



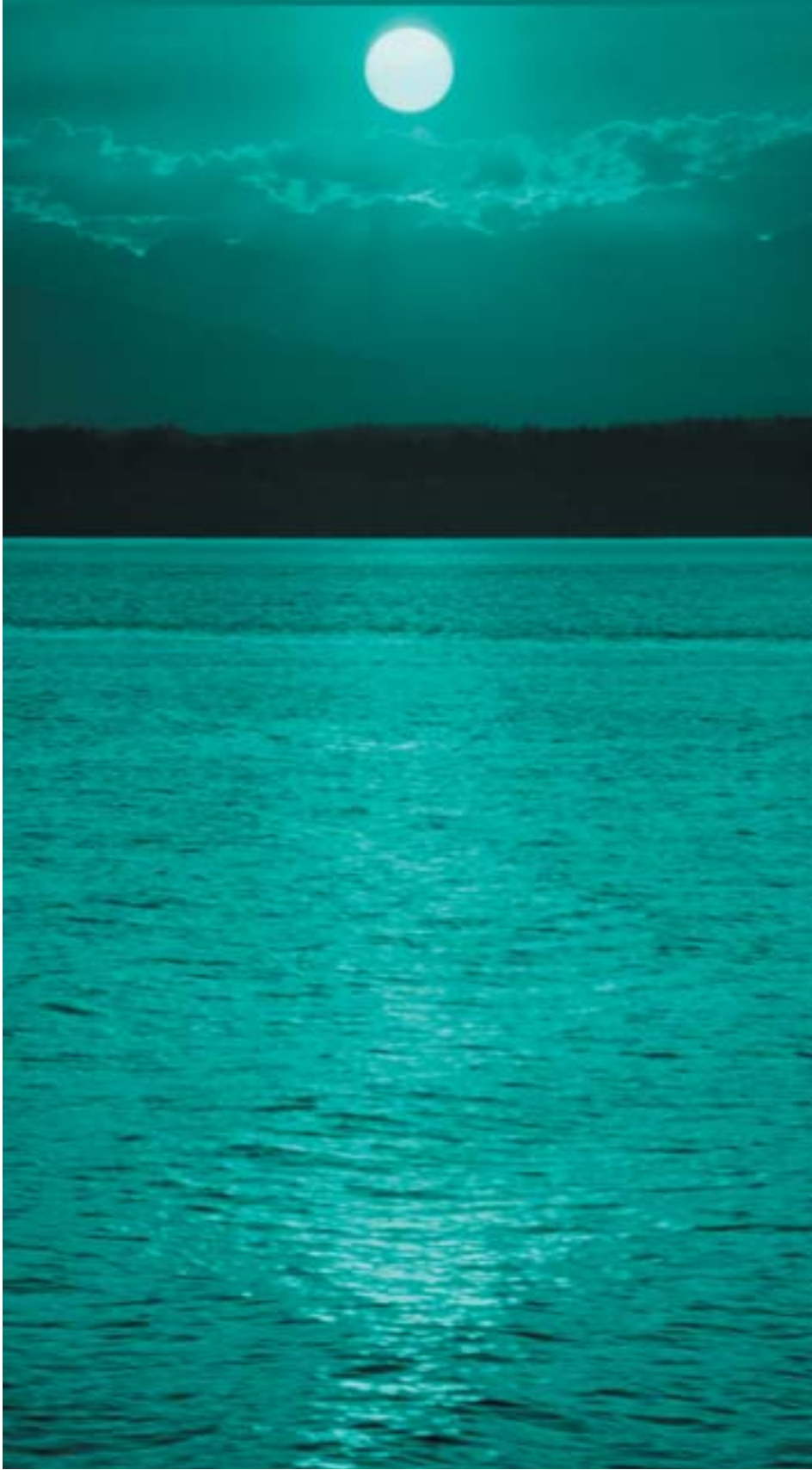
Department of the  
**Environment**  
www.doeni.gov.uk



Department of  
**Agriculture and  
Rural Development**  
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ENVIRONMENTAL POLICY DIVISION

# Environmental Policy Division



## **Nitrates Directive Second Consultation Paper**

### **Proposal for the Protection of Northern Ireland's Surface and Groundwaters**

April 2004



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## **Summary**

This Consultation Paper invites views on the proposal by the Department of Environment (DOE) and the Department of Agriculture and Rural Development (DARD) to declare 'total territory' under the Nitrates Directive. In effect, this will mean the establishment of mandatory measures, which will apply to all farmers, to control nutrient losses to water from agriculture.

It is the second in a series of consultation exercises being taken forward by DOE/DARD, on the subject of implementation of the Nitrates Directive and the control of diffuse water pollution from agriculture. The first sought views on the proposals to extend the designation of groundwater Nitrate Vulnerable Zones (NVZs) in Northern Ireland. This resulted in Northern Ireland increasing its designation of groundwater NVZs to seven.

Two further documents are planned, first a consultation in May 2004 on draft action programme Regulations under the Nitrates Directive to control agricultural nitrates, to be made in Autumn 2004 and become operational in March 2005; second, a consultation in April 2005 on draft Regulations under the Water Framework Directive (WFD) to control agricultural phosphorus with the aim of introducing these in summer 2005.

