Explanatory Memorandum to The Water Resources (Control of Agricultural Pollution) (Wales) (Amendment) (No. 3) Regulations 2023

This Explanatory Memorandum has been prepared by Climate Change and Rural Affairs Group and is laid before Senedd Cymru in conjunction with the above subordinate legislation and in accordance with Standing Order 27.1

Minister's Declaration

In my view, this Explanatory Memorandum gives a fair and reasonable view of the expected impact of The Water Resources (Control of Agricultural Pollution) (Wales) (Amendment) (No. 3) Regulations 2023. I am satisfied that the benefits justify the likely costs.

Lesley Griffiths
Minister for Rural Affairs and North Wales, and Trefnydd
29 November 2023

1. Description

1. The Water Resources (Control of Agricultural Pollution) (Wales) (Amendment) (No. 3) Regulations 2023 ("these regulations") amend the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 ("the 2021 Regulations").

2. These Regulations implement the second stage of a two-stage process for introducing an enhanced nutrient management (ENM) regime for the calendar year 2024 for holdings or part of holdings not previously situated within a Nitrate Vulnerable Zone (NVZ) and sown with at least 80% grass (defined in these Regulations as "qualifying grassland holdings").

3. The ENM regime imposes total nitrogen application limits for both grazing and non-grazing livestock manure on qualifying grassland holdings for the calendar year 2024. It also requires that where occupiers of such holdings intend on applying (whether by spreading or by direct deposit from grazing livestock) to the holding more than 170kg per hectare of nitrogen in grazing livestock manure during the calendar year 2024, they must comply with additional enhanced nutrient management requirements, environmental controls and notify NRW.

4. These Regulations also extend the transitional provision for the 170kg per hectare annual nitrogen holding limit on the application of livestock manures ("the 170kg/ha limit") in relation to qualifying grassland holdings. This means that the 170kg/ha limit does not apply to such holdings until 1 January 2025

5. These Regulations also make minor technical drafting amendments to the 2021 Regulations in consequence of the ENM amendments to the 2021 Regulations and to make minor corrections to the 2021 Regulations.

2. Matters of special interest to the Legislation, Justice and Constitution Committee

6. None.

3. Legislative background

7. The Water Resources Act 1991 (c. 57) grants the Welsh Ministers the power to make Regulations to, among other things, prevent and control pollution. These Regulations are made in exercise of the Welsh Ministers' powers under Sections 92 and 219(2)(d) to (f) of that Act.

8. Article 2 of, and Schedule 1 to, the National Assembly for Wales (Transfer of Functions) Order 1999 (S.I. 1999/672) transferred functions of the Secretary of State under section 92 of the Water Resources Act 1991 to:
   a) the National Assembly for Wales in relation to those parts of Wales which are outside the catchment areas of the rivers Dee, Wye and Severn, and
   b) in relation to those parts of Wales which are within those catchment areas, functions under section 92 are exercisable by the National Assembly for Wales concurrently with the Secretary of State.

9. Functions of the National Assembly for Wales are exercisable by the Welsh Ministers (so far as exercisable in relation to Wales) by virtue of section 162 of, and paragraph 30 of Schedule 11 to, the Government of Wales Act 2006 (c. 32).

10. These Regulations are being made under the negative resolution procedure and will come into force on 1 January 2024.

4. Purpose and intended effect of the legislation

11. The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 (" the 2021 Regulations") seek to tackle the causes of water (and air quality) pollution from agricultural activities across Wales. The 2021 Regulations include an annual limit on the amount of nitrogen in livestock manure that may be applied (whether by direct deposit or by spreading) to a holding. This annual limit is set at 170kg of nitrogen per hectare ("the 170kg/ha limit") and applies as an average across the holding. Whilst this limit already applies to holdings that were previously in an NVZ, it is not due to apply to holdings that were not previously in NVZs until 1 January 2024.

12. Due to uncertainty resulting from a judicial review against the 2021 Regulations and economic challenges associated with the rising costs and impact of the Ukraine war, concerns were raised about the sector's readiness for implementation of controls on the amount of nitrogen to be applied to the land from livestock manure. This led to the Welsh Government through the co-operation agreement with Plaid Cymru consulting on a time-limited regime to enable occupiers of holdings that were not previously in NVZs more time, where appropriate, to transition to the 170kg/ha limit. It was proposed that this time limited regime would apply only to holdings that were at least 80% grassland due to grass being a crop with a high nitrogen uptake and, where managed appropriately it can aid the de-nitrification of soils and acts as a permanent cover crop, which helps to limit soil loss and nutrient loss from run off and leaching.

13. The purpose of these Regulations is to allow occupiers of holdings or part of holdings not previously situated within an NVZ where at least 80% of the agricultural area of the holding is sown with grass (defined in these regulations as "qualifying grassland holdings") to continue to apply (whether by direct deposit or by spreading) in excess of 170kg/ha of nitrogen in grazing livestock manure to the holding for the calendar year 2024 up to a maximum of 250kg/ ha. Another purpose of these Regulations is also to ensure that where such applications do occur, occupiers of qualifying grassland holdings must comply with additional enhanced nutrient management requirements to mitigate any potential environmental impact. Also, occupiers of such holdings will be required to notify Natural Resources Wales ("NRW") of their intention to make such application to their holdings so that NRW can check whether the additional enhanced nutrient management requirements are being complied with when undertaking inspection and enforcement activities.

14. The effect of these Regulations is to amend the 2021 Regulations to extend the transitional provision for the 170kg/ha limit in relation to qualifying grassland holdings. This means that the 170kg/ha limit will not apply to qualifying grassland holdings until 1 January 2025. However, no such provision is being made for holdings or part of holdings not previously situated within an NVZ where less than 80% of the agricultural area is sown with grass. As such the 170kg/ha limit will apply to those holdings from 1 January 2024.

15. These Regulations also amend the 2021 Regulations to introduce an enhanced nutrient management ("ENM") regime for the calendar year 2024 for qualifying grassland holdings. The Regulations insert Regulation 4A into the 2021 Regulations which requires occupiers of such holdings to comply with total nitrogen application limits for both grazing and non-

grazing livestock manure for the calendar year 2024. This means that during the calendar year 2024, occupiers of qualifying grassland holdings must not apply:

- in excess of 170kg per hectare of nitrogen in non-grazing livestock manure (including manure deposited directly by livestock and spreading), and
- in excess of 250kg per hectare of nitrogen in grazing livestock manure (including manure deposited directly by livestock and spreading).

