An Taisce
The National Trust for Ireland

Draft Agri-Food Strategy to 2030 Environmental Consultation
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Sent by email to: 2030StrategyEnvironmentalConsultation@agriculture.gov.ie

15th June 2021

To Whom It May Concern,

An Taisce welcomes the opportunity to respond to the Public Consultation on the Environmental Assessment of the Draft Agri-Food Strategy to 2030.

Please acknowledge our submission and inform us of any further consultation periods.

Kind regards,

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An Taisce Submission to the Public Consultation on the Environmental Assessment of the Draft Agri-Food Strategy to 2030

1. Environmental Pillar Engagement with the Draft Strategy

An Taisce has been involved with the Agri-Food 2030 process from the outset as a member of the Environmental Pillar. We would highlight that the recommendations and concerns about the Draft Strategy that the Environmental Pillar expressed throughout the process (both at Committee meetings and in written submissions) remain outstanding. The report prepared by the Environmental Pillar, the Sustainable Water Action Network and Stop Climate Chaos (representing over 70 civil society organisations) providing policy recommendations for a sustainable future for agriculture is attached to this submission as an Appendix, as is our submission on the draft Chapter 10 of AFS, submitted in 2020.

We note that Section 2.2 of the Strategic Environmental Assessment states the following:

> "*The Agri-Food Strategy to 2030 builds on its predecessor programmes; in establishing a vision of how the sector is anticipated to develop over the period to 2030 for the benefit of its stakeholders and the wider Irish economy and environment. This is reflected in the terms of reference for the 2030 Stakeholder Committee, to outline the vision and key objectives, with associated actions, required to ensure the economic, environmental and social sustainability of the agri-food sector in the decade ahead. A key feature of each of these strategies has been the level of joint engagement by stakeholders and Government.* ***These strategies are fully owned by all who took part in forming them: farming organisations, food industry, environmental non-governmental organisations (NGOs), retailers and academics; as well as the DAFM and relevant State agencies***." [An Taisce emphasis added].

An Taisce would strongly contest the above statement in bold with regard to AgriFood 2030. The Environmental Pillar, of which An Taisce is a member, withdrew from the Committee after its inputs were consistently not reflected in the drafting of the strategy, and we could not stand over the plan as drafted. Therefore, it cannot be accurately stated that Agri-Food 2030 is "fully owned by all who took part".

2. Public Participation

The United Nations Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (commonly known as the Aarhus Convention) was adopted in Denmark on 25th June 1998 and ratified by Ireland in June 2012. It delineates the right to public participation and access to information in environmental matters. An Taisce would highlight in particular Article 7 regarding 'Public Participation concerning plans, programmes and policies relating to the environment', which states:

> '*Each Party shall make appropriate practical and/or other provisions for the public to participate during the preparation of plans and programmes relating to the environment, within a transparent and fair framework, having provided the necessary information to the public. Within this framework, article 6, paragraphs 3, 4 and 8, shall be applied. The public which may participate shall be identified by the relevant public authority, taking into account the objectives of this Convention. To the extent appropriate, each Party shall endeavour to provide opportunities for public participation in the preparation of policies relating to the environment.*'.

An Taisce would question the ease of accessibility, and therefore ease of public participation, due to the challenges of navigating the Gov.ie website and consultation process.

An Taisce considers that the listing of the consultation as '*Public Consultation on the **Environmental Assessment** of the Draft Agri-Food Strategy to 2030*' is misleading, with the consultation period also pertaining to comment on the draft Agri-Food Strategy itself, in addition to the associated Environmental Report and Natura Impact Statement, as stated on the consultation web page:

> "*The documents listed below are now published and members of the public and stakeholders are invited to make a written submission or observation with respect to **the Draft Agri-Food Strategy to 2030 and associated Environmental Report and Natura Impact Statement***" [An Taisce emphasis added].

We would also note that the listing of documents on the consultation webpage may be confusing to the general public not familiar with such documentation. The documents are not hyperlinked at this stage, only available at the bottom of the webpage after the intervening text (re. availability of documentation during COVID-19 and data protection during sharing and publication of submissions). The documents also appear under different headings than those earlier listed, with a lack of clarity regarding which documents are relevant for the current public consultation.

3. SEA

3.1 Non-technical Summary

An Taisce would highlight the failure of the Non-technical Summary of the Strategic Environmental Assessment (SEA) to adequately comply with the provisions of Annex 1(j) of the SEA Directive, due to the omission of important information.

Annex 1(j) states the requirement for;

> '*a non-technical summary of the information provided under the above headings*'

(i.e. sections (a) - (i) of Annex 1 of the SEA directive).

While an outline of the contents and objectives of the Agri-Food 2030 is provided, the overview of the 'Current state of the Environment in Ireland' is vague and potentially misleading, as it fails to highlight the scale of the challenge in regard to environmental protection in an agricultural context. The methods employed to assess the Agri-Food Strategy during the SEA are described, however, the results of the evaluations are not discussed in the non-technical summary and must be searched for in the main SEA document. It is our opinion that such omissions from the non-technical summary diminish the capacity for effective public access to information, understanding and participation in the consultation process, and therefore do not comply with the requirements of the SEA Directive.

3.2 Consideration of Alternatives

It is our view that the 'Consideration of Alternatives' in Section 5.2 of the SEA is legally insufficient, the outcome of which is wholly unsubstantiated.

Annex 1(h) of the SEA Directive stipulates informational requirements including:

> *'**an outline of the reasons for selecting the alternatives dealt with**, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;'*

No such rationale is provided for the selection of the three scenarios under consideration: Alternative 1 Do Nothing (*"Base Case/Do Nothing Scenario"*); Alternative 2 Reduced Output (*"Greater Emphasis on Reduced Output"*); and Alternative 3 Selected Strategy (*"Balanced Approach"*)[1]. Instead, only a brief description is included for each scenario. This omission compromises the legitimacy and transparency of the succeeding assessment of alternatives, and ultimately the subsequent justification of the AgriFood 2030 strategy.

We note that Alternative 1 Do Nothing is assessed on the premise that the current FoodWise 2025 strategy will continue in a business as usual manner. With the FoodWise strategy lapsing in less than four years time, we would question the validity of this. In this regard, we suggest that the FoodWise strategy is not a suitable proxy for the baseline, from which both the alternatives and associated impacts are compared.

[1] Alternative 1 is described as the continuation of FoodWise 2025 without the introduction of additional environmental protection measures i.e., business as usual. Alternative 2 envisages a more environment-centric food production model with enhanced biodiversity and climate benefits, albeit with reduced output. Lastly, Alternative 3 (the chosen option) envisages a "balanced" approach whereby environmental, economic and social values are given equal importance, with increases in yield deriving from the existing herd.

It is further noted that Alternative 2 Reduced Output is overly simplistic in its interpretation of an environment-centric future for the agricultural sector. No regard is given to alternative forms of agriculture and land diversification such as organic farming, agroforestry, and horticulture expansion. Instead, the reader is presented with what we consider to be a short-sighted focus on a 'reduced output' model which neglects the potential synergies between industry and environmental objectives involved in a transition from a bovine-focused system of farming to a more diversified system.

Similarly, there is little transparency surrounding Alternative 3 Selected Strategy, generically described as follows: *"This alternative assumes an increased focus on all three strands of sustainability - environmental, economic and social."*

This statement is reminiscent of the "guiding principle" of FoodWise 2025, highlighted in its Executive Summary as: *"[...] recognising that the three pillars of sustainability - social, economic and environmental - are equally important and carry commensurate weight."*

Given the ongoing downward trends in Ireland's key environmental indicators (e.g. water quality, ammonia emissions, biodiversity loss, etc.) over the course of FoodWise 2025's running period, it would lead us to question the credibility of future claims of a supposed "balanced" agri-food model which are made in the absence of concrete measures. A harmonious relationship between environmental, economic and social objectives will not be delivered within the existing export-focused intensive bovine model of agriculture. Even with a stable herd size, increased dairy yield is directly correlated with spikes in ammonia and nitrate emissions. As such, brandishing Alternative 3 Selected Strategy with a "balanced" label is a gross miscalculation unsupported by scientific evidence.

3.2.1 Human Health

An Taisce submits that there are key inaccuracies within Section 5.3 and Section 6.1 of the Strategic Environmental Assessment, pertaining to the assessment of alternatives and thus the reasoning for selecting the chosen option. Specifically, in our opinion, the information regarding the potential health impacts relating to both air and water quality of all alternatives 1, 2, and 3, is both inaccurate and misleading, bringing into question the selection of alternative 3 (See footnote 1 above).

Whilst the SEA does acknowledge that alternative 2 performs higher compared to the other alternatives in all environmental aspects examined in accordance with the SEA Directive, the report states that alternative 2 is the worst performing scenario in relation to population and human health impacts, as a reduction in agricultural activity:

> *"May also increase the risk of ongoing rural depopulation which may indirectly lead to under-grazing or land abandonment. It is anticipated that there could be adverse effects on population and human health. However there may be some indirect beneficial effects on human health through better air and water quality."*

The report cites that, due to a reduction in agricultural activity, there is a potential for "adverse impacts" on local populations, with the report further elaborating these impacts encompass potential economic hardship, reduced rural development, and increased stress due to reduced agricultural activity. However, reduced agricultural output is not necessarily synonymous with reduced rural development, nor a reduced quality of life. In these instances, there can be an expansion of small-scale, local food production, in particular, local initiatives that shorten, amplify and democratise local food supply chains linking producers to consumers. This also opens up marketing and new business opportunities for a range of HNV food produce and ecotourism and can also increase the uptake in organic farming in line with the EU Biodiversity Strategy 2030 target of having at least 25% of agricultural land under organic farming management.

While the aforementioned adverse impacts on rural economies are certainly acknowledged, there are also an array of health benefits from a reduction in current agricultural practices, such as improved drinking and bathing water quality from reduced pesticides and run-off, and improved air quality from reduced ammonia emissions, alleviating cardiovascular stress and respiratory issues of vulnerable groups in society. However, the SEA only briefly mentions the beneficial health impacts of the Reduced Output alternative, which are then seemingly overshadowed by the adverse economic impacts.

In contrast, in Section 6.1 Assessment of Mission 1 of the chosen alternative, the SEA highlights the health impacts of improved water and air quality in greater depth and magnitude in favour of alternative 3, the selected strategy:

> *"As improvements are anticipated in environmental conditions including improved water quality, air quality and actions to tackle climate change, it is expected that beneficial effects would be seen for human health, both directly (due to improved air quality for example) and indirectly (due to improved environmental quality)."*

As alternative 3 supports increased agricultural activity, there will likely be a significant decrease in both water and air quality as alternative 1, similar to alternative 3 in expanding agricultural production, highlights: *"Air pollutants from agriculture have been increasing which can pose health risks. Some drinking water supplies have also failed to meet the necessary pesticide standard."*

In a recent report from the European Commission, the death toll for poor air quality is the number one environmental cause of premature death in the EU, with over 390,000 premature deaths every year[2]. Air pollution also impacts quality of life through exacerbating asthma and respiratory problems with vulnerable groups such as children, asthmatics and the elderly worst affected.

One potential air pollutant impact arising from furthering agriculture is increased ammonia emissions. Agriculture is already responsible for approximately 99.4% of ammonia emissions, with recent data suggesting levels are much higher than originally thought, with

[2] https://ec.europa.eu/environment/air/index_en.htm

Ireland in violation of the ammonia ceiling for seven of the past nine years[3]. Health impacts from increased ammonia include cardiovascular disease, cognitive decline, and respiratory issues with recent UK studies finding at least 3,000 deaths could be prevented annually by halving ammonia emissions.

Health impacts also arise from declining water quality as a result of increased agricultural production. As of 2019, approximately 300,000 people have been impacted by polluted water supplies which fail to meet the legal standard for safe pesticide levels. Under alternative 3, pesticide use would be increased which further jeopardises the safety of drinking-water for Irish citizens[4].

Despite this, alternative 3 does not consider the potential environmental impacts as harmful to human health, but rather classifies them as benefits whilst giving them no real weight in alternative 2.

It is our view that the beneficial health impacts relating to improved water and air quality of alternative 2 are not given their appropriate weight, creating an inaccurate representation of these benefits, and furthermore, that the health benefits relating to "improved" air and water quality of alternative 3 have been inflated and given further weight than is warranted. This is highlighted both by the alternative 1 assessment of increased agriculture and numerous studies detailing the associated health impacts of increased agriculture.

For this reason, we recommend a full assessment be conducted on the potential health impacts of water and air quality impacts under alternative 3 and that the potential beneficial impacts of alternative 2 be re-evaluated and given their appropriate weighting. Doing so would provide greater clarity as to which alternative actually performs best in relation to human health.

3.2.2 Assessment Metrics

An Taisce considers that the metrics used for the comparative assessment of alternatives lack clarity and transparency. The 'high level matrix approach' outlined in Section 3.5 is a colour-coded system used to classify effects by type and likelihood e.g., likely strong beneficial effect, likely adverse effect, uncertain effect. However, no clarity is provided in relation to the internal mechanisms of this classification system:

> *"The high level matrix assessment is not a conclusive tool or model; its purpose is to identify those strategic priorities for which uncertainties or potential adverse effects may arise. These particular strategic priorities can then undergo further scrutiny at the detailed matrix assessment stage."*

[3] EPA (2021) Ireland's Air Pollutant Emissions: https://www.epa.ie/publications/monitoring--assessment/climate-change/air-emissions/EPA-Irelands-Air-Pollutant-Emissions-report_2021Final.pdf

[4] EPA (2020) Drinking Water Quality in Public Supplies 2019: https://www.epa.ie/publications/compliance--enforcement/drinking-water/annual-drinking-water-reports/drinking-water-quality-in-public-supplies-2019.php

The evidence base for identifying such "uncertainties or potential adverse effects" is not supplied, creating a gap which undermines the robustness of the assessment. While the document outlines it is not a conclusive tool or model, it is, nevertheless, the determination of whether a potential impact undergoes further scrutiny. As such, this part of the decision making must be fully transparent and robust.

For instance, in the "Soil and Land Use" category both Alternative 2 Reduced Output and Alternative 3 Selected Strategy receive the light green "likely beneficial effect" classification. Despite the obvious difference in biodiversity values, levels of fertiliser use and farming intensification between the two scenarios, yielding markedly different results for soil health and land use, no distinction is made between the two. We consider the lack of differentiation to be illogical, and as such we submit that it is both inaccurate and misleading.

This is compounded by the fact that the matrix assessment is not tallied, rendering the final decision to pursue Alternative 3 Selected Strategy all the more confusing.

3.3 Monitoring

Article 10 (1) of the SEA directive states that:

> '*Member States shall monitor the significant environmental effects of the implementation of plans and programmes in order, inter alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action*.'

Chapter 8 of the SEA addresses the need to '*monitor significant environmental effects of implementing the Strategy*', ensuring this is '*be done in such a way as to also identify unforeseen adverse effects and to take appropriate remedial action*'. While a number of monitoring strategies have been identified, An Taisce would note the absence of a mention of remediation to address unforeseen effects, should they arise in accordance with Article 10. We would highlight that breach of Article 10 with regard to the FoodWise 2025 monitoring and remediation of unforeseen adverse effects is already under investigation by the EU Commission.

An Taisce would question the validity of the following statements, as included in the SEA report:

> '*It is important that any monitoring proposed by the SEA should aim to* ***specifically monitor the impact of the Strategy rather than monitoring trends in the baseline environment that would have occurred regardless***'

And

> '*Monitoring of these aspects over the Strategy duration will not directly measure the performance of the Strategy as they are all* ***affected by multiple factors of which the Strategy is just one***'. [An Taisce emphasis added].

We would question both the viability and validity of segregating environmental impacts observed/monitored throughout the duration of the strategy, and would note that this does not preclude the requirement for remedial action, particularly in the instance of unforeseen or cumulative impacts.

3.3.1 Carbon Sequestration

An Taisce would highlight the limited potential for proposed '*farm-scale carbon offsetting schemes… for example through woodland creation or peat restoration*' to offset the adverse impact of an '*increased carbon footprint for some produce*' due to an increase in food miles associated with an increased focus on exports.

Carbon sequestration only happens when carbon levels in a "store", like soil, are increased over time, ideally centuries. Land-use in Ireland is a net emitter of carbon, with many current land use systems and practices (e.g. grassland systems, intensification, hedgerow removal, drainage, deforestation) resulting in the removal of existing vegetation and soil carbon stores. While promoting increased carbon drawdown on farmland is good for farming, it is not good for verifiable climate action because it's insecure, hard to measure, and easily 'gamed'. This is no substitute for fossil fuel and methane emissions reduction. The rate of carbon loss far exceeds the rate of sequestration. Increases in sequestration would serve to offset losses, not ongoing emissions.

3.3.2 Monitoring and Water Quality

An Taisce note the monitoring proposal for Mission 1, Goal 3 of the Strategy which aims to *'Protect high status sites and contribute to achieving good water quality and healthy aquatic ecosystems, as set out in the Water Framework Directive'*, and the proposed monitoring and mitigation measures to:

> *"Monitor nitrogen fertiliser usage rates over the Strategy period to establish if rates fall, regional / catchment area reporting should be adopted where possible to match the recorded achievements to the areas of greatest urgency (as identified by the baseline). Increase the overall amount of water bodies monitored. Monitor nitrogen and phosphorus levels of waterbodies, especially those already known to be affected by agriculture".*

We would also highlight section 7.3 of the SEA report, which outlines an additional mitigation measure for consideration by the strategy as the '*Development of sector-*

wide strategy to tackling the issues relating to surface water pollution from agricultural sources'.

We would observe that Ireland has legal obligations under the Water Framework Directive and Nitrates Directive to prevent water pollution. The deadline for achieving WFD objectives is 2027, and the means to achieve that is the 3rd River Basin Management Plan which is currently being drafted. If the agricultural sector aligns itself to the RBMP, as it is legally obliged to, then there will be no need for a standalone strategy and the necessary steps can be taken immediately, instead of waiting on some additional strategy.

If Ireland is to align itself with the ambition of the Farm to Fork strategy then nitrogen inputs need to fall 20% by 2030. This SEA should be endeavouring to monitor the year on year reduction, to ensure we are on track to achieving that. If the rates are not falling fast enough, or at all, then effective action should be taken to address that. Simply monitoring the trends with no specific aim will achieve nothing.

3.4 Policy Coherence

3.4.1 Air Quality

It is submitted that the SEA contains a contradictory point within its policy coherence assessment in Section 4.2 relating to other plans and programmes. For instance, it is stated that this strategy will directly support the European Commission 2013 A Clean Air Programme for Europe, however, it is also stated that the strategy is in conflict with the DCCAE (2017) Cleaning Our Air Public Consultation to inform the development of a National Clean Air Strategy, as the strategy states in Appendix B:

"Goal 1 of "Viable and Resilient Primary Producers with Enhanced Well-Being" sets out an ambition for the pig and poultry sectors to capture a greater market share. This may potentially conflict with future air quality / odour objectives"

Furthermore, there is also a conflict with the DCCAE (2019) National Air Pollution Control Programme (draft NAPCP report) as the same Appendix reiterates the previous point now in relation to the above programme.

This point regarding a potential increase in pig and poultry leading to air quality issues is not addressed in relation to the European Commission 2013 A Clean Air Programme, with the strategy primarily focusing on its "improvements for ammonia reductions", with no mention given to the air quality impacts of Goal 1 relating to pig and poultry expansion: *"Sector-specific targets for ammonia will be set as part of Goal 1 of "Viable and Resilient Primary Producers with Enhanced Well-Being"*

However, the aim to "support improvements in air quality" is inadequate given Ireland has been breaching its NECD ammonia limit since 2012 and furthermore, the EPA and EU Commission have stated that proposed measures will not reduce ammonia emissions

sufficiently to meet the target in future. This again highlights the conflict between this strategy and previous targets and policy.