A Consultation Paper on the introduction of a Farm Waste Management Scheme, which is subject to European Commission approval, is being issued separately by DARD in parallel with this paper. It is the aim, subject to the outcome of consultation and approval, in the case of the latter, to introduce both in summer 2004.

In formulating your response to this consultation exercise, you may find it helpful to consider the following questions:

**Question 1:**

**Do you agree with our assessment of the impacts of water pollution from diffuse agricultural sources and the need for action?**

**Question 2:**

**Do you consider that the approach we are adopting to protect the Northern Ireland water environment is reasonable and proportionate given the extent of the water quality problems and our legal obligations under the EC Nitrates Directive? If not why?**

**Consultation Arrangements**

Your comments on the issues raised in this paper should be sent to one of the addresses below to arrive not later than 2 July 2004.

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Further copies of the consultation paper are available on written request or by telephone (DOE 028 905 44585 or DARD 028 905 25570). The paper can also be accessed through the following websites

<http://www.doeni.gov.uk/epd>

<http://www.dardni.gov.uk/>

### **Further Information**

Should you require a copy of this document in an alternative format, it can be made available on request in large print, disc, Braille, audio cassette or textphone for the hearing impaired. It may also be made available on request in minority languages for those who are not proficient in English.

Please note that the Departments may in due course wish to publish responses to this consultation document.

## **INTRODUCTION**

### **Purpose of Consultation**

The purpose of this consultation paper is two-fold. First, DOE and DARD wish to seek views on their proposal to declare ‘total territory’ in Northern Ireland under the Nitrates Directive. The declaration of ‘total territory’ is the foundation stone for a wider DOE strategy to control diffuse water pollution, principally, eutrophication, which is one of its primary manifestations in Northern Ireland. The declaration of ‘total territory’ will be specifically designed to control the agricultural contribution to eutrophication. The control of eutrophication will not only bring about considerable environmental benefits but will also fundamentally strengthen Northern Ireland’s compliance with a range of EU Directives on the aquatic environment.

Second, the Departments wish to take this opportunity to provide early information to farmers on the nature and scope of the mandatory nutrient controls which are likely to be proposed and will apply province-wide on the land application of agricultural nutrients in the event that Northern Ireland declares total territory. The first stage of this process will involve a further consultation paper setting out the Departments’ proposals for the control of agricultural nitrogen. A further consultation paper will be issued concerning agricultural phosphorus. While the Departments are not seeking comments on these measures for the purposes of this consultation exercise, this early information is intended to assist farmers in assessing their individual needs for financial assistance under the Farm Waste Management Scheme which is the subject of a parallel consultation being published by DARD. The launch of the scheme is scheduled for Summer 2004, as the Commission is currently considering the State Aid application.

## **SECTION 1**

### **The Need to Reduce Water Pollution**

1.1 One of the biggest environmental challenges facing Northern Ireland is the need to control diffuse water pollution in order to improve water quality and thereby contribute to the objective of sustainable development. In addition, its control will make a significant contribution to meeting European obligations.

### **What is Diffuse Water Pollution?**

1.2 Diffuse water pollution is ‘non-point’ source pollution; that is, there is no discrete point of discharge that can be readily identified and controlled and pollution can enter the environment by a number of pathways. In agriculture, the main pathways are by runoff and leaching from land to water.

1.3 In addition to agriculture, several other activities give rise to diffuse pollution of water including forestry, industrial land use, construction, urbanisation, transport and recreation.

1.4 The main concerns for water quality associated with diffuse pollution arise from the loss of nutrients such as phosphorus and nitrogen, silt, pesticides and other chemicals, faecal micro-organisms and slurry, manure and dirty water.

1.5 Loss of nutrients is of particular concern in Northern Ireland where it is giving rise to widespread eutrophication of surface waters. Eutrophication is one of the principal manifestations of diffuse pollution in Northern Ireland.

## **What is Eutrophication?**

- 1.6 Eutrophication is the enrichment of waters by nutrients 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. Eutrophication arises mainly from nutrient losses from sources such as farming, sewage and industry.
- 1.7 For surface freshwaters, phosphorus is the main nutrient of concern. Normally, it is in short supply, therefore limiting the growth of plants (sometimes referred to as the 'limiting nutrient'). In coastal and marine waters, nitrogen is generally the limiting nutrient. However, scientific studies show that in freshwaters and marine waters, nitrogen and phosphorus can each be limiting factors, either together or in turn, depending on a range of factors such as the plant species present and the time of year. There is a requirement to control losses to waters of both nutrients.

## **What are the benefits of controlling eutrophication?**

- 1.8 Eutrophication is considered to be the most widespread threat to good water quality in Northern Ireland. A large proportion of surface waters in Northern Ireland, both freshwater and marine, are now impacted by eutrophication and there is a trend towards deteriorating trophic status in many others.
- 1.9 While it is difficult to place an exact monetary value on the benefits associated with improving water quality, it is clear that

taking action to prevent and control eutrophication will generate a wide range of benefits for Northern Ireland's natural environment, its economy and the quality of its environmental amenities.

1.10 More specifically, action to tackle eutrophication will enhance biodiversity, restore fish habitats and improve the aesthetic standards of water bodies. Many of the important and characteristic aquatic plant and fish species found in Northern Ireland need low levels of nutrients to flourish. At low and moderate levels of nutrient enrichment, aquatic food webs are complex and diverse. If nutrient levels are too high, this diversity is reduced as the original flora and fauna become displaced by a smaller number of species, both plant and fish that are favoured by high nutrient content.

