVZs, and takes no account of derogations or transitional arrangements which may be obtained. We are concerned that unqualified this requirement would make it impossible for the majority of dairy farms to enter Environmental Stewardship.

- The AP cover cropping proposals conflicted with ELS agreements to maintain winter stubbles. It appears this is being addressed, with Defra indicating that winter stubbles are likely to be acceptable for meeting any cover crop requirement which is introduced.

We are very disappointed that Defra has conceded the first two points, unnecessarily as we believe, and created the difficulty which would have arisen from the third. We welcome the efforts which are being made to at least partially address these issues, although we are concerned that unnecessary impacts may remain. Some agreement holders will have to select alternative options to achieve the requisite minimum points score or withdraw from the ELS scheme. We consider Defra could have handled these issues a great deal better.

January 2008

Witnesses: Mr Peter Kendall, President, Mr Andrew Clark, Head of Policy Services, and Mr Michael Payne, Consultant to the NFU, National Farmers’ Union, gave evidence.

Q1 Chairman: This is a short, focused inquiry on the implementation of the Nitrates Directive in England. We have two evidence sessions this afternoon, one in just a second or two involving the National Farmers’ Union, followed by Phil Woolas, the Minister from Defra. Can I formally welcome Peter Kendall, the President of the National Farmers’ Union, followed by Phil Woolas, the Head of Policy Services, and Mr Michael Payne, who is a consultant. In a way, Peter, we do not really need to hear from you because you very kindly produced a press-release which tells me you are about to confront us about the background of where the NFU is coming from in this matter, and Mr Michael Payne, a consultant who works for the NFU on this, and I have got Andrew Clark with me as well because there are detailed aspects that we need to convey. What I would like to start by saying is that we are very serious about the implementation of the Nitrates Directive is that it actually impacts on every single sector: Defra’s proposals as they stand impact on the cattle sector through slurries and manures, pigs and poultry, through how they export and how they move on their manures, and the arable and horticultural sectors because of proposals on cover crops. I think, for the first time, we are seeing an implementation that moves on from the previous
application of the Nitrates Directive to one that is going to have an impact on absolutely everybody. Where we are very concerned is that as it stands this proposal is costly, it is over-prescriptive and it is disproportionate. In fact, the recommendations are, we believe, a classic example of old-fashioned regulation rather than a modern cost-benefit and proportionate approach to implementation. In stark contrast, although we worry as an industry about the Water Framework Directive, the Water Framework Directive says, “Is this a proportionate regulation? What are the costs and benefits?”, and if the benefits are outweighed significantly by the problems it causes to society as a whole or the industry, then there are assessments made of that at the end. We have seen that the wrong sort of regulation being handled in the wrong way. I would also like to say that, in the context of what has actually been going on on farms, this is not so much necessarily because of the high prices that it is being used better but the amount of nutrients that have been employed by farming, for a whole host of reasons. We have seen increasing yields at a time when we have seen less fertiliser used—in effect a 40% reduction on fertiliser usage since 1987—and where we have seen some key measurements, and Mike is a real expert on this. When you look at some very large catchment areas, for example the Trent, we have seen a 20% reduction already. This is associated with reduced nitrogen and fertiliser usage, but also a significant reduction in the amount of livestock on farms at this moment in time. We actually see the industry going in the right direction, but we have a directive that stems from 1991 that is forcing disproportionate, costly changes that Defra, I think, are imposing in a heavy-handed way.

**Q2 Chairman:** Perhaps that would be a good point to ask the detailed question about what your assessment is of the current Action Programme and the impact it is having on farmers. You have mentioned a number of sectors. Perhaps you might comment sector by sector as to what they think about it and perhaps give us an indication, in terms of the proposals which the Government are consulting about, as to what the financial impact would be on farming?

**Mr Kendall:** I will hand over to Andrew, if I can, for the specific comment, but if I can pick one example up, and I think it is a very really good example, on the closed periods of applying slurry and the amount of storage you then require. Devon County Council have, I think, 55 dairy farms. The estimate they currently put forward on the Action Plan as it stands would be an expenditure of £3.2 million, and that is a county council that says it has got no money to do it. They have got two years, as the rules stand, to make those changes. That is 3.2 million on 55 dairy farms in Devon.

**Mr Clark:** Just giving a context for that, looking at last year’s capital expenditure across all of the county council smallholding estate, we are looking about a £9 million expenditure; so you can see that in one county a third of the expenditure might be necessary to meet the slurry storage costs that we are looking at. This is not something that just impacts on individual farms, it impacts on local authorities, or on other institutional landlords, potentially setting up tension between tenants and landlord. We looked at the dairy sector, for an example, to answer your question, Chairman. We estimate there are about 5,000 dairy farms which are going to need some work to their slurry stores. About 70% of slurry stores are over 10 years old, about 70% of the dairy farms are found within NVZ, and so we estimate about 5,000 slurry stores are going to need work. Each one of those is going to have to maybe seek planning permission, they will need to put in place finance, they will need to get the constructors to go and put together those slurry stores. There are real practical difficulties in terms of that. That is one practical example.

**Q4 Miss McIntosh:** These slurry stores already exist, so you are not requiring new slurry stores, you are requiring an update of the existing slurry stores?

**Mr Clark:** Mike might want to come in here, but my understanding is, at the present moment, because the closed period only applies to shallow and sandy soils under the Action Programme, not every farm has a substantial slurry store. In fact, we looked at the north-west. We carried out a survey of 100 dairy farms in the north-west region. We found that the 100 farms we surveyed had 36% of the necessary storage. So that indicated or something had storage, but not as much as required by this new Action Programme. Only 43% of them could meet the whole farm limit in terms of 170kg/ha of nitrate loading per year; so we can see real practical difficulties for the dairy farms. About 60% of the dairy herd are stocked on farms at a rate above the maximum established by this new Action Programme.

**Q5 David Taylor:** You have got real problems in actually costing out the capital requirements for slurry storage. In the brief that was supplied at the end of last year, which was unfailingly accurate and helpful in most ways, there was reference to capital costs that may only be in excess of £50,000, but I went to quite a packed meeting of farmers on the Leicestershire/Derbyshire border, three-quarters of them in my own patch, and one said he had a 250-head herd and the consultants had come up with a figure well in excess of £50,000. So these are pretty tentative figures, are they not?

**Mr Kendall:** I think the total figure of £240 million has been estimated by Defra for the industry for maybe a benefit of a half to 1% reduction of nitrate in water. This is why we are concerned about this whole directive not looking at the cost benefit, because of the time period we have got to address it.

**Mr Clark:** And, of course, any average covers a huge range of extremes, and so the point has been made or implied that some farms may be able to just simply
extend an existing store which is just under the requirement, but the indications from our north-west dairy study indicate that in actual fact there is going to be a substantial amount of building required to meet this new requirement and a substantial amount of cost.

**Q6 David Lepper:** Could I ask you about the timescale as well. Have you looked at, for instance, the average length of time that it takes to process a planning permission in the various areas that are most likely to be affected? Do they vary greatly? Could most farmers keep within what is now suggested as the time for complying with the new requirements?

**Mr Clark:** We think it is extremely unlikely that farms will be able to get to the standard required within two years, and that is why we asked in our submission to Defra for a four-year working period. The sorts of things that will need to be in place are the finance. So using Devon County Council as an example—you are at the end of a financial year now—they will have to bid for extra resources and that is a year-long process. Then they have got to get the planning permissions, they have got to find the necessary contractors to do that work and source the materials, and we all know builders are difficult to get to do an estimate let alone construct the work. We think it is totally impractical to see the scale of building that will be required in that timescale. We just cannot see that happening.

**Q7 Dr Strang:** Can I ask a quick question while we are on this. The issue is whether in fact the measures that are being prescribed are actually going to result in a reduction in managing the content of the water. You mentioned the Trent. You said there was a reduction in the Trent, and you attributed that to the reduced use of nitrogen by the farmers over the last number of years. Can we be sure that is cause and effect?

**Mr Payne:** We cannot be entirely sure. We know that water companies have also been required to reduce their emissions from major sewage works, although minor sewage works are not affected, but if you were to say that the whole of that reduction was from the water industry, it would mean they were emitting almost no nitrate at all, and I do not think that is a plausible situation. The Trent has quite a large rural catchment as well as a number of major towns, and I think it is inconceivable that none of that reduction was coming from agriculture.

**Q8 Dr Strang:** Are you confident that the measures that the Commission are insisting on do have the effect and, over time, are bound to have the effect of reducing the nitrate concentration in surface water?

**Mr Payne:** They would have some beneficial effects, but I think the burden of what we are saying is that improvements which the industry is making independently of NVZs, regardless of whether there are NVZs, are already having quite a substantial effect and probably more effect than the current Action Programme.

**Mr Clark:** Let me interject there, because I think this is the crucial point we want to make and we have made to the Minister directly. The type of Action Programme requirements of the Nitrates Directive, reflecting the fact that it is old-fashioned, are weighing down on those areas in an unnecessarily costly way, with a tiny impact in terms of nitrate benefit. There are other practices that agriculture is currently applying which are far more cost-effective than the proposals that are being put forward now.

**Q9 Mr Drew:** Is the introduction of new building a landlord or tenant responsibility and, given the sensitivity of rents at the moment, how are negotiations going? I am interested, as you know, in county farm estates, because they are going to be fairly cash-strapped and I imagine there are not many tenants who are going to take on this responsibility very willingly.

**Mr Kendall:** It does depend on the type of tenancies. Usually in the county council the buildings would be the landlord’s obligation. As you said, quite rightly, a lot of these tenancies are up for review on the back of some sectors having better prices currently, so there is that challenge, but also, for tenants to make those investments where it is their responsibility, real concern about the long-term future and, therefore, whether you make those investments, but it does depend on whether your tenancy states the buildings are your obligation or whether they are the landlord’s obligation.

**Q10 Chairman:** Can I be clear, because the conversation has ranged from the impact of the revised Action Plan in terms of the extra capital investment that farming would have to put in, and you said that the original plan was quite old-fashioned—obviously, for something that was framed in 1991, by definition, that must be the case—but do you accept that any parts of the new Action Plan are justifiable?

**Mr Payne:** I think the requirement to stick to the crop nitrogen limit, or what is needed for the individual crop, must be a sound and responsible thing for the industry to do, which many farmers would already be doing. I do not think there would be any argument that that is a sensible and cost-effective measure to take. Similarly, making sure that you are spreading your nitrogen accurately is an appropriate measure and keeping up with modern techniques as developments take place. Those sort of measures we think are effective and a reasonable part of good farming practice, but some of the prescribed measures relating to manure management, I think, may originally have been devised with other Member States in mind and problems in mind which are not prevalent in the UK and, clearly, from Defra’s own consultation document, very poorly cost-effective in our circumstances.

**Q11 David Taylor:** Can we return to the pre-existing trends in nitrate levels in surface waters, which you have provided some research and figures on. I referred a moment or two ago, Chairman, to the
meeting with farmers on the Derbyshire/Leicestershire border where the Trent is, indeed, the county boundary. It is quite a long length and, as one of you said, it is a pretty rural area, not an industrial area. What other rivers did you study and how many, if any, showed a significant downward trend over a 15-year period? Finally, is there an element where you are able to identify artificial nitrate levels, the source of the nitrate, if you like, rather than organic sources? Mr Payne.

**Mr Payne:** Taking the last question first, no, you cannot differentiate nitrate by source, you could only look at it by associated compounds, but nitrate itself is the same whatever source it comes from.

Q12 David Taylor: Which nitrate in particular?

**Mr Clark:** Nitrate from fertiliser, is it not?

Q13 David Taylor: Okay, so you cannot always tell. **Mr Payne:** You cannot tell whether it is nitrate from fertiliser or nitrate from sewage.

Q14 David Taylor: There are no other traces to help source it?

**Mr Payne:** Not within the nitrate molecule itself, no. We have looked at probably 30 or 40 rivers throughout the 15-year period that you have referred to. We have found a variety of trends.

Q15 David Taylor: Some upwards?

**Mr Payne:** Some upwards.

Q16 David Taylor: In urban settings or what type of setting?

**Mr Payne:** Some urban settings. It is not that easy, without having time to conduct a proper research study, to pick the bones out of it, but there are some general conclusions that we can reach. What we have noticed is that within the Midlands almost all the major rivers have significant downward trends: the Thames, the Trent, the Warwickshire Avon, the Weaver in Cheshire, for example, all those sort of rivers. In other parts of the country—

Q17 David Taylor: The South Midlands as well, I suppose?

**Mr Payne:** Yes.

Q18 David Taylor: What is conventionally called the South Midlands.

**Mr Payne:** Indeed. In other areas, though, the position is much more mixed. Some rivers, for example, are fed predominantly by ground water. Ground water takes a long time to percolate through, so you do notice that ground water fed rivers do tend to be still on an upward trend—I say still because we would anticipate that the things which are changing now in some of the surface fed rivers I have referred to—

Q19 David Taylor: I am sorry to interrupt, long percolation times measured in years?

**Mr Payne:** Decades.

Q20 David Taylor: Decades?

**Mr Payne:** Yes, it is possible that some—

Q21 David Taylor: The farmers I talk to talk about generations in one case.

**Mr Payne:** The British Geological Survey has referred to up to 120 years. That would be an extreme, but we could still be looking at the effect of war-time ploughing in some areas.

Q22 David Taylor: How have Defra and the Environment Agency responded to the analysis you have provided to them?

**Mr Payne:** We provided this analysis over two years ago, for the first time, and Defra’s analysis in the consultation document, which was issued a few months ago, looked no further than the last five years. It conceded that 77% of surface waters had downward or static trends over the last five years, but it did not ask the question going further back.

Q23 David Taylor: One final question. Could you instance a significant river with an upward trend?

**Mr Payne:** The River Wensum in Norfolk. It is ground water fed.

Q24 David Taylor: Near Norwich itself?

**Mr Payne:** Yes.

Q25 Mr Williams: We are talking about nitrates. There used to be a concern about nitrites as well. Is that an issue or is that an entirely different matter?

**Mr Payne:** It is not an entirely different matter because nitrate in the body is converted directly into nitrite predominantly by bacteria on the tongue, I understand. I am not a medical person myself, but I have read quite a lot about it.

Q26 Mr Williams: But it is not an issue in terms of water quality?

**Mr Payne:** No, it is not an issue in terms of agricultural water quality.

Q27 Miss McIntosh: You mentioned at the outset, Peter, a cost-benefit analysis and you mentioned the cost particularly to dairy farmers. Presumably it will be dairy, pig and poultry farmers that are affected. What would you say was the average income of an average farm?

**Mr Kendall:** I think it is one of the dangers of averages.

Q28 Miss McIntosh: Presumably the income stream is not that high at the moment, particularly for pig farmers?

**Mr Kendall:** The pig and poultry sector are definitely, as you saw yesterday from the media—

Miss McIntosh: I met Winnie!

Q29 Chairman: She is our next witness!

**Mr Kendall:** There is real concern about people’s ability to pay and, I think, when you look at the fact that so many of these proposals are across the board, what we want to do is make it so it is much more specific to the problem in the area rather than Defra
just saying these across the board responses, and that is where our fundamental objection comes with the Action Plan.

**Q30 Miss McIntosh:** Presumably it will be subject to cross-compliance; so before any of your farmers can sign up to the Single Farm Payment, you will have to have cross-compliance with this Directive.

**Mr Kendall:** Yes.

**Q31 Miss McIntosh:** You had expressed earlier some unhappiness with the designation of the methodology that was used. Are you satisfied with the revised methodology? Would you like to tell us what the issues are?

**Mr Payne:** We are not entirely satisfied. We believe it is a substantial improvement on the methodology last time, which had certain specific faults. It is very much work-in-progress. This is the view of the Environment Agency. The NFU was represented on the Technical Nitrate Group which looked at this, but there are certain aspects of the methodology which we feel are unfortunate. For example, the decision to include the whole of a river catchment, including uplands which contribute very little nitrate, but where there is a failing point downstream the last two UK methodologies have gone the whole way up to the source, despite the fact that water draining from the higher levels is well below 50mg/l and is, in fact, diluting the higher concentrations lower down. There would be other aspects that we would be concerned about. For example, the NFU received a letter from the then Minister, at the time the Nitrates Directive was agreed, in which he informed us of a number of options for minimising the size of zones which the UK had negotiated into the Directive, such as the choice of monitoring points, and it is unfortunate that those options have not actually been used.

**Q32 Miss McIntosh:** You alluded earlier, Michael, to what other Member States were doing and how it was being applied. Would you say that farmers in this country are being unfairly discriminated against by the extent of the catchment area and particularly the percentage of England that will fall within the Directive?

**Mr Payne:** I think it depends on how you look at it. A number of Member States have decided to designate their whole territory as a matter of approach, but you would find that quite a lot of those Member States would have very serious ecological problems because they drain into the Baltic or the Eastern North Sea which have had very severe ecological problems. The UK does not have severe ecological problems. We have some technical problems with a highly precautionary nitrate standard for drinking water. I think if you just looked across Member States, you could say that eight or nine Member States have designated their entire territory but their circumstances are different. It does depend on your starting point. We do feel that the approach is unnecessarily rigorous.

**Q33 Miss McIntosh:** Will it impact more on surface water or ground water in England?

**Mr Payne:** Most of the designations are either surface water or overlaps between ground water and surface water, so surface water mainly.

**Q34 Chairman:** I am interested in the evidence which the Environment Agency sent to us. They say, “Applying the Action Programme throughout England will place an excessive and unnecessarily financial burden on farmers in low nitrate areas.” It sounds to me as if they have sort of said universal application is not a good idea, but you have still been critical of the way they have identified certain areas. Just to pick up on the point that Anne was making, you, I think, drew our attention to the fact that some of their evidence in the designation process was factually inaccurate. How did they respond to that when you confronted them with this?

**Mr Clark:** I think it is right to say, and Mike will probably want to come in on this one, that the 2002 methodology used to designate areas, when those areas are then re-run through the new methodology, 6% of the area appeared to be misidentified. It could be that not only are there areas outside, as it were, the whole territory that should not ever be designated, but also areas within the 2002 Action Programme area which also should not be identified, but perhaps Mike can say a little bit more on the detail of that.

**Mr Payne:** Yes. We did have specific issues with the 2002 methodology which the new improved methodology has highlighted, as Andrew has referred to. I think our major issues are probably not so much with technical errors but with policy decisions to designate wider areas in principle rather than narrow areas which we could have opted to do quite legitimately.

**Q35 Miss McIntosh:** If you were to itemise, in order of importance, the changes you would like to see to the Defra Action Programme, what would they be?

**Mr Kendall:** I will start. Certainly the issue of closed periods we would like to be addressed.

**Q36 Miss McIntosh:** Does that have an impact on winter crops?

**Mr Kendall:** We are talking about storage of slurries at this moment in time. I will come to cover crops in a second, if I could. The shortening of the closed periods: this notion that we have just had incredibly dry weather in this period of time now. The weather becomes more unpredictable and having closed periods that do not relate to the weather conditions and/or particularly the positions of farms, I think, is a real worry to us. The storage requirements being linked to the farms rather than the closed periods, we think, is more pragmatic and practical and could be worked on as well. We think also the whole notion of cover crops for environmental reasons needs further work. I farm on very heavy clay. I still grow spring crops. To try and put a cover crop in, then plough it up in January and try and knock it down again, I just would not grow spring crops. The practicality of that, and that not being targeted where we believe
the problems of leaching might occur, is an area we want to see changed, and the other one we know Defra are looking to appeal against is the derogation from 170 kilos to 250 kilos.

Q37 Miss McIntosh: Have you made these points?
Mr Clark: We have set out our main priorities in our main consultation to Defra; we set out 44 recommendations for changes. We have got an edited list, which we provided to the Committee, under paragraph 26, table two, but if I was going to capture it, I think, as Peter rightly says, cover crops, something we have not talked about a lot in the evidence session so far, is an absolutely critical area. It was dropped into the consultation very late and we certainly did not have any opportunity to discuss that in detail with many of the horticultural producers that are concerned—the sugar beet producers, who already have suffered major concerns with changes to their regime, as well as potatoes—so we would see a substantial need to change cover crops and to think again on that. The breakage in the link between your storage requirement on a farm and the closed period that applies to your farm is quite illogical to many farmers. If they are seeing a range of different closed periods on their farm, and you might have two or three different soil types, grassland and arable—they all have different types of closed periods—the cumulative effect of that on one farm would be different to the cumulative effect on a different farm. Surely that means that storage should be linked to the farm’s capability to spread safely rather than some arbitrary 22-weeks, 26-weeks’ storage requirement.

Q38 Miss McIntosh: You are still unhappy about spreading locations and spreading techniques?
Mr Clark: Yes. Going back to an earlier point we made about activities that farmers can do to improve their lot: being responsible understanding what your land is capable of doing, that is the sort of thing which we believe is important.

Q39 Miss McIntosh: You say you would like to see reduced bureaucracy. How would you see that happening?
Mr Clark: We think that we can promote a responsible approach within the industry. We have got a proven record already within the voluntary initiative on pesticides. We are at the moment developing a professional nutrient management initiative which is trying to get a consistent baseline which aims particularly at the grassland sector, where we think there can be further improvements to nutrient management to make the most of it. Encouragement from incentives to follow that approach is a far better way than saying: “You must have so much slurry storage; you have got to have these compulsory closed periods”, irrespective of their impact.
Mr Kendall: Some farmers think initiatives like the voluntary initiative is bureaucratic. What we are trying to do is find practical responses that do not involve those very vast sums of money being spent in the wrong place, in the wrong quantities. We think best practice is getting people to understand. If I can go back to my very earliest point, these nutrients are incredibly valuable. When you see bagged fertiliser today at £300 per tonne, for example, the prospect of having these valuable nutrients in the water course is no good to anybody, so we are trying to engender how we can get these in the right place at the right time. As I said, some farmers might think demonstrating that good practice is bureaucratic, but we think it is better than spending all that extra money.

Q40 Chairman: In your revised proposals for the Action Plan you make every effort to secure derogation from grassland at 250kg/ha of nitrogen. How did you decide that 250 was the right number?
Mr Payne: There are quite a number of other countries who already have derogations. They are all either for 230 or 250. The figure currently operated in the UK, which the Commission would contend was illegal, is 250. There is a coalescence around the 250, 230 kind of area.

Q41 Chairman: But what you have described to me is what is—. The question I asked is why is 250 the right number? I am struggling a little bit to understand the practicalities, because, Mr Clark, you also were saying if you looked at this issue on a farm by farm basis you might come up with a different formulation for the use of manures and nitrogen according to the circumstances, and that is finessing it to a degree by farm. I struggle to understand how in the real world you are going to do that? You would have to have a farm by farm assessment for something which, in terms of the movement of nitrate from the surface of the land to the ground water, you have told us in earlier evidence, takes a long time. I am not quite certain how we know what the effect is that we are going to get out by all of this fine-tuning. Coming back to this 250 kilogrammes figure, how do we know that is the right number for grassland?
Mr Payne: I obviously recognise your criticism, but I am just telling you what has happened. We are working together with ADAS and Defra to develop the scientific case, and I just do not think we are in a position to tell you.

Q42 Chairman: Let us turn it round the other way. Part of the reason we are having this discussion is that the European Union has decided that 170kg is the right number. I am intrigued to know how we decide that 170kg/ha is the right number. Has somebody done a sort of detailed analysis that on every single soil type, if you put 170 on every year, the water that comes out at the bottom will be guaranteed to be at 50mg/l?
Mr Kendall: I think the point we have been making is soils are different, areas are different and closed periods and what they are dictating as to storage, we know that farms have a different make-up of arable land and grassland.
Chairman: It is all a bit of guesswork really, is it not?

Mr Payne: Could I just comment on the water coming out at the bottom?

Chairman: I am going to ask the Minister the same thing, and if there is anybody here representing the Minister, they had better nip out and tell him that this question is coming!

Mr Payne: The water coming out at the bottom, Chairman, what you say about ground water is true. Where water drains to surface water, you know, the result within a calendar year, so you can monitor and get results, but a lot of it is to do with the wording and interpretation of the Directive, that any derogation should not prejudice the achievement of the objectives, on what scale you have to assess them and there is a lot of political administration, put it like that, in the way these are administered. The issue of how the 170 was arrived at—

Chairman: I am just interested in where these numbers come from?

Mr Clark: The figures come from the Nitrates Directive. Those are the figures set down: 170 and 250.

Chairman: I do not blame you if you cannot tell me, because it is not clear to me.

Mr Clark: Michael may be able to, because he was there when it happened.

Chairman: Somebody in the Commission has decided that these numbers are the correct numbers, and I am just interested to know where these numbers have come from. Did Jacques de whatever wake up one morning and think, “Oh, I have the answer. It is 170”? What is the answer? It might be 49, I do not know. I am just asking the question.

Mr Kendall: I suspect they often look at something that is significantly lower than the current norm and, therefore, they set targets that look to deliver lower outcomes.

Chairman: I can see this is going to be an entertaining line of questioning when our next witness comes along.

David Taylor: Going back to cover crops briefly, Chairman.

Chairman: Mr Tipping is going to ask about cover crops. Mr Tipping, you ask the question about cover crops.

Chairman: What is the case for cover crops on light and sandy soils?

Mr Clark: We have looked at the evidence, the rationale for introducing cover crops. It seems to be based entirely on an analysis that was undertaken as part of the Nitrate Sensitive Area Regime which was run in areas which were principally sandy and shallow soils, and there, in the context of the early 1990s, late 1980s, it was found to be an effective measure. We have already demonstrated to you with evidence produced by the AIC that the way we farm now in terms of the amount of fertiliser used, the timing of the fertiliser, for example not applying in the autumn, we think the context in which arable farms, horticultural farms are operating is totally different to what it was even 15 years ago, and so we think that the effectiveness of cover crops expected to result from this sort of measure is possibly overstated in that context. Having said that, we can see there is, however, some evidence that cover crops can reduce nitrate loss. We have to recognise that, and so our task is to work with the farming sector in consultation to try and understand how that can be applied so that it works practically with farms, and we see particular problems. We are still in discussion, and we have had good discussions with Defra about this—they recognise it is not a universal panacea in the way that they have suggested—but we see particular problems for the sugar beet sector, for the horticultural sector, some of the high value crops based on vegetables which have unusual regimes—it is not a straightforward rape arable, fallow type approach—and so I think we want to get more underneath the skin of that particular regime.