It is our view that this SEA is unjustified in stating this strategy will support the European Commission 2013 A Clean Air Programme whilst simultaneously stating potential air quality issues from Goal 1 of the strategy highlighted by conflict with DCCAE (2017) Cleaning our Air Public Consultation to inform the development of a National Clean Air Strategy and DCCAE (2019) National Air Pollution Control Programme (draft NAPCP report).

3.4.2 Peatlands

The SEA states that there is conflict with the DCHG (2018) National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022. This is again echoed by Agri-Food 2030 as despite the strategy indicating potential indirect peatland conservation under LULUCF for carbon sequestration, it is also stated in Appendix B:

> *"Contribution to greater afforestation set out in Goal 4, albeit with a focus on agro-forestry and biodiverse woodlands may present a conflict w/r/t protection of peatlands if not appropriately mitigated."*

This again demonstrates inadequate policy coherence and we consider that a full assessment be carried out detailing mitigation measures for afforestation in relation to peatlands to ensure compliance with both the DCHG (2018) National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022 and the Habitats Directive.

3.4.3 River Basin Management Plan

It is our view that this strategy also conflicts with the EPA (2018) River Basin Management Plan for Ireland 2018-2021 as required under the Water Framework Directive. In 2019, an EPA[5] report stated nitrate was increasing in nearly half of rivers and phosphate concentrations increasing in 25% of rivers, with this figure just 1.4% and 4.2% respectively pre-2015 and pre-quotas. This strategy follows its predecessor in supporting herd expansion, however, the strategy states it will contribute to water quality objectives set out in Goal 2 of the "A Climate Smart, Environmentally Sustainable Agri-Food Sector" through nine actions covering pesticides with Action 4 addressing pesticide reductions. However, the SEA then states:

> *"The extent of any positive effects are as yet uncertain as they will be influenced by the implementation measures adopted for these actions."*

Contrastingly, the SEA then concludes:

[5] EPA (2020) Water Quality in 2019, An Indicators Report: https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/Water_Quality_2019.pdf

"These actions are therefore expected to have beneficial effects on the natural capital objective and to a lesser extent on the water, climate change and soil and land use objectives."

We note that there are no WFD specific assessments required for the granting of derogation licences, or for intensive farms operating without derogation. As a result, we consider that this strategy is in direct conflict with the EPA (2018) River Basin Management Plan for Ireland 2018-2021, and likely it's successor, contrary to the conclusions drawn.

3.4.4 EU Biodiversity Strategy

The SEA report states that under Goal 3 of Mission 1 "A Climate Smart, Environmentally Sustainable Agri-Food Sector", that the EU Biodiversity Strategy will be supported by Agri-Food 2030. The goal sets out various measures such as lower chemical nitrogen use, soil management, and reducing the risk pesticides pose to drinking water, however, due to the numerous adverse environmental impacts associated with increased agricultural output, these actions are insufficient in addressing the full extent of biodiversity decline from agriculture and thus conflicts with the EU Biodiversity Strategy.

4. Appropriate Assessment

4.1 Requirement for a Natura Impact Statement (NIS)

As outlined in the guidance issued by the Department of Housing[6], a Natura Impact Statement (NIS):

"comprises a comprehensive ecological impact assessment of a plan or project; it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans and projects, on one or more Natura 2000 sites in view of the sites' conservation objectives"

As outlined at the beginning of the NIS for AgriFood 2030:

"A plan or project may have a significant effect on a Natura 2000 site if it:

- *Reduces the area of an Annex I habitat, the habitat of an Annex II species, or the overall Natura 2000 site;*
- *Damages the physical quality of the environment (e.g. water quality and supply, soil compaction) within the Natura 2000 site;*
- *Causes serious or ongoing disturbance to species or habitats for which the Natura 2000 site is designated, e.g. increased noise or human activity;*
- *Results in direct or indirect damage to the size, characteristics or reproductive ability of populations within the Natura 2000 site; or*

[6] https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

• Interferes with mitigation measures put in place for other plans or projects"

The negative impact of agriculture on Irish Natura sites and habitats is well established. Section 3.5.1 of the NIS outlines the potential impacts on Natura 2000 sites from agriculture. It acknowledges the findings of the NPWS Article 17 report under the Habitats Directive that agriculture is a key contributor to declines in conservation status of protected habitats and species. It outlines:

> *"The wide ranging potential ramifications of agricultural practices is reflected in the number of habitats and species included in Table 6. It can be seen that the Table includes the majority of Annex habitats and species represented by the Natura 2000 series in Ireland."*

Section 3.5.1 further acknowledges the European Court of Auditors report on Biodiversity on Farmland (2020)[7] which concluded that the effect of CAP direct payments on farmland biodiversity is limited, and that agricultural intensification remains one of the main causes of biodiversity loss and ecosystem degradation.

Impacts on water quality are also acknowledged in the NIS, although An Taisce would note that the disproportionate impact of nitrogen runoff as a direct result of dairy intensification, as clearly catalogued by the EPA in their most recent reports[8], is not acknowledged, with the NIS instead highlighting increases in phosphate as being particularly problematic:

> *"In recent years, there have been significant increases in nutrient levels (especially phosphate), sediment and dissolved organic carbon from agricultural activities."*

In section 4.3 it is clearly outlined that:

> *"Each of these impact pathways are intimately connected to agricultural, forestry and fisheries activities and are the key routes by which agriculture can affect the status of Natura 2000 sites. The actions within the AFS are therefore critical in determining the future direction of these impact pathways (positive or negative)."*

As such, the obligation to carry out an NIS is clearly outlined, the existing and potential impacts of agriculture, particularly intensive bovine agriculture, are acknowledged and the importance of the actions outlined within the AFS are clearly identified as being key to achieving the conservation objectives of Natura 2000 sites impacted by agriculture.

[7] https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=53892

[8] Environmental Protection Agency (2020) Water Quality in 2019: an indicators report

4.2 Mitigation and the requirement for certainty

Under the Mitigation heading in the NIS the following is outlined:

> *"Key areas for mitigation are in relation to the location and extent of Natura 2000 sites (i.e. where these sites lie in proximity to agricultural activities), managing agricultural intensification (including drainage), managing diffuse and atmospheric pollution and regulation and management of fisheries."*

And that:

> *"The AFS addresses all these issues in some detail and provides appropriate mechanisms for reducing and counteracting impact pathways."*

We respectfully submit that this is not the case. AgriFood 2030 does not propose any measures which are not already in place via various regulations such as the Nitrates Action Programme, or alternatively it relies upon strategies such as Ag-Climatise and the Code of Good Agricultural Practice for ammonia, both of which have been heavily critiqued, and their credibility called into question. Alternatively, it relies on yet to be drafted or reviewed strategies, such as a review of the Nitrates Action Programme, or an as yet to be drafted, National Soils Strategy. As such, the legal standard of certainty is not being met.

The Department cannot objectively conclude that the measures outlined in the Strategy will address the ongoing declines in all our environmental indicators, when the mitigation is a reliance on already existing, and failing, measures, or plans which rely on voluntary and unenforceable action by land-owners, or have not yet been drafted or reviewed, yet are relied upon in the NIS.

Even when measures are outlined, they are largely insufficient, non-targeted and vague. For example, in regard to biodiversity and impacts on Natura 2000 sites, the mitigation is as follows:

> *"knowing where an individual farm is in relation to a SAC or SPA feature is very important in order to avoid or reduce impacts from agriculture."*

And:

> *"Targeting of Natura sites by future agri-environment schemes, especially with higher level measures also provides a high potential level of mitigation."*

While it is obviously essential that these Natura sites be identified, the mitigation measures propose nothing more than identifying where these are, and having some ad-hoc nominal protection by agri-environmental schemes. The very same schemes which the EU Court of Auditors have already categorically concluded did not provide any substantial biodiversity

benefit. It does not propose that any farming activity be in any way curtailed by proximity to Natura sites, nor that any AA be carried out in regard to standard farming activities. This is particularly pertinent given that the intensification of agriculture is one of the primary drivers of degradation of protected habitats and species. We would respectfully query how knowing the location of these Natura sites would in any way address that issue comprehensively, as is the required standard of certainty under Article 6(3) of the Habitats Directive. We would also question how agri-environmental schemes will provide the broad protection necessary for all the QIs in a Natura site, and what certainty they can provide. While they may, if properly designed, provide some level of protection, it is not the equivalent to a rigorous and targeted mitigation measure under the Habitats Directive.

Furthermore, for bird impacts the mitigation measures outline:

> *"Disturbance effects on Annex I bird species can be controlled through the avoidance of operations in known areas during the breeding or wintering season. "*

While this may be true in certain circumstances, the alarming decline in farmland bird species is as a result of changes in land management practices, and loss of roosting and feeding habitat. Carrying out activity outside of the breeding season will not benefit species which have lost their habitat.

A further mitigation measure is:

> *"Relevant studies of direct and indirect impacts should be made available to agri environment advisors and relevant agricultural workers (including farmers), where Natura 2000 sites are present on a landholding. This should include an appreciation of appropriate buffer zones (e.g. in terms of disturbance effects on Annex II (Habitats Directive) and Annex I (Birds Directive) species. "*

This is in no way compliant with Article 6(3) of the Habitats Directive, where prior authorisation is required for activities which may impact on Natura 2000 sites. While it is beneficial that agricultural workers and advisors are cognisant of the direct and indirect impacts, it is not their legal obligation to judge the appropriateness or risk of their activities to the Natura site. It is that of the Irish state, or a state body acting as an entity of the Minister with responsibility for the Habitats Directive. Furthermore, we would question what benefit '*appreciation of the appropriate buffer zones*' would have. It has no legal meaning, and imposes no legal obligation on these workers.

We would highlight that in Kelly v An Bord Pleanála & Ors. [2013 No 802 J.R.] with reference to Commission v Spain c-404/09 the High Court held in para 36 that the competent authority must carry out an AA for a plan or project in light of the best scientific knowledge in the field and that the final determination of the competent authority must

include complete, precise and definitive findings. The case repeated the conclusion of CJEU at para. 44 in Case C-258/11, namely that an AA:

> "*cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt*."

Furthermore, it is now well established in law that approval can only be granted for plans and projects when it has been established beyond all reasonable scientific doubt that the subject proposal will not adversely impact any Natura 2000 sites. In Case C-258/11, Sweetman & Others v An Bord Pleanála & Others, it was held that:

> *"authorisation for a plan or project ....may therefore be given only on condition that the competent authorities ....are certain that the plan or project will not have lasting adverse effects on the integrity of the site. That is so where* ***no reasonable scientific doubt remains*** *as to the absence of such effects"* [emphasis added].

4.3 Conclusion

It is our considered opinion that the NIS, as presented, fails to provide the scientific evidence and level of certainty which is necessary for the decision maker to conclude beyond reasonable doubt that the plan or project will have no adverse impact on Natura 2000 sites. We submit that the mitigation measures are vague, non-binding and do not present detailed analysis of how they will counteract the ongoing declines for Irish Natura sites as a result of agricultural practice, as acknowledged by the NPWS, and the introduction of this very NIS. There is a reliance on existing measures, which have been shown to be ineffective thus far for the protection of Natura 2000 sites from agriculture, and a dependence on plans and strategies which are as yet unproven in regard to their efficacy, and several of which have been widely criticised in regard to their credibility for achieving their specific aims.

We would reiterate that the NIS specifically outlined that the actions within the AFS are critical in determining the future direction of these impact pathways, and that the AFS addresses all these issues in some detail and provides appropriate mechanisms for reducing and counteracting impact pathways. We would highlight that is clearly not the case, and no such evidence is provided in the NIS document before us. As such the potential impact has been identified, the importance of mitigation measures has been underlined, but no sufficient mitigation measures have been provided. Therefore, we submit that this is a clear failure within the NIS document.

As such, we are of the view that the Department cannot sign off on the AgriFood 2030 from a legal perspective, as the NIS does not provide the necessary legal certainty as required by Article 6(3) of the Habitats Directive. To do so would be in contravention of the Habitats Directive, and subject to legal challenge on those grounds.

Towards a New Agricultural and Food Policy for Ireland

Recommendations for Government

A Position Paper from the Environmental Pillar, the Stop Climate Chaos Coalition and the Sustainable Water Network



Towards a New Agricultural and Food Policy for Ireland

Recommendations for Government

April 2021

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Executive Summary

Agriculture is by far the most significant pressure on Ireland's nature, water and air, and greenhouse gas emissions. There has been a long-standing failure to align the sector with Ireland's obligations under environmental law. Current policies that prioritise a productivist model of agriculture (i.e. focused on specialisation and intensification) lock farmers into an unsustainable commodity-driven food production system which leaves them economically vulnerable. These policies have also undermined Ireland's international reputation on food security.

In this paper, we – the Environmental Pillar, the Stop Climate Chaos Coalition, and the Sustainable Water Network – set out our policy recommendations for the Government that would deliver much needed change in Irish agriculture policy. This paper provides a foundation for a deeper discussion on what a new model of agriculture for Ireland could look like – a model that works within the ecological parameters essential to a healthy society, economy and planet.

01

Develop a Policy Framework Aligned with Ecological Limits and Environmental Commitments

The Government must ensure that Ireland's food production is in line with commitments to the Agenda 2030 Sustainable Development Goals, the Paris Agreement, the EU Green Deal and current legal obligations to protect biodiversity and water quality. It must phase out all environmentally harmful subsidies in the agricultural and food sector. This means re-orienting subsidies so that public money is channelled into the delivery of public goods. Public funding should deliver permanent cuts in greenhouse gas emissions and protect and restore water quality and biodiversity. It should also support rural livelihoods and communities. The following sections detail policy recommendations that are crucial to this framework.

02

Protect and Restore Biodiversity on Farmland

The viability of food production in Ireland depends on functioning ecosystems. Yet, agriculture is the main pressure and threat to Ireland's habitats and species. Biodiversity protection on farmland is undermined by incoherence between agriculture and biodiversity policies, and the failure by Government to enforce existing nature laws.

Approximately 33% of the agricultural area in Ireland has High Nature Value (HNV) characteristics. On HNV farmland, grazing is important for the healthy grasslands that create favourable habitat for many species. Maintaining the viability of these farming practices must be a priority for Ireland's rural development policy. Whilst intensive farms should be required to do more for biodiversity, we believe that incremental changes at farm-level will not restore ecosystem services, species and habitats as long as intensification remains the core goal of agri-policy.

Farmers should be subsidised for farm and landscape-scale ecological restoration and rewilding initiatives, where appropriate. In carrying out their proposed national land use review, the Government should examine how best to protect existing HNV systems, how best to improve biodiversity values on more intensive farms, and where and how best land use could be transformed from food production to restoration and rewilding to enhance the provision of ecosystem services.

Recommendations **The Government must commit to ambitious restoration of biodiversity on farmland and at landscape scale. They must also implement the EU target of protecting (at least) 30% of land area for biodiversity by ensuring that, at the very minimum, 10% of agricultural area is under high diversity landscape features by 2030. The State should reward farmers for the public goods HNV farmland provides and ensure the socio-economic viability of rural communities. Scaling up locally adapted and financially attractive results-based agri-environment payment schemes will be important for restoring biodiversity on all farm types. As part of the proposed land use review, the Government should assess the potential for ecological rewilding at farm, catchment and landscape level.**

03

Protect and Restore Peatlands and Woodlands on Farms
Land use in Ireland is currently a net emitter of greenhouse gases. This is due to on-going unregulated drainage of peatlands and organic soils because of agricultural activity, afforestation and the harvesting of peat. This can be tackled by reducing livestock grazing on organic soils. Rewetting degraded peatlands (through ditch blocking, for example) has demonstrable benefits for carbon sequestration, flood attenuation and biodiversity. The elimination of further GHG emissions from degraded peatlands must be a priority.

Agroforestry involves deliberately integrating woody vegetation (trees or shrubs) with crops. Examples include animals grazing the understory of trees and the use of trees for animal shelter, timber and/or food production. Agroforestry has multiple benefits – for example, soil biodiversity, carbon sequestration, flood mitigation, and human and animal wellbeing are all enhanced when tree cover is stable and long term.

Recommendations **We call on the Government to cease the drainage of wetlands and peaty soils, and end all peat extraction. We recommend that targeted, customised supports for the management and rejuvenation of existing carbon stocks be put in place. We also call for the introduction of a suite of agroforestry measures to promote natural regeneration and ecological corridors for nature connectivity.**

04

Ensure that Agriculture Delivers its Fair Contribution of the 51% Reductions in Greenhouse Gas Emissions by 2030 Committed to in the Programme for Government
Agriculture is the single largest contributor to Ireland's overall climate impact. Greenhouse gas emissions from the sector are increasing. The average dairy farm emits three and a half times more emissions than the average for beef farms, and four times more than the average for tillage farms. Current policies rely on the uptake of voluntary on-farm efficiency measures. However, these fail to adequately address the underlying drivers of emissions: rising cattle numbers and associated nitrogen inputs (fertiliser and animal feed). Further growth in the dairy sector is envisaged by Teagasc, a goal that is incompatible with climate policy. The current Government emissions reduction roadmap for the sector (AgClimatise) is not consistent with the 2020 Programme for Government commitment to reduce emissions by on average 7% per annum or 51% by 2030, as it assumes a stabilisation as opposed to an absolute reduction of methane emissions by 2030. Total emissions of greenhouse gases and nitrate/ammonia impacts must be reduced.

Recommendations **We call for a revised roadmap for agri-related emissions reductions and a declining cap on total national reactive nitrogen usage. To rapidly bring down sectoral methane and nitrous oxide emissions, we recommend that regulatory, voluntary and combined measures be implemented to limit and reverse recent dairy expansion. Compensatory measures for farmers should be put in place to incentivise herd reductions.**

05

Urgently Improve Air Quality

Rising cattle numbers and excessive use of nitrogen from fertiliser and animal feeds have also contributed to Ireland breaching the National Emission Ceilings Directive (NECD) limits on ammonia. A high concentration of ammonia in the air can damage ecosystems, as well as being linked to a range of pulmonary and cardiac issues in humans.

Recommendations **We call for a roadmap that brings Ireland into compliance with binding commitments on ammonia. The roadmap should include implementation and enforcement measures, and funding for farm abatement measures. We also call for efforts by the Government to address barriers to compliance with the NECD, including improved mapping and monitoring.**

06

Halt and Reverse Water Quality Decline

Agriculture is specifically linked with recent marked increases in water pollution, particularly in the south and southeast of Ireland. An association has been found between cattle density (i.e., as pathogen sources) and human Verotoxigenic Escherichia coli (VTEC) infection in Ireland, because of the contamination of private well drinking water supplies. Current regulations are ineffective in controlling nutrient pollution, and on-farm best practice measures to protect water quality are of limited efficacy, especially if more animals and more nitrogen inputs are permitted.

Recommendations **We call on the Government to conduct risk assessments of all intensive farms (greater than 130 kg livestock manure nitrogen/ha) in sensitive catchment areas. Nitrates derogations should only be granted where it can be demonstrated that no deterioration in the aquatic environment will result. If necessary, sub-catchment areas must be zoned ineligible for certain stocking rates. A national plan to co-ordinate and support on-farm measures to intercept pollution pathways must be implemented.**

07

Support Sustainable Livelihoods and Incentivise Farm Diversification

The current commodity-driven model contributes to spatial and sectoral inequalities within the farming population. Solutions include building sustainable and viable rural communities and rewarding farmers for the ecosystem services they provide. Just transition principles will help ensure that farm diversification alternatives and payments for ecosystem services adequately compensate farmers for any radical or abrupt changes.

Recommendations **We call on the Government to develop a farmer and community-centred Just Transition action plan for the sector that includes diversification options with environmental co-benefits. We recommend support for the scaling up of local and indigenous nature-friendly food production, especially in cereals and pulses for human consumption, fruit and vegetables – a large proportion of which are currently imported at the expense of the indigenous tillage and horticultural sector.**

08

Contribute to Public Health and Sustainable Consumption
A reduction in the intake of meat and dairy products is essential to reversing environmental decline and enabling a shift towards more sustainable agriculture. The high rates of consumption of livestock products in nearly all wealthy countries, including Ireland, and increasing global demand for livestock-based foods, threatens to undermine the United Nations Sustainable Development Goals and the Paris Agreement.

