



Rialtas na hÉireann  
Government of Ireland

# Ireland's Draft Nitrates Action Programme

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# 1. Introduction

## 1.1 Importance of Water

Abundant, clean and healthy water is a fundamental cornerstone of any thriving society and is necessary for a vibrant economy and enjoyable living environment. A strong and healthy water ecosystem offers vital goods and services, such as the provision of drinking water and also protection against flooding and the impacts of climate change. However, water is a fragile resource that needs to be protected.

It is recognised across the European Union that climate change and environmental degradation need to be tackled urgently at local, national and international scale. In Ireland, as elsewhere, environmental indicators for water, biodiversity and climate are deteriorating despite policies, investments and actions intended to prevent and reverse deterioration. A new strategy is needed to deliver true sustainability. The European Green Deal is a comprehensive response to the challenge. It is proposed to make the EU's economy sustainable by turning climate and environmental challenges into opportunities, and making the transition just and inclusive for all citizens. The plan aims to;

- boost the efficient use of resources by moving to a clean, circular economy
- restore biodiversity and cut pollution.

The 2020 Programme for Government<sup>1</sup> contains a significantly more ambitious programme for the environment. Under the European Green Deal a comprehensive range of actions are outlined including for; water, natural heritage and biodiversity, climate and environmental emissions. The need for an integrated approach to these issues is recognised, including the potential to deliver integrated measures, which benefit all environmental objectives.

### Ireland's Nitrates Action Programme

This is the first review of the Nitrates Action Programme whereby not all measures introduced during the review will be incorporated into a new set of Good Agricultural Practice Regulations. During the discussions with stakeholders, and the deliberations of the Nitrates Expert Group, it has become clear that a wider, more holistic approach to controlling nutrient and sediment losses from agriculture is needed at this stage. The measures set out in this programme are intended to address all of the significant issues that arose during the first and second stage consultation, and in discussions with stakeholders and the EU Commission. The

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<sup>1</sup> <https://www.gov.ie/en/publication/7e05d-programme-for-government-our-shared-future/>

measures are also intended to help Ireland to meet its climate, biodiversity and water quality targets set at both national and EU level.

In setting out the measures in this programme, the broad principles were elucidated, and were refined following an assessment of the second stage consultation responses. Interested parties brought forward high level supporting information and opinions that informed the Nitrates Expert Group to design robust, realistic and achievable measures that will deliver real results that can be measured and accounted for.

## 1.2 The Agri-Food Sector

The agri-food sector is Ireland's largest indigenous sector. In 2020, the sector accounted for over 6% Gross National Income (GNI) and 9% of exports in value terms. The sector account for 38% of total indigenous exports and over 60% of indigenous manufactured exports. The sector employed 163,600 people or 7.1% of total employment in 2020; outside of Dublin and the mid-east region, the sector provides between 10% and 14% of employment. Some 137,500 farms producing over €8.2 billion in output, over 770,000 hectares of forest, and over 2,000 fishing vessels and aquaculture sites producing fish with a value of €700 million, underpin the sector. In Ireland, agri-food is an integral part of the economy and society, and especially so for our rural and coastal communities.

Food Vision 2030 is the new stakeholder strategy for the Irish agri-food sector ([gov.ie](http://gov.ie) - [Food Vision 2030 – A World Leader in Sustainable Food Systems \(www.gov.ie\)](http://www.gov.ie)). Food Vision is a landmark for the Irish agri-food sector and has the potential to transform our agriculture, food, forestry and marine sectors in the period to 2030. Food Vision is honest and upfront about the challenges ahead. Crucially, it proposes solutions and charts a pathway to sustainability in all its dimensions – environmental, economic and social, using the food system approach, a more holistic view of agri-food and its inter-connectiveness.

The Strategy sets out four high-level missions to achieve its vision:

1. A Climate Smart, Environmentally Sustainable Agri-Food Sector,
2. Viable and Resilient Primary Producers with Enhanced Wellbeing Food that is Safe, Nutritious and Appealing,
3. Trusted and Valued at Home and Abroad,
4. An Innovative, Competitive and Resilient Sector, driven by Technology and Talent.

There are seven Goals in the environmental mission that aim to deliver a climate-neutral food system by 2050, with verifiable progress achieved by 2030, encompassing emissions reductions, carbon sequestration, improvements in air quality, restoration and enhancement of biodiversity, improvements in water quality, development of diverse forests, enhanced seafood sustainability, exploring the bioeconomy and strengthening Origin Green. An implementation process for Food Vision has begun.

Notwithstanding the economic success of the previous strategies to date, the sector faces a number of environmental and climate challenges as well as our water quality standards and climate change commitments. As the industry embraces new ambitions of growth, it will also be required to show an absolute commitment to the principles of sustainability, recognising that gains in productivity must not be at the expense of the environment. The success or otherwise of measures to mitigate and adapt to these challenges will inform the reforms to the Common Agricultural Policy (CAP), the cornerstone of agricultural support in Ireland and the EU.

## 2. Policy Context

### 2.1 Introduction

Agricultural activity both relies on and influences the quality of our water, soils, biodiversity and air at a local, regional and national scale. EU and national policy and regulation guide agricultural activity to a great extent, with the Common Agricultural Policy (CAP) taking the overarching role. This section provides an overview of the EU and national regulatory and legal obligations, the science guiding policy and the challenges faced by the agriculture sector.

It is clear that there needs to be greater alignment between different environmental protection policies at a national and European level. In particular the EU Farm to Fork and Biodiversity strategies for 2030 have set ambitious targets for the agricultural sector.

In Ireland, the links between water quality plans and programmes, biodiversity strategies and climate adaptation plans needs to be developed to ensure we are achieving multiple benefits for as many implementation measures as possible. There are natural links between the measures required to protect each of these areas and it is the role of policy-makers and stakeholders to ensure these links are strengthened as much as possible.

### 2.2 Water Framework Directive

The Water Framework Directive (WFD) establishes a framework for the protection of all waters including rivers, lakes, estuaries, coastal waters and groundwater, and their dependent wildlife/habitats under one piece of environmental legislation. It was given legal effect in Ireland by the European Communities (Water Policy) Regulations 2003<sup>2</sup> (S.I. No. 722 of 2003). The WFD is linked to a number of other EU directives in several ways. These include Directives relating to the protection of biodiversity (Birds and Habitats Directives), Directives related to specific uses of waters (drinking water, bathing waters and urban waste water directives) and to Directives concerned with the regulation of activities undertaken in the environment (Industrial Emissions and Environmental Impact Assessment directives). Soil health is largely addressed indirectly through the implementation of the WFD.

