



Derogation Review,
Nitrates Biodiversity and Engineering,
Department of Agriculture Food and the Marine,
Johnstown Castle,
Co Wexford
Y35 PN52

21st May 2019

Re: DAFM Public Consultation on the Nitrates Derogation

The EPA welcomes the opportunity to provide comment to this consultation on the Nitrates Action Programme.

The EPA notes that the consultation document outlines the key environmental challenges with respect to agriculture and water; air quality; and greenhouse gas emissions. The EPA recognises each of these individual challenges but suggests that, where possible, amendments to the Programme aimed at changing land management or farming practices should focus on achieving multiple benefits – i.e. actions that are good for the farmer, water quality, air quality, greenhouse gas emissions mitigation, climate resilience and nature while preventing any negative unintended cross environmental media impacts. In addition, the EPA wishes to make the following points:

1. The EPA recommends a single whole farm plan approach be integrated into the Nitrates Action Programme. Such a plan would integrate operational farm administration, nutrient management planning, grass growth monitoring, itemisation of the concrete actions being taken on farm to support the environment under GLAS or future agri-environmental schemes/eco-schemes and actions under certification schemes. This single system approach could be developed and tailored to the activities of each farm to help streamline administration and regulatory compliance for the farmer and the regulatory authorities. Such an approach could encourage a farmer-led targeted approach to measures, that are effective for different problems in different settings, i.e. ‘the right measure in the right place’, and which could consider synergies between actions targeted for different purposes. This could be complimented by a certification system that could capture the evidence required for assurance schemes as well as capturing actions being implemented on farm either under environmental schemes or otherwise. Inclusion of environmental targets and outcomes e.g. losses to water; air and greenhouse gas emissions; biodiversity outcomes; compliance with agri-environment schemes and other certification schemes

alongside sustainable production would allow linkages between sustainable production and environmental impact to be considered jointly. The single farm plan approach could be trialled on derogation farms and structured in the context of environmental schemes included in the next rural development programme.

2. The current Teagasc Marginal Abatement Cost curves for ammonia and greenhouse gases set out a series of actions to mitigate these emissions from the agriculture sector. The EPA considers that the measures are positive but are unlikely, by themselves, to achieve the greenhouse gases and ammonia targets set for Ireland and that additional measures will need to be formulated into the future to achieve National and European targets. The EPA also recognises that a roadmap or programme to ensure these measures are implemented has not been put in place and that the assumptions underlying Teagasc's assessment need to be tested. In the absence of a sectoral programme of implementation for these actions, the EPA recommends that the actions set out by Teagasc are considered individually and collectively for inclusion in the Nitrates Action Programme.
3. The EPA notes that the consultation document references the EPA 2017 Water Indicators Report¹. From that report the EPA wishes to re-emphasise that increasing levels of nutrients are being found in waters. Since 2014 the emissions of Nitrogen and Phosphorus from Irish catchments to the marine environment have been increasing. The Indicators Report shows that the average Total Nitrogen emission to the marine environment increased by 3,200 tonnes (6%) between 2012–2014 and 2015–2017. The average Total Phosphorus emission to the marine environment increased by 240 tonnes (22%) over the same period. Additional actions under the Programme should focus on reducing nutrient loss to waters. These actions should include the promotion and implementation of targeted nutrient and sediment interception measures on poorly drained soils and nutrient source control and use efficiency measures on free draining soils.

