



Northern Ireland Audit Office

Reducing Water Pollution from Agricultural Sources: The Farm Nutrient Management Scheme



REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
9 March 2011



Northern Ireland Audit Office

Report by the Comptroller and Auditor General for Northern Ireland

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Reducing Water Pollution from Agricultural Sources: The Farm Nutrient Management Scheme

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Comptroller and Auditor General

Northern Ireland Audit Office
9 March 2011

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Abbreviations

DARD	Department of Agriculture and Rural Development
DEFRA	Department of the Environment, Food and Rural Affairs
DOE	Department of the Environment
DFP	Department of Finance and Personnel
DSO	Departmental Solicitors' Office
EC	European Commission
EHS	Environment and Heritage Service
EU	European Union
FNMS	Farm Nutrient Management Scheme
LPS	Land and Property Services
NAP	Nitrates Action Programme
NIEA	Northern Ireland Environment Agency
NVZ	Nitrate Vulnerable Zone
PPE	Post Project Evaluation
SFP	Single Farm Payment
SMR	Statutory Management Requirement

Executive Summary and Recommendations



Executive Summary and Recommendations

Introduction

1. The Farm Nutrient Management Scheme (FNMS) provided financial assistance to farmers to install new or improved manure storage facilities on farms. It was introduced by the Department of Agriculture and Rural Development (DARD) in January 2005 to help farmers comply with the 1991 European Union (EU) Nitrates Directive and was seen as a key measure to help prevent water pollution from agricultural sources.
2. Under the Nitrates Directive, an 'Action Programme' of compulsory measures was introduced. This promotes better management of animal manures and other nitrogen-containing materials that are spread on the land. One of the key measures is that all livestock farms must have a minimum manure storage capacity of 22 weeks (26 weeks for pig and poultry farms). This is to ensure that farmers can comply with the requirement not to spread manure between mid-October and the end of January – the 'closed period'. This helps to combat eutrophication¹, a major environmental problem in Northern Ireland's waters.
3. The new regulations applied to all farm holdings. Many livestock businesses were unable to meet the closed period requirement without investment in new or improved storage facilities. If farmers could not afford to provide the minimum storage they either had to rent additional storage elsewhere, or destock to a level where their existing storage met the

22/26 week requirement, or risk non-compliance.

On the approval of the scheme

4. In 2004, an Economic Appraisal looked at the options for implementing the Nitrates Directive in Northern Ireland and recommended a capital grant scheme to assist farmers to meet the storage requirement. A grant rate of 40% was proposed up to a maximum grant payable of £34,000 per farm business. Based on a 1996-97 DARD sample survey of farms, the Appraisal estimated that as many as 12,000 farms would need to upgrade their storage facilities.
5. The scheme opened for applications in January 2005 with a budget of £45 million, on a 'first come, first served' basis. One condition of EU approval was that all construction work had to be completed by 30 November 2006, with the Department given a further year to process claims and make payments.
6. Before the launch of the scheme, the Department asked the European Commission (EC) to approve an increase in the grant rate to 60%, primarily because of an increase in the cost of materials, particularly steel and concrete, and an anticipated low level of interest in a 40% grant scheme. Commission approval was given in June 2005 and Department of Finance and Personnel (DFP) approval the following month.

¹ Eutrophication is caused by nutrient enrichment, mainly arising from excessive nitrates and phosphorus entering the water. This results in accelerated growth of algae, excessive plant growth and consequential reduction in oxygen levels.

7. In March 2006, DARD asked the EC for a two-year extension to the scheme. The main reason given was that the local construction industry would be unable to meet the demand for storage by the scheme deadline of November 2006. Following protracted negotiations, approval was given on the basis that no further extensions to the scheme would be sought.
8. In April 2007, the Department submitted a Business Case to DFP for the funding of all FNMS applications. This pointed out that the existing FNMS budget would only allow DARD to fund less than 2,000 applications. It estimated that funding all applications would cost £144 million (more than three times its original budget) but would:
- deliver the greatest water quality impacts
 - keep farmers on board regarding compliance with the Nitrates Directive Action Programme
 - avoid destocking on applicant farms
 - minimise the negative knock-on impacts of destocking, both on farm and processing employment and on wider rural communities.
9. In June 2007, DFP responded that the case had raised significant affordability issues and that it did not consider that the value for money case had been proven purely on economic grounds. However, it recognised that there were wider social benefits in terms of sustaining rural employment and rural communities. Other key factors were legal compliance, risk of infraction² and the need for, and implications of, enforcement. On balance, DFP agreed to approve the funding of all applications, subject to the affordability issue being satisfactorily resolved.
10. The Department subsequently put forward the potential sale of its land at Crossnacreevy in the context of seeking funding for the expanded FNMS scheme. It told DFP that an initial informal valuation suggested that, with planning permission, the site would command in excess of £200 million on the open market. DFP saw this potential receipt as an important and in the final analysis the persuasive point and agreed to provide the Department with the capital cover required to continue approving FNMS applications.
11. In March 2008, Land and Property Services (LPS) completed their valuation of Crossnacreevy. DARD's informal valuation of £200 million was not borne out. Instead, LPS put forward a number of disposal options for the site, which produced potential total market values ranging from £2.28 million to £5.87 million.

2 Infraction - a breach or infringement of the rules. Infraction Proceedings allow the EC Commission to impose penalties on member states.

Executive Summary and Recommendations

On grant take-up

12. In the first four weeks, following the launch of the scheme in January 2005, the Department received just over 11,000 preliminary applications, representing some 40% of the 26,000 livestock farm businesses in Northern Ireland. However, by the November 2005 deadline, fewer than 400 full applications had been received and the closing date was extended to March 2006. By this date, just under 5,000 applications had been received which represented some 18% of farm businesses. This contrasted with the earlier farm survey (paragraph 4) which indicated that 42% of farms needed to upgrade their storage facilities.
13. One in five applications was for the maximum grant available (£51,000), resulting in an average grant application of £31,231, nearly three times that predicted in the Economic Appraisal (£11,843). Following rejection of 473 applications by DARD and 493 withdrawals by applicants themselves, a total of 3,933 claims were processed by the Department, representing some 15% of livestock farms. By December 2009, the total grant aid paid to farmers was just over £121 million, making FNMS the largest capital grant scheme ever run by DARD.

On the impact of the scheme

14. It will take some time before the restrictions placed on farming practice result in significant and measurable improvements in water quality - the Economic Appraisal considered that it may take up to ten years to ascertain the ultimate impact. However, an indication of the current position was produced in late 2009. The EC requires Member States to review, every four years, implementation of their Nitrates Action Programmes. The first Northern Ireland review, dated December 2009, concluded that:
 - nitrate levels in surface freshwaters and groundwater appeared to be generally stable
 - eutrophication continued to be a problem in rivers, lakes and marine waters
 - compliance with the Action Programme was generally good, although there were some key areas of non-compliance such as record keeping and farm yard manure storage
 - trends in fertiliser use and improved use of manures were very encouraging.

15. As well as improved water quality, other success measures of FNMS are the additional storage capacity created and the extent to which destocking was prevented. However, this information is not readily available. The Department did not establish, at the outset, an appropriate set of output performance measures to assess increased storage capacity; for example:

- the total under-capacity of storage prior to the introduction of the scheme, i.e. the scale of the problem
- the increased storage capacity as a result of the scheme, i.e. how successful the scheme had been in addressing the problem
- the under-capacity still remaining in Northern Ireland, both overall and at a local level.

There is some indication of the extent to which farms may still be short of storage capacity, following completion of the scheme. The FNMS Economic Appraisal estimated that 42% of farms in Northern Ireland would need to upgrade their manure storage facilities to comply with the Action Programme. The scheme provided financial assistance to some 15% of farms, indicating that around 27% (around 6,750 farms) may pose an increased risk of non-compliance, unless they have rented storage elsewhere or reduced stock levels.

16. The Department has no data on storage rentals. As regards reduced stock levels, the size of the Northern Ireland cattle herd dropped from just over 1.7 million at June 2005 to a little under 1.6 million at June 2009. Again, however, there is no data available on the extent to which this resulted from the need to comply with the Nitrates Action Programme.

On compliance with the Nitrates Action Programme

17. The Northern Ireland Environment Agency (NIEA) is responsible for inspection and enforcement to ensure that farms are compliant with the Action Programme. Around 400 inspection visits are undertaken each year. Since 2007, when the Action Programme was introduced, inspection results show an increasing trend in the number of breaches detected. In 2009, 225 of 493 (46%) farms inspected were in breach of at least one programme measure, compared with 10% in 2007. While not totally unexpected (the regulations contained some transitional arrangements before becoming fully operational in January 2009), the extent of the increase does provide some cause for concern.

18. All breaches are notified to DARD which is responsible for applying reductions to the farmers' Direct Aid payments. The total penalties applied in 2009, relating to the "protection of water against nitrate pollution" were £278,600 compared with £1,375 in 2007.

Executive Summary and Recommendations

Main Recommendations

19. Our main recommendations are as follows:

1. **The Department should implement all EU Directives in a timely manner** – implementation of the 1991 Nitrates Directive in Northern Ireland was very late. Designation of Nitrate Vulnerable Zones should have been complete by 1993 and an Action Programme of measures in place by 1995. Slow implementation of the Directive brought an increased risk of non-compliance by farmers and, consequently, continuing environmental damage. It also exposes the Department to the risk of infraction proceedings if the European Commission does not see evidence of rapid and full compliance with its Directives.
2. **The Department should establish relevant and meaningful performance measures for grant schemes** – it is important to agree at least an initial batch of input, output and impact performance measures for any grant scheme. For example, in FNMS an output measure might have been the additional storage capacity created. As the current performance management system is more about activity-based reporting and does not contain SMART³ targets, it is difficult to measure scheme performance and state whether it has been a success.
3. **The Department should obtain accurate and up-to-date base information before the introduction of any grant scheme** – the Department's estimate of storage under-capacity in Northern Ireland was based on a survey of farms undertaken in 1997-98. Establishing a more accurate baseline would have enabled the Department to have a better understanding of the existing storage needs and to provide an accurate standard against which future progress could be measured. Failure to obtain accurate and timely data undermines the quality of decision making.

4. **In future schemes, the Department should explore the reasons for low levels of grant take-up while activities are running** – FNMS attracted over 11,000 preliminary applications of which less than 4,000 followed through with a grant claim. It may have been useful to check out the views, attitudes and behaviour of unsuccessful applicants and non-applicants. Careful review of data during the initial stages may provide useful lessons on how the scheme could be modified to encourage applications and maximise take-up and impact.
5. **The Department should feed into NIEA's annual risk assessment exercise** – the Department's records, including those farms that have not received FNMS assistance, provide a useful source for identifying farms with the highest risk of non-compliance with the Nitrates Directive. The Department should, therefore, consult with NIEA in advance of its risk assessment being completed to select the farms to be inspected.
6. **The Department should complete a Post Project Evaluation (PPE) at the earliest opportunity** – evaluation is an essential aspect of any scheme, providing an assessment of the scheme's effectiveness. FNMS was the largest capital grant scheme run by DARD and, following its closure, an early PPE should be given priority.
7. **The Department should take steps to obtain details of the slurry/manure storage capacity on all livestock farms in Northern Ireland** – apart from the 4,000 farms which availed of the scheme, the Department has no record of the capacity or condition of slurry and manure storage facilities in the remaining 22,000 livestock farms in Northern Ireland. Given the risks that inadequate storage poses for compliance with the Nitrates Action Programme and, consequently, realisation of improved water quality, action should be taken to obtain this data.

3 SMART - Specific, Measurable, Achievable, Realistic and Time-bound.

Part One: Introduction and background



Muck spreading.

Part One: Introduction and background

- 1.1 The Farm Nutrient Management Scheme (FNMS) was an agricultural grant scheme funded by the Department of Agriculture and Rural Development (DARD). It provided financial assistance towards the cost of building additional slurry and manure storage facilities on farms and was a key measure for improving water quality in Northern Ireland. The scheme operated between 2005 and 2008 and aimed to help Northern Ireland comply with the 1991 EC Nitrates Directive⁴ (the Directive).
- 1.2 Under the Directive, a mandatory programme of measures was introduced throughout Northern Ireland to prevent pollution of waterways and groundwater from nitrates from agricultural sources, through improved farming practices. One of the principal requirements of this programme is the need for all livestock farms to have a minimum of 22 weeks slurry storage capacity (26 weeks for pig and poultry farms). This aims to ensure that farmers can meet the rules prohibiting the spreading of organic manures during the wettest months with least growth (mid-October to the end of January) and that they also have sufficient storage capacity not to spread in adverse weather and ground conditions outside this closed period.
- 1.3 To comply with this requirement, many farmers in Northern Ireland had to upgrade their slurry and manure storage facilities. To offset a proportion of the cost, DARD provided farmers with a grant of 60% on eligible expenditure of up to £85,000. The scheme attracted almost 5,000 applications and had a budget of £45 million at its launch.
- 1.4 FNMS opened on 26 January 2005 and had a closing date for the receipt of full applications of 31 March 2006. EU State Aid approval required that all construction works under the scheme had to be completed, and claims submitted, by 31 December 2008, with all payments made by 31 December 2009.
- 1.5 The actual cost of the scheme grew steadily and, by its close, was some £121 million, making it the largest capital grant scheme ever run by DARD. The cost of the scheme was funded entirely from within the Northern Ireland Block grant.
- The 1991 EC Nitrates Directive introduced mandatory measures to reduce water pollution from agricultural sources**
- 1.6 The 1991 Directive was given legal effect in Northern Ireland through a range of Regulations, culminating in the Nitrates Action Programme Regulations (NI) 2006. Both DARD and the Department of the Environment (DOE) have joint statutory responsibility for its implementation. In Northern Ireland, agriculture is the largest source of nutrients found in surface waters and groundwater. They come from livestock manures and fertilisers and can reach groundwater and waterways by a combination of run-off from the land, losses from farmyards and percolation through the soil.

4 Council Directive 91/676/EEC, adopted on 19 December 1991

1.7 The Directive requires all Member States to identify as polluted waters:

- all surface and groundwaters that contain, or could contain, elevated levels of nitrate (i.e. nitrate concentrations in excess of 50 milligrams of nitrate per litre)
- all surface waters (fresh and marine) that are, or in the near future may become, eutrophic.

In both instances, Member States must designate all land draining into the affected waters as a 'Nitrate Vulnerable Zone' (NVZ). Alternatively, Member states can adopt a 'total territory' approach.