Mr Kendall: Can I make a point on the practical side. As I said, on heavy soils you do plough the land early because the weather breaks it down. Where I think we are seeing a change, since the earlier period of work that indicated that light, shallow soils caused leaching, is many of those farmers are either now in agri-farm schemes where they get over wintered stubbles, therefore, they cultivate them deliberately late, or, alternatively, they have understood the impacts of leaching and, in order to keep those nutrients, they plough them late anyhow; so we think that farmers are learning to react properly and therefore behave differently on those soils. Ploughing a shallow or a light soil in January is feasible, but with my heavy Bedfordshire clay you are going to get stuck.

Chairman: Could I just comment on the water going out at the bottom? Mr Payne, you were very keen to find out about. We are very concerned about them. There are some, are there not?

Mr Clark: This is one of the things which the RSPB and others have been promoted as part of the Entry Level Scheme. I looked at the data last month and found there were about 60,000ha of over wintered stubbles entered into the Entry Level Scheme, which I am sure the RSPB, who will be visiting Peter’s farm on Friday, will be very keen to find out about. We are very concerned, in this respect, that cover crops are not only going to be agronomically difficult, they are perverse from a biodiversity point of view unless they are managed very carefully. The requirement to have a green cover might work for nitrates, but in obtaining a green cover you might well end up not having any over wintered benefits for feeding birds, you might well end up having to use extra herbicides to kill off that green cover, you will have had to disturb the ground in the first place to establish the green cover, so you are going to be creating nitrate at that time, and so the perversities of the cover crop option, while in nitrates terms simplistically is good, in terms of the perversities of this measure we are very concerned about them.
Q50 Chairman: In conclusion, I asked for some information about what had been happening in other Member States and, in terms of storage capacity for slurries, the impression I got was that other Member States had installed anywhere between six or five months capacity, for example, as in the case of Northern France and Brittany, five months in the south. They had already done that. What is your impression about what other Member States have done, and if their farmers have been able to afford enhanced storage capacity against the background when the whole of Europe’s agriculture is under the kind of price and input pressures ours are, how have they afforded it?

Mr Clark: There are three ways in which you can help with this: there is time, there is planning permission and there is grant aid. If you look at Ireland, they have got, I think, it is three, three and a half months’ requirement to store and up to 80% grant aid. That is how they can put it in, and I suspect in France they have got 40% grant aid as well, but they have had grant assistance, and we are not going to have grant assistance, as we have been told by the Minister so far.

Chairman: Okay. That is very helpful. Thank you very much indeed, as always. Now we have got the Minister coming to explain the other side of the story.

Memorandum submitted by the Department for Environment, Food and Rural Affairs

INTRODUCTION

Defra welcomes the opportunity to provide evidence to the Environment, Food and Rural Affairs Committee inquiry into the Government’s implementation of the Nitrates Directive in England.

This evidence will provide a summary of the current status of implementation and on proposals for future implementation as set down in the recent consultation, with particular reference to matters in which the Committee has indicated a specific interest.

1. BACKGROUND

1.1 Water pollution from nutrients such as nitrates is a recognised problem which has a negative impact on the quality of our waters and the ecosystems they support. In addition, the costs for treating water to meet drinking water standards on nitrates are high: in the period 2005-2010, it is estimated expenditure will be £288 million in capital costs and £6 million per year in operating costs. Agriculture is a major contributor to the problem (over 60% of nitrates in surface waters) and the Government’s principal regulatory tool for tackling the issue is through Regulations which implement the EU Nitrates Directive.

1.2 The Directive, adopted in December 1991, is specifically aimed at protecting waters from nitrate pollution from agriculture. Annex A provides a summary of its main provisions. The key elements are to protect waters which are, or are likely to become polluted, by identifying those waters, designating land draining to them as Nitrate Vulnerable Zones (NVZs) and applying an Action Programme of mandatory controls on the management and use of manures and fertilisers within those zones. The Directive requires member states to take a precautionary approach to implementation and is prescriptive in defining the actions to be taken. A review of the designated areas and the Action Programme is required at least every four years.

2. IMPLEMENTATION IN ENGLAND

2.1 Our approach to initial implementation of the Directive was based on “high risk” assessment, both in relation to the designation of NVZs and the Action Programme measures. Implementation did not fully meet the timetable set down in the Directive.

2.2 While the Directive allows member states to apply Action Programme measures across the whole of their national territory, England has opted to designate specific NVZ areas. Regulations making the first designations (covering 8% of England) were made in March 1996. A ruling in 2000 from the European Court of Justice that our designations were inadequate (the designation assessment in 1996 focused on drinking water sources only) led to further Regulations being made in October 2002, based on an assessment of all waters. This increased the designated area in England to the current 55%.

2.3 Regulations establishing the initial Action Programme were made in May 1998. There was insufficient data available for an effective four-yearly review to be undertaken in 2002; as a consequence, the measures introduced in 1998 constitute the current Action Programme for NVZs.
3. **Commission Intervention**

3.1 The EU Commission has concerns about some aspects of our current Action Programme and designated areas and these have been formalised in ongoing legal proceedings.

4. **Consultation and Timetable for Future Implementation**

4.1 We have recently completed reviews of the designated areas and the Action Programme. A consultation on proposals to give effect to the outcome of the reviews was launched in August 2007 and closed on 13 December (extended from 13 November because of foot-and-mouth and bluetongue outbreaks). The timetable at launch envisaged revised Regulations being made in April, but the Regulations are not now expected to come into force until later in the Spring.

4.2 Farmers in existing NVZs will need to meet revised requirements once the Regulations come into force. However, for practical reasons, some measures will need to be phased in: for example, it is proposed that the storage capacity requirement should be implemented over two years. Aside from any phasing-in provisions, farmers whose land is newly designated as an NVZ will have a year from the date of the Regulations coming into force in which to comply with the Action Programme.

5. **NVZ Designations: Review and Consultation Proposals**

5.1 Evidence from the recent review indicates that we need to extend the designated NVZ area to about 70% of England. This is due mainly to an increase in nitrate pollution in some areas of the country, but also because improvements in modelling techniques have enabled assessment of more water bodies.

5.2 If a decision is taken to continue the discrete designation approach, extending the NVZ area to reflect the outcome of the review is the minimum action we need to take to meet our obligations under the Directive. The consultation indicates that we propose to put in place an appeals mechanism whereby farmers whose land is newly-designated as an NVZ can challenge the designation if they have evidence to demonstrate that the land does not drain to a polluted water. The consultation also seeks views on defining the circumstances in which de-designation of NVZs could be considered in the future.

5.3 As the Directive allows member states to apply the Action Programme across the whole of their national territory, we have taken the opportunity in the consultation to seek stakeholders’ views on the two approaches to designation, that is, whole territory vs discrete designations. If a decision is ultimately taken to apply the Action Programme across the whole of England, all farmers in England would be affected by the proposals relating to the Action Programme.

6. **The Action Programme**

**Review**

6.1 The recent review of the current Action Programme has shown that measures are not achieving an overall consistent downward trend in nitrate losses and a recent study by the EU Commission shows the UK as having one of the highest levels of nitrate loss in the EU (under its former constitution of 15 member states).

6.2 Aside from some localised reductions in recent years, nitrate concentrations in England’s ground and surface waters remain high in many parts of the country, with levels in some waters often exceeding 50 mg per litre. There are also a number of water bodies continuing to display signs of eutrophication, so there is still some way to go before our waters achieve their full environmental and ecological potential.

6.3 Work commissioned specifically to assess the effectiveness of current Action Programme measures showed that the current measures are unlikely to effectively reduce agriculture’s contribution to nitrate loss to waters at the national scale. It is estimated that the current Action Programme, fully implemented, would reduce mean nitrate concentrations in NVZs by just 2–7% overall.

6.4 On the basis of the review findings, we have concluded that the current Action Programme needs revising.

**Consultation proposals**

6.5 Throughout the review, we have actively engaged with stakeholders in farmer workshops and wider stakeholder meetings. Their views have been taken on board in developing the proposals and we have also taken into consideration the points raised by the Commission.

6.6 The proposed revisions and supporting evidence are set out in detail in the consultation and accompanying documents. All of the revisions, apart from the cover crops proposal, are measures which the Directive prescribes must be included in the Action Programme. However, the Directive does allow member states some discretion in defining the detail of the measures and we have made full use of those discretions.
in drawing up the proposals. Our aim is to achieve a balance between sustainable and efficient farming practices—retaining as much flexibility for farmers as possible—and respecting the need to achieve the environmental objectives of the Nitrates Directive.

7. Costs and Benefits of Key Proposals

7.1 The partial Regulatory Impact Assessment issued with the consultation considers the impact, in terms of costs and benefits, of the most significant proposals for revisions to Action Programme measures and how this impact varies depending on the extent of NVZ designation (70% v 100%).

7.2 Quantifying environmental benefits is difficult but predictions are that the main proposals in the revised package of measures will reduce nitrate losses by 5.5–15.5%. As this calculation did not consider all the proposed measures, the actual percentage change is expected to be greater.

7.3 Although ammonia emissions are predicted to increase by 0.2–2%, this is likely to be an overestimate and other options we considered for the Action Programme were predicted to result in even greater losses.

7.4 The estimated overall cost to the agricultural sector from the proposed revisions ranges between £35.5—£80.8 million and £52.8—£105.9 million (the lower range taking account of savings from mitigation measures) and is largely due to the impact of the following measures:

- Whole farm nitrogen loading limit from livestock manure of 170kg/ha—(farmers may have to purchase/rent additional land and/or reduce livestock numbers).
- Slurry storage capacity requirement—farmers may need to construct extra storage facilities to enable them to comply with an extended closed period and have contingency capacity to cover unsuitable spreading conditions.

7.5 Further work on costs and benefits has been undertaken since the consultation was issued and a report is due shortly. The findings will be incorporated into the Impact Assessment which will be issued with the revised Regulations.

8. Consultation Outcome

8.1 Consultation responses (about 700) are still being analysed. We shall be carefully considering those responses and where there is scope for refinement of the proposals in line with the discretions allowed by the Directive, we shall make amendments. As the cover crops proposal is not a mandatory Directive measure for the Action Programme, we could consider going beyond refinement and dropping it completely, although if we decided on the latter, we may need to consider how to compensate for the loss in environmental benefits which this measure is expected to deliver.

9. Advice and Support for Farmers

9.1 To ensure that farmers are aware of, understand, and are able to fulfil their obligations under the proposed Regulations, the Department has planned an extensive programme of advice and guidance, including support software.

9.2 We are committed to making an application for a derogation from the 170kg/ha whole farm nitrogen loading limit. If granted, it would substantially relieve the immediate economic pressure on livestock farmers. We cannot assume that our application will be approved by the Commission, nor that our evidence will justify seeking approval for a 250kg/ha limit. We will be making an announcement regarding arrangements/requirements while our derogation request is going through the application process.

9.3 We are not intending to establish a capital grant scheme to help with constructing manure storage facilities because past experience has shown that this can lead, for example, to increased supply prices and merely postpone the impact of market forces. It also goes against the “polluter pays” principle and we prefer to avoid putting public funds towards securing compliance with regulatory standards. However, a lead-in period for getting adequate storage in place is proposed and advice and guidance will be available to assist farmers in correctly assessing the storage capacity they need for compliance.

9.4 Under the Rural Development Programme for England 2007–2013, all farming sectors are eligible for support for improving skills and productivity. In addition, there is a specific package of support worth around £100 million over the Programming period targeted at the livestock sector and aimed at improving competitiveness, animal welfare and on-farm management of nutrients. If storage facilities are an integral part of an innovative, sustainable project (eg anaerobic digestion) and achieve outcomes beyond meeting regulatory requirements, the Regional Development Agencies may choose to fund that element of the project.
10. RELATED ISSUES

Anaerobic digestion and managing manure

10.1 The Government is committed to making the most of the potential of anaerobic digestion to contribute to our climate change and wider environmental objectives, including to the management of manure. The UK Biomass Strategy and the Waste Strategy for England, which were published in May 2007, include details of how we will work with stakeholders to drive a faster growth in the use of this technology by local authorities, businesses and farmers, in a way that is both cost effective and beneficial to the environment. We aim to stimulate and develop the markets for anaerobic digestion and its products and to address the administrative and technical challenges which may hamper its development.

10.2 Electricity from anaerobic digestion is eligible for Renewable Obligation Certificates (ROCs). The Government is seeking through the Energy Bill to introduce differentiated support levels for different renewables technologies (known as “banding”). We announced on 10 January that anaerobic digestion would be among the technologies that would receive additional support in the form of two ROCs/MWh.

10.3 Aside from support under the Rural Development Programme, anaerobic digestion projects are also eligible to apply for support under the Bio-energy Capital Grants Scheme. This scheme supports the installation of biomass-fuelled heat and combined heat and power projects in the industrial, commercial and community sectors in England. The current round of the scheme is closed to application but we hope to make an announcement on further rounds in the near future.

10.4 The Environment Agency and WRAP (Waste and Resources Action Programme) aim to develop a standard and protocol for digestate by Spring 2008. The objective is to help facilitate the development of the market for digestate as a fertilizer and soil conditioner. WRAP are supporting the development of the market for digestate, alongside its work to establish markets for waste-derived compost.

10.5 We will work with stakeholders to develop and disseminate information on best practice and technology for the use of anaerobic digestion, for example through Defra’s New Technologies Demonstrator Programme and through advice to farmers.

Entry Level Stewardship agreements in existing Nitrate Vulnerable Zones

10.6 Subject to decisions following the recent consultation on proposals for revising the NVZ areas and the Action Programme, all farmers in NVZs will have to meet new and higher standards, irrespective of whether they are in Environmental Stewardship or a similar agri-environment scheme. Those with existing Entry Level Stewardship agreements entered into before 1 January 2007 will continue to receive payments as before, and their agreements remain unchanged. Those farmers in existing NVZs who have a provisional Entry Level Stewardship agreement (ie an agreement entered into after January 2007) will now have to meet scheme requirements related to the proposed revisions to the Nitrates Action Programme.

February 2008

Annex A

NITRATES DIRECTIVE—KEY REQUIREMENTS

1. Designation of Nitrate Vulnerable Zones (NVZs)
   (i) To identify as polluted waters:
      — surface and groundwaters which have, or could have, levels of nitrate above 50 mg per litre if action is not taken, and
      — surface waters which are or could become eutrophic.3
   (ii) To designate, by December 1993, all agricultural land draining to polluted waters as Nitrate Vulnerable Zones (NVZs).

Note: As an alternative to designating specific NVZs, member states can opt to apply an Action Programme across the whole of their national territory.

2. Establish an Action Programme in NVZs

To establish by December 1995 and implement by December 1999 an Action Programme in the form of “rules” covering the use and management of manures and fertilisers. The rules must include the following mandatory measures:
   — a nitrogen loading limit across the farm for livestock manure of 170kg per hectare per year (this controls stocking density by linking manure produced on farm to the land available for spreading);

3 Eutrophication is caused by excess nutrients, such as nitrates and phosphates, which can stimulate an accelerated growth of algae and other plants and have an adverse affect on water ecology, water quality and the amenity value of the water.
— a ban on manure and fertiliser applications during periods of the year when there is a risk of nitrate loss to waters;
— a requirement for farmers to have manure storage capacity sufficient to cover the closed spreading period plus additional capacity to take account of other periods when spreading conditions are unsuitable; and
— a requirement to ensure that applications of nitrogen from manures and fertilisers are limited overall, taking account of certain specified factors such as foreseeable nitrogen requirement if the crop, soil type, nitrogen residues in the soil from previous cropping, nitrogen supplied to the crop from manures prior to application of fertilisers.

The Action Programme must also include any additional measures or reinforced measures if, at the outset or in subsequent reviews, it becomes clear to the member state that further action is needed in order to meet Directive objectives.

3. Derogation from the 170kg/ha whole farm nitrogen loading limit

Member states may allow a limit higher than the prescribed 170kg/ha limit but must follow a defined procedure in making a derogation application to the Commission.

4. Reviews

Member states must review both NVZ designations and the Action Programme measures at least every four years.

5. Reporting

Member states must report to the Commission every four years on their implementation of the Directive.

Witnesses: Mr Phil Woolas MP, Minister of State (Environment), Mr Chris Ryder, Head of Water Quality Division, and Ms Maureen Nowak, Team Leader on implementation of the Nitrates Directive, gave evidence.

Q51 Chairman: We now move on to the Department for Environment, Food and Rural Affairs, and I have pleasure in, once again, welcoming before the Committee the Minister of State, Phil Woolas, and he is supported by Chris Ryder, the Head of the Water Quality Division, and Maureen Nowak, who is the Team Leader on the implementation of the Nitrates Directive. Minister, you must be one of the world’s living authorities on this subject, judging by the number of Adjournment and Westminster Hall Debates you have done on this, so you know everything there is to know. Indeed, this is Mastermind on the Nitrates Directive, and you have decided you are going to volunteer to answer questions! One or two things by way of definitions to get us into the mood for our inquiry. In Annex 1 of the actual Directive itself, it talks about ground waters containing more than 50mg/l of nitrate, and yet in the evidence which the Environment Agency sent us they talk about river monitoring points not exceeding 50mg/l of drinking water value. Could you just explain this difference in what it is that we are actually measuring, and perhaps you could assist me to define with some clarity what we actually mean by the term “ground water”?

Mr Woolas: Thank you very much indeed, Mr Jack, for inviting myself and my team to give evidence. We are very grateful to the Committee and certainly looking forward to the report of the Committee before any decisions are taken on the future of the Directive. It is important to point out that at “Annex I” of the actual Directive, the definitions offered are to identify as polluted waters surface and ground waters which have, or could have, levels of nitrates above 50mg/l if action is not taken. What one has to look at in designating a vulnerable zone is where the surface water and ground water is already above 50mg/l and where the trend is that it might be. On the actual drinking water point, the 50mg/l of drinking water quality is, in fact, the same thing, and I would ask for advice on why that is. I think, Mr Jack, it is because it is waters that you could take out to treat or drink. That is the point, I think. Yes, it is.

Q52 Chairman: Okay.

Mr Woolas: From memory from the Adjournment Debate.

Miss McIntosh: That is your starter for ten!

Q53 Chairman: We are actually looking at two types of water, both surface and ground water, because it is a bit confusing, when we have had some commentary criticising methodology, as to quite which bit is being criticised. The other thing to help me out in understanding this: part of what we are going to look at are the requirements, for example, to have 170kg/ha but with requests for derogations of potentially up to 250. Where did 170 come from? Why is 170 deemed to be the right number of kilogrammes of nitrogen per hectare to achieve the objectives of the Directive?

Mr Woolas: As you know, the 170kg/ha is from the Directive.
Q54 Chairman: I know they are from it, but where did the number 170 come from?
Mr Woolas: From the discussions and negotiations in 1990.

Q55 Chairman: Is there a scientific basis for 170 being deemed to be the universal number that throughout Europe, if nitrogen is applied in that rate, achieves the objective? I am interested to know why 170 is the right number or even why 250 is the area for derogation.
Mr Woolas: I do not know, Mr Jack, but I think you make a very good point which I had not thought of, and it could be a very helpful point. My advice is that no nitrogen is not a good thing, that this is a balance in terms of its impact on the two criteria, as I understand it, from the original discussions. One was on the impact on the plants and wildlife, the so-called eco-system, and the second was on the processes for treating the water for drinking water and, of course, we have debated in the House the cost of that. I assume, therefore, that it is a balance of those things, but I do not know, and I think it is a very good point and I will find out for you and let you know.

Q56 Chairman: The reason I ask that is, obviously, we are aware that the European Commission has decided to consider taking legal proceedings against the UK with reference to the implementation of the Directive. It would just be helpful to have your commentary about how that particular course of action by the Commission has influenced the moves that you are now making in terms of the coverage area of the NVZ and, indeed, the changes to the Action Programme that are proposed.
Mr Woolas: Thank you very much. The story from our point of view is that the Directive, as we know, was a 1991 directive, that it is subject to a four-yearly review, of which we have never ever had one. The European Court of Justice, I think in 2000, ruled that the definitions that we had applied to define nitrate vulnerable zones were inadequate and that increased the percentage area of England, I think I am right in saying, from 8% to about 55% as a result of that ruling by the European Court of Justice. Following action from that, we have started to prepare our—

Q57 Chairman: I am sorry to interrupt, but you made a very interesting point. You said the United Kingdom had never had one of the four-yearly reviews; so the Commission would not have known how well we were doing, and yet we are subject to an ECJ ruling in 2000 to say we have got to do better. So, what was the case against us? Why did we lose?
Mr Woolas: We had defined the designated vulnerable zones as part of the preparations for implementing the Directive, but we had never in this country implemented it.1 The definition of the designated zones was challenged in the European Court and the definition was found to be outside of the European Directive, and that caused us to expand the areas of the country which were defined as designated zones, as I say, to 55%. We have never been subject to a review because we had never implemented the Directive. My view, Mr Jack, is that in recent times, with the accession countries and the European Union wishing to ensure that there are environmental compliances in place across the European Union, we are the last of the old countries, as it were, not to have implemented this Directive, and so we are in a very vulnerable position. I think the other factor is the Water Quality Directive, which covers some of the same requirements to improve the quality of the water.

Q58 Chairman: When you say “water quality”, do you mean the Water Framework Directive?
Mr Woolas: The Water Framework Directive: I am sorry. So that, again, I think, has provided momentum to it. I am informed that the Commission had obtained also its own report on what should or should not be designated and the challenge to our definition is based on the Commission’s report.

Q59 Dr Strang: Has there been sufficient time to assess the effectiveness of the Action Programme measures, given that most of them have only been in place since 2002?
Mr Woolas: No, I do not think there has. I think that the Directive is too specific. There is some flexibility, obviously, and we have tried to err on the side of commonsense in the proposals we have put forward, but they are, of course, as you know, subject to consultation themselves. I think the problem that we have, apart from the nature of the Directive, which we can complain about as much as we like but other countries have implemented it and it is something we signed up to, is the different geography of our country, the different sub-regional and regional differences, but I think the answer to the question is, no.

Q60 Dr Strang: On the movement of nitrogen to surface water, we read that after five years it is not really possible to make a judgment as to what is significant. Given that whole background, you could say, and I think you have implied this already, we have been asked to make changes in these measures without really having much of a clue as to what they have been doing. Is that a bit extreme?

1 Note by witness: Defining nitrate vulnerable zones (NVZs) fulfilled our obligation to implement the first of the several implementing stages of the Directive. Establishing an Action Programme in 1998 and applying it to defined NVZs met the second and third stages of implementation. When the NVZ area was increased from 8% to 55% in 2002, insufficient available data made a review of the effectiveness of the Action Programme (to implement the four-yearly review requirement) impractical and the 1998 Programme was applied unchanged to the newly-designated areas. The recent review of the Action Programme fully implements the Directive’s periodic review requirement.
Mr Woolas: We are under pressure to implement the Directive as soon as possible. Of course we are in discussions with the Commission as to what possible derogations there may be on the 170kg/ha point, but obviously the timetable of implementation is subject to decisions. I do not know, in anticipation of the next question, or possible next question, what the basis of the four years is. I presume that there was some scientific basis to that. Maybe that is something that I could provide a note for you on as well.

Q61 Dr Strang: I recognise that you have got to comply with the Directive, but I suppose, reading the stuff, there is a certain scepticism in that on the one hand the farming industry is required to take certain measures; on the other hand there is an issue, obviously, in terms of the nitrate content of the water. It is just whether the measures it is being required to take are, in fact, impacting on the actual nitrate concentration at the end of the day.

Mr Woolas: I think there are two considerations. In the non-vulnerable zones there is a code of practice for farmers and other land users, and the evidence is that that is working. Because it is quite a prescriptive directive, there is also the evidence from other countries. I recognise the geography and the agriculture may be different, but there is the evidence from other countries that it is working, so to that extent, yes, but the answer in the core is, no.

Q62 Miss McIntosh: I have found the relevant part. I should declare an interest, because I was at the time an MEP for an East Anglian constituency. It does actually say in Article 3(4) that “Member States shall review if necessary revise or add to the designation of vulnerable zones as appropriate,—(I think they mean “at least”, it says “at last four years”)—at least every four years, to take into account changes and factors unforeseen at the time of the previous designation”. Minister, it is good to see you again. Could I say, presumably this would reflect the fact that changes in agricultural practice probably take some time to work their way through, and I think the NFU would probably say that the fact that all that happened, all that was dug up during the Second World War actually took more than four years to work its way through, so I hope there is some flexibility in the Directive.

Mr Woolas: The other factor is the weather. The amount of rainfall, and when it is, can a

Q63 Chairman: Thank you very much indeed, where it had gone up. What is your take on it?

Mr Woolas: That it is getting worse.

Chairman: Overall?

Q64 Miss McIntosh: Could I just add a supplementary because I think the problem is you are intending to put whole rivers into a catchment area whereas in fact we just heard from the NFU that the upland part may have a low nitrate level and the lowland part may have a higher nitrate level, so it does not seem very sensible to put a whole river in these areas into one catchment. Are you looking to review that?

Mr Woolas: That carries with it commonsense and so it is something that we will look at for the obvious reason as has been said. We also have, just again to give the full jigsaw, the River Basin Management Plans of which these are part. If I could just come to the situation as we see it: it is patchy; our evidence is that the trends on nitrogen are still going up in most groundwaters and some coastal waters; the removal of set aside, leading to an increase in land under cultivation, together with rising grain prices, is expected to increase fertiliser use and bring with it a comparative increase in the risk of nitrate loss. This tends to be in the eastern side. We have this issue, Chairman, which has come up in the consultation over storage for the—and if I caricature hon Members and right hon Members will forgive me—the cattle areas to the north and the west and the agriculture areas to the south and the east, and both are suffering problems in our calculations in terms of levels of nitrates, and indeed the revision from 55% to 70% reflected not just better scientific methodologies but also an increasing problem, so it is a patchy picture in our view.

Q65 Chairman: You can imagine what it is like for us. We hear from the NFU who say, “Here are some big catchments: trend down,” and they say very candidly, “In certain rivers: trend up.” Then in the Environment Agency’s evidence to the Committee—and I quote—“From our general quality assessment monitoring information, we know that around 17% of our 7,300 river monitoring points exceed 50mg/l drinking water value at least once during the winter months, linking the nitrate concentrations recorded to run-off from agricultural land.” If you invert that, 83% do not register on the Richter Scale. That sounds like a pretty clean
5 March 2008 Mr Phil Woolas MP, Mr Chris Ryder and Ms Maureen Nowak

Mr Woolas: If and when the revised Regulations come in, because that would be a requirement, it would not therefore qualify for Entry Level Stewardship agreements; that is a very valid point. On the first point, the proposals we have are subject to the consultation, which was closed on 13 December. We have had a very significant number of responses to that consultation. We will be publishing the analysis of the responses next week and I hope that will be available in time for your considerations. And, as I say, this is a consultation and I want you to have the analysis of the consultation before making recommendations that I want to be able to take on board in the conclusions.