Ireland is required to produce a river basin management plan under the WFD and the Minister for Housing, Local Government and Heritage published the second cycle River Basin Management Plan for Ireland in 2018. The plan sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in our water bodies. Water quality in Ireland has deteriorated over the past two decades.

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<sup>2</sup> <http://www.irishstatutebook.ie/eli/2003/si/722/made/en/print>

The RBMP provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The draft third cycle RBMP was published on 27<sup>th</sup> September 2021, commencing a period of six months public consultation before publication of the final plan in 2022. The draft plan will set out the proposed measures for addressing pressures on our water bodies from different activities and sectors, including agriculture. The NAP is one of the key measures for mitigating agricultural pressures and the two programmes are being developed by the Department of Housing, Local Government and Heritage (DHLGH) in close co-operation and with shared levels of ambition.

## **2.3 Nitrates Directive and Nitrates Action Programme**

Ireland's first Nitrates Action Programme (NAP) came into operation in 2006. Giving effect to the Nitrates Directive and supported by successive national regulations, the NAP was designed to prevent pollution of waters from agricultural sources and to protect and improve water quality.

In accordance with the Nitrates Directive and Article 28 of the Good Agricultural Practice Regulations, the Minister for Housing, Local Government and Heritage, in consultation with the Minister for Agriculture, Food and the Marine reviewed the NAP in 2010, 2013 and 2017. The current NAP is given effect by the Good Agricultural Practice Regulations (also known as the 'GAP Regulations' and the 'Nitrates Regulations') – S.I. 605/2017<sup>3</sup> with amendments SI 40 2020<sup>4</sup>, SI 225 2020<sup>5</sup> and SI 529 2020<sup>6</sup> derived from a review of the derogation in 2019. The current NAP expires on 31<sup>st</sup> December 2021.

### **2.3.1 Key Elements of Ireland's Current Nitrates Action Programme (NAP)**

Ireland has applied its NAP on a country-wide basis including both Nitrogen and Phosphorus control measures within its regulations. Ireland are only one of a few member states including both Nitrogen and Phosphorus, ensuring broad nutrient control delivery and 100% territorial coverage.

The scope of the NAP to date has been comprehensive, both in terms of addressing the major sources of agricultural nutrients and in covering a national farming population of over 139,600 farm holdings.

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<sup>3</sup> <http://www.irishstatutebook.ie/eli/2017/si/605/made/en/print>

<sup>4</sup> <http://www.irishstatutebook.ie/eli/2020/si/40/made/en/print>

<sup>5</sup> <http://www.irishstatutebook.ie/eli/2020/si/225/made/en/print>

<sup>6</sup> <http://www.irishstatutebook.ie/eli/2020/si/529/made/en/print>

The principal elements of the NAP include:

- limits on farm stocking rates,
- legal maxima for nitrogen and phosphorus application rates,
- prohibited spreading periods preventing the application of organic and chemical fertilisers during more environmentally vulnerable times of the year,
- minimum storage requirements for livestock manures,
- requirements regarding maintenance of green cover in tillage lands, and
- set-back distances from waters

In common with other EU member states in which agricultural activity is practised, Ireland has availed of a derogation from the 170kg N/ha livestock manure nitrogen limit as provided for in the Nitrates Directive. The derogation was originally granted by the Commission in 2007 and renewed in 2010, 2014 and 2017.

Ireland's next Nitrates Action Programme is being developed in the context of significant greater environmental ambition in the Programme for Government and at EU level.

### **2.3.2 Science Guiding Policy - Agricultural Catchments Programme**

The primary function of Agricultural Catchments Programme (ACP) is the evaluation of the effectiveness of the package of measures contained in Ireland's NAP. The programme is operated by Teagasc and funded by DAFM.

The ACP works in partnership with over 300 farmers in six intensively farmed catchments and this farmer engagement, which is built on the relationships of the advisers with their farmer clients, facilitates the research elements of the programme. The research work is carried out according to a single experimental design which is implemented rigorously in each catchment. A range of biophysical and socio-economic parameters are used to evaluate the impact of the NAP measures and the derogation implemented by farmers under the Nitrates Directive. The outcomes of this research provide a valuable insight into the processes that determine the impact of agricultural activity on water quality in the catchments.

Overall, evidence from the ACP indicates that supporting farmers to make better decisions regarding how they manage nutrient applications is likely to be the single area with the greatest potential to improve outcomes for water quality on Irish farms - delivering better profits for the farmer while reducing risk of nutrient loss to water.

The fourth phase of the ACP commenced in 2020 and has received an increased budget of 65%. This will facilitate the recruitment of new researchers, technicians and technologists to conduct new experiments and support the on-going and extended data collection and research.



## **Key messages from the ACP**

- Ireland's landscape is heterogeneous in terms of factors controlling N and P transfer pathways, transformation processes and timing of delivery.
- The influence of soil type, subsoil and geology on nutrient loss to water can override source pressures at the farm scale. At catchment scale (ca. 10 km<sup>2</sup>) the link between nutrient source pressures and nutrients monitored in the stream water was most obvious when the critical source areas were identified.
- Weather drivers play a more important role in temporal nutrient transport than farm practice changes.
- The influences of weather shifts were different for different physical settings. Both long-term weather shifts and short-term offsets need consideration.

## **Science Guiding the Importance of the Closed Period**

The “closed period” when application of fertiliser is prohibited and “storage periods” for livestock manure under the GAP regulations are necessary to minimise loss of nitrogen and phosphorous to waters. Nitrogen and phosphorus are both major elements essential for plant growth. If not adsorbed by soil or taken up by growing plants they are available for loss to water. The main route taken by unused (surplus) nitrogen lost to water contrasts with that of phosphorous.

Nitrate does not bind to clay particles and is easily dissolved in water percolating through the soil. Growing plants will capture this nitrogen dissolved in soil solution. However, during autumn, winter and early spring, plant growth rates fall in line with soil temperatures and day light. Less growth results in less nitrogen uptake. At the same time of the year, soils are more likely to be saturated as rainfall amounts exceed evapotranspiration rates. While rainfall amounts can vary from season to season, evapotranspiration always fall to negligible amounts during the winter. The moisture in saturated soils transports dissolved nitrogen to ground water, which will eventually reach streams and rivers by springs. Nitrogen from organic manures is vulnerable to loss during the closed period as (i) there is little crop growth to take Nitrogen from soil solution and (ii) moisture in saturated soils will readily carry dissolved nitrogen away (below) the root zone.

Phosphorous is usually lost via surface runoff when soils are saturated and rainfall amounts exceed the ability of soils to soak up the amount of water falling. Soil can “bind” and hold onto phosphorus but does not get the opportunity to do so when it is carried in rain runoff, across the surface pathway to a watercourse.

