ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management

Submission by ZWAI to the Department of Housing, Local Government and Heritage in Response to the Department's Public Consultation on Draft Proposed Additional Measures for Ireland's Fifth Nitrates Action Programme (NAP)

04 December 2024

Zero Waste Alliance Ireland is funded by the Department of the Environment, Climate and Communications through the Irish Environmental Network, and is a member of

EEB European Environmental Bureau and IEN Irish Environmental Network

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04 December 2024

Nitrates Consultation – Water Advisory Unit,
Department of Housing, Local Government and Heritage,
Custom House,
Dublin,
D01 W6X0.

By email to wau@housing.gov.ie

Dear Sir / Madam,

Public Consultation on the Additional Measures for Ireland's Fifth Nitrates Action Programme

Submitted By Zero Waste Alliance Ireland to the Department of Housing, Local Government and Heritage

In response to the invitation by the Minister for Housing, Local Government and Heritage, to make submissions, observations and comments on the proposed additional measures for Ireland's Fifth Nitrates Action Programme, we attach a submission on behalf of Zero Waste Alliance Ireland (ZWAI).

ZWAI is very pleased to have the opportunity to respond to this important public consultation; and, even though our principal interest and aims are the reduction and elimination of every form of waste, we recognise the importance of ensuring that Ireland's agriculture sector is motivated and encouraged to reduce the quantities of dissolved nitrate which currently contaminate surface waters and groundwater as a consequence of intensive livestock farming.

Using unnecessarily large quantities of nitrogenous materials, whether in the form of slurry or organic manure from livestock, or as industrially manufactured

fertiliser, can be considered as a waste of economically valuable resources, especially when these resources are used in a manner which makes no positive contribution to protection of the environment. Ireland is not the only EU Member State which is experiencing significant eutrophication of many water sources by nitrates, but in this country we should be particularly aware of the adverse consequences for biodiversity, tourism, landscape quality and human health, and the resulting economic impacts.

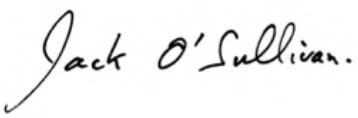
While it may appear initially that our primary aim of advocating waste reduction and elimination, and urging for more efficient use of scarce or non-renewable resources has little connection with the EU Waste Directive and Ireland's Nitrates Action Programme, it is our belief that strong links exist between all of these policies and programmes. Nitrogenous materials applied to land at times when they are not being taken up by vigorously growing crops, or applied to unsuitable land, constitutes a waste of resources.

Not only must these wasted resources be replaced in the continuing linear activities of production and consumption, but the processes of transformation, transport, processing, and distribution require significant quantitates of energy which could be used more beneficially or avoided completely. Saving energy also contributes to mitigating climate change; and it is becoming more apparent that climate change is having adverse impacts on agriculture, even in Ireland, where the most serious effects have yet to be experienced.

We therefore see this public consultation as a welcome opportunity to provide observations on a proposed policy measure in which Zero Waste Alliance Ireland has a significant interest.

We look forward to your acknowledgement of the submission, and to seeing in due course the final version of the Fifth Nitrates Action Programme.

Yours sincerely,



Jack O'Sullivan

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04 December 2024

CONTENTS

Cont'd

CONTENTS, CONTD

Cont'd.

CONTENTS, CONTD

APPENDICES

ZERO WASTE ALLIANCE IRELAND

Towards Sustainable Resource Management

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1. INTRODUCTION

1.1 Setting the Context – Agriculture and the Increasing Use of Nitrogenous Fertiliser

Agriculture is one of the world's oldest means of production, dating back 12,000 years, when pre-historic civilisations made the transition from nomadic hunter-gathering to farming in permanent settlements. In the millennia that followed, agriculture acted as a major force of progress and helped develop many of the European cities and the agricultural landscapes with which we are familiar today.

With the arrival of Europe's Industrial Revolution, agriculture began to gradually diminish in importance and prominence as countries moved more towards extraction of raw materials, manufacturing, processing, distribution, marketing and the development of a wide range of services.

Farming became mechanised and more intensive, with increasing numbers of livestock being reared and managed on a smaller number of farms, many of them large-scale factory-type facilities; and this process was accelerated by the European Union's common agricultural policy (CAP), which has dominated Europe's farming since its introduction in 1962. The number of livestock farms in Europe declined sharply as a consequence of the CAP, and huge numbers of small farms were lost, revealing a massive intensification of agriculture.

The productivity of agriculture has increased greatly over the last decades, driven and enabled significantly by the expanded availability and increased use of fertilisers, pesticides and a wide variety of other agricultural chemicals. This

increased productivity has, however, also resulted in significantly increased pollution of groundwaters and surface waters from nitrates, phosphorus, pesticides and residues of pesticides, creating a major environmental pressure on water bodies throughout the European Union (EU).[1]

In addition to these problems, the annual economic cost of nitrogen losses in the EU as a whole has been estimated at €70 billion, 81% of agricultural nitrogen input to aquatic systems is caused by livestock production, and 87% of ammonia emissions from agriculture to atmosphere are caused by livestock production.[2]

The European Environment Agency has pointed out that nitrogen surpluses from the over-fertilisation of grass-land and crops have remained very high in northern and central Europe. Meanwhile, the unsustainably high nitrate concentration in groundwater has not decreased for 30 years, and there has been only very limited progress in reducing pesticide use since 2011.[3]

In response, the European Commission and Parliament have been introducing reforms of the Common Agricultural Policy and farming subsidies in an attempt to halt the decline of small farms, to protect them from the intensification of agriculture promoted by decades of previous policies, and to protect the environment, by avoiding intensive farming and reducing the use of pesticides, fertilisers and chemicals as part of a zero-pollution ambition.

A recurrent accusation levelled at the CAP is its weak enforcement of environmental standards, despite the fact that agriculture is a significant driver of pollution, accounting for more than 10% of the EU's greenhouse gas emissions which the European Environment Agency (EEA) attributes to three sources:

- CH_4 (methane) from enteric fermentation, the digestive process in ruminant animals such as cattle, sheep and goats;
- N_2O (nitrous oxide) mainly from the use of nitrogen-based synthetic fertilisers; and,
- CH_4 (methane) from the management and disposal of manure.

Although the agriculture sector is subject to the EU's overarching goal to gradually reduce greenhouse gas emissions and reach climate neutrality by 2050, the reduction achieved so far has been extremely limited. For example, the European Environment Agency (EEA) has estimated that, between 2005 and 2021, agricultural emissions increased in 13 member states, with Estonia exceeding the 30% mark. Based on current projections, the Agency predicts a

[1] European Environment Agency, 'Water and Agriculture: Towards Sustainable Solutions' (Publications Office of the European Union 2021).

[2] https://environment.ec.europa.eu/topics/water/nitrates_en

[3] European Environment Agency, 'Water and Agriculture: Towards Sustainable Solutions' (Publications Office of the European Union 2021).

modest decline of 4% by 2030 compared with 2005 levels, or even to an 8% decline if additional climate measures are put in place.[4]

This slow pace is a matter of serious concern, given that at least 25% of global warming is driven by methane, a gas 80 times more harmful than CO_2 in the first 20 years after being released into the atmosphere. Meanwhile, artificial fertilisers and chemical pesticides commonly used to maintain crop yields are a factor causing biodiversity loss, poor-quality water, high nitrate levels in drinking water, degraded soils and pest resistance, and have been linked to chronic illnesses in human populations.

Agriculture, together with associated food systems, has been at the core of major EU policies and programmes, such as the "*farm to fork strategy*"[5] (EC, 2020a), the EU *biodiversity strategy* for 2030[6], and the *common agricultural policy* (CAP) 2023-2027.[7] A reformed CAP is considered by the EU to be compatible with the European Green Deal's aims,[8] though we in ZWAI remain sceptical about the extent of this compatibility.

1.2 The Nitrates Directive, Ireland's Nitrates Action Programme and this Public Consultation

For more than 30 years, the EU Nitrates Directive[9] has been the principal item of European legislation for the protection of water threatened by over-exploitation of agricultural land and the resulting nitrate contamination. The Directive was issued in 1991 to "*protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices*".

[4] All you need to know about the EU agriculture sector. Euronews, 13 February 2024. https://www.euronews.com/my-europe/2024/02/13/all-you-need-to-know-about-the-eu-agriculture-sector#

[5] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system. COM(2020) 381 final; Brussels, 20.5.2020.

[6] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — EU Biodiversity Strategy for 2030: Bringing nature back into our lives. COM(2020) 380 final; Brussels, 20.5.2020.

[7] https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-2023-27_en#documents.

[8] https://agriculture.ec.europa.eu/news/cap-reforms-compatibility-green-deals-ambition-2020-05-20_en and the Strategic Dialogue on the Future of Agriculture (launched Sept 2023): https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/agriculture-and-green-deal/strategic-dialogue-future-eu-agriculture_en

[9] Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (91/676/EEC).

The Nitrates Directive also supports the implementation of the Water Framework Directive, which aims for all European surface waters to achieve "good status" by 2027. Alongside the Urban Waste Water Treatment Directive (UWWTD), the Nitrates Directive aims to improve the quality of EU water bodies, as nutrient pollution can be an obstacle to achieving "good status".

As mentioned briefly above, the Nitrates Directive is also linked with the EU Biodiversity and Farm to Fork strategies, both of which set a shared objective of reducing nutrient losses by at least 50% by 2030 while maintaining soil fertility.

The Nitrates Directive is also one of the Statutory Management Requirements which European farmers are obliged to respect in order to receive the subsidies provided for the cross-compliance system of the Common Agriculture Policy, and the individual economic and other benefits given to farmers are reduced proportionally to any detected noncompliance with the Directive.

The Nitrates Directive is therefore a very important piece of legislation, with the following objectives, in Article 1:

- reducing water pollution caused or induced by nitrates from agricultural sources and,
- preventing further such pollution.

It is clear that the Directive, while curbing the worst excessive of nitrate pollution in farming, has failed in its objective to reduce water pollution from agricultural nitrates, and preventing increases in it.

All available evidence points to a eutrophication crisis in the EU of epic proportions, that represents a significant threat to the ecological integrity of the environment.[10] Ammonia from spreading of agricultural livestock slurry constitutes a major contributor to air pollution as well as water pollution and a major public health crisis. Ammonia also degrades to nitrous oxide, a greenhouse gas, which additionally contributes to climate change.