1.8 Once NVZs have been identified, or total territory adopted, Member States are required to adopt an 'Action Programme'. This sets out legally binding measures based on improved farming practices, including closed periods for the application of organic and inorganic fertilisers, a maximum application rate per hectare per year of nitrogen from livestock manure and the requirement for sufficient livestock manure storage capacity on farms to protect surface and ground waters. Farmers with land located in NVZs, or the entire territory, must comply.

Directive coming into force in 1991, it was not until 1999 that three small areas of Northern Ireland were designated - one at Clogh Mills, County Antrim and two near Comber, County Down. These areas were identified by the Environment and Heritage Service (EHS)⁵ of DOE using data on nitrate concentrations in groundwaters. The three zones covered some 1,600 hectares and encompassed approximately 90 farms. In 2003, a further four NVZs were designated, which covered an additional 167 hectares and encompassed approximately 20 farms. The seven zones in total comprised around 0.1 per cent of the land area of Northern Ireland.

1.10 It is important to implement EU Directives in a timely manner, particularly as there is the possibility of infraction proceedings for non-compliance. However, implementation of the Nitrates Directive in Northern Ireland was very late. While designation should have been complete by 1993 and an Action Programme drawn up by 1995, Northern Ireland's first designations were not made until 1999. The delay in designating NVZs was explained by DARD in a submission to the European Commission in 2004 when it stated that, until 1999, the focus of Government in Northern Ireland had been concentrated on socio-economic and, in particular, security and political needs. Protection of the environment had to compete against these policy priorities and, as a consequence, it was not adequately resourced.

Seven Nitrate Vulnerable Zones were identified in Northern Ireland between 1999 and 2003

1.9 While Member States were required to designate NVZs within two years of the

5 EHS became the Northern Ireland Environment Agency (NIEA) with effect from 1 July 2008.

Part One: Introduction and background

The most widespread threat to good water quality in Northern Ireland is “eutrophication”

- 1.11 In August 2002, a Working Group under the joint Chairmanship of DARD and DOE produced a scientific report⁶ which analysed the agricultural contribution of nutrients in eutrophic waters. It 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 the eutrophic status of these waters unless phosphorus losses to water are controlled simultaneously.”

- 1.12 A subsequent report⁷, published in 2004, found a similarly large agricultural contribution to the nitrate loading in local sea loughs. This report also confirmed that agricultural land was a major source of phosphorus.

- 1.13 A map, produced by EHS in 2005, showed that over 83% of the land area of Northern Ireland was sensitive to eutrophication. This suggested that this area, at least, would require designation as an NVZ under the Directive – see **Figure 1**.

To address the problem of eutrophication, Northern Ireland adopted a ‘total territory’ approach in October 2004

- 1.14 In April 2004, DARD and DOE, in a joint consultation paper⁸, considered that an action programme across the total territory was the most effective way of securing a measurable improvement in water quality and tackling eutrophication. They noted that seven Member States had designated less than 50% of their land as NVZs and the EC was taking legal proceedings against all seven for insufficient designation. Given that Northern Ireland had only designated 0.1% of its land area, DOE and DARD considered that Northern Ireland was extremely vulnerable to legal proceedings and substantial fines by the EU, especially in the wake of a European Court of Justice case ruling against France⁹.

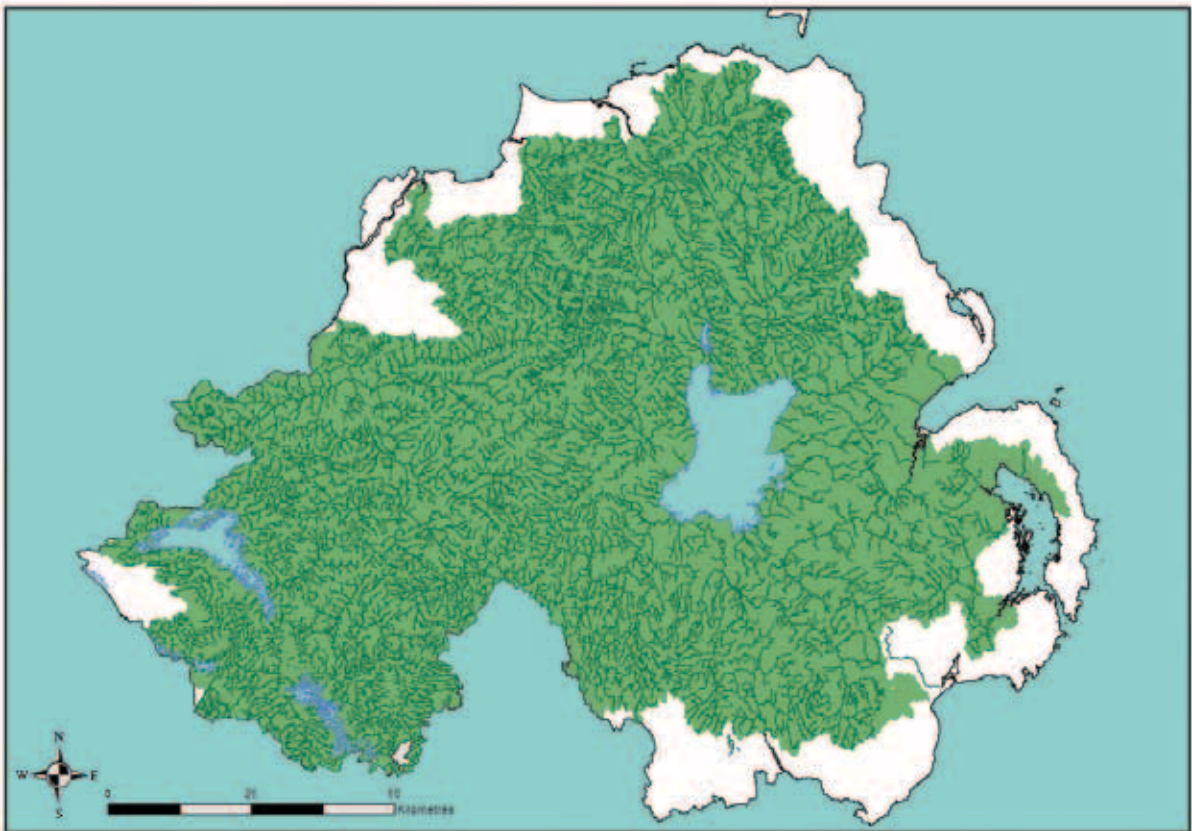
6 Report on the Environmental Aspects of the Nitrates Directive in NI, DOE/DARD, August 2002

7 An Evaluation of Nitrogen Sources and Inputs to Tidal Waters in Northern Ireland’, Queens University Belfast and DARD, March 2004

8 Nitrates Directive: Second Consultation Paper – Proposal for the Protection of Northern Ireland’s Surface and Groundwaters, DOE and DARD, April 2004

9 In June 2000, the European Commission brought a case against France to the European Court of Justice (ECJ) for failing to designate eutrophic waters as NVZs. France argued that since phosphorus, not nitrogen, was the controlling factor in eutrophication, it did not fall within the scope of the Nitrates Directive. In June 2002, the ECJ delivered its judgement and ruled against France. It clarified that eutrophic waters must be addressed under the Nitrates Directive, even where eutrophication was caused mainly by phosphorus rather than nitrogen. This was new case law and, in Northern Ireland’s case, it overturned its existing approach of designating only those limited areas with elevated nitrate levels in groundwaters. This change in interpretation ultimately led to “total territory” designation, as the main river catchment areas in Northern Ireland were all experiencing eutrophication, primarily as a result of elevated phosphorus, rather than nitrate, levels.

Figure 1: Areas sensitive to eutrophication



Eutrophic Catchments in Northern Ireland 2005

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Source: Northern Ireland Environment Agency

1.15 The consultation exercise closed in July 2004 and attracted 86 responses, with the majority supporting the proposal. In October 2004, DARD and DOE declared that a 'total territory' approach in Northern Ireland would come into

effect later that month. As a result, all farmers in Northern Ireland would have to comply with the accompanying action programme and, consequently, would become eligible to apply for financial assistance under FNMS.

Part One: Introduction and background

Position in Great Britain and the Republic of Ireland

- 1.16 The decision in Northern Ireland followed a similar one in the Republic of Ireland, where a total territory approach was declared in 2003. By contrast, England, Scotland and Wales have decided to continue to designate discrete NVZs – see **Appendix 1**.
- 1.17 The Department told us that designation of discrete NVZs is more appropriate to address elevated nitrate levels in groundwater, which is the main problem being addressed in other regions of the UK. It said that an NVZ designation approach would not effectively deal with eutrophication in the main lakes and river systems of Northern Ireland.
- 1.18 The Department also said that at least 83% of land area would have required designation as an NVZ based on scientific data provided by EHS in 2003. Therefore, moving to a “total territory” designation had very little impact on the funding required for FNMS. It said that this was because the remaining 17% is primarily upland in the Mourne, Antrim Plateau and Glens of Antrim. In these areas there is very low density of livestock, almost exclusively sheep. Hence, negligible additional slurry storage would be required in these areas as a result of total territory designation.

An Action Programme of measures, covering Northern Ireland, came into effect on 1 January 2007

- 1.19 An Action Programme, agreed between DARD, DOE and stakeholders, was accepted by the EC in October 2006. This resulted in the Nitrates Action Programme Regulations (Northern Ireland) 2006 coming into operation in January 2007. Regulations¹⁰ governing the use of phosphorus fertilisers were also introduced in parallel with the Action Programme Regulations (eutrophication of Northern Ireland’s waters occurs primarily where phosphorus is the main contributor). Their aim was to limit the amount of chemical fertiliser that could be applied, taking into account the amount of phosphorus already contained in soil and organic manures. **Appendix 2** sets out the key mandatory measures included in both sets of Regulations.
- 1.20 Research¹¹ undertaken in 1996-97 indicated that some 42% of farms (approximately 12,000) had less than the five months storage capacity required by the Action Programme. Therefore, many livestock businesses would be unable to meet the ‘closed period’ requirement (see paragraph 1.2) without investment in new or improved livestock manure storage facilities. Those farms which had insufficient storage capacity had three options:

¹⁰ The Phosphorus (Use in Agriculture) Regulations 2006 came into effect on 1 January 2007.

¹¹ Pollution Catchment Initiative 1996-1998 published by Countryside Management Division of DANU – consultants extrapolated the findings to estimate how many farms had less than 5 months storage.

- invest in additional storage
- reduce their stock numbers so that their existing storage facilities provided the 5-month storage capacity required
- a combination of the above.

1.21 In order to ensure optimum compliance with the Directive, and encourage farmers to retain their stock numbers, FNMS was introduced by DARD in January 2005. Similar schemes were already in place in the rest of the UK and the Republic of Ireland. On its launch, the scheme had a budget of £45 million to be used on a 'first come, first served' basis, but the Department subsequently obtained DFP approval to fund all applications. The final cost of the scheme was £121 million.

Previous NIAO review of measures to tackle agricultural pollution

- 1.22 In April 1998, NIAO reported¹² on the measures to control river pollution in Northern Ireland, including those employed by the Department of Agriculture to prevent pollution from farm sources. This was the subject of a Public Accounts Committee hearing at the Northern Ireland Assembly in November 2000. The Committee's subsequent report¹³ was published in February 2001.
- 1.23 The Committee noted that the Department's own research had shown that good farm management was a key factor in preventing river pollution and that grants alone were not the solution

to agricultural pollution. It welcomed the Department's proposals for tackling the problem through a mixture of regulation, advice and well-targeted capital grant support and recommended that DARD should monitor the outcomes of its anti-pollution activities using clearly defined, measurable impact indicators.

We examined how effectively the Department had administered FNMS

Scope of NIAO examination

- 1.24 We assessed the effectiveness and value for money provided by FNMS, including the economic justification for its introduction and how well the scheme had been implemented by the Department. We also consulted with the Northern Ireland Environment Agency on how it is enforcing the Nitrates Action Programme in Northern Ireland. This included a review of the results of the Agency's farm inspection programme, looking in particular at those breaches of the nitrates regulations which related to the handling and storage of slurry and manure. The report addresses three broad issues:
- the rationale and approval of the scheme **(Part 2)**
 - eligibility and grant take-up **(Part 3)**
 - the impact of the scheme **(Part 4)**.

12 Control of River Pollution in Northern Ireland, NIAO, HC 693, April 1998.

13 Report on the Control of River Pollution in Northern Ireland, NIA PAC, 3/00/R, February 2001.

Part One: Introduction and background

- 1.25 Our report draws on a wide range of evidence, including our review of scheme documentation and applications; observation of Departmental inspections; and written consultations and interviews with stakeholders, including the Ulster Farmers' Union.
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Part Two: Rationale and approval of the scheme



A below ground slurry tank, under construction. The majority of tanks under FNMS were below ground concrete tanks.

