NFU Cymru Briefing

Review of the (Control of Agricultural Pollution) (Wales) Regulations 2021

Evidence Pack

The Water Resources (Control of Agricultural Pollution) (Wales) Regulations (COAP), introduced in 2021, include a requirement for a four-yearly review to assess the effectiveness of measures imposed by the Regulations as a means of reducing or preventing water pollution from agricultural sources. Welsh Government has published an evidence pack to provide further information to supplement the review. All information was made available to the independent Chair – Dr Susannah Bolton for the purposes of the review. The key points are summarised in this NFU Cymru briefing.

The nutrient management challenge across the UK and Europe
Welsh Government states Wales is not alone in limiting applications of nutrients to land to mitigate the risk of pollutions to waterways. In England, all farms must adhere to Farming Rules of Water which include nutrient management planning for all nutrients, soil testing for pH, P, K and Mg, rules on soil compaction and poaching and other pollution pathways. In addition, NVZ also exist which set out additional requirements. In Scotland, all farms must adhere to General Binding Rules which include mandatory nutrient management planning for P and pH, additional restrictions on nutrient applications to shallow soils, rules on soil erosion, additional rules on pollution pathways, poaching and low emission spreading and increased storage requirements. Northern Ireland implements a Nutrients Action Plan across the whole of its territory. In all four UK nations, Environmental Permitting Regulations apply to intensive agricultural systems.

A comparison of the regulatory regimes across the UK indicates that in some cases measures are more stringent than Wales.

Welsh Government identify it is important to consider the relationship between the COAP regulations and the wider regulatory environment. Applying livestock manures or slurry in excess of crop nutrient requirements is considered a waste disposal activity. In August 2022 Natural Resources Wales (NRW) published advice on how to use manures and slurries appropriately outlining when manure and slurry are considered a waste material.

Agriculture in Wales
The total amount of land on holdings in Wales was 1,775,200 ha, when combined with 180,300 ha of common rough grazing, this means that around 90% of land is used for agricultural purposes - 62% is permanent grassland, 14% is rough grazing, 9% is new grassland, 9% is other land (farm woodland, buildings and land not used for agricultural purposes) with arable crops making up 6%.

Estimates from the 2024 Agriculture and Horticulture Survey outlined that the total number of cattle and calves in Wales was 1,089,800 – a decrease of 2.4% from the June 2023 figure. The number of dairy females aged 2+ years that had calved had fallen by 1.3% to 251,300. Using the equivalent definition the size of the beef herd decreased by 5.8% over the last 12 months to 140,700. Over the period since 2004, the dairy herd has increased slightly (3%) and the size of the beef herd has fallen considerably by 33%. The total poultry in Wales was 11,842,400 in June 2024, with the number of chickens for egg production increasing from 1.37m in 1998 to 4.38m in 2024. There was a gradual drop in sheep numbers from the peak of 11.8m in 1999 over the following 10 years.

Water quality monitoring evidence
The Welsh Government evidence pack does not duplicate existing reporting of water quality data undertaken by NRW but draws on the range of data available to identify trends.

Nutrient Review Evidence – NRW appointed consultants (Arup) to undertake a review of nutrients in water bodies across Wales to develop a national scale understanding of the current baseline nutrient water quality and assess potential nutrient risks. The review covered nitrate and phosphate and assessed groundwater, surface water (rivers, lakes, and transitional and coastal waters.

The output was a map at a scale of 1km square grid scale indicating potential nutrient risk at a national scale for nitrates and phosphates available on NRW's Wales Environmental Information portal. Summary reports have been produced for each water type. Areas of potential high risk indicated on the nitrate map typically coincide with areas where NVZs were previously designated or recommended for designation. A greater number of areas were at higher risk from phosphate pollution than nitrate pollution.

Water Framework Directive classifications – NRW published an updated interim classification on 13 March 2025.

Special Areas of Conservation (SAC) Rivers – There are nine SAC rivers in Wales. Compliance assessments on the revised phosphorus targets were published in 2021 and five (Usk, Wye, Cleddau, Dee and Teifi) failed with 39% of water bodies assessed passing new targets. The updated compliance assessment was published on 13 March 2025. The results were shared with the Chair but as the results were unfinalized the earlier assessments were used.

Marine assessments – Wales has a number of marine SACs. Work is being undertaken to produce condition assessments for marine designated sites wholly in Wales – to be published later in 2025.