Mr Woolas: My policy is going to take on board the representations that have been made in the consultation, the findings of this Select Committee, and all the stakeholders.

Q70 Chairman: I am grateful for you saying that but I am trying to understand the methodology that will inform the decision-making process. You have just said in answer to the Committee’s questions, when we asked how are things going, taking a whole river, that your figures are going upwards, the trend is universally up. The picture from others is different, so I am just trying to understand the methodology, what is going to inform your assessment of all the information that you have got?

Mr Woolas: On the measurements?

Q71 Chairman: Just to develop the point, Miss McIntosh talks about upland areas and lowland areas. The Environment Agency talk about the problems of low nitrate areas and the expense of universality. You have talked about assessing where we are on a whole river system, and a whole river system, by definition, must include upland, lowland, high input and low input. I just want to understand the methodology you are going to use because you will get a lot of views and you have to have a benchmark to say, “This is what I am now going to have as the policy,” so what is the basis upon which that decision will be made?

Ms Nowak: Can I say that we developed a revised methodology for the purpose of this review because we felt that there were a number of uncertainties in the previous methodology. Making the designations and identifying the polluted waters is really quite difficult, it is a very complex area, so we set up a group of very eminent people who we felt had the...
knowledge and the expertise to be able to look at our existing methodology. We did have NFU representation on that group. The methodology that was finally decided upon took the view that if there was a polluted waterway at the lowest point on the catchment then it was one-out all-out. That was an agreed view that was taken by people whom we felt were in a better position than just the ordinary policymakers to take that view. The alternative would be—because it is quite difficult to designate, and there are inherent complexities in identifying the waters and designating particularly groundwaters—to do what many other Member States have done which is to apply the Action Programme across the whole territory. Some Member States who have lower nitrate levels than we do in England have chosen to take that option, some of them for that very practical reason.

**Chairman:** Okay, so you are trying to be focused but take into account the point you have just made that everybody is in if you are associated with a particular river where the trend is going up. Right. I think I have understood that. Anne, did you have a technical point?

**Q72 Miss McIntosh:** I think there are other Directives where the NFU and farmers have adopted a voluntary approach. Is there some merit in considering that because it would make it easier for the Department to show that it is implementing the Directive and easier as well for the farmers to implement the Directive?

**Mr Woolas:** The voluntary approach being?

**Q73 Miss McIntosh:** Allowing the farmers to have a voluntary agreement with your Department as to how they will implement it rather than the Department being very prescriptive even down to each farm.

**Mr Woolas:** Within the strictures of the Directive that would be what we would want to do. The Directive has been criticised for being too prescriptive. I think there is some flexibility on the density point but on the storage and spreading periods it is pretty prescriptive, and it has been criticised for that.

**Q74 Miss McIntosh:** I know there have been some adjournment debates on the de-designation and you actually said in a written answer on 16 January this year that you were considering circumstances under which land in an existing nitrate vulnerable zone may be de-designated. Have you reached a result?

**Mr Woolas:** My intention is to do that at the same time as the total package.

**Q75 Miss McIntosh:** Will the appeals mechanism be open to existing and new NVZs?

**Mr Woolas:** The ball is bouncing towards the beach?

**Q76 David Taylor:** In your opening remarks, Chairman, you talked about the Minister—and I will paraphrase a little—almost setting up camp in Westminster Hall as he was responsible for a series of debates, and I was at the one in January when you, in a sense, abandoned 6 April as the start date after bluetongue and after foot-and-mouth and so on and the consultation period had to be extended. In the submission to us for this particular investigation you have used that delightfully vague and mobile description of “spring” as being when you plan to actually implement it. Have you refined that any further?

**Mr Woolas:** I have crossed it out, Chairman, and I thank you Mr Taylor for his very perceptive question. We had a debate as to what I meant by spring!

**Chairman:** We need a separate inquiry into that!

**David Taylor:** Spring has sprung; the grass is risen.

**Chairman:** The influence of climate change on ministerial timings of decisions; it could be very interesting!

**Q77 David Taylor:** Is the ball bouncing towards early summer on to the beach?

**Mr Woolas:** The ball is bouncing towards Brussels.

**Q78 David Taylor:** Oh God, we are in trouble!

**Mr Woolas:** We put back the deadline for the consultation from 13 November or thereabouts to 13 December because of bluetongue and foot-and-mouth and it not being reasonable to ask the farmers to respond because of that. Our initial intention was to publish the response to the consultation in the form of regulations in April of this year. The decision was taken, as I indicated at the adjournment debate on 8 January, that that would not give us enough time to do justice to the level and numbers and content of the consultation responses that had already come in.

**Q79 David Taylor:** You have got better developed antennae than most middle-ranking Ministers. You must have a feel for the area of terrain where this implementation date lies. What are we looking at? Farmers need to know.

**Mr Woolas:** By the summer recess. The third factor is the European Commission because we are talking to the European Commission about these matters and about how we could implement the Directive, about where the flexibility is, and we will obviously use the response to the consultation as part of our conversation with the Commission.

**Q80 David Taylor:** So for “spring” read “early summer” as being when?

**Mr Woolas:** I have crossed out “spring” and put in “summer”.

**Q81 Miss McIntosh:** Does that mean before the summer recess?

**Mr Woolas:** It does mean that.

**Q82 Chairman:** Just help me, we could have some quite esoteric discussions if we were not a little clearer on when you are going to go back to talk to the Commission as to the areas that you can meaningfully discuss with them. Where is the wriggle room?
Mr Woolas: The major area is the 170kg on that. Maureen, are there any other major areas of wriggle room?

Ms Nowak: We have got wriggle room insofar as the Directive does allow Member States discretion in defining the very detail of some of the mandatory measures which the Directive requires us to put in place. These are in areas such as the closed periods, storage (and linked to that the 170 we have to put in but we can apply for a derogation), the cover crops, the detail relating to crop requirement, and various other measures, so all of them allow us some discretion. We will be applying that in the light of what has been said to us in response to the consultation, and again within the constraints that the Minister has mentioned of what we are required to achieve under the Directive, which does have a very prescriptive nature, and also in light of the evidence and the science that we have to support our case. We have conducted a lot of work to support the measures that we have put forward which we think deliver for England what we need to do in order to make ourselves fully compliant with the Directive.

Q83 Chairman: That amount of area for discussion backed up by the methodology which the Minister outlined is all designed to give us the opportunity to take into account differing ground conditions?

Ms Nowak: Yes.

Q84 Chairman: And different agricultural sector requirements?

Ms Nowak: Yes.

Q85 Chairman: Okay, and when you have done that I presume you will have a financial impact assessment done on these various options, will you?

Ms Nowak: We have already prepared a partial impact assessment before putting forward our proposals in the consultation and that was attached to the consultation document. We will be doing another impact assessment in the light of whatever changes we may make to the proposals.

Mr Woolas: And the evidence that is presented in the consultation.

Q86 Paddy Tipping: Could I just talk about the practical implementation? Farmers in Nottinghamshire and the East Midlands say to me it is quite impossible if these regulations come in to get planning permission and to get funding to construct slurry storage facilities within a two-year period. In fact, the evidence that the NFU argue for four years. What is your view on that?

Mr Woolas: My response to that, Mr Tipping, is again the dilemma between having a scheme that is practical for its implementation and complying with the Directive. We have put forward the two-year period.

Ms Nowak: — Our judgment was that farmers would not be able to—

Mr Woolas: Sorry, Chairman, I should have known the answer to this. The two years was ours; it was not a Brussels date, so it is that balance. I have seen some examples in correspondence that have been sent to me by Members of Parliament of planning permission delays, and that is true. On the other hand, it is not unreasonable if the Commission will give. We have to look at the evidence that has been provided to us on the costs. We are aware from experience in Northern Ireland that there may well be some self-fulfilling inflationary problems. It is worth mentioning also, Chairman, on the timing, I did have a fourth reason which is related and that is the Anaerobic Digestion Strategy. I am not suggesting at all to farmers that that is an answer to all of their problems, but it is a significant answer, and I am trying to ensure that the strategy in that regard dovetails with the Nitrate Directive because to some extent we can have a win/win, we can create a bigger market here, so the evidence is important. It is interesting—and I am not saying this in advance of the analysis of the consultation which is coming out next week—that from the correspondence I have had where farmers have written saying how we should implement it (and some have written saying we should not implement it for obvious reasons) they do make the point to me that Mr Tipping has just made.

Q87 Paddy Tipping: So that is an area that is still open for negotiation and discussion?

Mr Woolas: It is something that we will have to take into account, yes.

Mr Ryder: In relation to a possible four-year period to consider how to implement it, of course the Directive does require us to review the effects of what we have done after four years, so we were bearing that in mind when we proposed two years so that we would have some time for it to be in place to be reviewed in four years’ time.

Q88 David Lepper: I appreciate that circumstances are different in each of the European countries, both geographically, in terms of soil and farming methods, et cetera, but it does seem that the UK is not the only country which is having some problems as far as the Commission is concerned in implementing the Directive. I do not know whether it has changed since the information from November 2006 from the Commission where they were taking action against Belgium, Germany, Spain, Ireland, Italy and Portugal then, as well as us, some of that may have been resolved. What I am wondering is whether, despite all those differences between countries that we have talked about this afternoon, there are common themes that are coming out across the EU in terms of the difficulty that individual states are having in implementing the Directive?

Mr Woolas: Can I make a general point and then ask Maureen to answer the question specifically. The impression I get—and it is 17 years since this Directive was done and it was first discussed some years before that—is that the European Commission does not make legislation like this any more. It is now less prescriptive and it is less focused. Having said that, my initial question was the same as Mr Lepper’s which was what are the others doing? Some of course have gone a lot further and tougher but we
are in a bad position in this regard. It has changed since then and I think we are at the back of the queue with Spain just in front of us.

Ms Nowak: Of the countries you name, Spain, Italy, UK, and Luxembourg currently have action against them by the Commission.2 There are different areas where they have concerns, but Italy and ourselves have the same areas on our infraction. What was the other part of the question?

Q89 David Lepper: I just wondered whether there were common themes in terms of the difficulties.

Ms Nowak: Indeed, it is a universally unpopular Directive, needless to say, simply because it is trying to impose very prescriptive rules onto something which should really be fairly flexible, so it is not, as I said, universally popular. However the point that is made is that other countries have managed to put in place measures which make them compliant with the Directive, which achieve the Directive’s objectives, and have done so. We should be on our third review of the Action Programme had we implemented in accordance with the timetable set down in the Directive. We are only doing our first review of the Action Programme. It is a dynamic Directive and it has an on-going review process built into it. Whatever proposals we put now are not written in stone, they will need to be reviewed again. One way we have looked at it is to put in place what we consider is necessary at this stage to deliver what the Directive requires and be compliant with it, and then see in four years’ time what the outcome is. I take the point that has already been made about four years not being a very long time but regrettably that is what is in the Directive. It was reconsidered for repeal, I believe, at the time the Water Framework Directive was being negotiated in 2000 and the decision was taken not to repeal the Nitrates Directive, so I think it is one of these situations where we may have to learn to live within the constraints of the Directive.

Q90 Mr Williams: The Minister might not be able to answer this question given the closeness we are to the Budget, but with farmers faced with this quite considerable investment, they do not even get some relief in terms of Agricultural Buildings Relief which the Chancellor, as I understand, is intending to scrap, and it may be a point that the Minister might wish to make to the Chancellor, on the basis that these agricultural buildings depreciate rather than appreciate in value.

Mr Woolas: First of all, there is the polluter pays principle which is an important point.

Q91 Mr Williams: Well, they are paying.

Mr Woolas: Some suggest they should not. Secondly, I just want to be cautious here and say that I want to look at the figures again in light of the consultation, and I want to be sure, as Maureen has said, what the financial impact assessment is, so I am very conscious of this point. There is of course the Rural Development Programme and there is the Bio-energy Capital Grant Scheme and there is the Anaerobic Digestion Strategy, as I have mentioned. We have started conversations with the NFU and other partners about these areas, and there is the Budget, as you have rightly said, about which I am going to say nothing because I do not know.

Q92 Chairman: What I wise man! You might get moved to the Treasury if you carry on like that! No, we like you where you are; we are very happy from that standpoint. Just help me a little bit to understand the derogation that might be part of your strategy. The Environment Agency when they gave evidence in writing to us said, “Currently, we believe there is no justification for a derogation from the Whole Farm Limit of the current 170kg/ha/yr …” You perhaps take a different view; why?

Mr Woolas: Because we want to provide some flexibility. The goal is to take the nitrogen out of the waterways that is killing the fish and damaging the environment and costing the water companies £288 million a year in capital costs to treat the water to the level that it is required, but within the zones we want some flexibility because not to do so could result in—and I am not pre-empting the consultation analysis here—herds being reduced for example. It could result in farming practices being brought about in a way that is not helpful rather than in a way that is helpful. It is not a scientific point, it is a commonsense point, if I might say. Chris, did you want to add to that?

Mr Ryder: The Directive does provide explicitly for the possibility that Member States can set a higher limit. That has to be by way of applying for a derogation after you have implemented the Directive.

Q93 Chairman: But we have not implemented it.

Mr Ryder: But when we have, our Ministers have declared an interest in taking advantage of that and applying for such a derogation. Clearly in order to obtain the derogation, there needs to be a case, so we are working at present to understand what the evidence would be to support that, gathering information from interested parties—

Q94 Chairman: Just help me on the technicalities because you said you have got to demonstrate that you are applying the Directive. Does that mean you have to demonstrate good intent? Can you not do the two co-terminously, otherwise you could have had a bizarre situation of working at 170 and everybody thinking are they ever going to apply for this derogation and then at some point down the road you say, “Now is the moment”?

Mr Ryder: I think the moment comes quite quickly after implementing the Directive. It is not so much a technical point as a reality that you can only apply for a derogation from something which you have in place.

Q95 Chairman: Is the limit to which you apply for a derogation determined by the Minister? In other words, does he decide that 250kg is the number? Is it your decision?
Mr Woolas: If we get there.
Mr Ryder: I think that would depend on the evidence.

Q96 Chairman: What I am saying is is it a nationally derived figure that you wish to derogate to? Is the answer Yes, Mr Ryder?
Mr Ryder: Yes, the 170 is a nationally applicable limit under the Directive.

Q97 Chairman: I have got that.
Mr Ryder: The derogation would be in order to apply a different level.

Q98 Chairman: What I am wondering is if the different level is one that we determine ourselves.
Mr Ryder: Yes, but we have to support it—

Q99 Chairman: Ms Nowak is nodding.
Ms Nowak: It is a level that we will determine ourselves based upon the evidence which will support our case for the derogation. We have to make a case so we will need to get evidence. The fundamental core of our case has to be that by granting the derogation no environmental damage will be caused.

Q100 David Taylor: I was with Anne McIntosh and Winnie and her friends from the National Pig Association in front of Richmond House yesterday and they had been reading (not Winnie but the friends!) Maureen Nowak’s partial regulatory impact assessment on the benefits of the changes to the Directive could be implemented. We have had a significant response to that. We wish to implement the Directive in a way that is most beneficial. On the cost point, as I say, I have got a very open mind on that and I am looking to the representations to form a judgment as to what is realistic. There is another side of the coin of course, which is also within my brief, and that is the cost to the water industry.

Q104 David Taylor: Of course and we understand that but it is what appears to be quite a slight improvement of a half of 1% in nitrate levels which does not seem to square with the substantial capital costs that will be borne by the pig sector?
Mr Woolas: The cost/benefit of it in terms of reduction of nitrogen is at the forefront of my mind.

Q105 David Taylor: Is it not possible—and this came out of the Committee to which I have referred earlier on several occasions in January with the Board of Farmers of Leicestershire—to have much greater flexibility built into the requirements. Farmers have been farming for generations, they are not fools, they know their land, they know where it drains, they know the impact that they are making by their farming methods. Why can they not be allowed to spread organic manure in what would otherwise be closed periods where they know that the conditions are suitable, they know the weather conditions or what has led up to it over the previous two weeks? Why are they not able to do that?
Ms Nowak: The closed periods that we put into the proposals were based on the science that we had. It is a precautionary Directive so you look at where the risk of nitrate loss is at its greatest and then on either side of that you determine what dates you will put in for your closed period. In terms of the storage, we suspect that the calculation methodology that we have put forward may not have been fully taken on board. We have gone to some pains to develop a methodology which we have said to farmers, “You will only be asked to store what you actually need to store,” so the devil is in the detail.
David Taylor: I am very sorry to interrupt—

Q106 Chairman: Just a minute, David, just let Ms Nowak explain because it is an important detailed point.
Ms Nowak: By following through the calculation methodology that we have set out, a farmer’s storage capacity requirement should only be equivalent to what he actually needs to store, in other words the times of the year when he is collecting slurry and he cannot go out and put it on the fields for whatever reason. The Directive is very clear on the storage requirement and the Commission has made it clear in open forum that it sees the storage requirement to be one of the fundamental tenets of the Directive because if farmers have enough storage they will not be tempted to just go out simply to empty their stores, be it a lagoon or a tin tank or whatever, and so on that basis we said in the calculation we need to make sure that farmers only store what they need to do. We are looking at reasons, you are talking about people being able to go out on the ground during the closed period. If they are going out they should only be going out because they need to go out for their crops. They should not be going out simply as an excuse to empty their storage tanks, which is precisely what the Directive is aiming to prevent.
Chairman: I think we have got that.

Q107 David Taylor: The point I want to make is a very brief one. You used the phrase that farmers had not “fully taken on board” the new regulations, or something close to that. By that do you mean they had not fully understood what was being suggested or that they did not agree that it was necessary?

Ms Nowak: It is quite a complicated calculation and we are not sure that all of them have fully appreciated the detail.

Q108 David Taylor: Not that they were not persuaded?

Ms Nowak: I am not sure, they may not be persuaded either.

Q109 Chairman: Do I understand from that that you think that if farmers looked at the detail they might be less worried about the total capacity of storage which they might be required to have?

Ms Nowak: I think that could be the case for some of them certainly.

Q110 Paddy Tipping: Could you just go through that with me a bit more. Perhaps I have got it wrong but I thought the closed period for spreading on grassland was three to four months and you are asking dairy farmers for a storage period of five months and for pig and poultry farmers six months. That is not a direct equation, is it, you are gold-plating, as the farmers might put it?

Ms Nowak: I do not think we are gold-plating because what the Directive says is you must have storage in excess, and it does not define in excess of course, of your longest period, so on your farm if you have got several closed periods you would probably have to go for the longest closed period and then have in excess of that. Looking in terms of good farming practice, in most instances it is preferable that fertilisers be put on in the spring. That is the time when the crops are growing, generally speaking. There are exceptions and we will be looking at exceptions because we are trying not to have, as far as possible within the constraints of the Directive, a one-size-fits-all, recognising that there needs to be some flexibility. That being said, if you are going to go towards the spring, which is in good practice the best time to be going out to spread your manures and fertilisers, if you think about it, you will need storage while your animals are in-house for several months, which could well be three, four or five months, if you are going to go in the spring, so you will come up to your five or your six, and can I say that many other Member States have got much longer storage requirements than we have.

Q111 Paddy Tipping: Sure but let us just stick with the phrase “in excess”. The closed period is three to four months and you are asking poultry and pig farmers to have storage facilities for a storage period of five months and for dairy farmers for a storage period of six months. That is 50% in excess. That is a bit much, is it not?

Ms Nowak: The calculation is five or six months but you still have to go through the calculation process which could well mean you do not in your particular situation, bearing in mind we have said we do not want farmers to have storage capacity more than they actually need, in that particular situation you could well end up with less than that.

Q112 Paddy Tipping: Let me just ask you a final question. You say five months for dairy farmers and six months for poultry and pig farmers. Slurry is slurry. What is the scientific basis for having one at five months and the other at six months?

Ms Nowak: I believe the evidence that we have indicates that for pig and poultry you need it. I cannot remember off the top of my head what the scientific explanation was for that so I would have to come back to you.

Paddy Tipping: Could you drop us a note on that?

Q113 Chairman: Is it about concentration of the material?

Ms Nowak: I think it is the end content.

Mr Woolas: It is about time inside as well.

Chairman: I think that would be helpful. Roger, cover crops.

Q114 Mr Williams: I think one of the issues that was covered in the debates was this issue of cover crops and the necessity to have those during the winter to prevent nitrate run-off. We heard from the President of the NFU earlier about the physical difficulties on his farm where he has got very heavy clay and of planting a cover crop and then having to plough and get the land ready for sewing in the spring, and indeed on a nature conservation issue the RSPB actually believe that cover crops would threaten our ability to reverse the decline in farmland birds. I think in the debate the Minister did indicate that he might be rethinking this aspect of the regulation.

Mr Woolas: If I could thank you for that question and just respond. Obviously this proposal is for largely arable areas, the east and south as I have caricatured it, because obviously in those areas the 170kg has little or no impact. The cover crops measure is not prescribed in the Directive. It can be a cost-effective way of reducing nitrates loss and we think it is helpful to us in our conversations to show our intent to implement the Directive, but we do think that there is some commonsense flexibility that we can use in this area. As you say, there are other potential benefits but if I could ask Chris to comment as well please.

Mr Ryder: I think this is not one of those measures in our proposal that is prescribed in the Directive but the Directive does contain a requirement that Member States shall introduce such additional measures or reinforced actions that are necessary if it becomes apparent that that is necessary to meet the Directive’s objectives, so in terms of what we have to do, we have a lot more flexibility in relation to this proposition. We do think something is necessary in this area to contribute to the Directive’s objectives but as to the details for six months, if we have had a lot of comments on it, we are carefully considering what we proposed and considering re-visiting this. I do not think we are ready yet. As part of our overall response we will come to this possibly with some
alternative suggestions because I think it is important not just to talk about looking at something differently but to come forward with what that should be but we are thinking about that at the moment.

Q115 Mr Williams: Just another question on figures, I think you say in your regulatory impact assessment that using cover crops could reduce nitrates by 4 to 7%. How do you know that? Where is the evidence?
Ms Nowak: Some years ago there was a programme called the Nitrate Sensitive Areas Scheme and the evaluation of that, the work that was done under that scheme, showed cover crops to be one of the more cost-effective ways of reducing nitrate loss, so there is evidence in various forms.

Q116 Mr Williams: In coming to a conclusion on this—and I guess a lot of people would like you to say that there is no need to have cover crops—will you take into account differences in soil types while coming to your recommendations for the regulation on this?
Ms Nowak: Yes.

Q117 Chairman: And biodiversity issues?
Ms Nowak: Yes.
Mr Woolas: Yes. I am not suggesting that this has been done at this Committee’s hearings but the debate has been caricatured by some as farmers on the one hand and people who like the environment on the other. My experience is that many farmers want to protect biodiversity as well, and I think this, properly implemented, is a method by which we can have our cake and eat it.

Q118 Chairman: Because your Department puts quite a lot of emphasis in terms of the former PSA sustainability indicators on farmland birds for example, and there would be a loss under certain circumstances if cover crops became the norm. If your analysis of the consultation is going to be sensitive enough to take that into account, the Committee might find that reassuring.
Mr Woolas: I would very much like the Committee’s views in its report on that as well, but I argue with myself on this point given my responsibilities.

Q119 Chairman: I want to wrap up because I am conscious that there is going to be a rather important vote in a few moments’ time. Colleagues have raised with you, Minister, the capital costs involved in the investment in new storage and we heard what you said en passant in terms of anaerobic digestion. The use of AD systems may be affordable on the farm but, for example, there is a very big capital cost in connecting up anaerobic digesters to electricity grids. I appreciate that your consultation results may well come after the Chancellor has stood up next week to deliver his Budget, but I think it might just be helpful for us to ask you the question if when you look at the impact of potential investment by the farmers you came to the conclusion that the economic potential, particularly in sectors like pigs, would make it exceedingly difficult at this time for the sector to afford the investment, and there might be some need for help, over and above your observations about the Rural Development Programme and assistance with anaerobic digestion (which may not be open to everyone) is this the kind of thing that Defra as the sponsoring ministry would be prepared to go to the Treasury and make representations about?
Mr Woolas: We think there is a great opportunity for the country here in any event. The Nitrates Directive is giving it a spur, but it is an opportunity and we have put some resources already into this. Could I please give you the figures I referred to before on the costs to the water companies, and therefore the customers and shareholders, of the additional costs for treating water to meet the drinking water standards. We estimate that in the period 2005 to 2010 there will be £288 million of capital costs and £6 million per year in operating costs to the water industry. That is because we put nitrates in the water and we pay to take them out. The figures—and we can debate these—on the potential cost to the agricultural sector from the proposed ranges on capital costs for meeting this Directive range from £35.5 million at the bottom end to £105 million at the top end. If you step back from that, at a macro level it is bonkers. We are putting the nitrate in the water; we are paying to take it out; why do we not pay not to put it in in the first place? That is the theory. How to do that requires the different sectors that are involved to come together, and we are of course working on that, and we have announced on 18 February, in addition to the point that I made, that we are making available some additional £10 million from the Environmental Transformation Fund for an anaerobic digestion demonstration programme which will support the existing series of demonstration plants that are operating in the different sectors, and of course local authorities and food waste and other bio-waste industries, the water industry itself, the agricultural sector, and indeed the combined heat and power sector are the partners that we are working towards. I am not saying to the farmers if any of them are listening, that this is the only answer, but I think it is a fantastic opportunity. However, we have to create a market and that is the challenge.
Chairman: I am going to draw proceedings to a close there and may I thank you, Minister, and your officials for helping us on that. We will reflect obviously on what you have said and also on the written evidence that we have received. Thank you very much for coming before the Committee.
Questions to the Department for Environment, Food and Rural Affairs arising from the evidence session of 5 March

The Committee have some further queries in relation to the Nitrates Inquiry:

1. The scientific basis for the figure of 170 in the 170 kg N/ha limit in the Directive, and the scientific basis for the figure of 250 in the 250 kg N/ha limit under a derogation (Q55)

   170 kg limit: Our records do not show how or why the Commission proposed this figure. Records do show that it was very strongly criticised by a number of member states on the basis that “the rainfall assumption did not hold good for all parts of the Community”, indicating that rainfall levels were at least one significant factor in arriving at the figure. The UK saw the 170 limit as too tight, argued for a much more differentiated approach to limits but did not win the argument.

   250 kg limit for grassland in our domestic Regulations: There is some anecdotal evidence that this may have derived from the Water Code of July 1991 where a limit of 250 kg is recommended to help reduce nutrient losses to water from all land (not just grassland). Note that this limit in our current Regulations is not strictly a “derogation” in that we have not gone through the derogation process set down in the Directive. Ministers have made a commitment to apply for a derogation from the 170 kg limit which will be established in the revised Regulations. The derogation limit we seek will be determined by the evidence we are able to put forward which may or may not support a 250 limit.