Part Two: Rationale and approval of the scheme

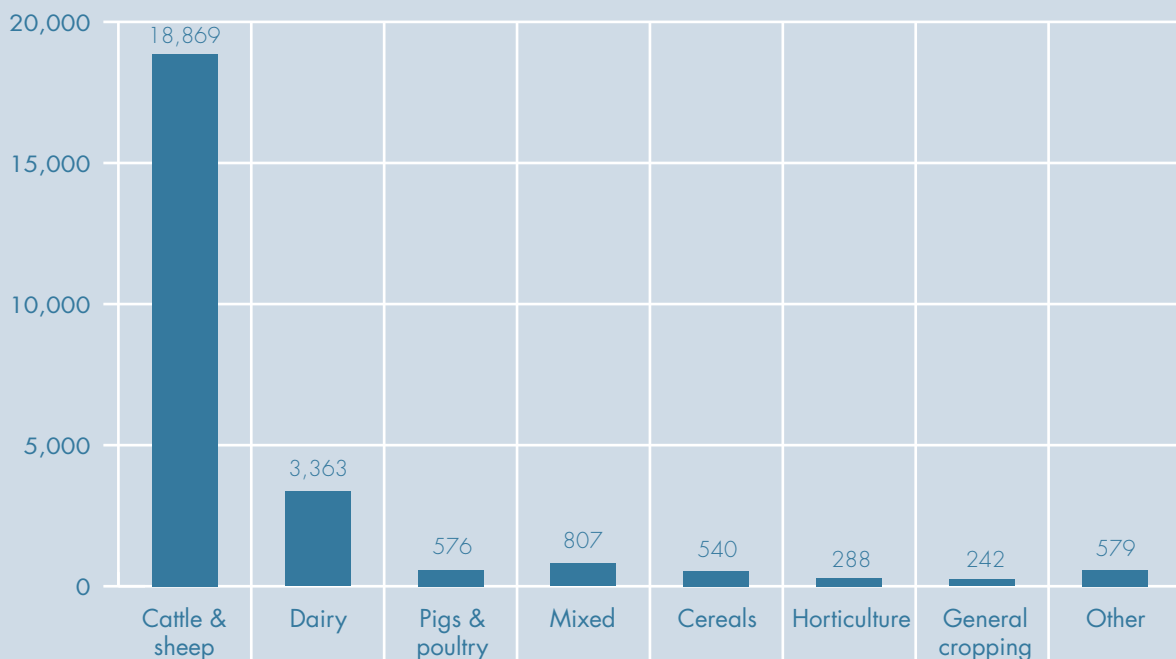
The agriculture industry in Northern Ireland

- 2.1 Agriculture plays an important role in the economy of Northern Ireland. Around 75% of the total land area of 1.35 million hectares is used for agriculture, with the industry dominated by grass-based cattle and sheep enterprises. At June 2009, there were over 25,000 active farm businesses in Northern Ireland, with some 88% of farms designated as mainly dairy, beef cattle or sheep - see **Figure 2**.
- 2.2 The number of farm animals in Northern Ireland, at June 2009, was some

1.6 million cattle, 1.9 million sheep, 430,000 pigs and 17 million poultry. The manure generated by agricultural livestock in Northern Ireland is some seven million cubic metres of slurry and 200,000 tonnes of poultry manure per annum, the vast bulk of which is applied to the land. Agricultural activities which can give rise to water pollution include:

- inadequate farmyard management – e.g. inadequate storage facilities for livestock manures and the run-off and seepage of soiled water to nearby watercourses

Figure 2: Farm business type at June 2009



Source: DARD's Agricultural Survey

- inappropriate application of livestock manures and chemical fertilisers – e.g. application made when crop uptake is low, on wet land, too close to watercourses, in wet weather conditions or on steeply sloping ground
- excessive use of livestock manures and chemical fertilisers – e.g. inappropriate rates and uniformity of spreading, resulting in an unacceptable level of nutrient loss from the soil to water.

2.3 In 1996-97, the Department undertook a sample survey¹⁴ of some 2,150 farms to establish the management and use of farm slurry and to establish the condition of farmyard installations. This indicated a number of concerns:

- 53% of farms had a storage capacity of less than six months
- 22% had a storage capacity of less than three months
- 36% of farms had poor slurry storage, 5% were leaking and 3% were overflowing
- 79% of farmyards had run-off from stock yards, silos, middens or bedded houses
- 34% of farms had uncollected dirty water.

2.4 This information was used by consultants in their Economic Appraisal to justify the introduction of FNMS – see paragraph 2.7. However, by that stage the data was some 7-8 years old. In our view, it would have been preferable if the Department had established a more up-to-date estimate of the storage under-capacity on farms before introducing the scheme. This would have provided useful information on where need was greatest, together with accurate baseline data for monitoring progress against the main objectives of the scheme.

FNMS provided financial assistance to farmers towards the cost of building additional slurry and manure storage facilities

Rationale for a grant scheme

2.5 DARD and DOE commissioned an Economic Appraisal to look at the options for implementing the Nitrates Directive in Northern Ireland. This was to consider the:

- arguments for and against designating certain targeted areas as NVZs, or declaring a 'total territory' approach
- costs and benefits of options
- relative extent to which the farming industry and Government should bear the costs of compliance.

14 Pollution Catchment Initiative 1996-1997, published by the Countryside and Management Division of the Department for Agriculture for Northern Ireland.

Part Two: Rationale and approval of the scheme

2.6 The March 2004 appraisal¹⁵ (described as a 'final draft') recommended the introduction of a capital grant scheme to help farmers meet the expected 5-month storage requirement of the Nitrates Directive Action Programme. The rate of grant recommended was 40%, which was consistent with the rate available in other parts of the UK. The main rationale for a grant scheme centred on a need to encourage farmers to retain animal numbers, rather than de-stock, so as to retain the value added of stock at the production and processing stages. Other reasons included the:

- difficult financial situation on farms
- introduction of similar grant schemes in other parts of the UK
- other non-monetary benefits of providing capital grant assistance, e.g. improved water quality would provide benefits to fish stocks, wildlife and flora and would encourage recreational use.

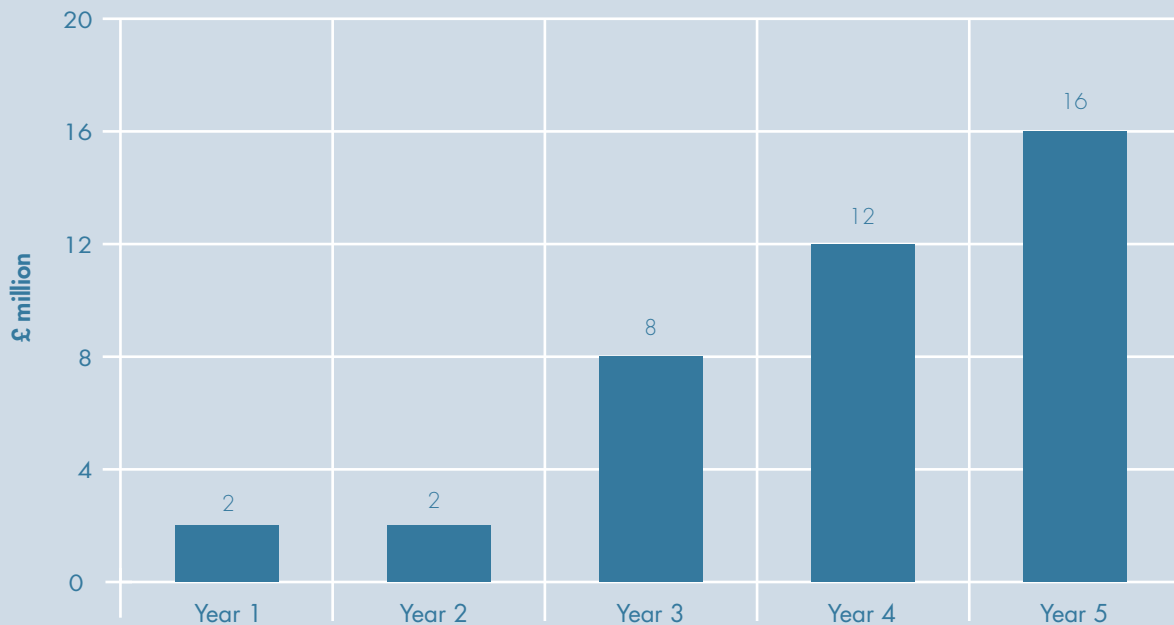
2.7 Based on DARD's sample survey of farms in 1996-97 (see paragraph 2.3), the appraisal estimated that there was a need for some 4.3 million cubic metres of additional slurry storage, if a 5-month storage capacity was to be met. This would require approximately 12,000 (or 42%) of farms to upgrade their storage facilities. The total cost of this, and other associated works, was estimated at £237 million - see **Figure 3** - an average investment of £19,700 per farm.

Figure 3: Estimated costs of additional storage needed to meet the requirements of the Nitrates Directive

Investment	Assumptions	Cost £ million
Slurry storage deficit	4,270,758 m ³ @ £46 per cubic metre	196.5
Midden investment	2,000 farms @ £10,000 per farm	20.0
Storm water repairs	10,200 farms @ £2,000 per farm	20.4
Total investment required		236.9

Source: *Economic Appraisal, BDO Stoy Hayward, March 2004*

2.8 The appraisal stated that existing pressures on farm incomes, coupled with the lack of financial return on an investment in storage capacity, would limit the ability of the industry to undertake this capital investment. It predicted that only 5,000 farmers would decide to avail of the scheme and invest in additional storage facilities. At an estimated average cost of around £20,000 per farm, the total investment for the agricultural industry was estimated at £100 million. Based on this, grant funding of £40 million would be required to meet demand - see **Figure 4**. The appraisal considered that once funding was exhausted, no further applications should be accepted.

Figure 4: Projected grant profile 2004-2008

Source: *Economic Appraisal, BDO Stoy Hayward, March 2004*

DFP approval (March 2004)

2.9 In March 2004, DARD obtained DFP's approval to introduce the capital grant scheme. This was based on the recommendations contained in the 'final draft' of the Economic Appraisal. DFP's approval was given on the basis that:

- funding of the scheme did not exceed £30 million – this was subsequently increased to £45 million in October 2004
- appropriate monitoring and timely review arrangements were put in

place to ensure that uptake of the scheme was in line with forecasts

- when clarification was received from the European Commission about the length of the scheme and upper limit of organic manure that could be applied to land, DARD would review the options identified should any substantial changes to the scheme be required.

DFP also noted that DARD intended to take overall responsibility for the Post-Project Evaluation (PPE) which was to be carried out by 2008 and asked that

Part Two: Rationale and approval of the scheme

arrangements be put in place for an interim review to be undertaken at the end of the first year of the scheme. It pointed out that *“these monitoring arrangements will be particularly important to ensure cost-effective and successful implementation of this scheme”*.

- 2.10 We note that, since the implementation of the scheme, no interim or other evaluations have taken place, despite this being a condition of DFP’s approval. Interim evaluations are important, as priorities can change and useful lessons can be learned by assessing how far the scheme has achieved its aims and objectives and what changes and improvements should be made.
- 2.11 The Department told us that it regards its Economic Appraisal Addendum of July 2005 (see paragraphs 2.20 to 2.23) as an interim review in the first year of the scheme; also, that its Business Case for further funding in April 2007 (see paragraphs 2.29 to 2.37) was a further review and comprehensive interim evaluation. We note, however, that the Addendum was completed only five months after the launch of the scheme, with the Business Case completed some two years later – neither in keeping with DFP’s requirement for an interim evaluation *“at the end of the first year of the scheme”*. The Department also told us that a PPE is to be carried out after completion of the scheme.

European Commission approval (June 2004)

- 2.12 In parallel with seeking DFP approval, DARD notified the EC of its intentions. Commission approval was given in June 2004 and required that:

- all farmers apply for grant aid before 1 March 2005 at the latest
- all construction works be completed by 30 November 2006, with all payments made by 30 November 2007.

The Commission noted that the maximum take-up of grant was estimated at 5,000 farmers, with total investment costs of £106 million. Grant assistance at 40% would, therefore, cost around £42 million.

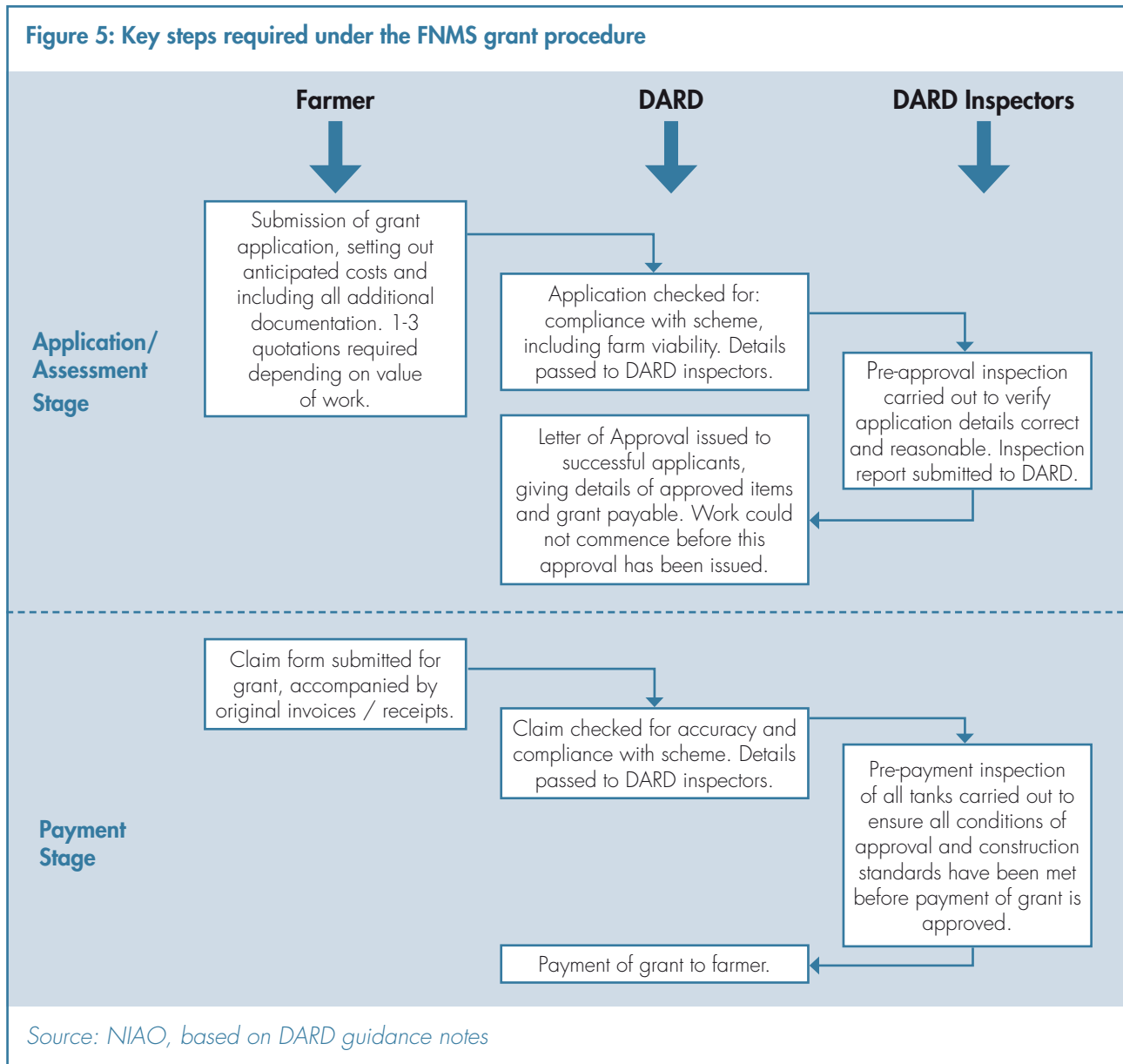
FNMS opened for applications in January 2005

- 2.13 FNMS opened for applications on 26 January 2005, with a total budget of £45 million. The scheme offered financial assistance at a rate of 40% on the first £85,000 of eligible expenditure, providing a maximum capital grant of £34,000. On its launch, the scheme was to be administered on a ‘first come, first served’ basis as recommended in the Economic Appraisal, and once the budget was exhausted, no further applications were to be accepted. (This was superseded in 2007 when the Department decided to seek additional

funding to ensure that all applications were supported - see paragraphs 2.29 to 2.37).

