Title: **Nutrients Action Programme Regulations (Northern Ireland) 2027**	**Regulatory Impact Assessment (RIA)**
	Date: 24 June 2026
	Type of measure: Secondary Legislation
Lead department or agency: **Department of Agriculture, Environment and Rural Affairs (DAERA)**	**Stage:Initial**
	Source of intervention:Domestic NI
Other departments or agencies: N/A	**Contact details:** Environmental Farming Branch DAERA Clare House 303 Airport Road West Sydenham Intake Belfast BT3 9ED
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Summary Intervention and Options

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

The Protection of Water Against Agricultural Nitrate Pollution Regulations (Northern Ireland) 2004, requires the Department to establish and implement an action programme across Northern Ireland that regulates farming practices to reduce and prevent water pollution caused by agricultural sources. The Action Programme was first introduced in 2007 and has been reviewed and updated three times. The Department published the findings of its fourth review in June 2025 and has been working with stakeholders through the NAP Stakeholder Task and Finish Group to develop a revised Action Programme for 2027 - 2030.

Monitoring data indicates that nitrate levels are rising at some monitoring sites, many rivers and most lakes remain affected by excess nutrients, coastal and estuarine waters are deteriorating again after earlier improvements and agricultural phosphorus surpluses continue, increasing pressure on water quality. These trends show that while current NAP measures have delivered some benefits, they are not enough to reverse recent declines in water quality. A revised and strengthened Nutrients Action Programme is therefore needed.

What are the policy objectives and the intended effects?

The Nutrients Action Programme (NAP) aims to improve water quality and protect the wider environment by reducing pollution caused or induced by nutrients from agricultural sources. A key objective is to promote efficient management of livestock manures, manufactured fertilisers and other nutrient-rich materials spread onto land and to reduce their environmental impacts.

The measures contained within the 2019 NAP will be carried forward into the 2027 NAP Regulations. In addition, new or strengthened measures are proposed for the 2027 NAP Regulations to address ongoing pressures on water quality from agricultural sources and negative impacts of excess nutrients on designated habitats.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

The options considered in this assessment are:

Option 1: Do nothing and continue with existing NAP measures under the 2019 regulations.

Option 2 (the preferred option): Revise the Nutrients Action Programme, with proposals that have been developed in a co-design process with farming, industry and environmental stakeholders. The revised Action Programme would apply from 2027 to 2030 and would contain new measures, strengthened measures from the 2019 regulations and carry forward measures that remain unchanged from the 2019 regulations.

Option 1 (Do nothing) would not meet the requirement of the Regulations to review and implement a revised NAP. Additional measures to address ongoing pressures on water quality from agricultural sources would not be introduced. Option 2 is the preferred option because it would strengthen the NAP to reduce excess nutrients, lower the risk of losses to the environment, improve water quality and improve nutrient use efficiency in agricultural systems. Option 2 would provide clear, enforceable standards, which are necessary to meet legal obligations and effectively reduce nutrient pollution from agricultural sources.

Will the policy be reviewed? Yes	**If applicable, set review date:** January 2030

Cost of Preferred (or more likely) Option		
Total outlay cost for business £m	**Total net cost to business per year** £m	**Annual cost for implementation by Regulator** £m
18.52	2.04	3.70

Does Implementation go beyond minimum EU requirements?			**YES** ☐	**NO** ☒
Is this measure likely to impact on trade and investment?			**YES** ☐	**NO** ☒
Are any of these organisations in scope?	**Micro** Yes ☒ No ☐	**Small** Yes ☒ No ☐	**Medium** Yes ☒ No ☐	**Large** Yes ☒ No ☐

The final RIA supporting legislation must be attached to the Explanatory Memorandum and published with it.

Approved by: Brian Ervine Date: 24 June 2026

Summary: Analysis and Evidence Policy Option 1

Description: Do nothing and continue with existing NAP measures under the 2019 regulations.

ECONOMIC ASSESSMENT (Option 1)

Costs (£m)	Total Transitional (Policy) (constant price)	Years	Average Annual (recurring) (excl. transitional) (constant price)	Total Cost (Present Value)
Low	**Optional**		**Optional**	**Optional**
High	**Optional**		**Optional**	**Optional**
Best Estimate				

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

N/A

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

This option would mean a continuation of the existing NAP measures under the 2019 regulations therefore the additional measures to address ongoing pressures on water quality from agricultural sources would not be introduced. As no additional NAP measures would be introduced, there would be no transitional costs for farmers. This would not meet the requirement of the Regulations to review and implement a revised NAP. The Department would be in breach of its statutory duties. There would be environmental costs with this option in terms of poor and declining water quality, leading to negative impacts on sensitive habitats, biodiversity and amenity value.

Benefits (£m)	Total Transitional (Policy) (constant price)	Years	Average Annual (recurring) (excl. transitional) (constant price)	Total Benefit (Present Value)
Low	**Optional**		**Optional**	**Optional**
High	**Optional**		**Optional**	**Optional**
Best Estimate				

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

N/A

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

Farmers and other relevant stakeholders would not have to spend time understanding new and revised regulation and make changes to be compliant with new requirements. DAERA and farmers would not face implementation costs for new or amended regulations.

Key Assumptions, Sensitivities, Risks

This option would pose significant risks to the environment and natural habitats across Northern Ireland. These include poor and declining water quality, negative impacts on sensitive habitats, biodiversity and amenity value. This would not meet the requirement of the Regulations to review and implement a revised NAP. The Department would be in breach of its statutory duties.

BUSINESS ASSESSMENT (Option 1)

Direct Impact on business (Equivalent Annual) £m				
Costs:	**Benefits:**	**Net:**		

Cross Border Issues (Option 1)

How does this option compare to other UK regions and to other EU Member States (particularly Republic of Ireland) Maximum 3 lines

Similar Action Programmes exist in other UK jurisdictions. The ROI has a similar Action Programme which is currently in its 6th iteration. Action Programmes to address nutrient pollution are also implemented across the EU in accordance with the EU Nitrates Directive and Water Framework Directive.

Summary: Analysis and Evidence Policy Option 2

Description: Revise the Nutrients Action Programme, with proposals that have been developed in a co-design process with farming, industry and environmental stakeholders. The revised Action Programme would apply from 2027 to 2030 and would contain new measures, strengthened measures from the 2019 regulations and carry forward measures that remain unchanged from the 2019 regulations.

ECONOMIC ASSESSMENT (Option 2)

Costs (£m)	Total Transitional (Policy) (constant price)	Years	Average Annual (recurring) (excl. transitional) (constant price)	Total Cost
Low	**16.90**	**4**	**5.14**	**38.18**
High	**20.14**		**6.33**	**46.17**
Best Estimate	**18.52**		**5.73**	**42.18**

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

The total transitional cost estimate is made up of:

- £9.233m for LESSE equipment
- £0.687m for Farm administration for familiarisation
- £7m for AD Plant CAPEX
- £1.6m for DAERA IT systems

The average annual (recurring) costs estimate comprises of:

- £0.318m annual cost for replacing unprotected Urea with protected Urea from April 1
- £3.70m for DAERA staffing and IT systems
- £0.717m annual farm costs for planning and administration
- £1m for AD Plant OPEX

A full breakdown of the costs is detailed in the evidence base and a summary of the monetised costs calculations can be found on page 31. Financial support for the costs of LESSE will be available via the SFIS.

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

Farms and other relevant stakeholders will face administrative costs to comply with the new requirements. Farms will have to make informed decisions over what changes are necessary to their farm enterprise and nutrient management, these changes may create new costs. Compliance with the amended regulations may involve both potential efficiency gains and adjustment costs. The scale and direction of the economic impacts are likely to vary across farms depending on their starting position and the measures required to achieve compliance.

Benefits (£m)	Total Transitional (Policy) (constant price)	Years	Average Annual (recurring) (excl. transitional) (constant price)	Total Benefit (Present Value)
Low	**Optional**	**4**	**Optional**	**Optional**
High	**Optional**		**Optional**	**Optional**
Best Estimate			**3.7**	**14.8**

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

The monetised benefit estimate is the potential savings and revenues for AD Plants. Full details on this can be found in the evidence base and a summary of the monetised benefits calculations can be found on page 32.

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

Depending on the decisions taken on farm to comply with the new requirements, such as nutrient management changes and utilising LESSE, farms could have improved nutrient use efficiency from livestock manure and reduced need for chemical fertilisers. This potentially could decrease farm input costs while maintaining or improving farm productivity. Increased advisory support and knowledge transfer on best practices will also contribute to this. Actions taken on farm will lead to environmental benefits through lower levels of nutrient pollution in river, lakes and other waterways; better manure and fertiliser management to reduce emissions; lowered risk to sensitive habitats; and improved water quality.

Key Assumptions, Sensitivities, Risks

Delivery of the benefits is dependent on effective and widespread implementation of both the existing and new additional NAP measures at farm level across Northern Ireland.