Research from the Agricultural Catchments Programme (Shore et al 2016) has shown that this is more likely to occur during the closed period. Low evapotranspiration rates (discussed above) result in a greater likelihood of saturated soils and a disproportionate amount of nutrients are lost to water.

43% of total Phosphorous and 45% of nitrogen gets into catchment streams during the closed period.

Weather conditions in Ireland are unpredictable and can worsen after the closed period finishes. Organic manure storage periods are longer than closed periods in order to reduce the likelihood of running out of storage should this happen. Nitrogen use efficiency on grass based systems are low (typically around 25%). Efficient use of organic fertilisers, getting the maximum response from the N that they contain is a major way to improve this, and minimise costs incurred in chemical N purchases. Spreading organic manures at the right time in the right place is key to achieving this.

## **2.4 Climate Challenge**

### **2.4.1 Background**

The Ag-Climatise roadmap was published in December 2020 by the Department of Agriculture, Food and the Marine. The document sets out a series of 29 actions to deliver a 10-15% reduction in GHG emissions by 2030. The Climate Action Plan 2021 was recently published, and climate ambition has been significantly stepped up under this plan. The sector will need to deliver an indicative 22-30% reduction in GHG emissions by 2030. The Ag Climatise roadmap will be updated to reflect this new target and increased ambition. The final target for the sector won't be known until the sectoral emissions ceiling is set for the sector in 2022.

### **2.4.2 Climate Neutral Agriculture by 2050**

Ag-Climatise sets out an objective for a climate neutral food system compatible with the Paris temperature goals, whereby the climate impact of biogenic methane from the livestock herd is neutralised and remaining agricultural emissions are balanced by removals through land use and a significant contribution to renewable energy.

The roadmap focuses both on the immediate actions that the sector must take, alongside the more medium to long-term actions. This roadmap will underpin the environmental chapter of the new 2030 agri-food strategy.

The approach to ensuring the sector achieves its climate ambitions is three pronged and includes

- reducing emissions,
- enhancing the development of sustainable land management, and
- contributing to sustainable energy.

Significant progress will be needed in all three areas if the sector is to achieve its overall objective of becoming climate neutral. The main focus of the roadmap will be

on nitrogen management and reducing fertiliser nitrogen use to a maximum of 325,000 tonnes by 2030. There will also be significant focus on switching from Calcium Ammonium Nitrate (CAN) to urease treated chemical nitrogen products.

### 2.4.3 Climate Action Measures

The Climate Adaptation Plan<sup>7</sup> for agriculture sets out high-level objectives for achieving Ireland's significant climate-related targets. These have not been translated into measures on the ground and the review of the NAP is an opportune time to look at implementing measures that can have multiple benefits for water quality and climate mitigation (as well as biodiversity).

A significant amount of research has been undertaken by Teagasc and others, looking at mitigation measures for agriculture to reduce GHG emissions and promote more sustainable farming practices.

## 2.5 Greenhouse Gases

Ireland's national policy position is to transition to a low-carbon, climate resilient economy and society with 80% decarbonisation by 2050 including an approach to carbon neutrality in the agriculture and land use sector which does not compromise sustainable food production. Ireland's commitments under the EU Effort Sharing<sup>8</sup> decision and the Climate and Energy Framework<sup>9</sup> to 2030 can be summarised as follows:

Key indicator	2020	2030
Reduction in non-emissions trading - GHG emissions	20%	30%
Increase in energy efficiency	20%	32.5%
Increase in renewable energy (across electricity, heat and transport)	16%	>16% - 32%

<sup>7</sup><https://www.gov.ie/en/publication/a8e47-climate-change-bioenergy-biodiversity/#agriculture-forest-and-seafood-climate-change-sectoral-adaptation-plan>

<sup>8</sup> [https://ec.europa.eu/clima/policies/effort\\_en](https://ec.europa.eu/clima/policies/effort_en)

<sup>9</sup> [https://ec.europa.eu/clima/policies/strategies/2030\\_en](https://ec.europa.eu/clima/policies/strategies/2030_en)

It should be noted that the targets in the table above will likely change under the EU Fit for 55 proposals.

## 2.6 Ammonia and Other Emissions to Air

There are a number of EU Directives on air quality in place that set standards for a wide variety of pollutants. Additionally, Ireland is a Party to the Convention on Long Range Transboundary Air Pollution (CLRTAP) under which certain transboundary air pollutants including ammonia are controlled. As a member of the EU, implementation of the Gothenburg protocol (a daughter protocol of the CLRTAP) is achieved through limits set out in the National Emissions Ceilings Directive 2016/2284/EU.

A key component of the NECD is more ambitious and protective national emission ceilings for key pollutants such as ammonia. The NECD sets new national targets for 2020 and 2030 for five air pollutants – particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>) and volatile organic compounds (VOCs). The aim of the NECD is to cut the negative impacts of air pollution on human health by almost half by 2030. Reducing levels of illness, including respiratory and cardiovascular diseases and premature death is the main priority.

Ammonia in our air causes two main issues; potential damage to human health causing respiratory issues and habitat degeneration through deposition on soil and vegetation. Agricultural activities account for over 99% of the national NH<sub>3</sub> emissions.

In 2020 the Environmental Protection Agency (EPA) reported our NH<sub>3</sub> emissions for 2018 were 119.4 kt against a ceiling of 116.0 kt- therefore exceeding our ceiling. Based on the EPA's 2020 reported emissions for 2018 a reduction of approx. 12kt to a new legislative ceiling of 107.5Kt would be required by 2030. However, the EPA have now completed their 2021 report on air pollutant emissions for Ireland. The report "**Ireland's CLRTAP/NECD Submissions 2021**" details a significant recalculation of ammonia emission factors in the agricultural sector. For example, as result of these recalculations, emissions from agriculture for 2018 have increased from a total of 118.31 kt in the 2020 report to 134.33 kt in the 2021 report. This represents a 13.53% increase in the total agricultural emissions for 2018, which was a peak year for emissions. In this latest report, total agriculture NH<sub>3</sub> emissions were reported to be 124.6 kt in 2019, This was a 7.24% decrease or a reduction of 9.73 kt when compared to 2018 which was helped by increased uptake of measures such as low emission slurry spreading (LESS) and use of protected urea fertilisers.

Ireland has commitments under the NECD to meet a 1% reduction on 2005 levels by 2020 and a 5% reduction by 2030. A comprehensive analysis of the risks associated with exceeding the ceilings as set out in the NECD has not yet been undertaken.