[10] Report from The Commission to the Council and the European Parliament on the implementation of Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources based on Member State reports for the period 2016–2019 {SWD(2021) 1001 final} https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A1000%3AFIN&qid=1633953687154

Implementation of the Nitrates Directive requires EU Member States to undertake all of the following actions:[11]

1. Designate Nitrate Vulnerable Zones (NVZs):
    - Which can be specified areas of land which drain into polluted waters, or waters at risk of pollution and which contribute to nitrate pollution; or
    - EU Member States can also choose to apply measures (see below) to the whole territory (instead of designating NVZs).
2. Establish Codes of Good Agricultural Practice, to be implemented by farmers voluntarily, including:
    - measures limiting the periods when nitrogen fertilisers can be applied on land to target application to periods when crops require nitrogen and prevent nutrient losses to waters;
    - measures limiting the conditions for fertiliser application (on steeply sloping ground, frozen or snow-covered ground, near water courses, etc.) to prevent nitrate losses from leaching and run-off;
    - requirement for a minimum storage capacity for livestock manure; and,
    - crop rotations, soil winter cover and catch crops to prevent nitrate leaching and run-off during wet seasons.
3. Establish Nitrate Action Programmes to be implemented by farmers within NVZs on a compulsory basis, including:
    - measures already included in Codes of Good Agricultural Practice that become mandatory in NVZs;
    - other measures, such as limitation of fertiliser application (mineral and organic), taking into account crop needs, all nitrogen inputs and soil nitrogen supply, maximum amount of livestock manure to be applied (corresponding to 170 kg nitrogen/ha/year);
    - recommendations for establishing action programmes are available for each type of measure to be included in action programmes, according to the pedo climatic region in Europe, so as to minimise the risk of water pollution; and,
    - the Action Programmes must be revised at least every four years.

[11] https://environment.ec.europa.eu/topics/water/nitrates_en

4. Limit the application of nitrogen from manure:
    - In areas already polluted by nitrates, the Directive prescribes that the highest amount of nitrogen from manure that can be applied annually is 170 kg/ha. At the request of EU Member States, and provided that they justify scientifically that this shall not lead to higher pollution, the Commission can adopt implementing Decisions (commonly referred as derogations) that allow the application of higher maximum limits of nitrogen from manure in specific areas and under particular conditions. Such derogations do not exempt Member States from the water quality objectives of the Directive, nor from any other of its measures.
5. Identify water bodies (streams, rivers, lakes, transitional waters and coastal waters) which have become polluted, or waters at risk of pollution.

1.2.1 Nitrate Vulnerable Zones (NVZs)

As we have noted in point 1 above, Member States were asked to designate Nitrate Vulnerable Zones (NVZs), namely areas likely to contribute to surface or ground water contamination of a minimum of 50 mg L-1 of nitrate (NO_3-).

Within the NVZs, specific mandatory protection measures had to be adopted by farmers and a limit of 170 kg ha-1 year-1 of nitrogen (N) from organic manure was established. Within the non-vulnerable zones (nNVZs), Member States must propose a set of measures to be implemented on a voluntary basis, mainly regarding the periods and weather conditions for fertiliser application.

1.2.2 Ireland's Nitrates Action Programme

Ireland's NAP is designed to implement in Ireland the mandatory requirements of the European Union Nitrates Directive,[12] and is a critical element of national legislation to protect surface waters and groundwater from pollution caused by agriculture, or from agricultural sources and activities

Ireland's first Nitrates Action Programme (NAP) came into operation in 2006; the second, third, fourth and fifth NAPs followed, and the current Fifth NAP runs from the year 2022, through to 2025. The proposed changes are the result of an interim review of the programme, which commenced in 2023, and which recommended additional actions aimed at delivering improvements in water quality. The review was undertaken by the Agriculture Water Quality Working

[12] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.

Group, and the group's recommendations for additional actions were agreed by both Ministers.

In section 3 below, we describe the work of the Agriculture Water Quality Working Group, and how it relates to this consultation.

1.2.3 This Public Consultation

On 04 November 2023, the Department of Housing, Local Government and Heritage launched an open public consultation on the draft **proposed additional measures for the Fifth Nitrates Action Programme** (NAP) and on the Natura Impact Statement (NIS) accompanying the proposal.

Our submission is in response to this public consultation.

2. ZERO WASTE ALLIANCE IRELAND (ZWAI)

At this point we consider that it is appropriate to mention briefly the background, aims, activities, policies and strategy of ZWAI, and to mention some of our previous submissions to the European Commission and to Irish Government departments. In the next section of this submission (section 3), we will provide information on the background, aims and activities of the Waterford Environmental Forum.

2.1 Origin and Early Activities of ZWAI

Zero Waste Alliance Ireland (ZWAI), established in 1999, and registered as a company limited by guarantee in 2004, is a Non-Government Environmental Organisation (eNGO) and a registered charity. ZWAI has prepared and submitted to the European Commission, the Irish Government and to Irish State Agencies many policy documents on waste management and waste elimination, and continues to lobby the Irish Government and the European Commission on using resources more sustainably, on promoting re-use, repair and recycling, and on development and implementation of the Circular Economy.

One of our basic guiding principles is that human societies must behave like natural ecosystems, living within the sustainable flow of energy from the sun and plants, producing no materials or objects which cannot be recycled back into the earth's systems, or reused or recycled into our technical systems, and should be guided by economic systems and practices which are in harmony with personal and ecological values.

Our principal objectives are:

i) sharing information, ideas and contacts,

ii) finding and recommending environmentally sustainable and practical solutions for domestic, municipal, industrial and agricultural waste management, and for more efficient and ecologically appropriate uses of natural resources such as scarce minerals, water and soil;

iii) lobbying Government and local authorities to implement environmentally sustainable waste management practices, including clean production, elimination of toxic substances from products, re-use, repairing, recycling, segregation of discarded materials at source, and other environmentally and socially beneficial practices;

iv) lobbying Government to follow the best international practice and EU recommendations by introducing fiscal and economic measures designed to penalise the manufacturers of products which cannot be re-used, recycled or composted at the end of their useful lives, and to financially

support companies making products which can be re-used, repaired, recycled or are made from recycled materials;

v) raising public awareness about the long-term damaging human and animal health and economic consequences of landfilling and destruction by mass burning or incineration of potentially recyclable or re-usable materials;

vi) investigating, raising public awareness and lobbying Irish Government departments and agencies about our country's failure to take adequate care of vulnerable and essential natural resources, including clean water and air, biodiversity, and soil;

vii) advocating changes in domestic and EU legislation to provide for more ecologically appropriate, environmentally sustainable and efficient uses of natural resources; and,

viii) maintaining contact and exchanging information with similar NGOs and national networks in the European Union and in other countries, and with international zero waste organisations.

2.2 Our Basic Principles

Human communities must behave like natural ones, living comfortably within the natural flow of energy from the sun and plants, producing no wastes which cannot be recycled back into the earth's systems, and guided by new economic values which are in harmony with personal and ecological values.

In nature, the waste products of every living organism serve as raw materials to be transformed by other living creatures, or benefit the planet in other ways. Instead of organising systems that efficiently dispose of or recycle our waste, we need to design systems of production that have little or no waste to begin with.

There are no technical barriers to achieving a "*zero waste society"*, only our habits, our greed as a society, and the current economic structures and policies which have led to the present multiple environmental, social and economic crises.

"*Zero Waste"* is a realistic whole-system approach to addressing the problem of society's unsustainable resource flows – it encompasses waste elimination at source through product design and producer responsibility, together with waste reduction strategies further down the supply chain, such as cleaner production, product repairing, dismantling, recycling, re-use and composting.

ZWAI strongly believes that Ireland and other Member States, and the EU as a whole, should have a policy of not sending to other countries our discarded materials for further treatment or recycling, particularly to developing countries

where local populations are being exposed to dioxins and other very toxic POPs. Relying on other countries' infrastructure to achieve our "recycling" targets is not acceptable from a global ecological and societal perspective.

2.3 What We are Doing

Our principal objective is to ensure that government agencies, local authorities and other organisations will develop and implement environmentally sustainable resources and waste management policies, especially resource efficiency, waste reduction and elimination, the promotion of re-use, repair and recycling, and the development and implementation of the Circular Economy.

As an environmental NGO, and a not-for-profit company with charitable status since 2005, ZWAI also campaigns for the implementation of the **UN Sustainable Development Goals**, including (but not limited to) Goal 12, Responsible Consumption and Production; Goal 6, Clean Water and Sanitation (having particular regard to the need to avoid wasting water, and to wasting nutrients contained in our wastewater); and Goal 15, to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, to halt and reverse land degradation and to halt biodiversity loss.

In responding to many public consultations, members of ZWAI have made submissions and given presentations on:

- How Ireland, the European Union and the Irish food industry should address the problems of single-use plastic packaging and plastic waste (March & Nov. 2019);
- Transforming the construction industry so that it could become climate-neutral (instead of being a major emitter of greenhouse gases & toxicants);
- Observations on the general scheme of the Irish Government's Circular Economy Bill (October 2021);
- Several observations and submissions addressing the need for recovery and reuse of the phosphorus and nitrogen content of wastewater (2019 to 2023);
- Observations to the European Commission on a proposed revision of the EU Regulation on Shipments of Waste (January 2022);
- Feedback to the European Commission on a proposed Directive on Soil Health – Protecting, Sustainably Managing and Restoring EU Soils (March 2022);[13]

[13] https://www.zwai.ie/resources/2022/protecting-sustainably-managing-and-restoring-eu-soils/

- Submission in response to a public consultation on the review of Ireland's security of energy supplies (October 2022);[14]
- Submission in response to a public consultation on Ireland's Fourth National Biodiversity Action Plan (November 2022);[15]
- Submission in response to a public consultation on Ireland's National Bioeconomy Action Plan 2023-2025 (January 2023);[16]
- Submission in response to a public consultation on Ireland's draft Waste Management Plan for a Circular Economy (July 2023);[17]
- Submission in response to a public consultation on the problem of disposable vaping devices (July 2023);[18]
- Observations and recommendations on the rapidly increasing European and global problem of waste electronic & electric equipment (WEEE, Sept. 2023);[19]
- Observations to the European Commission on a Proposed EU Directive on Soil Monitoring and Resilience (November 2023);[20]

[14] Submission to the Department of the Environment, Climate and Communications in Response to the Public Consultation on a Review of the Security of Energy Supply of Ireland's Electricity and Natural Gas Systems; https://www.zwai.ie/resources/2022/public-consultation-on-a-review-of-the-security-of-energy-supply-of-irelands-electricity-and-natural-gas-systems/