16. A maximum limit of 250kg per hectare for grazing livestock manure supports those farms currently operating above 170kg per hectare to sustainably transition to the lower limit by 1 January 2025. Non-grazing livestock manures are excluded from the higher limit to reduce the risk of pollution from phosphorus due to the higher phosphorus content of non-grazing livestock manures.

17. However, regulation 4A(2) also provides that where an occupier of a qualifying grassland holding intends, during the calendar year 2024, to apply (whether by direct deposit or by spreading) nitrogen in grazing livestock manure in excess of 170kg per hectare (up to the 250kg per hectare limit), the occupier will need to comply with the additional ENM requirements under Schedule 1A and notify NRW in compliance with regulation 4B.

18. These Regulations also insert Regulation 4B into the 2021 Regulations. Regulation 4B sets out that the notice to be submitted to NRW must include:

- the name of the occupier of the qualifying grassland holding,
- the address of the qualifying grassland holding,
- a written statement that the occupier intends during the calendar year 2024 to apply to the holding, whether directly by an animal or by spreading, a total amount of nitrogen in grazing livestock manure which exceeds 170 kg per hectare, and
- a written statement that the occupier will comply with the additional enhanced nutrient management requirements set out in Schedule 1A.

19. Also, the notice to be submitted to NRW must be accompanied by an enhanced nutrient management plan that the occupier must produce for the holding under Schedule 1A and must be submitted to NRW by no later than 31 March 2024. The notice and accompanying enhanced nutrient management plan must be submitted to NRW by e-mail (NotificationENMA@cyfoethnaturiolcymru.gov.uk).

20. These Regulations also insert Schedule 1A into the 2021 Regulations which sets out additional ENM requirements and environmental controls that occupiers of qualified grassland holdings must comply with if they intend to apply (whether by direct deposit or by spreading) more than 170kg per hectare of nitrogen in grazing livestock manure during the calendar year 2024. The ENM requirements include the production of an enhanced nutrient management plan, which requires occupiers to include phosphorus in nutrient management planning. Additional environmental controls in relation to land management practices are established to minimise risks associated with high application rates of livestock manures, including increases in buffer zones around watercourses and measures to reduce risk of soil losses. Details of the additional measures are contained in Table 3.

21. The ENM requirements outlined above will apply to occupiers of qualifying grassland holdings in additions to the requirements which already apply to such occupiers by virtue of Parts 2 to 7 of the 2021 Regulations. Also, any occupier of a holding failing to comply with these additional ENM requirements during the calendar year 2024 will be guilty of an

offence and liable on summary conviction, or on conviction on indictment, to a fine, as is provided for under regulation 46 of the 2021 Regulations.

22. These Regulations also make minor technical drafting amendments to the 2021 Regulations in consequence of the ENM amendments to the 2021 Regulations and to make minor technical drafting corrections to the 2021 Regulations.

5. Consultation

23. The Welsh Government consulted formally on proposals to introduce a licensing scheme for farm businesses to work to an annual nitrogen holding limit, from grazing livestock manures, of 250kg/ha, subject to crop need and other legal considerations. The consultation ran for 12 weeks from 25 November 2022 to 17 February 2023.

24. On 10 October 2023, we published a summary of responses to the formal consultation. This, along with the consultation document can be found at: https://gov.wales/nutrient-management-managing-application-livestock-manures-sustainably

25. As the Regulations provide a time-limited amendment similar to the proposals previously consulted upon and do not reflect a change in the Welsh Government's policy, a further formal public consultation did not take place.

Regulatory Impact Assessment

Rationale for intervention

1. The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021[1] (the Regulations) were introduced to improve water and air quality by addressing the causes of pollution from agricultural activity. The Regulations are based on long-standing good practice carried out across Wales by many of our farmers and land managers. The Regulations, amongst other things, include measures which focus on the planning, management, storage, and application of nutrients to the land. They help to deliver on a wide range of our international[2] and domestic obligations[3] and help to meet key objectives on biodiversity, air quality, ammonia and particulate matter and contribute to reducing greenhouse gas emissions.

2. Applying livestock manures or slurry in excess of crop nutrient requirements is considered a waste disposal activity for which a permit is required. In August 2022 Natural Resources Wales published advice on how to use manures and slurries appropriately, [4] outlining when manures and slurries are considered a waste material. It states 'When manure or slurry are applied to land with no demonstrable benefit to the soil or crop growth or when they exceed the nutrient requirements of the crop, they are considered waste materials.' and confirms the importance of crop need as the defining line between beneficial application and waste disposal activity.

3. The most important market failure to address here is the negative externality associated with pollution from agricultural activity – the negative secondary or unintended consequence that affects individuals, and groups across Wales without their involvement in the underlying transaction.

4. This Regulatory Impact Assessment (RIA) appraises the changes to the component of the Regulations which places a limit of 170kg nitrogen per hectare (170kg/N/ha) per year from livestock manure for a holding, as defined in the Regulations. The limit is based on the nitrogen from the number of livestock kept on the holding over the year and the eligible land defined in the Regulations.

5. This assessment considers three potential options, Option 1 maintaining the regulatory baseline (business as usual), Option 2 introducing a time-limited licensing scheme to allow for a higher application rate of grazing livestock manures, Option 3 an enhanced nutrient management approach involving a notification approach.

[1] The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 (legislation.gov.uk)
[2] This includes the United Nations Framework Convention on Climate Change; Convention on Biological Diversity; the UN's Sustainable Development Goals, and the Gothenburg Protocol
[3] The Regulations contribute to our obligations under the Well-being of Future Generations Act (Wales) 2015 and the aims of the Environment (Wales) Act 2016
[4] Natural Resources Wales / How to use manures and slurries appropriately

6. This assessment does not re-visit the original policy decision to introduce The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 or the assessments undertaken at the time of the decision.

Assessment of potential demand

The potential impacts of Options 2 and 3 will largely be dependent on the demand from farms to participate. The consultation on a licensing scheme received strong engagement with over 1,000 respondents expressing some support for a scheme. However, due to the complex nature of some responses, and the diverse range of respondents, it is difficult to infer, with sufficient confidence, the direct demand for participation in a licensing scheme or a notification approach.

The analysis below, sourced from the Welsh Agricultural Survey (June 2022), provides a breakdown of the overall farm population in Wales. Table 1 shows the aggregate estimates of the farm population, while Table 2 shows each variable as a share of the Wales total.

Both the demand for, and impacts of, Options 2 and 3 will be highly dependent on the management and farming practices across individual farms. The below assessment suggests that due to the higher eligible grazing livestock numbers and lower volumes of land, Dairy farms are likely to be operating at higher nutrient application rates, increasing the likelihood they may be exceeding 170kg/N/ha. However, other farm types such as Sheep and other livestock may also be impacted due to how their farm business may be structured, or the availability of land.