1.11 Plants and animals also contribute towards clean, healthy and robust aquatic eco-systems which provide many benefits. Good water quality is important because it provides clean drinking water, safe bathing water, healthy fisheries and contributes to an improved living environment. Good water quality is also essential for recreation and for supporting tourism which in turn encourages the use of the countryside and the viability of rural businesses.

## **Plans for Tackling Eutrophication**

- 1.12 To address the problem of eutrophication in Northern Ireland and halt the trend towards deteriorating trophic status of its surface waters, DOE is currently developing a Eutrophication Strategy, designed to put in place an overarching integrated approach to address this problem. The Strategy will incorporate a Nutrient Management Action Plan requiring management action by a wide range of groups and organisations to control the amount of nutrients they input into the environment.
- 1.13 This consultation paper is a key component of the wider strategy and contains an outline of DOE and DARD's proposals for the phased introduction of controls on the agricultural contribution to nutrient enrichment. In addition to the current consultation paper on the issue of total territory, these plans will be explained in more detail in two further consultation documents. The first of these (issuing in May 2004) will contain the Departments' proposals for draft Regulations controlling agricultural nitrogen under the Nitrates Directive. A second consultation paper (to issue in April 2005) will set out proposals for draft Regulations to control agricultural phosphorus under the Water Framework Directive. Both documents will include detailed regulatory impact assessments.
- 1.14 It is the Departments' intention to make the Nitrate Regulations in Autumn 2004 and bring them into operation in March 2005. It is envisaged that the phosphorus Regulations will be made and brought into force in the summer of 2005. The Departments

acknowledge the extent of the change which these measures will mean for the industry. By introducing the Regulations in this phased way, they are signalling to the industry their intention to introduce the measures while at the same time, providing a lead-time to allow the industry to prepare for the changes required.

### **Agricultural Contribution to Eutrophication**

- 1.15 Agriculture provides many benefits for society, aside from the production of food. It provides jobs and contributes to local economies and rural communities. It provides an attractive and well-managed countryside with great recreational and amenity value. In short, it plays a vital role in preserving and enhancing our environment and protecting our natural resources including water. Agriculture remains, nevertheless, a major source of environmental pollution.
- 1.16 Current evidence suggests that about 75% of diffuse nitrate loadings into water in Northern Ireland is caused by agriculture. This is perhaps unsurprising given that agriculture covers just under 80% of the land area and that substances that give rise to the nitrate inputs (fertilisers, manure and slurry) are essential, integral elements of the farmer's business.
- 1.17 Northern Ireland has identified the following five waterbodies as eutrophic – Lough Neagh, Lough Erne, Tidal River Lagan, Inner Belfast Lough and Quoile Pondage. The extent of eutrophic waters is currently under review and it is envisaged that other areas such as the Foyle and Lower Bann catchments may be identified as eutrophic in 2004/05.

1.18 In August 2002 DOE/DARD published a scientific report entitled “*Report on the Environmental Aspects of the Nitrates Directive*”, DOE/DARD which focused essentially on analysing the agricultural contribution to nutrients in eutrophic waters. The findings of this and subsequent analyses concluded that:

- Agriculture is the most significant source of nitrate in both Lough Neagh and Lough Erne contributing 75% and 92% of the total nitrate loading respectively. While the Nitrates Directive would mandate the control of nitrate in these catchments, there is likely to be little improvement in eutrophic status of these waters unless phosphorus losses to water are controlled simultaneously.
- With respect, in particular, to the Lough Neagh and Lough Erne catchments, the report observed that sewage accounted for less than 10% of the nitrate inputs. The low proportion reflects the small amounts of nitrogen excreted by humans and, in the Erne catchment, low urban populations. Nitrate loss rates from upland areas were exceptionally low leaving lowland agriculture the principal nitrate source.
- Nitrate from agriculture formed the dominant proportion of the annual nitrate loading in the remaining eutrophic areas: Tidal River Lagan (78%), Inner Belfast Lough (73%) and Quoile Pondage (94%).
- There is also significant nitrate loadings in the other larger catchments in Northern Ireland as follows: River Foyle (92%),

Lough Foyle (90%), Lower Bann (92%), Strangford Lough (90%), and Tidal Newry River (96%).

1.19 For rivers, the widespread presence of blanket weed and other nuisance plant species are accepted indicators of nutrient enrichment. Monitoring of plant communities present in the rivers of Northern Ireland, most recently in 2002-3, confirms that the majority of rivers in Northern Ireland are enriched or are showing signs of enrichment.

1.20 In the hundreds of small lakes present in Northern Ireland, nutrient concentrations typical of eutrophic conditions are the norm rather than the exception.

### **Agricultural Activities**

1.21 The agricultural activities which give rise to water pollution are mainly:

- inadequate farmyard management e.g. in relation to provision of waste storage facilities of adequate capacity, interception of soiled water, diversion of unsoiled surface water;
- application of fertilisers (organic and chemical) to land in an inappropriate manner e.g. on wet or frozen land, too close to watercourses, in wet weather conditions, application of excessive quantities of liquid, on land sloping steeply towards water courses; and

- the over-application of fertilisers to land, typically over an extended period that increases levels of nutrients in the soils which increases the incidence/risk of nutrients leaching from soil to water.