Recommendation **Ireland must ensure that its food production policy promotes global health and environmental protection. National food policy should incentivise and support a greater dietary intake of organic produce and plant-based foods that are sustainably produced.**

09

Contribute Meaningfully to Food Security and Nutrition
If Ireland is to be an international leader in creating a fairer, healthier and more sustainable global food system, the environmental, social and economic bases for food security and nutrition for future generations must not be compromised by Irish domestic policies.

Recommendation **We call for the implementation of clear principles and oversight mechanisms, including mandatory Human Rights and Environmental Due Diligence legislation, to ensure that the commercial links to the global food economy do not undermine Ireland's international development commitments.**

10

Facilitate Inclusive Dialogue and Participation for an Alternative Model for Agriculture in Ireland
A transition to a sustainable agricultural system will not be possible without ongoing multi-stakeholder dialogue. Drawing on the recommendations presented in this report, the Environmental Pillar, Stop Climate Chaos Coalition, and SWAN are committed to engaging in dialogue and discussion, with all relevant stakeholder groups, where there is genuine commitment to deliver an alternative, fairer model for Irish agriculture.

Context

The world's food and agricultural systems feed more people than ever before, supplying large volumes of key commodities to domestic and international markets. Yet, the intensification of agricultural practices across the world is causing potentially irreversible damage to the planet's living systems – its soils, air, biodiversity and water.[1] Exceeding planetary limits threatens to weaken the very support systems that are crucial to food production and ecosystem health.[2, 3]

The COVID-19 pandemic has highlighted the potentially dangerous interactions between infectious diseases, the environment, and public health. Intensive livestock farming and land-use change are widely recognised as increasing the risk of zoonotic diseases emerging in humans.[4, 5] COVID-19 revealed many hitherto invisible concerns associated with livestock production.[6, 7] The global pandemic has also highlighted the risks associated with unhealthy diets (such as obesity, cardiovascular disease, some forms of cancer), poor environmental conditions, the vulnerabilities of the global food system to supply chain issues, poor animal and human welfare standards, and biosecurity risks.[8]

Preventing future pandemics calls for a planetary health perspective across the entire spectrum of public policy, including agricultural policy. Central to this response must be the preservation of ecosystems and public health, higher standards of animal health and welfare in line with legislation and best practice, and reductions of climate pollution consistent with Ireland's fair share commitment under the Paris Agreement.



Image Eoin Campbell

Here in Ireland, a productivist model of food production – characterised by intensification, concentration, and specialisation – has come to dominate farming. There has been a continued failure to align food production with environmental protection and legal obligations.[9, 10] The EU's Common Agricultural Policy (CAP) has supported this model by subsidising food production over the other services that farmland can provide (such as regulation of soil and water quality, carbon sequestration, support for biodiversity and cultural services). Despite numerous and on-going reforms, the current CAP policy framework has failed to drive sustainability and environmental protection. Since its establishment in 1962, the CAP has driven the intensification of agriculture and has promoted the simplification and specialisation of agricultural ecosystems. This, in turn, has led to profound biodiversity loss land degradation, including over-grazing, and climate change. Limited funding goes to support climate-friendly and biodiverse farming regions.[11]

It is also well recognised that CAP spending exacerbates income inequality within agriculture. CAP has not benefited the majority of farmers, with larger farms (that are more prone to intensification) receiving the bulk of CAP funds through direct payments linked to how much land is farmed, with minimal environmental requirements.[12] The analysis of proposals for a revised CAP post-2020 indicates that it generally retains the structure and weaknesses of the current CAP. (This paper does not address CAP in detail. It is expected that the individual coalitions behind this paper will provide a more detailed assessment of Ireland's National CAP Strategic Plans in due course).[13]

Current policies lock Irish farmers into farming practices that may be unsustainable and uneconomical in the long term, linked as they are to the vagaries of global commodity markets. These policies have also undermined Ireland's international reputation as a credible voice on food security, climate change, and environmental protection. Yet, to date, the Department for Agriculture, Food and the Marine has so far failed to offer credible alternatives that prioritise environmental sustainability.[14]

Irish agriculture is now at a critical juncture, and significant decisions are being made regarding the direction and priorities of the sector. This paper is published by the Environmental Pillar, the Sustainable Water Network (SWAN), and the Stop Climate Chaos Coalition – Ireland's largest environmental coalitions. It comes against the backdrop of the publication, in April 2021, by the Department of Agriculture, Food and the Marine, of the Agri-Food Strategy for 2030.[15]

We present our policy recommendations for the Government that, if implemented, would bring agriculture into line with Ireland's national and international obligations on climate, nature, and air and water quality.[16] These recommendations are based on an integrated approach to agriculture. They recognise the synergies between climate, water and air quality, and healthy ecosystems and provide multiple benefits across climate change mitigation, biodiversity conservation and restoration, and the protection of water and air quality. For example, aligning intensive land use with ecological parameters at catchment level will mitigate climate change and deliver benefits for ecosystems, water and air quality.

The recommendations presented in this report reflect the priorities of Ireland's largest environmental coalitions for a new vision for agriculture and food production that works with and protects nature from further destruction. Our combined membership spans local and regional grassroots-based groups to faith-based, youth, development, and environmental NGOs with a nationwide and global reach. We propose, therefore, that these recommendations are used to inform a national dialogue for an alternative model for Irish agriculture and how this might best be implemented and supported by Government. We propose that, if based on an inclusive, committed process, the Government's 'Farming for Future in Ireland Dialogue' (put forward in the 2020 AgClimatise - A Roadmap towards Climate Neutrality) could provide an important space in which to progress these recommendations to chart a more sustainable pathway for Irish agriculture.

"The recommendations presented in this report reflect the priorities of Ireland's largest environmental coalitions for a new vision for agriculture and food production."

Priorities and Recommendations for a New Agricultural and Food Policy in Ireland

01 Develop a Policy Framework Aligned with Ecological Limits and Environmental Commitments

Significantly greater ambition is now required in domestic policy to meet the objectives of the EU Green Deal,[17] the EU 2030 Biodiversity Strategy, and the Farm to Fork Strategy.[18] The European Green Deal comprises a set of policy initiatives by the European Commission with the aim of making Europe climate neutral by 2050 and reducing greenhouse gas emissions by 50%-55% by 2030 compared with 1990 levels. In addition to other areas, the plan also introduces new policies:

- **On restoration of biodiversity through a Biodiversity Strategy for 2030. The Strategy aims to protect nature, reverse the degradation of ecosystems and halt biodiversity loss:**

- **On agriculture through the Farm to Fork strategy. The Strategy aims to "guarantee a fair, healthy and environmentally friendly food system, whilst ensuring farmers' livelihoods. It covers the entire food supply chain, from cutting the use of pesticides and sales of antimicrobials by half and reducing the use of fertilisers to increasing the use of organic farming":[19]**

These Strategies set targets that seek to transform the EU's food system. EU member states, including Ireland, must set national values, through agri-food policy and national CAP strategic plans, for the relevant targets set out in these Strategies. This will require a detailed, target-driven roadmap that shifts Irish agriculture away from the commodity-driven, export-focused production of meat and dairy produce, and brings it in line with these EU strategies and with national obligations on climate, water and biodiversity.

The Government must ensure that Ireland's food production is in line with commitments to the Agenda 2030 Sustainable Development Goals, the Paris Agreement and current legal obligations to protect biodiversity.[20]

This requires early, continual and permanent cuts in greenhouse gas emissions and air pollution, the protection and restoration of

water quality and biodiversity, and support for rural livelihoods and communities (Fig. 1). Achieving these goals will require that semi-state agencies, such as Teagasc, perform their functions in a manner consistent with Ireland's environmental obligations.[21]

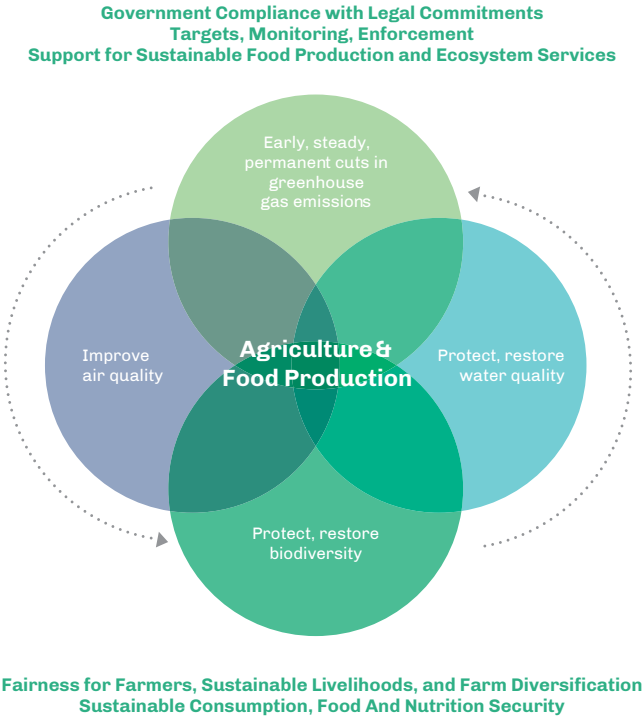


Figure 1 A broad outline of approaches & supports required to align agriculture with ecological limits.

We call on the Government to

- **Provide a detailed strategy for the agricultural sector, setting out how environmental targets and commitments as they relate to biodiversity, climate, soil, air, and water quality will be met and enforced, and how primary producers will be supported in achieving these targets. The roadmap for the sector must address the EU Farm to Fork and Biodiversity strategies.**
- **Task an independent body, ideally Ireland's Environmental Protection Agency, to establish and implement a robust monitoring framework to assess the full environmental impacts of food production at farm, catchment and national level.**
- **Discontinue Bord Bia's Origin Green Programme because of the conflict of interest between the marketing aims of the programme and the role of Bord Bia in producing their own sustainability assessments and metrics.**
- **Review the legal mandate of Teagasc (Ireland's Agriculture and Food Development Authority) with a view to reorienting its research and advisory activities towards a sustainable agro-ecological model, ensuring that environmental expertise is immediately represented on its board and management.**
- **Phase out all environmentally harmful subsidies in the agricultural and food sector.**

02 Protect and Restore Biodiversity on Farmland

The viability of food production in Ireland depends on well-functioning ecosystems. Yet, agriculture is the main pressure and threat to Ireland's habitats and species. Biodiversity and ecosystem function has deteriorated in recent decades to the point where agriculture is now responsible for an erosion of the important public goods and services that these ecosystems provide. Habitat fragmentation, land clearance, afforestation, widespread drainage of wetlands and damp pastures, severe declines in mixed farming, land abandonment, hedgerow removal and reduction, and increase in intensive management of grasslands have all contributed to this deterioration.[22, 23, 24] Of Ireland's designated sites (i.e., areas have been designated specifically to protect core areas for a subset of species or habitat types listed in the Habitats and Birds Directives), many of which are farmed, 85% have 'unfavourable status' with 70% of those impacted negatively by agriculture (see Fig. 2 and Fig. 3).[25] Ireland's water-dependent habitats, birds and other species are declining.[26, 27] The population of bird species such as the Curlew, Corncrake, and Lapwing have plummeted in recent decades, and one third of Ireland's wild bee species are threatened with extinction.[28, 29, 30]

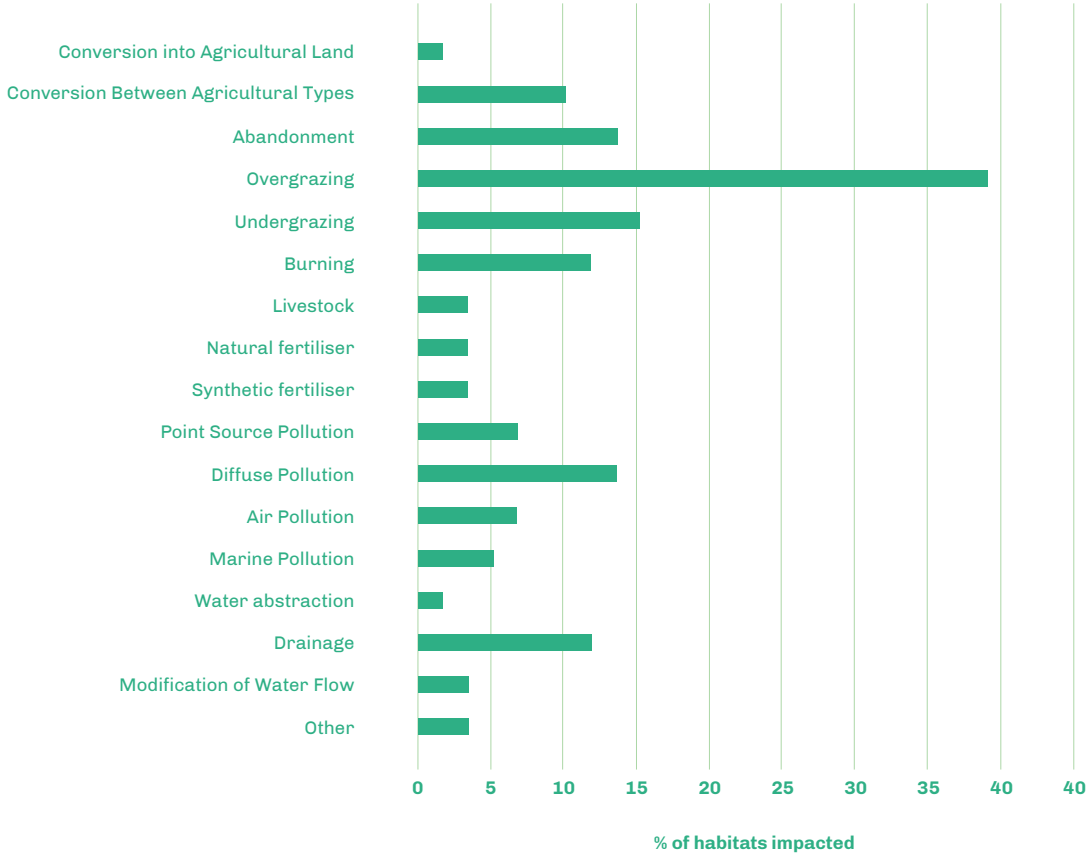


Figure 2 Percentage of habitats impacts by agricultural pressures (Medium and High-importance pressures combined). (Source: NPWS, 2019

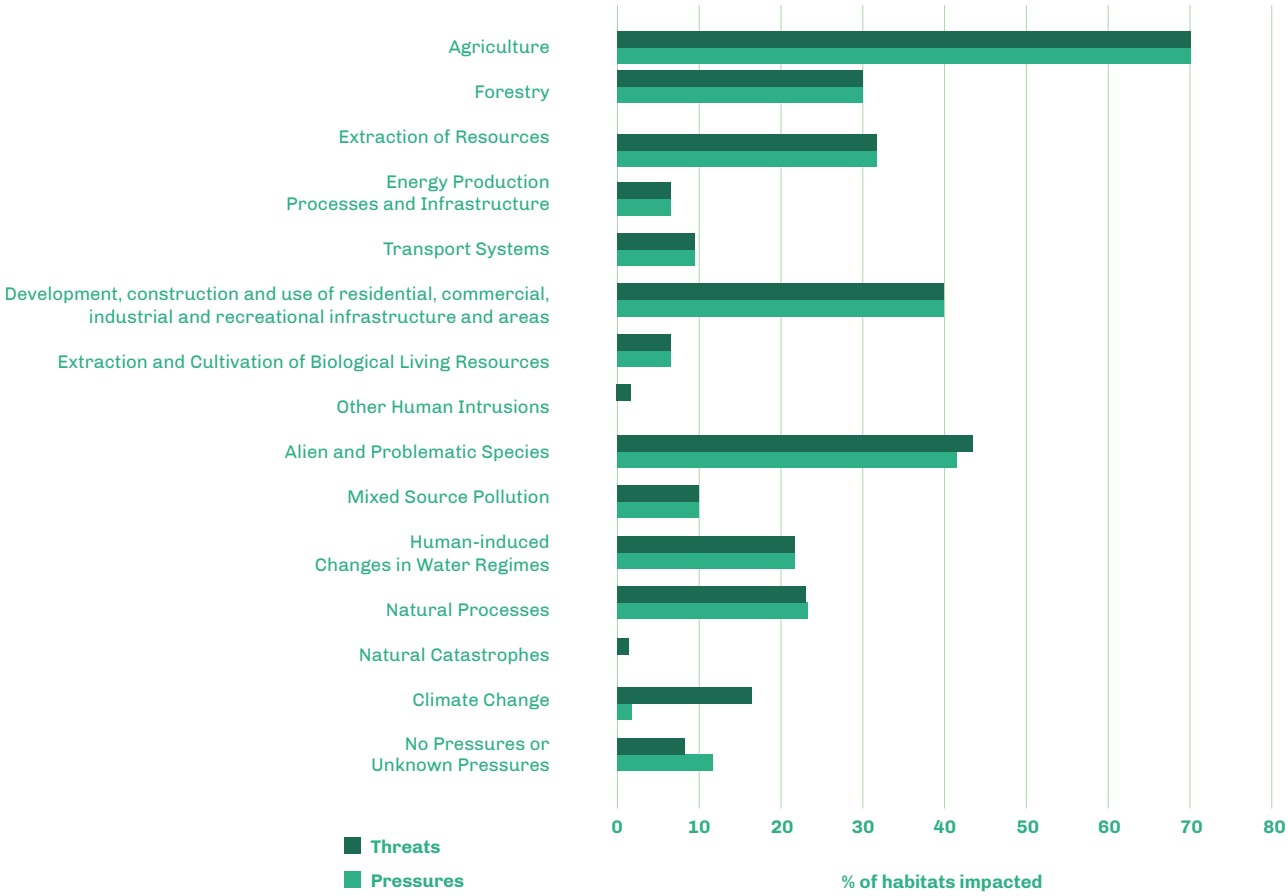


Figure 3 Percentage of habitats impacts by pressure/threat category (combined Medium and High-importance pressures/threats).

Source NPWS (National Parks and Wildlife Service) (2019). The Status of Protected EU Habitats and Species in Ireland. Volume 1: Summary Overview. NPWS, Dublin. **https://www.npws.ie/publications/article-17-reports/article-17-reports-2019**

The protection and enhancement of biodiversity on farmland, and more broadly at regional and national scale, is impeded by an incoherence between agriculture policy and biodiversity policy, disincentives to make space for nature on farms, and the consistent failure by Government to enforce existing national and EU nature laws. In addition, because of serious design flaws in national agri-environment schemes, current monitoring and evaluation systems for farm biodiversity actions do not capture the true impact of these schemes on biodiversity.

Complex EU land eligibility rules for Pillar 1 payments under the CAP have had perverse effects on the ground, causing farmers to destroy habitats simply to retain eligibility for payments, often on farms with the most ecologically sensitive systems. Farmers can find themselves penalised for keeping certain biodiverse landscape features on their land (such as ponds, hedges, shrub patches, for example) as a result of poorly conceived rules and their interpretation by national and EU authorities.[31]

Ireland as a whole has a mixture of semi-natural vegetation and more intensive food production areas. The range of intensities of farming in Ireland and the spatial diversity of land types mean that measures to protect biodiversity on farmland need to be locally adapted within a broader framework of integrated catchment/landscape management initiatives. The following subsections present scenarios for biodiversity on farmland under different management regimes.