2.14 The scheme consisted of two parts, the initial application stage (where all applications for grant aid had to be

submitted before the 1 March 2005 at the latest), followed by the expenditure claim (where all works had to be completed and claims for grant submitted before the end of November 2006) – see **Figure 5**.



Part Two: Rationale and approval of the scheme

- 2.15 The deadlines imposed by the EC raised concerns in DARD, principally whether the local building industry would have the capacity to undertake and complete all the necessary capital works by the end of November 2006. In the circumstances, the Department began to explore, with the Commission, the case for an extension to the deadlines.
- 2.16 In addition, while the scheme had opened for applications in January 2005, the Action Programme components had still to be finalised and requirements, such as minimum storage capacity, remained uncertain. This, together with uncertainty over the scale of investment required and the availability of only a 40% rate of grant, appears to have contributed to a lower than anticipated level of applications – see paragraph 3.6.
- 2.18 The Department submitted proposals for an increase in the grant rate to the EC in October 2004. The submission highlighted the higher cost of providing storage tanks since the start of 2004 (when the original State Aid application process had begun). This had been caused by an increase in the cost of materials, particularly steel and concrete. In addition, consultations with farming representatives suggested that there would be very low levels of interest with a 40% grant scheme. To address this, the Department asked the Commission to approve an increase in the grant rate to 60%, to maximise scheme uptake.
- 2.19 In June 2005, the EC gave its approval to raise the grant to a rate of “up to 60%”. In practice, DARD applied a flat rate of 60%, up to a maximum grant of £51,000. The Commission noted that a budget of £71 million would now be required to fund the 5,000 expected applicants (although at this stage only £45 million had been allocated to the scheme).

An increase in the grant rate from 40% to 60% was approved by the European Commission and DFP

EC approval (June 2005)

- 2.17 The Department was unable to implement some revisions to FNMS unilaterally – certain changes to the terms of the State Aid Approval had to be approved by the European Commission. Even before the launch of the scheme in January 2005, the Department was exploring, with the Commission, a number of changes in order to make the scheme more attractive, particularly increasing the grant rate from 40% to 60%.

DFP approval (July 2005)

- 2.20 In July 2005, following receipt of the Commission’s approval, the Department submitted an Addendum to its original Economic Appraisal to DFP, seeking an increase in the grant rate to 60% (this would provide a maximum individual grant of £51,000). Whilst the Department’s main justification was the increase in building costs, it also pointed out that the original economic appraisal had been based on a storage requirement

of 20 weeks but, following discussions with the Commission, this had been settled at 26 weeks for pig and poultry farms and 22 weeks for other farms. The Addendum estimated that this had increased construction costs by a further 5% and the average investment per farm was now likely to be £24,000 (up from £19,700).

2.21 The Addendum also pointed out that the original appraisal had estimated that 5,000 farmers would uptake grant aid at 40% but conceded that this had been overly optimistic. It stated that responses to the public consultation on the scheme (received after the completion of the Economic Appraisal) suggested that a significant number of farmers would not be able to meet the remaining 60% of costs. At the 40% grant rate, the majority of farmers would be keen to either reduce stock levels or risk non-compliance with the Directive. The Addendum pointed out that, following the launch of the scheme, 11,000 farmers had registered their intent to enter the scheme, but very few (only 1%) had submitted a full application by July 2005, five months after the scheme opened.

2.22 The Addendum stated that increasing the rate of grant to 60% was likely to:

- maximise the level of uptake, and hence compliance with the environmental standards required

- maintain the viability of farms affected by the Nitrates Directive
- reduce the potential for stock reductions, and the associated impact on the value added for agriculture and its related industries.

2.23 DFP's approval to the higher rate of grant was given in July 2005. It was estimated that the existing budget of £45 million would allow 3,150 farmers to invest in storage capacity. The Department calculated that if it was to fund all 5,000 farmers who were expected to apply to the scheme, then a budget of some £71 million would be required.

A two-year extension to the scheme was approved by the European Commission in December 2006

2.24 In March 2006, the Department returned to the European Commission to explain that farmers were experiencing difficulties in submitting FNMS applications, as they were unable to obtain quotations. It appears that this was because suppliers were reluctant to quote for work which they were unlikely to complete by the scheme deadline of 30 November 2006. The Department considered that pressing suppliers to quote ahead would inflate prices and reduce value for money for both the scheme and applicant.

Part Two: Rationale and approval of the scheme

2.25 In order to encourage the maximum take-up of grant and secure the environmental benefits, the Department requested a two-year extension of the scheme, to the end of 2008, to:

- enable capacity in the construction industry to meet demand for storage tanks
- control the increase in prices caused by the short-term imbalance between supply and demand
- drive up levels of voluntary compliance with the Nitrates Directive Action Programme
- minimise potential short-term disruption arising from destocking and ensure the sustainability of the agriculture industry.

The Department also asked for a further year (i.e. until 31 December 2009) to process claims and make payments.

2.26 In a further submission to the Commission in June 2006, the Department pointed out that the original scheme budget was also insufficient. This was primarily due to:

- significantly higher than anticipated costs associated with the investment works

- the increase in grant rate from 40% to 60%
- the increase of the minimum storage requirement from 20 weeks to 22 weeks for cattle and 26 weeks for pig and poultry farms.

As a result, the Department reported that the total cost of additional storage was now estimated at £250 million. This equated to Government assistance of some £150 million, if all applicants were grant-aided.

2.27 Following protracted negotiations, EC approval was obtained to extend the deadline for the completion of works to 31 December 2008, with a budget of up to £150 million. The Department was also granted a further year in which to process all claims and make the grant payments. This provided a five-year scheme lifespan, beginning from January 2005, as illustrated in **Figure 6**. As a condition of approval, the Commission required an assurance that no further extensions to the scheme would be sought.

Figure 6: Key events timeline

2003-04	Mar 2004	FNMS receives DFP approval
2004-05	Jun 2004	FNMS receives European Commission approval
	Jan 2005	FNMS opens for applications
	Mar 2005	Closing date for applications (set by EC) (11,191 preliminary applications received)
2005-06	Jun 2005	EC approves grant increase from 40% to 60%
	Nov 2005	Closing date for full applications (set by DARD) (386 full applications received)
	Mar 2006	Revised closing date for applications (set by DARD) (4,899 full applications received)
2006-07	Nov 2006	EC deadline for completion of all works
	Dec 2006	EC approves a 2-year extension to the scheme
2007-08	June 2007	DFP approval given to fund all applications
2008-09	Dec 2008	Revised deadline for completion of works (EC approved)
2009-10	Dec 2009	Deadline for all claims to be paid (set by EC)

Source: NIAO

2.28 We note that while the Department sought and obtained EC approval for extending the scheme's deadlines, no submissions were made to DFP. The Department told us that it considered no submission to DFP was required, as the original appraisal had indicated that a five-year timeframe was required for the completion of works. It said that DFP was also kept informed of progress through budget monitoring processes and the submission of up-to-date statistics at fortnightly "stocktake" meetings.

DFP approval to fund all applications was received in June 2007

2.29 In April 2007, the Department submitted a Business Case to DFP to justify the funding of all FNMS applications. This stated that the additional funding (estimated at £89 million) would prevent the de-stocking of livestock and the consequent loss of value added to the Northern Ireland economy.

Part Two: Rationale and approval of the scheme

2.30 The Business Case pointed out that, although DFP had allocated an additional £10 million to the £45 million FNMS budget in early 2007, this only allowed the Department to fund applications received up to the 8 March 2006, together with some received on 9 March 2006. However, the Department had difficulties with ranking applications by “time received” on 9 March and calculated that it would require an additional £7 million to fund all applications (1,914) received up to that date – see Option 1, paragraph 2.32.

2.31 DARD also acknowledged that it had significantly underestimated the cost of the storage works involved. It said that there were a number of reasons for this:

- farmers’ preference for more expensive “below ground” tanks as opposed to “above ground” tanks - the original Economic Appraisal assumed that 25% of tanks would be underground but it now appeared that this would be closer to 80%
- the average price per cubic metre of storage for below ground tanks had increased from £58 to £86
- larger amounts of storage and other infrastructure works were required per farm - DARD inspectors found that approximately 25% of farmers had under-estimated the amount of storage required in their applications.

2.32 The DARD Business Case considered three options:

Option 1

The status quo - grant-aid all applications (1,914) received up to 9 March 2006. This would exhaust the existing budget (£55 million) and require a further £7 million, as it was difficult to identify the timing of individual applications received on the 9 March.

Option 2

Grant aid applications until a total budget of £71 million had been exhausted - this was the amount estimated in the revised Economic Appraisal of July 2005 that the Department would need to fund all 5,000 expected applications (paragraph 2.23). However, with the increase in average project costs, a budget of £71 million would only fund around 2,182 applications.

Option 3

Grant aid all of the applications received by the closing date of 31 March 2006. This would require total grant aid of £144 million i.e. £89 million above the existing budget of £55 million.

2.33 For each of the three options, the Business Case estimated the amount of stock that would need to be removed from non-funded farms in order for their existing storage capacity to meet the Action Programme requirements. It assumed that, on average, applicants had 50% of the capacity required.

2.34 The Business Case concluded that option 3 – fund all applications – was the preferred option from the quantitative economic perspective. It also stated that option 3 ranked highest overall on the basis of non-monetary criteria as *“it delivers the greatest water quality impacts; keeps the farmers “on board” re. compliance with the Nitrates Directive Action Programme; avoids destocking on the 4,694 applicant farms and minimises the negative knock-on impacts of destocking on farm and processing employment, and on wider rural communities”*.

2.35 The Department emphasised to DFP that retaining stock numbers would not only maintain farm employment but also sustain employment in the meat and dairy processing sectors. Conversely, if a large number of applicants were denied grant support, then there was the risk that a significant number would be in breach of the Nitrates Directive and expose Northern Ireland to the potential risk of infraction proceedings by the European Commission, with the possibility of significant daily fines.

2.36 During the following two months, DARD and DFP discussed the detail and ramifications of the proposal. In June 2007, DFP responded that the case had raised significant value for money and affordability issues and that it did not consider that the value for money case had been proven purely on economic grounds. However, it recognised that

there were wider social benefits in terms of sustaining rural employment and rural communities. Other key factors were legal compliance, risk of infraction and the need for, and implications of, enforcement.

2.37 DFP reached the conclusion that, overall, the benefits arising from the proposal outweighed the costs, with the social benefits and the reduced risk of infraction proceedings being crucial to its decision. It gave its formal approval, in June 2007, subject to a number of conditions, including:

- no additional funding would be provided to applicants to cover construction cost inflation
- confirmation from DARD that the 31 December 2008 deadline was largely achievable
- DARD was fully satisfied that there were no repercussions with GB (in relation to its schemes), as a result of this proposal
- And, “most importantly”, the affordability issue in relation to the additional resources had to be satisfactorily resolved before any commitment to funding could be made. (This would be the subject of separate correspondence between the DARD and DFP Accounting Officers.)

Part Two: Rationale and approval of the scheme

2.38 Following DFP's approval, the capital grant budget for FNMS had increased from its original budget of £30 million, approved by DFP in March 2004, to £144 million at June 2007 – see **Figure 7**.

	FNMS budget £ million
March 2004	30
October 2004	45
January 2005 - Launch of FNMS	
March 2007	55
June 2007	144

Source: NIAO

FNMS had a larger budget and higher rate of grant than similar schemes in Great Britain and Republic of Ireland

2.39 In addition, following the increase in grant rate to 60% and the decision to fund all applications, Northern Ireland had the

highest amount and rate of aid available within the UK, although similar to that in the Republic of Ireland – see **Figure 8**.

The Department put forward the potential sale of Crossnacreevy in the context of seeking funding for the expanded FNMS scheme

2.40 In correspondence between the DARD and DFP Accounting Officers, in June 2007, DARD said that the initial study on the 84 acre Crossnacreevy¹⁶ site had just been received. It believed that it would be possible to vacate the site and dispose of it within the period of the Comprehensive Spending Review, probably in 2010-11. It said that an initial informal valuation suggested that, with planning permission for the whole site, it would command in excess of £200 million on the open market. Therefore, the anticipated receipt would greatly exceed its requirements. The DARD letter went on to clarify that, if the proposal was to work, there would have to be an early initial meeting with the Valuation and Lands Agency to discuss

	NI	England & Wales	Scotland	Rol
Total Programme budget approved by EC	£150m	£13m	£29.4m	€248m
Estimated number of beneficiaries	4,800	2,060	4,350 (max)	25,000
Grant rate	up to 60%	40%	40%	60-75%*
Maximum grant per application	£51,000	£34,000	£34,000	€120,000

Source: DARD, NIAO & EC State Aid Notifications.
Note: * The higher rate of grant was payable to 'Less Favoured Areas' and young farmers.

¹⁶ Crossnacreevy incorporates the Northern Ireland Plant Testing Station, a centre of expertise on seed and cultivar science and technology, and the Northern Ireland Official Seed Testing Station.

how they would progress the valuation and disposal method for Crossnacreevy.

normal budgetary process in September 2007.

2.41 DFP saw DARD's proposal as very helpful, particularly as it was offering, for consideration and deployment by the Executive, a potential £200 million capital receipt, an amount considerably larger than DARD was seeking approval to utilise in the Farm Nutrient Management Scheme. In DFP's view, this was *"an important and in the final analysis the persuasive point"*. DFP indicated that given an assurance by DARD that it would seek to maximise the capital receipt arising from the Crossnacreevy site (provisionally estimated to be a potential £200 million), DFP would provide it with the capital cover required to continue approving FNMS applications over the following few months. The position would be ratified by the Executive as part of the

2.42 In March 2008, Land and Property Services (LPS) completed their valuation of Crossnacreevy. DARD's informal valuation of £200 million was not borne out. Instead, LPS put forward a number of disposal options for the site, which produced potential total market values ranging from £2.28 million to £5.87 million. Relocation costs of up to £6 million were also identified, leaving the sale of the site unlikely to yield any net gain. We asked the Department whether it would have to dispose of other assets to make good the shortfall. It said that it had produced an overall Estate Management Strategy which, amongst other things, had identified the opportunities for rationalisation and the options for disposal.