[15] https://www.zwai.ie/resources/2022/submission-to-the-department-of-housing-local-government-and-heritage-in-response-to-the-public-consultation-on-irelands-fourth-national-biodiversity-action-plan-nbap/

[16] https://www.zwai.ie/resources/2023/zwai-submission-on-irelands-national-bioeconomy-action-plan-2023-2025/

[17] Submission to the Regional Waste Management Planning Offices on the draft Waste Management Plan for a Circular Economy; ZWAI, 05 July 2023: https://www.zwai.ie/resources/2023/submission-on-the-draft-waste-management-plan-for-a-circular-economy/

[18] Submission to the Department of the Environment, Climate and Communications in Response to the Department's Public Consultation on Disposable Vaping Devices; ZWAI, 27 July 2023: https://www.zwai.ie/resources/2023/submission-to-the-decc-on-disposable-vapes-and-why-they-should-be-banned/

[19] Submission by ZWAI to the European Commission on Waste from Electrical and Electronic Equipment — Evaluating the EU Rules; ZWAI, 22 September 2023. https://www.zwai.ie/resources/2023/waste-from-electrical-and-electronic-equipment-weee-evaluating-eu-rules/

[20] Observations and Feedback to the European Commission on the Proposed EU Directive on Soil Monitoring and Resilience; ZWAI, 03 November 2023. https://www.zwai.ie/resources/2023/submission-on-the-proposed-eu-directive-on-soil-monitoring-and-resilience/

- Observations on the Irish Government's draft Green Public Procurement Strategy & Plan (November 2023);[21]
- Observations and feedback to the European Commission on the proposed revision of the EU Waste Framework Directive (November 2023);[22]
- Observations & feedback to the European Commission on revision of Directives 2000/53/EC & 2005/64/EC on End-of-Life Vehicles (December 2023);[23]
- Submission by ZWAI to the Department of the Environment, Climate and Communications in response to the Department's public consultation on proposed amendments to the Access to Information on the Environment (AIE) Regulations 2007-2018 (January 2024);[24]
- Response to the first Public Consultation by the Department of the Environment, Climate and Communications on Ireland's draft National Energy and Climate Plan (March 2024);[25]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on the evaluation of the Nitrates Directive (91 / 676 / EEC) on Protection of Waters against Pollution caused by Nitrates from Agricultural Sources (March 2024);[26]
- Response to the second Public Consultation by the Department of the Environment, Climate and Communications on Ireland's updated draft National Energy and Climate Plan (June 2024);[27]
- Submission by ZWAI to the European Commission in response to the Commission's public consultation on proposed ecodesign and ecolabelling requirements for computers (July 2024);[28] and,

[21] https://www.zwai.ie/resources/2023/submission-to-the-decc-on-the-draft-green-public-procurement-strategy-and-action-plan/

[22] https://www.zwai.ie/resources/2023/observations-and-feedback-to-the-european-commission-on-the-proposed-revision-of-the-eu-waste-framework/

[23] https://www.zwai.ie/resources/2023/end-of-life-vehicles-observations-and-feedback-to-the-european-commission/

[24] https://www.zwai.ie/resources/2024/submission-to-the-decc-on-the-proposed-amendments-to-the-access-to-information-on-the-environment-aie-regulations-2007-2018/

[25] https://www.zwai.ie/resources/2024/submission-by-zwai-to-decc-on-irelands-national-energy-climate-plan-necp/

[26] https://www.zwai.ie/resources/2024/submission-by-zwai-to-the-eu-public-consultation-on-the-evaluation-of-the-nitrates-directive/

[27] https://www.zwai.ie/resources/2024/draft-update-of-irelands-national-energy-and-climateplan-necp-submission-by-zwai-to-decc/

[28] https://www.zwai.ie/resources/2024/ecodesign-and-ecolabelling-requirements-for-computers-zwai-submission-to-eu-commission-ecodesign-and-ecolabelling-requirements-for-computers/

- Submission by ZWAI and the Waterford Environmental Forum to the Department of Transport in response to the Department's Public Consultation: "*Moving Together – A Strategic Approach to Improving the Efficiency of the Transport System in Ireland"* (August 2024).

It will be clear that ZWAI is concerned with the very serious issues of discarded substances, materials, water and energy, whether from domestic, commercial or industrial sources, how these become "waste", and how such "waste" may be prevented by re-design along ecological principles. ZWAI is also very concerned about the effectiveness and appropriateness of Irish and EU policies, legislation, programmes and plans which are the principal determinants of how these "wastes" are managed, controlled and monitored for environmental and societal benefits.

In-depth examination and analysis of national policies have made us very aware of the many disconnections and conflicts between economic, environmental, land-use planning and social policies, frequently resulting in a national failure to implement changes which would appear to be very necessary. While making the submissions listed above, we have welcomed many proposed policy changes; but at the same time we have also considered that it was very necessary to evaluate forensically all such proposals in the context of what is best for the environment and society.

ZWAI is represented on the Irish Government's Water Forum (An Fóram Uisce), is a member of the Irish Environmental Network and the Environmental Pillar, and is funded by the **Department of the Environment, Climate and Communications** through the **Irish Environmental Network**.

ZWAI is also a not-for-profit company limited by guarantee (Company registration number **394205**), and a registered charity (CRN number **20057244**). Membership is less than 50 individuals, and the company's affairs and activities are supervised by a 6-person Board of Management (Directors), some of whom are regular contributors to submissions, or make presentations at conferences.

In 2019 ZWAI became a full member of the **European Environment Bureau** (EEB); and a member of the **Waste Working Group** of the EEB. Through the EEB, we contribute to the development of European Union policy on waste and the Circular Economy. In November 2021, the EEB established a **Task Force on the Built Environment**; ZWAI is a member of this group, and we contribute to continuing discussions on the sustainability of construction materials, buildings and on the built environment.

3. OBSERVATIONS BY ZERO WASTE ALLIANCE IRELAND (ZWAI) ON THE DRAFT PROPOSED ADDITIONAL MEASURES

3.1 The Agriculture Water Quality Working Group's Recommendations for Minimising Adverse Effects of Agriculture on Water Quality

The Agriculture Water Quality Working Group held its first meeting on 29 May 2023 in Portlaoise, at which the group's terms of reference were agreed. This working group includes representatives of the farm organisations, the agri-food industry, Teagasc, private agricultural consultants, local authorities, An Fóram Uisce and officials from the Department of Housing, Local Government and Heritage and the Department of Agriculture, which chaired the meeting.

It is our submission that we find it very disappointing that the group's membership does not include any representatives of environmental NGOs, despite the fact that environmental organisations had been drawing attention for several decades to the increasing water pollution, and declining water quality caused by the type of intensive agriculture widely practiced in Ireland.

The aim of the Working Group was to identify and recommend actions which would help the agricultural sector to make a contribution to much needed improvements in water quality. The Working Group's recommendations are included in a report entitled "*Water and Agriculture – A Collaborative Approach"*, prepared by the Department of Agriculture, Food and the Marine, and published in August this year.

The report "*Water and Agriculture – A Collaborative Approach",* states that there are many factors which can adversely affect water quality; but, when considering agriculture, the principal risks of damage to water quality are caused by nutrient losses from farmed land and from farmyards.[29]

Recommendations for achieving an improvement in water quality include better management of nutrient loading on land, and reduction of nutrient applications, especially nitrogen, and reduction or restriction of pathways for nutrient loss, especially phosphorous, to water. The report proposes a range of measures under five areas:

1. Regulatory measures;
2. Government financial support for farmers;

[29] Water and Agriculture – A Collaborative Approach", Department of Agriculture, Food and the Marine, August 2024, page 8.

3. Government, industry and farmers working in tandem;
4. Further measures and actions; and,
5. Securing Ireland's next nitrates derogation.

From the perspective of **Zero Waste Alliance Ireland**, the most relevant of these existing and proposed measures are:

- For the first time, fertiliser purchases must now be accounted for, from point of import to the end user, through a National Fertiliser Database;
- Access by bovine livestock to watercourses must be prevented by means of mandatory fencing on farms with a grassland stocking rate above 170 kg N/ha;
- The closed period for the application of nutrients to farmland has been extended;
- All farms with a grassland stocking rate >130 kg N/ha and all arable land must have their soils sampled before any phosphorous can be applied;
- All farms with a grassland stocking rate >130 kg N/ha must now use LESS equipment;
- From January 2025 all cattle slurry must be applied by LESS Equipment on farms stocked at >100 kg N/ha grassland stocking rate;
- All pig slurry must be spread using LESS equipment;[30]
- The number of compliance inspections for derogation farmers is being doubled from 5% to 10% per annum, so that there will be approximately 4,500 farms inspected annually by Local Authorities for water quality by 2025;
- A Biomethane Strategy will support the provision of an alternative to spreading on land of up to 20% of the livestock manure produced over the winter period;
- In 2025, DAFM will procure an environmental and economic assessment on the impact of possible reductions in the maximum chemical nitrogen allowances for all grassland stocking rates as well as the main arable crops as part of the Nitrates Action Programme Review for the period 2026–2029; and,

[30] LESS, Low Emission Slurry Spreading equipment minimises the surface area to which animal slurry is spread, and applies the slurry directly onto or into the soil, thereby reducing losses of nitrogen (especially ammonia) to the atmosphere. The main type of LESS equipment are a) Band-spreader b) Trailing shoe or c) Shallow injection methods. Using LESS equipment also reduces odour from slurry spreading. The Low Emission Slurry Spreading (LESSES) Equipment Scheme provides financial aid to farmers to help them buy new slurry-spreading equipment which improves environmental performance.

- Ireland will make a formal application to the European Commission this year (2024), coupled with presentations to the Nitrates Committee in 2025 for a continuation of the Nitrates Derogation for the period 2026 – 2029.

It is our submission that Ireland should not seek continuation of the Nitrates Derogation for the period 2026 – 2029.

3.2 The Nitrates Derogation and the Results of the Environmental Protection Agency's Monitoring of Water Quality

The Nitrates Derogation,[31] is one of the most environmentally contentious measures in Ireland's agricultural policy and practice, which allows farmers to exceed the permitted limit of 170 kg of livestock manure nitrogen per hectare as mandated in the Nitrates Regulations, up to a maximum of 220 kg or 250 kg per hectare, subject to adherence to stricter rules. Only three countries in the EU currently have nitrates derogations – Ireland, Denmark and the Netherlands. Ireland's derogation expires at the end of 2025. In April this year, Denmark announced that it would not seek a renewal of its derogation; and it is possible that Ireland will remain the only EU Member State which is allowed to spread animal slurry on farmland at a rate which exceeds that permitted under the EU Nitrates Directive.