2. The reason for the different storage capacity requirements for pig slurry and poultry manure, compared with other slurries (Q112)

   Difference in pig/poultry and cattle manure storage requirements:
   (a) More out-grazing of cattle, therefore less manure collected and needing storage.
   (b) Cattle more usually on grassland where there are more opportunities for spreading manure.

   It would also be helpful to have clarification on the following point:

3. In his reply to Q56, Mr Woolas said “we have never ever had” a four-yearly review. But Defra’s consultation document says: “Reviews of the extent of the NVZs and the effectiveness of the Action Programme are required by the Nitrates Directive every four years . . . The Department has just completed its reviews of NVZs and the Action Programme” (1.26–7) Has the Department conducted a four-yearly review or not?

   Requirement for four-yearly reviews: Our records do not show how this figure was arrived at, nor do they show that there was any significant discussion of the review requirements at the time of Directive negotiations.

   Our implementation of the four-yearly review requirement:
   (a) NVZ designations were reviewed in 2001 following a European Court of Justice ruling in 2000 that insufficient NVZ areas had been designated. A second review was conducted in 2006 to meet the four-yearly review requirement.
   (b) The Action Programme was introduced in 1998. A full review was not conducted in 2002 because there was insufficient data available at the time (the NVZ area was increased in 2002 from 8% of England to 55%) to enable a meaningful assessment to be made of the effectiveness of the Programme. The 2006 review met the four-yearly review requirement to review.

   We are aiming to give effect to both reviews in revised Regulations to be made by the summer recess.

4. Does an anaerobic digester count as a form of storage capacity under the Action Programme and contribute to the storage capacity requirement?

   The Directive is concerned with the sufficiency of capacity and does not define requirements as to the form the storage must take. So, the short answer must be yes. Whether Anaerobic Digestion could indeed be useful in helping farmers manage the storage of manures for purposes of the NVZ Action Programme is another matter; the potential is being considered within the Department and, I understand, by the agricultural sector itself.

5. In answer to Q88, Ms Nowak said that “Spain, Italy, UK and Luxembourg currently have action against them by the Commission”

   Prior to the evidence session, I asked Jeroen Casaer at the European Commission which countries had legal action outstanding against them in relation to their implementation of the Directive. He replied this week and said that the UK, Luxembourg and Spain have action outstanding against them, but his list also includes Germany, Ireland and Portugal. He said that the case against Italy had been closed.
Please could you confirm whether Defra agrees with the list provided by Mr Casaer?

We are not able to say whether we agree or disagree. The list I provided at the hearing was from my recollection of a printed list provided to member states at the Nitrates Committee meeting in mid-February 2008. The corrected transcript of the hearing notes shows that my memory was not fully accurate in that I omitted Portugal. A footnote to the printed list states: “For legal reasons, some proceedings at an early stage cannot be mentioned in this table”. It is possible the Commission has progressed/initiated proceedings since the meeting in mid-February and this could account for the differences in the list provided by me and by the Commission.

6. Please could you let me know when Defra publishes its analysis of the consultation responses?

Expected very soon.

Answers received 20 and 28 March.

Supplementary memorandum submitted by the National Farmers’ Union

INTRODUCTION

1. Following our oral evidence session and that of Defra on 5 March 2008, the NFU wishes to draw some further points to the Committee’s attention. These relate to the designation of NVZs and to the proposed new Action Programme.

2. A number of issues with Defra’s proposals remain highly controversial. We believe it is essential that Defra allows sufficient time to deal with the issues carefully and thoroughly, despite pressure from the Commission to move rapidly. The consequences for farmers are potentially very serious.

DESIGNATIONS

3. Defra’s oral evidence suggested that the new designation methodology has been agreed (Q71). This is not correct. The NFU had considerable reservations and our representative made this clear to Defra at the time (see letter at Annex 1).

4. One major concern is Defra’s policy of designating entire river catchments or subcatchments upstream of failing monitoring points, including low nitrate areas such as in the uplands. This approach is not necessary to meet the Directive’s requirements; it was not used in the UK’s 1996 designations and its absence was not challenged by the Commission, even though other aspects were challenged. This is a straightforward policy choice on the part of Defra between larger and smaller designations. Choosing to make larger designations than necessary has major financial implications for many farmers, and yields little benefit in nitrate reductions since levels in these “extra” areas are already in compliance with the Directive.

5. We therefore welcome the Minister’s response to the suggestion that he should review the designation of whole upstream river catchments (or subcatchments) where he commented to the effect that excluding low nitrate parts of catchments seemed common sense (Q64). We agree, and we hope the Committee will encourage the Minister to act on this.

6. We also have wider concerns about Defra’s tendency towards larger NVZ designations. Before agreeing to the Nitrates Directive in 1991, the UK government had negotiated opportunities to reduce the extent of areas to be designated. These opportunities are detailed in a letter from the then Minister, David Trippier, to the NFU after political agreement on the Nitrates Directive was reached at the Environment Council (see Annex 2). Regrettably, it appears that Defra has chosen not to use the opportunities detailed by the Minister to moderate the area it intends to designate, and thus reduce the impact of its NVZ proposals on the farming community.

7. The question of de-designation was also raised in oral evidence (Q74). Since some of the existing designations result from defects in the previous methodology, and the new improved methodology has identified that such areas do not need to be designated, we believe it is important to release affected farmers from the impact of the strengthened Action Programme. The Minister did not rule out de-designation, and we would encourage him to take this course to resolve the current injustice.

8. In view of the use of a new methodology and the much more serious consequences of designation under the revised Action Programme, we are concerned that all affected farmers should have the opportunity to appeal against designation. We welcome the Minister’s indication to the Committee that “the ball is bouncing in that direction”. We can see no reason to deny the opportunity to appeal to any farmer affected by the new proposals.
ACTION PROGRAMME

9. We share the concern that was expressed during the Committee’s questioning of the Minister that five years is insufficient time to evaluate the effectiveness of the existing Action Programme, particularly since about 85% of the existing designations were only made in 2002 and there have been a bare five years for the results to work through.

10. Nitrate trends are important when considering the need for further Action Programme measures because the objective of the Nitrates Directive is to achieve a declining trend. This is not just the view of the NFU, but the considered interpretation applied by Defra. We therefore believe that where nitrate trends are declining, there is no need to strengthen the Action Programme measures.

11. We refute the Minister’s assertion that the situation with nitrate levels is getting worse (Q63). The large majority of NVZ designations involve surfacewater and Defra’s recent consultation documents stated that 77% of surfacewater monitoring sites showed static or declining trends for the latest five year period (1999–2004). It is clear that the downward nitrate trends apparent in official Environment Agency monitoring data in many rivers go back to at least 1990 and pre-date the introduction of Nitrates Directive measures in 1998 (see graphs at Annex 3). They are also evident in catchments without any substantial NVZs until 2002. Changes in farming practices, including the 40% reduction in nitrogen fertilizer use since 1987, together with a reduction in manure applications due to the decline in livestock numbers and much improved crop management techniques and farmer know-how will have contributed to these downward trends. The Urban Waste Water Treatment Directive which deals with emissions (including nitrate) from larger sewage treatment works is likely to have contributed to reductions in some areas, but is subject to a similar timetable to the Nitrates Directive and would not have affected nitrate levels in the early 1990s.

12. Groundwater reacts more slowly than surfacewater and the response time of many aquifers is measured in decades rather than years. Defra accepts this, stating in the consultation that rising groundwater trends are attributable to land use 20–50 years ago, or more. Even so, 27% of groundwater sites are now showing improving trends according to Defra.

13. We have shown our analysis of 15 years of Environment Agency monitoring data to Defra on a number of occasions in the past 2½ years, but it has expressed very limited interest and has given little consideration to data from longer periods than five years in the recent consultation. At the same time, it has dismissed five years as too short a period to obtain reliable results.

14. We welcome Defra’s recognition in its evidence that it has flexibility in applying the Directive’s requirements for the Action Programme, although we consider that Defra is using the flexibility it is afforded too narrowly. Our regular meetings with the Commission indicate that the Commission accepts that nobody can be expected to take actions that are ineffective. However, the Defra consultation recognizes that closed periods would deliver only 0.5–1% reductions in nitrate loss, Defra nonetheless proposes to introduce greatly extended closed periods (and their attendant high storage costs) in all NVZs. We consider such reductions amount to no worthwhile or measurable benefit, particularly when gauged against disbenefits to the environment that are expected to result (see para 20 below).

15. We also welcome Defra’s recognition in its evidence that closed periods should be used to address the period when the risk of nitrate loss is greatest (Q105). Again we have picked up a similar line from the Commission and in particular a concern about the spreading of slurry in October. We believe this allows scope for shorter closed periods than the 3–5.5 months in Defra’s proposals, where the longer periods have been justified by higher rainfall in some areas causing a perceived increase in the risk of gross water pollution from manure run-off. In Ireland, shorter closed periods have been adopted, 3.5 months in the north and 3–3.5 months in the south, whereas it would have been expected that the closed periods would be longer due to the generally wetter climate and longer period of run-off risk than in England. The question arises as to whether Defra is adopting a more rigorous approach than the respective Irish administrations.

16. The inflexibility of closed periods compared to the variability of soil conditions from year to year is a major issue for farmers. There is a substantial risk that farmers will be unable to utilize the best weather windows to apply manures without causing soil damage, and making it difficult for farmers to meet their cross compliance obligations not to cause soil damage. We therefore believe there is a need for flexibility in the dates of closed periods according to the circumstances of the particular year.

17. We remain strongly of the view that it is illogical for Defra to have decoupled storage requirements from closed periods in its proposals. This linkage is contained in the Republic of Ireland’s Action Programme, where less storage is required where the closed period is shorter. The NFU also believes that influence of soil type on manure spreading opportunities should be taken into account in the re-coupling of storage with closed period.

18. The Committee rightly raised the time farmers are to be allowed to achieve compliance, particularly with the manure storage requirement. We have always argued that a longer period is needed than the 2 years Defra proposes due to the time required for planning and securing financing, obtaining planning permission, and to allow for the shortage of suitably skilled construction companies etc. We note Defra concedes in its evidence that inflation in construction costs can occur when a regulatory requirement for facilities is introduced, drawing attention to the experience in Northern Ireland. This inflationary effect is likely to be much greater when the period for compliance is shorter.
19. The Minister advocated farmers adopting anaerobic digestion (Q119), but this type of complex project/plant requires a substantially longer lead time than slurry storage. If the Minister requires farmers to invest in slurry storage in the short term, they are less likely to have sufficient funds to invest in anaerobic digestion in the medium term. A more joined-up approach is required.

20. We would also ask the Committee to consider the perverse environmental effects expected as a result of Defra’s proposals. The consultation estimates that ammonia emissions will be increased by up to 2%, amounting to an extra 5,720t. Defra’s consultation documents cite the costs of ammonia damage of up to £37,000 per tonne, so the damage costs from the increased ammonia emissions alone would be up to £212 million per annum. We are aware of concern amongst researchers that the proposed manure spreading measures are likely to cause higher levels of ammonia in rivers leading to exceedence of the ammonia standard in the Freshwater Fish Directive. We know of no evidence that nitrate is killing fish under current circumstances as the Minister suggested (Q92). In addition, the Environment Agency has expressed concern about additional greenhouse gas emissions from the revised Action Programme in its response to Defra.

21. We would also ask the Committee to consider the potential for further impact of the NVZ Action Programme on the Entry Level Stewardship scheme (ELS). This has already led to Management Plans being withdrawn from ELS under Commission pressure as a result of perceived overlap with NVZ Action Programme requirements. We are concerned that Defra’s cover crop requirements may run a similar risk and impact on the winter stubble option for wild birds under ELS. We have recommended adopting cover crops as an ELS option rather than as a requirement of the Action Programme. This may avoid the risk of interactions.

22. The negative environmental costs, in addition to the social and economic costs of the revised Action Programme, appear to make the net benefit for society very questionable.

April 2008

Annex 1

LETTER DATED 30 AUGUST 2006, FROM THE NATIONAL FARMERS’ UNION TO THE DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS

NITRATES DIRECTIVE ISSUES

The NFU has concerns about the way Defra is implementing the Directive, both in respect of the new designation methodology and the Action Programme.

REVIEW OF DESIGNATIONS

Last year, Defra invited stakeholders to attend the Nitrates Assessment Technical Group and the Steering Group overseeing the review of designations. The NFU had serious concerns about the shortcomings of the previous methodology and the way it was operated, and it welcomed the invitation. I attended all the meetings and played an active role. Some of those shortcomings have been addressed. But some issues of concern to the NFU emerged in the Groups’ final stages. These are as follows:

— De-designation not discussed: I had raised de-designation at the Technical Group and it was agreed that this would be referred to the Steering Group. This never happened.

— Designation of entire upstream catchments: The early recommendations from the Technical Group to the Steering Group meeting of 24 January provided for not automatically designating entire upstream catchments. This possibility was effectively removed from the final designation options because the EA informed the meeting that it had not had time to develop the option of which this was part, adding that there was “no appetite” for pursuing this. The NFU has always considered the policy of designating the whole upstream catchment introduced at the 2002 review, as an important issue. We had earlier been assured by Defra that this was up for discussion.

— New principle used for GW designation without discussion: A new principle for defining boundaries based on direction of flow within groundwater bodies emerged during the course of my questioning during the final meeting. This had not been disclosed or discussed with the Technical Group previously, and results in a significant expansion of boundaries in many cases. Stakeholders and peer reviewers had clearly been excluded from the decision to use this technique.

— Short-comings in the Groundwater database: It emerged—again as a result of my questioning—that the database still includes monitoring sites which are no longer active. This is despite my having been previously assured that all inactive sites had been removed. This means that any improvements in nitrate levels at such locations will not be taken into account in the designation process.

— Operation of the methodology: Development of the practical outputs has been a closed process. The EA was willing for the NFU to observe example area workshops dealing with this, but Defra overruled the EA and would not let the NFU attend. One of the NFU’s biggest concerns about the
previous round of designations was shortcomings in the way the methodology was operated. Defra’s decision to maintain a closed process has not helped in rebuilding the NFU’s confidence in the way the methodology is applied.

Given these concerns, the NFU would be unable to support the new methodology proposed.

I am conscious that the Steering Group provides recommendations, and that Defra itself takes the final decisions. I would therefore welcome a final opportunity to address these concerns and to understand fully how Defra has decided to proceed. I will then be able to advise the NFU on an appropriate reaction.

**Action Programme Review**

You are aware that the NFU has concerns regarding the AP measures Defra has put forward. I will not rehearse these again, but feel I do need to register the NFU’s disappointment at the way in which Defra has carried out its consultation with farmer organisations.

Pre-consultation with the industry by Defra is welcome, but the NFU does not feel that it has been genuinely consulted. Little of what the NFU, or indeed the other farming organisations, have said appears to have been taken on board or made any impact. Regrettably, the impression the NFU is left with is that Defra has used the process to “soften up” the industry in respect of the much harsher measures likely to be introduced.

**M R Payne**

**Annex 2**

LETTER DATED 4 JULY 1991, FROM THE DEPARTMENT OF THE ENVIRONMENT TO THE NATIONAL FARMERS’ UNION

**EC Nitrate Directive**

We briefly discussed the Nitrate Directive during our meeting on 26 June. I was grateful for your kind words about our success in negotiating changes to the Directive.

You wrote to me on 10 June. John Gummer and I both welcomed the opportunity to discuss your concerns about the Nitrate Directive before I went to the Environment Council. I took very careful note of your concerns, and I made a point of drawing other Member States’ attention to the need for the Nitrate Directive to strike a fair balance between improving water quality and maintaining an efficient agriculture. I hope that we will be able to involve the NFU in the work we must now undertake to implement the Directive.

The original Commission proposal would have forced Member States to introduce measures beyond fertiliser limits and controls on manure with little discretion on what these further measures should be. In effect it would have forced the introduction of costly measures such as set aside without regard to the wider consequences for the economy or social conditions.

The final text has been greatly changed in response to the concerns of the UK and other States about this. The choice of further measures is now at the discretion of the individual Member State. If we needed them, we would have regard to their cost, their effectiveness and the extent to which nitrate from agricultural sources was likely to cause concern to human health, harm to living resources and to aquatic ecosystems, damage to amenities or interference with other legitimate uses of water. That is exactly what the Directive requires.

Nothing in the Directive will affect the role of the water industry in tackling the nitrate problem—indeed the recently adopted Urban Waste Water Directive imposes fresh obligations on the industry.

As you know, on surface water, with some difficulty, I was able to get other Member States and the Commission to agree that monitoring to assess compliance with the Nitrate Directive would be at the same points as in the existing Surface Water Abstraction Directive. This was a major improvement to the Directive and one that allows us to limit the size of vulnerable zones. It provides the opportunity to limit the effect of seasonal peaks in nitrate concentration by allowing measurements to be made after blending of water in reservoirs. We will press the water supply companies to ensure that, so far as possible, the choice of monitoring points properly reflects the wider requirements for the UK.

I was also able to negotiate a change to the provision on manure limits. The limit in vulnerable zones may now be 210kg N per hectare for each of the first four years, reducing to an annual rate of 170kg N per hectare thereafter. However Member States have scope to fix different amounts, on the basis of objective criteria, for example, where soil has a high denitrification capacity or crops have high nitrogen uptake. This additional flexibility is a major achievement, and one that you particularly asked me to seek.

You asked about the possibility of paying compensation to farmers in vulnerable zones. I have discussed the position with John Gummer. We are four years away from the announcement of action programmes in vulnerable zones, and there is a further four years to implement programmes. All that I can say now is that
the underlying Government policy for purposes of the pilot national nitrate scheme was, as you know, that farmers should not be compensated for complying with good agricultural practice, but that they should be compensated for substantial restrictions beyond good agricultural practice.

I am copying this letter to John Gummer.

*David A Trippier MP*

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**Annex 3**

**Nitrate Trends**

Nitrate trends from selected rivers showing range of examples of declining trends between 1990 and 2005, and one example of an upward trends from a groundwater-fed river, the Wensum.

The data is official EA monitoring data. The left hand scale is in mg of nitrogen per litre of water. On this scale, 11.3 is equivalent to 50 mg nitrate per litre of water.

![R. Avon at Tewkesbury 1990-2005](image1)

\[ y = -0.0062x + 11.323 \]

![R. Trent at Keadby (tidal) 1990 - 2005](image2)

\[ y = -0.0004x + 22.69 \]
R. Weaver at Northwich 1992 - 2005

\[ y = -0.0004x + 24.158 \]

R. Nene at Peterborough 1990-2005

Nitrate as nitrogen. EA data

R. Thames at Goring Weir 1990-2005

\[ y = -0.0002x + 13.717 \]
R. Aire at Snaith - 1992-2005
Oxidised nitrogen. EA data

R. Cherwell at Grimsbury Intake - 1990-1998
\[ y = -0.0008x + 6.6531 \]

R. Cherwell at Grimsbury Intake - 1999-2005
\[ y = -0.026x + 7.7583 \]
R. Slea - Anwick 1990-2002
(Nitrate as N  11.3 mg/l N = 50 mg/l nitrate)

R. Wensum - New Mills 1990-2001

y = 0.0003x - 5.069
Written evidence

Memorandum submitted by Alan S Monckton

I have been informed that you are the MPs selected to consider a request from Defra to approve their proposal to extend NVZs, subsequent to a public consultation. Please vote against this for the following reasons:

2. Water Framework Directive 2000 includes Nitrate Directive 1991, and has changed or cancelled many of its relevant terms. Any consultation should have been under what is now the law.
3. Defra seek to extend their bureaucratic empire, without relating the relevant facts to any of the new land. Defra have no idea which land should or should not qualify under Water Framework Directive 2000.
4. Defra know that any public consultation under WFD 2000 would highlight the incompetent way in which they have administered NVZ areas. By pretending that ND 1991 should be used, the relevant terms of WFD 2000 do not form part of the sham consultation.
5. One example, of several, of Defra’s incompetence, which would be highlighted in a consultation on WFD 2000 is that Defra have failed to remove huge areas from NVZs which have no technical reason to be in them. These areas are of light, often sandy land, where nitrate and rainfall seep by gravity into the subsoil, and do not run into rivers; after which any nitrate is harmless both to health and to the Environment.
6. Defra hid from the consultation one key matter—but are slyly using it in discussions behind the scenes. They pretend that unless we act soon to increase NVZ areas under ND 1991 the EU will sue us for damages (as they did in the 1990’s). This is not true, because the EU could not/would not sue us under a Directive which does not now exist, nor under those parts of it which remain unamended in WFD 2000. Any lawcase under WFD 2000 would be unlikely to proceed, because it gives us the power to change NVZ areas on a factual and scientific basis, not on a bureaucratic box-ticking basis.
7. The 1990s case was lost by us. Why? Because Defra forgot (or “omitted”) to enter a defence. Sheer incompetence, and what is the betting that if a new case were started, they would be equally useless?
8. So please vote against extending Defra’s bureaucratic empire, solely to provide more “jobs for the boys” without any benefit to anyone else; and tell them that if they want to extend their red tape they should start by public consultation under the correct law which is WFD 2000.
9. If you are interested in reading the background facts on why Nitrate was wrongly treated like a poison, read the Royal Agricultural Society of England Journal, Volume 163, 2002, pp 45–51. Defra have known these technical facts since 2000, they put them on their website then.

Summary

Defra should not be allowed to use the wrong EU Directive (ND 1991) to increase red tape areas and costs, without public consultation on the correct EU Directive, which would permit consideration of matters outside the ambit of any parts of ND 1991 which remain unchanged by Water Framework Directive 2000.

January 2008

Memorandum submitted by the Salmon and Trout Association

Executive Summary

1. Thank you for giving the Salmon and Trout Association (S&TA) the opportunity to respond to the inquiry into the Implementation of the Nitrates Directive in England. The S&TA is an international organisation representing the interests of 100,000 individual and club-based game anglers, fishery owners, managers and affiliated trades throughout the United Kingdom. We are especially concerned with promoting and communicating the environmental, social and economic benefits of game angling and fisheries management.

2. Eutrophication is a very serious problem to waterbodies, with nitrates and phosphates from agriculture being the principal contributor. Eutrophication destroys aquatic food-webs and biological diversity, by starving the organisms of oxygen. Treatments and remedies are often impractical, temporary and costly; making it imperative that we treat the causes of eutrophication to prevent it occurring in our waterbodies in the first place. We therefore support integrated, holistic management of diffuse pollution, and believe that nitrates and phosphates should be considered together, as effective prevention of eutrophication requires all nutrient discharges to be controlled.
3. Overall the S&TA supports the revised Action Plan proposals to reduce fertiliser and manure usage on farms, and improve slurry storage capacities. We support applying the revised Action Programme throughout England, and strongly support the introduction of the revised plans in April 2008.

4. We believe the enforcement of new and existing regulations is an important step in achieving successful reductions in diffuse pollution. To achieve this we wish to see greater cross-compliance across the Common Agricultural Policy (CAP), with the use of more targeted General Agricultural and Environmental Conditions (GAECs). This would increase the farmer’s incentives to comply, and add leverage to the competent authority’s ability to reduce diffuse agricultural pollution. We would also like Defra to identify from where the necessary resources to facilitate this Directive will come.

Our responses to the individual questions set out in the inquiry are as follows:

5. Has Defra’s implementation of the 1991 Directive been adequate; and how have levels of nitrate pollution changed since the Directive came into effect? How effective has the current Action Programme been in reducing nitrate pollution?

By Defra’s own admission nitrate levels generally have shown little reduction in spite of the regulations imposed under the 1991 Nitrate Directive. We feel this is because the current measures and their limited coverage have not been adequate. This is made worse by the decreasing resources being made available to the regulating authority, the Environment Agency, to monitor and enforce the already limited regulations adequately.

6. Defra says that the area designated as Nitrate Vulnerable Zones (NVZ) needs to increase from 55% to 70% of England: is it right?

The S&TA supports Defra’s proposals to extend the area beyond the current 55%, as this is clearly inadequate. However, we feel there are excellent reasons for extending the Programme’s measures throughout the whole of England.

7. Whether the proposed Nitrates Action Programme measures should apply throughout the whole of England, rather than only on land designated as Nitrate Vulnerable Zones

The S&TA fully supports applying the revised Action Programme throughout England. We feel this will create a level playing field for all farmers and avoid problems with de-designation and determining boundaries. A 100% designation would send a clear and simple message to everyone that this is a serious problem which requires attention now. There also appears to be difficulties identifying the correct land to designate, therefore applying measures nationally would ensure all vulnerable sites are covered, and would make it easier to cooperate these measures with other Defra measures to reduce diffuse pollution sources.

8. Currently many of the UK’s salmon and trout rivers are outside designated NVZs. We feel that applying the Action Programme throughout England can only benefit fisheries, in that it will undoubtedly bring nitrate levels down in watercourses and lakes. We believe this measure will also have wider benefits; for example improving slurry storage will reduce the frequency of accidental pollution incidents. This can only be beneficial to the ecology of rivers and lakes in the future, and in meeting the objectives set out in the Water Framework Directive (WFD).

9. Regulations, however important, that cannot be enforced will never achieve the required results, with failure to observe them playing a lesser role.

10. What should be the timetable for introducing any changes in the way the Nitrates Directive is implemented?

The S&TA strongly supports bringing the regulations into force on the suggested date of April 2008, as measures such as fertiliser and manure spreading can be adopted straightaway. Obviously, farmers will require more time for measures, such as constructing slurry tanks. However, we feel this timetable is currently too vague and, if there is to be some temporary relaxation, the conditions under which they can be allowed must be rigidly defined.

11. What are the costs and benefits of Defra’s individual key proposals for the revised Action Programme, namely: whole farm manure nitrogen loading limit, closed period (organic manures), manure storage, closed period (manufactured nitrogen fertilizers), crop nitrogen requirement limit, spreading locations, spreading techniques, record keeping and cover crops. Should any of these be abandoned or modified?

The S&TA welcomes the strengthening of the Action Programme, and believes they represent the minimum requirements needed. We strongly support the need to reduce fertiliser and manure usage on farms, and improve slurry storage capacities.
12. We also support the inclusion of cover crops to minimise bare sediment exposed during the winter period. We feel this would not only help reduce excess nutrients, such as nitrates and phosphates, and agrochemical contaminants, such as sheep dips, reaching the river systems, but would also reduce sedimentation of watercourses in heavy rainfall events. Excess sediment in rivers causes major problems to fish populations, particularly salmonids, where smothering of spawning gravels and oxygen deprivation of eggs and fry, result in reduced reproductive success. We feel guidance into cover crop management would be required, though, to ensure no other net negative environmental impacts would occur; for instance, during the destruction of the cover crops.