Protecting High Nature Value Farming

Ireland's grassland and hedgerow biodiversity has assembled over time in conjunction with diverse, low-intensity mixed farming with minimal to zero fertiliser inputs. Because of their landscape and socio-cultural value, and high levels of biodiversity, these systems are known as High Nature Value farmland ((HNVf) (Fig. 4).[32, 33] It is estimated that approximately 33% of the agricultural area in Ireland has HNV characteristics, approximately half of this is within the Natura 2000 protected areas network.[34]

Many HNV landscapes across the EU are at risk of ecological degradation.[35, 36, 37] Past and current agricultural subsidies and conservation measures have mainly failed to safeguard HNV farmland and the respective farming systems, and a combination of social, economic and environmental pressures has led to either farmland abandonment or agricultural intensification.

Many HNV farms are economically vulnerable. Farmers are highly dependent on direct payments and off-farm employment for income, but they are not recognised or rewarded for the ecosystem services they provide. This is both a policy failure and an example of market failure.[38]

Once lost, it can be difficult to reinstate HNV management, especially in areas of rural depopulation, and because of global environmental change, there may be a limited timescale in which it is possible to achieve restoration goals to a former ecological state. Supporting and maintaining the viability of HNV farming must be a priority for Ireland's rural development policy. Vibrant rural communities are needed to help protect and ensure the socio-ecological viability of this type of farming. Ensuring this requires: improving basic services and infrastructure in rural communities, providing new economic opportunities for HNV related goods and services, and

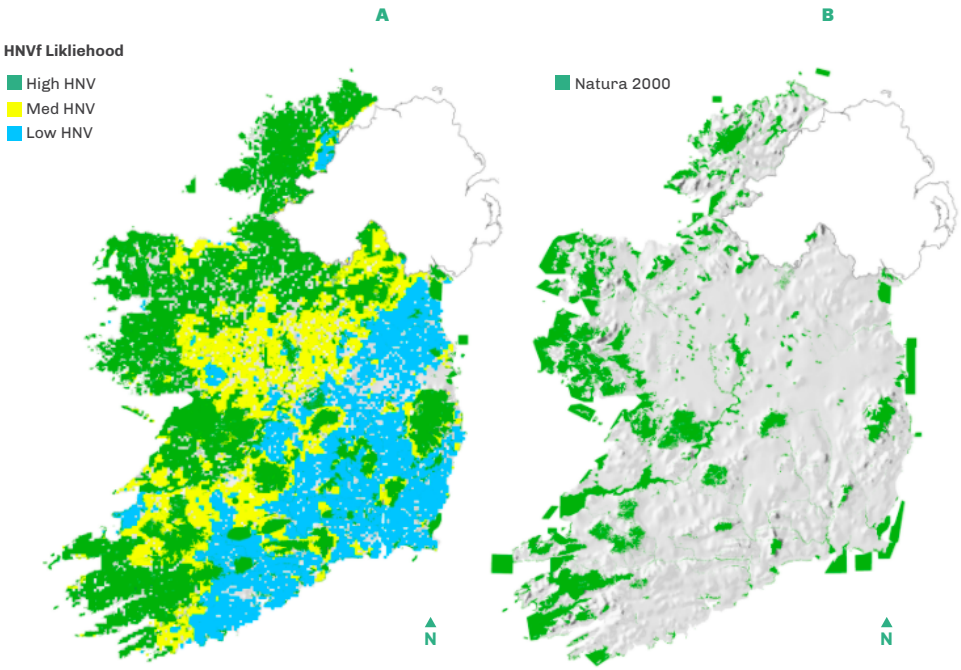


Figure 4 (a) Extent and distribution of high nature value farmland in the Republic of Ireland. (b) Natura 2000 network in the Republic of Ireland.

Source Moran, J., D. Byrne, J. Carlier, B. Dunford, J. A. Finn, D. Ó hUallacháin, and C. A. Sullivan. 2021. Management of high nature value farmland in the Republic of Ireland: 25 years evolving toward locally adapted results-orientated solutions and payments. Ecology and Society 26(1): 20. **https://doi.org/10.5751/ES-12180-260120**

empowering farmers and rural communities through capacity building and innovation, and rewarding farmers for the delivery of ecosystem services. Restrictions on certain land use change may be necessary to deter intensification. A mix of conditionality rules along with environmental funding schemes such as CAP eco-schemes, and incentives to bring stocking densities in line with the specific ecological parameters of the system may be required.

Recently established targeted, results-based agri-environment schemes have shown much-needed promise in the fight to save species from extinction and improve habitats. With adequate investments, Ireland should be significantly expanding results-based schemes across all farm types (i.e., HNV and more intensive systems) including where there exists a clear relationship between biodiversity protection and other environmental targets, e.g., related to water and soil quality, carbon storage and sequestration. The protection and reintroduction of structural elements (such as ecological corridors, ponds and wetlands, hedgerows, for example) to increase habitat heterogeneity should be part of these schemes.

Increasing Biodiversity Potential on Intensive Farms

Farms with a higher level of input and output per unit of agricultural land area have considerable impact on biodiversity and ecosystem health directly (through local land use changes on-farm and at landscape scale) and indirectly (through feed production processes and associated land conversion off-farm).[39] The reliance on monoculture pasture and high fertilizer input, as well high levels of nitrogen pollution means that intensive systems present risks to biodiversity and ecosystem stability. This is especially in traditionally biodiverse grasslands and wetland areas. Across Europe, intensification has resulted in a decline of structurally diverse landscape elements, such as ecological corridors and hedgerow networks, where natural habitats have become increasingly fragmented.[40] As a result, this pressure undermines the capacity of the land to support other functions and ecosystem services.

Studies from across Europe show that if a minimum of 10-14% of agricultural land were left to nature, then birds, and thus other wildlife, would recover. Targets within the EU Biodiversity Strategy aim for at least 30% of EU land area to be protected and connected through ecological corridors, and at least 10% of agricultural area to have high-diversity landscape features, such as hedges and ponds. As highlighted earlier in this report, these targets need to work in tandem with the Farm to Fork Strategy and the CAP post 2020. If Ireland preserved all farmland landscape features, either through targeted incentives and schemes, or via legal designation, to achieve this 10% high diversity target, it would help progress the overall EU target of 30% protected lands. Climate mitigation measures such as multi-species swards, hedgerows or agroforestry are clearly good for biodiversity at a field or farm scale. At a landscape and catchment scale, ecological diversity and connectivity should be encouraged through the conservation of ponds and wetlands, mixed species woodlands and other natural and semi-natural habitats.



Image Richard T. Mills—
Courtesy BirdWatch Ireland

Although important ecological features at farmland and landscape level should be protected from intensive agriculture, incremental changes at farm-level will not deliver for biodiversity if intensification remains the core goal of agri-policy. Recommendations – on regulating nitrogen inputs and reducing herd size and stocking density, on-farm diversification, and reducing the demand for meat and dairy consumption – presented in subsequent sections of this report will also deliver biodiversity gains on Irish farmland.

Ecological Restoration and Rewilding

Ecological restoration aims to return severely degraded ecosystems to a former ecological state, restoring its ecosystem function. Rewilding gives wildlife and natural processes the space and time to recover to increase ecological resilience, with the focus on process rather than a desired outcome.[41] Both approaches represent a managed withdrawal of direct human management of nature (depending on the scale of the area, i.e., small farmland areas, for example, may require much more intervention to replace the ecological processes that require large areas of land to operate naturally). There is now a growing discussion among conservationists about the need to restore and rewild degraded ecosystems by leaving land free from livestock. In future, the implementation and enforcement of existing legislation will need to take place alongside additional efforts (e.g., outside of protected areas) to halt wide-scale biodiversity loss.

Restoration and rewilding could be used where land has been abandoned or severely degraded due to agricultural practices[42] (for example, overgrazed upland regions), or where the ecological, economic and societal value outweigh the benefits of keeping land under food production (supported by subsidies).[43, 44, 45] Land owners could be subsidised – by channelling public money into the delivery of public goods – for keeping land not for the primary focus of food production and agricultural activity, but for farm and landscape-scale ecological restoration and recovery.[46] The local implementation of rewilding initiatives, however, must be based on a scientifically robust rationale, and an assessment of the potential ecological and social costs and benefits.[47]

In undertaking their proposed national land use review (committed to in the 2020 Programme for Government), the Government should examine how best to protect existing HNV systems, how best to improve biodiversity values on non-HNV farmland, and where and how land use could be transformed from food production to restoration and rewilding. An important part of this review will be the need to consider how best to operationalise land management regimes in policy and practice in cooperation with farmers and local communities.

We call on the Government to

- **Urgently develop new, and fully implement all existing conservation and restoration plans for habitats, threatened species and protected areas at landscape/catchment scale in line with EU Biodiversity Strategy targets.**
- **Progress the EU target of protecting (at least) 30% of land area for biodiversity by ensuring that, at the very minimum, 10% of agricultural area is under high diversity landscape features by 2030. This can be achieved by working collaboratively with farmers and ecologists to identify areas that can support natural regeneration, ecosystem connectivity and functioning at scale. Given the poor condition of Ireland's biodiversity, the Government must commit to a much higher restoration target.[48]**
- **Reward farmers for the public goods HNV farmland provides and improve its viability by promoting recognition and demand for these goods and services.**
- **Scale up locally adapted results-based agri-environment payment schemes on all farm types. Scheme payments must be financially attractive[49] and supported by improved monitoring and evaluation systems for biodiversity actions and outcomes. Schemes should support biodiversity, carbon sequestration and water quality including active rewetting and maintenance of bogs, riparian planting, agroforestry, continuous cover forestry and hedgerow conservation.**

- Use the national CAP Strategic Plan to select instruments and measures that best support the delivery of public goods. Review land eligibility criteria under CAP with a guarantee of payments for space for nature and high quality, connected ecosystems on all farms. The primary eligibility criterion should be that land is subject to positive environmental management in a way that ensures maintenance of public goods.

- Significantly tighten and enforce the regulations on land restructuring, habitat removal and drainage of wetlands. Introduce bespoke legislation to protect hedgerows, including a requirement for consent from the relevant agencies for all proposed hedgerow removal.

- Significantly bolster farm advisory services with appropriately skilled ecologists to work with farmers to ensure that desired outcomes are achieved for biodiversity and water quality. More specifically, expand expertise and peer-to-peer learning opportunities on the management of hedgerows, with specialised training provided in best practice hedgerow management techniques.

- Assess the policy constraints and opportunities for ecological restoration and rewilding at farm, catchment and landscape level. This assessment should include an analysis of the trade-offs between food production and provision of ecosystem services, and where there are win-win opportunities for the environment and rural communities. Identify funding mechanisms to reward farmers for farm-scale rewilding initiatives, and support the piloting of well-monitored and evaluated rewilding initiatives at multiple scales.

“Introduce bespoke legislation to protect hedgerows, including a requirement for consent from the relevant agencies for all proposed hedgerow removal.”

03 Protect and Restore Peatlands and Woodlands on Farms

Ireland needs to take a holistic approach to agricultural land use to meet the need for food and fibre, and to protect and restore ecosystems and to provide public goods.

The Restoration of Peatlands and Soils

Wetlands in Ireland are a significant source of carbon emissions due to ongoing and unregulated drainage of peatlands and organic soils for agriculture and forestry, and peat harvesting. Peatlands contain up to 75% of Ireland's soil carbon, with carbon dioxide emissions associated with changes in soil temperature, vegetative cover and water table level. Wetlands (such as turloughs, fens and swamps, callows, ponds, and wet grasslands, for example) are important habitats on farms, providing habitat diversity and ecosystem services.

Agricultural soils are one of the largest peatland categories. Many peatlands, including those protected under national and European legislation, are in poor condition at present. Just 18% of peatlands are classified as 'near-natural' and of conservation value, whilst 82% are classified under other land uses that involve some form of drainage. Agricultural activity is attributed to 28% of this area of peatland.[50] Annual drainage emissions from histic and humic soils related to agriculture equate to over half of Ireland's agricultural emissions.[51, 52] This contrasts with the widespread misreporting of the carbon sequestration potential of farming practices in Ireland.

Managing soils to minimise GHG emissions and depletion must be a priority in agricultural policy. A decline in soil organic matter is one of the major factors in declining soil biodiversity.[53] Given that biodiversity is positively linked with soil functioning and land productivity, farming practices that increase soil organic matter should be encouraged to aid carbon sequestration. Such practices would result in an increase in the quality and productivity of agricultural soil, residing the need for nitrogen fertilisation.[54] Rewetting of nutrient poor organic soils, coupled with grazing reduction, has proven benefits for carbon sequestration. Increasing soil organic matter also improves water retention, which in turn helps agricultural land to become more resilient to flooding and drought.

Although the implementation of the 2019 Climate Action Plan and the 2020 AgClimatise strategy will help to reduce carbon losses from peatlands and grasslands, both land-use categories will remain significant sources of emissions unless more ambitious action is taken.

The elimination of GHG emissions from degraded peatlands should be a priority for the Government. Improved management and protection of existing carbon stocks, such as peatlands, could generate income under agri-climate environmental measures in national CAP strategic plans.[55]

It is important to emphasise however, that due to the lack of verifiable and permanent carbon storage, offsetting is not a reliable policy for managing agricultural emissions. For example, trees may eventually be harvested or burned, and climate-induced drought may affect rewetted soils or bogs. Restoration for the purpose of generating carbon credits for the voluntary carbon market or for trading under the provisions of Article 6 of the Paris Agreement is not a reliable policy that supports Ireland's domestic emission reduction obligations under the international climate law.[56, 57] While carbon sequestration must play an important role in agriculture and land use policy, it cannot be a substitute for absolute emission reductions from the sector.[58] The State should not support, develop or encourage any carbon market or offsetting project that uses land-based credits until we have as a country contributed our fair share of mitigation effort under the Paris accord.



Image Dick Coombes

Woodlands & Agroforestry

Only 2% of Ireland's land mass consists of semi-natural and native woodland cover. Most of this is recently planted or naturally regenerated, much of it is isolated, fragmented and in far from satisfactory condition. Healthy woodlands provide multiple environmental and social benefits – for example, carbon sequestration, natural organic soil improvement, flood mitigation, potential benefits of related farm diversification; local employment, and enhancement of human and animal well-being from shade, shelter, and aesthetic value.

Recent evidence points to a high level of deforestation in privately owned broadleaf dominated forest, with 52 deforestation events (between 2000 and 2012) taking place in long-established or ancient woodlands.[59] Raising awareness among landowners of the

regulatory framework around tree felling and the penalties for the illegal felling of trees should be a priority.[60, 61]

Forestry and farming are not mutually exclusive activities. They can work together to support ecosystems, people and the rural economy. Agroforestry is the practice of deliberately integrating woody vegetation (trees or shrubs) with crops with a view to, for example, reducing soil erosion. Agroforestry also describes the practice of letting animals graze at the understory of trees and where the trees are used for animal shelter, timber and/or food production.[62] There is evidence to show greater floral, faunal and soil microbial diversity on agricultural land that includes agroforestry, in comparison to monocropping and some forest systems.[63]

Agroforestry can also open up opportunities for diversification (farm-woodland guided walks, for example). These benefits are enhanced when agroforestry is stable and long term and managed manually with selective felling. Current agroforestry measures are limited in scope and have the production of timber as the main objective. Stringent timber production criteria and a replanting obligation present obstacles to farmers adopting agroforestry measures.

We call on the Government to

- **Cease the drainage of wetlands and peaty soils,[64] and cease all peat extraction. Identify areas of agricultural land that require better management of existing carbon stocks and where immediate rewetting is possible. Put in place targeted, customized support for the management and rejuvenation of existing carbon stocks.[65]**
- **Ensure that measures to promote soil carbon sequestration, rewetting of grasslands and afforestation are done for sound environmental reasons and not with a view to generating unreliable and impermanent carbon offsets.**
- **Introduce a full suite of agroforestry measures focused on a variety of species and a continuous cover management model to promote natural regeneration and ecological corridors for nature connectivity.[66] Prioritise the protection and restoration of ecological corridors of linear native woodlands and hedgerows that connect existing fragments of semi-natural, native, and ancient woodlands.**
- **Prioritise the development of a new sustainable forestry model that is in line with EU law, and increases the area of woodland and continuous tree cover. This model must be based on appropriate afforestation in the appropriate place and the implementation of environmental safeguards to protect water sources and biodiversity. It is critical that physical ecological survey and assessment is undertaken prior to afforestation of sites.**

04

Ensure that Agriculture Delivers its Fair Contribution of the 51% Reductions in Greenhouse Gas Emissions by 2030 Committed to in the Programme for Government

Agriculture is responsible for 35% of Ireland's annual greenhouse gas emissions and is the single largest sectoral contributor to Ireland's overall climate impact (Fig. 5).

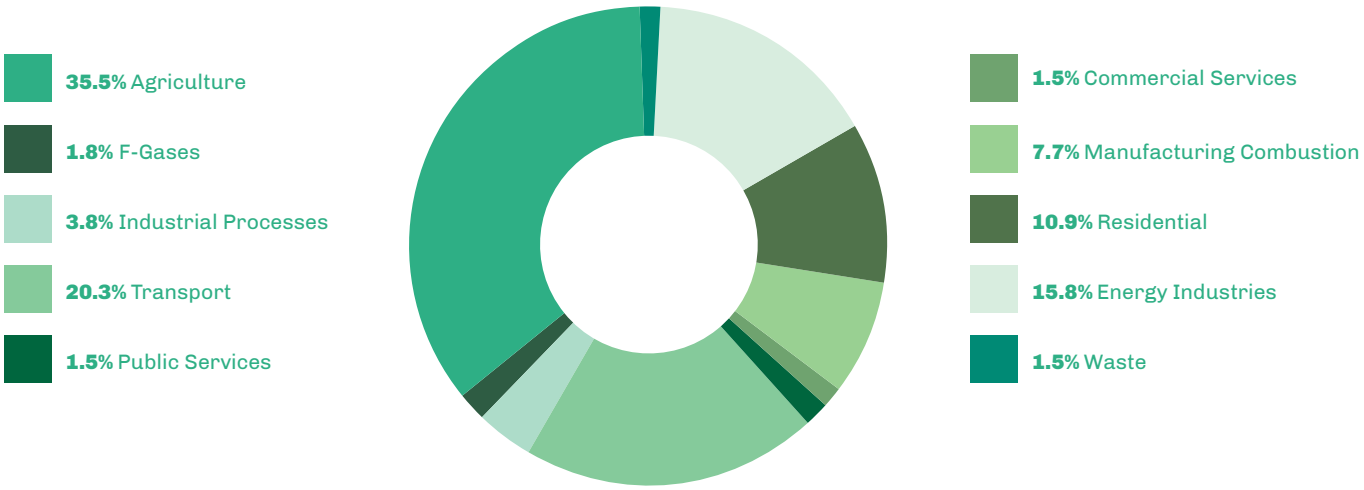
The EPA states in its most recent emission projection reports that emissions from the sector are increasing, and that they are driven by rising dairy cattle numbers and associated nitrogen inputs.[67]

The dairy sector currently contributes half of all of Ireland's agricultural greenhouse gas emissions and has been driving the increase in agricultural emissions in recent years. Recent CSO data shows that there was a 41% increase in dairy cows from 2010 to 2019, making Ireland an outlier in comparison to other EU member states.[68]

It is worrying to note that the Teagasc dairy strategy to 2027 envisages yet further growth in herd numbers, a goal that is totally incompatible with climate policy.[69] If current projections for the sector are realised in terms of animal numbers and milk and

Figure 5 Sectoral contribution to overall GHG emissions in 2019

Source EPA (Environmental Protection Agency). (2020b). Ireland's Provisional Greenhouse Gas Emissions 1990-2019. EPA, Wexford, Ireland.



beef output, there will be an inevitable increase in absolute greenhouse gas emissions, regardless of whether on-farm efficiencies are implemented.