The EPA has identified in its submission on Food Wise 2025 the need to recognise that all parts of the country are not equal in the context of intensification and that some parts of the country are less able to intensify i.e. nutrients behave differently in the landscape depending on the soil type and setting and therefore measures needed to mitigate problems also need to vary depending on the physical context. Specifically, EPA research on catchment management² identified that Phosphorus loss is typically associated with poorly draining soils while Nitrogen loss is typically associated with freely draining soils. Consequently, the measures needed to address these different scenarios need to be tailored. In the case of poorly draining soils breaking the pathway between farmland and the receiving waters is more likely to be effective whereas in more freely draining

¹<https://www.epa.ie/pubs/reports/water/waterqua/Water%20Quality%20in%202017%20-%20an%20indicators%20report.pdf>

²http://www.epa.ie/researchandeducation/research/researchpublications/researchreports/Research_Report_249.pdf

locations source control measures are more likely needed. Consequently, the EPA suggests that the DAFM consider the physical setting of the farming enterprise during its derogation application assessment process to ensure the intensification does not take place in an area where it is unsuitable. Additionally, where the Minister for Housing, Planning and Local Government has set a high-status objective for a water body this should also be assessed when considering an application for derogation.

4. The EPA recognises that the assessment of the effectiveness of measures is dependent on the evidence base that underpins that assessment. There are several areas where strengthening the evidence base of Irish agricultural production would support the development of policy and measures. These include updating emission rates for dairy cows, comprehensive information on manure management and the uptake of low emission spreading techniques, and the nutrient management of manures and slurries from the poultry and pig sectors. The EPA recommends that these updates are completed in time for their inclusion within the next regulations implementing the Nitrates Directive.
5. The EPA notes that the consultation document did not seek views on the development of advisory support to farmers however the EPA, in its State of the Environment Report³, highlighted the need for advisors to act as mediators between farmers and policy interventions. The new Agricultural Sustainability Support and Advisory Programme (ASSAP) provides farmers with one to one advice on sustainable farming while minimising losses to the environment. This Programme operates nationally; both in derogation and less intensively farmed areas, and in the medium term the experiences and knowledge from this Programme can be transferred to other farm advisors. The EPA suggests that enhancing this service could form part of a non-legislative action under the Nitrates Action Programme.

Further to the specific questions posed in the consultation document, the EPA wishes to make the following comments:

Recent Expansion in the Farming Sector

As indicated in this consultation, the agricultural intensification associated with the Food Harvest 2020 and Food Wise 2025 has seen a 19% increase in the number of farms operating under the derogation since 2014 and an associated 34% increase in land area farmed under the derogation. Coupled with this:

- CSO Ireland data⁴ show Nitrogen fertilizer sales increased by 25% (73,000 tonnes) between 2010 and 2016, with Phosphorus and Potassium increasing by 50% (14,000 tonnes) and 58% (38,000 tonnes) respectively, over the same period. The DAFM data included in the consultation document highlight an additional 20% increase in fertiliser sales since 2016.

³Specifically, Chapter 12: Environment and Agriculture (page 197)

⁴<https://www.cso.ie/en/releasesandpublications/ep/p-eii/eii18/landuse/>

- CSO Ireland data also indicate that there has been a 23% increase in dairy cow population and a 9% increase in the overall National cattle herd since 2013.

As set out in Commission Implementing Decision (C/2018/0624), it must be demonstrated that farming under the derogation does not cause environmental impact. Increased Nitrogen and Phosphorus in our waters, as reported in the EPA's 2017 Water Quality Indicators Report⁵, are an early warning that we need to address the sources and break the pathways by which these nutrients make their way into our waters. The EPA is concerned that recent agricultural intensification coincides with and may be contributing significantly to this water quality deterioration and that water quality may deteriorate further if intensification continues without prior and substantial mitigations being put in place. Moreover, the EPA in its earlier consultation submission on Food Wise 2025 set out that intensification cannot take place everywhere and that more vulnerable areas need more careful protection. This must be explicitly recognised in the formulation and implementation of systems of supports under the Rural Development Programme and regulatory systems, such as derogation application assessment and approval systems.

Grassland Management and Soil Fertility

Efficient production is a critical first step in ensuring the sustainability of farming from both an environmental and economic standpoint. The two most important aspects for grassland management that underpin efficient production are soil fertility and efficient nutrient use.