BUSINESS ASSESSMENT (Option 2)

Direct Impact on business £m				
Costs: £25.06m	**Benefits: £14.8m**	**Net: £10.26m**		

Cross Border Issues (Option 2)

How does this option compare to other UK regions and to other EU Member States (particularly Republic of Ireland)

There has been a NAP in place in Northern Ireland since 2007. This is in line with similar measures and regulations in place in other UK jurisdictions, ROI and across the EU. The proposed Northern Ireland NAP for 2027 – 2030 (Option 2) will have stronger Phosphorus controls in comparison to other NAPs, in the UK and EU.

Evidence Base

Problem under consideration

Water quality in Northern Ireland is under pressure and many rivers and lakes are not at good water quality status. Our water environment is essential for everyday life and supports a wide range of benefits including clean drinking water, agriculture and food production, wildlife and biodiversity and recreation, tourism and local economies.

Evidence from the NAP Implementation and Review Report along with other water quality monitoring data shows evidence that nitrate levels are rising at some monitoring sites, many rivers and most lakes remain affected by excess nutrients, coastal and estuarine waters are deteriorating again after earlier improvements and agricultural phosphorus surpluses continue, increasing pressure on water quality.

This pollution negatively impacts water quality, biodiversity, habitats and amenity value. While the current NAP measures have delivered some benefits, they are not enough to reverse recent declines in water quality. As additional voluntary measures alongside the NAP have not adequately reduced nutrient levels, Government intervention is necessary to ensure compliance and achieve environmental standards.

The NAP contains measures to control the land application of livestock manures and chemical fertilisers and the storage of livestock manures. The NAP Regulations are the responsibility of the Department for Agriculture, Environment and Rural Affairs ('The Department' 'DAERA').

Rationale for intervention

Nutrient management practices currently impact negatively on the water environment, imposing costs on the environment and wider society including other sectors such as tourism and recreation. These impacts are not being sufficiently addressed currently and therefore additional regulation combined with voluntary measures and supported by advice and enforcement are required to provide effective intervention.

The Protection of Water Against Agricultural Nitrate Pollution Regulations (Northern Ireland) 2004, requires the Department to establish and implement an action programme that regulates farming activities throughout Northern Ireland to reduce and prevent water pollution from agricultural sources.

The Action Programme was first introduced in 2007 and has been reviewed and revised on three previous occasions. Following the NAP Implementation Report in June 2024 the Department published its findings of the fourth review in June 2025 along with a consultation on proposals for the revised NAP. In October 2025, a NAP Stakeholder Task and Finish Group was established with representatives from farming, agri-food industry, environmental organisations and the Department. The purpose of this group was to develop proposals for the revised action programme which where workable at farm level but would still comply with regulatory requirements. Their final report now forms the basis for the revised Action Programme for 2027- 2030.

The revised NAP for the period 2027-2030 will undergo further development through a public consultation. Its implementation will come through the Nutrients Action Programme Regulations (NI) 2027 (the 2027 NAP Regulations) which will strengthen existing measures and include additional measures to improve the effectiveness of the action programme

Policy objective

The Nutrients Action Programme aims to improve water quality and protect the wider environment by reducing and preventing pollution caused or induced by nutrients from agricultural sources. A key objective is to promote efficient management of livestock manures, manufactured fertilisers and other nutrient-rich materials spread onto land and to reduce environmental impacts.

The intended effects include preventing eutrophication, protecting aquatic ecosystems, ensuring the long-term sustainability of farming practices and improving nutrient use efficiency.

The measures contained in the 2019 NAP will be retained in the 2027 NAP Regulations, with some being strengthened. Additionally, new additional measures will be introduced in the 2027 NAP Regulations to address ongoing water quality challenges related to agricultural activities.

Description of Options

Option 1 – Do Nothing

Do nothing and continue with existing NAP measures under the 2019 regulations. This would not meet the requirement of the Regulations to review and implement a revised NAP. Additional measures to address ongoing pressures on water quality from agricultural sources would not be introduced.

Option 2 – Amend the NAP regulations

Revise the Nutrients Action Programme, with proposals that have been developed in a co-design process with farming, industry and environmental stakeholders. The revised Action Programme would apply from 2027 to 2030 and would contain new measures, strengthened measures from the 2019 regulations and carry forward measures that remain unchanged from the 2019 regulations.

Assessment of Options

Option 1 – Do Nothing

The Do Nothing option would mean the existing NAP measures from the 2019 regulations would continue to be in place unchanged.

Costs
The requirement of the Regulations to review and implement a revised NAP would not be met, putting DAERA in breach of its statutory duties. With no additional measures, the ongoing environmental costs from the risks to water quality would be:

- Nitrates in rivers and lakes: although average nitrate levels remain below key thresholds, water quality is deteriorating at an increasing number of locations

- Phosphorus in rivers: almost half of rivers remain affected by phosphorus pollution, which can damage ecosystems and water quality

- Nutrient impacts on rivers (trophic status): more than half of rivers are affected by excess nutrients, which can lead to increased plant and algae growth

- Nutrient impacts on lakes (trophic status): most lakes are experiencing eutrophication, where too many nutrients lead to excessive plant and algae growth

- Transitional and coastal waters: coastal waters are becoming more sensitive to nutrient pollution, with risks to habitats, fisheries and protected sites.

- Agriculture and nutrient pressures: Ongoing nutrient surpluses mean existing controls have not been sufficient to prevent nutrient losses to water.

The consequences of the above list is that most lakes and rivers would continue to fail to meet good quality status. Poor water quality does harm nature, increase the costs for water treatment, affect communities across NI, and affect the economy, including through tourism and recreation.

Benefits
Farmers and other relevant stakeholders would not have to spend time understanding new and revised regulation and make changes to be compliant with new requirements**.** DAERA and farmers would not face implementation costs for new or amended regulations.

Risks and Assumptions
This option would pose significant risks to the environment and natural habitats across NI. These include poor and declining water quality, negative impacts on sensitive habitats, biodiversity and amenity value. This option would risk DAERA being in breach of its statutory duties to review and implement a revised NAP.

Option 2 – Amend the NAP regulations

This assessment will assess the potential costs and benefits of the new and strengthened NAP measures. This assessment will not be assessing the measures that would be carried forward unchanged from the 2019 regulations.

For consultation purposes, the proposed measures from the review of the Nutrients Action Programme have been grouped into seven categories:

1. Nutrient Management - Balanced Nutrient Use, Fertiliser and Manure Controls
2. Manure Storage and Application Requirements - Ammonia Implications
3. Farming Practices to Improve Nutrient Use and Water Quality
4. Utilising Technology
5. Additional Measures to Support Environmentally Sustainable Farming
6. Definition updates & Technical Amendments
7. Implementation – Including Inspections/Enforcement

A full description of each proposed measure and the rationale behind the changes is available in the NAP consultation document. This analysis will focus on assessing the costs and benefits of the proposed changes. For measures that will be voluntary, there has not been an assessment on how likely they will be implemented by farms, but the potential costs and benefits if they were implemented has been included in this assessment.

The profitability and compliance implications of the proposed measures vary considerably across farm systems depending on factors such as milk yield, stocking rate, soil phosphorus status and management practices. Some farms may be able to improve nutrient use efficiency, reduce reliance on chemical fertilisers and maintain or potentially improve profitability. For some systems, compliance may require adjustments that could reduce farm profits. The extent to which costs or benefits arise is therefore likely to depend on individual farm circumstances and the specific measures adopted.

To supplement this Regulatory Impact Assessment, a full Economic Impact Assessment will be finalised as part of the work of the NAP Stakeholder Task and Finish Group and this will be essential to help inform implementation**.**

In June 2025[1] there were 25,834 farms in Northern Ireland, with approximately one million hectares of land farmed. Almost four-fifths of farms (79%) are very small and over three quarters of farms (77%) have some cattle, 36% have some sheep and 4% have some poultry. Table 1 below shows the number of farms by type of farm broken down by size.

Table 1 Number of farms by type of farm in Northern Ireland, June 2025[2]

Category	Very Small	Small	Medium	Large	Total
Cereals	202	39	[s]	[s]	**254**
General Cropping	1,366	26	[s]	[s]	**1,437**
Horticulture	65	33	26	61	**185**
Pigs	36	23	15	67	**141**
Poultry	130	243	151	154	**678**
Dairy	194	606	599	1,112	**2,511**
Cattle & Sheep: Less Favoured Area	13,618	977	218	119	**14,932**
Cattle & Sheep: Lowland	4,487	427	98	87	**5,099**
Mixed and Other	363	74	44	116	**597**
Total	**20,461**	**2,448**	**1,175**	**1,750**	**25,834**

[s] Figures suppressed due to data confidentiality constraints

The revised NAP will apply to all farms in NI but the main group of farms impacted by the NAP measures are farms with annual livestock manure production at and above 170kg N/ha per year. There are 2,391 farms in this category. This is made up of dairy farms, most poultry and pig farms, and some beef farms.

1. Nutrient Management - Balanced Nutrient Use, Fertiliser and Manure Controls

The proposals in this section focus on improving how nutrients are used on farms so that they are applied in the right amounts, at the right time, and in the right place. This aims to reduce nutrient losses to water and air, while supporting efficient and productive farming systems.