The exclusion of poultry manure above an application rate of 170kg/N/ha also adds an additional level of complexity as manure which may previously have been applied to a single holding, may be exported to additional holdings. This may impact upon the dispersion of poultry manures to other holding types, or impact upon the availability of land for the spreading of manures which previously may have been available to other farm types, increasing the nitrogen application rate of a previously compliant holding to a level potentially in excess of 170kg/N/ha.

Similarly, when assessing the geographic impact by largest sector by standard output in agricultural small area in Map 1, these farms may not be the largest by count or land area, for the individual agricultural small area, but equate to the largest economic activity and therefore most likely to have the highest number of livestock. It also means however the geographic impact of these high output farms may be less significant than the whole agricultural small area.

Key points:

The estimated number of Dairy farms (1,401) equates to 6% of the total number of farms (24,709) but accounts for 44% (€845m) of the Standard Output across all farms. Conversely the estimated number of Micro farms (14,805), i.e. farms with Standard Output below €25,000, equates to 60% of the total number of farms but only accounts for 5% (€102m) of the Standard Output across all farms.

The land across Dairy farms (219,000ha) equates to 12% of the total land across all farm types but holds 46% of the cattle. The disproportionate share of cattle on Dairy farms may suggest that most of the associated benefits and costs of the options being considered in this assessment would primarily impact Dairy farms. This view is reinforced when we consider the existing farming practices across Wales and the eligibility criteria for both a licensing scheme and the enhanced nutrient management approach. However, for aforementioned reasons, it is likely that other farm types would be impacted by these options.

Based on our understanding of the geographical distribution of farm types across Wales (see Map 1 below) we would expect the majority of demand for Options 2 and 3 to be derived from

the following areas: South West Wales, Anglesey and the Llyn Peninsula, North East Wales and areas of the wider Gwent region. However this assessment does not provide further granular analysis of the geographic distribution of farm types, as the density of farms (particularly Dairy farms) varies widely across Wales.

The analysis also suggests that demand for Options 2 and 3 is likely to see relatively low demand (and therefore little impact) from farms within the lowland cattle, sheep and mixed livestock sectors. Uptake of any scheme in the less favourable area land types would be more limited due to the nature of the agricultural activity having a lower nitrogen loading level. It is important to highlight that the size of a farm by economic unit however is not a suitable indicator for identifying likelihood of scheme uptake as the whole holding nitrogen limit is calculated based on the nitrogen produced on the holding and the area of the holding.

When directly comparing with the uptake rate for the Northern Ireland[5], which is the only area of the UK operating a whole territory approach to the management of nitrates with a derogation to the limit of 170kg of nitrogen per hectare from livestock manure and a similar agricultural sector structure. It has an uptake of 4% of net agricultural area equating to 57,280ha across Wales and when compared with the Northern Ireland rate of 1.9% of total agricultural holdings at total of 471 farms are identified.

Table 1: Aggregate estimates for Wales

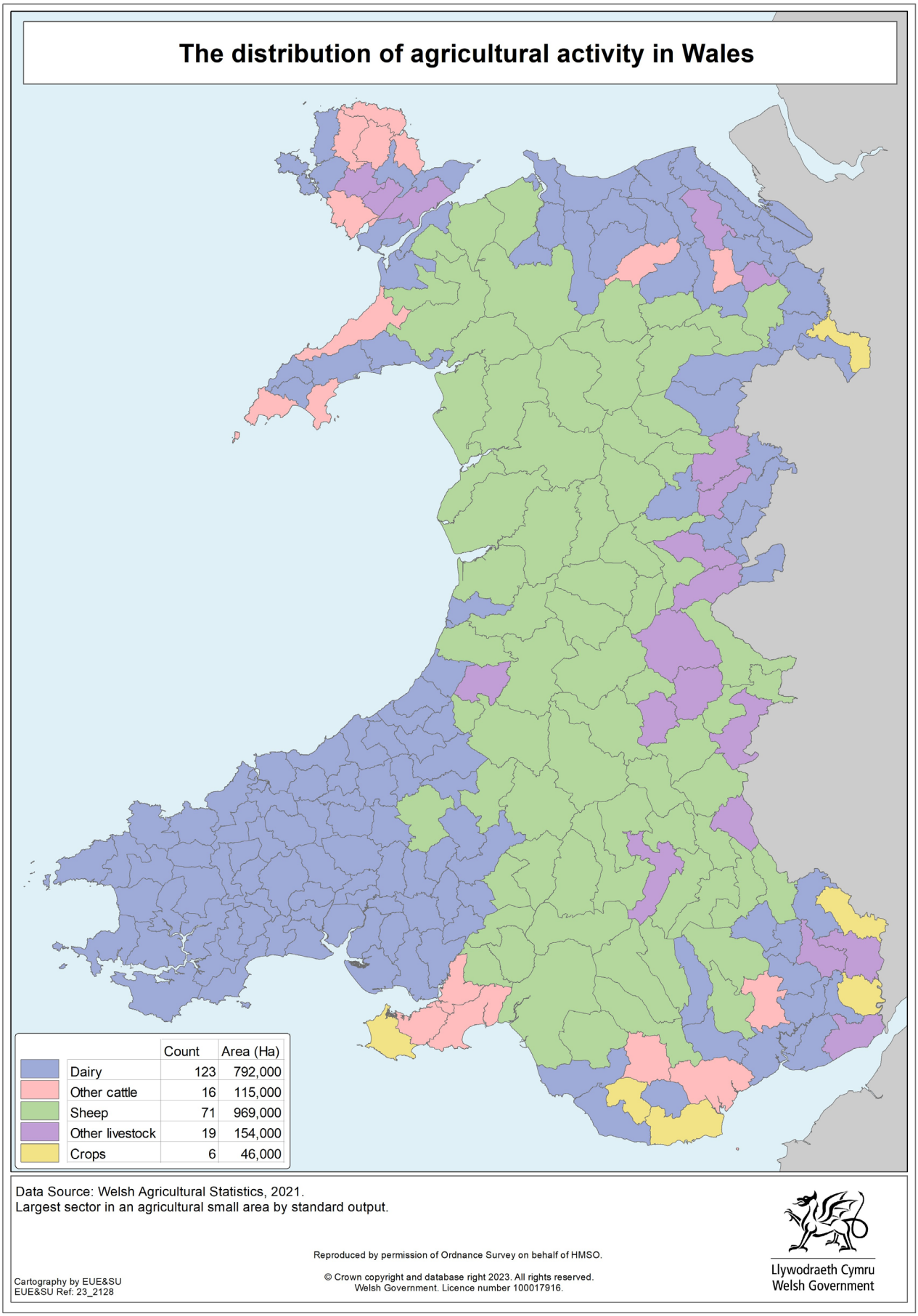
	Farms	Land on farms	Cattle	Sheep	Standard Output
Dairy	1,401	219	516	250	845
Significantly Disadvantaged Area (SDA) graze	4,250	774	243	6,125	388
Disadvantaged Area (DA) graze	1,888	210	164	1,250	148
Low graze	1,087	112	110	515	90
Arable/mixed	876	143	50	360	167
Specialists	402	36	7	82	198
Micro	14,805	271	42	770	102
All farms	**24,709**	**1,766**	**1,132**	**9,352**	**1,938**
Units - land in '000 hectares, livestock in '000 heads, and Standard Output in € millions					

