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Department of Housing, Local Government and Heritage,

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Dublin,

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Sent by email to: wau@housing.gov.ie

14th January 2021

Re: Fourth Review of Ireland's Nitrates Action Programme- Stage 1 Public Consultation

A Chara,

An Taisce welcomes the opportunity to comment on this Nitrates Action Programme (NAP) consultation, and would like to make the following submission.

A. General Comments

1. Premise of the document

This consultation document lacks transparency, and fails to make it clear what precisely it is asking of the public. While it lists some potential issues for consideration, it does not take a holistic look at the current situation to explore what the issues are, in order to identify where action is needed, or what is working or not working, as the case may be. Our freshwaters are following a downward trajectory, as outlined by the EPA in their recent report[1]:

> *"Of significant concern is the finding that nitrate is increasing in nearly half of our river sites. Phosphate levels are also on the rise in a quarter of river sites. This is in sharp contrast to the picture prior to 2015 when only a small proportion of sites had increasing nitrate and phosphate concentrations (1.4% and 4.2%, respectively)."*

[1] EPA 2020. Water Quality in 2019: An Indicators Report

The purpose of the Nitrates Directive is to protect water quality from pollution by agricultural sources and to promote the use of good farming practice. To date this is clearly failing to be achieved in Ireland. The Nitrates Action Programme (NAP), which is currently given effect by the European Union (Good Agricultural Practice for the Protection of Water) Regulations 2017, as amended, must be reviewed by the end of 2021. The purpose of a review is to look back and assess failures and successes in order to make changes where necessary going forward. This document does not provide any such information. It will be challenging, if not impossible, for the public to properly engage with a consultation when the basic information on what they are being asked to comment on is not available. The document outlines that one purpose of this consultation is to set out the potential issues to be considered as part of the review. The document then continues:

> *"The Table below sets out a number of detailed issues to be considered. It should be noted that this is not an exhaustive list and other issues can be raised in submissions."*

If the Department are not providing the basic review information to acknowledge the current water quality crisis and why we ended up in this situation, including the role played by agriculture, derogation and non-derogation farms, and the weaknesses, failings and strengths of the current NAP based on scientific evidence then this consultation is meaningless, and it precludes members of the public from raising other issues as the necessary information is not provided. Issues can only be identified by means of a thorough review, with transparent reporting. As similarly highlighted by the EPA (2019)[2] in their submission on the Nitrates Directive Derogation, a review of policy and measures would benefit from a strengthened evidence base.

2. Status of Ireland's waters

Detailed catchment characterisation undertaken by the EPA (2020)[3] highlighted once again that agricultural activities are the most significant source of pollution for Irish waters, with a direct impact on 53% of the 1,460 water bodies monitored. Nitrate is increasing in nearly half of our river sites, with phosphate levels also on the rise in a quarter of sites. Their previous more comprehensive report[4] highlighted similarly worrying trends:

[2] Environmental Protection Agency (2019) EPA - Nitrates Directive Derogation Consultation Submission Final. Available at: https://www.epa.ie/pubs/epasub/EPA%20-%20Nitrates%20Directive%20Derogation%20Consultation%20Submission%20Final.pdf

[3] Environmental Protection Agency (2020) *Water Quality in 2019: An Indicators Report.*

[4] EPA (2020) Water Quality in Ireland 2013–2018

> *"there has been an overall decline in surface water quality, especially in our rivers, following a period between 2004 and 2012 when overall water quality levels had improved, albeit with persistent deterioration of our highest quality waters. This recent net decline in water quality means meeting the targets set in Ireland's River Basin Management Plan 2018-2021* ***will be extremely challenging unless urgent steps are taken to address the causes of deterioration****. The increase in nutrient concentrations, which coincide with areas impacted by agricultural activities, are a particular concern, in the context of the ambition for further growth in the sector under the Foodwise 2025 strategy."* [An Taisce emphasis]