1.1 Limit chemical phosphorus fertiliser use on grassland through an additional advisory approach

It is proposed to introduce a new additional approach to managing the use of chemical phosphorus (P) fertiliser on grassland. This approach builds on existing NAP requirements and combines limits on the availability of phosphorus fertiliser products with strengthened advice and

[1] DAERA, Agricultural Census in Northern Ireland 2025, https://www.daera-ni.gov.uk/publications/agricultural-census-northern-ireland-2025
[2] DAERA, Agricultural Census in Northern Ireland 2025, Table 4.5a, https://www.daera-ni.gov.uk/publications/agricultural-census-northern-ireland-2025

support. The aim is to ensure that phosphorus fertiliser is only used where there is a clear need based on soil nutrient levels and crop requirements.

Costs
Farms will face administration costs to familiarise with the new approach and to decide how their farm is impacted. For farms choosing to use chemical phosphorus fertiliser on grassland, they will be required to have a valid soil analysis obtained within the last 4 years and will be required to prepare a Nutrient Management Plan showing the need for phosphorus.

It is assumed that because the restriction will only apply to some low P fertilisers, that higher P compounds and straight P will still be available, as well as some low P compounds where need can be demonstrated, and that there is a surplus of P from organic manures, that P deficit should not be an issue and therefore no added cost from reduced yields has been assumed.

Fertiliser merchants will also face administration costs as they will be required at point of sale to confirm farmers have a soil test and Nutrient Management Plan. Merchants will also face labelling costs as they will be required to clearly label that it is an offence to apply chemical phosphorus fertiliser without a crop requirement and a Nutrient Management Plan.

Fertiliser merchants will be required to complete basic training on nutrient management and water quality. Further, more detailed technical training will be introduced over time for those selling phosphorus fertiliser products, who wish to enhance their knowledge and expertise. This training will be based on recognised industry standards.

Benefits
The proposed measure aims to help farmers to use nutrients more efficiently, which could lead to a reduction in input costs. It is estimated that replacing chemical P component in fertiliser with cattle slurry to meet the requirement of silage ground with a P index of 2+ could save farmers £56 /Ha based on the average UK price of Triple Super Phosphate fertiliser of £624/tonne (AHDB 2026)This does not take account of the value of other nutrients in the slurry.

Reducing unnecessary use of chemical phosphorus fertiliser would lower phosphorus losses to rivers and lakes, leading to improved water quality.

1.2 Reducing Northern Ireland's average phosphorus surplus

It is proposed to reduce the national average phosphorus surplus by 30%, from the 2024 level of 8729 tonnes over the 4 year duration of the next NAP. This reduction would be achieved through a combination of measures, including:

All farms with livestock manure nitrogen (N) production levels at or above 170 kg N/ha per year must comply with proposals relevant to their sector, and must do one of the following :

- Ruminant livestock farms above the 170 kg N/ha threshold may join the Nutrient Stewardship Programme (NSP) and maintain a limit of no more than 10 kg P per hectare per year (Tier 1), or if that is not possible, reduce it by at least 10% over four years or demonstrate sustainable P management under the Soil P Protocol (Tier 2).
- Stay out of NSP and reduce both their N loading below 170 kg N/ha and their P balance by 15%.
- Stay out of NSP and reduce their N loading below 170 kg N/ha and work under the Soil P Protocol.
- Under the Soil P Protocol farms must demonstrate that weighted average soil phosphorus levels are stable or decreasing by the end of the 4 year period.

- Protocols for Pig and Poultry farms to demonstrate sustainable management of P have also been developed.

Reductions in P balance can be achieved by a range of actions, depending on individual farm circumstances. Key actions may include:

- Improvements in animal feed phosphorus efficiency
- Increased use of slurry and manure processing technologies to better manage and redistribute phosphorus
- Limit or eliminate chemical phosphorus fertiliser use.
- Exporting slurry
- Farming additional land

Costs

Farms at or above 170 kg N/ha per year will face administration costs to familiarise themselves with the new requirements and decide what actions they need to take to reduce their individual farm P Balance. Because each farm will face their own unique circumstances based on farm type, size, and other factors, it would not be possible to provide a definitive assessment of the costs of this measure as there is a range of choices farms could make. It is assumed that farms will adopt the lowest cost measures first. In 2024 there were 2,391 farm businesses operating at or above a loading of 170 kg N/ha per year post imports/exports.

For dairy farms specifically, some of the actions that could be taken:

i. <u>Limit or eliminate chemical phosphorus Fertiliser use</u>
Given the intensity of production and the level of farm phosphorus surplus, there is an assumption that there will be sufficient phosphorus in slurry to meet crop requirements for phosphorus. This should mean there is no reduction in grass yield if the use of chemical phosphorus fertiliser was eliminated. Straight nitrogen fertiliser is a lower cost than compound fertiliser containing phosphorus, which would mean there would also be a benefit of reduced fertiliser cost through this change.

ii. <u>Concentrate feed rate reduction of 0.05 kg/litre</u>
Taking the example of a standard dairy farm, assuming the average milk yield per cow is 8000 litres/year, a reduction of 0.05kg/litre of concentrate feed equates to 400kg/year of feed. The average cost per tonne of concentrate feed was £362 in 2024. This would mean a reduction of 0.05kg/litre of concentrate feed would be a savings of £144.80 per cow per year. Reducing concentrate feed use could reduce milk yield, unless feed use efficiency increases, so this reduction in milk yield could cancel out the savings in feed reduction. To increase feed efficiency on a dairy farm, total dry matter intake cannot be reduced. If concentrate is reduced forage intake will have to increase. In the past, an assumption has been made that silage cost per tonne DM is 50% that of concentrate.

iii. <u>SULS separation of farm slurry</u>
The Department's Sustainable Use of Livestock Slurry Initiative (SULS) is developing projects and processes for separating slurry on farms and remove phosphorus in the separated slurry solids. This processing of slurry and export of the solids off farm helps to reduce the farm's P Balance. From the experience and evidence to date, SULS is considered to have low or minimal cost to farmers at this point. Final costs will be related to how the market/regulations develop as slurry separation and processing capacity expands.

Under the current NAP, 420 farms operated under a NAP derogation in the most recent year, which requires them to meet a Farm Phosphorus balance limit of 10kg/P/ha/year. These are

predominantly dairy farms, which shows that it is feasible for dairy farms to operate within Farm Phosphorus balance limits.

Compliance may involve both potential efficiency gains and adjustment costs. The scale and direction of the economic impacts are likely to vary across farms depending on their starting position and the measures required to achieve compliance.

For Pig and Poultry farms, the actions they may take will be more variable as the farms range from those having no pasture and/or arable land on which to spread manure or slurry, and therefore export it all to other farms, to those which have sufficient pasture and/or arable land to utilise all manure or slurry they produce in accordance with the limits in NAP. Only pig and poultry farms not operating under Integrated Pollution Prevention and Control (IPPC) will be impacted by this measure. There are currently 594 commercial pig & poultry farms which operate below the livestock numbers required for IPPC.

Benefits
The proposed measure aims to reduce the amount of excess phosphorus entering agricultural systems, encouraging more efficient use of nutrients and supporting long-term farm sustainability by reducing unnecessary inputs.

Reducing the NI average phosphorus surplus would reduce phosphorus losses to rivers and lakes. It would also slow the build-up of excess phosphorus in soils, while targeted management could reduce phosphorous levels in high index soils. These changes would support long term efforts to improve water quality and ecological condition.

1.3 Dairy cow nutrient excretion values – based on milk yield

It is proposed to reform the standard nutrient excretion values for dairy cows under the NAP, by replacing the single values for Nitrogen and Phosphorus by values determined by milk yield.

There will be four different ways to determine the nutrient excretion values for a herd:

- Milk yield banding: This involves applying the standard nitrogen and phosphorus values specified for each milk yield band, with supporting records of farm milk yield. The proposed banding and excretion values for dairy cows are:

Table 2 Nitrogen (N) and Phosphorus (P) excretion figures for dairy cows

Milk yield bands (litres)	N excretion per cow (kg/year)	P excretion per cow (kg/year)
< 5,000	77	11
5,000 – 7,000	90	13
7,001 – 8,000	103	15
8,001 – 9,000	112	17
9,001 – 10,000	121	18
10,001 – 12,000	135	20
>12,000	149	22

- Farm-specific calculation (milk yield based): Farms may use their own milk yield data to calculate a tailored nitrogen value using DAERA's online calculator, rather than the standard values provided for in the fixed band average.
- Farm-specific calculations (diet based): Farms may choose this option where they are using specific feeding practices (such as lower protein diets). Nitrogen excretion can be

calculated by using diet information and DAERA's online calculator. This option must be supported by independent verification. It is only relevant for herds with higher milk yields and concentrate feed inputs. Improving N efficiency in diets will reduce N excretion rates.

- Default value: For farms which do not submit any data, the highest excretion values will apply.

Data relating to milk yield should be taken from either the most recent year's average or a rolling average of the most recent three-years. This data is to be submitted to the Department annually via an online system.