[5] COMMISSION IMPLEMENTING DECISION (EU) 2019/ 1325 - of 27 May 2019 - granting a derogation requested by the United Kingdom with regard to Northern Ireland pursuant to Council Directive 91/ 676/ EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources - (notified under document C(2019) 3816) - (Only the English text is authentic) (europa.eu)

Table 2: Aggregate estimates as a share of Wales total

	Farms	Land on farms	Cattle	Sheep	Standard Output
Dairy	6%	12%	46%	3%	44%
SDA graze	17%	44%	21%	65%	20%
DA graze	8%	12%	14%	13%	8%
Low graze	4%	6%	10%	6%	5%
Arable/mixed	4%	8%	4%	4%	9%
Specialists	2%	2%	1%	1%	10%
Micro	60%	15%	4%	8%	5%
All farms	**100%**	**100%**	**100%**	**100%**	**100%**

Map 1: Geographical distribution of agricultural activity in Wales



Options for consideration

Option 1: 'Business as usual' – 170kg/N/ha limit would apply to all farms from 1 January 2024.

This option would maintain the annual 170kg/N/ha limit from livestock manures as defined in the Regulations for all farms. This would leave very limited time for implementation of any relevant approach to allow farm businesses more time to transition to the 170kg/N/ha holding limit. This would be considered the baseline assessment for the purposes of the RIA.

Key features:

- The baseline requirements in the Regulations would apply.
- 170kg/ha holding limit would apply to all farms from 1 January 2024.

Option 2 - Licensing scheme – a time-limited scheme allowing application of up to 250kg/N/ha.

As part of the implementation of the Co-operation Agreement, a consultation was issued on a time-limited licence scheme to enable grazing livestock manure applications beyond the 170kg/N/ha holding limit, up to a maximum of 250kg/N/ha subject to soil and crop need for the nutrients being applied, which would operate until 31 December 2024. This approach would provide more time for those holdings on which the grazing livestock currently produce such quantities of manure that measures will need to be taken to comply with the 170kg/N/ha limit.

Key features:

- Application to Natural Resources Wales (NRW) for a licence which permits an allocation of more than 170kg/N/ha (but no more than 250kg/N/ha) from grazing livestock manures.
- Holding must be at least 80% grassland and not previously within a Nitrate Vulnerable Zone (NVZ).
- Exclusion of manure from non-grazing livestock
- Assessment of crop requirement for phosphorus through additional Nutrient Management Planning
- Additional restrictions on the spreading of livestock manures
- Soil protection measures

Option 3 – Enhanced Nutrient Management approach – a time-limited notification approach allowing application of up to 250kg/N/ha.

Under this option similar outcomes as the licensing scheme (Option 2) would be achieved through an alternative regulatory approach requiring notification, as opposed to a licence, for any farm which will apply grazing livestock manure beyond 170kg/N/ha per year.

Key features:

- Notification to NRW of intention to apply more than 170kg/N/ha (but no more than 250kg/N/ha) from grazing livestock manures along with submission of nutrient management plans to demonstrate crop need for the nitrogen and phosphorus which will be applied.
- Holding must be at least 80% grassland and not previously within an NVZ.
- Exclusion of manure from non-grazing livestock

- Assessment of crop requirement for phosphorus through additional Nutrient Management Planning
- Additional restrictions on the spreading of livestock manures
- Soil protection measures
- Additional enhanced environmental protections.

Table 3: Comparison of options

Requirement	Option 1: Business as usual	Option 2: Licensing scheme	Option 3: Enhanced Nutrient Management approach
170kg/N/ha/yr limit in force	For all farms from 1 Jan 2024	For all farms from 1 Jan 2024, unless licence obtained from NRW	For farms which are 80% or more grassland from 1 Jan 2025, all other farms from 1 Jan 2024
Licence required to exceed 170kg/N/ha limit	No	Yes	No
80% Grassland needed to apply in excess of 170kg	N/A	Yes	Yes
Exclusion of Non-grazing livestock manures in excess of 170kg/N/ha (i.e. poultry)	N/A	Yes	Yes
Maximum holding nitrogen limit from livestock manures either through spreading or direct deposition of 250kg/N/ha	N/A	Yes	Yes
Time limited to 1 Jan 2025	N/A	Yes	Yes
170kg/N/ha limit applies to farms previously within an NVZ	Yes	Yes	Yes
Exclusion of imported livestock manures	N/A	Yes	Yes
Enhanced Nutrient Management Planning – Including phosphorus	N/A	Yes	Yes
Phosphorus requirement to be determined by soil testing	N/A	Yes	Yes
Nutrient Management Plans must demonstrate applications do not exceed crop requirement	N/A	Yes	Yes
Phosphorus application must not exceed crop limits	N/A	No	Yes
Application/Notification Process			
Licence application made to NRW	N/A	Yes	N/A
Notification to NRW	N/A	N/A	Yes
Assessment of NMP in advance by NRW	N/A	Yes	No
Issuing of a licence with defined nutrient limits	N/A	Yes	No
NRW's identification of holdings exceeding or planning to exceed 170kg/N/ha	N/A	Yes	Yes
Additional Environmental Protections			
Measures to reduce risk of soil erosion	N/A	Yes	Yes

Additional measures for location of supplementary feeders/water troughs	N/A	Yes	Yes
Time specific ploughing of grassland	N/A	Yes	Yes
Limit on maximum manure application rate for specific time periods	N/A	No	Yes
Increase in buffer zones along watercourses	N/A	No	Yes
Mandatory low emission spreading	N/A	No	Yes
Submission of actual nutrient application	N/A	No	Yes

Options analysis

For the purposes of this RIA, to support the introduction of the Regulations, individual regulatory measures have been grouped together for the purposes of analysis. This allows for some comparison with the original RIA for the CoAP Regulations when considering the implications.