## Ammonia Projections

Ammonia emissions have been steadily increasing in Ireland since 2011 (EPA, 2021) as a result of increasing agricultural activity, with the first exceedance of the emission ceiling reported in 2016, and subsequently in 2017, 2018 and 2019. Moreover, emissions are projected to continue to breach the ceiling for the new commitment periods (EPA, 2021), therefore the implementation of abatement strategies are urgently required.

In 2019, DAFM published a code of good practice for reducing ammonia emissions on farms, with a view to increasing the awareness of the options open to farmers. In October 2020 Teagasc published an Ammonia Marginal Abatement Cost Curve which sets out 13 measures for potential implementation at farm level to address compliance of agriculture with the NECD ceilings. While each of the measures deliver a contribution to the reduction of NH<sub>3</sub> emissions from Irish agriculture, increasing the proportion of slurry applied using low emission spreading systems (LESS) can reduce ammonia emissions by up to 60% over current application methods (splash plate). The use of LESS for applying 90% of all slurry from Irish bovines can deliver a potential abatement in 2030 of 11.69 Kt of NH<sub>3</sub> emissions. The uptake of these technologies is currently being supported through DAFM's Targeted Agricultural Modernisation Schemes (TAMS) and Green, Low-Carbon, Agri-Environment Scheme (GLAS).

## 2.7 Biodiversity

Globally biodiversity has been in decline and this is true of Ireland also. Agricultural land management has impacted on much of Ireland's biodiversity and continues to influence it. Biodiversity loss has not been halted in Ireland and agriculture remains a threat to protected habitats and species both directly and indirectly.

The National Parks and Wildlife Service (NPWS) monitor and report on the status of Natura<sup>10</sup> sites in Ireland, forming an integral network across the country. Habitats and species dependent on, for example, high water quality can potentially be negatively impacted by agricultural activity. While these Natura sites are predominantly in the extensively farmed areas of the country it is important that all agricultural areas of the country are implementing appropriate measures to maintain and enhance national biodiversity.

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<sup>10</sup>Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right.

### 2.7.1. Biodiversity Measures

A cornerstone of the National Biodiversity Action Plan 2017-2021 is to bring biodiversity into mainstream policy-making decisions and ensure that our biodiversity targets are met and that we can introduce biodiversity targets for individual sectors.

Agriculture, being the dominant land use, has the greatest potential to impact, both positively and negatively, on biodiversity in Ireland. While primarily a water protection tool, the Nitrates Action Programme has introduced measures that provide positive benefits for water quality and biodiversity and these measures to enhance biodiversity have been introduced for farmers operating with a Nitrates Derogation from 1<sup>st</sup> January 2020. This includes the adoption of at least one measure from the All Ireland Pollinator Plan<sup>11</sup> in order to enhance biodiversity on farms which are either/or;

- Leave at least one mature Whitethorn/Blackthorn tree within each hedgerow.
- Maintain hedgerows on a minimum 3-year cycle. Cutting annually stops the hedgerow flowering and fruiting.

## 2.8 Drinking Water Protection

Protecting drinking water sources from diffuse microbial contamination from animal excreta continues to be an area of concern for public health. Generally, poor farm management practices or inappropriate land spreading near source abstraction points are the cause of such contamination. The threat and impact are often caused or exacerbated by extreme weather events. The EPA identified 18 drinking water sources that are at risk from elevated nitrate concentrations because of land use practices within the catchments.

## 2.9 Common Agricultural Policy (CAP) and the Rural Development Programme (RDP)

In each iteration the CAP is increasingly concerning itself with sustainability from an environmental perspective. The greening of the basic payment along with the cross compliance requirements for direct payments when land is maintained in Good Agricultural and Environmental Condition set an environmental baseline.

The RDP consists of a suite of measures designed to enhance the competitiveness of the agri-food sector, achieve more sustainable management of natural resources and ensure more balanced development of rural areas, with an enhanced focus on

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<sup>11</sup> <https://pollinators.ie/>

delivering positive environmental outcomes including for water and climate change. The GLAS programmes under the RDP were designed to implement meaningful actions at a regional and local level, especially in areas with high water quality. Knowledge transfer also has a key role here to allow for research findings to be disseminated and applied on the ground. Targeted measures introduced under the current Rural Development Programme (RDP) also contribute to meeting our ambitions for climate change measures, water protection, biodiversity and soil. Examples are low emission slurry spreading, efficient livestock breeding, and the upgrade of farm facilities. The impact of these policy measures are under review and will inform the next CAP Strategic Plan.

## 3. Summary of Water Quality

### 3.1 Background

The EPA is responsible for carrying out the national water quality monitoring programme<sup>12</sup>. The EPA produces annual reports on water quality outlining the condition and trends of Ireland's waters, and the pressures causing the impacts. This chapter provides a summary of the most up to date information.

Further detail is provided in the following EPA reports:

- Water Quality in Ireland Report 2013-2018<sup>13</sup>
- Water Quality in Ireland; An Indicators Report<sup>14</sup>
- Ireland's Environment; An Integrated Assessment<sup>15</sup>

#### 3.1.1 Impacts of Agriculture on Water Quality

Just over half of Ireland's monitored surface water bodies have satisfactory water quality. Agriculture is the most widespread and significant pressure impacting on the water environment. The key issues arising from agriculture are:

- excess nitrogen and phosphorus causing eutrophication;
- pesticides which impact on ecological health and on drinking water quality;
- excess fine sediment arising largely from erosion and runoff; and
- land drainage practices and other factors which impact physical habitat condition.

The most widespread issue is elevated nutrient concentrations which are present in a significant proportion of our water bodies, and the current trends are showing a continuous and sustained decline in water quality.

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<sup>12</sup>EU Member States are also required to monitor the effectiveness of their Nitrates Regulations, under Article 5 (6) of the EU Nitrates Directive. The Agricultural Catchments Programme (ACP), is tasked with monitoring the effectiveness of Ireland's measures since 2008. The ACP undertakes monitoring in relation to the impacts of derogation farms on water quality.

<sup>13</sup><https://www.catchments.ie/water-quality-in-ireland-2013-2018/>

<sup>14</sup> <https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/water-quality-in-2020.php>

<sup>15</sup> <https://www.epa.ie/publications/monitoring--assessment/assessment/state-of-the-environment/irelands-environment-2020---an-assessment.php>



### 3.1.2 Nitrogen Issues

The most recent Water Quality Indicators Report published in July 2021 noted that nitrate concentrations are too high in many of our waters, particularly in the south and south east of the country, and the trends are going in the wrong direction.

Nearly half of our river sites and one quarter of our groundwater sites have elevated nitrate concentrations. Our estuaries and coastal waters are particularly sensitive to high nitrogen concentrations.