SAGIS Modelling – Additional water quality modelling and reports not connected to the review have been provided by Dwr Cymru – Welsh Water using the Source Apportionment Geographical Information System (SAGIS) model for the nine SAC rivers. The tool was designed for informing wastewater planning decisions and as a result has received criticism when applied to an agricultural land management context. However, the results indicate the majority of the phosphorus load for all failing SAC rivers is from rural land use, including agriculture.

Substantiated pollution incidents with impact to water – the number of substantiated pollution incidents with impact to water 2001-2024 has not shown an improvement with an average of 150 incidents per year. The highest contributing sector was the dairy sector, highlighting the risk associated with inappropriate management of slurry.

Welsh Government state that pollution from agriculture is not the only source of pollution in Wales' rivers, however, it does contribute significantly to waterbodies failing to meet good ecological status. The impact of assessment periods covered by the water quality data and the COAP transition periods make it difficult to justify any correlation in the effectiveness of the regulations. However, the risk posed by nutrients from manures to water quality is understood and is influenced by manure type, manure management, catchment characteristic and climate. Models have been developed for different purposes but together they show the scale of the nutrient pollution issue.

Stakeholder experience

The review Chair engaged with a number of stakeholders on the implementation and impact of the regulations to complement the statistical evidence of the review.

Implementation – many farmers and representative bodies highlighted the sector was not engaging with the requirements of the regulations because they did not understand the purpose of the regulations and how they were meant to improve water quality. Some felt the agricultural sector was being targeted disproportionately and there has been a strong frustration from all stakeholders that previous poor practice had not been sufficiently addressed. Therefore, within the agricultural sector,

there was a feeling that the many were being punished for the actions of a few and the regulations were not proportionate to the risks or relevant geographies.

It is recognised from the engagement the implementation of the regulations has contributed to a negative effect on the well-being for many farmers and contractors at a time of significant uncertainty. There was a significant concern amongst agricultural stakeholders for holdings under bTB restrictions.

Environmental stakeholders welcomed the clarity the regulations provide in certain situations such as closed periods and improvements to enforcement highlighting failures under the existing regime, failure of farm assurance and voluntary approaches to address poor practice. It was felt that regulatory gaps remained, particularly in relation to soil management and erosion and phosphorus.

Nutrient Management Plans – the nitrogen plans were viewed as overly complex and not reflective of how farm businesses structure their nutrient management and operate in practice. As a result a large number of agricultural stakeholders view the nitrogen management plans as a paper exercise with work outsourced to agents with the resulting documentation for inspection purposes only adding further cost pressure with no benefit in return. The Welsh Government workbook was thought to be inadequate. At inspection many felt they were proving their innocence, and due to the complexity, some assessments were not able to be completed during the inspection visit. Issues were raised regarding the definitions and terms used within the regulations. Additionally, concerns were raised in respect of low input and extensive farms having to undertake the same level of nutrient management planning as more intensive farms and this was not proportionate to the risk.

The impact of the 170kg/N/ha limit – there was significant opposition from agricultural stakeholders to the 170kg limit. Changes were reported to the management of holdings as a direct result of the 170kg limit in most cases at an economic cost to the farmer. For example, in a survey undertaken by NFU Cymru 38% of farms which responded had been impacted by the 170kg limit, although this does not take into account compliance with other regulatory requirements such as Environmental Permitting Regulations. However, environmental stakeholders felt the impact of diffuse pollution, which the 170kg limit is in part intended to mitigate was poorly understood. The 170kg did not take into account any localised factors such as existing P indexes, soil types and catchment sensitivities.

It was felt this aspect of the regulation conflicted with other Welsh Government ambitions or those of the farming sector such as broader net zero and circular economy. This viewpoint did not take into account if the additional phosphorus applied above 170kg/N/ha would exceed crop need. Biodiversity concerns included previous habitat being intensified to facilitate the spreading of additional manures and about the reduction of cattle in upland environments. Supply chain businesses highlighted the concerns regarding the throughput of agricultural products and resulting economic impacts with Welsh Government investing in capacity building within the supply chain which would be impacted by lower throughput of product with detrimental impact on economic output and jobs.