13. **What advice and support will farmers need from Defra to implement a revised Action Programme?**

    We feel farmers will need clear, comprehensive, written advice, explaining what they will be required to do, how they can achieve it, the penalties of non-compliance, and the benefits of following the guidelines. This support should also be backed up with technical visits.

14. **How can Defra encourage greater adoption of anaerobic digestion as a way of managing manure?**

    The S&TA supports the idea of anaerobic digestion and feels it could be an effective way of managing manures, as long as the scale of the operation is large enough to be viable and the location of any plant is close enough to the supply of manure, for the operation to meet sustainability principles.

15. We feel the main barriers in its uptake are financial rather than technical. We therefore believe funding or incentives schemes would be required to facilitate greater uptake. Educating the farmers of the process of anaerobic digestion and its benefits are also an important step to gain support for the initiative.

16. **How the proposed new Nitrates Action Programme is affecting those with existing Entry Level Stewardship agreements in existing Nitrate Vulnerable Zones.**

    N/A

    January 2008

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**Memorandum submitted by the Royal Society for the Protection of Birds**

**EXECUTIVE SUMMARY**

1. The RSPB seeks a reduction in diffuse nitrate pollution from agriculture because of the long-term impact that this nutrient poses to natural and semi-natural habitats, and the birds and other wildlife that depend on them.

2. The RSPB recommends that Defra applies the Action Programme to the whole of England in order to: realise administrative, communication and equity benefits; simplify integration with other diffuse pollution measures and objectives; and comply with other Directives.

3. The RSPB opposes the proposed blanket requirement for cover crops to be sown on land which would otherwise be left with stubbles over winter. This proposal will cause a loss of seed resources for seed eating farmland birds which depend upon uncropped stubbles left over winter. Instead we propose a risk based approach whereby the requirement for cover crops applies only to bare soils or to maize stubbles (a crop with high erosion risk).

**INTRODUCTION**

4. The Royal Society for the Protection of Birds (RSPB) has practical experience of nitrate fertiliser and organic manure use on our landholdings (c 137,000 ha). A recent RSPB report identified that increased levels of nutrients, including nitrates, are adversely affecting natural and semi-natural habitats in the UK, reducing the diversity of plants and invertebrates in our countryside. It further highlighted the impact of eutrophication on habitats and reserves such as the RSPB’s Loch of Strathbeg and Ouse Washes, and also found that “strong causal links exist, in a number of cases, between nutrient pollution and knock-on effects on the food chain of wildlife, including birds”. Declines in the populations of species such as the corncrake, cirl bunting and bittern, are all, in part, due to nutrient use from agriculture.

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1 *Force-Feeding the Countryside: the impacts of nutrients on birds and other biodiversity*, MacDonald MA, Densham JM, Davis R and Armstrong-Brown S, 2006, RSPB.
5. Nitrate levels caused by diffuse pollution are increasing the cost of treating water and making some sources of drinking water unusable. Water companies will, in the period 2005–10, spend over £300 million (£288 million capital expenditure, £6 million per annum operating expenditure) to reduce diffuse nitrate pollution. Nitrate removal plants as well as being costly to build and maintain are also energy intensive and will add to the water industry’s growing carbon footprint.

IMPLEMENTATION OF THE NITRATES DIRECTIVE

6. To date incomplete implementation of the Nitrates Directive in the UK has created conflict with the European Commission and put the UK’s Rural Development Programmes at risk. Given this, the scale of the pollution problem for wildlife and the water industry and the forthcoming demands of the Water Framework Directive (WFD), we would argue that the UK administrations should take decisive action and move towards full implementation of the Directive.

APPLYING THE ACTION PROGRAMME TO THE WHOLE OF ENGLAND

7. The RSPB recommends that Defra applies the Nitrate Vulnerable Zone (NVZ) Action Programme to the whole of England because it will provide the following benefits.

It will:

(i) Provide significant benefits through ease of administration and enforcement for the Environment Agency.

(ii) Benefit the farming industry by creating a level playing field for all farmers.

(iii) Avoid any detrimental impact on land prices for farmers within NVZs.

(iv) Communicate to all farmers and landowners that nitrate pollution is a serious problem and avoid the potential for some to think that as they are not in an NVZ their practices are definitely non-polluting.

(v) Create an incentive for all farmers in England to produce a full nutrient management plan and thereby reduce nutrient surpluses, reduce pollution risk and make efficiencies on their farm.

(vi) Not prove overly burdensome to many of the farmers who fall outside the proposed 70% area designation as many of these farmers engage in practices which do not have a large impact on water quality.

(vii) Be possible to facilitate better regulation to the farming industry by combining the NVZ Action Programme with General Binding Rules in England. This will create a baseline regulatory package for the protection of waters against pollution from agriculture covering 100% of England. General Binding Rules (under WFD legislation) could be targeted to control diffuse phosphorus, Faecal Indicator Organisms and other pollutants.

(viii) Support compliance with other related Directives and ensure early action is taken to achieve water quality objectives. For example:

(a) Water Framework Directive: Interim European guidance suggests bodies that fail to meet Good Ecological Status under the WFD due to enrichment should be considered eutrophic and this, in turn should trigger NVZ designation where agricultural nitrate is the driver. Therefore, an Action Programme applied to the whole of England would help the UK comply with the WFD.

(b) New Groundwater Directive: It sets a 50mg/l threshold value for all groundwater bodies, irrespective of their designation as NVZ.

(c) OSPAR: Applying the NVZ Action Programme to the whole of England would take the UK one step closer to fulfilling its OSPAR commitments to achieve a 50% target for reducing nutrient input into waters that are likely to be polluted.

COVER CROPS

8. The proposed requirement for cover crops in the NVZ Action Programme will cause a loss of seed resources for seed eating farmland birds which depend upon uncropped stubbles left over winter. This would threaten Defra’s ability to meet its target to reverse the decline in farmland birds, which contributes to its new Natural Resources PSA target. The proposal is also in direct conflict with many Biodiversity Action Plan targets for farmland wildlife which rely on winter stubble fields. The proposed requirement would have a negligible effect on nitrate leaching, and would come into conflict with the agri-environment measures which incentivise stubble retention for its environmental benefits.

2 Ofwat final price determinations from AMP4—November 2004.
PROPOSED CHANGE TO THE WORDING OF THE ACTION PROGRAMME PROPOSAL

9. We propose the following alternative wording for the Action Programme:
   — Cover crops or natural regeneration on stubble (not maize stubble) must be retained over winter unless:
     — winter crops are sown, and
     — the previous crop will be harvested after 1 September.
   — Sow a cover crop before 15 September on land where soil would normally be left bare (ie with no stubble).
   — Cover crops must then not be destroyed until after 31 December.

RATIONALE FOR OPPOSING THE PROPOSED REQUIREMENT

10. Defra’s own supporting documentation to the Nitrates Directive consultation indicates that set-aside land leaches less nitrate than land sown with cover crops and land sown with a winter cereal crop, in that order. Over-winter stubble was not included in this study but as there is no practical difference between set-aside and over-winter stubble during the post-harvest period and autumn, the conclusion must follow that stubbles represent a lower nitrogen leaching risk than cover crops.

11. Over-wintered stubbles are an important seed resource for many farmland birds, particularly seed-eating passerines, such as the skylark, corn bunting and grey partridge. Recent loss of set-aside is predicted to have a significant impact on seed eating birds, which has been the subject of recent Ministerial statements, and the Secretary of State has charged Sir Don Curry with overseeing the environmental outcomes. Legislating against over-winter stubble will exacerbate the problems faced by farmland birds and expose Defra to accusations of poor environmental leadership.

12. The nitrogen leaching impact of the current small area of over-winter stubbles is minute in comparison to the impact from nitrate leaching from land sown with winter crops.

13. Defra proposes that the Action Programme requires farmers to calculate “N max” of crops and carry out full nitrogen management planning. This should result in minimal surplus nitrogen remaining in the soil following harvest and therefore over winter stubbles will leach much less nitrogen than is currently the case post harvest. Defra’s consultation did not consider this.

14. The proposal would conflict with climate change objectives because it would result in additional greenhouse gas emissions and soil carbon mineralization from the cultivation of stubbles and cover crop sowing.

15. Over-winter stubble is incentivised within a number of options in Defra’s Environment Stewardship scheme. Loss of these important options would result in loss of important habitat but also require the renegotiation of a substantial number of agreements.

16. Due to the natural regeneration and rough surface of over-winter stubbles they can, in the majority of cases, have a positive impact on reducing other forms of diffuse pollution, such as erosion and run-off.

ANAEROBIC DIGESTION

17. The RSPB believes that Defra should incentivise this emerging form of green energy within the dual contexts of the need to reduce nutrient surpluses and to develop green energy technology. Anaerobic digestion can help to process some of the current organic nutrient surpluses seen and convert them into useful energy and nutrient resources. To do this there must be an incentive to utilise mixed waste streams as feedstocks. In order to maximize environmental benefits, anaerobic digestion should be promoted where best practices demonstrate multiple environmental benefits and no environmental damage.

January 2008

Memorandum submitted by the Woodland Trust

1. The Woodland Trust welcomes the opportunity to submit written evidence to this inquiry. The Trust is the UK’s leading woodland conservation charity. We have four main aims: no further loss of ancient woodland, restoring and improving woodland biodiversity, increasing new native woodland and increasing people’s understanding and enjoyment of woodland. We own over 1,000 sites across the UK, covering around 20,000 hectares (50,000 acres) and we have 300,000 members and supporters.

3 Diffuse nitrate pollution from agriculture—strategies for reducing nitrate leaching. ADAS report to Defra—supporting paper D3. Figure 3.12. Page 17.
Executive Summary

2. The Woodland Trust believes land use mechanisms will be crucial to achieving the aims of the Nitrates Directive and believe that permanent uncultivated buffers are an efficient and cost effective means of reducing the levels of nitrates in waters. Such buffers should include grass, scrub and trees as appropriate. However trees and woodlands are particularly effective in reducing nitrates and other pollutant levels in water.

3. We provide below further evidence of the benefits of tree and woodland buffers to water quality from several studies as contained within research recently conducted for the Woodland Trust.

Overall Comments

4. Our comments focus on the costs and benefits of the proposals for the Action Programme. They are based on the premise that further measures are needed to reduce nitrates in water as current measures have not had a significant impact on nitrate pollution and nitrate pollution is increasing in some areas.

5. We welcome the strengthening of the Programme; however we believe further measures are needed in order to meet the aims of the Nitrates Directive and our obligations under the Water Framework Directive.

6. We believe that land use mechanisms could play a crucial role in achieving the aims of the Directive. Defra proposed cover crops as a land use mechanism in the recent consultation however we believe permanent uncultivated buffer strips adjacent to surface water or pollution sources would be the most efficient and cost effective way to reduce the nitrate load of waters.

7. The provision of buffer strips is provided for under part 5 of Article 5 of the Directive. This part deals with additional measures necessary to achieve the Directive. One mechanism for implementation of this could be cross compliance given that SMRs require compliance with EU Directives/Regulations.

8. Such buffer strips should include grass, scrub and trees where appropriate. Trees and woodland are particularly effective at reducing nitrates and other pollutant levels in water as recent research for the Woodland Trust has shown.

9. In detail: Broadleaved woodland can provide an effective nutrient buffer for water draining adjacent land, especially in riparian zones. It is effective at removing nitrate in drainage water, particularly when flow is through the upper soil. For example, one study found a 30 metre riparian woodland buffer removed nitrate to less than detection levels in shallow groundwater by the River Garonne in France. Another study similarly demonstrated that 99% of nitrate draining from arable fields in southern England during winter was retained within the first five metres of a buffer planted with poplar. Nutrient uptake is strongest during younger stages of growth and declines rapidly with age. Riparian woodland buffers are also effective at intercepting phosphate in drainage waters, especially that carried by sediment.

January 2008

Memorandum submitted by Natural England

Executive Summary

The impacts of nutrient enrichment and siltation on water and wetland habitats, in both freshwater and coastal ecosystems, are major nature conservation problems. They also have a wider environmental and social impact, affecting drinking water supply, flood risk, fisheries, recreation and tourism. Recent studies have shown that agricultural activities contribute approximately 60% of nitrogen entering rivers in England.

Natural England believes the proposed methodology for NVZ designation and subsequent Action Programme is not suitable for addressing nitrogen-related eutrophication in saline or fresh waters. While there may be small nominal reductions in nitrogen loading resulting from nitrate action programmes, the...
current application of the Directive is unlikely to tackle eutrophication risks and impacts. The 50mg/l drinking water criteria used for designation, has no ecological relevance and the science behind the 70% designation is imprecise. We call for a baseline layer of regulation covering 100% England to reduce diffuse pollution from agriculture and greater integration between the Nitrate Action Programme and other related policies for diffuse water pollution.

Natural England is concerned about the predicted 0.2–2% increase in ammonia emissions (as a result of the extended closed period and subsequent manure spreading in warmer months) and the proposed use of cover crops, and seeks further discussion with Defra on these issues.

IMPLEMENTATION OF THE 1991 NITRATES DIRECTIVE

1.1 The recent negotiations to secure RDPE approval have been influenced by the European Commission (EC) view on the adequacy of Defra’s implementation of the Nitrates Directive. In recent Q&A, Defra stated that the EC has for some time been extremely concerned that England has not adequately implemented the Nitrates Directive. This has adversely affected the recent RDPE negotiations and resulted in changes to the programme in order to secure EC agreement. Without making these changes, including scheme requirements related to the proposed (within the Defra consultation) revisions to the Nitrates Action Programme to agreements in existing NVZs, Defra would not have secured approval for the Environmental Stewardship (ES) scheme. The changes will apply to all future ES agreements under RDPE as well as provisional ES Scheme agreements made from 1 January 2007.

EFFECTIVENESS OF THE CURRENT NITRATES ACTION PROGRAMME (NAP)

2.1 Natural England believes that protecting water resources from agricultural emissions is essential for a sustainable environment. The impacts of nutrient enrichment and siltation on water and wetland habitats, in both freshwater and coastal ecosystems, are major nature conservation problems. They also have a wider environmental and social impact, affecting drinking water supply, flood risk, fisheries, recreation and tourism. The consultation details recent studies which have shown that agricultural activities contribute on average 60% of diffuse nitrate, 25% diffuse phosphorus, up to 75% of sediment and 25–50% of bacterial pollution entering river systems, and more than 85% of ammonia emissions. The UK continues to have one of the highest levels of nitrate pollution in the European Union. The cost of treating water to meet drinking water requirements in respect of nitrates between 2005 and 2010 is estimated to be some £288 million in capital expenditure and £6 million in operating expenditure. The cost of environmental damage to river and wetland ecosystems and to natural habitats is estimated to be some £716 million to £1.3 billion per year.

2.2 The Defra consultation documents detail the measured reduction in N pollution resulting from current action plans. Although small reductions in loading have been reported, Natural England believes the proposed methodology for NVZ designation and subsequent Action Programme is not suitable for addressing the issues of nitrogen-related eutrophication in saline or fresh waters. We believe that the 50mg/l drinking water criteria used for designation, has no ecological relevance. The partial RIA makes no mention of the ability of the NAP proposals to meet the drinking water standard, or any other standard. This results in an Action Programme aimed at tackling nitrites, which is not based on controlling nitrogen-related eutrophication, but merely reducing nitrate levels towards an undefined goal.

2.3 The partial RIA predicts a 5–15% reduction in nitrate loss from implementation of the revised NAP. Natural England believes this will fall a long way short of addressing nitrogen-related eutrophication in saline or fresh waters.

2.4 In considering the freshwater environment there is evidence (James et al 2005) to suggest that the current eutrophication management approach which relies on phosphorus control, may not be sufficient to restore plant biodiversity in all instances and that parallel control of nitrogen may be needed in these cases (eg for dystrophic and perhaps other upland lakes). Furthermore, where nitrate levels need to be reduced to control freshwater eutrophication, concentrations would need to be reduced to 1–2 mg/l N to limit plant growth (based on conversion from current phosphorus threshold values using N:P ratios typically found in aquatic algae), these are much lower levels than the drinking water standard for nitrate-nitrogen of 11.3 mg/l (NO3N-N). Current nitrate levels in freshwater across much of England are largely either in excess of the drinking water standard or at risk of exceeding it.

2.5 In considering saline waters, the partial RIA does not detail the scale of saline waters at risk from, or impacted by eutrophication, or the extent of N reduction required to tackle this in England. In saline waters, it is widely acknowledged that nitrogen is generally the limiting nutrient for primary productivity, and as such, standards have been developed to support good ecological status for transitional and coastal (TraC) waters under the Water Framework Directive. Nearly 80% of English waters have N levels in excess of the draft standards proposed, thus highlighting the degree of N enrichment. The Environment Agency, through its review of consents (ROC) project, has also identified a number of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) which are impacted by marine eutrophication. In many cases,
the relative contributions from diffuse sources of N are far higher than the consented point-sources. The Environment Agency is developing action plans for these impacted sites, and will be seeking a “proportionate” reduction in N load from licensed point sources, with an expectation that a proportionate reduction will also be required for diffuse sources of N if desired environmental outcomes are to be met. Natural England believes the proposed NAP will fall short of addressing nitrogen-related eutrophication in saline waters.

2.6 There is a clear need for better integration between the Nitrate Action Programme and the Water Protection Zone (WPZ) policy mechanisms and wider programmes such as the UK strategy on pesticides and the sheep dip pollution reduction programme. Natural England feels that there is a strong justification to develop a robust “broad and shallow” regulatory mechanism and a more highly targeted “narrow and deep” mechanism that can work in combination to tackle diffuse water pollution from agriculture. Pragmatically, the NAP could be seen as the broad and shallow mechanism for nutrients (not just nitrates), whilst policy mechanisms such as Water Protection Zones (WPZs) could be deployed on a catchment or sub-catchment basis to deal with more targeted measures for all diffuse pollutants (including nitrates) that are beyond the scope of the NAP and the Nitrates Directive.

PROPOSED 70% NITRATE VULNERABLE ZONES COVERAGE

3.1 The location of the proposed NVZs covering 70% of England does not appear to offer adequate protection to a number of SACs and SPAs (ie Natura 2000 sites), and SSSIs that either have a known risk of, or show signs of eutrophication. Furthermore, we consider the science and methodology behind the proposed 70% designation to be imprecise. Comparing the current review with the NAP review in 2002 highlights the inaccuracies in the methodology. Defra’s consultation in 2002 asked for views on 80% or 100%, (which subsequently translated to NVZ coverage of 55%) whereas the current review suggests 70% or 100% coverage. Natural England believes the Action Programme should provide a baseline layer of regulation throughout the whole of England.

ISSUES ARISING FROM SPECIFIC ACTION PROGRAMME MEASURES

4.1 Closed period (organic manures)

4.1.1 We have concerns about the potential 0.2–2% increase in ammonia emissions as a result of the Action Programme measures. Nitrogen deposition remains a significant risk to semi-natural vegetation, including rare habitats and species protected under national and European legislation. The increasing significance of ammonia was highlighted in the NEGTAP report (2001), and agricultural sources of atmospheric ammonia are becoming increasingly important as action is taken on other pollutants such as NOx and SO2. Recent work to underpin assessments by the Environment Agency of impacts on Natura 2000 sites under the Habitats Directive has confirmed the significance of ammonia for designated sites. We consider there is now a pressing requirement for an ammonia strategy to act in parallel with action under the Nitrates Directive to ensure a coordinated approach to managing emissions of ammonia from agriculture

4.2 Cover crops

4.2.1 We do not support the use of cover crops to replace over-winter stubbles. There is no consideration given within the partial RIA to the impact of cover crops and the potential loss of habitat. The requirement to sow cover crops would conflict with agri-environment options which incentivise over-wintered stubbles. Approximately 65,000 hectares (end Dec 2007) of over-wintered stubble land is managed under the environmental stewardship scheme. In some regions this may represent a significant percentage of the total area of land deemed suitable for cover crops. The Nitrates Directive does not explicitly require cover crops to be included in the Action Programme. We will seek further discussion with Defra on cover crops in order to prevent any loss of this valuable habitat for farmland birds. Further information in relation to the impacts of the widespread adoption of winter cover crops on arable biodiversity can be found in the Appendix.

4.2.2 Taking account of land use within NVZs, the estimated average nitrate reduction gained by using cover crops was calculated as 4–7%, and could be as much as 12% in arable groundwater catchments. The total estimated nitrate reduction from the entire package of measures is estimated at 5.5–15.5%. According to the estimates, within the RIA, cover crops represent the single measure contributing the highest average nitrate reduction. However, as the partial RIA does not consider biodiversity requirements such as the target for farmland birds (under the new Natural Resources PSA), this estimate is likely to be far higher than what is actually achievable.

4.2.3 Natural England also questions the application and benefits of cover crops on heavier soils where the object of autumn ploughing is to utilise winter frosts to weather the soil, thereby using nature rather than diesel to create the seed bed. Without the benefit of frost action, additional cultivations, herbicides and pesticides will be needed. The partial RIA does not consider this potential increase in the carbon footprint.
REFERENCES


January 2008

APPENDIX

POSSIBLE IMPACTS OF THE WIDESPREAD ADOPTION OF WINTER COVER CROPS ON ARABLE BIODIVERSITY

ASSUMPTIONS

Up to 20% of tillage area will be covered with a sown cover crop as opposed to being bare land/stubble (note: not sure if estimates include land managed as naturally-regenerating rotational set-aside, a major source of stubbles). The cover crop will be established by mid-September and destroyed in the following January/February, after which a spring crop is grown. The stubbles following late harvested arable crops (eg sugar beet/maize) will not be planted with cover crops. The use of cover crops might reduce the use of organic manure on arable fields.

IMPACTS ON FARMLAND BIRDS

Crop stubbles that are retained over-winter (especially those that have a rich weed cover) are the key foraging habitat for granivorous (seed-eating) farmland birds. For example, Evans and Smith (1994) and Donald and Evans (1994) found that Cirl Buntings and Corn Buntings selected winter stubbles, and Wilson et al (1996) found strong selection of stubbles by Greenfinches, Reed Buntings, Linnets, Chaffinches, Yellowhammers, Goldfinches, Pied Wagtails, Skylarks, Grey Partridges and Meadow Pipits on mixed farmland in Oxfordshire. The latter study recorded 88% of all finches, sparrows and buntings on stubbles. Even more extreme selection was noted by Mason and Macdonald (1999) who recorded 96% of these birds on stubbles in Essex farmland. A larger scale study by BTO examined the breeding population changes of a range of common farmland birds between 1994 and 2003 across over 600 1–km squares in lowland Britain and related these to the area of over-winter stubble: for both Skylark and Yellowhammer, the population trends were significantly more positive in squares that held a large area of stubble (20 ha) than those that held little or no stubble (Gillings et al 2005).

In view of the above, it is proposed that the widespread replacement of over-wintered stubbles fields with planted cover crops could significantly reduce the availability of foraging habitats for granivorous farmland birds with likely detrimental impacts on the population trends of what are already declining species in many cases. Any population impacts are likely to be worsened given the recent decision to set a 0% set-aside rate, which is likely to dramatically reduce the area of set-aside stubbles, known to be a vital foraging habitat for these birds (eg Buckingham et al 1999).

The impacts on seed-eating birds could be reduced if the planted cover crops could provide a suitable seed source that could be accessed by the target bird species. This might be provided by stubble turnips or mustard but the R&D evidence is not available to confirm this. Undersowing the previous cereal crop with a grass/legume mix can have some benefits for invertebrates that over-inter in the soil (eg sawflies) which area a key food source for some farmland birds in the following breeding season (Grey Partridge), although undersown stubbles do not provide the same quality of winter foraging habitat for birds.

A further issue of concern for farmland birds relates to the potential reduction in manuring of arable fields—there is some evidence that manured fields increase the abundance or availability of invertebrates (eg earthworms) for insectivorous farmland birds (eg thrushes and plovers).

IMPACT ON OTHER ARABLE BIODIVERSITY

The impact on other biodiversity associated with arable fields is less clear. Most scarce arable plants are spring germinating and so are unlikely to be affected. However, there are some priority species that are autumn germinating and so are likely to suffer from the application of cover crops. In addition, some scarce lower plants (eg bryophytes) inhabit over-winter stubbles and so could lose a significant part of their habitat.

Brown hares are most abundant in diverse farmland landscapes (Vaughan et al 2003), and stubbles fields form an important component of this habitat heterogeneity. The impact on brown hares will therefore depend on the extent to which the cover crops can be used for foraging/cover.
CONCLUSION

The widespread replacement of over-winter stubbles fields by planted cover crops could drastically reduce the availability of winter foraging habitats for declining seed-eating bird species and, hence, greatly inhibit our efforts to meet the PSA target which seeks to reverse the decline in farmland birds by 2020. There are also concerns over other taxa associated with arable fields, though we are less certain of the impacts on these.

REFERENCES


Memorandum submitted by the Meat and Livestock Commission

EXECUTIVE SUMMARY

1. The existing Action Programme (AP) meets the objectives of the Directive, the proposed changes are over prescriptive, disproportionate and would be detrimental to the long-term sustainability of the livestock sector.

2. Proposed revisions would impose considerable burdens on the livestock and meat industry resulting in further contraction and loss of competitiveness.

3. For the polluter pays principle to be adopted, Government and its advisers must share responsibility for past actions, some poor water quality is a consequence of a period when production was encouraged and environmental science less developed.

4. The case for a revised AP is weak; water quality data show sustained improvements towards the objectives being met. N excretion has declined because of falling livestock numbers and improved feeding technology. There will be a time lag for the benefits to show but this is not taken into account in monitoring data.

5. Designated areas must only be extended where there is a clear case, full or partial de-designation should be considered for areas already achieving water quality objectives.

6. For water quality objectives to be met before the next four-year review, key changes to the AP must be implemented quickly, but phased to allow investment and improvements to be made with a set time to prepare proposals and seek permissions and a further period to complete.

7. A risk-based approach is needed for manure storage requirements and closed periods for an overall better environmental outcome.

8. The Cover Crop proposals should be dropped as the drawbacks outweigh any benefits.

9. Support measures to demonstrate and encourage uptake of best practice, and financial incentives are needed for desired outcomes to be delivered without irreversibly damaging the rural economy and meat industries.