When Ireland was granted a derogation in April 2022, the European Commission inserted a condition that an interim water quality review must be carried out in 2023; and, that in areas where the relevant water quality criteria, as determined by the Commission, had not been achieved, then additional measures must be put in place **by January 2024**.

Four pollution criteria are included in the derogation decision, two of which are based on the nitrate concentrations in water, and two on eutrophication. The eutrophication assessment is based on the nutrient status of the water, i.e., on nitrate and phosphate levels, and on biological indicators (plants and macro-invertebrates). Monitoring is undertaken by the EPA, as Regulation 37 of the European Union (Good Agricultural Practices for the Protection of Waters) (Amendment) Regulations (S.I. 393 of 2022) requires the EPA to prepare an annual report of the results of water quality monitoring to support the assessment of the impact of the nitrates derogation, as required by the Commission Implementing Decision (EU) 2022/696.

[31] Commission Implementing Decision (EU) 2022/696 of 29 April 2022 granting a derogation requested by 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(2022) 2596).

The key findings of the most recent EPA report on indicators of water quality[32] show a depressing picture:

(i) Biological indicators

The proportion of rivers in a satisfactory biological condition is relatively unchanged since 2018 and there is ***no indication yet of an improvement*** [our emphasis].

Of the 1,459 river water bodies monitored in 2022 and 2023 there has been a further small net decline in biological quality of 45, with the number of declines (232) exceeding the number of improvements (187).

There has been a slight decline in the proportion of lakes with satisfactory (high and good) biological quality, driven by a reduction in the number of lakes with high biological quality.

(ii) Nutrient indicators – nitrogen

Annual average river nitrate concentrations nationally were the same in 2023 as in 2022 and there is ***no sign of an improvement*** [our emphasis]. *Nitrate concentrations remain too high in 42% of river sites mainly in the South East and Midland and Eastern regions.*

20% of groundwater sites still have ***nitrate concentrations that are considered too high*** [our emphasis]. *The* ***national annual average in 2023 was higher than in 2022*** [our emphasis] *with both the South East and Midlands and East regions seeing increases.*

17% of our estuarine and coastal water bodies assessed were in unsatisfactory condition for nitrogen, while ***nitrogen loads to the marine environment are largely unchanged over the past four years*** [our emphasis].

The elevated levels of nitrogen in our waters are found mainly in the east, south east and south of the country and are too high to support good water quality in our estuaries. This is ***primarily attributable to intensive agricultural activities on freely draining soils in these areas*** [our emphasis].

(iii) Nutrient indicators – phosphorus

Annual average river phosphate concentrations nationally were the same in 2023 as in 2022. ***Average phosphate concentrations remain too high in 27% of rivers*** [our emphasis]. *Phosphate levels fluctuate annually*

[32] Water Quality in 2023: An Indicators Report. EPA, June 2024.

> *but overall there has been* ***no significant change over recent years*** [our emphasis].
>
> *Total phosphorus concentrations were too high in 35% of lakes which is a small decrease from 36% in the previous period. The majority of lakes with elevated phosphorus are in the border region.*
>
> *The vast majority of estuaries and coastal waters have satisfactory concentrations of winter phosphate and annual phosphate loadings to the marine environment have been broadly unchanged over the last few years*.

To summarise the key findings of the EPA[33] Water Quality Report 2023:

- The proportion of rivers in a satisfactory biological condition is relatively unchanged since 2018 and there is no indication yet of an improvement.
- Of the 1,459 river water bodies monitored in 2022 and 2023, the number of quality declines (232) exceeded the number of improvements (187).
- There has been a slight decline in the proportion of lakes with satisfactory (high and good) biological quality.
- Annual average nitrate concentrations nationally were the same for river sites and higher for groundwater sites in 2023 as in 2022, and nitrate concentrations remain too high in 42% of river sites and 20% of groundwater sites.
- Nitrogen loads to the marine environment have remained largely unchanged over the past four years.
- Nitrogen levels in the south and east of the country are too high to support good water quality in our estuaries. This is mainly due to intensive agricultural activities on freely draining soils in these areas.
- Average phosphate concentrations remain too high in 27% of rivers, and the annual average nationally was the same in 2023 as in 2022.

While the report is worthwhile reading, it makes no practical suggestions for improvement of the situation summarised above. While the absence of any recommendations for improvement of the country's surface water quality is disappointing, we note that the EPA is primarily a reporting and monitoring organisation, and that the task of developing and implementing policies is shared

[33] Water Quality in 2023: An Indicators Report. EPA, June 2024.

between the Department of the Environment, the Department of Housing, Local Government and Heritage, and the Department of Agriculture.

It is our submission that a the lack of coherence between Government departments and agencies, and possibly conflicts of interest, policy and "territory" between these departments may be a further reason why improvements in water quality have been only marginal, or in some cases there has been a reduction in water quality.

3.3 The Proposed Additional Measures

The Additional Measures proposed jointly by the Department of Housing, Local Government and Heritage, and the Department of Agriculture, are set out in a document entitled "*Proposed Additional Measures for the Fifth Nitrates Action Programme – Public Consultation 2024"*, and it is these measures on which we are invited to comment.

The following Proposed Additional Measures are listed and briefly described in section 2 of the public consultation document:

3.3.1 Reduction In Maximum Stocking Rate and Reduction in Allowable Quantities of Organic Manure (Section 2.1.1)

> "*An organic manure limit on derogation farms of 220 kg N/ha will be applied to the nitrogen reduction measure areas on the EPA Targeting Agricultural Measures that are currently not included in the Water Quality Implementation Map for 2024. This measure will be in effect from 01 December 2025".*

It is our submission that this a very vague statement, and doesn't appear to require any significant reduction in the numbers of livestock per hectare, even in areas where water quality is below standard, or where streams and rivers are at risk of being adversely impacted by nutrients from agriculture. Systematic monitoring and enforcement of the measure are significant weaknesses.

3.3.2 Reducing Reliance on Chemical Fertilisers (Section 2.1.2)

> "*If water quality improvements were not evident during the interim review, a further 5% reduction should be applied to further reduce the maximum allowable chemical nitrogen application rates for grassland on all farms from 2024;*
>
> *A targeted reduction is proposed to farms where surplus levels of nitrogen need to be reduced;*

Intensive farms with a stocking rate above 170kg/ha have the highest maximum allowances where surplus levels of available nitrogen present a higher risk of loss to water, and therefore a further 5% reduction in the maximum allowable chemical nitrogen fertiliser application rates for grassland will apply from 1 January 2025; and,

Additionally, to reduce the potential risk of nitrogen surpluses on lower stocking intensity farms, from 1 January 2025 there will be a chemical nitrogen fertiliser limit of 90 Kg N/ha on farms with a stocking rate of less than 85 kg N/ha."

These proposed measures may help to reduce nutrient run-off, but they lack any significant detail; the proposed "targeted reduction" is not specified in a way which would allow progress to be measured; and there are no "milestones" set by which progress can be measured.

3.3.3 Reporting of Organic Nutrient Movements (section 2.1.3)

"*The Department of Agriculture Food and the Marine (DAFM) will require notification of the movement/ export of organic nutrients between holdings within four days of the movement occurring.*

To enable local authorities to undertake these inspections, DAFM will export the necessary data centrally to local authorities.

GPS tracking of organic nutrient movements will be reviewed and considered as a measure for the Sixth NAP".

It is our submission that these are possibly some useful measures, but their effectiveness depends on the willingness and ability of local authorities to undertake farm inspections. At present, and for the next few years at least, Local Authorities have neither been willing or able to obtain the necessary staff to undertake these inspections. It is difficult to believe that farmers and contractors will comply with a proposal to track by GPS all movements of slurry from farms to the lands where the slurry is to be spread.

To consider one county as an example, Westmeath County Council "***did not complete any planned farm inspections in 2023"*** owing to staff shortages, according to a report published by the Environmental Protection Agency (EPA).[34] While it did not complete farm inspections last year Westmeath County Council informed the EPA that two assistant scientists have been appointed as "*agricultural inspectors and will be commencing farm inspections once the appropriate site selection is completed".* The Council also informed the EPA that

[34] https://www.agriland.ie/farming-news/epa-farm-inspections-not-completed-in-westmeath-in-2023/

it "*has a requirement of 37 agricultural inspections assigned in the National Agricultural Inspection Plan for 2024".*[35]

In its latest Local Authority Enforcement Audit Report on Westmeath Co. Council the EPA confirmed that while the County Council met the "required standard" for local priorities and water quality monitoring in 2023 it needed to "make improvements" in other key areas.

It is our submission that the system of giving local authorities the responsibility for farm inspections should be radically overhauled. While on the one hand, Local Authorities know their areas very well (or should do so), they currently lack the necessary independence, technical knowledge and willingness to pursue farmers which are non-complaint with the Nitrates Directive.

What is very good, however, is the auditing by the EPA of Local Authorities' performance, and the publishing of quite detailed audit reports by the Agency. The problem still remains, however, that local authorities are unable to obtain the necessary numbers of qualified staff to undertake such inspections adequately. Also, the proposed measure to adequately resource local authorities to undertake enforcement and awareness campaigns (see section 3.3.11 below) is to be welcomed.

3.3.4 Mitigate Overstocking of Land Areas (section 2.1.4)

> "*On farms with a nitrates derogation, the maximum stocking rate will be limited to 170 kg N/ha for land more than 30km from the main farm-holding unit unless demonstrable evidence is provided to DAFM to show that this land is being farmed at an appropriate higher level. This measure will be implemented from the 1 January 2025".*

This measure appears to be based on a finding that livestock are more likely to be grazed, and organic manure is more likely to be applied, in close proximity to the main farm holding, and therefore there is a greater risk that the land within a manageable vicinity of the main farm holding will receive higher nutrients than the whole farm allowances, thus increasing the risk of nutrient surplus and loss to water.

Our submission is that this measure will probably be helpful, but only marginally.

[35] EPA Local Authority Enforcement Audit Report, Westmeath County Council; 02 October 2024, section 3.3

3.3.5 Nutrient Excretion Rates Of Young Bovines Up To Two Years Of Age (section 2.1.5)

> "*The nutrient excretion rates of a bovine aged 0 to 1 will be split into two sub-categories to reflect Teagasc research …"*

These changes in the excretion rates are intended to reflect the most up-to-date research on animal growth and excretion rates of Ireland's national bovine herd, providing a more acute account of organic nutrient sources on farms.

It is our submission that any beneficial effect on water quality is likely to be only marginal or not detectable.