The EPA Catchment Characterisation Programme (and associated EPA Water Quality monitoring) and the Teagasc Agricultural Catchments Programme both show that the Nitrates Regulations are insufficient to protect water from agricultural impacts.[5][6] Worryingly, the Teagasc Strategy for the dairy sector (launched in November, 2020) envisages yet further increases in dairy cow numbers to 1.65 million by 2027, which will further exacerbate the problem. This will be compounded by the impacts of climate change, with extreme weather events exacerbating pollution risks and water quality vulnerabilities.[7][8][9]

Urgent action is now required to reverse these downward water quality trends, and the review of the Nitrates Action Programme, if done comprehensively, could signpost the way for such action. The first step towards doing that is acknowledging the current crisis we are facing.

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[5] Archbold, M., Bruen, M., Deakin, J., Doody, D., Flynn, R., Kelly-Quinn, M., Misstear, B. and Ofterdinger, U. (2010) Contaminant movement and attenuation along pathways from the land surface to aquatic receptors - A Review. *STRIVE Report No. 56*. Environmental Protection Agency, Wexford. Available at: https://www.epa.ie/pubs/reports/research/water/STRIVE_56_Archbold_ContaminantsPathwaysReview_web.pdf

[6] Teagasc (2017) *Agricultural Catchments Programme Phase 2 Report*. Teagasc, Wexford. Available at: https://www.teagasc.ie/media/website/publications/2018/ACP_Phase_2_Report.pdf

[7] Environmental Protection Agency (2020) *Ireland's Environment – An Integrated Assessment 2020*.

[8] Environmental Protection Agency (2019) *The impacts of climate change on Irish groundwater resources*. Available at: https://www.catchments.ie/the-impacts-of-climate-change-on-irish-groundwater-resources

[9] [3] Ockenden, M et al. (2017). Major agricultural changes required to mitigate phosphorus losses under climate change. *Nature Communications* 8 (161), https://doi.org/10.1038/s41467-017-00232-0

3. Additional Information

Firstly, a consolidated version of the Good Agricultural Practice for the Protection of Waters (GAP) Regulations should be compiled for the purposes of this review of the NAP. Legal documents are already complex and difficult for non-legally trained people to navigate, without having to piece together the original Regulations with subsequent amendments. The Department should make it a priority to provide a consolidated version of this legislation to better promote public participation and transparency.

While the consultation document outlines that:

> *"The current Programme contains the mandatory measures required of all Member States by the Nitrates Directive, including closed periods that prohibit the spreading of fertilisers, limits on the amount of livestock manure that may be land-spread, conditions during which fertilisers may not be spread and livestock manure storage capacity requirements. As these are fundamental elements of the Directive,* ***the scope for change in relation to them is limited****."* [An Taisce emphasis]

We would highlight that while the Directive requires the establishment of a Code of Good Agricultural Practice in Annex II of the Directive, the requirement is for those measures to be in place, but the details of these vary from country to country, and are prescribed under the GAP regulations in Ireland. These can indeed be amended, in accordance with the requirements of the Directive, with different thresholds and limits imposed, should it be considered necessary.

Additionally, the consultation document makes reference to input from the members of the Nitrates Expert Group, however, this input is not made available with the consultation documentation, which limits potential comment as part of this public consultation. If the public are unaware of what advice the Nitrates Expert Group is providing to the Department this cannot be assessed, or compared to the output of this consultation.

Finally, while the consultation document outlines in the preamble that Ireland's next Nitrates Action Plan will be developed in the context of better policy alignment, which is very welcome, this does not appear to be underpinned by any meaningful action to achieve this throughout the rest of the document. Research and data on biodiversity, ammonia, climate and water quality would all indicate that agriculture is a major pressure, driving trends the wrong direction. Significant changes will be necessary in our agricultural model if we are to align it with policy such as the EU Farm to Fork and Biodiversity Strategy. It will require concrete action and difficult decisions, not just noble ambition. The situation in the Netherlands in relation to the implementation of nitrates policy emphasises the legal

requirement for better coordination of policies between the Water Framework Directive, the Nitrates Directive, and the National Emissions Ceiling Directive.[10]

B. Detailed Issues

A Table is included in the consultation document outlining some of the potential issues, we would like to address a number of those. However, we would highlight that without a thorough evidence base and information on the current successes and failures of the NAP it is impossible to comment comprehensively on additional specific issues.