NIAO Main Findings

2.43 There are a number of issues arising from the implementation of the 1991 EU Nitrates Directive in Northern Ireland:

- **The initial approach to the implementation of the Directive was delayed** – while Member States had two years to identify and designate Nitrate Vulnerable Zones, NI only designated three small areas as NVZs in 1999 - some eight years after the Directive was adopted.
- **Due to the extent of eutrophication, NI adopted a 'total territory' approach in 2004** – this imposed a mandatory requirement on all livestock farmers to have at least 22 weeks slurry storage capacity. Some 42% of farms could not comply and, therefore, they had to decide whether to upgrade their facilities or take other actions to become compliant with the Action Programme. Grant support was available for those deciding to invest in additional storage capacity. We note that the Republic of Ireland, which had similar water quality problems to NI, also adopted a total territory approach in 2003.

Part Two: Rationale and approval of the scheme

- **Information about farmyard storage capacity, used in the Economic Appraisal and submitted to DFP, was at least 7-8 years old** – little additional research had been undertaken, since 1996-97, to measure the storage under-capacity on farms and establish the up-to-date need and priority areas for development when FNMS was introduced in 2005.
- **No interim review was undertaken at the end of the first year of the scheme** – DFP's approval was conditional on an interim review being completed after Year 1. DARD regards the Economic Appraisal Addendum in July 2005 (completed only five months after the launch of the scheme) as an interim review in the first year and the Business Case for additional funding in May 2007 (completed almost two and a half years after the launch of the scheme) as a comprehensive interim evaluation. However, we note that neither meets the DFP requirement.
- **Due to slow take-up, the grant rate was increased from 40% to 60%** – the European Commission approved an increase in the grant rate to a maximum of 60%, some five months after the scheme opened. This meant that FNMS had the highest percentage rate, and value, of grant available within the UK, although similar to that available in the Republic of Ireland. We note the Department's view that the grant rate was appropriate, given the scale of the problem in Northern Ireland and the fact that the 40% rate set at the outset of the scheme did not stimulate the necessary interest.
- **The deadline for the completion of works was extended by two years** – DARD returned to the EC, just over a year after the launch of the scheme, to request an extension to the end of 2008. The Department told the EC that the local construction industry did not have sufficient capacity to meet the demand for storage tanks under FNMS within the November 2006 timeframe. In December 2006, EC approval was obtained to extend the scheme to December 2008.
- **The cost of the scheme has grown from £45 million to £121 million** – it was originally estimated that FNMS, offering 40% grant, would require a budget of £40 million, which was to be issued on a 'first come, first served' basis. DARD subsequently persuaded DFP to increase the grant rate to 60% and fund all applications. DFP said the case had raised significant value for money and affordability issues but accepted that there were wider social benefits in terms of sustaining rural employment and rural communities.

- **DARD put forward the potential sale of Crossnacreevy in the context of seeking funding for the expanded FNMS scheme** – when DFP gave approval to fund all FNMS applications, it pointed out that the key outstanding issue was affordability. DARD's initial informal valuation of Crossnacreevy suggested that, with appropriate planning permission, the site could yield a significant receipt in the region of £200 million. In DFP's view, this potential receipt was an important and in the final analysis the persuasive point and obtained Ministerial approval to provide DARD with the necessary capital cover. Due to the absence of residential planning permission, subsequent professional advice was that there were a number of disposal options for the site which would produce potential market values ranging from £2.28 million to £5.87 million.
-

Part Three: Eligibility and grant take-up



A roofed midden for storing farmyard manure. The mixture of manure and bedding material such as straw has a high solid content and can be stacked.

Part Three: Eligibility and grant take-up

To qualify for grant, farmers had to meet certain eligibility criteria

3.1 FNMS covered the provision, replacement or improvement of a range of capital items:

- additional waste storage facilities, such as above and below-ground slurry tanks
- improvements to existing facilities, such as roofs for existing middens
- clean and dirty water drainage systems, such as guttering and downpipes
- slurry/dirty water management equipment, such as fixed slurry separators and electrical pumps
- miscellaneous items, such as access ramps, fencing and professional fees.

3.2 For minor elements of the works, farmers were allowed to claim grant either on an actual cost or on a standard cost basis. Standard costs were devised to cover works that did not require professional installation or certification and could be completed by the farmer or a general labourer, e.g. gutters, downpipes, fences, gates or excavation and demolition work. Where there was a standard cost for an item, payment would be capped at the standard cost limit, even where actual costs were greater.

3.3 To apply for grant, a farm business had to meet three eligibility criteria:

- **ownership** – applicants had to be the lawful occupier of the land
- **economic viability** – if requested, applicants had to provide a professional assessment of economic viability, comprising an income declaration and three years annual audited accounts
- **occupational skills and competence** – applicants had to confirm that they had at least five years full or part-time farm management experience or list their relevant agricultural qualifications as evidence of competence.

From our review of the Department's case files, we were unable to clearly establish if successful applicants had satisfied these criteria, as the Department requested no documentary evidence to support claims of ownership, economic viability or competence.

3.4 As a further condition of support, farmers had to provide confirmation that the grant-aided storage facility would be kept in agricultural use for a minimum of five years from the date of claim.

The vast majority of applications were submitted in the final three weeks prior to the closing date

- 3.5 EC approval for the scheme, in June 2004, required that all farmers apply for grant by 1 March 2005 “at the latest”. DARD took this as a deadline for preliminary applications (or ‘expressions of interest’) and set a later date of 30 November 2005 for the submission of full applications. The Department told us that a two-stage application process was necessary because the short time period to 1 March 2005 was insufficient for farmers to compile the detailed technical and financial information required for a full application. In addition, it said that farmers did not have full information on all the requirements of the Action Programme, as these had not been finalised by March 2005.
- 3.6 In the four weeks from the launch of the scheme on 26 January 2005 to 1 March 2005, a total of 11,191 preliminary applications (or ‘expressions of interest’) were received by DARD. This represented some 40% of farm businesses in Northern Ireland. Under the Department’s timetable, those that submitted preliminary applications had a further nine months to submit a full application. However, in October 2005, DARD extended the closing date for full applications to 31 March 2006, due to the low uptake. By the original closing date of 30 November 2005, the Department had received only 372 full applications. We asked the Department whether it had obtained EC approval to set or extend the closing date
- for the submission of full applications. It told us that there was no need to do so as the EC was kept fully aware of its actions throughout.
- 3.7 By the revised March 2006 deadline, a total of 4,899 full applications had been received, 3,498 (or 70%) of which were submitted in the final three weeks – see **Figure 9**. The number of full applications equated to 44% of preliminary applications and 18% of Northern Ireland farms – see **Figure 10**.
- 3.8 We note that the 18% of farm businesses that applied for FNMS grant contrasts with the earlier farm survey (see paragraph 2.7) which indicated that 42% needed to upgrade their storage facilities. DARD commented that its 1996-97 sample survey had indicated that more than 50% of farms already had sufficient storage capacity to meet the requirements of the Action Programme. It said that the 18% of farms that applied to FNMS were larger than average and accounted for 44% of the total cattle in Northern Ireland. In its view, therefore, the remaining 30% of farms that did not apply were likely to be smaller than average and would account for a small proportion of cattle. In our view, this does not necessarily follow. For example, DARD does not have figures to show the proportion of Northern Ireland cattle represented by the 50% of farms that its sample survey had indicated were compliant. In addition, only 15% of farms followed through with their FNMS application and submitted a grant claim (see paragraph 3.15). On a pro rata basis, this means that the percentage of

Part Three: Eligibility and grant take-up

Northern Ireland cattle represented by scheme applicants reduces from 44% to 37%, in respect of those who actually proceeded with the scheme.

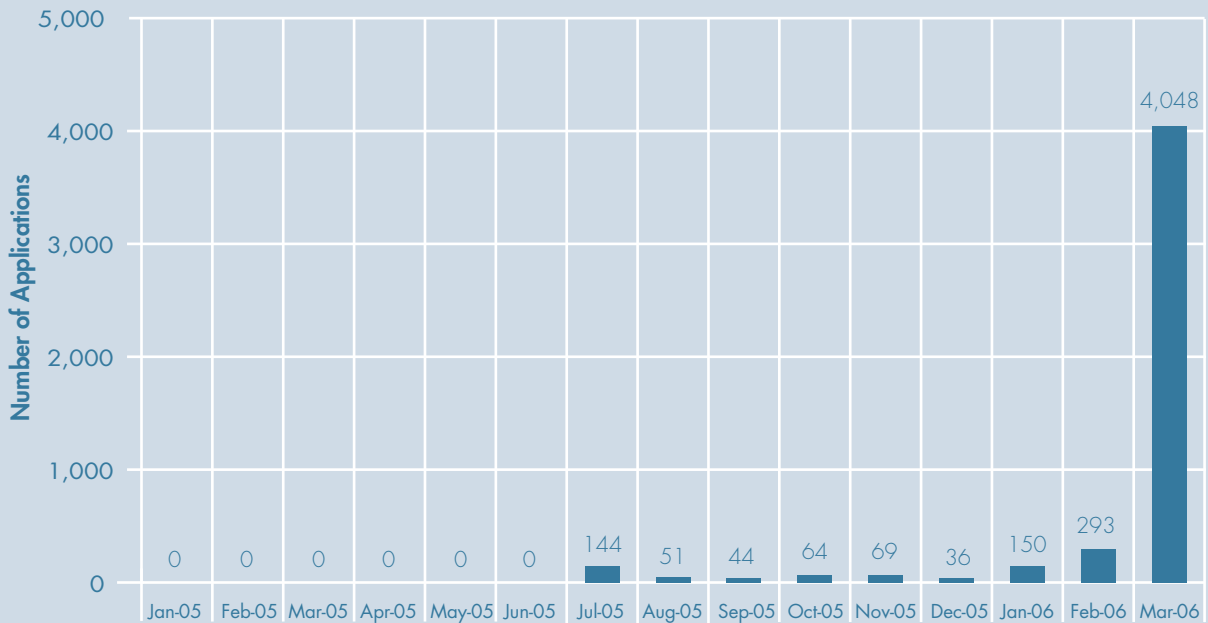
All farms were subject to an initial inspection before approvals were issued

3.9 Farmers were not permitted to begin work until they had received DARD approval in writing. This, however, could only be issued when all relevant documentation had been provided by applicants and the Department had checked details through a pre-approval on-farm inspection. This

was to ensure that the storage tank would be positioned correctly, be of adequate size and meet all specification standards. Out of the 4,899 full applications received, 473 (or 10%) were rejected or withdrawn. The reasons included late application, no preliminary application received and no livestock on the farm. This left 4,426 farms to be inspected, following which 4,357 were approved.

3.10 The first pre-approval inspection was carried out in March 2005, and the last one over three and a half years later, in October 2008. We note that it was a condition of grant that work could not

Figure 9: Full applications received per month



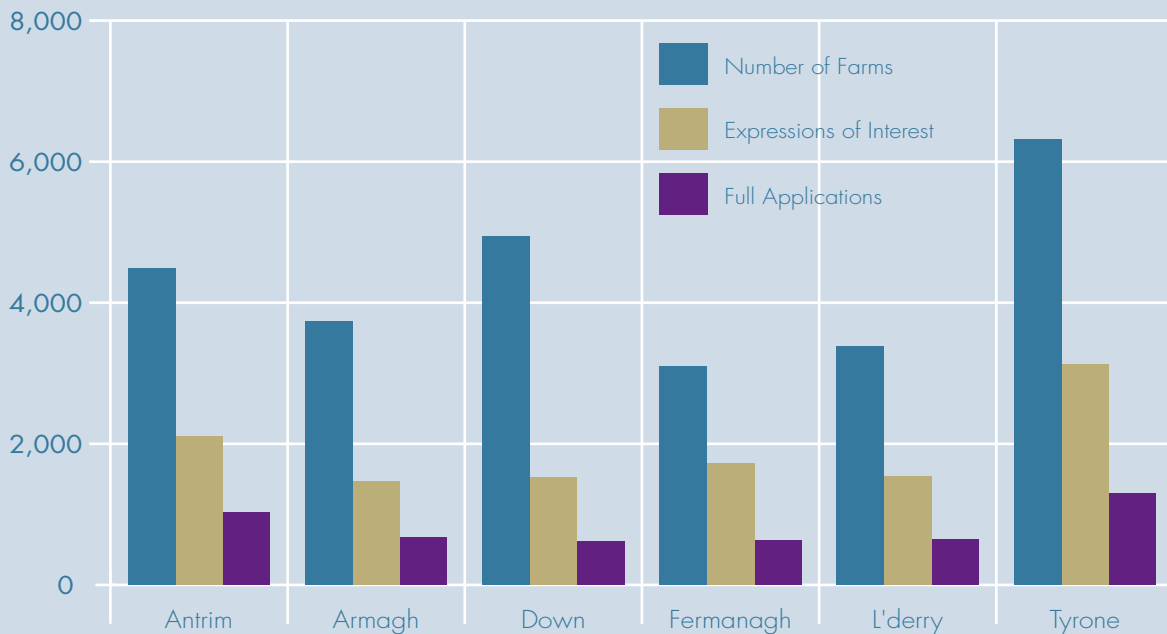
Source: NIAO

begin before a Departmental inspection had taken place and yet the last pre-approval inspection was carried out only 2-3 months before the deadline for all works to be completed. We asked the Department to explain why its inspection programme had taken so long. It told us that, initially, the number of inspectors appointed to FNMS was in line with the number of applications received. However, there was a large surge in applications during March 2006. At that point, DARD senior management agreed that there was no point in allocating additional inspection staff to carry out pre-approval inspections until there was

assurance that the finance was in place to fund more applications. When additional funding was secured, DARD significantly increased the number of inspectors on FNMS by transferring inspectors from other business areas.