Closed periods – the spreading of manures with a high readily available nitrogen content attracted significant criticism that a farming by calendar approach does not work. The impact of the closed period of the agricultural contracting sector in particular in relation to staffing of specialist slurry spreading operations and the impacts on cashflow and the availability of equipment post closed periods. These contractors had access to a larger array of low emissions spreading equipment which would allow greater precision, but farms may not utilise due to poor availability post closed period. Conditions may not be suable for spreading after the re-opening of the closed period.

Some stakeholders were of the opinion that allowing spreading in the closed periods negated the need for a minimum of 5 months storage of slurry which would save farms additional costs. However, this did not consider the suitability of conditions across the autumn winter period or if there

was crop demand. Environmental stakeholders believe the closed periods to be beneficial by providing greater clarity of when spreading of manures is high risk. It also allowed for simplified reporting of bad practice and greater enforceability.

Storage requirements – concerns were raised about the construction standards contained within the regulations. Many of the non-compliances related to drainage channels around the perimeter of store and did not pose a significant risk of pollution. However, under non-compliant stores they were subject to penalties under cross compliance. In a written statement published 15 October 2024, more proportionate penalties were introduced but the need for a longer-term solution was identified. Additionally, the need for schedules to accommodate a wider range of designs was report.

The issue of non-compliance on tenanted farms was raised as an issue. The planning process, when undertaking improvements to or replacements to slurry and silage stores was a source of significant frustration. Delays and additional screening requirements were cited as the greatest concerns. Although planning requirements falls outside the review, the impact of not having appropriate storage to meet the requirements of the regulations does limit their effectiveness.

Soil management and protection – some agricultural stakeholders did not feel it needed to be a regulatory requirement and would be better addressed through voluntary measures or support schemes. There was also a concern it would impact the ability to utilise crops which would be more economically beneficial to the farm. Environmental stakeholders were concerned about the increased risk presented by bare soil and the risk of soils being less protected as a result of potential future changes to cross compliance.

Innovation – many stakeholders highlighted the potential for innovation and technologies to provide better outcomes, however, it was felt that the prescriptive nature of the regulations prevented farms from undertaken innovative activities. It also felt that existing routes made it difficult for products and services to be brought to the market. There was no incentive to use innovations such as feed additives, manure treatments or alternative storage solutions as the contents and values of the schedules were prescriptive.

NRW enforcement outcomes

Data is provided by NRW on the initial phase of inspections focussed on ‘higher risk’ farm types with 595 farms inspected by the end of October. 40.8% of farms inspected were found to be compliant with all measures. 59.2% of farms were found to be non-compliant. A non-compliant farm may have more than one non-compliance.

Slurry storage non-compliances were identified for both the construction requirements and the storage capacity available. When combined 15.6% of slurry stores did not comply with the requirements of the regulations. More than 50% were pre-1991 stores which were exempt from the SSAFO construction requirements, of these 14.3% were non-compliant, this means they posed a risk of pollution or were inadequately maintained. For stores constructed posted 1991, there was a higher failure rate of 17.1%. 30.2% of farms did not have the required level of storage at the time of inspection.

Silage clamps – high rates of non-compliance have been found with silage clamps, primarily relating to construction requirements – in particular, the absence of external drainage channels. Cross compliance penalties have been revised in recognition that many of these stores were technically non-compliant but otherwise well-constructed and posed no pollution risk.

Recording keeping – 16.6% of farms did not have a compliant nitrogen management plan and a further 9% did not have a compliant risk map. There was strong criticism about the complexity and relevance of the nitrogen management plans – many being completed by third parties for the purpose

of compliance. The most common non-compliance for nitrogen spreading records was failure to comply with the 250kg/N/ha 12-month limit for organic manure applied to individual fields.

Additional evidence relating to key areas of regulations

Nutrient Management Planning – is well established good practice and has been a feature of the Code of Good Agricultural Practice since 2011. The RB209 nutrient management guide published by AHDB provides further detailed guidance on nutrient management and states that 'for good nutrient management, the total supply of nutrients from all sources must meet, but not exceed, crop demand'. This is consistent with Environmental Permitting Regulations (England and Wales) 2016 and NRW's statement on when manures and slurry are considered waste.

Evidence from the 2nd Welsh Farm Practice Survey found a baseline of 56% of dairy farmers had a soil nutrient management plan, but only 25% of cattle and sheep farmers in SDA areas. The nutrient management plan requirements of the regulations take the form of a nitrogen management plan. The inclusion of a wider range of nutrient and soil considerations such as pH is particularly important when considering the application of organic manures which contain a wider range of nutrients than manufactured fertilisers.