4. Phosphorus build-up

The consultation document outlines this:

> *"The provision allowing for P build-up on farms with stocking rates of 130 kg N/ha or above was introduced in the most recent review of the Nitrates Action Programme. It allows for landowners to introduce higher levels of Phosphorous* [sic] *onto lands with a Phosphorous* [sic] *Index of 1 or 2 in order to optimise soil productivity. An assessment of the uptake and effectiveness of this measure will be undertaken as part of this review of the Nitrates Action Programme to determine if it should be removed, retained or expanded in the next NAP."*

Despite an ever growing body evidence (referenced below), regarding the risks of relying solely on soil P tests as a measure of run-off risk, and the absolute necessity for a nutrient pathway model, the consultation document outlines that as part of the review it is intended to assess the uptake and effectiveness of a measure to introduce higher levels of phosphorus onto lands with a phosphorus Index of 1 or 2 in order to optimise soil productivity.

We have repeatedly outlined that the disproportionate reliance on the soil phosphorus (P) test, Morgan's P, to determine the risks to water of nutrient runoff is fundamentally flawed, and provides inadequate protection for water quality. A review of the effectiveness of a measure relying on Morgan's P is not meaningful in light of the already existing scientific data indicating it is an inadequate metric (see references below). It should be a foregone conclusion that the reliance on Morgan P testing as a means for determining risk of run-off be replaced for something fit for purpose, the body of evidence already exists. To continue

[10] Wiering, M.; Liefferink, D.; Boezeman, D.; Kaufmann, M.; Crabbé, A.; Kurstjens, N. The Wicked Problem the Water Framework Directive Cannot Solve. The Governance Approach in Dealing with Pollution of Nutrients in Surface Water in the Netherlands, Flanders, Lower Saxony, Denmark and Ireland. Water 2020, 12, 1240

to rely on this test, which has been proven to be ineffective, will exacerbate the perpetual decline in our water quality.

4.1 Research on Morgan's P soil testing

Soil phosphorus tests were originally intended to be used as a means of assessing the phosphorus requirements of crop growth, but in latter years they have been used as an indicator of the risk of phosphorus loss from agricultural areas. There is an extensive body of recent research demonstrating that soil P tests are not an efficient means of testing for runoff risk. Most pertinently, one of the main findings in the Teagasc Agricultural Test Catchments (ACP) Phase II report[11] was that soil type and geology are better predictors than soil P level for predicting phosphorus loss from agricultural land. This is further supported in work by Irvine and NiChuanaigh (2011) which clearly highlighted that:

> *'The adequacy of soil index 3 as a reasonable threshold to be used for the protection of surface and groundwaters is unproven'*

Further to that, this review highlighted the water quality implications of runoff from soil classified as Soil Index 3. A Teagasc study (Tunney et al., 2010[12]) demonstrated that maximum beef production occurs at 4.1-6.4 mg/l Morgan's P, which roughly equates to 35 ug/l molybdate reactive phosphorus (MRP), equivalent to water on the good-moderate boundary. This also equates to the boundary between soil Index 2 and 3. However, the upper boundary of soil index 3 equates to 8 mg /l Morgan's P, thus clearly facilitating the eutrophication of surface waters, in contravention of the requirements of the Water Framework Directive (WFD) (2000/60/EC), which requires all surface waters achieve good status by 2021. What's more, untested soils are automatically classified as soil index 3, as outlined in Part 3 (16)(3)(a) of the GAP regulations 2017[13] :