3.3.6 Managing Crude Protein in Concentrates Fed To Dairy Cows (section 2.1.6)

> "*A voluntarily reduction of the level of crude protein beyond legal obligation should be recognised for dairy farmers that inform the DAFM that they are opting to feed an annual average crude protein in concrete to dairy cows that is lower than the national average crude protein content used to calculate standard excretion rates".*

This proposed measure is based on research by Teagasc which shows that dairy cows' nitrogen excretion rate can be reduced through a reduction in the level of crude protein in concentrated feed. The results of the research were mixed, and a quick appraisal of the paper by Teagasc showed that other factors, as well as reducing protein in cattle feed, would lead to a reduction in nitrogen excretion by dairy cows.

3.3.7 Concentrate Feed During The Grazing Season (section 2.1.7)

> "*This maximum crude protein content will be reduced to 14% on all holdings from the 01 January 2025, and this will reduce the nitrogen content in urine patches when bovines are grazing".*

This measure may lead to another marginal improvement, though no data is provided on the relationship between the protein content of cattle feed and the nitrogen voided onto grassland, which gives rise to the "*urine patches"* mentioned in the proposed measure.

3.3.8 Increase Clover Use (section 2.1.8)

> "*When reseeding perennial rye grass-based swards, derogation farmers are currently required to incorporate at least 1.5 kg/ha of naked clover seed or at least 2.5 kg/ha of pelleted clover into the reseed. This*

requirement will be extended to all farms and included as an amendment to the GAP Regulations".

This proposed measure is to be welcomed, as the addition of clover to the grass sward gives the ability to incorporate nitrogen from the air (clover root nodules provide this service); but the measure could be improved by requiring all farms to incorporate a wider variety of native wild plants into their currently grown one-species or two-species monoculture grazing lands.

This possible measure is further mentioned in section 2.2.5 of the document, where "*Multi-species Swards"* are promoted, and the DAFM will seek to continue to prioritise research on their inclusion and management on farms. This measure is to be welcomed, though no time limit or target is suggested.

3.3.9 Restriction of Unprotected Urea (section 2.1.9)

"A restriction on the use of unprotected urea in granular form will apply from 15 September 2025".

This proposed additional measure appears to be based on the fact that urea, when applied as a fertiliser, become immediately available as soluble nitrogen, and is more likely to be washed off into rivers and streams, while the "Protected Urea" (that is, urea which is treated with an active ingredient called a urease inhibitor, coating the fertiliser granule or incorporated into the urea granule melt during manufacture) is intended to stabilise the nitrogen as ammonium in the soil making it more slowly available for uptake by crops, thereby reducing losses to the atmosphere and improving nitrogen use efficiency.

It is our submission that this is a useful measure, but should be combined with tighter restrictions on the application of soluble nitrogenous fertilisers. Changes in Irish agriculture which would lead to much reduced requirement for fertiliser use, would be even more desirable, and would have the effect of reducing Ireland's dependence on imported fertiliser.

3.3.10 Other measures in the "Better Farming for Water" Campaign (section 2.2.1)

Non-regulatory measures proposed (some of which are already in effect) include:

1. *Reduce purchased nitrogen (N) and phosphorus (P) surplus per hectare;*
2. *Ensure soil fertility is optimal for lime, phosphorus and potassium;*
3. *Ensure application of fertiliser and organic manure at appropriate times and conditions;*

4. *Have sufficient slurry and soiled water storage capacity;*
5. *Manage and minimise nutrient loss from farmyards and roadways.*
6. *Fence off watercourses to prevent bovine access;*
7. *Promote targeted use of mitigation actions such as riparian margins, buffer strips and sediment traps to mitigate nutrient and sediment loss to water; and,*
8. *Maintain over-winter green cover to reduce nutrient leaching from tillage soils.*

3.3.11 Inspections and Other Enforcement Activity To Build Compliance (section 2.2.1)

This proposed additional measure states that "*by 2025, local authorities will be adequately resourced to inspect at least 4,500 farms per annum following a targeted water quality risk-based approach as part of the National Agricultural Inspection Programme, led by the EPA. As part of this programme, targeted awareness campaigns will focus on organic nutrient movement and storage, spreading within the closed period and under unfavourable conditions at other times of the year, building on the "Better Farming for Water" campaign. This will be co-ordinated between DAFM and local authorities under the EPA-led National Agricultural Inspection Programme. There will be targeted inspection and enforcement campaigns in parallel to these awareness campaigns involving both local authorities and DAFM inspectors"*.

It is our submission that this particular measure should be welcomed, especially as it includes a proposed level of co-ordination between the DAFM and local authorities under the EPA-led National Agricultural Inspection Programme. May we suggest however, that the Department of the Environment should have an advisory role, and that the proposed public awareness campaign should be designed to make the farming community more aware of the links between agriculture, over-production, food waste, loss of biodiversity and the urgent need to mitigate climate change.

It should be obvious to the Department of Housing, Local Government and Heritage that there is a serious lack of understanding among some members of the farming community about the effects of climate change, and the need for Ireland to severely reduce greenhouse gas emissions from all sectors of the economy and society.

3.4 Our Response to the Proposed Additional Measures

It is our submission that while there are some measures to be welcomed, we should consider how much more could be done to include measures and agricultural practices which would have a much greater positive impact on water quality. For example, there is no mention of the enormous waste of phosphorus into rivers and streams from over-fertilised farmland, nor any of the very eco-friendly agricultural improvement measures which Zero Waste Alliance Ireland described in detail in several of our previous submissions.

As a preliminary comment, it seems to ZWAI as if the consultation document and the descriptions of the proposed measures were disconnected from the wider and more critical issues of mitigating climate change, of the rapidity with which climate change is taking place, of how a seriously changing climate will affect agriculture during the next few decades, of the need for adaptation and resilience, and how the transition to a changed form of agriculture must be made with a sense of justice and integrity, so that the farming community (including many small famers) are not abandoned or left behind, while large agro-industries reap the benefits of multiple funding.

When examining the proposed additional measures for Ireland's 5th NAP, it is evident that there is a lack of specificity and potential limitations in the implementation and enforcement of these measures.

We have doubts whether some of the proposed actions will lead to meaningful improvements in water quality. For example, measure 2.1.5 on nutrient excretion rates of the young bovines up to two years of age (section 3.3.5 above) is not likely to lead to a significant improvement in water quality in Ireland's intensely farmed areas.

Although more detailed data for nutrient management is welcomed, the effect on water quality will likely be marginal or even undetectable. Therefore, we recommend that these measures should be recognised as only contributing to the accuracy of nutrient data collected and additional measures should be brought forward that will make a clear positive impact on water quality.

The measures should be based on concrete evidence and contain detailed guidelines or frameworks to ensure effective implementation. For example, the additional measure 2.1.9 (section 3.3.9 above) on the restriction of unprotected urea does not provide any sources or evidence as to why this measure is relevant. There is also no clear pathway for implementation, making it difficult to enforce and evaluate its progress. This also becomes evident for measure 2.1.7 (section 3.3.7 above) which recommends concentrate feeding only during the grazing season. The text states that the measure will ''reduce the nitrogen content in urine patches when bovines are grazing.'' without providing sources

that support this claim. The underlying assumptions and broader impacts of these measures should be more clearly explained.

Related to this is the comment that some measures are based on research that shows mixed context-dependent outcomes; for example, measure 2.1.6 (section 3.3.6 above) on managing Crude Protein in concentrates fed to dairy cows. This raises additional concerns about the robustness of the evidence supporting the proposed measures.

In the case of measure 2.1.3 (section 3.3.3 above) on reporting of Organic Nutrient Movements, we must repeat our concerns about whether it is realistic to expect local authorities to undertake farm inspections. As quoted above from a recent article[36] which reports that, due to staff shortages, Westmeath County Council could not conduct any of the planned farm inspections in 2023. Although we trust that County Councils in general are now working to make up for those missed inspections, it highlights the stress already put on these resources. For this reason,, we welcome the measure described in section 3.3.11 above, to resource local authorities more adequately, to develop better coordination between agencies, to ensure better enforcement of the Nitrates Directive, and to raise public awareness.

It is important to ensure that local authorities have capacity before moving forward with any legislation that requires them to do more, as it is unlikely to be implemented in that case.

Lastly, the proposed additional measures appear to be based on the general idea that the measures can be more ambitious by broadening their scope and setting clear targets and timelines. For example, measure 2.1.8 (section 3.3.8 above) to increase clover use is very welcome but the efforts could be expanded by, for example, incorporating more native plants and creating a more detailed and specific implementation plan. In contrast, measure 2.1.2 (section 3.3.28 above) on reducing reliance on chemical fertiliser suggests that the **required further reduction** in the maximum allowable chemical nitrogen application rates for grassland of 5% on all farms from 2024 should not be adhered to but rather only apply to a smaller number of farms. The 5th NAP was agreed to and should be adhered to accordingly. Therefore, we recommend that the 5% reduction should apply **to all farms**, as previously promised.

This evaluation of the proposed additional measures aims to underline opportunities for refining the measures to achieve more substantial and measurable environmental outcomes.

[36] https://www.agriland.ie/farming-news/epa-farm-inspections-not-completed-in-westmeath-in-2023/

4. OTHER RELEVANT EVALUATIONS OF THE NITRATES DIRECTIVE AND THE NITRATES ACTION PROGRAMME

4.1 Comparison with Other EU Member States' Nitrates Action Programmes

In order to better evaluate Ireland's current action programme, we considered that it would be useful to carry out a quick look at the action programmes of other EU Member States.

A report from the EU Commission's Nitrate Action Programmes Information System (NAPINFO) was used to compare different Member States' NAPs.[37]

This report compiles all measures from all Member States' NAPs. The report states the majority of Annex III measures from the Nitrates Directive are implemented in over 90% of the NAPs. The report ranks closed periods for fertiliser application as the most effective measure in reducing nitrate loss across all NAPs.

The report notes Ireland for its Agricultural Sustainability Support and Advisory Programme (ASSAP), which it recognises for actively engaging farmers in high-risk areas and supporting farmers in implementing NAP measures while promoting best practices for water quality improvement. According to the report, this level of farmer-focused advisory support is less common in other Member States.

It also assessed Ireland's closed periods for fertiliser and slurry application to be among the stricter in the EU, particularly for derogation farms.

On the other hand, the report points out a lack of structural solutions in Ireland's NAP compared to that of countries such as the Netherlands and Denmark, which could limit its overall impact. According to the report, Ireland's NAP lacks the implementation of low-emission technologies compared to the Netherlands and Germany, where such measures are mandatory across all farms, not just derogation farms.