Option 1: 'Business as usual' – 170kg/N/ha limit would apply to all farms from 1 January 2024.

This option would maintain the annual 170kg/N/ha limit from livestock manures as defined in the Regulations for all farms. This would leave very limited further time for implementation of any relevant approach to allow farm businesses more time to transition to the 170kg/N/ha holding limit.

Through the Regulations, a set of measures and farming standards have been introduced which seeks to improve water and air quality by addressing the causes of pollution from agricultural activity – this includes limiting the amount of nitrogen from livestock manures that can be applied to farms. Livestock manures, particularly when applied in excess, can cause significant harm to the environment when they are spread to farms when soil and weather conditions are not appropriate.

Option 1 is the 'business as usual' (BAU) baseline with its impacts set out in a previous Regulatory Impact Assessment[6]. For the purpose of this RIA, the additional costs, benefits, and risks of Options 2 and 3 will be assessed against the BAU baseline.

Option 2 - Licensing scheme – a time-limited scheme allowing application of up to 250kg/N/ha.

The licensing scheme would require farms to undertake an application process to seek to apply nitrogen from livestock manures above the 170kg/N/ha limit up to a maximum of 250kg/N/ha for the temporary period, either by spreading or directly by animal deposition. The submitted application would need to demonstrate a crop requirement for both nitrogen and phosphorus from the applied manures via a nutrient management plan. Where possible, initial applications would be informed by soil testing and analysis to inform the phosphorus requirement through the identification of appropriate indices.

Assessment of applications would be undertaken by NRW to consider the appropriateness of the nutrient management plan and the risk of pollution occurring through inadequate nutrient

[6] Explanatory Memorandum to the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021

management. It would also take into account sensitivity of local catchments when assessing the impact, including undertaking a cumulative assessment, where multiple farms have applied for a licence within a similar geographic area.

The final licences would be granted following this assessment outlining the maximum nutrient application rate for an individual farm. Farms would have the right to appeal the decision and/or resubmit proposals for consideration if appropriate. Farms in receipt of a licence would be subject to an enhanced inspection and enforcement regime due to the potential risks presented to the environment.

Applicants to the scheme would be required to follow additional land and soil management requirements to further reduce the risk of pollution as a result of applying higher rates of nitrogen from livestock manures.

Costs:

Additional financial costs to farm businesses - The introduction of a licensing scheme would incur additional costs to some farms who intend to go above the 170kg/N/ha limit.

Although there are similar requirements as part of farm assurance schemes and the need to meet other regulatory requirements, the approaches undertaken by farms will vary significantly. An example of this would be the requirement for soil testing and analysis to inform nutrient management plans, although many farms may already be undertaking the practice through a best practice approach, it may be new requirement for some farms. Therefore, the costs incurred to a farm would be greater for a farm not already undertaking soil testing. Under this option, farmers may also be more likely to seek professional advice for the completion and management of the application process and thus incur additional costs.

Assessment of the costs of soil sampling and analysis undertaken by companies on the Farming Connect Advisory Framework placed an average cost for between 15 – 20 samples per farm including a report on results of £1,114. These costs can be subsidised by Farming Connect funding on a one-to-one basis up to 80% to a maximum of £1400 per instance or for group advice up to 90% funded up to a maximum of £1000 per group member (between three and eight businesses can apply for group advice)[7].

Assessment from the original RIA[8] identified 74% of dairy farms, 55% of cattle and sheep farms (outside of SDAs) and 46% of cattle and sheep farms (inside of SDAs) already have a soil nutrient plan (Anthony et al., 2016). It would also be a requirement to produce a nitrogen plan for the requirements of the Control of Agricultural Pollution Regulations. Therefore, additional costs would be related to the phosphorus element of the nutrient management plans and ensuring the soil testing requirements are met in accordance with any licence scheme application format.

A licensing scheme would increase the administrative burden for farms. Businesses would need to formally apply to NRW for a licence, which may require extra resources, and could require a change to how a farm currently undertakes nutrient management planning to 'fit' the application criteria. This would likely incur additional costs to the farm business with costs identified as £20 per hr[9] for an individual farmers time and £40/hr using a consultants time and the costs would be dependent upon the size of the holding.

[7] Nutrient Management Planning | Farming Connect (gov.wales)
[8] Explanatory Memorandum to the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021
[9] £20/hr is judged to be representing the average cost rate. The hourly rate is ranging from £13.73 (farm managers' time) to £40/hr using a consultant. £13.73 is the average hourly rate for managers and proprietors in agriculture and horticulture in Wales [source: Office for National Statistics (ONS), 2023. Earnings and hours worked, region by occupation by four-digit SOC: ASHE Table 15.5a -Hourly pay - Gross (£) - For all employee jobs].

Previous assessment used within the original RIA[10] highlighted the variability of time to complete a nutrient management plan with a range from six hours for a small farm up to 70 hours for the largest farm type, with an average time used as 40 hours. As there is already a nitrogen management requirement under the regulations, these costs would be related to the time taken to increase the content of the nutrient management plan to that of the requirements of the licensing scheme application process and to format into the required standard. Therefore, as the requirement is lower than creating an initial plan, a value of 20 hours is assumed to develop a licence application. This places the minimum expected costs at £400 per licence application, or £800 if using a consultant. Where soil testing is required and subsidised support is not available costs of an individual licence increase significantly to £1,814 or £2,214 when utilising a consultant.

As identified in the 'Assessment of potential demand' section the majority of likely scheme participants would be from the dairy sector, with a more limited uptake from beef and mixed holding types. Therefore, as an estimate 30% of farms (141) are assumed to require a soil nutrient plan and undertake soil sampling analysis at an average cost of £2,014 per licence application totalling £283,974, the remaining 70% would still require a licence application at an averaged cost of £600 totalling £198,000. The aggregated one-off cost to the sector of completing licence applications is calculated at £481,974.

Costs of delivery – Relative to Option 1, a licensing scheme would incur substantial additional costs for NRW which could impact the existing service level agreement and require additional funding from Welsh Government. An application process would need to be developed to allow applications for a licence to be received in a standardised format for assessment. Processes would need to be developed to ensure all applications are received and assessed together to allow for a combined analysis of impact.

The administrative costs of a licensing scheme have been estimated using NRW staff costs, and existing regulatory permitting processes within the agricultural sector. This placed an average time of 15 hours per application, however this will vary significantly and be largely dependent on the size of an individual farm business and the complexity of each application.