> *'(3) (a) For the purposes of this article, the phosphorus index for soil shall be deemed to be phosphorus index 3 unless a soil test indicates that a different phosphorus index is appropriate in relation to that soil.'*

This assumption provides for the application of fertiliser to untested soils which may actually be Index 4, soils classified as having sufficient or excess nutrients, which will clearly lead to eutrophication of nearby water. This is particularly concerning given that 32-34% of grassland samples in Ireland were found to correspond to P index 4 category (Wall *et al.*,

[11] https://www.teagasc.ie/media/website/publications/2018/ACP_Phase_2_Report.pdf
[12] Tunney, H., Kirwan, L, Fu, W., Culleton N, and Black A.D. 2010. Long-term phosphorus grassland experiment for beef production - impacts on soil phosphorus levels and liveweight gains. *Soil Use and Management* **26:** 237-244
[13] S.I. No. 605 of 2017

2013). As such, the reliance on such tests to determine the nutrient management plans for both derogation and non-derogation farms is clearly failing to adequately safeguard surface water quality.

Furthermore, there has been clear evidence from research funded by the Irish Government that a pathway-receptor model should be implemented in order to address nutrient runoff. Nutrient transfer pathways are key to understanding the transport of pollutants to water, as highlighted by the Teagasc Agricultural Catchments Programme[14]. What's more, nutrient source pressures and transfer pathways vary considerably throughout different regions of the country[15] depending on several factors, including soil type and geology.

Further EPA work[16] found that:

> *'achieving successful WFD outcomes depends on having a site-specific, three dimensional understanding of contaminant transfer pathways'*

Given that Teagasc, the state agency charged with giving agricultural advice in Ireland have published research demonstrating that reliance on Morgan's P soil tests are not adequately assessing the risk of soil nutrient leaching, and that there is a need for a clear understanding of the transfer pathways in order to achieve our WFD objectives, An Taisce would question how, or indeed if, the current nitrates regulations are protecting our water and complying with the obligations of the WFD.

EPA assessments would indicate that the regulations are failing, with the most recent analysis[17] highlighting that intensive agricultural practices are the predominant source of excess nitrogen in our waters, particularly in the south and southeast of the country. The increasing trend in nitrate concentrations, particularly in our rivers and groundwater, shows that additional urgent and focussed action is now needed to reduce the nitrate losses to our waters. The measures currently in place are clearly failing.

5. LESS Technology

While LESS technology does indeed lead to less ammonia volatilisation, and potentially better nutrient adsorption, it cannot counteract or remedy the saturation of particular catchments with nitrogen. There is clearly already too much nitrogen in certain systems, particularly in the south and south-east of the country, and absolute reduction in the

[14] Teagasc (2017) Agricultural Catchments Programme Phase 2 Report. Teagasc, Wexford
[15] Archbold, M., Bruen, M., Deakin, J., Doody, D., Flynn, R., Kelly-Quinn, M., Misstear, B. and Ofterdinger, U. (2010) Contaminant movement and attenuation along pathways from the land surface to aquatic receptors-a review. STRIVE Report No. 56. Environmental Protection Agency, Wexford.
[16] Deakin, J., Flynn, R., Archbold, M., Daly, D., O'Brien, R., Orr, A., and Misstear, B. (2016) Understanding pathways transferring nutrients to streams: review of a major Irish study and its implications for determining water quality management strategies. Biology and Environment: Proceedings of the Royal Irish Academy, Vol. 116B, No.3 pp. 233-243
[17] EPA 2020. Water Quality in 2019: An Indicators Report

amount of nitrogen is necessary. The current situation necessitates a reduction in the amount of synthetic fertiliser which is spread in these, and other areas, in line with the Farm to Fork ambition of a 20% reduction in fertiliser use.

Further, it is our understanding that LESS machinery can lead to soil compaction, which would potentially negate the benefits of using such a method. This should be a significant consideration in any promotion of this technology.