### **Contribution of Waste Water Treatment Works to Eutrophication**

- 1.22 To effect an improvement in water quality, all the sources of pollution need to be addressed. Controlling inputs from agriculture is only part of the solution. The other main contributor to eutrophication in Northern Ireland are discharges of nutrients from waste water treatment works which are encountering significant compliance problems with the Urban Waste Water Treatment Directive (UWWT Directive) as a result of a prolonged period of under-investment.
- 1.23 A massive programme of investment in sewerage services is now underway by the Department for Regional Development aimed at securing compliance with EU standards as soon as possible.
- 1.24 The attention being given to resolving the urban waste problem, together with the measures being proposed to control agricultural pollution, means that there will be a concerted series of initiatives taking place within the agricultural and sewerage infrastructure contexts designed specifically to tackle eutrophication and effect improvements in water quality.

## **Position in the rest of the UK**

- 1.25 The Department of Environment, Food and Rural Affairs (DEFRA) will shortly be consulting on proposals to deal with diffuse water pollution from agriculture (DWPA) in England in a document which is being produced jointly with Treasury. Agriculture is a devolved issue and therefore, it is a matter for Scotland, Wales and Northern Ireland to decide on how they wish to take the matter forward. The action programme measures proposed in Northern Ireland are designed to tackle eutrophication which is a primary example of diffuse pollution, therefore, the application of these measures across the whole territory, combined with mandatory controls on agricultural phosphorus will serve to act as Northern Ireland's DWPA strategy.
- 1.26 It is worth noting that while the majority of the DEFRA paper applies to England only, some of the options for economic instruments that are being considered, such as environmental levies, would need to be applied UK-wide and will therefore need consideration on this basis.

## **SECTION 2**

### **The Legal Context**

- 2.1 There are wide ranging and complex European and International legal drivers stimulating action to control diffuse pollution particularly eutrophication. The key driver for controlling agricultural nitrogen comes from the EU Nitrates Directive.
- 2.2 The Directive requires Member States (MS) to identify surface waters which are eutrophic or may become eutrophic. MS are then required to designate their catchments as Nitrate Vulnerable Zones (NVZs) and to apply action programmes to control agricultural pollution to those zones. Alternatively Member States may declare total territory and apply action programme/s across the whole territory, in which case there is no requirement to designate specific NVZs.
- 2.3 EU case law, supported by recent scientific studies, has confirmed that there is a requirement to control agricultural nitrogen in both marine and freshwaters where it is contributing to eutrophication. The scientific evidence on Lough Erne and Lough Neagh has shown that nitrate pollution plays a role in the eutrophication of the lakes.
- 2.4 However, while the Nitrates Directive requires the control of agricultural nitrogen, DOE and DARD scientific evidence has also confirmed that to tackle eutrophication effectively in Northern Ireland, there is a need also to control agricultural phosphorus.

2.5 The phosphorus controls will be introduced under the Water Framework Directive (WFD). The Water Framework Directive is a major new EU wide initiative aimed at ensuring a holistic approach to the management of water resources and the aquatic environment. The Departments will consult in April 2005 on proposals for phosphorus controls.

### **Current Implementation of the Nitrates Directive**

2.6 Northern Ireland has currently designated seven groundwater NVZs in response to findings of elevated levels (above 50mg NO<sub>3</sub>/L) of nitrogen in these waters. These zones are all small, constituting about 0.1% of the land area of Northern Ireland. There are no nitrate levels that exceed or are likely to exceed the 50mg NO<sub>3</sub>/L standard in surface waterbodies and therefore no requirement to designate NVZs on this basis.

2.7 There are, however, extensive areas of Northern Ireland to which the Nitrates Directive should be applied on the basis that they are draining into waters which are eutrophic. In addition, many other waters require protection from the harmful effects of agricultural activities to halt the trend towards deterioration in their trophic status. Given the extensive impact of agriculture on the environment and the resulting need for widespread agricultural controls, DOE and DARD consider that the application of action programme measures across the whole territory, in preference to an NVZ approach, is the most effective way of securing a measurable improvement in water quality. The rationale for, and advantages of this approach, are explained fully in **Section 3**.

2.8 Seven Member States have adopted the total territory approach to implementing the Nitrates Directive, most recently, the Republic of Ireland, in May 2003. Of the MS not applying total territory, seven have designated below 50% of their land as NVZs. The European Commission is currently taking legal proceedings against all seven, including the UK, for insufficient designation. Northern Ireland has designated only 0.1% of its land area and is already part of the major infraction case against the UK. Given its very low level of designation and the close scrutiny from the European Commission, Northern Ireland remains very vulnerable to further legal proceedings. The current infraction case on the Nitrates Directive has reached the final stage and should the European Commission not be satisfied with the UK's response, the case will be referred to the European Court of Justice with the possibility of fines of up to £50 million per year.

### **Other Legal Controls on Contributors to Eutrophication**

2.9 The legal controls on the other main contributor to eutrophication are found in the Urban Waste Water Treatment (UWWT) Directive. The UWWT Directive requires MS to identify as sensitive areas freshwaters and marine water which are found to be eutrophic or may become eutrophic. Within the catchment areas of sensitive areas (Eutrophic), the Directive requires larger<sup>2</sup> wastewater treatment works to remove nitrate and/or phosphate from the wastewater streams. One or both of these parameters may be applied, depending on the local situation.