Total emissions of greenhouse gases and nitrate/ammonia impacts must be reduced. However, reliance on the uptake of voluntary efficiency measures drawn up by Teagasc and the more recent AgClimatise Roadmap (published in late 2020), fail to adequately address the underlying drivers of emissions: cattle numbers and nitrogen inputs (fertiliser and animal feed). Nor is the AgClimatise roadmap consistent with the Programme for Government commitment to reduce emissions by on average 7% per annum or 51% by 2030, as it assumes a stabilisation rather than an absolute reduction of methane emissions by 2030.[70]

Climate action policies for the agricultural sector have to date been based on assumptions about farmers' responses to theoretical cost savings from voluntary mitigation and efficiency measures. However, even if fully implemented, these measures will not address the multiple environmental impacts of the sector, nor can they be scaled up quickly enough to deliver the required emission reductions in a timely fashion.[71, 72] Moreover, the focus on cost efficiency falsely assumes that if farms are 'efficient' in the sense of maximising outputs per unit of input (feed and fertiliser), they are environmentally sustainable. This approach ignores greenhouse gas impacts and other land-use changes that, taken together, would show much higher environmental impacts per unit of output than are currently reported.

In fact, the only important measure of climate and air pollution action is absolute, instead of relative, annual emissions as reported in the National Inventory of GHGs published annually by the EPA, therefore efficiency measures are a distraction. Agricultural emissions of methane, nitrous oxide and ammonia have been increasing steadily since 2011 due to dairy expansion and greatly increased nitrogen inputs, with only a minimal reduction in beef cattle numbers.

Requiring herd reductions from beef farmers will not by itself address the water and biodiversity impacts from the dairy sector, and may even lead to rebound effects as more land becomes available for silage production for dairy cows.

The Climate Change Advisory Council undertook a special review of agriculture, forestry and land-use in 2019 but assumed in its scenarios that no herd reductions would take place in the dairy sector, thus ignoring the growing ecological burden of intensive dairy farming in many areas of the country. Getting cattle numbers down simply by sacrificing the beef sector is not a just transition for Irish agriculture: no farmer should be left behind, and no one part of the country should be turned into a 'sacrifice zone' to keep profitable dairy farmers in business. Farmers must be supported with policies that provide both stable incomes through diversification, and also facilitate reduced stocking rates with decreased inputs.[73]



Image iStock.com/Wendy Love

Without substantial and sustained reductions in agricultural methane over the next decade, it will not be possible to meet current national and EU climate targets. It is not expected that agricultural emissions will fall as fast as emissions in other sectors of the economy over the next decade. It is expected, however, that there must be substantial year-on-year reductions in absolute emissions from agriculture. For the Government to allow one economic sector in society — a sector which represents one-third of Ireland's emissions — to simply continue business-as-usual, and insist that the rest of the economy reduce its emissions by three-quarters to achieve the overall 51% target for 2030 is highly unfair and impractical. Steadily and permanently reducing agricultural methane in the near-term with annual reductions in the order of 3-5% from 2022 to 2030 will be necessary to limit overshoot of Ireland's national 'fair share' of the remaining global carbon budget aligned with meeting the Paris Agreement commitments.[74]

Policies that support carbon sequestration, though highly important for carbon storage in trees, soils, hedgerows and wetlands, are neither reliable nor permanent methods to offset greenhouse gas emissions from agriculture or fossil fuel combustion. Relying on carbon storage or anaerobic digestion technologies carries risks, uncertainties and high costs.

Changing the types and quantities of foods we consume could also have a significant impact on emission reductions. Shifting diets in

line with health recommendations would have the positive benefit of reducing GHG emissions and freeing up land for other uses.[75] However, it needs to be acknowledged that while there is potential for emissions reductions from a shift towards plant-based diets among Irish consumers, a reduction in the consumption of animal-sourced food in Ireland is unlikely to have a significant impact on Ireland's total agricultural greenhouse emissions. This is due to the fact that most agricultural commodities are produced for export markets. For this reason, the Government, in its approach to agriculture and food production, must address the total impacts of all food production in Ireland on a territorial basis regardless of where the food is eventually consumed.

We call on the Government to

- **Publish a revised roadmap for agri-related greenhouse gas emissions reductions that sets out a time scale to achieve, as a minimum, compliance with EU and national law, including the forthcoming Climate Amendment Bill, by 2030, and an implementation and enforcement schedule that can be monitored on an annual basis.[76]**
- **Put in place a declining cap on total national reactive nitrogen (and phosphorus) usage based on an assessment of the total amount and rate of nitrogen inputs from fertiliser and animal feed that is appropriate and sustainable for climate action, air and water quality to bring usage down to 2011 nitrogen inputs levels (296 ktN) within three years, followed by a more gradual, steady reduction thereafter.[77]**
- **Consult with stakeholders and devise regulatory, voluntary and combined measures based on international best practice to limit and reverse recent expansion in the dairy sector by rapidly bringing sectoral greenhouse gas emissions back to 2011 levels by 2025 or as soon as feasible thereafter. Such measures should include a requirement for dairy farmers to reduce their herds and stocking rates to the level consistent with local environmental, and national ammonia and climate constraints, with immediate priority given to farms in sensitive catchment areas.**
- **Put in place compensatory measures to facilitate and incentivise herd reductions and diversification in the beef suckler and finishing sectors. Farmers relying on CAP payments for the bulk of their farm incomes should not be financially worse off by implementing herd reductions on a gradual basis.[78]**

05 Urgently Improve Air Quality

Ireland is in breach of the National Emission Ceilings Directive (NECD) on ammonia, with agriculture dominating emissions of ammonia (99%) because of animal manures and nitrogen fertiliser (Fig. 6).[79] The EPA has identified this breach as being largely due to increasing cattle numbers under Food Wise 2025. Beef and dairy farming represent 51% of these emissions, and 4% and 3% are from the rearing of pigs and poultry, respectively.[80] These figures exclude emissions from the spreading of animal manure from cattle, pig and poultry (30% of national total). Due to the intensive nature of pig and poultry production, their ammonia contributions may have a higher impact locally, especially with unlicensed intensive pig and poultry farms acting as ammonia hotspots in some parts of Ireland.[81]

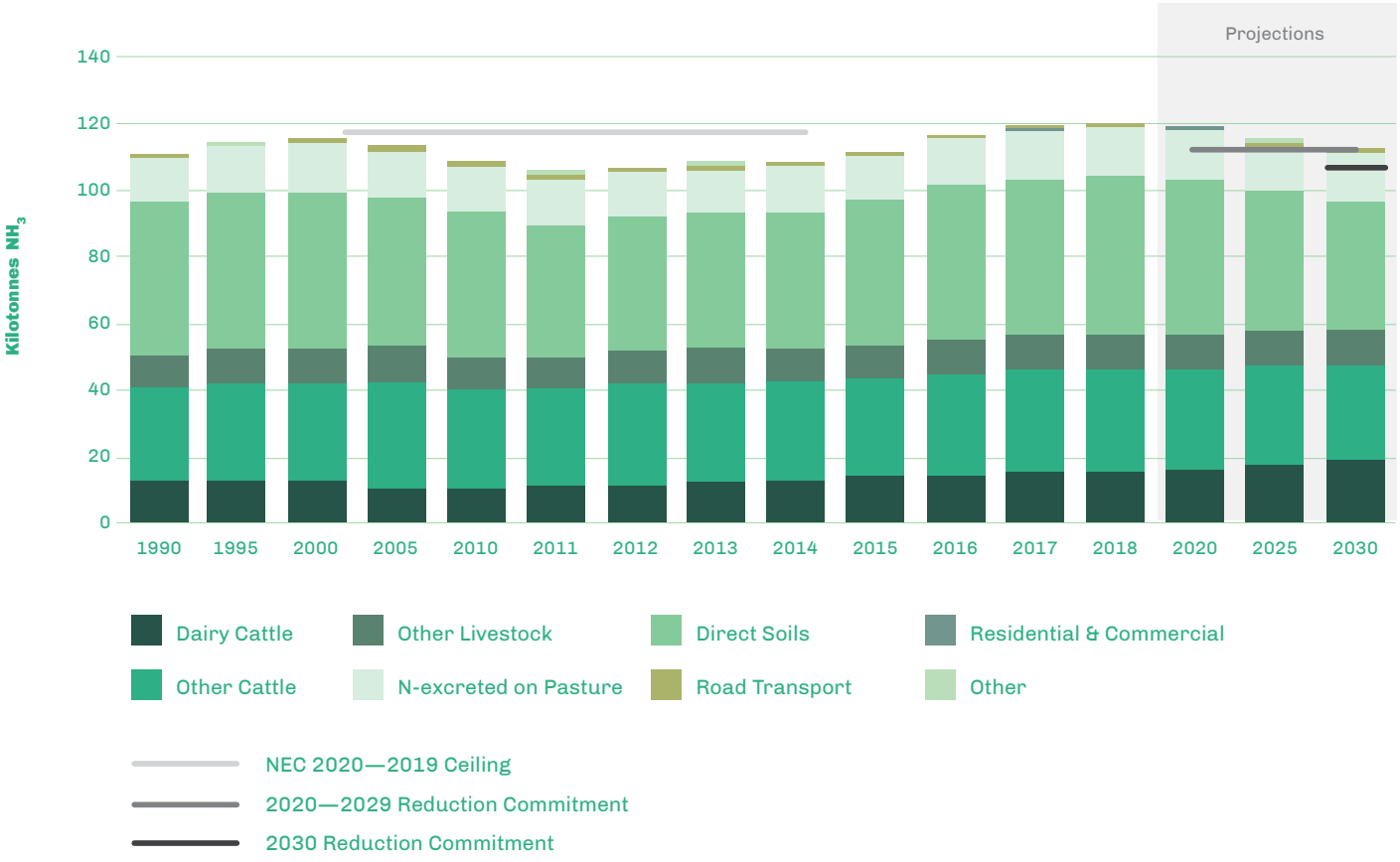


Figure 6 Total ammonia emissions and projected emission figures (Source: EPA, 2020).



Image iStock.com/Jef Folkerts

A high concentration of ammonia in the air can also cause negative changes in ecosystems, especially nitrogen-sensitive habitats, such as semi-natural grasslands and peatlands.[82] Particulate matter resulting from the reaction of ammonia with other pollutants has been linked to a range of pulmonary and cardiac issues in humans. Research specific to Ireland is required to assess the impacts of ammonia on human health, especially on the prevalence of asthma in children.

The Government's Code of Good Agricultural Practice (which is a range of voluntary yet cost-prohibitive measures that farmers can implement) is insufficient for achieving reductions in ammonia emissions.[83, 84] The Government currently relies on AgClimatise, which adopts this Code, as the instrument to reduce ammonia emissions.

The most recent analysis (at the time of writing) of the costs of ammonia abatement in Irish agriculture expects that compliance with NECD obligations can be achieved, conditional upon the full uptake of all abatement measures. Notably, the Baseline Scenario adopted in this analysis assumes a decrease by 2% in the overall cattle population between 2018-2030. This projection differs from an earlier analysis, which assumed an increase of 6% in cattle numbers up to 2030, to reflect the most likely trajectory of Irish agricultural activity. Overall, considering the voluntary and unfunded nature of abatement measures, full implementation is highly unlikely, and Ireland will continue to breach binding ammonia limits for both 2020 and 2030.[85, 86, 87]

We call on the Government to

- Prioritise the establishment of a credible, integrated roadmap that delivers compliance with the NECD. Include in this pathway mandatory implementation and enforcement measures, and substantial funding streams for specific farm abatement measures and monitoring of impacts.
- Address the current barriers to compliance with the NECD, including the need for extensive mapping and monitoring of ammonia concentrations and the ecological impacts.
- Implement an immediate ban on splash plate slurry spreading within the impact zone of sensitive Natura sites (such as bogs, heaths and species rich grasslands), and within 5.2 km of those sites.[88]
- Task the EPA to thoroughly critique, via the integrated pollution control licencing process, and undertake a cumulative assessment of projected ammonia emissions from intensive pig and poultry production, with a view to determining the impact on Ireland's efforts to achieve its NECD obligations.

"Implement an immediate ban on splash plate slurry spreading within the impact zone of sensitive Natura sites (such as bogs, heaths and species rich grasslands), and within 5.2 km of those sites."

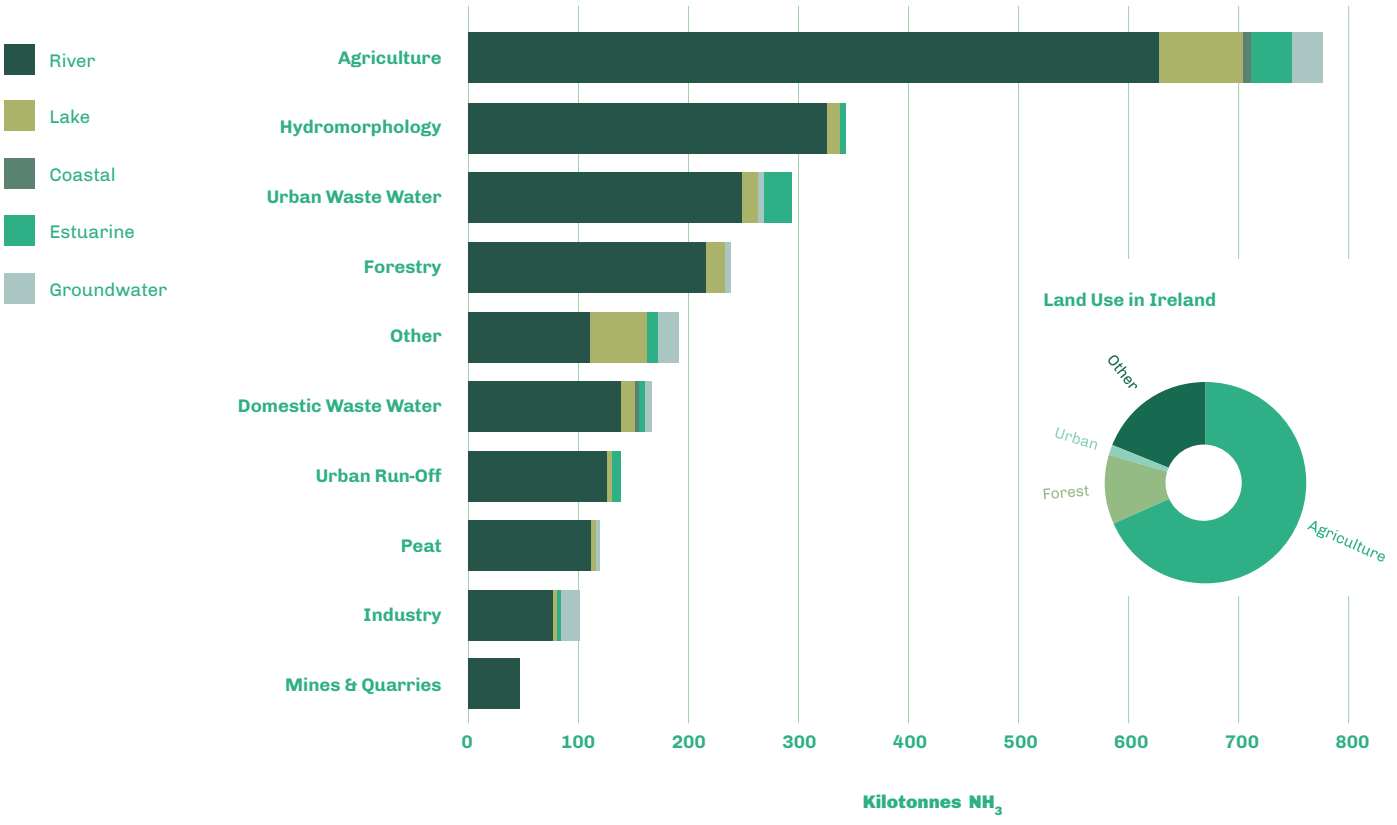
06 Halt and Reverse Water Quality Decline

Agriculture is by far the most significant pressure on the Irish water environment,[89, 90, 91] and the sector is responsible for a large proportion of water bodies failing to achieve good status as required by the Water Framework Directive (WFD) (Fig. 7 and 8).[92]

Agriculture is specifically linked with recent marked increases in water pollution from nutrients, particularly in the south and southeast of Ireland (Fig. 8)[93, 94] elevated pesticide levels,[95] declining species richness and abundance,[96] physical alterations to water bodies, and widespread unregulated wetland and riparian drainage causing sedimentation impacts.[97]

In addition, Ireland reports one of the highest crude incidence rates of Vero toxigenic Escherichia coli (VTEC) infection in the European Union, with evidence showing a link between infection risk, private well use and cattle density.[98]

Figure 7 Significant pressures on Ireland's aquatic environment (Source: EPA, 2020)



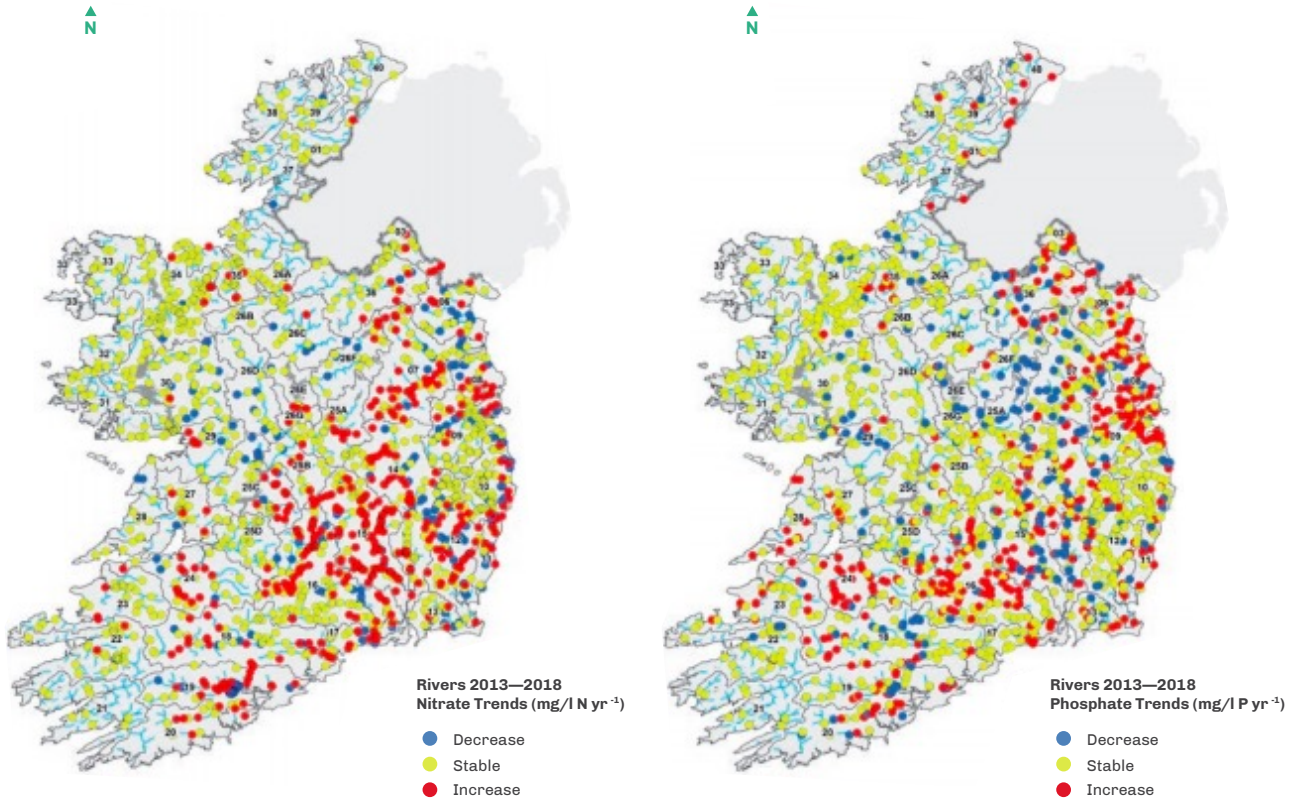


Figure 8 Nitrate (left) and phosphorus (right) concentrations in rivers, 2013-2018, showing trends increasing (red dots), stable (yellow dots) and decreasing (blue dots) (Source: EPA, 2020)

Low-input extensive farming can have local impacts, depending on biophysical conditions. The sensitive nature of some catchment areas means that very low-level on-farm changes can impact negatively on sensitive high-status waters.[99] The link between agricultural intensification and declining water status has long been proven,[100] and recent intensification has been clearly linked to increased localised water pollution.[101] Given that additional measures may be required in sensitive catchments, there is a clear need to differentiate between the potential impacts of different types of farming and their spatial distribution within catchment areas.