6. Nutrient Management Planning

While nutrient management planning, done properly, would indeed provide improvements in fertiliser use, this is clearly not working. The EPA have indicated that there is a clear correlation between areas of Ireland with the most intensive farming, and elevated levels of nitrogen in waters. Many of these farms are likely to be operating under derogation, and nutrient management planning is clearly not preventing water contamination. Further, we have had numerous anecdotal reports of nutrient management plans being solely paper exercises, with little or no practical implementation on the ground. Any compulsory nutrient management planning must be enforced, and farmers must be enabled to comprehensively implement any such plans.

7. Compliance with Habitats Directives and WFD

The consultation document outlines:

> *"One of the main concerns in this regard is the derogation process, and ensuring that derogation from the stocking rate limits of the Nitrates Directive does not result in non-compliance with the Birds and Habitats Directive or the WFD."*

The EPA have repeatedly demonstrated that Ireland is failing to satisfactorily fulfil its WFD obligations, with approximately half of our river and lakes failing WFD standards, and the main pressure on water is agriculture, particularly where dairy farming is most intensive in the south and south-east, an area we must assume (given the data is not publicly available) that derogation farms are likely to be most common. As such, the focus should be on how to reverse this, as it's too late to ensure that it doesn't result in non-compliance- it's already non-compliant with WFD, with knock on implications for water dependent Natura 2000 sites.

8. Recommendations

1. **There should be a requirement for cattle farms over a certain threshold to obtain an Integrated Pollution Control Licence from the EPA.**

   This is a requirement for pig and poultry farmers, and it is logical that the same rigour should apply to cattle farms. Any farmers found to violate their licence conditions could then have their licence revoked, leading to far more rigorous enforcement and control. Additionally, these licences should be required to undergo AA assessment. The current system of controls overseen by DAFM is failing water quality, IPC licensing would be a clear means to bring intensive cattle farming under the control of an independent environmental body.

2. **Move away from the flawed reliance on Morgan P testing as a means of assessing run-off risk to waters.** One of the key principles adopted for the river basin management planning process in Ireland is putting 'the right measure in the right place'. There is no one-size-fits-all solution to nutrient management across Irish farms, and An Taisce submits that to continue to rely on the flawed soil P test, and to focus primarily on the farmyard as opposed to the land itself is furthering the pollution of freshwaters, and is in contravention of the WFD. This applies to both derogation and non-derogation farms. In our considered opinion, if further water pollution from agriculture is to be prevented, it is imperative that the results of recent research be implemented, with field-scale models which take account of critical source areas and nutrient transport pathways, in addition to soil type, geology and precipitation mapping. The EPA have developed a catchment characterisation tool[18] from which a field-scale mapping tool could be developed. The necessary research has been carried out, and the tools are available to the DAFM, but the impetus to utilise these is currently lacking.
3. Provide a strengthened evidence base for the purposes of the review, with a clear analysis of the current situation and what measures have, and have not, worked.
4. Provide a consolidated version of the GAP regulations for members of the public to interpret the legal framework
5. It is vital that the EPA analysis on derogation farms and water quality be made available as soon as practicable, and that this is a cornerstone of any future consultations on the NAP. Should the data indicate a causal link between derogation farms and water quality decline these derogations should be immediately revoked, and any application for a derogation must be able to conclusively demonstrate how water quality will be protected.
6. Generally speaking, farmers must be supported to facilitate the protection of freshwater, including via effective training and funding measures. This should be

[18] Deakin, J., Flynn, R., Archbold, M., Daly, D., O'Brien, R., Orr, A., and Misstear, B. (2016) Understanding pathways transferring nutrients to streams: review of a major Irish study and its implications for determining water quality management strategies. Biology and Environment: Proceedings of the Royal Irish Academy, Vol. 116B, No.3 pp. 233-243

supplemented by robust inspections and associated enforcement if the standards set down in the Regulations are to meaningfully translate into protection of the aquatic environment as required by the Nitrates Directive and WFD.

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