3.11 An analysis of approved applications shows that almost one in five (19%) applied for the maximum grant available, i.e. for works costing more than £85,000 – see **Figure 11**. This had a significant impact on the average cost of applications (£31,231), which had risen to more than two and a half times

Figure 10: Applications received by County



Source: NIAO

Part Three: Eligibility and grant take-up

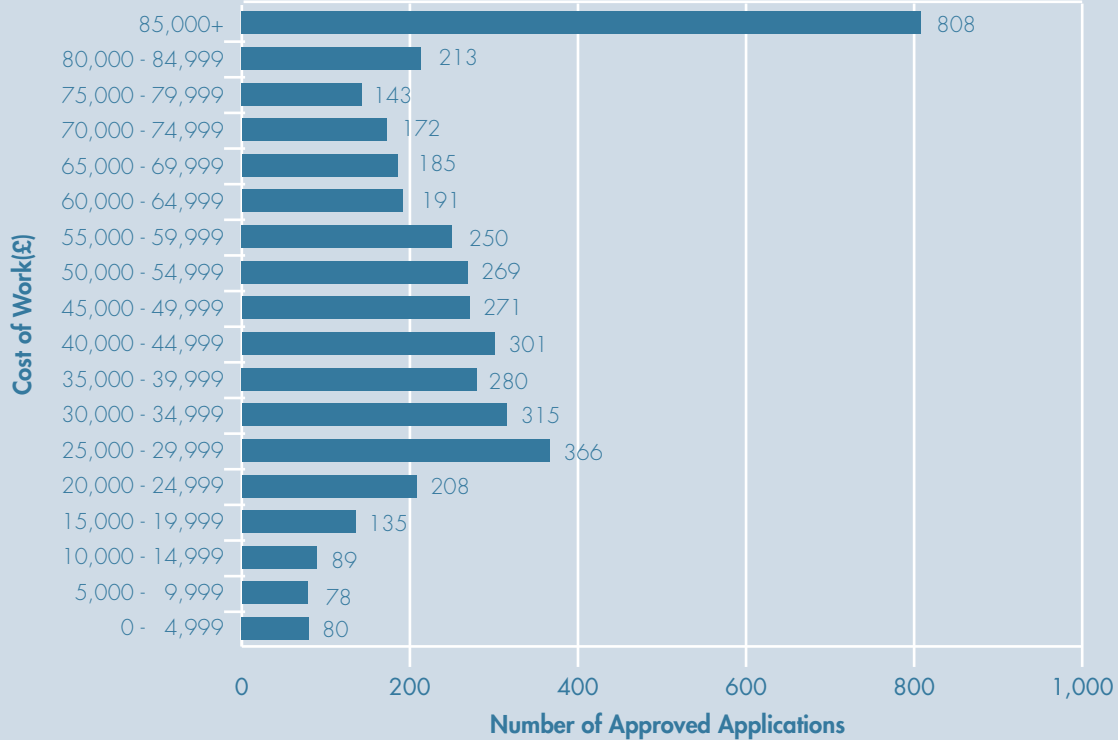
that predicted in the Economic Appraisal - £11,843.

Not all applicants proceeded with their project

3.12 In addition to the pre-approval inspection, the Department carried out a sample of some 700 interim inspections while works were ongoing. The purpose was to ensure that the grade and quantity of steel reinforcing used within walls of below ground tanks complied with British Standards. The Department told us that any discrepancies identified at inspection were satisfactorily resolved.

3.13 Not all farmers who passed the inspection process actually proceeded with their project – 69 withdrew their applications after receiving letters of approval from the Department and a further 355 cancelled their application or withdrew from the scheme after accepting their letter of approval.

Figure 11: Approved applications by cost of works



Source: NIAO, based on DARD data

3.14 Initially, farmers had to ensure that all works were completed and claims submitted by 30 November 2006. In December 2006, this deadline was extended by two years to 31 December 2008 (see paragraphs 2.24 to 2.27). The Department confirmed that all of the farmers who remained in the scheme (3,933) submitted a claim by the revised closing date.

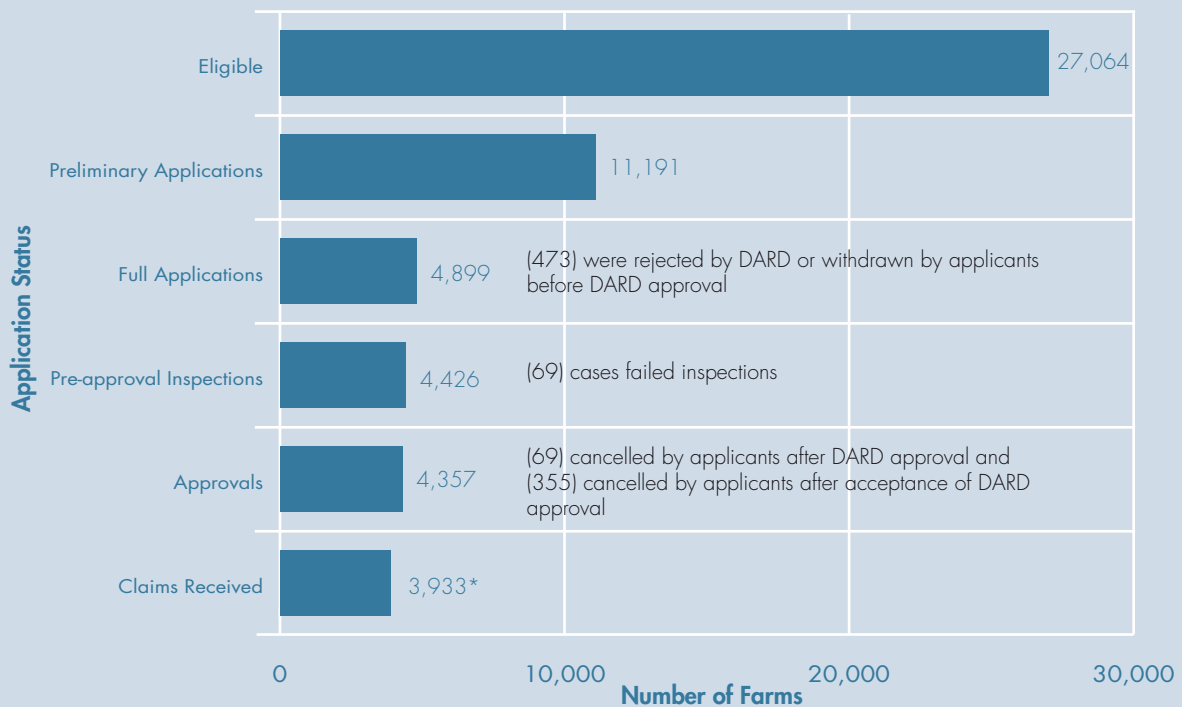
the claims deadline, and indicates that some 15% of farms in Northern Ireland submitted an FNMS claim.

All farms were subject to a second inspection before payments were made

3.15 **Figure 12** provides a summary of eligibility and uptake over the four year period from the start of the scheme until

3.16 The Department required grant claimants to submit invoices as evidence that work had actually taken place and been paid for. Departmental staff were required to check the adequacy of supporting documentation and professional and

Figure 12: Overview of eligibility and grant uptake



Source: NIAO based on DARD FNMS data.

Note: *3,931 claims were paid and 2 claims remain outstanding – 1 under investigation for suspected fraud and 1 at probate.

technical staff were required to carry out an on-farm inspection on every completed project. This was to verify that work had been completed to the specification required and that all paper work in relation to invoices and statutory requirements was in place. Our review of a sample of case files, confirmed that there was sufficient evidence on file to support grant claims and that inspection visits had been undertaken, as required.

The Department introduced a part-payment option, from August 2008, to ease the financial burden on farmers

- 3.17 In anticipation of the high volume of claims to be processed after December 2008, and to ease the financial burden on farmers, the Department introduced a part-payment option in August 2008. This enabled farmers to claim up to 50% of their approved funding, or receipted costs if less, as soon as building work was finished. This was conditional on production of acceptable receipts. The Department aimed to make the advance payments within four weeks of receiving a valid claim. The balance of monies would be paid later, after completion of a successful inspection. The Department's record system shows that 40% of part-payments were made within four weeks of receipt of a claim.
- 3.18 We note that the Department received 2,189 claims for part-payment which involved grant payments of some £69 million.

- 3.19 A quarter of all claims were received in the last few days before the scheme closed on 31 December 2008. This late surge presented the Department with a logistical problem in getting all claims inspected, despite more than doubling the number of FNMS inspectors to 28. At 30 April 2009, there were some 1,600 claimants still to be inspected and the Department began undertaking the inspection process largely in date order of the receipt of a claim. It told us that the pre-payment inspection process was completed by November 2009. However, we note that, for those inspections carried out after 31 December 2008, the Department could not physically confirm that all works had been completed by the closing date of the scheme (December 2008) – instead it had to rely on dated receipts, invoices and engineers' certificates.

The Department developed closure procedures which allowed for the completion of works after the scheme closing date where there were exceptional circumstances

- 3.20 Closure procedures for the scheme were developed in Autumn 2008 and notified to all farmers who had yet to submit a claim. They stated that, if works were delayed beyond 31 December 2008 due to exceptional circumstances, then grant would be considered on works up to 2 March 2009. However, exceptional circumstances had to be proven and farmers had to demonstrate that they had

done everything possible to meet the 31 December 2008 deadline.

- 3.21 European Commission regulations¹⁷ allow farmers to apply for special consideration if they are faced with an extraordinary or unforeseen event beyond their control, known as 'force majeure', which prevents them from meeting their obligations under scheme rules. DARD sought guidance from the Departmental Solicitors' Office (DSO) on its applicability to FNMS.
- 3.22 DSO advised that the principle involved was one where there were abnormal and unforeseeable circumstances outside the control of the farmer, the consequence of which, in spite of the exercise of all due care, could not have been avoided except at the cost of 'excessive sacrifice'. DSO conceded that it was difficult to be precise about how it would operate under FNMS. It advised, however, that if DARD did not provide for force majeure when considering late claims for grant, there was a risk that it may be in breach of community law; but similarly, in applying force majeure, there was a risk that it could be seen to be more generous than the principle provides for. On a practical level, DSO advised that late claimants should be asked for evidence to support their claims under the force majeure principle.
- 3.23 The Department received 261 requests for delays due to exceptional circumstances, of which 251 were accepted. Of the 10 rejected, 6 appealed and five were

successful. A further 190 claims, where minor or outstanding items had been ordered but not installed, were made and accepted. The Department said that all works relating to these claims, valued at £7.8 million, were completed before its revised deadline of 2 March 2009. It also said that a significant proportion of the work would have been completed prior to 31 December 2008 as the closure procedures required a minimum amount of work to be completed by this date. Documentary evidence of the work completed was required in the form of receipts and engineers' certificates and a Departmental panel assessed the evidence provided with each claim.

The Department made total grant payments of £121 million before the payment deadline of 31 December 2009

- 3.24 By the end of December 2009, the Department had inspected, approved and paid 3,931 full claims. The total amount of grant paid at this date was £121.3 million, an average of £30,857 per claim. There were two claims outstanding; one with the Department's Central Investigation Service to substantiate the claim's validity and one awaiting probate.

¹⁷ Commission Notice C (88) 1696 (88/C259/07).

NIAO Main Findings

3.25 There are a number of issues arising from scheme eligibility and grant take-up:

- **The EC deadline for receipt of applications was extended by over one year** – European Commission approval required that all farmers apply for grant by 1 March 2005 at the latest. Due to the low number of applications, DARD extended this by 9 months and subsequently by a further 4 months. DARD said that it did not require EC approval to extend the closing date for the submission of full applications.
- **Only 15% of farm businesses took up an FNMS grant** – this contrasts with an earlier farm survey which indicated that 42% (or 12,000) of farms needed to upgrade their storage facilities if they were going to continue farming at current levels or not take other action to comply. This indicates that there may be a significant number of farms at risk of non-compliance with the Nitrates Action Programme. While DARD considers that these farms are likely to be smaller than average and account for a small proportion of cattle, records are not readily available to clearly show the proportion of Northern Ireland cattle covered by farms not confirmed as compliant and which did not apply for FNMS grant assistance.
- **Nearly 10% of applicants withdrew from the scheme after receiving Departmental approval** – after receiving letters of approval from DARD, some 424 applicants decided not to proceed with their project, increasing the risk of non-compliance with the Action Programme. However, we note DARD's view that these farms may have become compliant by other means - e.g. through reduced stock numbers or the rental of storage elsewhere – although we have seen no Departmental evidence in support of this view.
- **The late submission of claims presented the Department with logistical problems in getting all farms inspected** – while applicants had to have all works completed by 31 December 2008, DARD's pre-payment inspections were not concluded until November 2009. As a consequence, DARD was unable, in many cases, to physically confirm that works had been completed by the required deadline. Instead it had to rely on dated invoices, receipts and engineers' certificates.
- **Over 250 claims were accepted for works which were not fully completed until after the closing date of the scheme** – the Department accepted claims for payment on works undertaken up to the beginning of March 2009, if they had been delayed due to 'exceptional circumstances'. A total of 256 were allowed involving a total of some £7.8 million of grant support. The Department told us that a significant proportion of the work was required to have been completed prior to 31 December 2008 which was verified by dated receipts and engineers' certificates.

Part Four: Impact of the scheme



An above ground steel slurry tank, under construction.

Part Four: Impact of the scheme

It is too soon to measure what improvements FNMS will deliver in water quality

4.1. The Nitrates Action Programme Regulations came into operation on 1 January 2007. However, the arrangements for closed spreading periods and manure storage requirements were only fully introduced from 1 January 2009. Improvement to water quality will be the primary measure of the success of FNMS but it will take some time for the restrictions placed on farming practice through the Action Programme to result in significant and measurable improvements in water quality. The original business case for FNMS said that it may take ten years to ascertain the ultimate impact of improved agricultural practice on eutrophication levels in Northern Ireland waterways.

4.2 The Directive requires a review of the Action Programme to be undertaken every four years and the first review was completed by a Scientific Working Group¹⁸ and submitted to the European Commission in December 2009. Its aim was to produce a scientific evidence-based report reviewing the effectiveness of the Action Programme and to highlight measures where change may be necessary. Among the Group's conclusions were that:

- nitrate levels in surface freshwaters and groundwater appeared to be generally stable

- eutrophication continued to be a problem in rivers, lakes and marine waters
- compliance with the Action Programme was generally good, although there were some key areas of non-compliance such as record keeping and farmyard manure storage
- trends in fertiliser use and improved use of manures were very encouraging.

The Group noted that the results of water quality assessments were not unexpected, given that nearly all assessments were based on water quality up to 2008, i.e. prior to the operation of all measures within the Action Programme on 1 January 2009.