As one of two other member states with a nitrate derogation besides Ireland and as a huge agricultural producer, the Netherlands is relevant to look deeper into when comparing NAPs with Ireland. The Netherlands is currently on its 7th NAP, covering the period of 2022-2025. There are some notable and relevant points

[37] Identification of approaches and measures in action programmes under Directive 91/676/EEC Final report. Ref. ENV.D.1/SER/2018/0017 Agriculture and Environment Research Unit (AERU), School of Life and Medical Sciences, University of Hertfordshire, England; 24 April 2020.

when comparing the focus and aims of the Netherlands' current NAP to those of Ireland, and we suggest that these should be considered by the Department

The Dutch NAP incorporates actions that are specifically aimed at climate change mitigation. For example, the Netherlands aims to convert some agricultural lands within critical water quality areas to wetlands to filter runoff, increase carbon sequestration, and enhance biodiversity. Although many of Ireland's NAP measures also mitigate climate change, it is notable that they don't explicitly mention climate adaptation or mitigation and, therefore, the Irish 5th NAP fails to acknowledge this as a related and connected issue.

The Dutch 7th NAP requires all farmers, regardless of type or size, to have a natural buffer zone around their agricultural land of at least three metres. In Ireland's NAP, only farmers that operate under the nitrate derogation have to choose one action from the All-Ireland Pollinator Plan to implement, of which one of them is natural buffer zones.

The previous point hints at a wider theme notable when comparing the current Dutch and Irish NAPs. The Dutch NAP applies equally to all farmers, regardless of operation size or capacity. While a significant portion of the Irish NAP's measures are only obligatory for farmers operating under the nitrates derogation.

It is our submission that Ireland's NAP should be amended to include similar requirements, especially actions that are specifically aimed at climate change mitigation. We would point out that such climate-focussed measures are even more necessary in Ireland than in most other EU Member States, as our agriculture is such a significant contributor to Ireland's total greenhouse gas emissions.

It is also our submission that Ireland's NAP should be amended to require all farmers, regardless of type or size, to have a natural buffer zone around their agricultural land of at least three metres; similar to the requirement in the Dutch NAP.

4.2 Evaluation of the Effectiveness of Measures in Ireland's National Action Programme (NAP); the Agricultural Catchments Programme (ACP)

One of the programmes in Ireland which examined the effectiveness of the package of measures implemented in Ireland's National Action Programme (NAP) under the EU Nitrates Directive was the 4-year Agricultural Catchments Programme (ACP), the first phase of which was was completed at the end of 2011.

This programme was run by Teagasc and funded by the Department Of Agriculture, Food and The Marine (DAFM), and one of its principal objectives was to evaluate the performance of the Nitrates Action Programme. Phase 1 of the ACP covered only the establishment of a catchment scale experiment, to provide an agri-environmental baseline of agricultural activity and water quality response in the years following the implementation of the NAP.

This evaluation included an investigation of the efficacy of the derogation mechanism under the Nitrates Directive which permitted farmers to exceed the 170kg ha^{-1} limit for spreading organic nitrogen (N) from livestock manure, up to a level of 250kg ha^{-1} of organic N. The evidence used to support Ireland's original case for a derogation in 2005 for crops with a high nitrogen requirement was the apparently generally large denitrification potential of Irish soils due to maritime weather conditions (giving high net precipitation) and a relatively long growing period, compared with that in other EU Member States.

However, the NAP is also concerned with controlling the mobilisation of residual nitrogen in the soil beyond the root-zone in order to mitigate groundwater impacts and transfers to downstream water bodies. Additionally, phosphorus (P) had been identified by the Environmental Protection Agency (EPA) as a significant influence in the process of eutrophication of surface and groundwaters in Ireland, and other NAP measures (some coincident with N measures) had been introduced to deal with this problem (S.I No. 378 of 2006; S.I No. 101 of 2009; and S.I No. 610 of 2010). Furthermore, the mitigation measures in the NAP were recognised as the agricultural contribution towards helping to implement the Water Framework Directive (and associated Groundwater Directive) objectives in Ireland.

These factors were considered in the design of the ACP, and the experimental design took account of the article 8(4) clause in the Irish derogation (EC, 2007):

> *"monitoring of shallow groundwater, soil water, drainage water and streams in farms belonging to the agricultural catchment monitoring sites shall provide data on nitrate and phosphorus concentration in water leaving the root zone and entering groundwater and surface water."*

Key findings from the Agricultural Catchments Programme to date include:[38]

1. The underlying soil type and geology can override the effect of nutrient source pressures. There was no clear link between stream nitrogen (N) and phosphorus (P) concentrations and nutrient loading at small catchments scale. Targeted and efficient mitigation measures are required.

[38] https://www.teagasc.ie/environment/water-quality/agricultural-catchments/research/acp-key-findings/

2. Airborne Lidar surveying and new analytical methods of water quality data produced information on pathways and delivery sites that can facilitate targeted and efficient mitigation measures and up-scaled to larger areas. There is a need to identify Critical Source Areas (CSAs) and critical times to tailor advice.
3. Long-term weather shifts and short-term weather extremes influence N and P loss to water differently. Weather needs consideration and may require different mitigation strategies and real time advice.
4. There are time lags between agricultural pressures and water quality state. The response time mostly increase with catchment size. Time lags of ca 5 – 10 years need consideration when linking agricultural pressure to water quality state.
5. Temporal changes in groundwater nitrate concentrations were related to both agronomic, meteorological and hydrogeological factors in two groundwater fed catchments. N application need to be reduced and/or tailored at time of restricted crop growth.
6. Following heavy rainfall stream P concentrations were gradually reduced during the "closed period" and did not increase in the four week period after the end of "closed period". Advice on soil moisture conditions can facilitate better decisions on time and location for slurry spreading.
7. In three catchments the environmental quality standards were frequently exceeded caused by different risks and a new P loss screening tool identified the type of risk.
8. Sediment was the most common stressor on stream water ecology. Improved management of sediment inputs and influence of point sources in low flow is required.
9. Most of the sediment losses came from stream bank/bed erosion and road losses on the more common land uses. Soil permeability largely influenced the sediment loss. Sediment loss can be managed by ditch management and by interventions to slow down water.
10. Safe use of pesticides and pharmaceuticals and/or alternative treatments is required. Herbicides were detected in private drinking water wells and were present in the rivers all year: concentrations peaked in summer and mass loads in winter. Anticoccidial veterinary drugs and anthelmintic residues were detected in groundwater. More research on losses, pathways and impacts are required.
11. Increasing N and P use efficiency is important from both the agronomic and environmental perspective. The distribution of P sources can be improved. At the field scale, there was often a mismatch between P inputs and the crop/soil P requirements. Advisory support for effective Nutrient Management Planning is required.

12. A growing acceptance of environmental benefits from regulation was found. The likelihood of adopting certain nutrient management practice is related to demographic and farm structural factors. Farmer cohorts should be considered for land use planning when tailoring policy measures and incentives.

13. Economic, attitudinal and farm structural factors influence the willingness to adopt a mitigation measure such as a buffer zone. A total of 53% of the catchment farmers surveyed indicated a negative preference of a fenced 10 metre riparian buffer zone under a 5 year scheme. Incentives are needed for adoption of buffer zones.

14. Knowledge exchange is required for effective Nutrient Management Planning. Farmers prefer a flexible Nutrient Management Plan (NMP) approach combining a durable map with a table. Factors such as fertiliser prices, stocking rates, land use potential, use of milk recording technology, contact with extension services and rainfall patterns influence the P balance and use efficiency. Advisory support relating to NMP is required.

It is our submission that these findings, though they appear to be only in draft form, as we have been unable to locate a final report, should inform the process of amending the Nitrates Action Programme, so as to introduce:

i) more targeted and efficient mitigation measures, scaling up to cover wider areas (as in the Dutch Programme, see section 4.1 above);

ii) in some catchments, nitrogen application rates should be reduced at times of restricted crop growth;

iii) though not strictly a requirement of the Nitrates Directive, sediment loss from farmland should be managed, to prevent ecological damage;

iv) though not strictly a requirement of the Nitrates Directive, much improved control of the use of pesticides and pharmaceuticals is required, given the finding that herbicides were detected in private drinking water wells and were present in the rivers all year; while anticoccidial veterinary drugs and anthelmintic residues were detected in groundwater;

v) though not strictly a requirement of the Nitrates Directive, much more research on losses, pathways and impacts of pharmaceuticals and pesticides is required; and,

vi) incentives are needed to encourage farmers to introduce riparian buffer zones (see section 5.2 below); and such incentives are very necessary, given the finding that 53% of the farmers surveyed indicated a negative preference for a fenced 10-metre riparian buffer zone; from which we may deduce that they were unwilling to consider implementing fenced riparian buffer zones.

4.3 The Effectiveness and Efficiency of the Nitrates Directive: How can it be Improved?

Given that the Nitrates Action Programme is based on, and takes its legal force from, the Nitrates Directive, we wish to include a few comments on the Nitrates Directive, and how it could be improved, from an environmental perspective.

In its 2024 work programme, the Commission announced an evaluation of the Nitrates Directive, under which all EU member states are required to carry out several actions, including:

- Identification of waters polluted by nitrates, and waters that have become eutrophic (eutrophication is the enrichment of water with nutrients leading to excessive growth of algae, affecting the aquatic ecosystem's balance);
- Designation of areas that are particularly susceptible to nitrate pollution;
- Developing codes of good agricultural practices; and,
- Implementing measures aimed at preventing and reducing water pollution caused by nutrients.

In the implementation of the Directive, we found that Member States utilise a range of different methodologies. For example, Member States are not using the same method when calculating nutrient balances, although one particular method is provided and promoted by Eurostat. The use of different methods decreases the possibility of comparing data across countries, and of accurately assessing the effectiveness of the Directive. Another example is the variation in the definition of trophic status utilised by member states, leading to an absence of verifiable trends in trophic status of surface waters at the EU level.

It is our submission that a revision of the Nitrates Directive should include an official requirement for Member States to use a specific methodology for calculating nutrient balances and to provide a definition for trophic status within the Directive, which Member States should follow. This will allow a better comparison to be made between countries and more accurate monitoring of EU-level progress. If any other disunity in methodologies or definitions is identified that impedes the Commission's ability to assess EU-level progress, then some additional requirements should also be set.

The issue of differences in methodologies applied by Member States leads to another issue with the Nitrates Directive, which is that there is a lack of data, or insufficient data, supplied to accurately assess progress on certain parts of the Directive.