The resilience of Ireland's waters (i.e., the rivers' capacity to recover from the impact of further pollution) is greatly reduced by the general degradation of their environmental integrity. This problem will be amplified by climate change, as extreme weather events exacerbate land vulnerabilities and the damage caused by underlying water pollution.[102, 103]

There has been a recent shift in policy recognising the importance of 'the right measure in the right place', with this principle supported through initiatives such as the Agricultural Sustainability Support and Advisory Programme (ASSAP). However, the Good Agricultural Practices (GAP) regulations, which are the main policy and regulatory tools to control agricultural water pollution, do not reflect this principle. For this and other reasons, including inadequate enforcement, the GAP regulations are widely recognised to be ineffective in controlling nutrient pollution. [104, 105, 106, 107,] They

fail to account for site-specific conditions, and do not provide for targeted farm-specific measures. Furthermore, the ASSAP is a limited scheme targeting a small percentage of farms, and no assessment has been done to ascertain the effectiveness of the scheme in reversing water quality trends.[108]

Continued agricultural intensification, in particular intensive dairy expansion, cannot be reconciled with Ireland's commitments to protecting its water environment.[109] On-farm best practice measures to protect water quality are of limited efficacy within a policy framework that facilitates more animals and more nitrogen inputs that have, in turn, been linked to declines in water quality.[110] Any such policy is at odds with the WFD.[111]

Effective, substantial and robust mitigation measures to tackle agricultural impacts are urgently required if the necessary water quality improvements are to be achieved,[112] and ecological resilience restored. These measures need to immediately address water pollution linked to the intensification of agriculture,[113] and also focus on the localised impacts of intensive and extensive farming systems. The restoration of degraded river systems, as part of broader efforts to restore functioning habitats on agricultural land, should also be incentivised where appropriate. For example, reconnecting rivers to their natural floodplains could form an integral part of a catchment-based integrated land-use plan, that would deliver benefits for biodiversity, water quality and flood attenuation.

We have serious concerns about the prevalence and prospect of continued growth of zero-grazing/feedlot systems on beef and dairy farms. Unlike pig and poultry intensively housed systems, these feedlots do not fall within the licensing requirements of the Industrial Emissions Directive. This is despite the potential environmental consequences. Due to the higher application of inorganic fertiliser and manure used for the production of concentrate feed ingredients, as well as the extra slurry storage requirements, there is the potential for eutrophication of surface waters and nitrate contamination of ground waters in systems where cattle are confined.[114, 115] Furthermore, ammonia emitted from dairy and beef feedlots is a human health hazard. Studies on existing farms have shown that keeping cows indoors is, unsurprisingly, detrimental to their health and welfare.[116]

The EPA's Pollution Impact Potential (PIP) maps show the potential critical source areas for agricultural diffuse nutrients in Ireland's water bodies and sub-catchments. These maps will provide a useful management tool for assessing the suitability of certain catchment areas for intensive systems, especially intensive dairy farming. (i.e., 130 livestock manure nitrogen/ha and above).[117]

We call on the Government to

- Acknowledge the failings of current policy to address agricultural impacts on the water and wetland environment, in light of escalating water pollution and aquatic/wetland habitat degradation. Clearly outline and make publicly available, the relative, catchment-specific impacts of all the main farming types on water status; the incidence & impacts of agricultural wetland drainage; data on agricultural pesticide use & impacts; and impact to date of the application of nitration derogations on water quality in the catchments of derogation farms. Where this information/analysis is not available, it must be prioritised and the precautionary approach applied in its absence.

- As part of national regulation aimed at aligning the dairy sector with ecological parameters and environmental commitments:

  — Radically overhaul the Nitrates Action Plan so that nitrate derogations are no longer granted unless it can be demonstrated that a given catchment area can absorb the totality of nitrates being applied without negative impacts on water status as per the WFD. Informed by the EPA PIP maps, risk assessments must be carried out on farms applying for derogation, taking into account catchment-scale cumulative impacts.[118]

  — Require a WFD-specific assessment on all intensive farms (greater than 130 kg livestock manure nitrogen/ha) in areas identified by the EPA as Critical Source Areas (CSAs) for nitrate pollution. If necessary, certain sub-catchment areas may need to be zoned ineligible for certain stocking rates and for the granting of derogation status.[119]

- Introduce comprehensive measures based on site-specific on-farm assessments in all sub-catchments designated as at-risk[120] to intercept nutrient transport pathways between critical source areas and watercourses. This is required irrespective of stocking rates, particularly in relation to controlling pollution from phosphorus. Examples include attenuation zones, riparian zones, and appropriately distanced buffer strips.

- Introduce results-based dedicated water-protection schemes as part of wider supports for HNV farming, e.g. wetland protection; flood attenuation; fenced riparian buffers; and low and zero inputs near watercourses.

- Prohibit drainage of all wetlands. Ensure these regulations are enforced, and accompanied by targeted awareness-raising campaigns.

07 Support Sustainable Livelihoods and Incentivise Farm Diversification

Agriculture is at the forefront of the fight against climate change. Simultaneously, farmers are directly exposed to the impacts of extreme weather events, rising input costs and workloads, and related stresses on animal health and welfare.

In comparison to other sectors of the Irish economy, the farming population experiences serious income inequality, with over a third of farms economically vulnerable and at risk of severe poverty.[121] Yet, discussions on reducing agricultural emissions have been broadly perceived by the sector as a threat to farmers' income and livelihoods.

The current livestock and production-focused model also contributes to spatial and sectoral inequalities within the sector.[122, 123] Average farm income is highest on dairy farms and in the south-east region. The north-west (mainly beef and sheep farmers) is the most disadvantaged region, with the lowest farm income and highest reliance on direct payments and off-farm income.[124] Agri-environmental schemes, as a source of income, are more important on dry stock farms than on dairy and tillage farms. Improvements in average income have been made since 2018, however these improvements are largely confined to the dairy sector.

Dairy farms account for only 17% of the total farm population; yet, in 2019 these farms represented 48% of the total farm income (€1,074m) generated by the farm population represented.

Farmers face intense pressure from market forces and powerful actors, such as supermarket chains and agribusiness, to produce more and more outputs for a fraction of the price that their produce is sold for. The expansion of the dairy sector has resulted in farmers taking on intergenerational levels of debt to finance this expansion. In 2013, Irish dairy farmers were warned by Teagasc of the risks of price volatility and external cost exposures, and farmers were advised to adapt their farming systems to deal with these risks.[125]

The 2019 National Farm Survey revealed that two-thirds of Irish dairy farmers had an average debt of over €110,000, with levels increasing over the past five years.[126] This level of on-farm debt, in addition to the risk of low milk prices, rising production costs and the costs associated with extreme weather events, places dairy farmers in a potentially very vulnerable position. Long-term gains to the farm must be weighed against the potential that increased pressure due to farm debt, higher workloads, and extreme weather events have for farmer well-being.[127]

Solutions to the income inequalities experienced by Irish farmers require a shift in our food production model and policies that focus on building sustainable and viable rural communities. This requires linking subsidies to the provision of public goods, building local food supply systems that are based on new forms of cooperation among farmers and consumers, and adding value to farm produce. Just transition principles that seek to address the current inequities within the sector must also underpin this shift to an alternative agricultural model. This will help ensure that farm diversification alternatives and payments for ecosystem services adequately compensate farmers for any radical or abrupt changes that are required.

On Farm Diversification

On-farm diversification (such as agroforestry, horticulture, mixed organic farming, agri- and eco-tourism, and social farming) can improve farmers' livelihoods by opening up new economic opportunities, and reduce the environmental impacts associated with single modes of food production. The absence of economic incentives for on-farm diversification and a route out of damaging agricultural activities has the potential to jeopardise farm incomes even further as Ireland's climate and environmental targets become increasingly onerous.

However, farm diversification should not be narrowly defined by a switch to another single form of land use type or farm activity that compromises local and global environmental quality (e.g., mono-culture forestry, or a shift to anaerobic digestion based on grass inputs). It is also important to understand the barriers to diversification. Some farmers can be averse to risk, they can have limited access to agronomic and market information, and a loss of local and traditional knowledge may undermine the capacity of some farmers to consider alternatives. These barriers warrant the need for tailored communication on how to diversify farm systems.[128]

The Government needs to prioritise and reward diverse land use activities that are necessary for a multifunctional agricultural system. This will require broader policy reforms that recognise the multiple services and benefits provided by the land, including the broad range of ecosystem services. Aiming for added-value, shorter supply chains and local markets (such as organic, locally branded or artisan production) as opposed to higher volumes of commodity-based produce would help reduce stocking pressure on farms and allow for mixed farms, increased agroforestry and other biodiversity-friendly measures. Changing consumer preferences to



Image Eoin Campbell

include more locally produced, plant-based products will help open up new market opportunities for farm produce.

Diversification and Ireland's Tillage Sector

Ireland currently imports a high proportion of the cereals, vegetables and fruit consumed nationally. This is despite the fact that a very wide range of vegetable and fruit crops can be grown here, the production of which could be introduced or increased at commercial scale. Ireland's import dependence has been increasing across all main outputs of the tillage sector (i.e., cereals, oilseed rape, pulses, potatoes, and arable fodder crops).[129] This reflects an increase in demand that has outpaced domestic supplies, and highlights the notable economic opportunities that exist for the Irish tillage sector.

In recent years, calls have been made by representatives in the tillage sector for the economic and environmental contribution of tillage to be recognised as part of a balanced agri-food strategy. Nevertheless, tillage expansion in recent years has been curtailed by a sharp increase in the rental cost of land due to competition from the dairy sector.[130] Over the past decade, there has been a substantial reduction in tillage acreage especially in areas of the southeast and southwest, where former tillage land is now used by the dairy sector.

Tillage farming in Ireland has a lower emissions footprint than dairy and meat production, and is more calorie, protein and nitrogen efficient than dairy and beef production. However, current systems

are heavily reliant on the routine use of pesticides to minimise the impact of pests and disease, with implications for water quality and biodiversity.[131] Regular tillage is also destructive to soil diversity and function, and can reduce levels of soil organic matter and soil carbon.

The livestock feed sector comprised 93%, 83%, and 65% of the domestic uses of wheat, barley, and oats, respectively, diverting arable land from direct food production. Specifically, 15% of barley (malting/distilling), 32% of oats (milling), and less than 1% of wheat supply were used in human food and drink products. The vast majority of Irish output of pulses is used in the animal feed industry.[132]

A move towards greater uptake of tillage farming in Ireland would need to focus on substantially increasing the share of output of food ingredients direct for human consumption, and using nature-friendly management techniques to reduce the need for pesticides. Sustaining diverse agricultural land use with 'pockets' of tillage may be of particular value in agri-environmental planning, alongside a shift towards organic tillage production.

We call on the Government to

- **Develop, fund and implement a Just Transition action plan for the agricultural sector to identify and address the specific needs of farmers and communities in rural areas. In developing this plan, assess the emissions reductions and environmental benefit of diversification options. Identify the grants, training and advisory supports required, and the potential economic viability and employment opportunities of diversification strategies. Involve those affected by policy changes to identify sustainable alternatives, with support and input from the wider community and civil society working collectively toward rapid and fair solutions.[133, 134]**

- **Base diversification strategies on the merits of delivering public goods that deliver landscape and catchment-scale environmental and socio-ecological benefits. These strategies should take into account the local agro- and socio-ecological context, including soil type and the socioeconomic needs of farmers.**

- **Establish networks of agricultural innovation that provide an enabling environment for on-farm diversification. Facilitate peer-to-peer learning and knowledge transfer between farmers, government agencies, civil society, and research institutes.**

- Expand small scale, local food production. In particular, scale up local and innovative initiatives that shorten, amplify and democratise local food supply chains linking producers to consumers (such as Community Supported Agriculture schemes, farmers markets etc.). Open up marketing and new business opportunities for a range of HNV food produce (such as the development of farm shops, niche products, and ecotourism), and increase the value of HNV produce by linking food with environmental ethics.

- Increase the uptake in organic farming in line with the EU Biodiversity Strategy 2030 target of having at least 25% of agricultural land under organic farming management.

- As a national policy priority, substitute imported horticulture food items with cereals, fruit and vegetables grown in Ireland. This would improve rural economic resilience and national food security, help promote a healthier diet nationally, and reduce GHG emissions.

- Incentivise a shift in the tillage sector away from producing feed grains for the livestock sector, to producing outputs such as cereals and pulses directly for food consumption to reduce Ireland's reliance on imported food. Strengthen supply chains and the domestic market opportunities for Irish tillage farmers by supporting the production of organic certified cereals and pulses that offer price premiums for the tillage sector.

- Promote nature-friendly farming methods in the tillage and horticultural sector, including the use of Integrated Pest Management, reduced or no-till farming, crop rotation and cover crops, as well as leaving fallow plots and allowing for arable reversion next to existing natural habitats.

- Review the curricula of all agricultural training colleges to ensure that the next generation of farmers has up-to-date skills and knowledge in ecology and climate change.

"Expand small scale, local food production. In particular, scale up local and innovative initiatives that shorten, amplify and democratise local food supply chains linking producers to consumers..."

08 Contribute to Public Health and Sustainable Consumption

The global growth in animal food demand comes at a significant environmental cost and is inherently resource inefficient.[135] Plants that could be used for human consumption and directly for nutrition are instead used for the (indirect) process of meat production. The subsequent competition for scarce land between "food and fodder" drives land uses that are incompatible with the Paris Agreement and that undermine global nutrition.[136] Intensive agriculture can also present direct risks to human health through acute and chronic soil, air, and water pollution as well as by increasing exposure to zoonotic diseases, pathogens, and exacerbating the risk of antimicrobial resistance. Continuing high consumption of livestock products in wealthy countries, including Ireland, and increasing demand for livestock-based foods in large transition economies, severely limits the ability to achieve all of the UN SDGs and the objectives of the Paris Agreement.[137, 138]

Western diets are characterised by a high intake of meat and dairy products that exceed dietary recommendations.[139] Tackling poor dietary habits therefore is now a public health emergency that requires a whole-of-government response. Kilocalorie, protein and nutritional recommendations can easily be met with a variety of different diets, including low-carbon diets. Simply adhering to nutritional guidelines, and moving to a healthier diet with less

Image Eoin Campbell



dairy and meat intake will deliver some reductions to greenhouse gas emissions from food production and associated land use. The greatest reductions in emissions can be achieved, however, by eliminating all animal produce from one's diet.[140, 141]

The contribution of agriculture to food and public health should not only consider the role of livestock in food and nutrition security or in terms of the market value of promoting animal-based produce. The Government must acknowledge the fact that a reduction in meat and dairy consumption is essential to supporting One Health, One Welfare principles, and to reversing global environmental decline.[142, 143, 144]

Claims that Ireland is efficient at producing food also need to be reassessed.[145] Ireland's efficiency measures rely on out-of-date evidence which may not capture the full life cycle impacts of livestock production and which often do not confront the ethical imperative of reducing absolute emissions from food production regardless of how 'efficient' a particular country may appear to be in comparison to others.[146]

Simultaneously, the ethics of high consumption and aggressive marketing, both here and abroad, of high carbon foodstuffs (the production of which has serious environmental impacts) needs a balanced and fair discussion.[147] A sustainable food system must include policies that promote sustainable consumption practices and public health.[148, 149] Rather than seeing these as a threat to Irish agriculture, marketing and promotional measures should be tailored to accommodate changing consumer preferences and market opportunities.

We call on the Government to

- **Ensure that all stages of food production and consumption — from farm to fork and beyond to post-consumption — are in line with an agenda that promotes global health and environmental conservation. This requires a food and agricultural strategy that incentivises a greater dietary intake of organic produce and plant-based foods that are sustainably produced, facilitates a shift away from ultra-processed foods, and supports a drastic reduction in food waste.**
- **Draw up new Healthy Eating Guidelines and resources that are compatible with the latest science on reducing consumption of meat and dairy-rich produce in line with human and planetary health.**
- **Implement public health campaigns to promote nutritious, high quality plant-based diets utilising locally and nationally grown food where possible in line with environmental and climate policies, and ensure that any promotion of meat and dairy foods is consistent with up-to-date dietary and environmental considerations.[150]**

09 Contribute Meaningfully to Food and Nutrition Security

A truly sustainable food system delivers food security and nutrition for all in such a way that the environmental, social and economic bases for food security and nutrition for future generations are not compromised. It must integrate all food-related activities beyond actual agricultural production. This includes food availability, how food is used, how far food travels, whether the food in question requires energy-intensive transportation or not, and access to food, in addition to the consequences for the environment and social equity.[151]

The One Health, One Welfare principles to agriculture and food production, promoted by the World Organisation for Animal Health, recognise the synergies between human health and animal health for food security, and how these interconnections are interdependent and bound to the health of ecosystems.[152, 153] Implementing these principles however, requires a shift away from intensive, high-throughput livestock production systems. It must involve situating food production within the context of planetary health, fostering resilience and, where possible, shortening supply chains so as to reduce 'food miles', encouraging community involvement in food growing, maximising access to fresh, locally-produced food, and ensuring fairness across the chain of activities that comprise the food system.

Positioning Ireland as an international leader in creating a fairer, healthier and more sustainable global food system requires a transparent assessment of the relationship between food production, land use impacts and environmental deterioration, and how these variables combine to cause food insecurity and societal instability globally. It also means supporting small-scale food producers globally through appropriate accreditation schemes, such as Fairtrade and the Rainforest Alliance, that enhance farmer agency in global food value chains (especially in food items such as coffee, cocoa, etc., where they are dominant suppliers).

As threat multipliers, biodiversity collapse, climate change and resource depletion are the biggest risks to food security and nutrition, with the potential to aggravate existing social, economic and security problems, especially in vulnerable regions of the world.



Image Eoin Campbell

To avoid future breakdowns in food and sustainable livelihoods, it is essential that Ireland ensures its agri-food policy and approach to food systems do not contribute further to climate change.

Policies that purport to contribute to global food security must consider and address land use and transportation impacts, the principle of equal access to food, the right to food production and sustainable livelihoods, and the need to mitigate ecological and climate impacts due to production.[154, 155]

We call on the Government to

- **Implement clear principles and oversight mechanisms, including mandatory Human Rights and Environmental Due Diligence legislation, to ensure that the commercial links to the global food economy do not undermine Ireland's international development commitments on climate mitigation and sustainable development. Include appropriate assessment tools to evaluate the implications for delivery of the full set of Sustainable Development Goals (SDGs).**

- **Recognise the importance of deforestation-free value chains for agricultural imports. This should involve supporting small-scale farmers globally through appropriate accreditation schemes (Fairtrade, Rainforest Alliance, organic certification, etc.) that enhance their agency in global food value chains (especially in food items such as coffee, cocoa, etc. where they are dominant suppliers). These schemes enable small producers to transition to more sustainable agricultural systems and gain a greater share of the value of their production.**

10 Facilitate Inclusive Dialogue and Participation to Envision an Alternative Model for Agriculture in t

The planetary boundaries and global carbon budget consistent with 1.5°C of global warming are now the context within which all policy choices and strategic decisions must be made. Transitioning to a more sustainable future presents opportunities but will also require difficult political and societal decisions to be made. As a result, it will be necessary to make potential trade-offs explicit, in a way that recognises regional impacts, the strengths and weaknesses of different approaches to food production, and costs and benefits to society as a whole.