Costs

Dairy farms will face administration costs to familiarise themselves with the new N excretion values and to decide how they will determine the nitrogen value for their herd via the four different ways outlined above.

Benefits

The proposed measure will provide a standard, transparent method for estimating nutrient production on farms. It should create more accurate and fair nutrient accounting and allow farms to use their own verified data where it is available. It would allow nutrient limits to be applied fairly and consistently across all farms.

The proposed measure would contribute towards protecting water quality, by ensuring that nutrient applications remain with safe limits. It would also support wider environmental reporting, including greenhouse gas and ammonia inventories.

1.4 Updated poultry nutrient excretion figures

It is proposed that the standard values for poultry figures are amended as outlined in Tables 3 & 4 below.

Table 3 Nitrogen (N) and Phosphorus (P) excretion rates for poultry (Update to Table 1c of Schedule 2 of the 2019 NAP Regulations)

Livestock type	Dry matter (%)*	Nitrogen (N) produced per 1,000 birds per crop (kg/N)	Phosphorus (P) produced per 1,000 birds per crop (kg/P)	Crop length (weeks)	Litter output per 1,000 birds per crop (t)	Litter output per 1,000 birds per week (t)
Broilers – indirect heating systems	72	30.3	5.0*	6	1.0	0.170
Free range broilers (0d – finish)	57	44.9	11.4	8	1.7	0.213
Free range broilers (0 – 28d)	65	18.6	4.4	4	0.53	0.133
Free range broilers (28d - finish	56	44.9	11.4	4	1.6	0.395
Turkeys 0 – 6 weeks	62	103.9	30.3	6	3.9	0.650
Turkeys 6 weeks – kill	59	305	73.8	8	12.3	1.538
Turkeys 0 – kill	61	408.9	104.4	14	16.2	1.157
Fattening Ducks	25	139	65	5	21.4	3.567

Livestock type	Dry matter (%)*	Nitrogen (N) produced per 1,000 birds per week (kg/N)	Phosphorus (P) produced per 1,000 birds per week (kg/P)	Crop length (weeks)	Litter output per 1,000 birds per crop (t)	Litter output per 1,000 birds per week (t)
Broiler breeders 0 – 18 weeks	55	2.9	2.0	18.	3.0	0.167
Broiler breeders 18 – 60 weeks	60	7.2	3.9	42	14.7	0.350
Broiler breeders 0 – 60 weeks	58	5.9	3.3	60	17.7	0.295
Pullets	72	4.7	1.7	16	2.3	0.144
Free range laying hens – single tier	46	5.8	2.2	60	17.3	0.288
Free range laying hens – multi tier	32	6.6	2.1	60	25.3	0.422
Housed hens	31	7.4	2.3	60	29.0	0.483

**Dry matter may vary depending on litter/manure drying systems. Adjust litter/manure output and nutrient profile accordingly. As DM increases, total weight of litter manure will decrease, and nutrient content / kg will increase.*

Table 4 Total Nitrogen (N) and Phosphorus (P) content of fertilisers and proportion of total phosphorus to total nitrogen (Update to Table 2 of Schedule 2 to the 2019 NAP Regulations, in so far as is relevant to poultry only)

Solid manure type	Dry matter content (%)*	Total nitrogen content by weight (kg N/t)	Total phosphorus content by weight (kg P/t)	Proportion of total phosphorus to total nitrogen
Poultry manures				
Broiler – indirect heating systems	72	30.3	5.0	0.16
Free range broilers 0d-finish	57	26.4	6.7	0.25
Free range broilers 0-28d	65	34.5	8.2	0.24
Free range broilers 28d-finish	56	28.5	7.0	0.25
Broiler breeders 0 – 18 weeks	55	17.5	11.8	0.67
Broiler breeders 18 – 60 weeks	60	20.7	11.0	0.53
Broiler breeders 0 – 60 weeks	58	19.1	11.4	0.60
Turkeys 0 – 6 weeks	62	26.6	7.7	0.29
Turkeys 6 – kill	59	24.8	6.0	0.24
Turkeys 0 – kill	61	25.7	6.9	0.27
Pullets	72	32.7	12.0	0.37
Free range laying hens – single tier	46	18.8	7.5	0.40
Free range laying hens – multi tier	32	15.6	5.0	0.32
Housed hens	31	15.4	4.7	0.31

**Dry matter may vary depending on litter/manure drying systems. Adjust litter/manure output and nutrient profile accordingly. As DM increases, total weight of litter manure will decrease, and nutrient content/kg will increase*

Costs

Poultry Farms will face administration costs to familiarise themselves with the updated poultry nutrient excretion rates, to recalculate their nutrient loading and review their nutrient management planning.

Benefits
The proposed change would reflect modern poultry systems more accurately. It would improve regulatory clarity and nutrient management planning certainty. It would reduce the risk of under-estimated nutrient pressures.

1.5 Standard values for separated manures and slurries

It is proposed to update the regulations to include standard values for screw press separated slurry fractions.

Costs
Farms will face administration costs to familiarise themselves with the update and decide how it impacts their nutrient planning.

Benefits
The proposed update would improve the accuracy of nutrient planning. It would support slurry separation and nutrient processing investment, providing regulatory certainty for new technologies. By promoting better nutrient use, it would reduce risks to crop performance and the environment.

1.6 Updated chemical nitrogen fertiliser limits for grassland

It is proposed to introduce whole farm limits on chemical nitrogen fertiliser use, based on how much grass a farm produces.

Table 5 Whole farm limits on chemical nitrogen fertiliser use, based on how much grass a farm produces

Nitrogen application limits for Grassland Crops Grass Production Level	Balance of grassland nitrogen requirement (from chemical fertiliser or organic nitrogen supply other than livestock manure) Whole farm limits – kg/N/ha/year
Maximum – Target yield 12-15 (t DM/ha)	243 - 272
Moderate to High – Target yield 10-12 (t DM/ha)	223 - 242
Low to Moderate – Target yield 5-10 (t DM/ha)	0 - 222

Costs
Farms will face administration costs to familiarise themselves with the change and decide how it impacts their nutrient planning. Farms in the maximum grass production category have additional administration costs as they would be required to: carry out soil sampling and analysis at least every four years; sample each homogeneous grassland area; and test, as a minimum, for phosphorus, potassium and soil pH.

Benefits
The proposed change should encourage fertiliser use to better reflect actual grass growth and soil need, which would lead to a more efficient use of fertiliser, leading to potential cost savings, and reduce the risk of excess nitrogen being lost to the environment.

1.7 Allowance for processed organic fertilisers

It is proposed to introduce a specific allowance and limit of 100 kg nitrogen per hectare per year for “Processed Organic Fertilisers” derived from agricultural sources.

Costs
Farms will face administration costs to familiarise themselves with the change and decide how it impacts their nutrient planning.

Benefits
The proposed measure would support more efficient and sustainable nutrient use on farms, which could reduce the reliance on chemical nitrogen fertilisers without increasing overall fertiliser use. Increasing the use of processed organic fertilisers would support the processing of slurry and manure to remove excess nutrients.

The measure would help promote a low-emissions, circular economy, reducing impacts on air quality, water quality and greenhouse gas emissions. It would also help to reduce nitrogen and phosphorus surpluses at a national level.

Organic nutrient processing can facilitate LESSE through the removal of slurry solids from farms for off farm processing. This reduces on farm slurry dry matter and makes LESSE easier to use.

2. Manure Storage and Application Requirements - Ammonia Implications

This section focuses on improving how manures are stored, handled and applied, alongside measures to reduce ammonia emissions.

2.1 Reduced slurry application volumes in February and early October

It is proposed that the maximum volume of slurry which can be applied during the period from 1st to 15th October and throughout the month of February is reduced from the current limit of 30m^3 per hectare per single application to 25m^3 per hectare per single application.

Costs
Farms will face administration costs to familiarise themselves with the change and decide how it impacts their slurry applications. It is expected that there would be no additional storage needs required from this change. It is assumed that because the proposed reduction in volume is small, that the largest requirement for nutrients supply to grass and crops will be later in the season, and that there has been no change to the closed period, additional storage would not be needed.

Benefits
The proposed change would better align slurry application rates with lower grass growth and nutrient demand in February and early October. This would lead to a more efficient use of slurry. With lower application volumes, the likelihood of nutrients being lost to watercourses during wetter conditions is reduced. This would help reduce diffuse pollution pressure on rivers, lakes and streams.

2.2 Clearer definition of Low Emission Slurry Spreading Equipment

It is proposed to update and clarify the definition of LESSE in the regulations. Under the proposed definition, LESSE will be expanded to include:

- Any method that reduces ammonia emissions by 30% or more compared with the inverted splash plate method.

Costs
Farms and Contractors will face administration costs to familiarise themselves with updated definition and decide how it impacts their slurry spreading methods.

Benefits
The proposed change would provide fairness and consistency in how rules are applied, providing greater certainty for farmers and contractors about which equipment meets regulatory requirements. It would encourage innovation by allowing new slurry spreading technologies to be recognised where they deliver proven environmental benefits. The proposed change would contribute to improved environmental protection from reducing ammonia emissions.