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<sup>2</sup> Those treating waste from 10,000 population equivalent or more

## **Other legal drivers for addressing eutrophication**

2.10 Diffuse pollution and the phenomenon of eutrophication is leading to breaches of, or an increased risk of failure to comply with, a wide range of other environmental Directives, namely, the Shellfish Directive, Bathing Water Directive, Habitats Directive and the Freshwater Fish Directive. The benefits derived from introducing controls on nutrient losses under the combined powers contained in the Nitrates, Urban Waste Water and Water Framework Directives will make significant inroads into increasing Northern Ireland's level of compliance, thus minimising its vulnerability to further infraction proceedings.

## **The role of nutrient controls in strengthening farmers' ability to take advantage of CAP Reform**

2.11 The reform of the Common Agricultural Policy (CAP) will also provide a further incentive for farmers to reduce water pollution from agriculture. "Decoupling" – breaking the link between support and production – will mean that farmers become more market focused and will not be encouraged to overproduce. Farmers will be free to decide what to produce based more on sustainability, choosing approaches that will deliver environmental benefits as well as profits for farmers.

2.12 One of the central features of CAP reform is the establishment of cross compliance between EU environmental directives and the payment of subsidies which will help increase the sustainability of agriculture and particularly the environmental performance of farmers – by providing an incentive for them to meet a range of

new and existing requirements. For the first time, and as a condition of receiving the single payment, farmers will need to keep their land in good agricultural and environmental condition. This will set new standards for the protection and management of soils and will also help reduce damage to habitats and landscape features. In turn, these soil measures will also support our efforts to control diffuse water pollution from agriculture.

## **SECTION 3**

### **Total Territory Designation**

- 3.1 In considering the case for total territory, the Departments' approach has been influenced by a number of key considerations. The DOE/DARD Scientific Report identified a serious eutrophication problem throughout Northern Ireland. It also highlighted the extent of the agricultural contribution to that problem. It can be concluded therefore that an improvement in water quality will only be achieved by the introduction of widespread controls on agriculture. The introduction of these controls on a total territory basis creates a level playing field for all farmers and provides them with the opportunity to apply for grant aid, which is subject to European Commission approval, to assist with compliance.
- 3.2 Northern Ireland shares a land border with the Republic of Ireland (ROI), another MS which declared total territory in May 2003. The Water Framework Directive, which was transposed into domestic legislation on 22 December 2003, requires the co-ordination of measures within International River Basin Districts (IRBDs). Over 70% of Northern Ireland falls within the three agreed IRBDs. Given the extensive impact of agriculture on the island of Ireland generally and the fact that ROI is experiencing similar water quality problems to those in Northern Ireland, it would be consistent for Northern Ireland to follow a similar approach on the Nitrates Directive to that taken in ROI.

3.3 The Departments believe that these are compelling reasons for a declaration of total territory in Northern Ireland. However, the full advantages of the approach are set out below:

*Advantages for Farmers*

- It creates a level playing field for all farmers in Northern Ireland with all farmers subject to the same maximum application rates for livestock manure.
- It avoids potential tensions between farmers at the boundaries of NVZs through a possible perception of inequity between neighbouring farms.
- It avoids (real or perceived) competitive variations e.g. in relation to farm production costs or agricultural land values.
- It would help to preserve a clean, environmentally-friendly image for Northern Irish agricultural produce and would avoid (real or perceived) “labelling” of particular areas as polluted or environmentally blighted.
- It avoids the continuing uncertainty associated with the non-designation of areas as NVZs. These excluded areas could easily be designated in future years and advance planning in them would be hindered by such uncertainty.
- Financial support for implementing agricultural improvements, for which State Aid approval is currently being sought, would be available to all farmers, not just those within NVZs.

### *Advantages for the Environment*

- Agricultural activities affect water quality in all areas. It is appropriate that similar standards/principles are applied in all areas.
- A total territory approach is the most appropriate, holistic, comprehensive approach as it addresses a wide range of environmental impacts likely to arise from agricultural activities e.g. eutrophication of freshwaters or estuaries due to excessive inputs of phosphorus or nitrates; health-related risks due to elevated levels of nitrates in drinking water sources; biological contamination of drinking water sources (including protection against possible contamination by E-coli 0157 which can cause serious illness). It would also support implementation of the National Climate Change Strategy (to reduce emissions of the greenhouse gas nitrous oxide), the Gothenberg Protocol and the National Emissions Ceilings Directive (2001/81/EC) to limit emissions of ammonia.
- The approach is consistent with the Water Framework Directive, which requires programmes of measures to be developed in all catchments with the aim of achieving good surface water status.
- It would prevent the movement of slurries from designated to non-designated areas, thereby not simply displacing the problem.
- It is consistent with the actions being taken in all areas in relation to, for example, controls on industrial discharges and intensive piggery/poultry units, and the major programme of investment in wastewater treatment works by the Department of Regional Development.

### *Additional Advantages*

- It avoids potential problems in deciding the precise boundaries of the NVZs.
- It avoids the need to justify NVZ boundaries to the European Commission and any time delays which may accompany this process.
- It avoids any potential further problems with the Commission in relation to the designation of groundwater NVZs.
- It is consistent with the approach taken in the Republic of Ireland.
- It is consistent with the policy aim of promoting the sustainability of agriculture in all areas.