Phosphorus (P) management – the overall challenges of utilising manures as a fertiliser source is summarised by Massey, R and Gedikoglu, H in the paper Manure application rules and environmental considerations (2021) which highlights that the nitrogen (N) and phosphorus (P) ratio of manure does not match the N:P ratio needed by crops'. The paper further states 'applying manure to meet crop N needs frequently results in P being applied in excess of crop needs'.

Within the challenges of managing phosphorus on holdings is the risk of surplus phosphate remaining in the soil. A combination of reducing the number of livestock and processing livestock manures to recover renewable fertilisers that can substitute for imported P products is needed to reduce the P surplus.

Soil pH – is an important determinant of a crop's ability to absorb nutrients. RB209 highlights overapplication of some nitrogen fertilisers and other practices may lead to increased acidification of soils resulting in a detrimental impact on the crop's ability to take up nutrients, including phosphorus. Soils which are regularly outside the optimum range for pH for both crops and soil type may increase risk of pollution. Recent assessments of soils sampling undertaken via the Farming Connect programme highlighted that less than half of soils were in the optimum pH range and 53.3% were below the optimum range.

Enhanced nutrient management approach – this was developed following a consultation on a licensing scheme to provide a time limited approach to the end of 2024 allowing a higher rate of application up to 250kg/N/ha of grazing livestock manure, with additional controls relating to soil sampling and P. A total of nine farmers undertook the approach, significantly lower than anticipated. Opportunities to apply beyond the 170kg/N/ha from livestock manures exist across the UK. The implementation of any limit above the 170kg/N/ha or removal of any limit would need to take into account the risks to the Trade and Cooperation Agreement and requirement for equivalence.

Closed periods – closed periods for spreading of organic manures with high readily available nitrogen (RAN) content are a feature of the EU Nitrates Directive, it is also consistent with other areas of the UK. Spreading of other manures which do not have a high RAN content reflects the lower risk of nitrate leaching loss, however, risks to the environment do remain. There are benefits to ensuring applications are undertaken when crop demand is greatest, with RB209 highlighting spring or early summer being the optimal time for the application of nitrogen on grassland when sward demand is the greatest. The use of low emission spreading techniques will reduce ammonia losses and further increase the nitrogen value.

Storage requirements – there have been requirements for the storage of slurry and silage since the SSAFO regulations were introduced in 1991. The regulations included a provision exempting previously constructed stores. The exemptions to the construction standards of the pre-1991 silage and slurry stores carried forward into COAP regulations represents an increasing risk of pollution as stores age.

The regulations mandate a minimum level of storage, in many cases, this level of storage may not provide sufficient capacity where the store cannot be emptied prior to the closed period. Sufficient storage would still be needed to ensure farms can store slurry until it is appropriate to apply to the land in accordance with soil and weather conditions and crop need.

Ammonia – ammonia emissions have increased by 8% since 2005 with agricultural practices being the largest source of these emissions. The biggest polluting sector is cattle: cattle manure management (livestock housing, manure storage, and outdoor concrete yards) and its application make up 70% of all ammonia emissions. The regulations have a co-benefit for ammonia mitigation:

- Precision spreading – modelling estimates 7% reduction in total ammonia emissions if precision spreading is implemented across dairy, cattle and poultry
- Rapid incorporation – ammonia losses are greatest immediately after manure application, with up to 50% of total loss occurring within the first few hours.
- Inorganic fertiliser – solid urea fertilisers release greater emissions and contribute 8% to the UK ammonia emissions.
- Manure storage – losses during manure management stages responsible for 46% of all agricultural ammonia. Slurry store covers can be impermeable or permeable, fixed or floating.
- Livestock housing – emissions from housing are reduced by the frequent removal of slurry.

Soil protection measures – soil protection measures are not contained within the regulations, however, they were a requirement for farms undertaking the enhanced nutrient management approach and responses to the consultation demonstrated a broad support for the principle of protecting soils. Currently the primary mechanism for protection of soil loss is undertaken via cross compliance.

Geographic or risk-based approaches – the explanatory memorandum when the regulations were introduced identified the greatest environmental benefit being an all-Wales approach albeit with higher costs.