- *Soil Fertility* - Soil pH plays a key role in the more efficient nutrient recycling in the soil and subsequent release for crop/grass uptake. Teagasc has stated that only 10% of agriculture soils are at optimum pH yet lime application has declined⁶ from 1.7 million tonnes per annum in 1980s to under 0.8 million tonnes in 2017. Imbalances in pH will lead to inefficient uptake of nutrients and the EPA recommends that maintenance of soil pH at optimum levels should become obligatory on derogation farms to minimise inefficient and excessive fertiliser applications.
- *Nutrient Management* - The management of grass swards through measurement and sward budget allocation are important tools for the more appropriate management of manures and fertilisers preventing over application of nutrients. In this context, recent initiatives such as PastureBase Ireland are welcome. The EPA recommends that grassland sward management via such a system should also a requirement on derogation farms.

Livestock Manure Management

Emissions - The 2019 EPA air emissions Report⁷ highlights that Ireland was in breach of its national emission ceilings (2016/2284/EU) for Ammonia for 2016 and 2017 and is forecast to continue to

⁵<https://www.epa.ie/pubs/reports/water/waterqua/Water%20Quality%20in%202017%20-%20an%20indicators%20report.pdf>

⁶<https://www.teagasc.ie/crops/soil--soil-fertility/soil-ph--liming/>

⁷<http://www.epa.ie/pubs/reports/air/airemissions/Irelands%20Air%20Pollutant%20Emissions%202017.pdf>

be in breach of its obligations to 2030 and beyond⁸. Even with the adoption of all measures in the Teagasc Marginal Abatement Cost curve to abate ammonia emissions, there will still be a significant distance to target. In this context, the EPA considers the rate of adoption of the Marginal Abatement Cost curve measures as being critically important.

One of the main measures that could be used towards emissions reduction is application of slurries by low emission spreading techniques, irrespective of the time of year in which they are spread.

Other ammonia abatement measures, whether adopted in housing or in storage of manures, will conserve nitrogen in the manure management chain; which if not used in conjunction with low emission spreading techniques will result in higher losses during landspreading. Any measures put in place to better manage manures need to be cognisant of this fact. In this context, the EPA welcomes the recent amendment to the Nitrates Regulations that require spreading of at least 50% of slurries on derogation farms before mid-June; and if subsequently applied that low emission spreading techniques must be used.

Efficient use of manure - Livestock manures are an important source of nutrients; however sometimes manure is not applied in a manner to maximise the nutrient benefit. For example, the practice of applying slurry to freshly cut silage ground, when the sward is bare and gaseous losses are the highest (i.e. during the summer months) needs to be reconsidered.

Conservation of nitrogen throughout the manure management chain will increase the quantity of crop available nitrogen. As a mechanism to incentivise the curtailment of losses of nutrients throughout the manure management chain, the EPA suggests that a cap on fertiliser applications could be put place within the context of operational stocking limits and/or the mandatory use of stabilised urea products (subject to an assessment of its potential environmental impact).

Update outdated nutrient level metrics for manures - Given an operational stocking limit of 250 kg N/ha, and a crop available value of 85 kg N per cow currently, the EPA suggests that the values for these metrics should be reviewed and revised in the context of increased milk output objectives under Food Wise 2025 and more intensive feeding practices that now exist. Furthermore, recent Teagasc research⁹ indicates that nutrient levels in poultry litter are significantly higher than set out in the Nitrates Regulations. The revision of the regulations resulting from this consideration of the Nitrates Action Programme should reflect this research.

Simplification of approach to nutrient management accounting and reporting - The EPA recommends a whole of farm approach to nutrient accounting. This could be complimented by a certification system that would capture the management of nutrients on the farm as well as actions being implemented either under schemes or otherwise to protect the environment and provide evidence of the environmental sustainability of the farm.