The key nitrogen indicators are as follows:

- Nearly half (47%) of river sites have unsatisfactory nitrate concentrations. Over one third (38%) of sites are showing an increasing nitrate trend for the period 2013-2020 while only 3% have a decreasing trend.
- Over a fifth (22%) of estuarine and coastal water bodies have unsatisfactory dissolved inorganic nitrogen (DIN) concentrations. The highest DIN concentrations are in the south and south east of the country.
- Loads of total nitrogen to the marine environment from our rivers have increased by 26% (14,574 tonnes) since 2012-2014.
- Almost one quarter (24%) of groundwater monitoring sites have high (>25mg/l N03) nitrate concentrations, and three sites exceed the drinking water standard (50 mg/l N03).
- Almost half (47%) of all groundwater sites had increasing nitrate concentrations for the period 2013-2020.
- There is a strong regional pattern in all waters that have excess nitrogen concentrations and increasing trends. The areas of greatest concern are the south and south east of the country.

The main sources of nitrogen from agricultural activities are organic manures and urine from livestock, and chemical fertiliser. The predominance of free draining soils in the south and southeast make these areas particularly susceptible to nitrate leaching. The vast majority of the nitrogen loads in these catchments come from agriculture and there is a strong relationship between farming intensity and nitrate concentrations in waters at the catchment scale. There is however, water quality variability within and between sub-catchments. Detailed research work in the Agricultural Catchments Programme has highlighted that soils, weather and farming practices can have a significant influence on nitrate concentrations, at the local scale. This has important implications for targeting the right measure to improve water quality in the right place.

### 3.1.3 Phosphorus Issues

Excess phosphorus contributes to eutrophication and is a particular concern for the ecological health of rivers and lakes, and some estuaries. The main sources of phosphorus in the Irish environment are agriculture and urban waste water. The majority of urban waste water is discharged in coastal areas, while agriculture is the most significant source inland.

The key phosphorus indicators<sup>16</sup> are as follows:

- Over one quarter (29%) of river monitoring sites have unsatisfactory phosphate concentrations, and one quarter (24%) of river sites are showing an increasing phosphate trend for the period 2013-2020.
- Almost one third (30%) of monitored lakes had unsatisfactory total phosphorus concentrations and 33% had an increasing total phosphorus trend.
- Phosphorus loads to the marine environment have increased by 35% since 2012-2014.

The most susceptible areas for phosphorus losses are poorly draining soils, from which the runoff over land discharges to watercourses. While many of the catchments in the east and northeast have elevated phosphorus concentrations there are typically areas of poorly draining soils in most catchments. Research has shown that most of the phosphorus loss in catchments typically comes from a relatively small area (the critical source areas), within a relatively short time, during significant rainfall events. The best outcomes will be achieved when measures are targeted into the critical source areas.

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<sup>16</sup> [EPA Water Indicators report 2020](#)

## 3.2 The EPA's Assessment of the Catchments That Need Reductions in Nitrogen Concentrations to Achieve Water Quality Objectives

The EPA published a report in June 2021 on the “**Assessment of the catchments that need reductions in nitrogen concentrations to achieve water quality objectives**<sup>17</sup>” The report sets out that nitrogen concentrations have been increasing in coastal waters in the south, southeast and east over the period since 2009 and it estimates that 85% of nitrogen in mainly rural catchments is from agriculture. The report provides estimates of how much of a reduction in the nitrogen load in the rivers in each catchment is needed to support healthy waters, this ranged from 0 in some catchments in a number of years to 8,000 tonnes for the Barrow in 2018. The impacts of climate and weather are acknowledged, the 2018 drought had a significant negative impact on water quality and the impacts of this were still being shown in 2019. In the Barrow and Slaney catchments c 27% of the losses are from arable land but the majority of losses across all catchments are from grassland. The report identifies that there are areas of land in all catchments of free draining soil which are most susceptible to losses and these are termed critical source areas and should be targeted for interventions to reduce losses. On average these make up 40% of the catchments or 690,000 ha.

### 3.2.1 Modelling the Impact of Environmental Measures

The Department of Agriculture, Food and the Marine (DAFM) requested Teagasc to model the impact (environmental and economic) of a number of farm nitrogen mitigation measures in order to inform policy of the best current and potential actions to deliver the catchment-based nitrate load reduction estimated by the EPA. The report on the analysis, entitled ‘**The Impact of Nitrogen Management Strategies within Grass Based Dairy Systems**<sup>18</sup>’ was published on the 21<sup>st</sup> July 2021. The analysis has linked directly to the EPA report mentioned at section 3.2 above and has informed environmental measures in the next Nitrates Action Programme (NAP).

The assessment was confined to nitrate losses from freely draining soils where farming intensity is greater than 130 kg N/ha/year. The following scenarios were requested to be investigated:

- Chemical N reduction of approximately 10% and 20% i.e. chemical N application rates of 250, 225 and 200 kg/ha.

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<sup>17</sup> <https://www.catchments.ie/assessment-of-the-catchments-that-need-reductions-in-nitrogen-concentrations-to-achieve-water-quality-objectives/>

<sup>18</sup> <https://www.teagasc.ie/publications/2021/the-impact-of-nitrogen-management-strategies-within-grass-based-dairy-systems.php>

- Delaying the first chemical N application in spring from 15 January.
- Finish final chemical N application in autumn earlier than 15 September.
- Uneven distribution of chemical N fertilizer across the farm i.e. applying 300 and 350 kg N/ha on the grazing platform.
- Stocking rate reduction- 250 kg N/ha (2.74 cows/ha) versus 230 kg N/ha (2.52 cows/ha).
- High platform stocking rates- 340 kg N/ha (3.73 cows/ha) and 430 kg N/ha (4.72 cows/ha).
- Spreading slurry during the closed period- 12% and 25% of slurry spread during the month of December.
- Implementations of using precision farming to increase N use efficiency.
- Options for banding organic N excretion rates for dairy cows.

## **4. Public Consultation**

### **4.1 Introduction**

In accordance with the Directive, Ireland's Nitrates Action Programme (NAP) must be reviewed by the end of 2021 and a key component of the review was engagement with stakeholders and the general public. For the purposes of the NAP review, two separate consultation stages were held. The purpose of the first stage consultation was as follows:

- To set out the draft timetable and work programme to produce the next Nitrates Action Programme (NAP);
- To set out the potential issues to be considered as part of the review;
- To highlight milestones in the review cycle where further consultation will take place; and
- To invite interested parties to make submissions on the above.

The purpose of the second stage consultation was to:

- Invite comments and input on the proposed measures,
- Affirm the structure and scope of the next Nitrates Action Programme,
- Outline the main themes of the first stage responses,
- Highlight the final steps to completion of the review.