Accessibility, flexibility and enforceability – with flexibility there often comes additional complexity, which impacts both those enforcing requirements and those adhering to requirements. In this context, there is a need to ensure if any changes are made to the regulations to introduce more flexibility are still clear.

Welsh Government previously consulted upon the values contained within the schedules in the Nitrate Pollution Prevention (Wales) Regulations 2013 noting they were the lowest in the EU at that time.

Alternative Measures

The regulations contain a provision under regulation 45 for alternative measures to be proposed where they could deliver the outcomes more effectively. In total five alternative measures proposals were received and assessed. In May 2023 the then Minister was unable to determine with sufficient certainty whether the proposals received would be more effective and stated that the proposals which may have the potential to be more effective would be further assessed and consulted upon as part of the four-yearly review. The proposals are considered in more detail below:

Regulation	Alternative measure proposal	Assessment
Regulation 3	Clarify effluent from poultry manure is slurry	Look to adoption with greater evidence required prior to legislation
Regulation 16	Define the meaning of 'incorporated' in respect of incorporating organic manure into the ground and include maize stubble in addition to bare soils	More evidence is needed prior to a decision on legislation. Recommended that 'Incorporated' should be defined in legislation.
Regulation 23	Clarify if any seepage is defined as slurry and must be contained	More evidence is required prior to a decision on legislation being made.
Regulation 28	To consider when the liquid portion of separated slurry should no longer be classified as slurry	More evidence is required prior to a decision on legislation being made.
Regulation 29	Clarity to be provided to reflect sufficient storage is required to meet all requirements of the regulations, to include imported manures.	Look to adoption with greater evidence required prior to legislation.
Regulations 6-10	Inclusion of all fertilisers within nutrient management planning and crop limits. Allowing additional nitrogen applications to intensive, rotational grazing-based systems, as per grass cut 3 times per year	Look to adoption with greater evidence required prior to legislation
Regulations 12-13	Requirements related when to spread fertiliser and spreading near surface waters to apply to all fertilisers, not just nitrogen fertiliser	Look to adoption with greater evidence required prior to legislation.
Regulation 15	Reduce the maximum height of the fertiliser spreading trajectory for all fertilisers	Look to adoption with greater evidence required prior to legislation
Regulation 18, 19 and 22	Alternatives to the closed periods for manufactured fertilisers and organic manures	More evidence is required prior to a decision on legislation being made, particularly around monitoring and enforcements challenges.
Regulation 21	Spreading restrictions following the closed periods to be consistent for all organic manures with high readily available nitrogen	Look to adoption with greater evidence required prior to legislation
Regulation 36-40	Provision of online data recording for records and inclusion of phosphorus within these requirements	Look to adoption with greater evidence required prior to legislation
Regulation 11	Groundwater Source Protection Zones to be marked on risk maps	Look to adoption with greater evidence required prior to legislation
Regulations 13-14	Improved relationship between buffer zones and risk factors	Look to adoption with greater evidence required prior to legislation.
Regulation 24	To provide consistency, field silage sites should be stored and/or opened or unwrapped 50m from wells, springs or boreholes, and not within a Groundwater Source	More evidence is required prior to a decision on legislation being made.

	Protection Zone. Specify the design and construction of a store must be carried out by a qualified person	
	Introduce GAEC 5 (measures to protect soils from erosion into Regulation	Look to adoption with greater evidence required prior to legislation.
Regulations 24 and 25	Control on below ground stores in relation to unsaturated zone	More evidence is required prior to a decision on legislation being made.
Regulation 25	Greater clarity will be provided to reflect all types of slurry must be stored to aid compliance. Specify the design and construction of a store must be carried out by a qualified person	Look to adoption with greater evidence required prior to legislation.
Regulation 26	Replacement of the exemption enabling silos and slurry stores built prior to 1991 to continue to be used, with a safety inspection regime required within appropriate timescales	Look to adoption with greater evidence required prior to legislation.
Regulation 27	Greater clarity provided on field heap requirements to aid compliance, including in relation to poultry manure without bedding	More evidence is required prior to a decision on legislation being made.
Regulation 32	Increased notice period for a new and silo or slurry storage system, to at least 30 days before construction work is to begin, with additional information to be provided on the design and capacity specifications and the exact location	Look to adoption with greater evidence required prior to legislation.