2.3 Tiered move to increased use of LESSE

It is proposed to extend the mandatory use of LESSE to more farms over time, using a tiered approach based on farm size, measured in livestock units. Under the proposal, LESSE would become mandatory as set out in Table 6.

Table 6 LESSE Tiers

	Livestock Unit per farm	Proposed date of Mandatory LESSE
Tier 1	All farm businesses over 100 LU	by February 2028
Tier 2	All farm businesses over 75 LU	by February 2029
	All pig farms over 10,000kg livestock manure N production per year from pigs.	by February 2029
Tier 3	All farm businesses over 50 LU	by February 2030

Costs
Farms will face administration costs to familiarise themselves with the change and decide how it impacts their slurry applications and if they will need to purchase new equipment. DAERA asked questions about Low Emission Slurry Spreading Equipment in the 2024 Agricultural Census[3].The questions were designed to capture data on how farmers would respond to being required to use LESSE under new regulations. Cattle farmers were asked what their response would be regarding purchase of LESSE equipment and what type of equipment would be intended for use.

Analysis of the Census responses was used to indicate the likely purchases of LESSE equipment by farm businesses in each tier. Out of the total of 20,232 farms with cattle in the 2024 Census, 60.1% indicated that if required to use LESSE by regulations they would use a contractor and would not plan to purchase LESSE. Limiting the mandatory use of LESSE to farms over 50 Livestock Units removes 14,198 farms from this requirement, meaning an additional 6,034 farm businesses with cattle will be required to use LESSE.

[3] https://datavis.nisra.gov.uk/daera/ni-agricultural-census-2024.html#

Across all tiers, 11.7% of farm businesses already own LESSE, 9.2% indicated that they intend to purchase LESSE and 19.1% of businesses did not indicate their intentions regarding LESSE.
The breakdown of the type of equipment intended for purchase indicated in the Census (for the 9.2% of farms that indicated intention to purchase LESSE) are outlined in Table 7 together with the equipment costs.

Reference costs for LESSE equipment were taken from the Sustainable Farm Investment Scheme reference pricing. (Dribble Bar average cost £15,100; Trailing shoe average cost £16,830; Slurry injection system average cost £35,400; Slurry Tanker (max 2500 gallons) average cost £17,678).

The total cost of intended LESSE purchases would be £3.69m for Tier 1, £1.93m for Tier 2 and £3.61m for Tier 3, giving an overall total projected LESSE cost of £9.2m. Funding support from DAERA for the purchase of LESSE will be available through the SFIS.

Table 7 Total cost of intended LESSE purchases by Tier

Tier 1 All Farm businesses over 100 Livestock Units, 1st Feb 2028		
Categories of LESSE items	**Number of each item to be purchased from Census**	**Total cost per category**
Dribble bar / Trailing hose	132	£1,993,200
Trailing shoe	20	£ 336,600
Slurry Injection system	5	£ 177,000
Slurry Tanker	67	£1,184,426
	Tier 1 Projected Cost	**£3,691,226**

Tier 2 All Farm businesses over 75 Livestock Units, 1st Feb 2029		
Categories of LESSE items	**Number of each item to be purchased from Census**	**Total cost per category**
Dribble bar / Trailing hose	70	£1,057,000
Trailing shoe	11	£ 185,130
Slurry Injection system	2	£ 70,800
Slurry Tanker	35	£ 618,730
	Tier 2 Projected Cost	**£1,931,660**

Tier 3 All Farm businesses over 50 Livestock Units, 1st February 2030		
Categories of LESSE items	**Number of each item to be purchased from Census**	**Total cost per category**
Dribble bar / Trailing hose	129	£1,947,900
Trailing shoe	20	£ 336,600
Slurry Injection system	5	£ 177,000
Slurry Tanker	65	£1,149,070
	Tier 3 Projected Cost	**£3,610,570**

Current NAP regulations require the use of LESSE for pig enterprises (enterprises with more than 10 breeding sow places or 150 finishing pig places) with a total annual livestock manure nitrogen production of 20,000 kg or more. This includes a total of 59 farms and, as many of these businesses also have cattle which already subjects them to LESSE requirements for this, only 23 of these are affected by requirements relating specifically to pigs.

The proposal to amend this regulation to include enterprises with an annual livestock manure nitrogen production of 10,000 kg or more from pigs to be spread using LESSE from 1 February 2029 would affect an additional number of farms without significant cattle. The precise number cannot be calculated without individual farm data.

Current NAP regulations mean all contractors need to spread slurry using LESSE and the equipment is becoming more widely used in general. Baseline contractor costs for the spreading of slurry via LESSE however are difficult to establish as costs vary based on a number of factors, most notably the distance from yard to land and application rate.

Benefits
Increasing the use of LESSE would result in a more effective use of slurry nutrients, delivering improved grass growth and crop yield by keeping more nitrogen in the soil, leading to improved overall farm productivity. Increasing nutrient planning efficiency would lead to a reduced need for chemical fertilisers, which could lower input costs for farms.

The use of LESSE would lead to reduced ammonia emissions, improved air quality and increased protection for sensitive habitats. Nutrient run-off would be reduced, helping to safeguard waterways from pollution.

2.4 Pre-Notification of new slurry and silage storage

It is proposed to strengthen the regulatory requirement for pre-notification of slurry or silage stores prior to construction. Controllers must notify DAERA 28 days before construction (including substantial enlargement or substantial reconstruction) begins and provide the registration number of the Chartered Structural or Civil Engineer supervising and certifying the building works. If no acknowledgement is provided by DAERA within 28 days following notification, construction can proceed.

Costs
Controllers will face administration costs to familiarise themselves with the change and to adjust their processes to factor in pre-notification before work starts.

Benefits
The proposed change would strengthen environmental protection by identifying and addressing potential pollution risks before construction begins.

2.5 Clarify cover requirement for new above-ground slurry stores

It is proposed to clarify through guidance and awareness raising that for new above ground slurry storage facilities, the cover must be:

- a tensioned fitted cover (for example, a properly fitted membrane designed to remain in place), or
- a fixed structure (such as a roof or lid).

Other cover types that are loose-fitting or not fixed in place are not considered to meet the existing requirement.

Costs
Farms will face administration costs to familiarise themselves with the clarification and to decide if they have any plans for new above-ground slurry stores that will be impacted.

Benefits
The proposed change would lead to improved Nitrogen retention in slurry for new above-ground slurry stores and reduce ammonia emissions from slurry storage. Fitted covers can reduce ammonia emissions by up to 80%. Reduced ammonia emissions would lead to improved air and water quality. Fitted covers also prevent rainwater entering stores and therefore increase the effective slurry storage capacity.

2.6 Limit the use of unprotected granular urea fertilisers

It is proposed that the use of urea fertiliser in Northern Ireland would be managed through a seasonal approach, with a requirement to only use protected urea for applications from 01 April each year.

Costs
Farms will face administration costs to familiarise themselves with the new prohibition and to maintain records to demonstrate compliance. Based on the DAERA fertiliser delivery statistics, the restriction to protected urea for deliveries from April to December would lead to the total urea costs increasing by 2.1 to 2.9 per cent or £226k to £410k. Fertiliser deliveries are not necessarily the timing of farm purchases or fertiliser application but have been used as the best estimate. The analysis assumes that protected urea is substituted for standard urea and overall tonnage remains the same i.e. the only thing that changes is the price per tonne. There are nutrient savings that can be made by moving to protected urea and this could potentially offset the extra cost.

Benefits
Substituting the use of unprotected with protected urea fertiliser would lead to a substantial reduction in ammonia emissions from chemical fertiliser use. Reducing ammonia emissions would mean reduced risk to air quality and sensitive habitats. It would also result in improved nitrogen use efficiency, meaning more of the applied fertiliser benefits crop growth rather than being lost.

2.7 Anaerobic Digestate Measures

It is proposed that the NAP Regulations are updated as follows:

Separation of Digestate to reduce Phosphorus content

- Where the separated liquid portion of digestate has a low phosphorus to nitrogen ratio (1:10 or lower), it can be spread under the existing rules for cattle slurry.
- If the digestate is produced using feedstock sourced from outside Northern Ireland, it must be applied strictly in line with crop nutrient needs and will require a nutrient management plan to be completed and retained on farm.

Targeted application of Digestate to Land

- Where the separated liquid portion has a higher phosphorus to nitrogen ratio than 1:10, then it must be applied strictly in line with crop nutrient needs and a nutrient management plan must be completed and retained on farm, as required by the 2019 NAP Regulations.

Record keeping and reporting of nutrient movements

- The movements of AD must be recorded in the same way that slurry and manure imports and exports are recorded. This includes recording slurry and separated slurry from farms to AD plants, as well as processed digestate returning to farms. All movements must be notified to DAERA to allow oversight just as with manure imports and exports.

Costs

Farms and AD plants will face administration costs to familiarise themselves with the change and decide how it impacts their nutrient management activities.