We believe that a successful transition to a sustainable food system requires an ongoing dialogue and cooperation between farmers, civil society, and experts across climate, water and biodiversity, and policy-makers an approach that has been lacking to date in the

Image Eoin Campbell



formulation of Irish agri-policy.[157] The policy making process should reflect the diversity of perspectives now needed from a range of stakeholder voices, including farmers from all sectors, agri-extension workers, rural sociologists, political economics, environmental, animal welfare, and public health experts, and consumers to address the complex socio-environmental challenges faced by the sector, and broader public health, food security and sustainable food system challenges. We need a dialogue that is based on creative engagement, including awareness raising and participation in decision-making, via citizens assemblies and/or dialogue fora and regional exchanges, as reflected in the final action of AgClimatise.

The recommendations presented in this report reflect the key positions and priorities of Ireland's largest environmental coalitions. These recommendations provide a strong mandate for an end to a business-as-usual approach to agricultural policy. The Environmental Pillar, Stop Climate Chaos Coalition, and SWAN are committed to engaging in dialogue and discussion with all relevant stakeholder groups, where there is genuine commitment to define and deliver an alternative, more sustainable model for Irish agriculture that is in line with Ireland's climate and environmental obligations.

We call on the Government to

- **Ensure that environmental and climate civil society NGOs are recognised as partner stakeholders by agricultural bodies and the Department of Agriculture, Food and the Marine.**
- **Develop and implement a plan for comprehensive, effective and inclusive public engagement and debate, with adequate time and engagement mechanisms for incorporating public input into the policy making process.**

"The recommendations presented in this report reflect the key positions and priorities of Ireland's largest environmental coalitions. These recommendations provide a strong mandate for an end to a business-as-usual approach to agricultural policy."

About the Environmental Pillar, SWAN and Stop Climate Chaos

Stop Climate Chaos is a coalition of over thirty civil society organisations campaigning to ensure Ireland plays its part in preventing runaway climate change. It was launched in 2007 and is the largest network of organisations campaigning for action on climate change in Ireland. Its membership includes development, environmental, youth and faith-based organisations.

It's members are: Afri, BirdWatch Ireland, Christian Aid Ireland, Comhlámh, Community Work Ireland, Concern Worldwide, Cultivate, Cyclist.ie, Dublin Friends of the Earth, Eco Congregation Ireland, ECO UNESCO, Feasta, Fossil Free TCD, Friends of the Earth, Friends of the Irish Environment, Goal, Good Energies Alliance Ireland, Self Help Africa, Jesuit Centre for Faith and Justice, Just Forests, Latin America Solidarity Centre (LASC), Liberia Solidarity Group, Methodist Church of Ireland – Council of Social Responsibility, Mountmellick Environmental Group, National Youth Council of Ireland, Oxfam Ireland, Peoples' Climate Ireland, Presentation Ireland, Tearfund Ireland, Trócaire, An Taisce, Union of Students in Ireland, VITA, VOICE., and Young Friends of the Earth.

www.stopclimatechaos.ie

The Environmental Pillar is made up of thirty-two national environmental non-governmental organisations that work together to represent the views of the Irish environmental sector. The Environmental Pillar creates and promotes policies that advance sustainable development and acts as an advocacy coalition promoting sustainable solutions in areas such as climate change, biodiversity, tree-cover, resource efficiency, transport, planning and water.

It's members are: An Taisce, Bat Conservation Ireland, BirdWatch Ireland, CELT (Centre for Environmental Living and Training), Coastwatch, Coomhola Salmon Trust, ECO-UNESCO, FEASTA, Forest Friends, Friends of the Earth, Global Action Plan Ireland, Gluaiseacht, Good Energies Alliance Ireland, Green Economy Foundation, Green Foundation Ireland, Hedge Laying Association of Ireland, Irish Peatland Conservation Council, Irish Seed Savers Association, Irish Whale & Dolphin Group, Irish Wildlife Trust, Leave No Trace Ireland, Native Woodland Trust, The Organic Centre, The Rediscovery Centre Ireland, Sonairte, Sustainable Ireland Cooperative (Cultivate), Sustainable Projects Ireland (The Village), Vincent Wildlife Trust, VOICE, Wildlife Rehabilitation Ireland, and Zero Waste Alliance Ireland.

www.environmentalpillar.ie

The Sustainable Water Network (SWAN) is an umbrella network of twenty five of Ireland's leading environmental NGOs, national and regional, working together to protect and enhance Ireland's aquatic resources through coordinated participation in the implementation of the Water Framework Directive, the Marine Strategy Framework Directive and other water-related policy in Ireland. SWAN Members: An Taisce, Bat Conservation Ireland, BirdWatch Ireland, Carra/ Mask/Corrib Water Protection Group, Cavan Leitrim Environmental Awareness Network, Celebrate Water, Coastwatch, Coastal Concern Alliance,Coomhola Salmon Trust, Cork Environmental Forum, Cork Nature Network, Dodder Action, ECO-UNESCO, Friends of the Earth, Friends of the Irish Environment, Irish Peatland Conservation Council, Irish Seal Sanctuary, Irish Whale and Dolphin Group, Irish Wildlife Trust, Longford Environmental Alliance, Macroom District Environmental Group, River Shannon Protection Alliance, Save the Swilly, Slaney River Trust, Voice of Irish Concern for the Environment.

www.swanireland.ie

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61 Afforestation and related activities such as clear-felling and building of forest access roads have had, and continue to have, a detrimental impact on biodiversity and water quality and may only make a marginal contribution to carbon sequestration. Managed forests are already net emitters due to excess harvest compared to past planting, and annual carbon sequestration into forests and harvested wood products is projected to decrease through 2030, thereby further increasing land carbon emissions.

62 Agroforestry systems include open parkland assemblages, planted mixtures of a small number of tree species, to hedgerow planting and tree cover on field boundaries.

63 Udawatta, P., Rankoth, L., Jose, S. (2019). Agroforestry and Biodiversity. Sustainability 11, **https://doi.org/10.3390/su11102879**

64 Article 1 of the Ramsar Convention on Wetlands states that wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres. Ramsar Handbook 5th Edition. An Introduction to the Ramsar Convention on Wetlands. **https://www.ramsar.org/sites/default/files/documents/library/handbook1_5ed_introductiontoconvention_e.pdf**

65 For example, by reducing grassland and wetland carbon losses, properly managing hedgerows, ending drainage of wetlands, limiting forest harvesting, moving away from intensive agricultural production and drainage on nutrient poor soils, rewetting nutrient rich soils, and managing organic soils for carbon sequestration. Proper protection may require a bespoke law to protect important features. For example, the EIA regulations for hedgerow removal need to be revised; the thresholds must be eliminated and consent for all proposed hedgerow removal should be required.

66 Species could include: Aspen, Birch, Oak, Cherry, Holly; valuable high end broadleaves including Maple, Walnut and Spanish Chestnut; native conifer, Scots Pine; and non-native conifers including Cedar, Douglas Fir, European Larch

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68 Eurostat (2020) **https://ec.europa.eu/eurostat/web/products-datasets/product?code=tag00014**

69 Launched in late 2020, the Teagasc dairy strategy for 2027 envisages an increase in the dairy herd to 1.65 million dairy cows, which, in conjunction with increases in milk output, will lead to additional methane and nitrous oxide emissions. The N20 emissions are also likely to increase further if the dairy sector remains reliant upon imported feed and additional grazing land, and this dependency could increase further if climate change attributes to more droughts. See: Teagasc (2020). 2027 Sectoral road map: Dairy. **https://www.teagasc.ie/publications/2020/2027-sectoral-road-map-dairy.php**

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72 Agriculture is the single largest sectoral emitter in Ireland. Nitrous oxide and methane emissions have been increasing steadily since the ending of milk quotas in 2015, and are projected to grow over the next decade in line with an increase in animal numbers and fertilizer usage. See: Environmental Protection Agency (2020) Ireland's Environment An Integrated Assessment 2020.

73 Rather than waiting until the need to impose top-down strict regulations to meet environmental commitments, with a shift in policy direction now, decision makers can enable a smoother, farmer-led transition to a more sustainable sector. To illustrate the challenges from introducing regulation, it is worth looking at the Netherlands, where farmers held protests dissatisfied with regulation introduced to curb nitrogen emissions. See: Nitrogen crisis from jam-packed livestock operations has 58 paralyzed Dutch economy. Science

Magazine. doi:10.1126/science.aba4504

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75 Centre for Alternative Technology (2018) People, Plate and Planet report **https://www.cat.org.uk/app/uploads/dlm_uploads/2018/11/People-Plate-and-Planet.pdf**

76 The latter is required as part of the two five-year carbon budget periods committed to by the present Government, incorporating an overall 7% per annum national reduction in greenhouse gas emissions up to 2030.

77 For a detailed account of the policy drivers of agricultural emissions in Ireland, and possible interventions to reduce emissions, see: Stop Climate Chaos Coalition (2020). Agricultural emissions in Irish climate change mitigation policy: Science and Solutions. **http://www.stopclimatechaos.ie/assets/files/pdf/agricultural_emissions_science_and_solutions.pdf**

78 Beef Industry. Dáil Éireann Debate, Thursday - 11 February 2021. **https://www.oireachtas.ie/en/debates/question/2021-02-11/344/#pq_344c;** and Dairy Sector. Dáil Éireann Debate, Thursday - 11 February 2021. **https://www.oireachtas.ie/en/debates/question/2021-02-11/345/#pq_345**

79 Environmental Protection Agency (2020) Ireland's Air Pollutant Emissions 1990-2030. The EPA's 2019-updated recalculation of nitrogen inputs (not yet published at the time of writing) is expected to show a large increase in reported ammonia emissions.

80 Kelleghan, D., Hayes, E. Everard, M. & Curran. T. (2020). Assessment of the Impact of Ammonia Emissions from Intensive Agriculture Installations on Special Areas of Conservation and Special Protection Areas. Environmental Protection Agency, Ireland. **http://www.epa.ie/pubs/reports/research/health/Research_Report_347.pdf**

81 Ibid.

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85 European Commission - DG Environment (2020). Review of the National Air Pollution Control Programme Ireland Final Report for European Commission DG Environment Specific contract 070201/2018/791186/SER/ENV.C.3. **https://ec.europa.eu/environment/air/pdf/reduction_napcp/NAPCP%20review%20report%20IE%20-%20Final%20updated%2008Jun20.pdf**

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92 The EPA s catchment characterisation has identified agriculture a significant issue in 67% of 59 At Risk river and lake waterbodies and 53% of 59 At Risk waterbodies overall (incl. coastal waters and groundwater).

93 Ibid., and Environmental Protection Agency (2020) Ireland's Environment An Integrated Assessment 2020.

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156 Greater representation of the environmental sector was sought on the committee behind the development of Ireland's Agri-food strategy to 2030. This representation included experts in climate science, biodiversity and water quality to ensure that pressing and complex environmental concerns and priorities were reflected in the strategy document. This request was denied.

Notes

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Agri-Food Strategy 2030: Submission on Chapter 10 'A Climate Smart, Environmentally Sustainable Agri-Food Sector'

Agri-Food Strategy Timeframe and Fundamental Principles

As there is so much in flux with the EU Multi-annual Financial Framework budget, yet to be agreed, CAP budget and uncertainty around the UK withdrawal agreement, we suggest a longer timeframe for the entire process. We are unduly rushing a fundamental area of policy development, which will have wide ranging long-term impacts for our natural environment and rural communities in particular, but for everyone in Irish society and the way in which our food is produced and consumed in the future.

A guiding principle in Food Wise 2025 is that it, "will seek to embed at all levels of the agri-food industry, with environmental protection and economic competitiveness considered equal and complementary: one will not be achieved at the expense of the other." This social contract between the public and agriculture has been broken as all the environmental indicators are showing further declines and reactive nitrogen usage (in fertiliser and feed) is driving increased greenhouse gas and ammonia emissions from agriculture. This must be urgently remedied.

The Environmental Pillar again recommends basing the next Agri-Food Strategy on restoring the building blocks of farming in Ireland. That includes restoring the confidence of farmers and giving them a fair price for the food they produce. It also means halting and reversing environmental impacts and restoring soils, bird and insect populations, native plants, habitats, water quality of rivers, lakes, estuaries and cutting greenhouse gas emissions. It means building a strategy respecting key areas of biodiversity, climate and water in every chapter rather than isolating environment into a chapter on its own. This would promote policy coherence and reduce a silo-ed approach.

Role of SEA/AA in Process

A key objective of Food Wise 2025 articulated by two Ministers for Agriculture stated that in Food Wise 2025, "environmental protection and economic competitiveness are equal and complementary: one will not be achieved at the expense of the other".

The facts, increasing biodiversity, climate and pollution impacts from agriculture, demonstrate that the environment has not been equal or complementary to economic competitiveness, to the contrary, economic goals have been achieved (for some) at the expense of the environment in Ireland and by transferring increased costs and risks to many farmers. The social contract of Food Wise is broken. We need clean drinking water, thriving biodiversity and a healthy diverse food system. The pandemic has shown us how important biodiversity is in our lives for our wellbeing, but biodiversity is critical for the ecosystem services it provides for free (carbon sequestration of peatlands/hedgerows, pollination by wild bees, diverse resilient habitats).

The Food Wise 2025 SEA/AA was substandard and the ensuing strategy has led to disastrous consequences for the environment.

The goal of Habitats Directive is to restore to favourable conservation status. Habitats have to be restored. The Strategy must reflect the needs of habitats and species.

SEA must assess birds of Conservation Concern and status of habitats outside of Natura sites and include the Teagasc mapped areas of High Nature Value farmland.

The AA process must take account of case law from European Court of Justice and must have complete, precise and definitive findings that there will be no significant impacts to Natura sites or the conservation of protected species including Annex 1 bird species.

The AA must also assess impacts of Strategy on ex-situ habitats included in the Conservation Objectives of Special Protection Areas.

AA must assess impacts of Strategy as it relates to Article 4.4 of the Birds Directive (protection for birds in the wider countryside) and which is one of the rulings of C/418-04 against Ireland.

Introduction

The member organisations of the Environmental Pillar (www.environmentalpillar.ie) recognise the benefits of supporting sustainable agricultural production, and some of our members work with farmers and other stakeholders within the Irish agri-food sector. However, the agri-food sector cannot exist in isolation of national and international initiatives and obligations to tackle some of the most pressing and existential issues of our time: climate breakdown, loss of biodiversity, degradation of ecosystem services, and declining water quality. Furthermore, the continued emphasis on expansion and intensification within the Irish agri-food sector as a key to the success of the sector ignores the reality that we are living on a finite planet with finite resources, and a finite ecological carrying capacity. Numerous EU citizens, whose taxes fund the Common Agriculture Policy (CAP) that underpins Irish agriculture policy, have shown that they want to see food produced in a way that protects the environment. Policies must act to protect our ecological assets. These assets are at the core of our long-term health and well-being. The success of human society can no longer be based solely on financial metrics; sustainability must be considered differently, being linked to concerns for our environment, our communities and long-term human health and well-being.

The Natura Impact Statement for Food Wise 2025 stated that there would be no significant impacts on the Natura 2000 network, habitats and species. This has proven to be incorrect with continued deterioration of habitats. Since the 2015 publication date, all environmental indicators are showing that environmental quality in Ireland as it relates to agriculture is worsening and not improving. This includes water, biodiversity (breeding waders, farmland birds, pollinators including bees and butterflies and other wildlife, terrestrial and coastal habitats) and greenhouse gas and ammonia emissions. The NPWS states that 85% of EU protected habitats have bad or inadequate status with 70% of those impacted by agriculture.

The removal of the milk quotas and coupled with the support of certain grants and subsidies provided under the Rural Development Programme 2014-2020, as well as the lack of environmental objectives for 95% of direct payments to farmers under Pillar 1 of the RDP, ANC payments and bolstered by TAMs grants, has resulted in the intensification of agriculture and in particular the dairy sector. Not only have we witnessed failure to restore bird populations and habitats and to maintain water quality, these indicators are worsening. Save for the Burren Farming for Conservation Programme, the Hen Harrier EIP, Curlew EIP which are promising in their targeted results-based schemes, we are further from ecosystem and species restoration now than in 2014.

This submission outlines the scale of the pressures on biodiversity, emissions and water quality. It goes into some detail on the solutions in forestry, fisheries and agriculture and charts a path forward. When we look out to 2030 and ask where does Ireland want to be in terms of our bird populations, water quality and greenhouse gas emissions, the government must ask itself if it will except extinction of species, undrinkable water and soaring emissions or if it will commit to redressing the problems created by Food Wise 2025? Agri-Food 2030 must chart a new path which recognises that farmers, our bird and bee populations, our water, climate will not continue to take the hit for unsustainable agriculture and large profits for some.

Agri-Food Strategy Public Consultation- farmer support for a change in direction

The public consultation element of the agri-food strategy comprised an online survey. The results of this survey demonstrate that public concern of respondents for agriculture which supports and protects biodiversity and reduces climate impacts is greater than for agriculture as an area of economic growth. However, the chapters that we have seen so far have not reflected these concerns. Instead the standalone chapter on environment is meant to address these concerns whereas a fundamental transformation of how and what we farm in Ireland is needed to align all chapters of the strategy with environmental boundaries and the objective of the EU Biodiversity Strategy 2030 and the EU Farm to Fork strategy. In order to support farmers with better prices for their food, a 'less is more' approach needs to be considered-less produce with a higher premium that has high nature value.

The Environmental Pillar sought greater representation of the environmental sector on this committee, including experts in climate science, biodiversity and water to ensure that these concerns were reflected in the strategy document. This was denied. The industry-heavy committee is reflective of the Department's 'business as usual' approach (previously critiqued in Kenny et al. 2016) and not representative of the responses in the public consultation.

Almost 60% of responses were from primary producers (farmers/fishers) and 56% working in/representing the agriculture sector 47% of respondents either disagreed or strongly disagreed that 'Food Wise 2025 is delivering on its vision of thriving producers and agri-food business'. Only 18% either agreed or strongly agreed with this statement.

Environmental Sustainability and Human Capital were the highest ranked themes for the next Agri-Food Strategy with 110 out of 212 respondents ranked environment as the most important theme-with a significant margin between it and the next ranked theme (43 points for Human Capital).

Low profitability is the key area of focus needed for generational renewal and new entrants. This deserves significant attention. The current form of agriculture is very heavily reliant upon expensive inputs which can be very damaging to the environment (see https://www.arc2020.eu/less-is-more-upland-farming-economics/). Ramped up payments for ecosystem services which would handsomely reward farmers for the work they do in protecting and restoring ecosystems through the right grazing management systems would be a good area of focus on the new Strategy. The objective of the Farm to Fork Strategy to increase organic food production to 25% needs to be included in the Agri-Food Strategy 2030, and the intertwined need for Bord Bia to promote organic food to build consumer support must be a high-level action. Support for diversification where appropriate and additional crops on the right soils must receive attention. Increasing uptake of farming means better prices for the primary product that farmers produce. Less produce and garnering higher premia must be the way forward.

Environmental sustainability also ranked as the number one concern for processors as consumers are demanding this. However, this must be real sustainability, as defined in the Bruntland report: 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs .

In relation to the importance of the contributions of farmers/fishers to society- protecting biodiversity, water and climate came second and third to ensuring safe, healthy food.

Tackling climate change, halting the losses of biodiversity and restoring it, and meeting water quality legal obligations are the top three priorities for the next 10-year strategy to address at primary production level.

New Developments: the EU Biodiversity Strategy and Farm to Fork Strategy

In May 2020, the EU Biodiversity Strategy and Farm to Fork Strategy-for a fair, healthy and environmentally-friendly food system, were published. Led by the Directorate of Health the Farm to Fork Strategy sets a course for much more sustainable agriculture across the EU with human health a key driver. It states 'It addresses comprehensively the challenges of sustainable food systems and recognises the inextricable links between healthy people, healthy societies and a healthy planet'. It goes on to say 'There is an urgent need to reduce dependency on pesticides and antimicrobials, reduce excess fertilisation, increase organic farming, improve animal welfare, and reverse biodiversity loss'. The objective of the EU Biodiversity Strategy 2030 and Farm 2 Form Strategy will be integrated into Ireland's next CAP Strategic Plan and this will be assessed by the European Commission. Since the Agri-Food Strategy 2030 will rely on implementation of the CAP to support its objectives, the Agri-Food Strategy is obliged to integrate the goals of these EU Strategies into its plans.