SUPPORTING INFORMATION

10. The MLC is an executive Non Departmental Public Body set up under the Agriculture Act 1967. Its remit is to work with the British meat and livestock industry (cattle, sheep and pigs) to improve its efficiency and competitive position, and to maintain and stimulate markets for red meat at home and British meat abroad, with due regard for the consumer. Its activities are funded through the collection of levies on sheep, pigs and cattle slaughtered for human consumption or exported live.
11. We note the remit of your enquiry and offer our comments in response accordingly. Our work within the livestock sector recognises the need for reducing the environmental impact of livestock production whilst developing sustainable and internationally competitive livestock industries. We are concerned about the impact of these revised regulations on the livestock sector.

HAS DEFRA’S IMPLEMENTATION OF THE 1991 DIRECTIVE BEEN ADEQUATE?

12. The targeted AP implementation has been adequate, based on the evidence presented in the consultation indicating general decline in surface water nitrate concentrations.

13. Surface water shows a faster response than groundwater to declining nitrate loss from agricultural land providing a better indicator of trends attributable to the AP. Data presented for the period 1999 to 2005 is unlikely to demonstrate clear responses to the 2002 AP as we highlighted during discussions with Defra Water Quality Division. Results presented, do not distinguish between 1998 designated zones (8% of England), 2002 designated zones (55% of England) or undesignated catchments.

14. For 2002 designated NVZ’s, winter 2003–04 was the first full nitrate loss season. With time lag, two years monitoring data is insufficient to conclude that more stringent measures are needed. During this period livestock numbers and fertiliser use have fallen dramatically, weakening the case presented.

Chart 1; Livestock Numbers - England

![Livestock Numbers Graph]

Chart 2; Percentage reduction in livestock numbers by class between 1997 and 2007

![Percentage Reduction Graph]

Source: Defra June Census.

15. Livestock feeding technology and genetics are improving; less N is being fed with better utilisation, a gradual process not identified within the water quality data.

16. We are unable to distinguish between economic and demographic changes in farming practice and implementation of the AP to gauge how effective it has been in reducing nitrate pollution. Knowledge and understanding of farmers regarding use of N fertiliser and manures is improving, in part due to the AP focusing on nitrate utilisation.
17. Regulations are only effective if those implementing them understand the subject; it is preferable to achieve goals through knowledge transfer and demonstration in preference to tighter and inflexible legislation.

EXTENT OF DESIGNATED AREA

18. Where evidence suggests agriculture is responsible for failure of water quality objectives we expect NVZ's to be designated. Where objectives continue to be met, or agriculture is not the prime cause of any failure, these areas should not be designated.

19. Catchments where there is evidence that objectives would still be met if full or partial de-designation took place, this should be implemented.

20. We would still like to see undesignated or partially designated areas being treated equally for knowledge transfer or fiscal support as NVZ’s. All land managers must be encouraged to strive for improvement and deliver environmental benefits, helping demonstrate that Defra is committed to ensuring objectives are met across the whole of England.

WHAT SHOULD BE THE TIMETABLE FOR INTRODUCING ANY CHANGES IN THE WAY THAT THE NITRATES DIRECTIVE IS IMPLEMENTED?

21. For AP changes to deliver positive results before the next four-year review key components need to be introduced quickly to allow for time lags.

22. The livestock sector is not currently able to finance all of the necessary investment on account of its weak economic position. The following points should be recognised:
   — Capital in many cases is not currently available.
   — Long-term confidence is low.
   — Tenants require landlords consent for investment.
   — Farmers/landlords with short-term tenancies or other agreements will be unwilling or unable to invest.
   — Assessing options, preparing scheme details, planning and consents are risky and take time, especially where opposition is met or impact assessments are needed.
   — Reduced critical levels for ammonia under the Habitats Directive will result in some proposals being challenged, refused or requiring mitigation measures at additional costs.
   — Slurry store construction is a specialist activity; the construction industry does not have capacity to take on additional workload. This will increase costs and may result in poor standards of workmanship increasing the risk of structural failure and pollution.
   — Competition from other projects is increasing construction costs and causing localised supply difficulties.

23. To avoid farmers delaying implementation, they should be required to prepare a scheduled programme of improvements and have applied for all necessary authorisations and approvals within 24 months and completed the works within four years.

COSTS AND BENEFITS OF DEFRA’S INDIVIDUAL KEY PROPOSALS FOR THE REVISED ACTION PROGRAMME

24. Administrative burdens and costs will increase for farmers. Circumstances surrounding each farm are unique, for example in many cases administration is not costed as it is carried out by the farmer or family members.

25. The interaction between various AP components on costs are not recognised within the RIA, and the write-down period for capital expenditure is longer than normal for this industry, this is seriously flawed.

26. Unless financial returns improve farmers will continue to exit the sector with loss of critical mass in the supplier, service and meat industries. Meat processors will not be able to satisfy demand for home produced products forcing them to import. Ability to support home prices by exporting products with low UK value will be impaired, as was demonstrated during the recent export ban.

27. For the polluter pays principle to be adopted, Government and its advisers must share responsibility for past actions, some poor groundwater quality is a consequence of a period when production was encouraged and environmental science less developed.
STORAGE REQUIREMENT

28. Specified minimum storage requirements for manures and slurries are not required. Manure Management Plans, as Defra has promoted in the past, can determine the needs of each unique farm through a risk-based approach.

CLOSED PERIODS

29. Fail to recognise local factors influencing crop growth and N uptake. Flexibility at the start and end of closed period, with a reduced interim application limit would permit a risk-based approach. This will reduce water and air pollution risks when restrictions are lifted, and allow greater crop N uptake as plant nutrient requirements and application can be better matched.

COVER CROPS

30. The proposed measures should be removed as they will not be effective in all instances and can, as mentioned in the consultation impair N availability to following crops. Fuel use and other resources would increase, and make some crops unviable.

31. The balance of environmental impacts has not been adequately considered in the preparation of the revised AP with regards to this and other revisions.

SUPPORT MEASURES

32. A sustained reduction in water nitrate levels requires farmers and land managers to understand N management including adoption of modern animal feeding technology.

33. Some farmers are very knowledgeable and have invested in equipment and tools to improve N use and cost savings. There is scope for all farmers to achieve higher standards. Extension of the ECSFDI and greater co-operation between Defra, its agencies and the levy bodies must be encouraged to deliver this objective.

34. Demonstrations of good practice including making spreading equipment available to farmers will help break down resistance to change, and convince doubters that they can make the necessary changes to deliver the desired outcomes.

35. Financial support is required to enable farmers to make the necessary capital investments; this includes grants and restoration of taxation incentives.

36. There needs to be greater partnership and dialogue between Defra, Environment Agency, Regional Development Agencies, industry and other stakeholders to develop a culture of co-responsibility and devise solutions that mean more comprehensive and tight controls are not needed in the future and to identify where those in place can be relaxed. The BPEX Pig Environment Partnership is such an example.

January 2008

Memorandum submitted by the National Pig Association

The National Pig Association (NPA) is the representative trade association for British commercial pig producers and also represents the pig interests of National Farmers’ Union members. Thank you for the opportunity to provide evidence to your enquiry.

EXECUTIVE SUMMARY

The pig industry is concerned about nitrate levels and is keen to assist Defra in meeting its objectives. The current Action programme (AP) meets the objectives of the Directive and we are confident our sector’s contribution through existing measures and changes of practise will help deliver much of what is proposed.

The industry remains unconvinced by the science put forward to justify the enlargement of the NVZ area from 55% of the country to 70%. There are a large number of contradictory findings in terms of surface and ground water nitrate levels, the pig industry’s contribution has decreased significantly partly due to the sizeable reduction in the national herd, and also through improved feeding technology.

The more onerous requirements are being proposed on the back of increases in nitrate levels due to farming practises over 20 years ago. The systems that are now in place will lead to further nitrate reduction when it has had sufficient time to feed through the aquifers.

The Defra consultation document estimates that the changes to closed periods will only result in a 0.5–1.0% reduction in nitrate levels, very small in comparison to the costs (estimated as at least £40 million for the pig sector) and burdens being imposed on a fragile industry without the ability to recover costs.
A timetable for implementation of the proposed changes to the AP needs to take account of other pressures on the industry, such as available capital and planning consent. Producers should have two years to draw up an implementation plan and five years to complete the changes.

Slurry storage should be calculated on a risk basis relating to each farm and the land available to them for spreading, not exceeding a requirement for six months.

The use of cover crops is likely to result in pollution swapping, this proposal should be removed.

We ask Defra to encourage the uptake of best practise by providing similar levels of capital support to that received by other countries, such as Northern Ireland that received 60% grants to meet slurry storage requirements and in Holland where government assisted in the investment in improved slurry spreading techniques.

SUPPORTING INFORMATION

The National Pig Association (NPA) is the representative trade association for British commercial pig producers and also represents the pig interests of National Farmers’ Union members.

We offer a number of comments which we hope will be useful in your enquiry. The pig industry is committed to reducing nitrate levels and is keen to assist Defra in meeting its objectives. We are confident our sector’s contribution through existing measures and changes of practise will help deliver much of what is proposed. We have a number of concerns about the impact of the revised Action Programme (AP) on our industry.

1. HAS DEFRA’S IMPLEMENTATION OF THE 1991 DIRECTIVE BEEN ADEQUATE?

Defra’s consultation presented evidence of a steady reduction in surface water nitrate levels, which suggests the current AP is delivering the right results. Groundwater results cannot show quick enough changes in nitrate levels to be used as a reliable indicator in the short timescale of the AP, unlike surface water levels that react much quicker.

The NVZ’s designated in 2002 have been measured against an insufficient period of monitoring data for Defra to be confident in making the claim that more onerous measures are needed. The following graph seeks to underline this point as our industry has contracted sharply in the same period, which will have significantly reduced our sector’s contribution to Nitrate levels.

![Pig Numbers - England](image)

*Source: Defra June Census.*

Improved animal genetics and feed rations has resulted in better utilisation by the animal and less N being fed to the pig in the first place.

Producers have found the current AP useful in concentrating their focus on improving the utilisation of their nutrients, however they find the new proposals demoralising as being in many cases unachievable.
2. THE INCREASE IN DESIGNATED AREA

The Action Programme should not be extended across the whole of England. NVZ designation should follow scientific analysis and only be introduced where the nitrate level of surface or ground water is above or close to the 50mg/l limit although we believe this limit should be higher.

The NPA has requested that Defra review the nitrate level as there is no scientific justification from an environmental or human/animal health perspective for the level to be set at 50mg/l. This was an arbitrary figure chosen by the EU Commission, the impact of which has enormous cost implications to English livestock industries.

3. WHAT SHOULD BE THE TIMETABLE FOR IMPLEMENTING CHANGES TO THE WAY THE NITRATES DIRECTIVE IS IMPLEMENTED?

A realistic timetable needs to take into account a number of practical industry issues that will impact on the speed with which the new proposals could be implemented, such as:

— Production costs have increased by 35% due to the doubling of feed prices last year, so capital available for investment is at an all time low.

— Achieving planning consent is increasingly costly and time consuming.

— The manufacturing industry in the UK is unlikely to be able to meet the sudden increase in demand for slurry stores across the livestock industry.

— Tenancy issues should be considered in terms of requiring a landlord’s permission, or being a viable option if operating under a short term agreement.

— The requirement for reduced ammonia levels under the Habitats Directive could prevent the implementation of some proposals.

Producers should be required to provide a plan of their improvements within two years, with the necessary work completed after five years.

4. THE COSTS AND BENEFITS OF DEFRA’S KEY PROPOSALS FOR THE REVISED ACTION PLAN

The pig industry has calculated the effect of some of these key proposals to the sector:

— An additional annual cost of at least £1.5 million/year for slurry spreading by the requirement for Spring applications (requires specialised equipment).

— £36 million for increasing slurry storage.

— £4 million for increasing storage for Farm Yard Manure.13

— Loss of the Agricultural Buildings Allowance has resulted in our members facing increased tax burdens this year and a disincentive to make investment.

The RIA presented in Defra’s consultation is confusing, poorly presented and fails to recognise how components of the AP interact and impact on costs. The costs detailed above simply cannot be met in the current financial environment within the pig industry and will serve only to export a significant proportion of production, where we have no control over how it has been produced.

5. MANURE STORAGE

Minimum slurry and manure storage requirements should not be specified. Storage should be calculated on a risk basis relating to each farm and the land available to them for spreading, not exceeding a requirement for six months.

6. CLOSED PERIODS

The NPA challenges the principle of closed periods being based so strictly on soil type and rainfall. This approach does not take into account UK rainfall patterns or the variety in topography and local climate. Spreading should be permitted based on field risk assessment including soil type, slope and how the field is being used.

7. COVER CROPS

The use of cover crops is likely to result in pollution swapping. The benefit that might be gained through prevention of N leaching needs to be off set against the use of fossil fuel intensive field operations and use of chemicals, and a risk of soil structural damage. This proposal should be removed.

13 Breakdown of cost calculations in attached annex spreadsheet.
8. SUPPORT MEASURES

To assist industry in meeting its environmental obligations under the Nitrates Directive, the pig industry asks to receive similar levels of capital support to other countries, such as Northern Ireland that received 60% grants to meet slurry storage requirements and in Holland where government assisted in the investment in improved slurry spreading techniques.

The pig industry has detailed its vision in the Pig Environment Partnership, where industry, government and other agencies responsible for the environment can work more closely together to remove the need for such restrictive legislative controls on farm and work on a lighter touch risk based approach that delivers an environmentally and economically sustainable industry.

January 2008
### Volume of slurry UK pig herd & cost of storage & spreading

**ENGLAND HERD**

<table>
<thead>
<tr>
<th>Stock Class</th>
<th>% housed</th>
<th>No. housed</th>
<th>% housed on slurry</th>
<th>Daily slurry (l)</th>
<th>Days housed</th>
<th>Volume of slurry m$^3$</th>
<th>Volume / farm m$^3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sows</td>
<td>61</td>
<td>241,560</td>
<td>50</td>
<td>10.9</td>
<td>365</td>
<td>480.523</td>
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<td></td>
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</tr>
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<td>393.863 Gallons</td>
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</table>

**Wash Water**

<table>
<thead>
<tr>
<th>Stock Class</th>
<th>% housed</th>
<th>No. housed</th>
<th>% housed on slurry</th>
<th>Daily wash water (l)</th>
<th>Days housed</th>
<th>Volume of water m$^3$</th>
<th>Volume / farm m$^3$</th>
</tr>
</thead>
<tbody>
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<td>393.863 Gallons</td>
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<td>0.1</td>
<td>365</td>
<td>393.863 Gallons</td>
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**Total**

402,138.0 Gallons

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<th>Method</th>
<th>Std</th>
<th>Improved</th>
<th>Increase</th>
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<tr>
<td>Spreading cost £</td>
<td>£3,759,598.46</td>
<td>£5,263,437.84</td>
<td>£1,503,839.38</td>
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<td>Spreading cost/farm £</td>
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<td>£3,508.96</td>
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<tr>
<td>Cost/finished housed pig</td>
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<td>£0.70</td>
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### Volume of additional storage required & capital cost

<table>
<thead>
<tr>
<th>Storage period</th>
<th>Vol. m³</th>
<th>Cost ind.</th>
<th>Cost/farm</th>
<th>Note</th>
</tr>
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<tbody>
<tr>
<td>1 month</td>
<td>257,297</td>
<td>£ 9,005,399.29</td>
<td>£ 6,004</td>
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<tr>
<td>2 months</td>
<td>514,594</td>
<td>£ 18,010,798.58</td>
<td>£ 12,007</td>
<td>Cost of installing new slurry storage facilities may range from £15 - £100/m³, depending on type of construction, location etc. A typical figure representing an above ground tank has been chosen for this illustration.</td>
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<tr>
<td>3 months</td>
<td>771,891</td>
<td>£ 27,016,197.86</td>
<td>£ 18,011</td>
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<tr>
<td>4 months</td>
<td>1,029,188</td>
<td>£ 36,021,597.15</td>
<td>£ 24,014</td>
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<tr>
<td>5 months</td>
<td>1,286,486</td>
<td>£ 45,026,996.44</td>
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<td>6 months</td>
<td>1,543,783</td>
<td>£ 54,032,395.73</td>
<td>£ 36,022</td>
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</table>

#### Wash Water
- Defra consultation paper e-1
  - Wash water (litres per pig place per week)

<table>
<thead>
<tr>
<th>Stock Class</th>
<th>% housed</th>
<th>No. housed</th>
<th>% housed on straw</th>
<th>Daily FYM (m³)</th>
<th>Days housed</th>
<th>Volume of FYM m³</th>
<th>Volume / farm m³</th>
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</thead>
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<td>241,560</td>
<td>50</td>
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<td>480,523</td>
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<td></td>
<td></td>
<td>0.0087</td>
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### Volume of additional storage required & capital cost

Average cost of storage £/m³

<table>
<thead>
<tr>
<th>Storage period</th>
<th>Vol. m³</th>
<th>Cost ind.</th>
<th>Cost/farm</th>
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<tbody>
<tr>
<td>1 month</td>
<td>145,629</td>
<td>£ 8,009,599.54</td>
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## Volume of slurry & cost of storage & spreading

<table>
<thead>
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<th>Stock Class</th>
<th>% housed</th>
<th>No. housed</th>
<th>% housed on slurry</th>
<th>Daily slurry (l)</th>
<th>Days housed</th>
<th>Volume of slurry m³</th>
<th>Volume / farm m³</th>
<th>N/ha/yr (kg)</th>
<th>M/ha produced (kg)</th>
<th>Ha req’d @ 170kg/ha</th>
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</thead>
<tbody>
<tr>
<td><strong>Sows</strong></td>
<td>100</td>
<td>1</td>
<td>100</td>
<td>10.9</td>
<td>365</td>
<td>4</td>
<td>4</td>
<td>15.9</td>
<td>15.90</td>
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<td>20</td>
<td>100</td>
<td>1.3</td>
<td>18</td>
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<td>1.1</td>
<td>1.08</td>
<td>0.0064</td>
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<tr>
<td><strong>Weaner 2nd stage</strong></td>
<td>100</td>
<td>20</td>
<td>100</td>
<td>2.1</td>
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<td>1</td>
<td>1</td>
<td>4.2</td>
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<td><strong>Grower</strong></td>
<td>100</td>
<td>20</td>
<td>100</td>
<td>3.7</td>
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<td>7.7</td>
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<td>10.6</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Boar</strong></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<td>13.6</td>
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</table>

## Wash Water

<table>
<thead>
<tr>
<th>Stock Class</th>
<th>% housed</th>
<th>No. housed</th>
<th>% housed on slurry</th>
<th>Daily wash water (l)</th>
<th>Days housed</th>
<th>Volume of water m³</th>
<th>Volume / farm m³</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sows</strong></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>1.4</td>
<td>365</td>
<td>52.143</td>
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<td>100</td>
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<td>18</td>
<td>0.103</td>
<td>0.103</td>
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<tr>
<td><strong>Weaner 2nd stage</strong></td>
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<td>20</td>
<td>100</td>
<td>0.4</td>
<td>32</td>
<td>0.238</td>
<td>0.238</td>
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<tr>
<td><strong>Grower</strong></td>
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<td>20</td>
<td>100</td>
<td>0.3</td>
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<td>0.250</td>
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<td>0.2</td>
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<td><strong>Maiden gilt</strong></td>
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<td>0.1</td>
<td>365</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Boar</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.1</td>
<td>365</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>52.9</td>
<td>52.9</td>
</tr>
</tbody>
</table>

**Total spreading costs**: £19.01 per sow, £26.62 per pig, £7.61 per finished pig.
**Cost of using a tanker**: £0.95 per housed pig.
### Volume of additional storage required & capital cost

<table>
<thead>
<tr>
<th>Storage period</th>
<th>Vol. m³</th>
<th>Cost ind.</th>
<th>Cost/farm</th>
<th>Cost/finished housed pig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>1.13</td>
<td>£39.61</td>
<td>£40</td>
<td>£1.98</td>
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<tr>
<td>2 months</td>
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<td>£79.22</td>
<td>£79</td>
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<td>3 months</td>
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<td>4 months</td>
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<td>£158.44</td>
<td>£158</td>
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<tr>
<td>5 months</td>
<td>5.66</td>
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<td>£198</td>
<td>£9.90</td>
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<td>6 months</td>
<td>6.79</td>
<td>£237.66</td>
<td>£238</td>
<td>£11.88</td>
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</tbody>
</table>

Cost of installing new slurry storage facilities may range from £15 - £100/m³, depending on type of construction, location etc. A typical figure representing an above ground tank has been chosen for this illustration.

---

#### Wash Water

<table>
<thead>
<tr>
<th></th>
<th>Defra consultation paper c-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wash water (litres per pig place per week)</td>
<td></td>
</tr>
<tr>
<td>Sows (inc. litters to 7 kg)</td>
<td>10</td>
</tr>
<tr>
<td>Maiden gilts and boars</td>
<td>0.6</td>
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<tr>
<td>Weaners (7 - 12 kg)</td>
<td>2</td>
</tr>
<tr>
<td>Weaners (13 - 30 kg)</td>
<td>2.6</td>
</tr>
<tr>
<td>Growers (31 – 65 kg)</td>
<td>1.9</td>
</tr>
<tr>
<td>Finishers (66 - 100 kg)</td>
<td>1.6</td>
</tr>
<tr>
<td>sold manure multiply by 1.15 to get tonnes</td>
<td></td>
</tr>
</tbody>
</table>
Memorandum submitted by the Association of Chief Estates Surveyors and Property Managers in Local Government, Rural Practice Branch

EXECUTIVE SUMMARY

1.1 The County Farms Service is provided by 62 Local Authorities; 31 County Councils, 17 Unitary Authorities and 14 Welsh Authorities.

In total we manage 117,705 hectares (290,850 acres) let as 2,699 equipped holdings, with a further 1,095 bare land lettings.

In 2006–07 we let 37 holdings to new tenants to the industry. A total of 155 new tenancies were signed in the year.

1.2 25 of the 62 Authorities are specifically dairy or dairy/stock rearing estates. The typical dairy holding is an intensive unit carrying one cow for every productive acre. This has been driven by the economics of the past 10 years and by the nature of the tenants selected by the Services, who have been by nature progressive, wishing to build stock numbers and thereby be in a position to move to a new larger holding whenever the opportunity presented itself.

1.3 Capital investment on all of the 62 Estates totalled £9.8 million in 2006–07, but the five year average of investment is only £7.4 million. Investment has been targeted at improved modern facility for modern tenants to produce to modern standards; this includes pollution management on intensive dairy holdings.

1.4 This response is a composite response provided from all ACES Rural Branch members. The Committee should know that many Authorities face difficult decisions over their continued support of their County Farms Services. Additional capital investment requirements for slurry storage, as required under this proposal, will put further pressure on the Service and potentially call in to question the continued political support for these services.

2. Has Defra’s implementation of the 1991 Directive been adequate?

No comment

3. How have levels of nitrate pollution changed since the Directive came into effect? How effective has the current Action Programme been in reducing nitrate pollution?

No comment

4. Defra says that the area designated as Nitrate Vulnerable Zones needs to increase from 55% to 70% of England: is it right?

We ask what is the scientific basis for this increase. If there is a sound scientific basis for the increase then undoubtedly some form of regulation should be implemented. It is our suggestion that the Catchment Sensitive Farming Initiative should be broadened to target specific rivers or catchments with high nitrate loadings rather than blanket regulation.

5. Whether the proposed Nitrates Action Programme measures should apply throughout the whole of England, rather than only on land designated as Nitrate Vulnerable Zones

Any measure introduced should be done with the backdrop of sound scientific study rather than the perceived notion that 100% is best to give the “level playing field”.

6. What should be the timetable for introducing any changes in the way the Nitrates Directive is implemented?

Due to the size and diversity of Statutory Smallholding Estates it would not be reasonable or feasible to implement all the changes within 24 months. Therefore from a practical asset management view this should be extended to at least 48 months.

7. What are the costs and benefits of Defra’s individual key proposals for the revised Action Programme, namely:

— Whole farm manure nitrogen loading limit;
  
  This needs to be linked to scientific evidence.

— Closed period (organic manures):
  
  This needs to be linked to specific growing periods of the soils involved. There are areas such as Cornwall where they can achieve 12 month growing seasons and would therefore require the ability to spread throughout.
— **Manure storage:**

Needs to be linked to the growing season—the previous NVZ system where each farm prepared its own management plan to reflect the specific circumstances of the holdings climate, topography etc is a more appropriate solution than a blanket approach. This farm specific approach will mean that areas which have an early growing season can make the best use of it whilst not damaging the environment.

— **Costs**

This is the most contentious area within the Nitrates Directive for the Statutory Smallholding Estates and their Managers. As explained in our opening brief many of our farms are relatively small intensive units already to ensure that a reasonable livelihood can be made. It is anticipated that where units have little or no storage currently the cost per farm could be up to £65,000 per unit. If one places this across the English Estate as a whole this could represent £8.97 million capital investment by Councils. This figure only represents farms entering new NVZ areas not those already in that may need additional infrastructure.

Various colleagues have done preliminary work with budget figures returning at up to £4.2 million for a South West Authority to £1.82 million for a North West Authority.

There is little scope for Landlords to gain a return on investment and more concerning is that many tenants would not have the capability of raising such sums of money to do the work themselves. This would therefore raise the spectre of County Councils deciding not to support the dairy industry with NVZ areas and converting farms to mixed farms.

— **Closed period (manufactured nitrogen fertilizers)**

This should be based on local conditions with supporting scientific evidence.

— **Crop nitrogen requirement limit**

There appears to be little or no scientific evidence to back up these limits. If produced and verified then measures can be adopted to comply with the proposed measures.

— **Spreading locations**

This measure is reasonable and was an integral part of the old management plans which were farm specific.

— **Spreading techniques**

Whilst the measures seem to be appropriate they need to be driven by scientific evidence.

— **Record keeping**

This should mirror the existing NVZ systems and emerging cross compliance updates to ensure uniformity not least for the regulators but the farmers as well.

— **Cover crops**

Cover crops on over winter stubbles would appear to lack any form of justification especially if farmers are complying with their soil management plans with regard to leaching and erosion. The overall loss of over winter stubbles we believe would be far greater than the benefit perceived to be gained by placing a cover crop on them.

— **Should any of these be abandoned or modified?**

See above.

8. **What advice and support farmers will need from Defra to implement a revised Action Programme?**

It is our belief that if the new consultation is introduced without change, there will be the need for specific holding by holding guidance. Each farm is different and as such the guidance will need to be made holding specific.

9. **How can Defra encourage greater adoption of anaerobic digestion as a way of managing manure?**

From work carried out by member authorities the cost of implementing an AD scheme is not beneficial to the small intensive unit. The added burden in management on the farmer would not meet the small commercial gain they could achieve by installing such a system.

10. **How the proposed new Nitrates Action Programme is affecting those with existing Entry Level Stewardship agreements in existing Nitrate Vulnerable Zones**

No specific knowledge.