For example, 13 out of the EU27+UK states did not report any information about the contribution of agriculture to nitrogen loss into the aquatic environment. That means data is lacking for nearly half (46%) of the Member States included in the

Directive. This is significant because agriculture is assumed to be the leading cause of nitrate pollution (average of 77%) in aquatic systems, based on the data provided by only a little more than half of the Member States. Moreover, from those States, the average is derived from data with a large range, from agriculture being responsible for 22% to 99% of nitrate pollution. This lack of data is problematic because it can lead to neglecting other potentially significant sources of nitrate pollution besides agriculture.

We consider that it is imperative to collect accurate and verifiable data in order to monitor the progress of each country; and, at the EU level, in reaching the Nitrates Directive's objectives. Therefore, Member States' reports should be followed up frequently when data is not provided, and infringement cases should be made against them for not complying with this requirement of the Directive.

The EU's latest progress report on the Nitrates Directive states that water quality data indicates that the level of implementation and enforcement of the Directive are still insufficient in order to reach the Directive's objectives.[39]

For example, water quality data shows that in some member states, the designation of Nitrates Vulnerable Zones (NVZ) is lacking as some polluted or at-risk areas have not been designated. Additionally, some designated NVZs do not take into account the entire water catchment area, and eutrophication is frequently not considered sufficiently when identifying polluted areas. This reduces the efficiency of action programmes and, therefore, the effectiveness of the Directive. More so, the Commission has identified a *''significant variability''* between action programmes when it comes to the specific actions taken and the ambitions of the programmes.

To enforce adequate implementation of the Directive, the EU Commission should push Member States (including Ireland, we might emphasise) to utilise the Nitrate Action Programme Information system (NAPINFO) to optimise their action programmes. Additionally, infringement cases should be opened whenever a Member State is not appropriately complying with the Directive.

Over the 33 years that the Nitrates Directive has existed, certain areas where it could be improved have been identified, and there have been developments which have led to the need to amend the content of the Directive to better address the current environment and Member States' needs.

It is also our submission that the effects of climate change have not been adequately considered in the Nitrates Directive, and this is not surprising, given the age of the Directive. Member states have indicated that unpredictable effects

[39] Report from the Commission to the Council and the European Parliament on the implementation of Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources based on Member States' reports for the period 2016–2019. COM(2021) 1000 final, Brussels, 11.10.2021

of climate change, such as the unusually dry summers in Europe between 2018 and 2019, make projections about future water quality difficult.

The Commission has stated that the action programmes currently in place by Member States may not address these effects appropriately and has urged them to apply the precautionary principle and include potential climate change effects in their updated action programmes. While we agree with this proposal by the Commission, we would strongly urge that a revised Directive should include a requirement to take climate change effects into account, and the Commission should provide Member States with a specific methodology that they should follow to account for climate change effects.

It is also our submission that the **Precautionary Principle** should be adhered to when considering future amendments to the Nitrates Directive, or when considering additional measures to be included in the Nitrates Action programme.

The Nitrates Directive does not have its own deadlines for reaching the water quality objectives that Member States need to reach in order to comply with the Directive, but instead relies on deadlines from the Water Framework Directive (WFD) and EU Green Deal. This may have led to the lack of implementation by some Member States addressed above. It is strongly recommended that an amended Nitrates Directive should develop and include its own specific deadlines for compliance by Member States, and these deadlines should be in line with deadlines presented within other Directives.

Although the Nitrates Directive has reduced nutrient loss and water pollution within the EU over the last 30 years, progress has slowed in the last decade. The EU Commission itself states that this could mean '*"the low hanging fruits have been already collected and now more far reaching measures being needed to improve the positive trend"*.[40] Therefore, it is an indication that the current Directive may have been sufficient to decrease nitrates pollution in aquatic systems at the time that the Directive was created, but that by now, further measures need to be taken in order to keep that progress going. Therefore, it is recommended that the Nitrates Directive adapts its requirements to advance and increase progress towards reaching its objectives.

[40] Report from the Commission to the Council and the European Parliament on the implementation of Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources based on Member States' reports for the period 2016–2019. COM(2021) 1000 final, Brussels, 11.10.2021; section 9, Conclusions.

5. STRATEGIES TO REDUCE NUTRIENT LOSSES IN AGRICULTURAL SYSTEMS

While the current proposal includes some measures to be welcomed, much more could be done to include measures and agricultural practices which would have a much greater positive impact on water quality. This section outlines some of the measures proposed by us in previous submissions, which would have the effect of reducing nutrient losses in agriculture and supporting water quality improvements.

5.1 No-till cultivation

No-till cultivation is about avoiding the ploughing of agricultural land. Combined with using cover crops to control weed growth, this practice helps preserve a healthy soil structure while allowing organic matter from crop residues to accumulate on the surface. The result is improved soil health indicators while maintaining yield and reducing runoff, thereby minimising the loss of nitrogen and phosphorus.

Evidence of the success of no-till cultivation can be found in a 2018 study by Nunes et al.[41] that evaluated the effects of long-term no-till cultivation of corn with cover cropping (perennial grass) and crop rotation. The technique resulted in an improvement of numerous soil health indicators: organic matter, active carbon, respiration, protein content, available water capacity, water-stable aggregation, penetration resistance, water infiltration rate, plant available nutrients, pH, and total nitrogen. All the while, an increase in corn yield was observed in two out of three investigated soil types.

5.2 Buffer strips and field margins

Field margins or buffer strips are strips of semi-natural habitats on the periphery of agricultural fields that offer a range of vital ecosystem functions, including soil erosion prevention, protection of (soil) biodiversity, water quality regulation, nutrient cycling, groundwater nitrogen reduction, and carbon sequestration.[42] [43]

[41] Nunes, M.R., van Es, H.M., Schindelbeck, R., Ristow, A.J. and Ryan, M., 2018. No-till and cropping system diversification improve soil health and crop yield. Geoderma, 328, pp.30-43.

[42] Ferrarini, A., Serra, P., Almagro, M., Trevisan, M. and Amaducci, S., 2017. Multiple ecosystem services provision and biomass logistics management in bioenergy buffers: A state-of-the-art review. Renewable and Sustainable Energy Reviews, 73, pp.277-290.

[43] Hopkins, A., 2009, May. Relevance and functionality of semi-natural grassland in Europe–status quo and future prospective. In International workshop of the SALVERE-Project (pp. 9-14).

Essentially, field margins allow maintenance of high crop yields in the arable fields while fostering biodiversity at the edges.

De Cauwer et al. (2006)[44] observed that establishing 5-metre-wide grass and forb margins around arable fields significantly reduced nitrogen pollution in groundwater and increased plant biodiversity within five years.

5.3 Agroforestry and tree planting

Incorporating trees into conventional agricultural systems can reduce soil erosion. Wei et al. (2020)[45] demonstrated that cropland afforestation in Northern China effectively prevented soil erosion. Jalón et al. (2018)[46] found that soil erosion reduced by approximately 50% in a system that grew trees and crops together, compared to regular arable systems.

Ruseva et al. (2015)[47] found that financial incentives successfully encouraged landowners to plant trees, suggesting that such incentives could also support the adoption of other agroecological soil protection practices. Providing financial support to farmers implementing these strategies is vital for improving soil health and minimising erosion.

5.4 Recommendations for Improving Soil Health

Because natural systems do not operate in isolation, the health of soil and water are closely linked. Enhancing soil health can improve water and nutrient management by reducing fertiliser usage, erosion, and runoff or leaching. In this section, we propose several measures to improve soil health in agricultural lands.

5.4.1 Crop rotation

During crop rotation, different types of crops are grown on the same field in a planned order. Crop rotation has shown to improve soil health, increase crop

[44] De Cauwer, B., Reheul, D., Nijs, I. and Milbau, A., 2006. Effect of margin strips on soil mineral nitrogen and plant biodiversity. Agronomy for sustainable development, 26(2), pp.117-126.

[45] Wei, W., Wang, B., & Niu, X. (2020). Soil Erosion Reduction by Grain for Green Project in Desertification Areas of Northern China. Forests, 11(4), Article 4. https://doi.org/10.3390/f11040473

[46] García de Jalón, S., Graves, A., Palma, J.H., Williams, A., Upson, M. and Burgess, P.J., 2018. Modelling and valuing the environmental impacts of arable, forestry and agroforestrysystems: a case study. Agroforestry systems, 92(4), pp.1059-1073.

[47] Ruseva, T.B., Evans, T.P. and Fischer, B.C., 2015. Can incentives make a difference? Assessing the effects of policy tools for encouraging tree-planting on private lands. Journal of Environmental Management, 155, pp.162-170.

yield, and reduce weeds, pathogens, and pests, which reduces the need for agrochemicals.

Plants make better use of the available nutrients in soil when grown in rotation. Higher uptake of nutrients by crops will minimise loss through leaching and runoff. An experimental crop rotation system reported 25.6% higher barley grain yield compared with conventional monoculture.[48]

5.4.2 Perennial crops

Perennial crops grow for two years or more, allowing them to develop much more extensive root systems compared to annual crops.[49] Their root networks improve soil structure and help to reduce erosion. Additionally, because phosphorus can build up in deep soil layers after decades of fertilisation, the deeper root structures of perennials can reach this phosphorus, reducing nutrient leaching further. Alfalfa is an example of a useful perennial crop that is nitrogen fixing, can be cut or grazed for animal feed, and produces edible seed. Other perennial crops include kale, asparagus, rhubarb, and fruit and nut trees.

A study by Kreitzman et al. (2020)[50] reported high productivity of some perennial crops, which means that transitioning from annual crops may not entail yield losses. A more recent (2024) study[51] found not only that there was no significant difference in yield between annual and perennial cropping systems but also that perennial systems led to a significant increase of topsoil carbon and nitrogen stocks, important soil health indicators, after nine years.

5.4.3 Intercropping

Intercropping is the practice of planting different crops together and is common in organic farming as an alternative to chemical fertilisers and pesticides. For example, legumes can contribute nitrogen to the soil as they grow, reducing the need for synthetic nitrogen fertilisers. Planting crops with fibrous roots in between

[48] Woźniak A., Soroka M. Structure of weed communities occurring in crop rotation and monoculture of cereals. International Journal of Plant Production, 9 (3), 487, 2015.

[49] Daelemans, R., Hulsmans, E. and Honnay, O., 2022. Both organic and integrated pest management of apple orchards maintain soil health as compared to a semi-natural reference system. Journal of environmental management, 303, p.114191.