There are an estimated 80 AD plants in Northern Ireland with the vast majority using agricultural feedstocks, mostly sized around the 500kWe scale and each managing around 16,000 tonnes feedstock / digestate per year. With reference to an individual AD plant, the AD plant will need to spread this digestate on land and in order to do so the controller of the land on which it is spread must comply with the existing NAP requirements for a high P:N organic manures. Specifically, the development of Nutrient Management Plans along with digestate and soil analyses to demonstrate crop requirement for the nutrients applied.

To achieve a P:N ratio of 1:10 or lower necessitates the use of a decanting centrifuge separator, as a screw press separator will not extract sufficient phosphorus in the solid fraction. However, decanting centrifuge separators are more expensive to buy and operate than a screw press.

If an estimated 50% of these AD plants were to install centrifuge separators and operate them, this would represent a national investment of approximately £7m CAPEX with a further almost £1m OPEX, which would be a cost of £11m over the next 4 year NAP period. This would represent a cost of approximately £11 / tonne of digestate solids produced per year. It is possible however that the production of these solids will provide AD plants in Northern Ireland with the benefits listed in the next section in terms of savings and revenues. It is also possible that rather than invest in a centrifuge separator, some AD plants may choose to use a mobile centrifuge separator if that service was provided by a company purchasing the separated solids for organic/organomineral fertiliser manufacture.

It is important to note that the proposed measures do not mandate all AD plants to separate digestate to reduce Phosphorus content. However, for the reasons outlined above many are likely to choose to use decanting centrifuge separators. This investment in manure processing infrastructure will be needed to provide a mechanism to export Phosphorus from the NI agricultural system. This mechanism is a key element in achieving Phosphorus reduction targets for the next NAP and therefore the investment in separators at AD plants has been included in this RIA.

Benefits

The proposed updates would encourage circular nutrient use and provide alternatives to chemical fertiliser. It would also support reductions in nutrient surpluses and encourage low emission nutrient recycling.

For AD Plants, potential savings and revenues could be £14.8m over 4 years as outlined in Table 8 below.

Table 8 Estimated potential savings and revenues for AD Plants in NI

Item	Total Northern Ireland value / year
The nutrient value present in the solids (P,K,S,Mg,N)	£2.0m (£16 / tonne)
Approx. 20% less material to spread (due to the volume of solids being removed for processing and export)	£1.2m (£32k per AD plant)
Due to reduced regulation of a now low P:N ratio, related to NAP requirements for NMPs. There may be additional secondary costs arising from the storage of separated solids and the need to mitigate ammonia emissions. However, as these would be site specific, they are difficult to quantify. There will be a further cost to AD operators resulting from proposed incoming requirements for nutrient tracking in and out of an AD plant. However, this is unlinked to the above.	£0.5m (£12k admin and NMP / NIEA costs)

*Based on 640k tonnes digestate separated to 128k tonnes of solids produced

3. Farming Practices to Improve Nutrient Use and Water Quality

This section focuses on practical approaches that support better nutrient use at farm level. It sets out proposals that aim to improve efficiency, encourage good practice, and provide a clearer structure for how nutrient management is supported and monitored over time. As these measures are voluntary, the costs and benefits listed are potential costs and benefits that could arise if voluntary action was taken.

3.1 Nutrient Stewardship Programme - a revised approach to Derogation

To replace the current Derogation with a revised approach called the Nutrient Stewardship Programme (NSP). While many of the existing environmental safeguards would remain, several important changes are proposed and set out below.

a) **Change of Name**

- The term “Derogation” would be replaced by “Nutrient Stewardship Programme”.
- This is intended to better reflect the higher standards of nutrient management required and the environmental benefits delivered as more farms are utilising nutrients more efficiently.

b) **Two-Tier Structure**

- Tier 1: Farms that already meet all requirements (current and new) would enter Tier 1, recognising their high level of nutrient management.
- Tier 2: Farms that do not yet fully meet all Tier 1 Phosphorus Balance requirements could enter Tier 2 and work towards Tier 1 over time, with advisory support.

c) **Grassland Requirement**

- The minimum grassland requirement would be reduced from 80% to 70%.
- This would allow some farms to grow more arable crops, such as cereals.
- Additional safeguards (such as buffer strips near watercourses) on some arable fields would be required to manage any risks to water quality.

d) **Phosphorus Balance Rules**

- Existing participants will enter Tier 1 and maintain the current limit of no more than 10 kg P per hectare per year surplus.
- New Tier 2 entrants will be permitted to join with a higher P surplus, provided they commit to reducing it by at least 10% over four years, or to 10 kg P per hectare per year.
- Compliance with the Phosphorus balance, will be assessed using a three-year rolling average, allowing for normal year-to-year variation in farming conditions.
- Compliance may also be demonstrated through soil testing showing stable or declining soil phosphorus under the Soil P Protocol.
- All farms must prepare and submit annual nutrient/fertilisation accounts, as per the existing requirements which will be checked and verified by NIEA.

e) **Clover and Leguminous Crops**

Current limits on clover and leguminous crops are designed to reduce risk of elevated nitrate levels in groundwaters. This is a measure historically applied by the EU due to widespread issues in some European countries. However, as most soils in Northern Ireland are less vulnerable to nutrient losses to ground water than those in European countries, the following changes are proposed:

- To permit more clover and legumes which has the potential to reduce the need for chemical fertiliser and imported feed.
- Targeted safeguards will be introduced in higher-risk areas if necessary.

f) **Application to the Programme**

- Tier 1 farms will apply for a maximum four years, aligning with the NAP cycle, rather than applying annually. This means that those applying for entry into the scheme part way through the NAP four year review cycle will only be approved up to the end of that review period.
- Tier 2 farms will be required to apply for entry into the programme each year, to allow progress to be reviewed and monitored.
- Annual nutrient planning and reporting will be required for all participants, which will be checked and verified by NIEA.

g) **Inspections, Training and Review**

- Tier 1 farms, will be considered as a lower risk and will therefore have a 1% inspection rate, reflecting their higher compliance.
- Tier 2 farms will receive targeted training and advisory support on nutrient management.
- Farms in Tier 2 (considered as in-conversion) will be considered as a higher risk than those in Tier 1 and therefore will have a 5% rate of inspection.
- Nutrient management accounts will continue for farms operating under the programme and will continue to be subject to monitoring and review by NIEA.
- Farms which are not part of the Nutrient Stewardship Programme but which are operating over 170kg Nitrogen per hectare per year, will be considered High Risk and will be subject to the highest 10% rate of inspection.

Costs
Grassland farms operating over 170kg N/ha per year will face administration costs to familiarise themselves with the Nutrient Stewardship Programme, to decide if they are joining the programme or not, and what obligations they face based on that decision. From 2019 to 2024 there was 418 to 441 farms approved for derogation annually. These farms already deal with various administration requirements, compared to farms that do not currently operate under derogation who would face new additional administration requirements such as annual nutrient planning and reporting, annual application to the programme if a Tier 2 farm. From 2019 to 2024 there were 1,656 to 1,990 farms operating above 170kg N/ha per year that were not derogated.

Tier 2 farms with a higher than 10kg P per hectare per year surplus will be committing to reducing their P surplus by at least 10% over four years or to 10kg P per hectare per year. Individual farms will face having to decide what options they can take based on the unique circumstances of their farming enterprise. Changes could be made such as feed efficiency improvements, reduced fertiliser inputs through improved nutrient planning efficiency, export of slurry or separated slurry solids off farm, increasing the land area utilised, or reducing the level of stock on farm.

Training and advisory services will be provided by DAERA to support this change and that will help reduce the administrative burden for farms and help them be well informed to make the best decision for their own farm circumstances.

Farms that choose not to enter the NSP who operate over 170kg N per hectare per year will be considered High Risk and be subject to the highest 10% rate of inspection, which could create additional administration costs compared to lower risk farms.

Benefits
The proposed NSP should result in less paperwork for compliant farms compared to the existing Derogation system, for example the existing Derogation process requires annual application versus in the NSP for Tier 1 farms they only need to apply once during the 4 year NSP cycle.

The planned support and advisory services that will be provided in NSP will help improve farm practices and should lead to reduced costs from better nutrient management. The support for more efficient nutrient use should lead to lower fertiliser and feed imports, which improves farm business resilience.

The requirements of the NSP should strengthen water protection due to lower nutrient losses and the encouragement of biodiversity-friendly farming. The expanded scheme will better align with NI soil conditions and wider agri-environmental policy goals.

3.2 Mitigation Measures for late harvested arable crops

To introduce specific provision on implementation of mitigation measures at planting stage supported by additional guidance. Mitigation will be required on fields planted with late harvested crops, where there is a risk to a watercourse e.g. slope of the field, run-off pathways and proximity to a watercourse. Such mitigation will be laid out in guidance.

Costs
Farms will face administration costs to familiarise themselves with the new proposal and to decide what impact it has on their cultivation plans.

Benefits
The proposed provision would provide flexibility of mitigating actions, aligning with post-harvest actions for environmental protection of watercourses from soil erosion.