The lack of performance and outcome measures means that the Department cannot provide a clear picture of scheme performance

Objective of FNMS

4.3 The objective of the scheme was "to assist agricultural businesses in Northern Ireland comply with the requirements of the Action Programme Regulations which will be established under the terms of the Nitrates Directive"¹⁹. In effect, replacement storage facilities with higher specifications and greater capacity would allow farmers to store their organic manure throughout the closed spreading period.

18 The Scientific Working Group comprised representatives from DARD, DOE, NIEA, Agri-Food and Biosciences Institute and the College of Agriculture, Food and Rural Enterprise.

19 Consultation on the proposed Farm Waste Management Scheme (Northern Ireland) 2004, DARD, 14 April 2004.

4.4 FNMS provided financial assistance to 3,933 farms, representing 15% of working farms in Northern Ireland. The Department held manual files, each separately recording progress with individual FNMS applications and claims. It also maintained a “grants and subsidies database” which recorded grant applications, approvals and claim payments. This system provided the Department with information to help monitor and control the volume and progress of the grant scheme.

4.5 However, in addition to information on numbers and costs, we expected the Department to have agreed a set of outcome measures and ‘SMART’ targets, defining what the scheme was intended to achieve, and also to have put in place the management information systems needed to provide a clear picture of performance.

4.6 Whilst the database was able to monitor applications, claims and payments, it could not provide accurate information on the extent to which the slurry and manure storage deficit had been reduced. In particular, no up-to-date information was readily available to show:

- the total under-capacity of storage immediately prior to the introduction of the scheme, i.e. the scale of the problem
- the increased storage capacity as a result of the scheme, i.e. how successful the scheme had been in addressing that problem

- the under-capacity still remaining in Northern Ireland, both overall and at a local level.

4.7 In the original FNMS Economic Appraisal, it was estimated that 42% of farms in Northern Ireland had less than five months storage capacity. The current scheme has provided financial assistance to some 15% of working farms in Northern Ireland to upgrade their storage facilities. This suggests there could still be over 27% of farms with less than five months storage capacity which could, therefore, pose a risk of non-compliance with the Nitrates Directive (unless they had reduced stock levels or transferred their excess manure to other storage facilities). Whilst we note DARD’s view that these farms may be smaller than average (see paragraph 3.8) the 27% involved, nevertheless, accounts for some 6,750 farms and so represents a significant potential for pollution.

4.8 A further shortcoming appears to have been a limit on access to the scheme, in that only those farmers who could afford to pay the difference between the costs of the work and the grant available would have proceeded. We asked the Department if it had established what proportion of the 7,000 farmers who had either cancelled their application or not taken forward their expression of interest did so because they could not afford to pay the difference between the grant available and the cost of the required works. It told us that all business decisions depend on affordability. Therefore, it is not a shortcoming that only farm businesses which could afford the

Part Four: Impact of the scheme

investment proceeded with their project under the scheme. An aim of FNMS was to enable viable farms to continue farming at current levels. The Department said that farmers who could not afford to invest were correct not to do so, and they could choose to pursue other options, such as destocking or renting storage from elsewhere, to achieve compliance.

FNMS applicants who were approved but did not submit a claim

4.9 We also note that there were some 424 farmers who had their applications approved by the Department but then subsequently withdrew from the scheme and did not submit a claim (paragraph 3.13). Farmers with insufficient storage have basically three options - invest in additional storage, or reduce stock numbers to match their existing storage facilities, or a combination of these. The Department commented that, depending on location and layout of the farm, some farmers could also have reduced the need for storage by making some adjustments to collection systems on their farm, e.g. by diverting rain water, or may have been able to comply by securing access to storage elsewhere.

4.10 We selected a random sample of 25% of these applicants across Northern Ireland (105 in total) to see why they had dropped out of the scheme and how, in the absence of increased storage, they would be able to comply with the Directive. From a review of case files, we found few explanations for withdrawal –

where there was correspondence, most applicants stated simply that they wished to cancel their application and would not be proceeding with their works.

4.11 We analysed these applications and compared herd numbers at the date of application with the position at December 2009 to see how many had reduced their stock in order to comply with the Directive. This showed that:

- the 105 farmers had, in aggregate, 60,000 cubic metres of storage which they had proposed to increase to 111,000 cubic metres
- they had an average of 15.5 weeks storage which they planned to increase to an average of 28.6 weeks (the required minimum was 22 weeks)
- they had 13,400 cattle at the time of application, which had reduced to just over 9,000 at December 2009.
- however, within that overall reduction, 15 applicants with under capacity had increased their herd size by 389 cattle, from an aggregate of 1,820 to 2,209. At the time of application these farmers had an average storage capacity of 15 weeks, ranging from 3 weeks to 21 weeks – see **Case Study 1**.

An applicant that did not proceed with the FNMS project

Case Study 1

At the time of application, the farm was producing 16 cubic metres of waste a week and had a storage capacity of 50 cubic metres, providing three weeks storage capacity. The farmer proposed to install a new tank of 358 cubic metres providing a total storage capacity of 408 cubic metres, representing 25 weeks storage capacity. The application stated that 34 cattle were held on the farm. On 27 November 2008, the farmer wrote to the Department to inform it that he wished to withdraw his FNMS application. To comply with the Nitrates Action Programme, the farmer would then have to de-stock (or move his excess waste to another farm with over capacity). By December 2009, the number of cattle registered to this farm had increased, by one third, to 46.

Source: NIAO, based on DARD case files.

- 4.12 We asked the Department whether it had carried out an overall risk assessment to identify farms with the highest risk of non-compliance. It told us that it had not done so but that NIEA selects farms for cross compliance inspection on a risk and random basis (see paragraph 4.19). However, we note that NIEA would be unaware of those farms with the highest risk of non-compliance and DARD does not feed into the Agency's initial risk assessment and selection process by providing its own assessment of high risk

cases. Rather, NIEA notifies DARD of farms selected and DARD provides details of those that have completed works under FNMS.

Review of the Economic Appraisal

- 4.13 The original Appraisal, submitted to the Department in March 2004, considered the likely impact of a 15% increase in total investment costs per farm, and concluded that it did not change the choice of preferred option, i.e. the introduction of a capital grants scheme to help farmers meet the 5-month storage requirement. This assessment showed that a 15% increase would result in the average investment cost per farm rising from £19,738 to £22,699, which equated to a maximum grant of just over £13,600 at 60%.
- 4.14 Based on the actual payments made to the end of December 2009, the average capital investment per farm was almost £52,000, providing an average capital grant per farm of £31,000. This was over two and a half times the figure projected in the Economic Appraisal – see **Figure 13**.
- 4.15 We note that one of the main reasons put forward to DFP, in April 2007, to justify the funding of all FNMS applicants, was that it would prevent the destocking of livestock and consequential loss of value added to the Northern Ireland economy. The Department stated that retaining stock numbers would not only maintain farm employment but also sustain employment in the meat and dairy processing sectors.

Figure 13: Estimated costs in Economic Appraisal compared with outturn

	Estimated uptake and costs per Economic Appraisal	Maximum variation expected (+15%)	Actual uptake and costs of scheme
Scheme uptake	5,000	5,000	3,933*
Average capital investment per farm	£19,738	£22,699	£51,428
Total investment required [average capital investment x scheme uptake]	£98,690,000	£113,495,000	£202,162,000
Total grant payable @ 60%	£59,214,000	£68,097,000	£121,297,000
Average grant payable @ 60%	£11,843	£13,619	30,857

Source: NIAO
Notes: *3,931 applicants paid at December 2009; one under investigation and one awaiting probate.

We, therefore, asked the Department if it had carried out any research, in the wake of the consultants' assumption, to check whether those in receipt of grant aid had indeed retained, or increased, their stock numbers since payment of grant. It told us that it had not carried out a check but, in its view, farm businesses which had increased storage capacity through FNMS were highly unlikely to have reduced stock numbers - they had invested heavily to enable them to retain stock numbers.

- 4.16 We also note that, since the introduction of FNMS, the aggregate number of cattle and calves in Northern Ireland has reduced from just over 1.7 million at June 2005 to just under 1.6 million at June 2009. We asked the Department what proportion of this reduction was

down to farmers destocking in order to comply with the requirements of the Nitrates Action Programme. It said that the decoupling of agricultural subsidies from production in 2005 was expected to lead to reductions in cattle and sheep numbers on some farms but it was not possible to say definitively how much of the cattle reduction was due to decoupling²⁰, rather than destocking in order to comply with the Action Programme. In its view, decoupling was likely to be the primary driver, as farmers with viable enterprises also had the option of renting manure/slurry storage elsewhere to ensure compliance with the Action Programme. The Department had no information, however, on either the extent to which storage had been rented, or the storage capacity available for rent.

20 Decoupling - breaking of the link between the value of support (grants) provided to a farmer and the level of farm production.

Compliance with the Nitrates Directive is part of a package of measures that farmers must meet, to be eligible for Single Farm Payment

4.17 Since the 1990s, EU agricultural policies have shifted the emphasis in farm support towards measures that will protect the environment, animal health and welfare, and public health. Subsidy payments based on livestock numbers have been replaced by a Single Farm Payment (SFP) which requires compliance with 18 European regulatory requirements (known as 'cross compliance'), and a requirement to keep land in good agricultural and environmental condition. Compliance with the Nitrates Directive, and in particular the Action Programme, is a fundamental component of this cross compliance. Significant levels of non-compliance could result in infraction proceedings.

NIEA is responsible for enforcement and inspection to ensure compliance with the Action Programme

4.18 Farmers in breach of the Action Programme risk incurring a penalty on their Direct Aid subsidies, e.g. Single Farm Payments²¹. The Northern Ireland Environment Agency (NIEA) is responsible for inspection and enforcement to ensure compliance with the Action Programme. At least 1% of farms claiming SFP are inspected each year, which results in around 400 inspection visits (based on 40,000 grant claims), although this percentage can be increased, depending on the extent of non-compliance.

4.19 The farms to be inspected are identified in two ways. NIEA carries out a risk assessment to select 75% of farms to be visited, based on a range of factors including past compliance with EU regulations, and other issues such as livestock density; the other 25% is chosen at random. This is in accordance with the rates specified by the EC. We note, however, that the selection system is not intended to ensure that all farms are visited over a given period of time. We also note that, when carrying out the risk assessment, NIEA staff do not have access to DARD'S records which show which farms did not apply for grant under FNMS and which might, therefore, carry a greater risk of non-compliance.

4.20 During an inspection, farm records are inspected and must show the application of any organic manure or chemical fertiliser. NIEA acknowledges, however, that issues such as spreading manure and fertiliser in the closed period would only be discovered where this was actually observed during a visit, or reported by a member of the public (which would result in a reactive inspection).

4.21 Following an inspection, NIEA provides written feedback to the farmer. Where there is evidence of non-compliance, enforcement action will be taken but this will depend on the circumstances of each individual case and a number of factors including severity, extent, permanence and repetition of non-compliance. NIEA may also initiate prosecution procedures. Under the Action Programme and

21 The Single Farm Payment (SFP) Scheme replaced most of the crop and livestock payments from 1 January 2005. The scheme breaks the link between production and support. Instead, farmers have to observe certain conditions (known as Cross Compliance) in return for receipt of direct agricultural support.

Phosphorus Regulations, it is an offence to:

- obstruct, refuse or fail to assist NIEA staff in relation to the inspection and enforcement of the Regulations
- fail to comply with the measures under the Nitrates Action Programme and Phosphorus Regulations
- compile and provide false or misleading records.

4.22 Anyone found guilty of these offences is liable, on conviction, to a fine not exceeding £5,000 or to imprisonment for a term not exceeding two years or both. Breaches of the Regulations are also reported to DARD which is responsible for applying reductions to Direct Aid payments in accordance with a penalty matrix. Penalties for inadequate storage facilities could have a major impact on a farmer's Single Farm Payments. For example, the first breach could result in a percentage reduction proportional to the severity of the breach, while repetition could ultimately result in a 100% reduction.

Results of inspections 2007-2009

4.23 Enforcement is undertaken via two related processes:

- Planned inspections – proactive visits to farms to check cross-compliance²²

with statutory management requirements

- Reactive Inspections - visits to investigate specific concerns, complaints or claims of breach from other farmers, agencies or the general public.

4.24 The number of farms inspected since implementation of the Nitrates Action Programme in 2007, together with the total number of breaches of that Programme, is provided in **Figure 14**. This shows an increasing number of breaches. However, this is not totally unexpected given that the regulations contained some transitional arrangements, so it was only from January 2009 that the Action Programme became fully operational. Nevertheless, it is a worrying trend that, in 2009, some 38% of farms subjected to planned inspections breached at least one measure contained in the Action Programme (this increases to 46% if reactive inspections are included).

4.25 It should be noted, however, that not all breaches of the Nitrates Action Programme relate to the inadequate storage of slurry and manure – many breaches involve shortcomings in the wider handling and application of slurry and manure to the land²³. In **Appendix 3**, we have further analysed the breaches shown in Figure 14 to illustrate the types of offences that occurred.

22 The requirements of cross-compliance are: an obligation to maintain agricultural land in good agricultural and environmental condition; and an obligation to comply with specified Statutory Management Requirements according to EU legislation, e.g. Nitrates Directive, Groundwater Directive, etc.

23 There were also a small number of breaches (40 in 2009) that related specifically to the use of chemical fertiliser and crop management, which fell outside the main focus of our review.

4.26 The severity of breaches is classified by NIEA into four categories (see **Appendix 4**), the most significant of which can result in prosecution, while less significant breaches may result in the issue of notices or warnings. During 2009, a total of 156 high and medium severity incidents were investigated, compared with just three in 2007. Details are set out in **Figure 15**. For breaches that occurred during 2009, NIEA issued five warning letters and submitted three cases to the Public Prosecution Service with a recommendation for prosecution. These cases are still pending.

4.27 All breaches were notified to DARD for application of any appropriate financial penalty under the Single Farm Payment Scheme. In addition, NIEA wrote to all farmers who had breaches recorded against their farm business. We asked DARD for details of deductions made in respect of nitrate breaches since 2007. It provided the total Cross Compliance penalties in respect of breaches under Statutory Management Requirement (SMR)²⁴ which relates to the protection of water against nitrate pollution – and these are set out at **Figure 16**.