### **Costs to the Industry**

3.4 A declaration of total territory does not of itself incur costs. However, the application of mandatory action programme measures to all farmers in Northern Ireland will have financial implications.

3.5 The full detail of proposed action programme measures is contained in **Section 4**. In terms of the action programme under the Nitrates Directive, the two key measures which will have the greatest financial impact are first, the requirement for a closed period when organic manures cannot be spread on land, necessitating increased slurry storage capacity, and second, an upper limit on the amount of organic manures applied to land.

3.6 It is proposed that the closed period will be of four months' duration. This will mean that the average farm in Northern Ireland will be required to have 5 months slurry storage capacity. To meet

this first requirement, a farmer can either reduce his stock numbers so that his current slurry storage capacity will provide enough storage for 5 months of slurry collection, or, alternatively, invest in additional slurry storage capacity so that the storage on farm meets the 5 months requirement.

- 3.7 It is estimated, that as many as 12,000 farms in Northern Ireland may have to take action in order to meet a 5 months storage requirement. Assuming that farmers will invest in slurry storage capacity to meet the storage requirement, the capital costs are estimated to be in the region of £237 million.
- 3.8 It is proposed to offset a proportion of this cost by the introduction of a Farm Waste Management Scheme (FWMS) which is subject to European Commission approval. The FWMS is discussed in more detail in **Section 5** of this paper and is also the subject of a separate, parallel consultation exercise.
- 3.9 As regards the limit on the amount of organic manures applied to land, the Directive requires this to be less than 170 kilograms of nitrogen per hectare per year. There may be scope to seek a derogation to 210 kilograms for a period of time. The possibility of a derogation will be pursued separately with the Commission.
- 3.10 Approximately 3,100 farms, of which 2,200 are intensive dairy farms, are likely to be affected by the 170 kgs N/ha/yr limit. These farms are likely to need approximately 73,000 additional hectares to accommodate slurry spreading. An Economic Appraisal, Commissioned by DARD and DOE to examine the financial implications of implementation of the Nitrates Directive, estimates

that potential annual economic costs, based on displacement of existing agricultural activity, could be up to £23.5 million per year.

3.11 These figures are estimates of the economic loss (displacement cost), due to farms requiring access to additional spreadlands to meet the nitrogen per hectare limits. In calculating the displacement cost, it is assumed this land is currently stocked at 1.25 cow equivalents per hectare and that the gross margin of £274 of these animals will be lost to the economy. These figures are not the direct financial costs attributable to farmers. It is expected that the financial cost per farm affected will vary significantly among farms depending on the cost of getting access to additional land for spreading slurry. In the dairy sector, the economic cost is estimated at £7.5m. This is based on an average displacement cost to a farm of £3,449, while in practice the actual maximum cost of additional spreadlands is estimated to be in the region of £1,920. In addition less than 50% of dairy farmers will suffer any loss as a result of compliance with the Nitrogen output limit. It is likely therefore that the cost to the individual farmer will be significantly less than the economic cost presented in the Economic Appraisal.

### **Costs Associated with Phosphorus Controls**

3.12 Phosphorus controls will be introduced under the Water Framework Directive which requires an economic analysis designed to consider the relative impact of the various contributors to the problem and a judgement about the most cost-effective combination of measures to resolve it. While this work is ongoing, it is not yet complete, therefore the exact nature of phosphorus controls by which the industry will be affected, or the financial

implications thereof, are not yet known. However, the Economic Appraisal has identified a cost of £0.5m for soil testing and savings of £2m from reduced use of chemical fertiliser. There may be additional costs associated with measures to reduce P in those soils that are already at excessively high levels

### **Alternative Methods of Slurry Disposal**

- 3.13 The Departments will continue to work with the industry to identify other measures which might assist it in achieving compliance with the Directive.
- 3.14 There are a limited number of alternative methods for disposal of farm wastes. Examples are anaerobic digestion and incineration with associated energy production for slurry and solid manures, the use of constructed wetlands for treatment of dirty water and the use of swales for lightly contaminated yard and roof water. Some of these, for example anaerobic digestion, will still produce wastes that contain nutrients and so cannot be discharged to water. For wetlands there are uncertainties as to their efficiency under Northern Ireland conditions. The main disposal mechanism will therefore continue to be land spreading in accordance with the Codes of Good Agricultural Practice and hence maximising their nutrient value.

## **SECTION 4**

### **Proposed Action Programme Measures**

- 4.1 This section includes the detail of proposed action programme measures which will apply to all farmers in the event of a declaration of ‘total territory’. As already indicated, these measures together with draft Regulations and regulatory impact assessments, will be the subject of two later consultation exercises, therefore the Departments are not seeking comments on them at this juncture.
- 4.2 It is the Department’s intention to introduce action programme measures controlling nitrogen under the Nitrates Directive and phosphorus under the Water Framework Directive. Although the control of the two nutrients will be found in two separate sets of Regulations, the effect of the combined measures is set out below.
- 4.3 Annex III of the Nitrates Directive sets out the measures that must be included in all action programmes and it also authorises MS to take additional measures or to reinforce the action programme/s in order to attain the objectives of the Directive. The establishment and application of action programme/s is the key element in achieving the objectives of the Directive.
- 4.4 The WFD does not explicitly stipulate measures which must be introduced but rather, it gives a wide power to control diffuse pollution to which phosphorus is a contributor. The exact nature of the agricultural phosphorus controls finally adopted must take account of various considerations required by WFD, including a

full analysis of the nature and extent of the problems created by phosphorus losses to water.