3.3 A focused approach to improving water quality

To introduce a “focused approach” to support the NAP, in focused areas, it is proposed to provide additional advisory support, education and recommendations for voluntary measures to mitigate against the risk of nutrient losses to water. In doing so it will provide additional targeted support in specific high-risk catchments, alongside the existing NAP rules that continue to apply to all farms.

Costs
Farms in focussed areas will face administration costs to familiarise themselves with the new proposal and to decide how they will engage with the offered advisory support and education, and what impact any recommended voluntary measures would have on their farm enterprise.

Benefits
The proposed approach would provide farmers with tailored guidance, practical support and access to expert advice. The targeted approach would direct interventions where they will have the greatest impact, in catchments where agricultural nutrient losses pose the greatest risk to water quality. This should lead to improved water quality and a reduction in the negative environmental impacts in protected habitats.

3.4 Nutrient Efficiency Roadmap for NI farming

To develop a Nutrient Efficiency Roadmap for Northern Ireland farming, built around an overarching mission:

To enhance food security, farm profitability, and environmental outcomes by increasing nutrient security through the efficient use of nitrogen and phosphorus on NI farms.

Costs
Farmers, government, industry, environmental groups and other relevant organisations will be involved in co-designing and co-owning the roadmap, meaning they will face varying levels of administration costs to engage in the process and to understand the specific impacts the roadmap has on their activities.

Benefits
The development of a Nutrient Efficiency Roadmap would support farmers in maximising nutrient efficiency farming practices and improve long term farm resilience and efficiency. It would also reduce avoidable nutrient losses to air and water and strengthen the sustainability of the NI agricultural sector.

4. Utilising Technology

DAERA is proposing to improve the existing online system used to record slurry and manure movements. The aim is to make the system more accurate, timely and easier to use, while ensuring that information can be verified. This will help support fair and effective regulation, while also reducing the risk of errors or incorrect reporting.

4.1 Enhanced online system for recording slurry and manure exports and imports

The existing online system will be enhanced to ensure more up to date and accurate reporting of exports and imports of slurry and manures. Organic manure movements must be notified to DAERA as follows:

- All organic manure movements must be notified to DAERA by the exporter three times annually as a minimum. Movements up to the end of February, June and October must be notified by the exporter and verified by the importer no later than the end of the subsequent month.
- Additionally, all exports of 15 miles or greater in a straight line distance must be notified to DAERA within five days of the transfer. Verification by the receiving farm or operator, is required within two weeks of the receiving farm or operator being notified.
- This notification will be by the online system which will be enhanced. An App will also be developed so that farmers can notify and verify movements using a mobile phone, providing an alternative to logging into the online system directly. A phone line alternative to the online system and App will also be available.
- The five day notification period for transfers of 15 miles or greater does not apply to transfers of separated slurry solids and poultry litter to licenced manure processing facilities.
- The 15 mile straight line distance is measured from the location of the holding where the slurry is stored/produced, if this is different from the location of the registered Farm Business ID.
- Under the 2019 NAP Regulations, Reg 27 (1) farmers are already required to … “keep sufficient records to allow the following information to be ascertained for any calendar year - …” Therefore, farmers should keep records of slurry movements on an ongoing basis, and these records should be available for inspection in the current year. These records could be a log kept in a notebook or documentation from a contractor or haulier. This will be highlighted in guidance for the updated NAP.

Costs
Farms will face administration costs to familiarise themselves with the new notification requirements as an exporter or an importer of organic manure and to familiarise themselves with the enhanced online system and how to submit notifications.

Benefits
The enhanced online system would improve the accuracy and reliability of slurry and manure movement records, this would ensure that movements are genuine, transparent and fully traceable. This would support fair and effective enforcement of nitrogen limits. It would reduce the risk of nutrient pollution by ensuring slurry and manure is accounted for where it is actually applied. Also, increased compliance has been noted in other regions that have previously adopted similar approaches.

4.2 Extending the system to processed slurry solids and digestate movements

The existing online system will be extended to include additional materials, such as digestate and processed slurry products, to give a more complete picture of how nutrients are managed across the region. Therefore, exports and imports of processed slurry solids and digestates must be notified to the Department as follows;

- All processed slurry solids and digestate movements must be notified to DAERA by the exporter three times annually as a minimum. Movements up to the end of February, June and October must be notified by the exporter and verified by the importer by the end of the subsequent month

- Additionally, all exports of 15 miles or greater in a straight line distance must be notified to the Department within five days of the transfer. Verification by the receiving AD plant, manure processing facility or farm, is required within two weeks of the receiver being notified**.**

- The five day notification period for transfers of 15 miles or greater does not apply to transfers of separated slurry solids and poultry litter to licenced manure processing facilities

- The additional measures for slurry and manure listed at 4.1. also apply.

Costs
Farms and operators of AD plants and other manure processing facilities will face administration costs to familiarise themselves with the new notification requirements as an exporter or an importer and to familiarise themselves with how to submit notifications.

Benefits
Extending coverage of the system would provide full traceability of all organic nutrient movements and ensure that processed materials and digestate are properly accounted for in nutrient loading calculations. The proposed change would lead to similar transparency requirements across different types of organic fertiliser. Reducing the risk of unrecorded or excessive nutrient applications would lead to improved environmental protection.

5. Additional measures to support environmentally sustainable farming

The following measures are voluntary and/or offer advisory support and guidance to support farmers to take informed decisions. As these measures are voluntary, the costs and benefits listed are potential costs and benefits that could arise if voluntary action was taken.

5.1 Awareness of existing storage requirements and how dirty water storage, rainwater and parlour washings can impact this

To raise awareness of the existing storage requirements and share best practices for making the most of on-farm storage facilities.

Costs
Farms would face administration costs to familiarise themselves with the best practices for on-farm storage facilities.

Benefits
Increasing awareness of storage requirements and the best practices for on-farm storage facilities would lead to reduced sediment and phosphorus runoff and could increase effective storage capacity.

5.2 Revised silage bale storage requirements

To strengthen the regulatory framework to ensure best practices are followed and to mitigate against the risk of pollution when silage bales are stored in fields.

Costs
Farms would face administration costs to familiarise themselves with the best practices for silage bale storage.

Benefits
Best practice silage bale storage would prevent high impact effluent losses to watercourses.

5.3 Voluntary buffer strips on arable land

Voluntary, uncultivated buffer strip alongside waterways in arable fields.

Costs
Introducing a buffer strip will reduce the land available for cultivation and there will be income forgone. The most recent income forgone figures are £469/ha for Arable/Improved Land and £1,073/ha for All Cereals; the total income forgone for an individual farm will depend on the size and scale of buffer strips introduced, which will vary for each farm.

Benefits
Introducing an uncultivated buffer strip alongside waterways in arable fields would protect water quality by reducing the amount of sediment and phosphorus that runs off into nearby waterways. It would also support sustainable farming practices by helping to retain valuable soil and nutrients on the farm.

5.4 Voluntary Liming Programme

Continue to raise awareness of benefits of liming on suitable land.

Costs
Farms would face administration costs to familiarise themselves with the voluntary programme and make decisions over whether to participate and what impact that would have on their farming enterprise.

Benefits
The Voluntary Liming programme if participated in could provide improved nutrient uptake, better use of existing soil nutrients, greater nitrogen efficiency, lower input costs over time and healthier soils. Therefore, there are likely to be net benefits from effective liming.

6. Definition updates & Technical amendments

These changes focus on making the rules clearer, correcting errors, and ensuring that they are consistent across the Department. These amendments do not introduce new policy measures. Instead, they aim to improve how the current rules work in practice. This includes making sure that wording is clear, definitions are up to date, and requirements are easier to understand and apply.

6.1 Definition of Appropriate Person
6.2 Definition of Farmyard manure
6.3 Updating terminology
6.4 Covering of Lagoons
6.5 Definition of heavy rain
6.6 Phosphorus content of livestock diets

Costs
Farms and other relevant stakeholders would face administration costs to familiarise themselves with the technical amendments and decide what impact, if any, there is on their operations.

Benefits
The technical amendments would reduce confusion and compliance risk. The proposal on the definition of heavy rain would help to prevent nutrient losses during heavy rainfall events.

7. Implementation – including inspections/enforcement

The following sections set out the specific proposals relating to enforcement provisions and a more targeted approach to inspections.

7.1 False or misleading information provisions

To extend the existing duty not to provide false or misleading information so that it applies not only to the controller, but also to the appropriate person.

Costs
Farms and other relevant stakeholders would face administration costs to familiarise themselves with the extension of duty. Stakeholders, such as agricultural consultants, may need to decide if they need to undergo more in depth training or carry improved indemnity insurance.

Benefits
The proposed change would ensure that responsibility rests with the person who deliberately provides false or misleading information.

7.2 Increased inspections in focused areas

This proposal introduces a revised approach to inspections which aims to make them more targeted, efficient and fair, so that effort is focused on the farms and activities that present the greatest risk to the environment.

Costs
Farms would face administration costs to familiarise themselves with the revised approach to inspections.

Benefits
The proposal would result in increased inspection coverage leading to improved protection of water quality, especially in high-risk areas.