The public consultation stages also aligned with the commitments in the Programme for Government:

- Review the effects of the nitrates derogation on water quality, in conjunction with the EPA, which will inform future policy in this area.
- Work with nitrates derogation farmers to improve environmental outcomes on their farms, ensuring the sustainable use of the derogation, in line with our environmental objectives.

### **4.2 Findings of the Public Consultations**

Over 700 written submissions were received in response to the two open consultations undertaken during the NAP review. These include submissions from local authorities, public bodies, farmers and farming representative bodies, NGO's, agricultural co-operative societies, agricultural advisors, trade and professional

bodies and industry. The Nitrates Expert Group reviewed all of these submissions and it was clear that the need to recognise both scientific and technical guidance is central to informing policy and to ensuring the outcomes from this review are sufficiently robust and practical. In general there was broad support throughout the submissions for existing measures while recognising there has been a number of policy reviews since the commencement of the current NAP in 2018 notably;

- The Interim Review of the Nitrates Derogation in 2019,
- Additional measures introduced for farmers operation above 170kgN/ha and exporting slurry in 2020.

All submissions received were reviewed by The Nitrates Expert Group and formed part of their deliberations on the development of proposed measures for the new NAP. The group is jointly chaired by DHLGH and DAFM and comprised senior scientific experts from DHLGH, DAFM, the Environmental Protection Agency (EPA) and Teagasc.

### Key themes arising from consultation responses

- Need for improved coordination between the Nitrates Directive and other environmental policies and targets, both at national and EU level.
- Funding/Grant aid will be fundamental to expedite some of the measures, especially additional storage.
- Timing of implementation of measures will help to improve overall compliance.
- Improved public engagement /public consultation is welcomed.
- Improved compliance and enforcement is required.
- NAP review needs to be viewed in the context of significant changes across Irish agriculture, including new CAP and new climate targets.
- Targeting of measures and enforcement actions in critical source areas will bring significant benefits for water quality.
- Broad support for the expansion of ASSAP.
- Targeted knowledge transfer and advisory services should be delivered in critical source areas.
- Specific measures re ammonia to be incorporated, eg low crude protein diets and compulsory use of low emission equipment.
- The right measure in the right place, taking account of critical source areas and nutrient pathways in addition to soil type, geology and precipitation mapping.

## **5. NAP Measures**

### **5.3.1 Proposed Non-GAP Regulation Measures**

This section focuses on the measures that will be progressed within the framework of the NAP review but outside of the scope of the new Good Agricultural Practice Regulations. These measures are designed to apply across all agricultural activities, regardless of the nature or scale of that activity. They are based on the principle that some measures are best applied at the local level, while others achieve best results when applied at a national scale.

#### **5.3.1.1 Register of Chemical Fertiliser Sales**

The Department of Agriculture, Food and Marine has commenced the process of developing legislation that will provide for the adoption by the Minister of a register of chemical fertiliser sales across the country and this register will come into place on the 1<sup>st</sup> of January 2023. The purpose of the register is to provide for accurate tracking of fertiliser sales and provide a more realistic picture of where fertiliser is being applied to land. In addition, it will help to establish a better understanding of the value of livestock manure and the need to re-use nutrients as much as possible on farms.

Along with the recently launched online slurry movement register, it will bring a level of regulation to the industry which is needed to ensure chemical fertilisers are used for optimum efficiency. While it is acknowledged that the majority of farmers apply chemical fertilisers in an efficient manner, and in compliance with the requirements of the GAP regulations, the inter-farm movement of fertilisers and stockpiling of fertiliser does not lend itself to an accurate calculation of the chemical fertiliser loadings at farm scale.

Similar to the pesticides register provided for under SI 155 of 2012 and SI 159 of 2012, the proposed new register of chemical fertiliser sales will place the responsibility on wholesalers, merchants and distributors of fertilisers to register chemical fertiliser sales against individual farmer's herd numbers. This data will be reported to the DAFM, where it will feed into the Department's analysis of farming activities generally, and more specifically into assessing compliance with the requirements of the GAP regulations.

### **5.3.1.2 Improving Compliance**

On average, approximately 3,400 Nitrates related inspections are undertaken on farms across Ireland each year by Local Authority and DAFM personnel. The level of compliance with the requirements of the GAP regulations varies from county to county but it is generally considered to be low, relative to compliance with other national legislation. Submissions received during the first and second consultation stage, and discussions with local authority personnel suggests that reform of the overall enforcement of the GAP regulations is required to:

- Further improve compliance levels,
- Ensure local authorities are adequately resourced,
- Prioritise targeting of high-risk areas.

While it is not expected that there will be significant changes to the enforcement powers of authorised personnel within the GAP regulations, the Nitrates Expert Group will set out a series of recommendations for the Minister for Housing, Local Government and Heritage to provide for appropriate reform within the sector. These recommendations will include actions to develop criteria to promote consistency across jurisdictions in targeting critical source areas. The recommendations will also inform the 3<sup>rd</sup> Cycle River Basin Management Plan Programme of Measures.

These recommendations will build on work being undertaken by the EPA, local authorities and other members of the NIECE enforcement network and will incorporate some of the recommended mitigation measures proposed in the SEA environmental report.

### **5.3.1.3 Review of the Agricultural Sustainability Support and Advisory Programme (ASSAP)**

The Agricultural Sustainability Support and Advisory Programme (ASSAP) was introduced during the second cycle River Basin Management Plan (RBMP) to act as a more collaborative approach to achieving positive water quality outcomes for Irish agriculture. Funding from DAFM and DHLGH has enabled Teagasc to provide 20 advisors and funding from the Dairy Processing Co-ops have provided 10 advisors as part of the Dairy Sustainability Initiative (DSI).

In their interim report on the programme<sup>19</sup>, Teagasc identified that strong collaborative relationships have been established between the ASSAP advisors, Teagasc, the dairy processing co-ops and the Local Authorities Water Programme

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<sup>19</sup> <https://www.teagasc.ie/publications/2020/assap-interim-report-1.php>



(LAWPRO). There is a commitment in the current programme for government to expand the ASSAP programme, however in order to expand and improve the programme, some clarity is needed on the future role and scope of ASSAP. As a result, an assessment of the programme is currently being prepared by Teagasc to be carried out by a panel of external experts from outside ASSAP.

The assessment will focus on the rationale, efficiency, effectiveness and sustainability of ASSAP, as well as providing recommendations for the future and its role in achieving water quality objectives set out in the third cycle RBMP. The assessment is due for completion before the end of 2021 and the recommendations will be sent to the Minister for Agriculture, Food and Marine, and the Minister for Housing, Local Government and Heritage and will inform the third cycle RBMP Programme of Measures.