4.5 As outlined previously, eutrophication is the main threat to water quality throughout Northern Ireland and the following measures have been designed to:

- a) reduce and prevent water pollution caused or induced by nitrogen and phosphorus from agricultural sources; and
- b) take effective action in all waters that are found to be eutrophic or are likely to become eutrophic.

4.6 The proposed action programme measures are:

*1. Measures relating to the land application of fertiliser*

1. Chemical fertiliser shall not be applied to any grassland between 1 September in any year and 15 February of the following year.
2. Chemical fertiliser shall not be applied to any land between 1 September in any year and 15 February of the following year for crops other than grass unless there is a demonstrable crop requirement between those dates.
3. Organic manure, excluding farmyard manure, shall not be applied to any land between 15 October in any year and 15 February of the following year.

4. Fertiliser shall be applied to land in as accurate and uniform a manner as is practically possible.
5. Chemical fertiliser shall not be applied to any land within 1.5m of a waterway.
6. Fertiliser shall not be applied to steeply sloping fields.
7. Fertiliser shall not be applied when:-
  - (i) soil is waterlogged;
  - (ii) land is flooded or likely to flood;
  - (iii) land is frozen or snow-covered; or
  - (iv) heavy rain is forecast within 48 hours.
8. Fertiliser shall not be applied to any land in a location or manner which makes it likely that the fertiliser will directly enter a waterway or groundwater.
9. Organic manures shall not be applied to land: -
  - (i) within 10 metres of any waterway, including open areas of water, open field drains or any drain which has been backfilled to the surface with permeable material such as stone/aggregate; or
  - (ii) 50 metres around a borehole, spring or well; or
  - (iii) within specified areas around designated groundwater source protection zones.

10. Slurry shall be applied close to the ground using inverted splashplate spreading, band spreading with trailing hose or trailing shoe, soil injection or soil incorporation methods.
11. Quantities of more than 50,000 litres per hectare of slurry, or 50 tonnes per hectare of organic manure shall not be applied at any one time. A period of at least 3 weeks shall be left between applications.

*2. Measures governing manure storage requirements*

1. New storage vessels, or existing facilities to be substantially enlarged or substantially reconstructed, for livestock manure, farm waste water and silage effluent shall comply with the British Standards specified in The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations (Northern Ireland) (2003).
2. The total livestock manure storage capacity on farms shall exceed, by at least 1 month, the period during which land application is prohibited in paragraph 2.3, except where it can be demonstrated that any manure in excess of the actual storage capacity will be disposed of in a manner which will not cause harm to the environment.

3. *Measures governing limits on the land application of fertilisers*

1. The quantity of chemical fertiliser and organic manures applied to each field each year shall not exceed crop requirements for nitrogen and phosphorus.
2. The application of fertiliser shall not exceed the recommendations in the MAFF Fertiliser Recommendations for Agricultural and Horticultural Crops (RB 209) (2000) and any supplementary guidance.
3. For any farm the amount of organic manures applied to the land, including by the animals themselves, and that brought onto the farm, shall not exceed 170 kg N/ha/year.

4. *Measures relating to land use management, including crop rotation systems, permanent crop maintenance and vegetation cover in winter*

1. Leaving soil bare in autumn and winter shall be avoided. Crops shall be sown so that they are growing by early autumn.
2. Where possible cover crops shall be sown in fields that would otherwise be bare over the winter.
3. Where grass leys are grown in rotation with arable crops, the first arable crop shall be sown as soon as possible after the grass has been ploughed.

## *5. Measures relating to record keeping*

1. For all farms, records shall be kept sufficient to enable any inspection of those records to ascertain, on an annual basis: -
  - (i) the total area farmed including the size and location of each field;
  - (ii) the soil fertility status;
  - (iii) the number of livestock kept on the farm, their species and type, and the length of time for which they were kept on the farm;
  - (iv) the capacity of livestock manure storage;
  - (v) the quantity of each type of fertiliser moved on or off the farm, the date of that movement and the name and address of the consignee and/or the consignor; and
  - (vi) where fertilisers are applied to any agricultural land other than grassland, records shall be maintained for each field of: -
    - a. area of field, the type and quantity of any fertiliser applied, the nitrogen and phosphorus content of that fertiliser, and the method and date of application,
    - b. the type and date of any crop sown; and
    - c. a statement of the foreseeable nitrogen and phosphorus requirements of the crops.
2. These annual records shall be retained for a period of 5 years beginning with the date of the event.

## **SECTION 5**

### **Farm Waste Management Scheme**

#### **Rationale for a Farm Waste Management Scheme**

5.1 As already indicated, DARD and DOE, in considering how best to implement the Nitrates Directive, commissioned an economic appraisal to examine the financial implications of the policy options. This appraisal recommended the establishment of total territory and associated action programme measures, and demonstrated the need for some form of financial support to assist farmers to comply with the Directive.