To undertake the assessment of applications NRW would require skilled staff, these have been assessed at an average of a Grade 5 on NRW's pay scale[11], which start at £32,879 pa – assuming a 37-hour week, this equates to £17.06 per hour. NRW's staff costs indicates there would also be an additional 36% of costs for employer's pension contributions and National Insurance. Therefore, for the purposes of estimating costs the per hour costs are calculated at £23.24 per hour.

These values place an estimated cost per licence application of £348.80, when utilising the values identified in the assessment of demand section of 471 applications, then a cost of assessment on NRW staff time alone is calculated at £176,740.

An appeals process would add an additional cost as licences would require a reassessment of applications and would likely be undertaken by higher graded staff. For calculating appeal costs an appeal rate of 10% has been estimated to be undertaken by NRW Grade 6 staff for an additional 15-hour re-assessment at a rate of £26.37. Therefore, the individual cost of an appeal would be £395.55 and a total of 47 appeals would cost £18,590.

The combined estimated staff costs for administering a licensing scheme with an appeals process would total a one-off cost £195,330. As outlined above there is significant uncertainty

[10] Explanatory Memorandum to the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021
[11] Natural Resources Wales / Pay scales

relating to both the number and complexity of individual applications or likely number of appeals.

Resource availability for enforcement may be impacted if the assessment of licence applications were to be undertaken by the same staff undertaking enforcement activity under the existing service level agreement (SLA).

Environmental impact

The environmental impacts of Option 2 are similar to those of Option 3 due to the similarities in the approaches outlined in table 1.

The allowance to spread an up to 250kg/ha of nitrogen from livestock manures would, in isolation, likely increase the risk of negative environmental impact. Primarily through the measure of *do not spread slurry or poultry manure at high risk times,* which provides the most significant improvements in pollution losses. However, risk of losses against this heading should be considered against the additional environmental measures required for farms undertaking an alternative approach.

A licensing scheme approach takes into consideration a wider range of nutrient factors in comparison to the more limited 'nitrogen' management plan approach of the CoAP regulations. The most significant of which is the addition of phosphorus into the nutrient management process.

Evidence from the RePhoKus analysis of the river Wye highlights that although regular applications of P can be beneficial for crop growth an excess of P within soils can significantly increase the risk of diffuse agricultural pollution *'annual surpluses of P beneficially build-up soil P fertility (typically measured as Olsen-P on farms) for optimising crop yields, but as soil P increases the risk of P loss in land runoff to adjacent waterbodies and consequently eutrophication risk also increases (Withers et al., 2017)*[12]*.*

Costs

The CoAP RIA used the figures published in Defra's Enabling Natural Capital Approach (ENCA) Databook[13] which gives central values of 97p per kg (range 69p-£1.26/kg) for nitrate and £30.00 (range 26.66 to 33.34 /kg) for phosphorus. The ENCA methodology sets the standard for studies quantifying the impacts of agricultural practices on Natural Capital.

Through ensuring a crop requirement for all the nutrients applied, phosphorus is brought into the management cycle and maintenance of an optimum P index becomes a mechanism for demonstrating appropriate applications of manures alongside the nitrogen requirement.

The requirement for NRW to assess individual licenses based allows for additional considerations to be taken into account based on local geographies and additional risk factors. This has the potential to limit the overall environmental impact of any scheme.

Table 4 below outlines a rage of costs associated with various pollutant types with values per tonne which was utilised in the CoAP RIA.

[12] Re-focusing Phosphorus use in the Wye catchment
[13] Enabling a Natural Capital Approach (ENCA) - GOV.UK (www.gov.uk)

Table 4: Variables impacted on and their monetary value

Pollutant	Central Value (£/t)	Value Range (£/t)	Data source
GHG	£68	£34-£102	Non-traded CO_2values in 2018 prices. Source: Department for Business, Energy and Industrial Strategy. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/793632/data-tables-1-19.xlsx (Table 3)
Ammonia	£7,923*	£1,521-£24,476	Defra Air Quality Damage Cost Guidance (2020). National averages in 2017 prices. https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance
Nitrate-N	£970	£690-£1,260	ENCA services databook
Phosphorus	£30,000	£26,660-£33,340	ENCA services databook

*Ammonia value increased significantly from year 2018 because of a re-evaluation of the damage costs, especially relating to human health and the inclusion of wider ecosystem service costs.

Table 5 below demonstrates the percentage reductions of individual pollutants by activity type as a percentage of pre-regulation practices. This demonstrates the variation on losses to the environment caused by different types of farming practices, relative to the pollution type.

Table 5: Percentage reduction in the component of the pollutant losses targeted by each measure, following full implementation of individual measures, expressed relative to losses for the whole of Wales under pre-regulation practice (%).

Measure	Component	Nitrate	P	NH_3-N	N_2O
Use a fertiliser recommendation system	Fertiliser	6.9	1.3	6.7	6.8
Integrate fertiliser and manure nutrient supply	Fertiliser	5.9	4.9	5.6	6.0
Do not apply manufactured fertiliser to high-risk areas	Fertiliser	1.9	0.4	2.6	2.4
Avoid spreading manufactured fertiliser to fields at high-risk times (to End of March)	Fertiliser	0.6	10.0	2.0	0.1
Avoid spreading manufactured fertiliser to fields at high-risk times (to End of February)	Fertiliser	0.3	2.0	1.0	<0.1
Increase the capacity of farm slurry stores to improve timing of slurry applications	Slurry	*	*	-1.5	*
Do not apply manure to high-risk areas	Manure	<0.1	0.2	0.0	<0.1
Do not spread slurry or poultry manure at high-risk times	Slurry / Poultry	8.2	50.0	-0.3	2.0
Do not spread FYM to fields at high-risk times	FYM	2.9	15.9	0.0	12.4

* Increased slurry storage facilitates changing manure application timing, so the N, P and N_2O impacts of this measure are included under 'Do not spread slurry or poultry manure at high-risk times'.

The highest risk related to the losses to the environment of both nitrogen and phosphorus was from the spreading of slurry or poultry manure at high-risk times, the introduction of the Control of Agricultral Pollution Regulations was projected provide a 50% reduction in losses to the environment of phosphorus through the reduction of spreading slurry or poultry manure at high-risk times.

Table 6: Alignment of Option 2 with measures contained within the Control of Agricultural Pollution Regulatory impact assessment.