[50] Kreitzman, M., Toensmeier, E., Chan, K., Smukler, S. and Ramankutty, N., 2020. Perennial staple crops: yields, distribution, and nutrition in the global food system. Frontiers in Sustainable Food Systems, p.216.

[51] Shang, Y., Olesen, J. E., Lærke, P. E., Manevski, K., & Chen, J. (2024). Perennial cropping systems increased topsoil carbon and nitrogen stocks over annual systems—A nine-year field study. Agriculture, Ecosystems & Environment, 365, 108925. https://doi.org/10.1016/j.agee.2024.108925

conventional crops such as maise or wheat can increase soil stability, which decreases nutrient loss through erosion and leaching.

Jensen et al. (2020)[52] analysed the intercropping of legumes and cereals, finding that such systems improved nitrogen-use efficiency, equalling a theoretical global reduction in fossil-based nitrogen fertiliser use of 26%. The study highlights several other advantages of intercropping, including increased yield stability and productivity per unit area, reduced pest pressure, decreased agrochemical usage, and enhanced soil biodiversity.

5.4.4 Cover crops

Cover crops are plants grown on agricultural land between periods of regular crop production that are primarily to protect and improve soil health, reduce erosion, suppress weeds, enhance nutrient cycling, and manage water quality between periods of regular crop production.

Cover crops can reduce runoff volume, sediment loss, and nitrate leaching.[53] They generally do not compete with the main crop for resources and are effective at suppressing weeds.[54] As mentioned before, crops with fibrous root systems are particularly beneficial in preventing soil erosion, so using these as cover crops would help decrease nutrient runoff.

5.4.5 Agroecological Crop Protection (ACP)

Agroecological Crop Protection (ACP) is the innovative application of Agroecology to crop protection. APM is built on two pillars, biodiversity and soil health, in order to make agroecosystem less susceptible to biotic stresses, for example herbivorous insects and weeds.

The application of ACP has the potential to improve soil health by encouraging ecosystem friendly practices, while reducing chemical control methods. A reduction of pesticides, herbicides and fungicides is correlated with higher soil biodiversity and soil health markers

[52] Jensen, E.S., Carlsson, G. and Hauggaard-Nielsen, H., 2020. Intercropping of grain legumes and cereals improves the use of soil N resources and reduces the requirement for synthetic fertilizer N: A global-scale analysis. Agronomy for Sustainable Development, 40(1), pp.1-9.

[53] Blanco-Canqui, H., 2018. Cover crops and water quality. Agronomy Journal, 110(5), pp.1633-1647.

[54] Sharma, P., Singh, A., Kahlon, C.S., Brar, A.S., Grover, K.K., Dia, M. and Steiner, R.L., 2018.The role of cover crops towards sustainable soil health and agriculture—A review paper. American Journal of Plant Sciences, 9(9), pp.1935-1951.

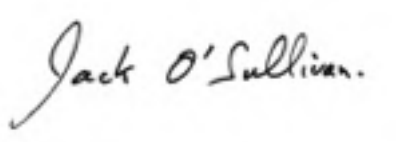
6. FINAL COMMENTS

Incorporating the suggested changes we have made in our submission, including the more targeted additional measures described, to Ireland's Nitrates Action Programme will not only enhance environmental protection, will help to protect biodiversity and safeguard human health but will also promote sustainable agricultural practices and contribute to the EU's overarching goals of resource efficiency and circularity.

Therefore, the relevant Departments must prioritize the revision of the Nitrates Action Programme to address the interconnected challenges of artificial fertiliser run-off, eutrophication of surface waters and groundwater, ammonia emissions, food security, restrictions on certain land uses (e.g., slurry spreading) near water bodies, and prevention of pollution by pharmaceutical substances and their residues.

It is our submission that these proposed or similar changes should be made in a significantly revised or new Nitrates Action Programme, so that a socially and environmentally sustainable and resilient agricultural sector can be ensured for future generations.

Jack O'Sullivan



Zero Waste Alliance Ireland 04 December 2024

This submission was researched and written by Sara Borkent (ZWAI Board member) and Jack O'Sullivan (ZWAI Vice-chair); with research and additional material by Dalia Smelstoriūtė and Beatrix Urban (EMS); and was edited by Jack O'Sullivan.

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Appendix I

Proposed Additional Measures for the Fifth Nitrates Action Programme

Public Consultation

2024

Prepared by the Department of
Housing, Local Government and Heritage
gov.ie

1 Introduction

The purpose of this document is to outline the proposed additional measures for inclusion under the Fifth Nitrates Action Programme (NAP) developed following an interim review of the programme. A public consultation on the proposed additional measures, the draft Natura Impact Statement and the draft Strategic Environmental Assessment for the additional measures will run for 30-calendar days until the 4 December. Therefore, this document does not refer to ongoing measures already implemented under the Fifth NAP or measures being implemented through other schemes and projects that support the NAP in terms of mitigating against water quality impact from agriculture.

1.1 Background

Ireland's NAP gives effect to the requirements of the Nitrates Directive (Council Directive 91/676/EEC) and its purpose is to prevent pollution of surface waters and groundwater from agricultural sources and to protect and improve water quality. The Minister for Housing, Local Government and Heritage is responsible for publishing the NAP, in consultation with the Minister for Agriculture, Food and the Marine. The first NAP was published as the European Union (Good Agricultural Practice for the Protection of Waters) Regulations ('The GAP Regulations') in 2006 with subsequent NAPs published in 2010, 2013, 2017 and 2022. Ireland's current Fifth NAP and implementing GAP Regulations (S.I. 113 of 2022, as amended) are in place until the end of 2025. For the first time, a formal interim review of the NAP was committed to in the programme and was undertaken in 2023. Stakeholder engagement on the proposed measures continued into 2024.

In developing the NAP, the Ministers sought scientific advice from the Nitrates Expert Group (NEG). Department of Housing, Local Government and Heritage (DHLGH) and the Department of Agriculture, Food and the Marine (DAFM) co-chair the group, and comprises senior scientific experts from DHLGH, DAFM, the Environmental Protection Agency (EPA) and Teagasc.

These measures were developed in the context that the interim review identified that water quality improvements are not yet evident. This was based on EPA reports highlighting that nitrogen concentrations in some waters are too high especially in the south and south east and are not improving over the long term[1][2][3][4]. Therefore, there is a need for strengthened measures. Furthermore, the Water Action Plan[5], which provides the framework for the achievement of Water Framework Directive (WFD) objectives, highlights that agriculture is the most significant pressure on water quality, impacting over 1000 water bodies. In light of the nitrogen concentrations in the east, midlands, south and southeast of the country, and associated significant declines in Irish estuaries in particular, this document outlines a suite of additional measures for inclusion in the Fifth NAP to mitigate against agricultural nutrient impact on water quality and facilitate the achievement of WFD objectives.

In addition, as part of the Fifth NAP, Ireland applied to the European Commission for a derogation from the maximum allowable stocking rate limit of 170 kg N/ha up to a maximum of 250 kg N/ha, subject to compliance with stricter environmental measures. The Commission granted the derogation, as set out in its implementing decision [Commission Implementing Decision C (2022) 2596]. Article 12 of the decision stipulates that a two-year review of water quality must be carried out. In areas where water quality was deemed to be unsatisfactory according to water quality criteria set out by the Commission, there is (1) a requirement to reduce the maximum organic loading rate from 250 Kg N/ha to 220 Kg N/ha and (2) a requirement for additional measures to be applied under the NAP. The EPA completed the prescribed water quality review with the outcome that for the majority of the country derogation farmers had to limit their maximum organic loading to 220 Kg N/ha from 1 January 2024. This water quality review was submitted by DAFM to

[1] EPA Water Quality in 2022_An Indicators Report

[2] EPA Water Quality in 2023_An Indicators Report

[3] EPA Water Quality Report 2016_2021

[4] https://www.epa.ie/our-services/monitoring--assessment/assessment/state-of-environment-report-/

[5] https://www.gov.ie/en/policy-information/8da54-river-basin-management-plan-2022-2027/

the Commission on the 30 June 2023 as Annex 1 of the Annual EPA Water Quality Monitoring Report on Nitrogen and Phosphorus[6].

The development of the additional measures to comply with the Derogation Decision and the Fifth NAP Interim Review and associated development of additional measures for the full programme were undertaken together given that water quality improvement where agriculture is a significant pressure involves an all-of-sector approach. While some proposed additional measures are targeted specifically at derogation farms, the majority of the proposed additional measures will apply more broadly.

[6] Annual EPA Report in Nitrogen and Phosphorous Concentrations 2022

3 What Happens Next

3.1 Have Your Say

To get involved in the consultation, please email your submissions, comments and observations on the proposed additional measures as outlined in this document to wau@housing.gov.ie with the subject **Nitrates Consultation.**

Postal responses can be sent to:

Nitrates Consultation
Water Advisory Unit
Department of Housing
Local Government and Heritage
Custom House
Dublin 1

The closing date for receipt of submission is 5pm, 4 December 2024.

3.2 What We Will Do With Your Response

Responses will inform finalisation of the additional measures for the Fifth NAP. Please note, while we will not publish names of those that have responded, submissions received may be made available on the Department's website.

In any event, all submissions received will be subject to the provisions of the Freedom of Information Act and Data Protection legislation. A copy of the Department's Privacy Statement is available at https://www.gov.ie/en/organisation-information/648102- data-protection/

3.3 Freedom of Information

All submissions and comments submitted to the Department for this purpose are subject to release under the Freedom of Information (FOI) Act 2014 and the European Communities (Access to Information on the Environment) Regulations 2007- 2014. Submissions are also subject to Data Protection legislation. Personal,

Appendix II

Gmail

Jack O'Sullivan <jackosullivan2006@gmail.com>

RE: Nitrates Consultation -- Request for acknowledgement of the Submission by Zero Waste Alliance Ireland to the Department of Housing, Local Government and Heritage

Housing Water Advisory Unit <wau@housing.gov.ie> 11 December 2024 at 11:37
To: Jack O'Sullivan <jackosullivan2006@gmail.com>, Housing Water Advisory Unit <wau@housing.gov.ie>

Dear Jack

We acknowledge receipt of your submission

Kind regards

Marie

Marie Archbold
Senior Adviser - Water Advisory Unit

An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta

Department of Housing, Local Government and Heritage

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From: Jack O'Sullivan <jackosullivan2006@gmail.com>
Sent: Monday 9 December 2024 15:37
To: Housing Water Advisory Unit <wau@housing.gov.ie>
Subject: Nitrates Consultation -- Request for acknowledgement of the Submission by Zero Waste Alliance Ireland to the Department of Housing, Local Government and Heritage