*January 2008*
Memorandum submitted by Dairy UK

Dairy UK

1. Dairy UK is the trade association that represents the dairy industry supply chain in the United Kingdom. Dairy UK’s remit covers dairy farmers, producer co-ops, dairy processors and doorstep delivery men.

2. The milk processed by Dairy UK members equates to 90% of the milk produced in the UK.

Response to Questions

Has Defra’s implementation of the 1991 Directive been adequate?

3. It is clear that the implementation of the Directive has not been sufficient to satisfy the European Commission and some other EU Member States. However it is not clear whether the Commission’s aspirations for the Directive are proportionate and appropriate to the situation in the UK.

How have levels of nitrate pollution changed since the Directive came into effect? How effective has the current Action Programme been in reducing nitrate pollution?

4. Dairy UK understands that there is some evidence available to Defra and the Environment Agency of significant progress being made in meeting the objectives of the Directive in England.

Defra says that the area designated as Nitrate Vulnerable Zones needs to increase from 55% to 70% of England: is it right?

5. The industry does not have access to the type of scientific data that would be required in order to challenge Defra’s assessment of which areas of England should be designated.

Whether the proposed Nitrates Action Programme measures should apply throughout the whole of England, rather than only on land designated as Nitrate Vulnerable Zones

6. The logic of targeted and proportionate regulation would require that only selected areas of England should be subject to an NVZ Action Plan. Arguments about simplicity and equity would not justify the needless imposition of costs on a large number of farmers when this would not achieve a meaningful contribution to the reduction in pollution from agriculture.

7. A targeted approach also inherently justifies de-designation when the evidence no longer warrants the inclusion of an area within an NVZ.

What should be the timetable for introducing any changes in the way the Nitrates Directive is implemented?

8. There should be a four year transition period. The proposed two year period is inadequate. Many dairy farmers will have to undertake lengthy planning applications for new slurry storage facilities which could take a minimum of 12 months if granted and longer if appeals procedures have to be invoked. This would concentrate the construction of additional storage capacity into a single year. This would inflate prices and the capacity may not exist to meet demand.

What are the costs and benefits of Defra’s individual key proposals for the revised Action Programme, namely:

— Whole farm manure nitrogen loading limit;
— Closed period (organic manures);
— Manure storage;
— Closed period (manufactured nitrogen fertilizers);
— Crop nitrogen requirement limit;
— Spreading locations;
— Spreading techniques;
— Record keeping;
— Cover crops;

Should any of these be abandoned or modified?
Costs

9. Dairy UK commissioned the farm consultants Promar International to undertake a study of the practical and financial implications to dairy farmers of Defra’s proposals. A copy of this report is attached for convenience.14

10. Based on a representative sample of farms and assessed over 10 years Promar’s estimate of the average annual cost of compliance for dairy farms is presented in the table below.

<table>
<thead>
<tr>
<th>Cost of compliance</th>
<th>Cost of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>(£ per farm per year)</td>
<td>(£ per farm per year)</td>
</tr>
<tr>
<td>Additional storage requirements</td>
<td>0.80</td>
</tr>
<tr>
<td>Additional costs of extra land or of loss of nutrient value</td>
<td>0.24</td>
</tr>
<tr>
<td>Additional spreading costs</td>
<td>0.30</td>
</tr>
<tr>
<td>Additional administrative costs</td>
<td>0.03</td>
</tr>
<tr>
<td>Additional nutrient value</td>
<td>-0.01</td>
</tr>
<tr>
<td>Total Additional Costs</td>
<td>1.34</td>
</tr>
</tbody>
</table>

11. The above figures are an average and costs for individual farms could range from 0.93 pence per litre to 2.17 pence per litre.

12. Promar’s analysis does not separately identify the cost impact of the individual components of Defra’s proposal with the exception of additional storage costs.

Benefits

13. Defra’s own estimate is that the measures relevant to the dairy sector will reduce losses of nitrates from agricultural land by between 1.0% to 1.5% per year. Given that the total cost to dairy farmers over 10 years would amount to £678 million according to the Promar Report, then the costs incurred would seem to be disproportionate to the potential benefit.

Abandonment or Modification

— Whole farm manure nitrogen loading limit

14. It is important that Defra obtains a derogation to allow the whole farm limit to be kept at 250kg per hectare of total nitrogen. Similar derogations have been granted to other EU Member States including Denmark, the Netherlands, Germany, Austria, Republic of Ireland and most recently to Northern Ireland.

15. It is estimated that the loading limit proposed by Defra will affect about half of all dairy farmers in Nitrate Vulnerable Zones, some of them severely. Farmers that cannot meet the whole farm limit on livestock manure production will either have to acquire more land or reduce their stocking density. Acquiring more land will impose additional costs, whilst de-stocking will undermine cost efficiency because fixed costs will have to be spread over smaller output.

— Closed period (organic manures)

16. Consideration should be given to an effective reduction in the length of the proposed closed periods so that, following a risk assessment, a farmer may apply slurry during December and January during the closed period, when the risk of nitrate leaching is substantially lower. This would avoid the risk of a national slurry spreading day (or days) and allow farmers to use periods of drier weather within the closed period when the risk of soil damage would be lower.

17. The inflexibility of Defra’s proposals will also put a considerable strain on the resources of the sector when it is permitted to spread slurry. This is because dairy farmers are now heavily reliant on external contractors. There are serious concerns as to whether there is sufficient capacity available from contractors to meet industry demand when the closed season comes to an end.

— Manure storage

18. There should be a closer alignment between the storage capacity requirement and the proposed closed period. The proposal for dairy farmers is for five months capacity whilst the closed period for grassland ranges from three to four months. This represents an excessive and costly level of insurance.

19. There also needs to be a closer match of storage requirements to the conditions on individual farms. Soil, land-use and rainfall needs to be factored in.

What advice and support farmers will need from Defra to implement a revised Action Programme?

20. More than is being proposed. The Government should provide grant aid to help farmers meet the significant capital expenditure obligations entailed by these proposals. Grant aid was provided under previous NVZ Action Programmes in 2002 and in other Member States and in Northern Ireland.

21. At the very minimum Defra must undertake a concerted education and training programme to alert farmers to how these proposals will affect their operations and how they can respond in the most cost effective manner. The advice and support programme proposed by Defra is inadequate because it is largely passive.

22. The most effective way of educating farmers into changing managerial practices is through one to one communication. The programme of seminars organised for Defra by ADAS can contribute to his process but on its own it is insufficient to the magnitude of the task that has to be addressed. The most effective mechanism available to the government to communicate on changing management practices is the Catchment Sensitive Farming (CSF) Initiative. It is important that this programme is retained and the network of advisors under this programme is built on to provide advice and guidance to farmers caught within NVZs. The grant assistance programme developed under the CSF could also provide the basis for developing a similar programme to address some of the capital expenditure requirements arising from the Action Plan.

23. Consideration also needs to be given to how the planning application process could be streamlined and improved to speed up the granting of applications by farmers undertaking building work intended to meet the obligations arising from Defra’s proposals.

24. The Treasury should also consider the abolition of the Agricultural Buildings Allowance, which is to be phased out following last year’s budget. The allowance gives relief in tax computations for capital expenditure incurred on the construction of agricultural buildings. The allowance is given at the rate of 4% per annum, with the result that qualifying expenditure is written off against taxable profits over 25 years.

How can Defra encourage greater adoption of anaerobic digestion as a way of managing manure?

25. Dairy UK strongly supports the adoption of anaerobic digestion as part of a range of renewable energy technologies that farmers and growers can adopt. This technology can also make a contribution towards addressing nitrate leaching and the NVZ Action Programme.

26. There are significant obstacles to be overcome in securing greater adoption of anaerobic digestion. In order to be viable low-energy cattle slurry will have to be supplemented with higher energy feedstocks from other sources. The nitrogen in these additional inputs can create difficulties in the recycling of digestate from the anaerobic digestion process to agricultural land and the NVZ rules will complicate this problem.

27. Investment in anaerobic digestion is further complicated by the compliance required from several regulatory regimes including Pollution Prevention and Control, Waste Management Licensing, Animal by-products and NVZs. There are also difficulties created by infrastructure requirements for connecting into the national grid, and the pricing arrangements for small generators.

28. The investment costs for AD plants are high and consideration needs to be given to providing additional incentives and a stable regulatory environment to ensure that farmers are confident they will receive secure return on their investment.

January 2008

Memorandum submitted by the Environment Agency

1. Q: Has Defra’s implementation of the 1991 Directive been adequate?

A Reasoned Opinion is currently outstanding against the UK government for failure to adequately implement the Nitrates Directive.

The current NVZ rules (The Action Programme), have not been revised since they were drawn up by the Ministry of Agriculture, Fisheries and Food in 1998. The initial NVZ designations (8% of England) were made by the Department for the Environment in 1996 when only certain deep groundwaters used for potable abstraction were protected. The designations were extended by Defra in 2002, after a ruling by the European Court of Justice in 1999, to 55% of England and 3% of Wales.

The Environment Agency believes that the protection of the water environment, including drinking water, through the full implementation of the Nitrates Directive will help with the sustainable management of our water resources. It is the only piece of existing legislation that seeks to control diffuse water pollution by nitrates from agriculture.
2. Q: How have levels of nitrate pollution changed since the Directive came into effect? How effective has the current Action Programme been in reducing nitrate pollution?

Overall the evidence is that nitrate pollution has not changed significantly since the Directive came into force. Indeed in some areas, particularly in the south and east of England, nitrate levels in groundwater have increased and are still rising. From our General Quality Assessment monitoring information we know that around 17% of our 7,300 river monitoring points exceed the 50mg/l drinking water value at least once during the winter months linking the nitrate concentrations recorded to run-off from agricultural land. We believe that the current Action Programme has been ineffective in reducing nitrate pollution.

3. Q: Defra says that the area designated as Nitrate Vulnerable Zones needs to increase from 55% to 70% of England: is it right?

The increase in land area designated is based upon strict criteria set out within the Nitrates Directive and the revised designation methodology. These criteria are linked to concentrations of nitrate in water exceeding, (or likely to exceed) the 50mg/l drinking water value or undesirable disturbance in the ecology of the receiving waters, including downstream marine waters. The additional NVZ designations, amounting to 15% of England, meet these criteria.

4. Q: Whether the proposed Nitrates Action Programme measures should apply throughout the whole of England, rather than only on land designated as Nitrate Vulnerable Zones

The Environment Agency supports the targeted approach to designation as determined by our environmental monitoring information and scientific analysis, which takes a modern approach to regulation, targeting action and regulation where it is most needed. Applying the Action Programme throughout England would place an excessive and unnecessary financial burden on farmers in “low nitrate” areas. There will however be a need to control nitrate pollution outside designated NVZs in some areas in order to meet the objectives of the overarching Water Framework Directive. At present it is only the Code of Good Agricultural Practice that fulfils this role. The Environment Agency is working to identify the need for and scale of any wider measures to meet this gap between the two Directives.

5. Q: What should be the timetable for introducing any changes in the way the Nitrates Directive is implemented?

The Environment Agency wants to see the Nitrates Directive implemented in a much more strategic way in order to protect environmental and drinking water quality in the long term. This could be done by simplifying the Action Programme rules to make compliance easier to achieve and to assess. We want the Nitrates Directive to be a major plank in nutrient management on farms within the context of the Water Framework Directive.

In terms of transitional arrangements for increased slurry storage the Environment Agency would be content for farmers to have a maximum of a two year period to upgrade their storage facilities.

6. Q: What are the costs and benefits of Defra’s individual key proposals for the revised Action Programme: Should any of these be abandoned or modified?

The Environment Agency believes that the revised Action Programme should be made as simple as possible to ensure farmers can understand exactly what is expected of them and for the Agency to assess compliance effectively.

6.1 Whole farm manure nitrogen loading limit

Currently, we believe there is no justification for a derogation from the Whole Farm Limit (170kg/N/ha/yr) for livestock manure. We also believe that the current Action Programme is not compliant with the objectives of the Directive, and therefore a derogation cannot be granted at this time. Farmers need to understand that any derogation will be temporary and is only likely to be in place until the next review of the Action Programme. It will generate more paperwork for them as they are likely to have to apply for a derogation on a farm by farm basis, and possibly each year until the derogation ceases. The Environment Agency, if it administers the derogation, will not be able to grant a blanket exemption.

6.2 Closed period (organic manures, manufactured nitrogen fertilisers)

We believe that the proposals for closed periods are overly complicated for both the farmer and the regulator and we have urged Defra to simplify them. We would particularly like to see the rainfall element removed as it will be an administrative burden for little or no environmental benefit. It may also target our enforcement effort towards low-risk farms.
We would like to see a single closed period during which applications within the period should be managed on the basis of written and recorded advice by a FACTS qualified person (Fertiliser Advisers Certification Scheme).

Closed periods for organic manures also affect water companies and others needing to manage slurries and sludges from their businesses that can be used for agricultural benefit.

Rules for manufactured fertiliser remain the same. However, rivers draining arable land tend to be high in nitrate. We therefore believe that Defra should review and consider extending the closed season for manufactured fertilizers to reduce leaching to surface waters.

6.3 Manure storage

We would like Defra to build in more flexibility to the storage requirements through use of manure management plans. We see no justification for different requirements for pig slurry and poultry manure and other slurries.

We would like a single, consistent time period for manure storage, with the potential to apply to grassland, (with written and recorded FACTS advice) as a way of minimising the need to build more storage, yet still retaining adequate environmental protection. This should then be included in the standard procedure for calculating storage volume.

6.4 Crop nitrogen requirement limit

We are concerned that using NMax may lead to over application of nitrogen. Defra needs to provide greater clarity on the difference between NMax and the nitrogen requirement of the crop. Defra does not mention other reference sources that can be used to identify crop requirement such as agronomists, other crop recommendation systems or its own Codes of Good Agricultural Practice.

6.5 Spreading locations

Defra’s consultation did not mention the need for a standard colour-coded farm map incorporating a risk assessment to identify where not to apply nitrogen.

Defra must ensure that the Regulations and guidance state that the field limit excludes areas where organic manure must not be spread, eg within 10 metres of a watercourse.

6.6 Spreading techniques

Clear guidance and definitions are required for undefined terms such as “high trajectory” and “high pressure”. It would be clearer to say, for example, no rain guns, no splash plates greater than “x” degrees or that the pressure must be less than “y”.

6.7 Record keeping

All farmers in NVZs must keep adequate records, it is an offence not to do so. Inadequate or no records are the main reasons for non-compliance with the current Action Programme. Accurate and timely record keeping is the main plank of compliance assessment and its importance cannot be stressed too heavily. Good record keeping is also an essential part of running an efficient business and can only be in the interests of the farmer.

6.8 Cover crops

A number of scientific studies show that cover crops are effective at taking up nitrate that would otherwise be lost to the environment. We support their inclusion in the Action Programme, especially given the lack of any other methods of controlling nitrate coming from arable farms. However we would like to see some flexibility in how the farmer maintains green cover when the main crop has been harvested.
7. Q: What advice and support farmers will need from Defra to implement a revised Action Programme?

Financial support

Although there are potentially significant increased costs in installing manure storage, particularly for livestock farmers, Defra is not currently proposing any grant aid for farmers. Some farmers may also need to invest in new spreading equipment.

Defra does not explain why the government has already decided not to make any grants available to support additional capital expenditure. The lack of financial support could have a significant impact on the viability of small businesses, especially in the dairy sector. Provision of financial assistance, at an appropriate level, to offset capital costs would be the single biggest thing that would help farmers comply with the revised measures.

We are pleased, however, that the management of nutrients and anaerobic digestion are areas that are eligible for financial support under Axis 1 of the Rural Development Programme for England.

Guidance

Defra must produce clear, simple and concise guidance to enable farmers to comply with the revised Action Programme measures. Where possible it should carry worked examples, including standard calculations, for farmers to follow. It is essential that Defra revises the current “blue book” guidance documents. Although this response relates to England we urge Defra to engage with the Welsh Assembly Government in translating this guidance into Welsh.

It might also be useful if Defra were to fund an independent organisation, such as ADAS, an independent provider of environmental consultancy, rural development services and policy advice, to assist farmers in interpreting and implementing the revised rules.

8. Q: How can Defra encourage greater adoption of anaerobic digestion as a way of managing manure?

We see this as a question for Defra. Defra may, for example, choose to provide financial assistance for the installation of these plants. It may also wish to encourage partnerships with Water and Sewerage undertakers to build collective plants, thus reducing the problems for both farmers and Water companies needing to dispose of slurries and sludge.

While within the strict context of the Nitrates Directive and the Action Programme rules anaerobic digestors will not directly benefit farmers we support the uptake of anaerobic digestion and the wider environmental benefits it can bring. Although storage requirements will be the same and the nitrogen content will stay the same, the nitrogen in the digestate is in a form that is immediately available to plants. Hence there is likely to be less leakage to the environment provided the application to the crop is carried out properly.

At present there are very few anaerobic digestors in England. The Environment Agency would support any initiative that encouraged greater use of anaerobic digestors on farm for wider environmental benefits. AD captures 85% of methane from stored slurry that would otherwise be lost to atmosphere as a greenhouse gas. AD also saves on fossil fuel by converting gas to energy and the process will utilise food wastes that might otherwise be spread to land or go to land fill.

Financial support for the set up and capital costs of the plants, and the infrastructure needed for the national grid to take power from small suppliers could amount to a large financial commitment.

9. Q: How the proposed new Nitrates Action Programme is affecting those with existing Entry Level Stewardship agreements in existing Nitrate Vulnerable Zones

We believe that Defra will require farmers within an existing NVZ, who hold a provisional Environmental Stewardship (ES) agreement, to conform to the requirements of the revised Nitrates Action Programme immediately. The revised Action Programme will apply to all farmers in NVZs, including those with a confirmed ES agreement, from the effective date of the new Regulations. The EA will need to examine these arrangements for any implications on its compliance and enforcement activities.

January 2008
Memorandum submitted by the Tenant Farmers Association

INTRODUCTION

The Tenant Farmers Association (TFA) welcomes the opportunity of providing written evidence to Environment, Food and Rural Affairs Committee as part of its Inquiry into the Implementation of the Nitrates Directive in England. The submission follows the questions set out in the Committee’s Press Notice of 18 December 2007 where the TFA believes it is able to assist the Committee.

Has Defra’s implementation of the 1991 Directive been adequate?

By and large and until recently, the TFA believes that the approach of Defra (and of the Ministry of Agriculture Fisheries and Food before it) has balanced practicability with risk. It is widely held that the Directive is flawed in a number of ways. This includes its reference to the 50 milligrams per litre limit of nitrate concentration in water and its broad application of policy tools which pay little attention to what is happening at a local level. In view of those concerns, the TFA believes that the policy of the UK government has been to implement the Directive in accordance with sound science and local conditions.

However, the TFA is now concerned that Defra’s approach has moved to one of almost slavish adherence to the Directive’s requirements in a “driving test” mentality. The TFA believes that Defra should be taking a lead on seeking changes to the Nitrates Directive and its Action Programme to bring it better in line with sound science.

How have levels of nitrate pollution changed since the Directive came into effect?

Even in Defra’s own consultation document on the issue there is acceptance that there have been localised reductions in nitrate concentrations in recent years. The TFA believes that there are other data sources which show that there has been a more substantial improvement in nitrate concentrations over a wider number of catchments than has been suggested. Data from the National Farmers’ Union, for example, has not been taken seriously by the Government. The TFA would argue that where there are improvements in nitrate concentrations and overall downward trends then land previously designated in NVZ’s displaying those characteristics must be de-designated and until they are de-designated that must not see an increase in the regulatory burden through the ratcheting up of the action programme measures.

Defra says that the area designated as NVZs needs to increase from 55% to 70% of England: is it right?

As noted above, the TFA believes that there are catchments which should be de-designated and that therefore the true figure lies between 55% and 70% of the country.

Should the proposed NVZ Action Programme apply throughout the whole of England?

No, the Action Programme measures should only be applied where they are needed.

TFA VIEWS ON THE WHOLE FARM LIMIT FOR LIVESTOCK MANURES

The TFA believes it is a must that we gain a derogation from the 170kg per hectare limit and that work on this must start right away.

TFA VIEWS ON CLOSED PERIODS

Whilst the TFA recognises the benefit of closed periods for organic manures, it is important to ensure that in setting the closed periods we are informed and guided by science and that there is flexibility to TFA that the science would not support the need for closed periods beyond the end of December and therefore, for all soils, the closed periods should come to an end on the 31 December.

At the other end of the closed period it is also important to build in flexibility as relatively warm, dry autumns (such as experienced in 2007) would provide the right circumstances to allow spreading of organic manures without the risk of leaching which we wish to avoid. In this respect we would want to see built into the programme a facility whereby individual farmers, based on sound professional advice, could spread manures in the early part of the closed period when conditions permit. This would then match the provisions for inorganic fertilisers where application can be made within the closed period where there is written advice from a FACTS qualified adviser.
TFA VIEWS ON MANURE STORAGE

This is by far the biggest concern for the TFA. This is for a number of reasons.

Firstly, the TFA believes that the capacity requirements proposed (22 weeks for cattle and 26 weeks for pigs and poultry) are too high. The TFA believes that Defra should review the closed periods in the manner suggested above and then come forward with a reduced aspiration as to the amount of storage required by individual farmers.

Secondly, the TFA is concerned that the calculations for storage requirements are to be carried out on a standard basis. The TFA believes that there should be flexibility for individuals to derogate from the standard factors where they have taken professional advice about their own circumstances and where they are applying nutrient management techniques which reduce the amount of available slurry that requires storage. The TFA is concerned that in using standard factors, individuals will be required to erect storage capacity which they will never use.

Thirdly, the TFA is greatly concerned about the cost implications for producers. The TFA estimates that, on average, dairy farmers in particular will have to spend around £50,000 per farm in erecting new slurry stores. This is a significant capital outlay which cannot, in our view, be justified in terms of the profitability of the industry.

Whilst on tenanted holdings, where those holdings are let under the 1986 Agricultural Holdings Act, it will be the landlords responsibility to install fixed equipment necessary to meet statutory standards, we are greatly concerned that landlords will not have the financial capacity to cope with the degree of investment necessary. This is particularly the case for County Council Smallholding Authorities who may have upwards of 50 tenants each all requiring new storage capacity. The potential expenditure involved could cause local authorities to reconsider whether they can reasonably continue with their county farms estates and cause them to consider an accelerated programme of disposal. This would have a damaging impact upon farm structures and the farming ladder and undermine the government’s other key objectives about encouraging new entrants into agriculture.

In view of this, it is non-negotiable from the TFA’s perspective that the government must introduce a grant scheme to help fund the erection of new slurry storage capacity and we see no reason why this should be less than the 60% being offered elsewhere.

Fourthly, the TFA is concerned about the planning regulations which will have to be adhered to in erecting new slurry storage capacity. Local planning authorities in livestock areas of the country could be inundated with applications for consent to erect new slurry stores. The TFA believes that it would be important to strengthen the guidance given to local authorities about the handling of these cases to ensure that they can be expedited and not cause problems for applications for other types of development in rural areas.

Fifthly, the Association is greatly concerned about whether there would be sufficient capacity in the construction industry to build slurry stores. We are aware that the expertise for this type of work is in the hands of a very few people and we would be greatly concerned about others coming into the market place without adequate expertise who may not do as good a job as would be required for this type of work.

As a result, the TFA would argue that, together with the review of capacity requirements, the period over which this particular aspect of the Action Programme should be implemented should be increased to five years but with grant aid.

TFA VIEWS ON RECORD KEEPING REQUIREMENTS

The membership of the TFA is characterised by many small, family farms where access to labour is severely restricted. The TFA is greatly concerned about the capacity on farms to deal with the amount of bureaucracy that will be involved in recording all that is required under the new regulations. There needs to be a package of tailored advice, information and support to the tenanted sector in particular which will enable those within it to understand and comply with the record keeping requirements. The TFA would also ask in terms of the enforcement of the regulations that the Environment Agency should take a light touch approach particularly in the early years as farmers get used to the increased requirements.

TFA VIEWS ON COVER CROPS

The TFA recognises that cover crops can play an important role in reducing nitrate leaching from agricultural land but its blanket application would have major negative affects not least for vegetable and root growers. It would also compete with other aspects of government policy not least the encouragement of over-wintered stubbles under ELS. However, in recognition of the benefits that cover crops can have, the TFA would propose that it should be included as an option within ELS and in order to incentivise its uptake in key areas of concern it should be given a high points rating. The TFA would not support any move to implement a cover crop requirement as a blanket policy.
TFA Views on Anaerobic Digestion

The TFA sees limited scope for anaerobic digestion systems to assist with compliance on nitrates issues at the farm level. It is also a relatively expensive technology and therefore we do not feel able to support significant government investment in this area. The Association would caution the Government against making headline-grabbing announcements about investment in anaerobic digestion systems when its benefits are marginal and, on cost-effectiveness, could not be supported.

January 2008

Memorandum submitted by Mr Philip Dunne MP

I submit to the Select Committee’s enquiry my concerns about the proposed amendments that the Government is considering introducing shortly to regulations governing Nitrate Vulnerable Zones (NVZ). Those amendments could cause significant harm to this country’s agricultural economy, particularly in certain sectors that are least well equipped to cope with the increased regulatory burden proposed by the Department for Environment, Food and Rural Affairs. I write as a Member of Parliament representing the rural constituency of Ludlow, where agriculture remains a significant contributor to the local economy, as well as a partner in a farming business, as declared in the Register of Members’ Interests.

The Government’s proposals for those sectors affected are potentially extremely significant, particularly for the long-suffering dairy sector. However, the proposals have much wider ramifications for farming practice and enterprise viability across much of the livestock and arable sectors in England. Indeed, the Minister for the Environment has indicated in a parliamentary answer that, if the 70% NVZ proposal is implemented, approximately 139,500 farmers will be affected and, if the Action Programme covers the whole of England, approximately 195,500 farmers will be affected, as could each of the 272 Members of Parliament with a farm in their constituency.

Objectives

Before commenting on the proposal in detail, I should like to dwell for a moment on the objectives and evolution of Nitrate Vulnerable Zones. According to Defra, nitrogen discharge from agriculture accounts for 60% of diffuse nitrate pollution of the aquatic environment. In layman’s terms, nitrogen pollution leaching into the watercourses stimulates algae growth, which damages water quality, in respect of both human activity—from the quality of drinking water to swimming in the sea—and biodiversity within our rivers and oceans. I accept that nitrogen can contribute to water pollution, but we have to ask ourselves whether draconian, new and costly regulations are the right answer to a problem that seems already on the way to being solved without them.