Additional Measure	Measure contained within the Control of Agricultural Pollution RIA
170kg/N/ha/yr limit in force for farms not in receipt of a licence	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Licence available to exceed 170kg/N/ha limit	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
80% Grassland needed to apply in excess of 170kg	Do not apply manure to high-risk areas, Do not spread slurry or poultry manure at high-risk times

Exclusion of Non-grazing livestock manures in excess of 170kg/N/ha (i.e. poultry)	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply, Do not spread slurry or poultry manure at high-risk times
Maximum holding nitrogen limit from livestock manures either through spreading or direct deposition of 250kg/N/ha	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Time limited to 1 Jan 2025	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
170kg/N/ha limit applies to farms previously within an NVZ	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Exclusion of imported livestock manures	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Enhanced Nutrient Management Planning – Including phosphorus	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Phosphorus requirement to be determined by soil testing	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Nutrient Management Plans must demonstrate applications do not exceed crop requirement	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Phosphorus application must not exceed crop requirement	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Application/Notification Process	
Licence application made to NRW	Use a fertiliser recommendation system
Assessment of NMP in advance by NRW	Use a fertiliser recommendation system
Issuing of a licence with defined nutrient limits	Use a fertiliser recommendation system
NRW's identification of holdings exceeding or planning to exceed 170kg/N/ha	Use a fertiliser recommendation system
Additional Environmental Protections	
Measures to reduce risk of soil erosion	N/A
Additional measures for location of supplementary feeders/water troughs	Do not apply manure to high-risk areas
Time specific ploughing of grassland	Integrate fertiliser and manure nutrient supply
Limit on maximum manure application rate for specific time periods	Do not spread slurry or poultry manure at high-risk times

The majority of the additional measures contained within Option 2 impact the *Use a fertiliser recommendation system* and *Integrate fertiliser and manure nutrient supply* measures of the original CoAP RIA. Of the additional environmental protections they primarily impact the *Do not spread slurry or poultry manure at high-risk times.*

Benefits:

Financial benefits to farms receiving a licence – Relative to Option 1, a licensing scheme, holding all else equal, would enable farms to retain their livestock numbers for the temporary period of the arrangements (and therefore their profitability) insofar as they meet the licensing requirements. It is difficult to quantify the financial benefits with certainty as the counterfactual, i.e. Option 1, would cause farms to respond in various ways. In the absence of a scheme which temporarily allows higher application of nitrogen, in certain limited circumstances, farms would need to take action to comply with the 170kg/N/ha limit. These options may include exporting farm manures, renting additional land, reducing livestock numbers, or a combination of all. Farms may be constrained by their size, geographic location, business model. As a result quantifying the financial benefits to farms of this option would require more granular data than is available to us.

Risks:

There is a high risk to the effective delivery of any licensing scheme given the time constraints relating to the application and assessment of licences and any appeals process. Farms have to wait for a licence to be issued before implementing their nutrient management plan, which means they may apply manures above crop need, or potentially delaying manure applications to a less suitable time while awaiting the outcome of a licence application or outcome of an appeal. As a result any processing delays would likely have an associated negative environmental impact due to manure being spread inappropriately and the *Do not spread slurry or poultry manure at high-risk times* measure within BAU has the most significant environmental benefit.

The impact of administering a licensing scheme could, without changes to the existing SLA, limit the resourcing availability for enforcement. This could negatively impact both the effectiveness of both Option 2 and BAU activity and the overall environmental benefits outlined above.

Option 3 – Enhanced Nutrient Management approach – a time-limited notification approach allowing application of up to 250kg/N/ha

The enhanced nutrient management (ENM) approach would require farm businesses to notify NRW of their intention to apply above the 170kg/N/ha up to a maximum of 250kg/N/ha subject to the provision of enhanced nutrient management planning, and adherence to a set of environmental controls (see Table 3).

The ENM approach would require both nitrogen and phosphorus to be taken into account to demonstrate the crop requirement. For an appropriate level of enhanced nutrient management planning to occur there is a requirement for soil testing to form appropriate judgements on the rate of application, particularly for the application of phosphorus, which would require appropriate soil indexing. Therefore, there is a need to ensure enhanced nutrient management plans can only be developed as a result of appropriate analysis. The ENM approach is also strengthened by the addition of phosphorus limits linked to the corresponding phosphorus index contained within the regulations and based upon industry recommendations from the RB209 fertiliser manual.

As the ENM approach does not require a dedicated application process or templated assessment, farm businesses can utilise existing nutrient management plans provided they adhere to the minimum requirements of the regulations.

The role of NRW when undertaking inspections will be to determine if applications of nutrients from livestock manures above the baseline 170kg/N/ha limit are being undertaken for

agricultural benefit with a demonstratable crop requirement as informed by the enhanced nutrient management plan and field inspection of the operations of the farm.

Costs:

Cost to farm businesses – Option 3, relative to the baseline, would incur a resourcing requirement to develop and maintain a notification process to allow farms to notify NRW of their intention (along with enhanced nutrient management plans) to apply above 170kg/N/ha from livestock manures. As identified in Option 2, 74% of dairy farms, 55% of cattle and sheep farms (outside of SDAs) and 46% of cattle and sheep farms (inside of SDAs) already have a soil nutrient plan (Anthony et al., 2016). As a result many farms may not need to undertake any significant additional nutrient management activity to meet the requirements of the enhanced nutrient management approach, significantly reducing any additional costs incurred.

Additionally, as outlined in Option 2, soil testing as part of a nutrient management planning process is available and supported via Farming Connect and the use of a non-standardised reporting process would allow farms with existing nutrient management plans to submit those or those required for farm assurance schemes, provided they met the requirements of the regulations. As per Option 2, an estimated 30% (141) of farms are assumed to require a soil nutrient plan and undertake soil sampling analysis under this option. As highlighted above, cost assessments of soil sampling and analysis undertaken by companies on the Farming Connect Advisory Framework placed an average cost for between 15 – 20 samples per farm including a report on results of £1,114. This provides an estimated cost to farms of £157,074 – this cost estimate is assumed to be an upper limit as farms would be able to apply for a subsidy of up to 90% from Farming Connect funding.

However, farms without a sufficient nutrient management plan will likely incur additional costs to develop a suitable enhanced nutrient management plan. Using the values above this would be approximately 26% of dairy farms or 45% of cattle or sheep farms. The approximate costs, as outlined in Option 2, would be£20/hr[14] for an individual farmer's time and £40/hr using a consultant's time and the costs would be dependent upon the size of the holding.

Costs of Delivery - The additional costs for NRW related to the assessment and issuing of a licence as required by Option 2 are not incurred when considering Option 3. This will allow for a continuation of the existing inspection and enforcement SLA developed ensuring the resources available are utilised for field inspections and other enforcement activity for baseline CoAP activity. This would ensure approximately more of the SLA value[15] to be utilised on inspection and enforcement and not the administration of a licensing scheme.