Based on a review of the second stage consultation submissions stakeholders are supportive of ASSAP and welcome the programme being extended while recognising that this would require more support from LAWPRO. Local Authorities would welcome more transparency and closer working relationship with ASSAP and exchange of data. It would also be beneficial in the future to increase communications with farmers in Priority Areas for Action to ensure that all are aware that they are in these areas regardless of when the ASSAP engagement begins in the third cycle and also provided them with water quality data directly related to the water body that their farm is located in.

In advance of the completion of the review, from 2022 onwards, DSI have committed a further 8 advisors to the programme which will continue its work in delivering for the stabilisation and improvement of water quality in primarily nitrogen sensitive areas of the country.

### **5.3.2 Proposed new GAP Regulation Measures**

This section focuses on the measures that will be progressed within both the framework of the NAP review and the updated Good Agricultural Practice Regulations.

#### **5.3.2.1 Slurry Storage and Management**

The management of organic manure, especially slurry, is an important area for the reduction in losses of nutrients to the environment.

Inspection statistics show that one of the primary non-compliances identified through enforcement activity is inadequate slurry storage on farms. For farmers who wish to apply for a derogation, they have to have the legal minimum slurry storage capacity in place in order to be eligible.

To reduce the impact of nutrient losses in the riskiest period, the spreading of slurry must be applied as follows:

- From 1<sup>st</sup> January 2022 all slurry generated on a holding must be applied by 8<sup>th</sup> October of that year.
- From 1<sup>st</sup> January 2023 all slurry generated on a holding must be applied by 1<sup>st</sup> October of that year.

In relation to the commencement of the closed period for slurry application, the Minister for Housing Local Government and Heritage shall, following consultation with the Minister for Agriculture, Food and Marine, establish predefined scientific criteria for the safe application of slurry, up to 15<sup>th</sup> October each year. These criteria will be published by the Minister within six months of the commencement of the new NAP. Where these criteria are strictly met, farmers may be permitted to spread slurry.

A review of future strategies for the covering of external stores will be undertaken as part of the interim review set out in 5.3.2.13.

### **5.3.2.2 Soiled Water Storage and Management**

The control and management of soiled water from farmyards needs greater emphasis across all delivery mechanisms for the Nitrates Action Programme. The addition of soiled water to slurry tanks is causing many of the issues related to storage capacity that are being observed across the country.

To reduce the impact of nutrient losses in the riskiest period, the spreading of soiled water will be prohibited from the following dates;

- From 1<sup>st</sup> January 2022 - between 21<sup>st</sup> December and 31<sup>st</sup> December
- From 1<sup>st</sup> January 2023 it will be prohibited between 10<sup>th</sup> December and 31<sup>st</sup> December, and
- From the 1<sup>st</sup> January 2024 – between 1<sup>st</sup> December and 31<sup>st</sup> December
- 1<sup>st</sup> January 2025 onwards for winter/liquid milk<sup>20</sup> producers between 1<sup>st</sup> December and 31<sup>st</sup> December.

All holdings producing soiled water must have a minimum of 4 weeks' storage in place by 31<sup>st</sup> December 2024 except for winter/liquid milk producers where this storage needs to be in place by 31<sup>st</sup> December 2025.

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<sup>20</sup> As defined by a farmer holding a winter/liquid milk contract

### 5.3.2.3 Livestock Excretion Rates

The excretion rate of all livestock categories (As per Table 6 of the regulations) is being reviewed as part of the NAP following the most recent increase in the annual livestock nitrogen excretion rate for the dairy cow (from 85kg/ha N to 89kg/ha N).

Additionally, the EU Commission have raised issues with Ireland's approach of a single organic output figure and have requested Ireland to evaluate allocating an excretion factor to the dairy cow based on milk yield.

DAFM requested Teagasc to review this request and this analysis was included in the published report '**The Impact of Nitrogen Management Strategies within Grass Based Dairy Systems**<sup>21</sup>'. This analysis reviewed the organic output versus milk yield. In conclusion, as milk yield increases, the organic output of the dairy cow also increases. The findings conclude that banded against annual milk yield, dairy cows would produce an organic output per cow as follows:

<b>Band 1</b>	<4,500kg – 80 kg N/ha
<b>Band 2</b>	4,501 and 6,500kg, - 92 kg N/ha
<b>Band 3</b>	>6,500kg – 106 kg N/ha

These new excretion rates will be introduced into Table 6 of the new Good Agricultural Practice Regulations, commencing on 1<sup>st</sup> January 2023. The calculation of Organic N production on each individual holding using the new excretion rate bands shall be calculated on a rolling 3-year average. The first calculation period for farmers is 2020-2022, inclusive. From the start of 2023, this new methodology shall be employed to calculate annual N production on farms.

The Minister shall consider a review of excretion rate methodologies in line with the interim review in Q3 2023 of the Nitrates Action Programme.

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<sup>21</sup> <https://www.teagasc.ie/publications/2021/the-impact-of-nitrogen-management-strategies-within-grass-based-dairy-systems.php>

#### **5.3.2.4 Chemical Fertiliser Controls**

In 2020, Teagasc updated the Green Book on Major and Micro Nutrient advice (2016 and 2020)<sup>22</sup>. These updated scientific revisions will be included in the next iteration of the technical tables of the regulations where appropriate.

Additionally, the national nitrogen allowances as outlined in Table 12 of the regulations will be reduced by:

- 10% nationally from Jan 2022, and
- By a further 5% from 1st January 2024, pending interim review of the programme, scientific advice and water quality trends.

Also, the period when the application of chemical fertilisers to land is prohibited will be extended by 14 days for Zones A, B and C.

In relation to the opening period for chemical fertiliser application, the Minister for Housing Local Government and Heritage shall, following consultation with the Minister for Agriculture, Food and Marine, establish predefined scientific criteria for the safe application of chemical fertiliser in the 14 days referred to above. These criteria will be published by the Minister within six months of the commencement of the new NAP and shall be applicable from 1<sup>st</sup> January 2023.

#### **5.3.2.5 Sewage/Industrial Sludges**

The use of sewage sludge is managed by Irish Water through its National Wastewater Sludge Management Plan. The application of sewage sludge to agricultural land is controlled by local authorities through the maintenance of sludge registers and inspection/enforcement programmes.

The EPA regulates industries (including dairy processing and animal slaughtering) that generate industrial sludges through IED licences. The application of industrial sludges as an organic fertiliser to agricultural land is controlled under the Good Agricultural Practice regulations.

However currently there is not an integrated approach or data system available that identifies the loads and spreadlands where sludges are applied. A comprehensive understanding of the movement of sludges and the application of sludges to agricultural land is required to ensure the existing controls are fit for purpose.