Costs summary of Option 2

Non-monetised costs

Farms will have to make informed decisions over what changes are necessary to their farm enterprise and nutrient management to be compliant with the amended regulations, these changes may create new costs. Compliance with the amended regulations may involve both potential efficiency gains and adjustment costs. The scale and direction of the economic impacts are likely to vary across farms depending on their starting position and the measures required to achieve compliance. For some systems, compliance may require adjustments such as reductions in stocking rates or other management changes that could reduce farm profits. The extent to which costs arise depends on individual farm circumstances and the specific measures adopted.

Administration costs for farms

Administration costs for farms have been referred to throughout the cost assessment above. These costs could range from time spent reading new guidance material issued about NAP, collecting nutrient management records, engaging with the nutrient management calculators to determine N and P loading rates, engaging with CAFRE/other knowledge transfer events and advisory services, preparing for an inspection, to making informed decisions about changes to on farm practices to improve farm efficiency or to comply with the revised regulations. The administration cost an individual farm would face due to the amended NAP will depend on a range factors such as size of farm, the types of farming activity undertaken, existing awareness of NAP regulations, experience of Nutrient Management, familiarity of available advisory services and support.

Some farms already hire professional services such as Agricultural Consultants or Nutritionists to assist with carrying out calculations or completing paperwork for the existing NAP. These farms may need to pay for additional services or time due to the amended regulations. Farms not currently paying for these services may decide they need professional services to assist them in complying with the revised regulations.

The number of farms operating above 170kg N/ha/year in 2024 was 2,391. Taking an average cost of £300 per year for a consultant's fee for NAP services, the total estimated cost for these farms would be £717k per year or £2.868m over the four year period of the amended NAP. This is a higher end estimate as under the proposed Nutrient Stewardship Programme, farms that were previously applying annually for Derogation would only need to apply once in the four year period to enter Tier 1, which would reduce existing administration costs.

For farms operating below 170kg N/ha/year, an estimated 23,799 farms in 2024, they will face lower administration costs due to fewer requirements, such as no application to the Nutrient Stewardship Programme, and will mainly need to just familiarise themselves with the amended NAP to decide if there are any impacts on their individual farm. The time cost for these farms can be estimated assuming it would take an estimated 2 hours for an individual farm decision maker to familiarise themselves with the new regulations and guidance. This is a high end estimate for the average length of time needed. For the hourly time cost, the Agricultural Wages Board[4] minimum rate of pay for an Agricultural Manager of £14.44 per hour is used. The total time cost estimate for familiarisation for these farms would be £0.687m.

[4] https://www.daera-ni.gov.uk/articles/awb-agricultural-rates-pay-orders-and-reports

Costs to DAERA

Estimated monetised costs to DAERA have not been itemised against each individual measure in the sections above and instead are provided in summary for the entire amended NAP here.

For IT systems development we estimate the proposed measures will cost an additional £1.6 million over the first three years of the updated NAP Regulations. There is also estimated to be a cost of £240k per year for supporting and hosting these applications, and this would usually be a 7-year commitment. There is estimated to be a cost of £2 - £3 million per year for AFBI which includes Research, Monitoring and Measurement. CAFRE costs for NAP-related KT delivery are estimated at around £10 – £20k per year and most NAP KT work would be Business as Usual. The additional staff required for NIEA is estimated at £958k per annum.

Total monetised costs of Option 2

Table 9 Total Transitional costs of Option 2

Monetised costs (£m)	Low	High	Average/Best estimate
DAERA IT systems	1.6	1.6	1.6
Farm admin costs for familiarisation	0.687	0.687	0.687
Farm LESSE costs	8.310	10.156	9.233
AD Plant CAPEX	6.3	7.7	7
Total	**16.90**	**20.14**	**18.52**

For the Farm LESSE and AD Plant CAPEX costs above, a sensitivity of +/- 10% has been applied to give a range of low and high.

Table 10 Average Annual (recurring) costs of Option 2

Monetised costs (£m)	Low	High	Average/Best estimate	Total cost of best estimate*
DAERA IT systems	0.24	0.24	0.24	1.68
AFBI Research, Monitoring and Measurement	2	3	2.5	10
CAFRE KT Delivery	0.001	0.002	0.0015	0.006
NIEA staffing	0.958	0.958	0.958	3.832
Farm Protected Urea costs	0.226	0.41	0.318	1.272
Farm planning and administration costs	0.717	0.717	0.717	2.868
AD Plant OPEX	1	1	1	4
Total	**5.14**	**6.33**	**5.73**	**23.66**

*** Total cost of best estimate calculation is based on a 4 year period, except for DAERA IT Systems where the total costs have been calculated for a 7 year period**

Table 11 Total Cost of Option 2

	Low	High	Best Estimate (£m)
Total Transitional Cost	16.90	20.14	18.52
Total Average Annual (recurring) cost	21.29	26.03	23.66
Total Cost	**38.18**	**46.17**	**42.18**

Table 12 Total outlay costs for business of Option 2

	Best Estimate (£m)
Farm admin costs for familiarisation	0.687
Farm LESSE costs	9.233
AD Plant CAPEX	7
Farm Protected Urea costs	1.272
Farm planning and administration costs	2.868
AD Plant OPEX	4
Total outlay costs to business	**25.06**

Benefits summary of Option 2

Environmental benefits

The previous benefits sections for each proposed measure included the potential environmental benefits that could be gained from actions taken under the amended NAP. These benefits have not been quantified or monetised as no assumption has been made in this assessment about how likely actions will be taken by farms and other relevant stakeholders or to what extent water quality indicators could improve if actions were taken.

Economic analysis from the River Basin Management Plans for NI, 3rd Cycle[5], stated that the total estimated monetised benefits of achieving 70% waterbodies at good status or above for 2021-2027 would be £280.9m, representing recreation, amenity and non-use benefits from improving the surface water environment.

The water environment is essential for everyday life and supports a wide range of benefits, including:

- Clean drinking water
- Agriculture and food production
- Wildlife and biodiversity
- Recreation, tourism and local economies.

Rivers, lakes and coasts help promote physical and mental wellbeing, and provide many opportunities for recreation and tourism, which in turn encourages the use of the countryside and the viability of rural businesses.

Measures in the amended NAP that are aimed at improving nutrient management and reducing nutrient surpluses may contribute to reductions in ammonia emissions, improved air quality, improvements in habitat condition and biodiversity, and potentially reductions in greenhouse gas emissions.

Other Non-monetised benefits

Depending on the decisions taken on farm to comply with the new requirements, such as nutrient management changes and utilising LESSE, farms could have improved nutrient use efficiency from livestock manure and reduced need for chemical fertilisers. This potentially could decrease farm input costs while maintaining or improving farm productivity. Increased advisory support and knowledge transfer on best practices will also contribute to this.

[5] https://www.daera-ni.gov.uk/sites/default/files/2025-06/Economic%20Analysis%20of%20the%20Programme%20of%20Measures%20-%20River%20Basin%20Management%20Plan%202021%20-%202027.pdf

Total monetised benefits of Option 2

Table 11 Total monetised benefits of Option 2

£m	Average annual recurring benefits	Total Benefit*
AD Plants potential savings and revenues	3.7	**14.8**

*** Total benefit calculation is based on a 4 year period**

Risks and Assumptions

It is assumed that to meet the requirements of the updated NAP farms would decide to take the lowest cost action first and that the decision making process will be supported by advisory services, knowledge transfer and training, and financial support through available schemes. It is intended that the LESSE measures will be introduced alongside a programme of financial support for LESSE under the Sustainable Farming Investment Scheme.

It is assumed most farms will have an existing valid soil test from the Soil Nutrient Health Scheme, but there is a risk that during the 2027-2030 period of the amended NAP that some of the SNHS results would become older than 4 years and no longer valid. A farm that needed a valid soil test due to a requirement of the amended NAP, would then have to pay for their own samples at approximately £10 per sample.

Delivery of the benefits is dependent on effective and widespread implementation of both the existing and new/amended NAP measures at farm level across NI.

Improved nutrient management efficiency can lead to reduced input costs, but this is also dependent on global events and the market price fluctuations of inputs. Therefore, there is a risk that nutrient management efficiency is improved but input costs do not decrease due to external market and global factors.

Preferred Option

The overall monetised costs for Option 2 are estimated at £42.18m, this includes a total outlay cost to business of £25.06m and total cost to DAERA of £17.12m. The monetised estimate for benefits to businesses is £14.8m, leading to a net cost to businesses of £10.26m for option 2. The non-monetised benefits of Option 2 include improvements in water quality, which the Environmental Benefits section above referenced have been valued in other assessments as worth up to £280.9m.

Option 1 (Do nothing) would not meet the legislative requirement of the Regulations to review and implement a revised NAP. Additional measures to address ongoing pressures on water quality from agricultural sources would not be introduced. Option 2 is the preferred option because it would strengthen the NAP to reduce excess nutrients, lower the risk of losses to the environment, improve water quality and improve nutrient use efficiency in agricultural systems. Option 2 would provide clear, enforceable standards, which are necessary to meet legal obligations and effectively reduce nutrient pollution from agricultural sources.