Environmental Impacts:

Option 3 contains many of the environmental protections of Option 2 with the inclusion of some additional measures.

The primary difference is the removal of the licence application and awarding process. Although the process of assessment and awarding of a licence has a potentially lower environmental impact than being reliant upon a notification approach. However, the consultation responses showed support for a time-limited approach provided it was simple to apply for and undertake.

[14] £20/hr is judged to be representing the average cost rate. The hourly rate is ranging from £13.73 (farm managers' time) to £40/hr using a consultant. £13.73 is the average hourly rate for managers and proprietors in agriculture and horticulture in Wales [source: Office for National Statistics (ONS), 2023. Earnings and hours worked, region by occupation by four-digit SOC: ASHE Table 15.5a -Hourly pay - Gross (£) - For all employee jobs].

[15] Letter to the ETRA Committee on NRW SLA

Therefore it is more likely farms would be more willing to participate in a notification approach and undertake the additional actions. This will allow the regulator to identify more farms where 170kg/N/ha is being exceeded and to supported targeted advice, guidance and enforcement.

The additional measures provide protections which could compensate for the loss of localised assessment or in some cases enhance protection levels above those afforded to the licensing scheme. In particular, the inclusion of mandatory low emission spreading has significant benefits in relation to ammonia emissions and the inclusion of universal defined phosphorus application limits based on soil testing results significantly lowers the risk of excess application of phosphorus.

Table 7: Alignment of Option 2 with measures contained within the Control of Agricultural Pollution Regulatory impact assessment.

Additional Measure	**Measure contained within the Control of Agricultural Pollution RIA**
170kg/N/ha/yr limit in force for farms not	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Licence available to exceed 170kg/N/ha limit	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
80% Grassland needed to apply in excess of 170kg	Do not apply manure to high-risk areas, Do not spread slurry or poultry manure at high-risk times
Exclusion of Non-grazing livestock manures in excess of 170kg/N/ha (i.e. poultry)	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply, Do not spread slurry or poultry manure at high-risk times
Maximum holding nitrogen limit from livestock manures either through spreading or direct deposition of 250kg/N/ha	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Time limited to 1 Jan 2025	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
170kg/N/ha limit applies to farms previously within an NVZ	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Exclusion of imported livestock manures	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Enhanced Nutrient Management Planning – Including phosphorus	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Phosphorus requirement to be determined by soil testing	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,
Nutrient Management Plans must demonstrate applications do not exceed crop requirement	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply,

Phosphorus application must not exceed crop limits	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply
Application/Notification Process	
Notification made to NRW	Use a fertiliser recommendation system
NRW's identification of holdings exceeding or planning to exceed 170kg/N/ha	Use a fertiliser recommendation system
Additional Environmental Protections	
Measures to reduce risk of soil erosion	N/A
Additional measures for location of supplementary feeders/water troughs	Do not apply manure to high-risk areas
Time specific ploughing of grassland	Integrate fertiliser and manure nutrient supply
Increase in buffer zones along watercourses	Do not apply manure to high-risk areas
Mandatory low emission spreading	Do not apply manure to high-risk areas, Do not spread slurry or poultry manure at high-risk times
Submission of actual nutrient application	Use a fertiliser recommendation system, Integrate fertiliser and manure nutrient supply

Similar to Option 2 the majority of the additional measures contained within Option 3 impact the *Use a fertiliser recommendation system* and *Integrate fertiliser and manure nutrient supply and Do not spread slurry or poultry manure at high-risk times* measures of the original CoAP RIA.

Benefits:

Those who expressed support within the consultation advised that any scheme should be accessible to as many farm businesses as possible, and minimise administrative burden and any associated costs. This option delivers the same principles as the licensing scheme (as consulted upon), but with reduced administrative processes when compared with Option 2. We would therefore expect this option to protect farm profitability to, at least the same extent, as Option 2.

This also means the farmer does not have to wait for a licence to be issued before implementing their nutrient management plan, as a result they will more quickly be able to apply manures according to crop need, as opposed to potentially delaying manure applications while awaiting the outcome of a licence application.

This reduction in administrative processes relative to Option 2 would likely free up resources contained within the SLA with NRW for inspection and enforcement activity, allowing the resourcing to be more closely related to those of the Option 1, with a minimal additional requirement from NRW.

Risks:

The primary risk associated with Option 3 is not the requirement for NRW to assess an application. This would not allow individual local analysis to be undertaken based on additional criteria which may be available by undertaking a wider geographic assessment. It also increases the risk of erroneous enhanced nutrient management plans as the information provided to NRW would not be verified unless the farm is inspected.

Summary of the preferred option

Of the three options presented in this assessment; the preferred option is Option 3 - enhanced nutrient management approach – a time-limited notification approach allowing application of up to 250kg/N/ha from livestock manures. The enhanced nutrient management approach provides a balance between

- delivering a time-limited intervention to allow the additional spreading of livestock manures up to 250kg/N/ha, which was supported during consultation for a licensing scheme.
- minimising the additional administrative requirements of a licensing scheme, identified as a concern during the consultation process.
- minimising the additional costs incurred to both farms and NRW through allowing the use of existing nutrient management processes, where applicable.
- ensuring environmental impacts are mitigated through the inclusion of additional controls on the application of livestock manures and land management practices.
- providing legal and financial certainty for farms from the point of issuing a notice and during the period 1 January 2024 to 31 December 2024 to support a sustainable transition to the 170kg/N/ha limit contained within the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021.

Monitoring and Evaluation

Monitoring and evaluation forms an important part of the baseline Control of Agricultural Pollution Regulations 2021. As part of the Regulations, a monitoring programme will be put in place to assess the extent to which the measures introduced help to reduce water pollution from agricultural activity.

The 2021 Regulations commit, at least every four years, to formally reviewing the effectiveness of the measures introduced and if necessary, revise them. This review is to be concluded by 1 April 2025 and as a result of introducing the enhanced nutrient management approach as an amendment to the Regulations an assessment of the enhanced nutrient management approach will be included in the four-year review. During this review Welsh Government will take into account all relevant evidence including available data and environmental conditions. It will also be able to provide additional information for analysis including the geographic distribution of holding applying in excess of 170kg/N/ha per year.

With regards to the monitoring of (and compliance with) the Regulations. Welsh Government and NRW have developed an SLA to cover the period 2023 to 2025. This is a new enforcement compliance programme which covers the Regulations and will play an important role in development and implementation of measures aimed at improving water and air quality in Wales.