A review of the management and oversight of sludges being applied to land will be carried out by a working group established under the National Technical

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<sup>22</sup> <https://www.teagasc.ie/news--events/news/2020/revisedteagascgreenbook.php>

Implementation Group (NTIG), which is part of the River Basin Management Planning and Water Framework Directive governance structures. Recommendations arising will be brought back to the WFD governance structures for consideration.

#### **5.3.2.6 P Build-Up**

The P Build-Up facility is considered an important mechanism to balance soil fertility and achieve optimum nutrient efficiency at farm level. In this context, the annual maximum fertilisation rates of phosphorus on grassland adopting increased P build-up application rates has been reviewed. This measure will remain and be available to farmers operating above 130 kg N/ha.

#### **5.3.2.7 Green Cover on Tillage Ground**

To reduce any potential losses of nutrients post-harvest and building on current requirements to naturally regenerate a green cover within 6 weeks post-harvest, shallow cultivation of harvested crops must be undertaken within 7 days of baling of straw. Where straw is chopped shallow cultivation or sowing a crop must take place within 7 days of harvest. In all circumstances, shallow cultivation or sowing of a crop must take place within 14 days of harvesting.

Where land is ploughed between 1<sup>st</sup> July and 30<sup>th</sup> November the necessary measures, shall be taken within 14 days of ploughing to provide for emergence of green cover.

Additional requirements are needed for late harvested crops i.e. Potatoes, Forage Maize and late harvested spring cereal crops especially those in critical sources areas. These will include the identification of critical sources areas for these crops and putting in place appropriate (6 metre) buffers to protect any intersecting water bodies.

#### **5.3.2.8 Organic Matter Determination**

In the current regulations, there is a requirement that “An occupier of a holding located in an area where soils have an organic matter content of 20% and above, as defined on the Teagasc- EPA Indicative Soils map, shall ensure that the soil test undertaken includes organic matter determination. The phosphorus fertilisation rate for soils with more than 20% organic matter shall not exceed the amounts permitted for Index 3 soils. Soil organic matter determination shall not be required where it is certified by a Farm Advisory System Advisor that soils on a holding/field in such areas are mineral soils”

There has been various amendments afforded to the implementation of Organic Matter determination through SI 65 of 2018 and DAFM Circular 02 of 2020 however the soil sampling for organic matter from soils within the EPA Indicative layer needs to be considered as part of the next NAP and the best approaches for its implementation.

The procedure for the certification of a soil as a mineral soil is provided under the current regulations however in order to streamline the process where soil samples are required in some instances and certification in other instances, the regulatory framework require a more streamlined approach to ensure consistency and accuracy of OM estimation. Therefore, from 2022, all soils in the indicative Teagasc/EPA layer for >20% OM are required to be soil tested for Organic Matter.

### **5.3.2.9 Soil Tests**

A soil test refers to the results of an analysis of a soil sample carried out by a soil-testing laboratory that meets the requirements of the Minister for Agriculture, Food and the Marine for this purpose.

The analysis of phosphorus, specifically the Morgan extractable P test, is currently used to determine the Soil P Index. A review of the soil test methodology for phosphorus availability will be undertaken however guidance is required on the best approach to consider to ensure phosphorus availability is evaluated correctly.

From 1<sup>st</sup> January 2022, all farmer above 170 kg N/ha must take soil samples. Where soil samples are not undertaken, Index 4 for Phosphorus will be assumed.

From 1<sup>st</sup> January 2023, all farmers above 130 kg N/ha must take soil samples. Where soil samples are not undertaken, Index 4 for Phosphorus will be assumed.

All arable land sown from 1<sup>st</sup> January 2023 must take soil samples.

### **5.3.2.10 Grazing Land Management**

Currently for Stocking rate calculations, Commonage is permitted for inclusion for stocking rate purposes at 170kg N/ha. In order to protect these areas further and the whole farm nutrient planning process, the stocking rate allowance will not exceed 50 kg N/ha.

There is no chemical fertiliser allowances to be afforded to Commonage lands.

Reduced storage through outwintering will only be applicable to farmers stocked <100kgs/ha from 1<sup>st</sup> January 2025

### **5.3.2.11 Review of Technical tables**

In some instances, the information is not up to date in the technical tables and these will all be considered as part of the review. Examples include the nutrient content of livestock manures including pig slurry and poultry manure and whether existing slurry storage capacity figures are considered to accurately reflect changes in animal size over the last number of years.

The Department of Agriculture, Food and the Marine will request Teagasc to undertake survey of soiled water and slurry production on dairy farms in 2022. This survey will be used to inform future technical specifications and guide the interim review in 2023.

### **5.3.2.12 Air Quality**

From an air quality perspective, ammonia provides the most significant challenge from agriculture. The current regulations provides for the compulsory usage of Low Emission Slurry Spreading (LESS) equipment for all farmers operating above 170 kg N/ha and Derogation farmers. In order to meet our Ammonia and Agclimatise targets, the further compulsory implementation of LESS for more farmers will be required.

In the second stage consultation document it was proposed that the compulsory usage of LESS would be introduced for all farmers operating above 100 Kg livestock N/ha from 2023 and for all Pig farmers from 2023 onwards.

However based on the stakeholder submissions a phased approach is considered more appropriate and is as follows:

- From 1<sup>st</sup> January 2023, compulsory usage of LESS will be introduced for all farmers operating above 150kg livestock N/ha.
- From 1<sup>st</sup> January 2024 compulsory usage of LESS will be introduced for all farmers operating above 130kg livestock N/ha
- From 1<sup>st</sup> January 2025 compulsory usage of LESS will be introduced for all farmers operating above 100kg livestock N/ha.
- This requirement to use LESS also applies to the application of slurry produced by pigs on any holding from 1<sup>st</sup> January 2023.

In addition, all organic manures applied to arable land must be by LESS or incorporated within 24 hours of application.

#### **5.3.2.13 Interim Review**

Following consultation with the Minister for Agriculture, Food and the Marine, the Minister shall initiate an interim review of this action programme in 2023. The purpose of the interim review is to undertake an assessment of the effectiveness of the NAP measures and introduce any new measures that may be needed to reflect new data or significant changes to the agricultural sector.

#### **5.3.2.14 Crude Protein in Concentrate Feeds**

From 1<sup>st</sup> January 2022, on holdings with grassland stocking rates of 130kg N per hectare from grazing livestock manure or above prior to export of livestock manure from the holding, a maximum crude protein content of 15% is permissible in concentrate feedstuff fed to grazing livestock on the holding between 15 April and 30 September.



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