⁸http://www.epa.ie/pubs/reports/air/airemissions/ghg/nir2019/Ireland%20NIR%202019_Final.pdf

⁹<https://www.teagasc.ie/crops/soil--soil-fertility/organic-manures/>

- In this context, while derogation farms cannot import pig and poultry organic fertiliser, the Nitrates Regulations do not appear to require on farm pig and poultry activities to be included in the N/ha loading. Pig slurry and poultry litter spreading should be accounted for in N/ha loading and records of pig and poultry organic fertiliser should be submitted to DAFM for cross checking and reallocation to the correct farm.
- The Nitrates Regulations require all occupiers to have specified slurry storage capacity (including the capacity to capture spoiled water and dairy washing) to ensure adequate storage over the winter (based on animal numbers, area of the country etc.). The DAFM nitrates handbook¹⁰ provides help sheets for farmers to ensure they have adequate storage capacity. Derogation farmers, including those farmers who have expanded their herd size most in the past number of years should also have expanded their storage capacities to reflect the increased slurry. Therefore, the EPA requests that derogation farmers retain records, as per the DAFM guidance sheets, to show that they have adequate storage. This would ensure more efficient and less intrusive inspections by DAFM and/or other regulatory bodies.
- The Nitrates Regulations appear to only restrict the storage of silage bales outside the farmyard and within 20m of a watercourse. The EPA proposes that this should be amended for derogation farms to capture the storage of bales in any area which is within 20 metres of a watercourse, i.e. the restriction should also relate to silage bales stored inside or adjacent to the farmyard and within 20m of a watercourse (unless there is a collection system in place to capture the run off).

Agricultural Soils

In addition to concerns relating to soil fertility, other impacts on soils, such as compaction and the associated runoff of sediments and nutrients, should be minimised.

- Although not a panacea for all water quality and sediment loss issues; ensuring compliance with the amended Nitrates Regulations by focusing on intercepting and breaking nutrient transport pathways and preventing sediment and nutrient losses to waters should be a priority.
- The EPA would encourage incentivising tree planting (using woodland schemes) or erecting fences (thereby establishing an uncultivated buffer strip) along banks in some settings, such as poorly draining soils, as a mechanism to prevent sediment loss to waters. This could be linked to existing DAFM / Forest Service grants for native woodland plantation. A supplemental measure of installing sediment traps at known locations where overland flow (and sediment) preferentially enter the watercourse would also be welcome.

¹⁰<https://www.agriculture.gov.ie/media/migration/ruralenvironment/environment/nitrates/2018Nitratesexplanatoryhandbook03042018.pdf>

The EPA funded SILTFLUX¹¹ and COSAINT¹² research identified significant sediment and faecal matter impacts on river water quality downstream of cattle access points. The EPA supports the recommendation of this research to prevent cattle access to rivers.

Application of Derogation Conditions to all Intensive Livestock Farms

The EPA notes the consideration in this consultation of all intensive livestock farms should be subject to the derogation conditions in the medium to longer term. Furthermore, it notes that it appears that some farms are operating beyond the derogation limit of 250 kg N/ha (table 3 in the consultation document).

The derogation farms are a significant cohort of farms where there is significant risk for environmental losses, but they are also those farms that, due to their scale, have significant opportunity for increased nutrient efficiency and reduced losses to the environment. The underlying principles relating to farm nutrient management; to maximise benefit and prevent losses, are applicable to all farmers. Additionally, the establishment of a single whole farm planning approach would equally be of benefit to all farms including all intensive farms as it would reduce administration burdens to farmers and regulatory bodies alike. Initial implementation and demonstration of the success and benefits for the derogation farms in the first instance could provide a knowledge base and stepping stone for wider implementation for other farms.

Yours sincerely,



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¹¹http://www.epa.ie/researchandeducation/research/researchpublications/researchreports/Essentra%20EPA%20RR%20230_web.pdf

¹²http://www.epa.ie/pubs/reports/research/land/Research_Report_260.pdf