Figure 14: Farm inspections and total breaches of the Nitrates Action Programme (NAP) detected 2007-2009

1. Planned Inspections	2007	2008	2009	Totals
Number of planned farm inspections	402	378	369	1,149
Farms in breach of NAP	27	74	141	242
Percentage of farms inspected in breach of NAP	6.7%	19.6%	38.2%	21.1%
Number of NAP breaches detected ¹	33	96	233	362
2. Reactive Inspections	2007	2008	2009	Totals
Number of reactive inspections	76	135	124	335
Farms in breach of NAP	23	85	84	192
Percentage of farms inspected in breach of NAP	30.3%	63%	67.7%	57.3%
Number of NAP breaches detected ¹	31	133	130	294
Total farms detected in breach of NAP	50	159	225	434
Total number of NAP breaches detected	64	229	363	656

Source: NIEA
Notes: ¹ Farms may be in breach of more than one regulation.

24 Statutory Management Requirements are legal requirements covering the environment, food safety, animal and plant health and animal welfare. Statutory Management Requirement 5 relates to the protection of water against nitrate pollution.

4.28 The Department told us that changes were made to its Cross Compliance penalty framework in 2009 which increased the level of penalty applied. This followed an audit by the European Commission in March 2009 which found that farmers with high-severity breaches were not receiving the maximum penalty (5%) that could be awarded under the regulations.

Instead, the majority of first-time breaches were receiving only a warning letter or a 1% penalty. The Department told us that, as a result of the audit findings, its penalty matrix has been restructured to ensure that all high-severity, negligent breaches now attract a penalty of 5% and medium-severity 3%.

Figure 15: Severity of nitrate breaches 2007-2009

Severity of nitrates breach / year	Number of Nitrate Breaches per Year		
	2007	2008	2009
High	0	11	115
Medium	3	45	41
Minimum	25	82	202
Minimum (warning letter)	36	91	5
Totals	64	229	363

Source: NIEA

Figure 16: Cross Compliance penalties in respect of breaches under SMR5 that have applied under the Single Farm Payment scheme since 2007

	Number of farms penalised	Total subsidy payable £	Total penalties applied £	Average penalty £	Average percentage deduction %
2007	11	141,069	1,406	128	1.0%
2008	109	1,642,483	23,111	212	1.4%
2009	200	4,364,086	267,905	1,340	6.4%
Totals	320	6,147,638	292,422	914	4.9%

Source: DARD

NIAO Main Findings

4.29 There are a number of issues arising from the administration and impact of the scheme:

- **The Department cannot, at present, measure the extent to which FNMS has contributed towards improved water quality** – it will take some time before the restrictions placed on farmers work through to improvements in water quality.
- **No milestones or targets were set to measure the success of the scheme** – before FNMS was launched, the Department did not agree a set of clear outcome measures and SMART targets defining what the scheme was intended to achieve. One reason for this weakness was the absence of accurate baseline data of storage facilities on farms.
- **One of the main disadvantages of the scheme was its arbitrary access** – it is of concern that only those farmers who could afford to pay the difference between the cost of the work and the grant available were the ones who proceeded.
- **The average grant claimed was more than twice that projected in the Economic Appraisal** – the consultants estimated that, on average, farmers would apply for a grant of around £13,600 but, following the settlement of claims, the average grant paid was £31,000.
- **Some 38% of planned farm inspections carried out by NIEA during 2009 detected at least one breach of the Nitrates Action Programme** – NIEA carried out some 370 planned farm inspections during 2009 of which 141 were found to have breached the regulations. In addition, another 84 farms were found to be in breach of the regulations following a complaint from other farmers, agencies or the general public.
- **In 2009, breaches of the Nitrates Action Programme were considered serious enough for NIEA to decide to prosecute three farmers** – in 2009, 156 breaches were given a 'high' or 'medium' severity rating by NIEA, with three cases going forward for prosecution.
- **Cross Compliance penalties have been imposed on an increasing number of farms over the last three years** – in 2007, 11 farms attracted Cross Compliance penalties of £1,375 for the pollution of waters caused by nitrates from agricultural sources, with this rising to 200 farms and penalties of £278,610 in 2009.
- **Changes to the Cross Compliance framework and a phasing in of Action Programme measures resulted in an increased level of penalty being applied in 2009.**

Appendices

Appendix One: (paragraph 1.16)

This Appendix shows the decisions reached by England, Wales, Scotland and the Republic of Ireland on whether to adopt a total territory approach or designate individual Nitrate Vulnerable Zones

England

In August 2007, DEFRA issued a consultation paper²⁵ on the implementation of the Nitrates Directive in England. The Government's response²⁶ was published in July 2008, and concluded that England should continue with the policy of designating discrete NVZs as this would ensure:

- its policy was in-line with the principles of better regulation, targeting action and regulation to areas where it was most needed
- the cost-effectiveness of its policy was maximised – taking a total territory approach would impose a financial burden on farmers in areas of the country where action would generate little environmental benefit.

Following the consultation exercise, England revised the number of NVZs to cover approximately 70% of its land area.

Wales

A similar consultation exercise²⁷ was launched by the Welsh Assembly in August 2007. This focussed on both the designation of NVZs and the action programme to be applied within those areas. The Assembly's response²⁸, in August 2008, concluded:

"Given the strong level of support for continuation of the targeted approach to designation from the respondents...and our concerns that a whole territory approach will penalise farmers and landowners/land managers in areas unaffected by potential nitrate problems, it is our intention to continue using a targeted approach to NVZ designations".

Around 3% of the land area of Wales is currently designated as NVZs.

25 The Protection of Waters Against Pollution from Agriculture: Consultation on Implementation of the Nitrates Directive in England, DEFRA, August 2007.

26 Government response to comments received in relation to the consultation on the implementation of the Nitrates Directive in England, DEFRA, July 2008.

27 The Protection of Waters Against Pollution from Agriculture: Consultation on the Implementation of the Nitrates Directive in Wales, Welsh Assembly Government, August 2007.

28 Nitrates Directive Review – Analysis of Responses to the Welsh Assembly Government Consultation Process and Welsh Assembly Government Response, December 2008.

Scotland

In Scotland, a review of the designation of NVZs was carried out by a Scottish Executive Steering Group in 2005. The Group reported in February 2006 that it was not convinced that Scotland should designate 'total territory'. It concluded:

"In Scotland, there is a great diversity of farming practice, with substantial areas of extensive livestock, where NVZ Action Programmes could not be expected to make any difference. Designation would involve additional costs, such as record-keeping, with no substantial benefit in pollution reduction on many farms."

Some 14% of the land area of Scotland is currently designated as NVZs.

Republic of Ireland

In February 2002, an Information Paper²⁹ was issued by the Department of the Environment, Heritage and Local Government which indicated the Department's preference of declaring 'total territory' rather than designating discrete NVZs. The paper set out a series of advantages to both farmers and the environment and concluded that designation of 'total territory' was the best option in the interests of both environmental protection and relevant stakeholders.

Discussions with the main farming organisations and other interested parties followed and, in January 2003, the Irish Government announced its preference for the designation of 'total territory', with the appropriate regulations coming into force on 29 May 2003.

29 Information Paper on Good Agricultural Practice and Protection of the Environment, DEHLG, 18 February 2002.

Appendix Two: (paragraph 1.19)

This Appendix sets out the key measures included in the Nitrates Action Programme Regulations (Northern Ireland) 2006 and the Phosphorus (Use in Agriculture) (Northern Ireland) Regulations 2006, which came into operation on 1 January 2007

Minimum Storage Requirements	<ul style="list-style-type: none"> • 26 weeks for pig and poultry farms • 22 weeks for all other livestock enterprises.
Closed spreading periods	<ul style="list-style-type: none"> • chemical fertiliser must not be applied 15 September – 31 January • organic manure must not be applied 15 October – 31 January.
Fertiliser application limits	<ul style="list-style-type: none"> • a limit of 170 kilograms per hectare per year of total nitrogen from livestock manure • by 2010, a limit of 272 kilograms of nitrogen per hectare per year of manufactured nitrogen fertiliser on dairy farms • by 2010, a limit of 222 kilograms of nitrogen per hectare per year of manufactured nitrogen fertiliser on other farms • chemical phosphorus can only be applied where soil analysis shows a requirement.
Land application restrictions	<ul style="list-style-type: none"> • all chemical and organic fertilisers not to be applied: <ul style="list-style-type: none"> ❖ on waterlogged soils, flooded land or land liable to flood ❖ on frozen ground or snow covered ground ❖ if heavy rain is forecast ❖ on steep slopes • Chemical fertilisers must not be applied within 1.5 metres of any waterway; organic manures must not be applied within 20 metres of lakes, or 10 metres of a waterway other than lakes.
Record Keeping	<ul style="list-style-type: none"> • annual records on land area, livestock numbers and fertiliser details, including the import and export of slurry, to be kept and retained for inspection.

Appendix Three: (paragraph 4.25)

Results of NIEA on-farm compliance inspections 2009

Breaches of the Nitrates Action programme which relate to the storage and handling of slurry and manure

Nitrates Action Programme Regulation	Measure Description	Total Number of Inspections 2009 ¹	Number of Breaches 2009
6.3	Closed period for the land application of organic manure (15 October – 31 January).	374 (369)	5
11.1 & 11.2	Sufficient and adequate storage for livestock manure must be provided to avoid water pollution, including during periods of adverse weather conditions.	370 (369)	1
11.3 & 12	Pig and poultry enterprises must have at least 26 weeks storage capacity and 22 weeks manure storage capacity for all other livestock enterprises.	369 (369)	0
11.4	Storage facilities for livestock manure and silage effluent must be maintained free of structural defect and be of a standard to prevent run-off or seepage into a waterway, and where applicable, comply with The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations (NI) 2003.	378 (369)	15
13	Prior to field storage or land application, farmyard manure must be stored in a midden which should have adequate effluent collection facilities. Where stored in a field, farmyard manure must be stored in a compact heap and not placed within 50m of lakes or 20m of any waterway.	375 (369)	42
14	Where stored in a field, poultry litter must not be placed in the same location of the field in consecutive years and must be covered with an impermeable membrane within 24 hours. It must not be placed within 50m of lakes or 20m of any waterway.	371 (369)	2
15	Dirty water storage must be available when weather and ground conditions are unsuitable for land application.	369 (369)	6

Appendix Three: (Continued)

Nitrates Action Programme Regulation	Measure Description	Total Number of Inspections 2009 ¹	Number of Breaches 2009
7.2 (a-e)	Land application of nitrogen fertiliser must not be undertaken on waterlogged or frozen soil, flooded or snow-covered land, or when heavy rain is forecast.	371 (369)	2
7.5 & 8.3	The land application of organic manures and dirty water must not be undertaken close to boreholes, wells and springs, e.g. not within 20m of lakes or 10m of any waterway.	379 (369)	11
7.6, 7.7 & 8.2	The maximum land application of solid manure must be 50 tonnes per hectare, and for slurry and dirty water it must be 50 cubic metres per hectare at any one time.	370 (369)	1
9.1 & 10.3	Total nitrogen in livestock manure applied to the land, both by land application and by the animals themselves, must not exceed 170 kg N/ha/year (or 250 kg N/ha/year if operating under derogation ³⁰).	369 (369)	42
7.8 & 8.4	The application of slurry and dirty water, close to the ground, must only be carried out using certain specified techniques	381 (369)	13
4	The farmer must not knowingly or otherwise cause the entry of nitrogen fertiliser ² into any waterways or groundwater.	395 (369)	68
7.1	Land application of nitrogen fertiliser ² must be carried out in an accurate and uniform manner.	379 (369)	12
7.3	The land application of nitrogen fertiliser ² must not be carried out in a location or manner where it is likely to enter waterways or groundwater.	369 (369)	0
7.2 (f)	The land application of nitrogen fertiliser ² must not be undertaken on steeply sloping ground where there is a significant risk of causing water pollution.	369 (369)	0
9.2	Limit on the application of nitrogen fertiliser ² to grassland – the total available nitrogen in organic manures and chemical fertilisers, excluding livestock manures, applied to grassland, must be in proportion to the crop requirement of the holding.	369 (369)	4

30 Derogation - a temporary waiver from an EC Regulation.

Nitrates Action Programme Regulation	Measure Description	Total Number of Inspections 2009 ¹	Number of Breaches 2009
10.1	Limit on the application of nitrogen fertiliser ² to land other than grassland – the quantity of nitrogen fertiliser added to land other than grassland, both by land application and the animals themselves, must not exceed the crop requirements for nitrogen for the holding.	369 (369)	3
19	Sufficient records, e.g. land area, numbers of livestock, manure storage capacity, manure production, nitrogen fertiliser ² moved on or off the holding, etc. must be available for inspection.	369 (369)	12
Footnote ² .	Record keeping (derogation) ³ .	169	84

Other breaches related specifically to the use of chemical fertiliser and to crop management

		Total Number of Inspections 2009 ¹	Number of Breaches 2009
6.1, 6.2, 7.4, 17, 18 and Phosphorus Derogation	Various	369	40

Total Breaches

All Measures	453 (369)	363 (225)⁴
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Notes:

1. Figures represent planned inspections plus those reactive inspections which resulted in a confirmed breach. Figures in brackets represent planned inspections only.
2. References to 'nitrogen fertiliser' may include chemical as well as organic fertiliser.
3. These inspections were desk-top audits. They reflect a statutory requirement for NIEA to audit all those farms operating under derogation.
4. Total number of farm businesses with breaches.

Appendix Four: (paragraph 4.26)

NIEA Pollution Incident Categories

<p>High</p> <p>A major incident involves one or more of the following:</p> <ol style="list-style-type: none"> potential or actual persistent effect on water quality or aquatic life; closure of potable water, industrial or agricultural abstraction necessary; extensive fish kill (greater than 100); excessive breaches of consent conditions; extensive remedial measures necessary; major effect on amenity value.
<p>Medium</p> <p>A significant pollution incident involves one or more of the following:</p> <ol style="list-style-type: none"> notification to abstractors necessary; significant fish kill (10-100); measurable effect on invertebrate life; water unfit for stock; bed of watercourse contaminated; amenity value to the public, owners or users reduced by odour or appearance.
<p>Minimum (Low)</p> <p>A minor incident resulting in localised environmental impact only. Some of the following may apply:</p> <ol style="list-style-type: none"> notifications of abstractors not necessary; fish kill of less than 10 fish; no readily observable effect on invertebrate life; water not unfit for stock watering; bed of watercourse only locally contaminated; minimal environmental impact and amenity value only marginally affected.
<p>Minimum (Warning Letter)</p> <p>No breach of Statutory Management Requirements but restrictions infringed, e.g. requirements in the manner of land application of nitrogen fertiliser where it is applied in a location or manner which makes it likely it will directly contaminate waterways and / or water contained in underground strata.</p>

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