How did we get to where we are today? The current proposals for extending and revising NVZs do not result from any new European Union Directive; rather, they stem from Defra’s need to abide by commitments originally entered into under the 1991 Nitrates Directive, which was agreed as part of the EU Environment Council in June 1991 and adopted in December that year.

It is clear that the original intent was to maintain regulation at the bare minimum. The 1991 Directive required member states to designate areas as NVZs where nitrate levels in water were at risk of exceeding 50 mg per litre and where the water was or might become eutrophic, namely water that is rich in dissolved nutrients, photosynthetically productive and often low in oxygen during warm weather. Member states could implement an Action Programme either for an entire territory or within discrete NVZs.

The Conservative Environment Minister at the time accepted that the aim of the 1991 directive was to improve water quality by reducing nitrate pollution from agricultural practice. He thought that the zone could cover up to two million hectares, but crucially said that the precise area would be based on necessary monitoring and other studies by the Government and the then National Rivers Authority. Any additional measures were envisaged to take into account their cost and effectiveness. Those two critical tests of cost and effectiveness should be the guiding principles applied by the Government today in responding to the consultation and bringing forward their final proposals.

It took until 1996 before the initial 66 NVZs were designated, covering a mere 600,000 hectares—just 8% of England—and focusing on protecting drinking water sources. In 2000, the European Court of Justice found that the UK had failed to protect surface and ground waters and was relying only on protecting drinking water. So Defra consulted in 2002 on two options for full implementation in England and received some 13,000 responses. The Government on that occasion wisely decided to take the least regulatory approach to comply with the Court and, in October 2002, designated 55% of England as an NVZ, including the original 8%. Much of that territory was in the West Midlands.
Those designations must be reviewed every four years, unless the Action Programme applies to the whole country. Having completed their four-yearly review, the Government concluded that there had been some increase in nitrate pollution in certain areas of England and that the current Action Programme had not had a significant impact on nitrate pollution. Those findings have not been universally acknowledged.

In August 2007, the Government published a further consultation paper inviting comments by 13 December, so that they could be in a position to respond shortly, with the stated intention of laying a statutory instrument before the House to come into force from 6 April 2008. In the Westminster Hall debate I secured in January, the Minister confirmed he is not fixed on that timetable.

**Implications of Proposals**

So what is proposed and what are the implications for English farmers and the environment? The measures currently proposed fall under seven main headings: controlling where, when and how much nitrogen is applied, how manure is stored, requiring cover crops in place of bare stubble and requiring detailed records of manure storage and nitrogen applications to be retained for five years. I describe those measures briefly below.

1. **Extent**

Defra proposes to control where nitrogen is applied by increasing the designation of either a further 15% of farmland to take the NVZs up to 70% of England’s farmland or incorporating the whole of England in an Action Programme, as Ireland did in 2003, joining Austria, Denmark, Finland, Germany, Luxembourg and the Netherlands.

Interested observers, such as the National Farmers’ Union, do not feel that such a major increase in designation is justified. The NFU claims to have provided evidence repeatedly to Defra over the past two years analysing Environment Agency data that has shown nitrate levels reducing in many rivers, such as in the River Trent. But we do not have to take the NFU’s word for it, since Defra itself admits in its NVZ consultation that:

“Analysis of surface water concentrations for the years 1999 to 2004 shows that 77% of sites had a declining trend”.

Defra may consider an analysis over only five years too short to be reliable, but why does it refuse to recognise the validity of the Environment Agency’s calculations of nitrate levels in several rivers, which show that they have been declining steadily for 15 years since 1990? In addition to the River Trent, other rivers have had a 10% to 20% decline in nitrates, including the River Nene at Peterborough, the River Thames at Goring Weir and the River Aire at Sneath, where Environment Agency monitoring of nitrate as nitrogen is used.

As recently as 17 December 2007, in answer to a parliamentary question the Minister said:

“My Department worked closely with the Environment Agency during the recent review of Nitrate Vulnerable Zones in England. The EA regularly monitors nitrate concentrations in waters and this monitoring data played a fundamental role in informing the recent review.”—[Official Report, 17 December 2007; Vol 469, c 1010W.]

This evidence should be used to allow a more refined designation, so that areas that have improved to an acceptable level can be de-designated. According to the refined method used to define NVZ designations in 2007, some 6% of England within the existing NVZ should qualify for de-designation. Areas that qualify should at the very least not be required to implement the new, more stringent Action Programme. That would save farmers a significant and wholly unnecessary capital investment.

A 100% designation would also exacerbate existing boundary anomalies on the edge of NVZs—for example, along the Welsh border, where NVZs are proposed to increase to only 3% of Welsh farmland, and in Scotland, where it is planned to increase them to only 14%. This raises the perplexing prospect, if the logic behind designation is based on scientific evidence, that part of a river, such as the River Teme which flows through my constituency but whose source is in Wales, could be subject to an NVZ in England but not in Wales.

Similarly, my own farm is divided by a watershed. If the 70% designation applies, land from which water flows west into the River Lugg would be subject to the regulations, but land where water flows east into the River Teme will not. That seems peculiar, and it will impact on how we conduct our farm and business.

If Ministers are considering expanding zones, they should also, under administrative law, consider the possibility of reducing a zone if the objective evidence supports such a reduction.

The increased costs on those within the zone, place these farmers at a considerable competitive disadvantage compared with those engaged in similar enterprises in neighbouring areas outside the zone.
2. Timing of dispersal

The proposal’s second impact concerns when nitrogen applications can take place. Defra plans to ban spreading slurry and poultry manure for up to five months during autumn and winter. It will extend the current ban of two to three months, which applies only to that 10 to 20% of NVZ land with sandy and shallow soil, to a ban for all land within the NVZ of between three and five months, depending on average rainfall, soil type and whether the slurry is being applied to arable or grassland. That is likely to have the perverse effect, even according to Defra’s own figures, of increasing the ammonia emissions from manure spreading by up to 9%. Ammonia is a potent pollutant that other EU directives are targeted to reduce. It is a further irony of the proposal that, according to the NFU, the environmental damage caused by the extra emissions will cost up to £300 million.

The proposal will encourage farmers to empty their slurry stores on the first fine day after the winter spreading bans end, almost certainly in unison. That has been the experience in other countries with similar regulations, such as the Netherlands, where regulations apply to pig and dairy cattle slurry. Instead of spreading slurry little and often when soil and weather conditions align to make it suitable, farmers throughout the area will all rush to empty their stores at the same time, increasing the environmental risks of smell in dry weather and leachate in wet.

3. Method of dispersal

Thirdly, the proposals on how manure should be spread amount to a ban on high-trajectory, high-pressure slurry spreaders. That would slow down the process, increase the cost and require additional investment in further machinery.

4. Rate of nitrogen

Fourthly, the proposals prescribe limits on how much nitrogen can be applied to each type of crop, which will effectively limit the potential yield from any specific crop. Over the years, plant breeders have developed higher-yielding varieties of all types of crops. The measure flies in the face of the attempt to encourage a competitive, dynamic agricultural sector.

Farmers can work within a farm-wide limit, so they should be free to apply fertiliser within that limit as they see fit to maximise crop potential. Defra recently conceded that it is willing to seek a grass-land derogation from the general whole-farm limit of 170 kg of nitrogen per hectare. The derogation is essential, and Ministers should seek a grass-land derogation of 250 kg per hectare, as is granted to other member states.

5. Storage

The proposal’s fifth and single biggest impact for farmers in affected sectors relates to the control of how slurry is stored. Defra proposes a minimum of six months’ storage for poultry and pig manure and five months for cattle slurry within two years of the regulations’ coming into force. That would impose a massive cost increase on hard-pressed dairy, pig and poultry farmers, many of whom would need to more than double their storage capacity, at a time when two dairy farmers a week have been leaving the industry due to the inability to make a living, poultry farmers have faced two avian flu scares in successive years and sharply volatile prices and livestock farmers, especially pig and poultry farmers, face a near-doubling of feed costs following last year’s grain price rises.

The capital cost of constructing suitable storage pits is estimated to be between £240 million and £400 million. Defra’s estimate seems completely out of touch with the reality of farming in Britain today. Defra assumes that farmers will have no difficulty in borrowing the capital cost and repaying it over 25 years, but banks—particularly in their current nervous and fragile state—might take a more jaundiced view about lending money to finance a sunk capital spend with no prospect of any return on investment. According to Promar International for Dairy UK, the capital cost for the average dairy farm will be £55,000. For the average pig farm, it will be £30,000, according to the British Pig Executive. For tenant farmers, such a commitment is likely to be particularly hard to fund. In an economic environment where dairy and pig farming has recently become a marginal activity for many, a bank prepared to lend might not take a 25-year view on repayment. Ten years seems more realistic, which would double Defra’s estimate of the annual cost of investment.

The difficulty of funding such investment has been exacerbated by the Government’s decision to abolish Agricultural Buildings Allowance. The Government should consider reinstating this relief to help farmers recoup the costs of that investment.

There are other costs in addition to the capital costs—for instance, the additional running costs of the proposed storage arrangements will lead to extra costs when dispersing slurry. Given the shorter time frame proposed for dispersal and the reduced volumes that can be spread at the same time, it will take longer, so there will probably be greater transport costs. I believe that those factors were not properly taken into account in Defra’s calculations.
6. **Cover crops**

Sixthly, the most significant aspect on farms other than dairy farms is the proposal to plant cover crops on ground harvested before 1 September that would normally be left as bare stubble over the winter. Defra argues that a cover crop would reduce nitrate leaching; it might do so, but I suspect only by a tiny amount. It is not clear on what scientific basis this argument was made.

This proposal bears all the hallmarks of Whitehall gold-plating—piggy-backing on an EU directive, so that Defra can blame someone else for the idea. There is no requirement for such a measure in the Nitrates Directive and reveals a lack of understanding of practical farming and horticultural practice.

Indeed a number of conservation schemes pay premiums to allow over-winter stubble, to protect farm birds. It seems that one arm of Government is working against the same arm.

A requirement to plant a cover crop and then to plough it in before sowing a spring-planted crop would lead to additional costs in mechanical operations and labour, and it could increase soil damage through the possible use of additional herbicides and the additional spring work necessary to establish seed beds. However, it would also be a direct encouragement to farmers to manage the land in such a way as to avoid the regulations—for instance, by harvesting after 1 September or by doing more autumn-sown planting which might adversely affect the optimum rotation for the farm.

The loss of over-wintering stubble would lead to a significant loss of habitat for farmland birds, just as set-aside is coming to an end. The environmental damage from such a proposal, which conflicts with other of Defra’s own objectives, would far outweigh the tiny reduction in nitrate. This proposal should be dropped.

7. **Record keeping**

Finally, the imposition of a new record-keeping regime provides a further major set of proposals for farmers to contend with. It takes red tape to new dimensions with records required to be kept in excruciating detail to comply with the provisions set out in the statutory instrument.

Such records include not just what manure is stored, but what is spread and where. They must all be kept for five years. Maps hatched in specified colours must be prepared and risk assessments undertaken, including a physical inspection, which must be recorded before spreading takes place in accordance with the map. Calculations for storage must be made in accordance with the schedule, which sets out how much manure each size, type and age of animal or bird excretes. That is taking micro-management to a ludicrous level. Farmers, particularly livestock farmers, have a better understanding of how their animals behave, including how they defecate, than bureaucrats in Whitehall.

Failure to comply is an offence, with penalties of up to two years in prison. Farmers should be trusted with a system of spot checking to ensure compliance, not compelled to spend endless spare time—time that they do not have—tied up in keeping essentially pointless records. This regime should be reconsidered.

**Food security and imports**

Another consequence of the proposal is the impact on the production of home-grown milling wheat of bread-making quality. I have some personal knowledge, having grown milling in preference to feed varieties of wheat on my farm for 20 years. UK flour millers require wheat with bread-making characteristics, which include a high level of good quality protein. The varieties of milling wheat presently available mean that, to achieve the required protein level, more than a third of UK crops will need more than 280 kg per hectare of nitrogen and 25% will require more than 300 kg per hectare.

Milling wheat achieves a premium price for farmers, which can be achieved only if it meets the millers’ high standards. Last year, wheat was grown on some 1.826 million hectares in the United Kingdom, of which approximately 35% had bread-making potential. Those farmers whose soils or land quality require higher than the proposed maximum 260 kg per hectare of nitrogen inputs to achieve those standards will be encouraged to grow more feed wheat varieties, thus lowering their returns and reducing the supply of home-grown quality wheat for the mills. That will increase our imports of such wheat from France, Germany, Canada and other countries.

British farmers have supplied an increasing proportion of domestic demand, which was estimated by the milling industry at 85% last year, with imports declining over the years from 70% to 15%. Has the environmental impact assessment considered the cost of increased food miles and associated carbon footprint increase that will result from reversing that trend, possibly to the point where the majority of the flour needed to make bread or cakes to feed the British public must be imported?

There is already significant evidence of reducing nitrate fertiliser use on cereal crops, by 25% over the past 10 years, while yields have continued to grow. Specialist farmers who produce bread-making wheat are skilled in applying nitrogen to maximise uptake by the plant, while minimising losses and wastage through run-off. That requires a flexible approach by individual farmers, applying manure and chemical fertilisers when it is right for the crop and in weather conditions suitable to maximise take-up and minimise leachate, not when they are told to do so by Whitehall.
Need and Gold Plating

Are more stringent requirements really necessary? I am not a scientist, but that decision should be based on scientific evidence rather than on bureaucratic convenience. Nitrogen fertiliser use has declined by 40% in less than 20 years and by 25% in the past 10 years. That has come about for several reasons, including a decline in the numbers of livestock after the animal health diseases of recent years, which means that less manure is generated. Furthermore, crop efficiency in absorbing nitrogen has risen substantially, so less nitrate is being leached through the soil. Nitrate trends are static or falling for 77% of river monitoring sites, and for 25% of groundwater. Defra’s plans seem based partly on meeting the aims of other directives or other Government objectives.

The Government have pledged to avoid all gold-plating of EU legislation, but their implementation and enforcement of these proposals fly in the face of that pledge. These measures are very costly, but not very effective. Defra itself has calculated a reduction in nitrites of only 1% by extending the closed period, which is responsible for the main cost of increased storage. These measures might not be regarded as cost-effective if they were introduced under the Water Framework Directive and could be disproportionate, but mysteriously, those tests do not apply under the Nitrates Directive.

Grant Aid

There should be grant aid to help farmers implement the more stringent proposals, particularly for storage. When the initial NVZ scheme was introduced in 1996, the then Government recognised the significant cost to farmers of meeting the manure handling and storage requirements under the Action Programme. They therefore established the Farm Waste Grant Scheme, which the current Government expanded, in 2002, when they substantially increased the designated area and then extended, in 2003, for a further two years. The scheme ended on 31 March 2006. Defra should reinstate that or equivalent schemes to provide relief to farmers in England, since their neighbours in Wales and Scotland are being offered grants of between 40 and 60% of the capital cost of providing the storage facilities.

Recommendations

Finally, I have some specific suggestions about what is needed to make the regulations workable. First, no more land should be designated as an NVZ than is justified by scientific monitoring—less than 70%.

Secondly, in areas where designation is questioned, there should be no additional storage requirement, plus the retention of existing closed periods and ideally other aspects too, while Defra undertakes more intensive monitoring.

Thirdly, capital grants comparable to the 40 to 60% grants available in Wales and Scotland should be introduced to assist with increased storage requirements, as well as tax deductible depreciation charges, following the loss of the Agricultural Buildings Allowance.

Fourthly, a longer period, such as four rather than two years, should be introduced, to allow the implementation of storage requirements, given the time needed to secure planning permissions, arrange funding and build. Ministers are keen to encourage anaerobic digestion facilities on farms, which will take even longer to plan and install than conventional storage, and they should be covered by these measures.

Fifthly, Ministers should press to secure a whole farm manure loading grassland derogation of 230 kg per hectare.

Sixthly, rather than imposing a blanket obligation from Whitehall, slurry volume storage requirements should be arranged locally to match more closely the conditions on the farm, including soil type, rainfall and land use. The six-month storage requirement for pig and poultry should be reduced to five months, because there seems no justification for additional storage; it is a buffer zone put in place by bureaucrats.

Finally, the record-keeping system should be simplified to allow a spot-check monitoring system, rather than the very prescriptive system proposed.

February 2008

Memorandum submitted by Natural Organic Fertiliser Company Ltd

The response provided below, from Natural Organic Fertiliser Company Ltd (Nofco), is to ensure that the beneficial use of organic green and ABP compost is duly noted, and that its usage should not be restricted in any way under the proposed Nitrates Directive.
1. **INTRODUCTION**

TEG Environmental Ltd composts source segregated municipal solid wastes. The resultant material is stable compost containing 45.5% organic matter, biomass and plant nutrients for recycling to agriculture, which is marketed by Nofco. The nitrogen in the composted materials has been incorporated into the compost biomass and stable forms of organic matter, which act as a *slow release fertiliser* over many years following application.

This document demonstrates the *importance of adding organic matter and nutrients to soils* with reference to EU and UK research and findings and (RB209). Compost is a low risk product, and should be excluded from any closed periods or loading limits in the forthcoming Nitrates Directive (England).

2. **SOIL ORGANIC MATTER (SOM)**

The primary source of SOM is plants, although animals, through waste products and the decomposition of their bodies provide a secondary source. In plant tissue, water makes up about 75% of the fresh weight of the plant, whilst 25% is composed of dry matter. In composted material the proportions of these elements will vary but the same basic components exist as well as an existing and active biomass. The elemental composition of the biomass is about 44% carbon, 40% oxygen, 8% hydrogen and 8% ash which incorporates all the elements listed above. Most of this is used as the building blocks for carbohydrates (60%), lignins (25%), proteins (10%), fats, waxes and tannins (5%). Sugars, starches and simple proteins decompose rapidly, whilst fats, waxes and lignins decompose very slowly. The decomposition of carbon and hydrogen containing compounds releases CO₂ (carbon dioxide) and water whilst the decomposition of proteins eventually releases NH₄ (ammonium), NO₃ (nitrate) and SO₄ (sulphate). Humus, which is created through a process of synthesis as well as of breakdown, is also an important product of organic matter decomposition. As well as producing a certain quantity of nutrients that are taken up by higher plants, humus is important for a number of other reasons. The surface area of colloidal humus particles (micelles) is high. This contributes to its high Cation Exchange Capacity (CEC), Water Holding Capacity (WHC) and is important in aggregate formation and stability.

The CEC of micelles may be 2–30 times higher than for mineral colloids, and this may account for as much as 20–90% of the adsorption of cations by mineral soils. SOM may help to provide easily replaceable cations on humus colloids, and increase the availability of Nitrogen (N), Phosphorus (P), Sulphur (S) and micro-nutrients held in organic forms. Acid humus may also help to release elements from mineral soils. **Soil Organic Matter also improves the physical properties of the soil by encouraging granulation, WHC and by reducing plasticity (and cohesion).**

In summary, organic matter positively influences physical and chemical properties of the soils far out of proportion to the small quantities present. It commonly accounts for as much as one third of cation exchange capacity of surface soils and is responsible, perhaps more than any other single factor, for the stability of soil aggregates.

2.1 **MICROBIAL BIOMASS CARBON (C)**

A recent study funded using Landfill Tax Credits into the benefits of applying compost to agriculture was undertaken by Enviros, with research studies by Rothamsted and Reading University (Compost Use in Agriculture Consolidated Report—January 2005), which concluded that:

"However, at the end of the 100 day incubation, the biomass in the soils given compost was still significantly larger than in soils where it was not applied."

2.2 **SOIL PROTECTION**

A recent Information Sheet was also produced by the Soil Association “Organic farming and the environment” which reinforced the need to supply soils with organic matter. An extract from that document is shown below:

*Conserving the land*

Defra has calculated that up to 2.3 million tonnes of soil is lost every year in agriculture. With c 6% of the soil in England and Wales now at high to very high risk of erosion, and much more land vulnerable to significant off-farm effects, organic farming is of immense importance to the UK’s soil protection objectives.
Soil protection

Soil erosion is caused by the loss of organic matter and exposure. The mode of plant nutrition is highly pertinent here and is completely different in conventional and organic/natural agricultural systems. In intensive, arable systems, the possibilities for soil protection are inherently limited since soil organic matter does not play a major role and because the use of inorganic fertilisers and pesticides, which replaces the dependency on organic matter, actually inhibits soil life and thus the development of a healthy soil structure. In contrast, organic farming developed out of a realisation of the central role of the soil in natural plant nutrition and also an early concern over soil erosion. As in nature, organic farming is therefore based on the use of organic matter in the soil as the plant’s nutrient source, with the nutrients supplied by the soil life, especially via fungal mycorrhiza, as opposed to via free mineral N/P/K. As a side effect of this, the soil life binds the particles, improving soil structure which means better water retention, better water drainage and also reduced compaction susceptibility. In other words, excellent soil protection is part and parcel of organic farming and the main objective of many of its practices, such as manure composting, crop rotation, as well as the non use of inorganic agro-chemicals. Additionally, because of its more extensive nature and the fact that organic farming encourages mixed sheep and cattle rearing, which is better for vegetation, organic farming avoids the damaging effects of over grazing. Research has confirmed the higher levels of soil life and organic matter and the reduced erosion potential of organic farms.

2.3 COMPOST STABILITY AND N RELEASE

The Enviros research project cited in 2.2 above provided the following conclusions:

“The field research and soil measurements have shown that soil organic matter and plant available nutrients can be raised through the addition of compost. Soil pH was shown to be stabilised and interesting interactions between compost and applied nitrogen fertilizer were seen. Nitrogen fertilizers were able to be reduced by approximately 25kg N/ha where compost was applied without yield loss. In addition, with some crops including potatoes in some situations, this led to increased yields possibly as a result of improved nutrient cycling and availability over the growing season. When compost is applied all other nutrients, apart from nitrogen, can probably be omitted from the fertilizer programme. Crop yields were generally highest when compost was applied with the full nitrogen fertilizer rate. However, with potatoes a high rate of compost coupled with a lower rate of nitrogen fertilizer (compared with standard recommendations) gave the best yields. These results should encourage farmers to apply compost immediately before high value, irrigated crops such as potatoes. Farmers do not use animal manures too soon before potatoes because of the unpredictable nature of nitrogen release. Compost releases only a small amount of nitrogen and appears to make applied inorganic nitrogen more efficiently used by the crop.”

In addition to this, it is commonly known that well rotted farm yard manure (FYM) converts N into very stable humic compounds and this is what happens in the composting process. These compounds act like a slow release N fertilizer for crop uptake and protect the N in soil from nitrate leaching.

The ADAS “Booklet 1—Making better use of animal manure on arable land” confirms the slow release characteristics of organic N in “old FYM” or well rotted FYM. TEG compost has been processed and stored on site to stabilise and can be considered to be very similar to “old FYM” in terms of its stability and N release, thereby providing significant benefits not only to agricultural production, but also reducing risks of potential nutrient leaching.

3. EXECUTIVE SUMMARY

Compost is a valuable source of essential plant nutrients, and holds them in a slow release form, which ensures that they are not leached into groundwater. They can therefore be stored on, and applied to, soils all year round, and do not need to be included in closed period regulations.

The addition of organic matter to the soil also improves its humus levels and CEC capacity, further reducing potential nutrient loss (as proven by ADAS ongoing studies).

The percentage of Nitrogen made available to the growing crop is small, but does allow for reduction in inorganic N applications in future years. Compost should be allowed to be applied to the crop at rates to meet crop need from its available N, rather than total N, which would then reduce the need for inorganic fertiliser to be applied to the land. An increase in whole farm nitrogen loading limit should be proposed where compost is used. Legislation should be amended to make this clear distinction.

Compost should also be permitted to be applied at an increased loading per year to increase SOM levels, as it is more cost effective for a grower to apply large volumes of material in a single year, and then reduce applications in subsequent years, rather than small volumes over a number of years.

Defra should include a summary detailing the benefits of compost applications in future farmer/advisor available publications, as there is now significant long term evidence showing its benefits to agriculture and the environment as a whole.

January 2008
Memorandum submitted by the Country Land and Business Association

1. The CLA represents the interests of 38,000 land managers and rural businesses who between them manage a variety of businesses ranging from agriculture, forestry, fishing, tourism and a wide range of diversified enterprises. These businesses are at the heart of the rural economy and as well as impacting on the surrounding environment, as all industries do to some extent, land managers are good stewards of the land, and create and enhance the beautiful landscapes and habitats which the public greatly enjoy visiting. Nitrogen fertilizers—manufactured and organic—are part of land management businesses, and without which there would be no livestock farmed landscapes to enjoy.

2. The Nitrates Directive is a deeply flawed regulation. There is simply no scientific justification for the arbitrary limit it imposes, and the programme of measures it delivers is neither rational nor cost effective.

3. The proposed NVZ action programme review and new NVZ measures do not arise because of any decline in the quality and health of the UK’s water—in contrast the vast majority of water bodies are, on the Governments own assessment, improving in quality. Sadly the UK is being driven by European Officials seeking to secure compliance with an arbitrary target.

3. In fact, the nitrate content of water bodies varies widely across the country, and in most cases is in a state of flux, with a general downward trend. However, many very stable water bodies have relatively high levels of nitrates owing to historical events (at least some affected by the drive for food production in WW2) which current management can do little to alter.

4. Applying a fixed limit to only one of the wide range of naturally occurring and introduced diffuse pollutants is not a rational policy, and inevitably imposes disproportionate costs. A far better approach is set out in the Water Framework Directive, which is based on an overall objective for the status of waters, and which has a proportionality test built in.

5. The CLA, having regard for the Haskins review of regulation has put together its own tests for policy which can better meet the needs of current and future generations. We argue that policy should be: based on sound science; proportional; engage voluntary participation; decentralized; and in order to lead to sustainable local solutions. The proposals before the EFRA committee fail on all these grounds.

6. It is absolutely clear that the nitrogen loading of the countryside is in steady decline, owing to a range of factors including:

   — improvements in plant science and application, reducing artificial N applications to accurately meet plant requirements at the optimum time, and the associated practice of precision farming. This has led to a reduction of artificial N purchased and applied by 30% in 20 years.

   — reductions and concentrations in the number of livestock into fewer and better equipped holdings with sophisticated manure management systems. The number of dairy cows (UK) has fallen by 500,000 to 2 million, radically reducing the amount of organic N loading in the environment.

   — Environmental Stewardship programmes that help prevent N reaching waters are having a positive effect. This is being supported by work that is coming out of the Defra Environmental Observatory.

7. The Environment Agency (EA) monitoring shows an overall trend—75% of waters have a downward trend in N loading over five years, which is exactly what would be expected from the change in farming detailed above.

March 2008