#### **Objective of Proposed Farm Waste Management Scheme**

5.2 The proposed Farm Waste Management Scheme (Northern Ireland) 2004, which is subject to European Commission approval and the detail of which is the subject of a parallel consultation, will provide grant aid towards the cost of the provision of farm waste facilities, to assist agricultural businesses in Northern Ireland, to comply with the requirements of action programme Regulations. It will also assist with compliance with the recently introduced Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (SSAFO) Regulations (Northern Ireland) 2003. The SSAFO Regulations, which will be amended to reflect the proposed storage requirement contained in the draft action programme Regulations, also play a significant role in the Departments' strategy for the effective implementation of the Nitrates Directive.

- 5.3 As with the schemes in England and Scotland, it is proposed, subject to the aforementioned approval, to make grant aid of £30m available towards the cost of investments in new or improved farm waste storage and handling facilities at a rate of 40%, up to an investment ceiling of £85,000.
- 5.4 Subject to the outcome of the consultation on the proposed Farm Waste Management Scheme and European Commission approval, DARD proposes to introduce the Scheme in the summer of 2004.

## **SECTION 6**

### **Mandatory Consultation Requirements**

#### **Equality Impact Assessment**

6.1 A preliminary screening exercise has been undertaken and there is no evidence that the proposed designation of Nitrate Vulnerable Zones will have any impact on equality issues. Therefore, the Departments do not consider a full Equality Impact Assessment to be necessary. Screening for Equality Impact Assessment documentation is attached at **Annex A**.

#### **Human Rights Act 1998**

6.2 The Departments of Environment and Agriculture and Rural development believe that this consultation document is compatible with the Human Rights Act 1998.

#### **Rural Proofing**

6.3 It is Government policy that all government Departments and Agencies intending to introduce a new policy should subject that policy to Rural Proofing. **Annex B** sets out the likely effects on the rural community of the proposed declaration.

## **Annex A**

### **Screening for Equality Impact Assessment**

#### **1.0 General Details**

##### *1.1 Title of proposed Consultation:*

Nitrates Directive – Second Consultation. Proposal for the Protection of Northern Ireland’s Surface and Groundwaters

##### *1.2 Brief summary of the scope of the proposal:*

The proposal seeks to declare ‘total territory’ in Northern Ireland under the Nitrates Directive. It will also provide early information to farmers on the nature and scope of the mandatory nutrient controls which will be the subject of future consultation exercises.

##### *1.3 Aims of the Consultation:*

To secure agreement on the proposal, thereby progressing implementation of the Directive.

#### **2.0 Screening Analysis**

All public authorities in carrying out their functions relating to Northern Ireland are required under Section 75 of the Northern Ireland Act 1998 to identify those policies which are likely to have the greatest impact on equality of opportunity and community relations. This is assessed against the nine categories listed below:

- (1) Persons of different religious beliefs
- (2) Persons of different political opinions
- (3) Persons of different racial groups
- (4) Persons of different ages
- (5) Persons of different marital status

- (6) Persons of different sexual orientation
- (7) Men and women generally
- (8) Persons with a disability and persons without
- (9) Persons with dependants and persons without

2.1 Is there any evidence of higher or lower participation or uptake by different groups within any of the nine categories?

**NO**

2.2 Is there any evidence that particular groups have different needs, experiences, issues and priorities in relation to the proposal?

**NO**

The Declaration of 'total territory' will be made by Regulation and this will relate to the prevention of water pollution. There is no evidence that particular groups have different needs, experiences, issues and priorities in relation to the proposal.

2.3 Is there an opportunity to better promote equality of opportunity or good relations by altering the proposal or by otherwise working with others in Government or the community at large?

**NO**

2.4 Have consultations in the past with relevant groups, organisations or individuals indicated that this proposal could create problems which are specific to them?

**NO**

### **3.0 Impact Assessment Decision**

3.1 Full impact assessment procedure is confined to those policies considered likely to have significant implications for equality of opportunity and community relations.

3.2 Taking account of the Screening Analysis in Section 2.0, does this proposal need to be submitted to a full equality impact assessment?

**NO**

## **Reason for Decision**

3.3 As a result of the screening analysis in Section 2.0, it is considered that there will be no significant implications for equality of opportunity or community relations as a result of the introduction of this policy.

## **Annex B**

### **Rural Proofing**

Rural Proofing is a process to ensure that all relevant Government policies are examined carefully and objectively to determine whether or not they have a different impact in rural areas from that elsewhere, because of the particular characteristics of rural areas; and where necessary, what policy adjustments might be made to reflect rural needs and in particular to ensure that, as far as possible, public services are accessible on a fair basis to the rural community.

This paper contains the Departments' proposal to declare 'total territory' under the Nitrates Directive with which the UK has a legal obligation to comply. By its nature, the proposal targets the rural community and its implications will be significant. In coming to a decision to consult on total territory, the Departments considered the extent of the water quality problem in Northern Ireland and the need to introduce widespread agricultural controls to address it. The Departments concluded that a declaration of total territory was the most effective way of doing so.

From the industry's perspective, it creates a level playing for all farmers providing them all with the opportunity to apply for grant-aid to assist with compliance. From an environmental perspective, a declaration of total territory will set the scene for the introduction of the level of control necessary to effect a measurable improvement in water quality throughout Northern Ireland. This will lead to enhanced biodiversity, the restoration of fish habitats and an improvement in the aesthetic standards of water bodies. Good water quality will lead to increased recreational use and support for tourism which in turn encourages the use of the countryside and the viability of rural businesses.