Important points from these strategies which must be the basis for which the Agri-Food 2030 Strategy is developed are:

EU Biodiversity Strategy 2030

- By 2030, 30% of EU land and EU sea areas is primarily managed for nature and Biodiversity with at least one third of protected areas – representing 10% of EU land and 10% of EU sea – should be strictly protected. Significant areas of other carbon-rich ecosystems, such as peatlands, grasslands, wetlands, mangroves and seagrass meadows should also be strictly protected, taking into account projected shifts in vegetation zones.
- Member States will have to ensure that at least 30% of species and habitats not currently in favourable status are in that category or show a strong positive trend. The Commission and the European Environmental Agency will provide guidance to Member States in 2020 on how to select and prioritise species and habitats.
- The Commission will aim to agree the criteria and guidance for additional designations with Member States by the end of 2021. Member States will then have until the end of 2023 to demonstrate significant progress in legally designating new protected areas and integrating ecological corridors. On this basis, the Commission will assess by 2024 whether the EU is on track to meet its 2030 targets or whether stronger actions, including EU legislation, are needed.

- The Commission will put forward a proposal for legally binding EU nature restoration targets in 2021 to restore degraded ecosystems, in particular those with the most potential to capture and store carbon and to prevent and reduce the impact of natural disasters.
- The EU's legal framework on water is ambitious but implementation is lagging behind and enforcement must be stepped up."
- ...at least 25,000 km of rivers will be restored into free-flowing rivers by 2030 through the removal of primarily obsolete barriers and the restoration of floodplains and wetlands. Technical guidance and support to the Member States to identify sites and help mobilise funding will be provided by the Commission in 2021.
- The Commission will take action to reduce by 50% the overall use of – and risk from – chemical pesticides by 2030 and reduce by 50% the use of more hazardous pesticides by 2030.
- Full implementation of the EU Pollinators initiative. By the end of 2020, the Commission will review the initiative and propose additional measures if necessary.
- The Commission will ensure that the CAP Strategic plans are assessed against robust climate and environmental criteria, and that Member States set explicit national values for the relevant targets set in this strategy, as well as in the Farm to Fork Strategy. These plans should lead to sustainable practices such as precision agriculture, organic farming, agro-ecology, agro-forestry, low-intensive permanent grassland, and stricter animal welfare standards.
- There is an urgent need to bring back at least 10% of agricultural area under high-diversity landscape features.
- At least 25% of the EU's agricultural land must be organically farmed by 2030. In addition to CAP measures, the Commission will put forward an Action Plan on organic farming, helping Member States stimulate both supply and demand of organic products. It will also ensure consumer's trust through promotion campaigns and green public procurement
- The Commission will update the EU Soil Thematic Strategy in 2021. The Zero Pollution Action Plan for Air, Water and Soil that the Commission will adopt in 2021 will also look at these issues. A mission in the area of soil health and food under Horizon Europe will aim to develop solutions for restoring soil health and functions.
- It also promotes the shift to advanced biofuels based on residues and non-reusable and non-recyclable waste. This approach should continue for all forms of bioenergy. The use of whole trees and food and feed crops for energy production – whether produced in the EU or imported – should be minimised."
- The Commission is assessing the EU and global biomass supply and demand and related sustainability. As part of its increased ambition to protect and restore forest ecosystems, the Commission will publish the results of this work on the use of forest biomass for energy production by the end of 2020.
- The Commission is assessing the EU and global biomass supply and demand and related sustainability. As part of its increased ambition to protect and restore forest ecosystems, the Commission will publish the results of this work on the use of forest biomass for energy production by the end of 2020.
- "There must be zero-tolerance for illegal practices."
- "The application of an ecosystem-based management approach under EU legislation will reduce the adverse impacts of fishing, extraction and other human activities, especially on sensitive species and seabed habitats."

- The Commission will also propose a new action plan to conserve fisheries resources and protect marine ecosystems by 2021. Where necessary, measures will be introduced to limit the use of fishing gear most harmful to biodiversity, including on the seabed.
- The by-catch of species threatened with extinction must also be eliminated or reduced to a level that allows full recovery. This should also be the case for those in bad conservation status or not in good environmental status. Furthermore, the by-catch of other species must be eliminated or, where this is not possible, minimised so as not to threaten their conservation status. To support this, data collection on by-catch for all sensitive species needs to be stepped up.
- Fisheries-management measures must be established in all marine protected areas according to clearly defined conservation objectives and on the basis of the best available scientific advice.
- As part of the Commission's Zero Pollution Ambition for a toxic-free environment, a new EU Chemicals Strategy for Sustainability will be put forward along with a Zero Pollution Action Plan for Air, Water and Soil. The Commission will also promote the goal of zero pollution from nitrogen and phosphorus flows from fertilisers through reducing nutrient losses by at least 50%, while ensuring that there is no deterioration in soil fertility. This will result in the reduction of use of fertilisers by at least 20%."
- The Commission will put in place a new European biodiversity governance framework. This will help map obligations and commitments and set out a roadmap to guide their implementation."
- "As part of this new framework, the Commission will put in place a monitoring and review mechanism. This will include a clear set of agreed indicators and will enable regular progress assessment and set out corrective action if necessary. (…) It will support administrative capacity building, transparency, stakeholder dialogue, and participatory governance at different levels."
- As regards the Birds and Habitats Directives, enforcement will focus on completing the Natura 2000 network, the effective management of all sites, species-protection provisions, and species and habitats that show declining trends. The Commission will also ensure that environment-related legislation with an impact on biodiversity is better implemented, enforced and – where necessary – reviewed and revised.
- "The Commission will support civil society's role as a compliance watchdog and will engage with Member States to improve access to justice in national courts in environmental matters for individuals and NGOs. It will also broaden standing for NGOs by proposing a revision of the Aarhus Regulation.
- New initiative in 2021 on sustainable corporate governance = "legislative proposal, will address human rights and environmental duty of care and due diligence across economic value chains in a proportionate way according to different sizes of enterprises."
- "The Commission will help to build a European Business for Biodiversity movement, taking inspiration from recent initiatives and making this movement an integral part of the European Climate Pact.
- The Commission will ensure full implementation and enforcement of the biodiversity provisions in all trade agreements including through the EU Chief Trade Enforcement Officer.
- "The Commission will also present in 2021 a legislative proposal and other measures to avoid or minimise the placing of products associated with deforestation or forest degradation on the EU market, and to promote forest-friendly imports and value chains.

Farm to Fork Strategy:

- Legislative proposal for a framework for a sustainable food system before the end of 2023
- Focus in the document is on defining sustainable food systems and labelling, also says it will 'mainstream sustainability in all food-related policies.'
- Moving to a more plant-based diet with less red and processed meat and with more fruits and vegetables will reduce not only risks of life-threatening diseases, but also the environmental impact of the food system."
- EC will examine EU rules to reduce the dependency on critical feed materials (e.g. soya grown on deforested land).
- Review of the EU promotion programme for agricultural products, with a view to enhancing its contribution to sustainable production and consumption, and in line with the evolving diets. In relation to meat, that review should focus on how the EU can use its promotion programme to support the most sustainable, carbon-efficient methods of livestock production.
- EC will strictly assess any proposal for coupled support in Strategic Plans from the perspective of the need for overall sustainability.
- "The Commission is committed to halving per capita food waste at retail and consumer levels by 2030 (SDG Target 12.3)."

Setting the Scene- Current status of different species groups and habitats as they relate to the Agri-Food Strategy.

All of the indicators in relation to biodiversity as it relates to terrestrial and marine biodiversity make for dismal reading. Ireland is liquidating its biodiversity by its agriculture and fisheries policies.

The following information demonstrates the current status of much of Ireland's most threatened biodiversity that relate to agriculture, fisheries and forestry.

- Two thirds of Ireland's regularly occurring wild bird species are Red or Amber-Listed Birds of Conservation Concern in Ireland. Farmland birds in particular are continuing to show declines and no recovery from the catastrophic and steady crash in populations since the 70s and up to this day. Habitat loss/change and change in farming practices are leading causes of losses.[1]
- Corncrake, Barn Owl, Yellowhammer, Twite, Whinchat as well as the suite of breeding waders like Curlew, Lapwing, Dunlin, Golden Plover, Redshank and Snipe are severely threatened.[2]
- Other more common farmland birds like Common Kestrel and Stock Dove are showing declines now, with Skylark and Meadow Pipit also ones to watch.
- Birds on fragile mountain and hill heath habitats such as breeding Hen Harrier, Red Grouse, Golden Plover are also red listed demonstrating declines in these habitats.
- One third of our 99 wild bee species are threatened with extinction. Reasons for decline include; Loss of habitat through conversion of low-intensity farmland and semi-natural land to intensive farmland, forestry and urban/ industrial use; Loss of flowering plants as a food source due to changing farming practices are reasons for decline; Poisoning from pesticide use.[3]

[1] Colhoun K. & Cummins, S. 2013 Birds of Conservation Concern in Ireland 2014-19. Irish Birds 9:523-544.

[2] Lewis, L. J., Coombes, D., Burke, B., O'Halloran, J., Walsh, A., Tierney, T. D. & Cummins, S. (2019) Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. Irish Wildlife Manuals, No. 115. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

[3] FitzPatrick Ú., Murray T.E., Byrne A., Paxton R.J., Brown M.J.F. (2006) Regional Red List of Irish Bees, Publ. Rep. to National Parks and Wildlife Service (Ireland) and Environment and Heritage Service (N. Ireland).

- 40% of our wintering waterbirds have declined in 20 years with changes in land use threatening geese, swans and some wader species.[4]
- 85% of EU protected habitats (the best of the best and internationally important) have 'bad' conservation status according to the latest report from the Irish government to the Commission[5] and 70% of these are negatively impacted by agriculture.[6]
- There has been a loss of 28% of the surveyed area of the EU protected and Annex 1 lowland hay meadow habitat since 2013 due to impacts of intensification of agriculture and application of slurry.[7]
- Water quality results show a decline in Ireland in the period 2013-2019 after a period of stabilisation, with now only 53% of Ireland's surface water bodies having satisfactory water quality. The number of pristine water bodies has fallen to 20 from 500 since the 1980's. Pollution from agriculture is a dominant factor along with wastewater discharges.
- Eutrophication of freshwater bodies is considered to pose a high-level pressure and medium-level threat to four waterbird species namely, Goldeneye, Pochard, Scaup and Tufted Duck; and a medium-level pressure and threat to Coot and Gadwall.[8]
- The NPWS Article 17 report to the European Commission on the status of protected species (2019) including water-dependent species states, 'The Agriculture category represents the highest percentage of High-importance pressures (Figure 9) relative to other categories, with incidence predicted to increase over the next 12 years; this has been linked to the threat from fertiliser and pollution on selected fish species.[9]
- Greenhouse gas emissions nationally have increased and those from agriculture have not only increased, they are projected to increase further out to 2030 to 38% of total emissions.[10]
- Drained peatlands (raised bog, upland blanket bog and other peat soils) and related activities account for emissions of c.11 million tonnes of CO2 per year[11] - equating to total emissions from the energy sector in 2018 (11.7 million tonnes CO2 per year).[12]
- Forestry is a significant pressure and threat to Red and Amber listed birds of Conservation Concern.[13]

[4] Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G. & Tierney, T. D. (2018) Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16. Irish Birds No. 41, 1-12; Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. (2013) Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford.

[5] NPWS (2019). The Status of EU Protected Habitats and Species in Ireland

[6] NPWS (2019). The Status of EU Protected Habitats and Species in Ireland, pg 84.

[7] Martin, O'Neill and Daly, 2018). Martin, J R, O'Neill, F H and Daly, O H (2018) The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. Irish Wildlife Manuals 102, National Parks and Wildlife Service, Ireland.

[8] Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. (2019) Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

[9] NPWS (2019). The Status of EU Protected Habitats and Species in Ireland, pg 90
https://www.npws.ie/publications/search?title=article+17&keyword=&author=&series=All&year=&x=31&y=8

[10] Ireland's Provisional Greenhouse Gas Emissions 1990-2018
https://www.epa.ie/pubs/reports/air/airemissions/ghgprovemissions2018/Report_GHG%201990-2018%20Provisional%20Inventory%20October%202019.pdf
Ireland's Greenhouse Gas Emissions Projections 2018-2040
https://www.epa.ie/pubs/reports/air/airemissions/ghgprojections2018-2040/Greenhouse_Gas_Projections.pdf

[11] Wilson, D., C. Müller, and F. Renou-Wilson, Carbon emissions and removals from Irish peatlands: current trends and future mitigation measures. Irish Geography, 2013. 46(1-2): p. 1-23.

[12] Duffy, P., et al., National Inventory Report 2018. Greenhouse gas emissions 1990-2016 reported to the United Nations Framework Convention on Climate Change. 2018. p. 581.

[13] Corkery et al 2019 Changes in forest cover result in a shift in bird community, composition Journal of Zoology doi:10.1111/jzo.12757

- In relation to Ireland's 24 breeding seabird species (threat level is medium or high):[14]
    - 22 are threatened by wind, wave and tidal energies if not planned correctly
    - 21 are threatened by fisheries bycatch
    - 18 are threatened by climate change
    - 13 are threatened by marine plastics
    - 11 are threatened by recreational activities

- Six species of sharks, skates and rays in Irish waters are Critically Endangered, a further five species are Endangered, 6 species are Vulnerable and 19 are near threatened according to IUCN Red List criteria. In essence 62% of Ireland's rich cartilaginous fish species are in trouble[15] and the foremost risk in Irish waters is over-exploitation as part of commercial fisheries.

Ireland's Natural Heritage: Our Biodiversity

Environmental Background paper information on biodiversity

- In the background chapter on environment, the focus on biodiversity appears to be solely on the Natura 2000 sites and protected habitats. This will need to be corrected in the subsequent iterations to address wider countryside biodiversity and the impacts to it.
- The chapter states that current baseline biodiversity is provided for within the conditionality of the basic payment. However, this is obviously not the case when all the environmental indicators are failing. This signifies that the conditionality (cross compliance) has failed to be properly implemented and that policies are undermining the goals of the conditionality.
- In relation to the following statement, "The trends in biodiversity nationally are not positive despite Agri-environmental schemes in place since 1994. The current AES - GLAS has approximately 50,000 participants and has made advances on past AES with more targeted actions and measures. There is a significant biodiversity focus with both priority entry and actions targeted at habitats and species of conservation concern." The RDP 2014-2020 failed to provide targeted ecological advisory services to support farmers in the measures they were required to undertake. This was flagged in advance and requested by BirdWatch Ireland. We are not confident that there will be any biodiversity boost from general GLAS schemes. The EIPs supported by DAFM however are very promising and show the benefit of targeted results-based schemes supported by strong ecological advisory services.
- In relation to hedgerows, work done by Neil Foulkes of the Hedgelaying Association of Ireland has found that approximately 300 km of hedgerows have been sanctioned for removal by the DAFM under EIA regulations but without adequate environmental assessment. Older hedgerows are irreplaceable and appropriate management is required. This issue has been raised with DAFM but has not been resolved. The thresholds for EIA must be eliminated.
- In the table at the end called '**ANNEX I – SUMMARY OF ENVIRONMENTAL TARGETS IN THE AGRI-FOOD SECTOR'** the targets for biodiversity are poor. They must be aligned with requirements under the EU Law and the new EU biodiversity strategy 2030 as it relates to restoring nature. In addition, national laws and plans must also be included.

[14] Cummins, S., Lauder, C., Lauder, A. & Tierney, T. D. (2019) The Status of Ireland's Breeding Seabirds: Birds Directive Article 12 Reporting 2013 – 2018. Irish Wildlife Manuals, No. 114. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland and national Article 12 of the Birds Directive reporting to the European Commission

[15] Clarke, M., Farrell, E.D., Roche, W., Murray, T.E., Foster, S. and Marnell, F. (2016) Ireland Red List No. 11: Cartilaginous fish [sharks, skates, rays and chimaeras]. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Dublin, Ireland.

- Habitats Directive (maintain and restore favourable conservation status, avoid deterioration of sites),
    - Article 6.1 For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex I present on the sites.
    - Article 6.2 Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.
- Birds Directive:
    - Article 2: Member States shall take the requisite measures to maintain the population of the species referred to in Article 1 at a level which corresponds in particular to ecological, scientific and cultural requirements, while taking account of economic and recreational requirements, or to adapt the population of these species to that level.
    - Article 3: Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds referred to in Article 1.
    - Article 4.2: Member States shall take similar measures for regularly occurring migratory species not listed in Annex I, bearing in mind their need for protection in the geographical sea and land area where this Directive applies, as regards their breeding, moulting and wintering areas and staging posts along their migration routes. To this end, Member States shall pay particular attention to the protection of wetlands and particularly to wetlands of international importance.
    - Article 4.4: Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats.

- The Targets table states that Ireland is going to partially achieve targets for biodiversity but there is absolutely no evidence to substantiate this. We suggest that unless there is a complete turnabout in agriculture policy and significant ramping up of targeted results-based measures in CAP to halt the loss of biodiversity, it will not happen.

The following information and subsequent proposals to transform agriculture in Ireland in this submission must be inform the direction of the Agri-Food Strategy 2030.

Ireland's biodiversity that relates to farmland and marine ecosystems are experiencing very severe pressures and threats. This is evidenced by declining populations of many farmland birds and the loss in extent and quality of many semi-natural habitats in the mosaic of Ireland's farmed landscapes. Our marine ecosystems are also in serious trouble with declining fish stocks, warming waters and estuarine habitats having bad or inadequate status.

Not only has the intensification of agriculture resulted in impacts to habitats, water and greenhouse gas emissions but the forestry programme's focus on predominantly Sitka spruce plantation without adequate ecological assessment on the siting of plantations has put further pressure on protected species and habitats within Natura sites, but also has impacted wider countryside biodiversity. The third impact of course is that rising greenhouse gas emissions globally is also a significant threat to biodiversity here. Unsustainable policies are a zero-sum game for our biodiversity and where the solutions (forestry planting for dairy emissions) can make matters significantly worse.

Ireland's natural heritage is under severe pressure. Many threatened habitats are in danger of being lost, and many species are threatened with extinction. Climate change will affect not just species and habitats, but also impact on people's lives and livelihoods. Nature also has a role in helping mitigate climate impacts and helping communities adapt to a changing climate through carbon sequestration, flood water retention and coastal protection amongst others. Ireland must address these and other issues to ensure future economic, social and environmental sustainability. It must seek to reduce climate impacts, mitigate for existing actions and adapt to changes as required. Ireland must halt the loss and destruction of important habitats in the Irish landscape, whether in designated areas or in the wider countryside. Biodiversity declines must not just be halted, but reversed. Populations of threatened species need to be not only stabilised, but also restored to parts of their former range. Government Policy, backed up by sufficient resources, must prioritise safeguarding all aspects of Ireland's natural heritage and wider environment for future generations.

Existing legislation must be acted upon and, where possible, enhanced or exceeded. For biodiversity, the long-overdue fulfilment of the EU Natura Directives as it relates to agriculture, fisheries and forestry is an essential first step. The full suite of all suitable sites must be designated so they can be fully and properly protected. Within these sites, comprehensive management plans, with targets and objectives and, crucially, the means to achieve them, must be clearly set out. Outside of these sites in the wider countryside, actions are required to protect priority, threatened species and habitats. A properly reformed and re-visualised Common Agricultural Policy (CAP) has a crucial role to play in this ambition. However, to achieve these goals, a reformed CAP must sit within a coherent set of EU policies and be backed up by appropriate national legislation.

Declining bird populations indicate declining health of the natural environment. Birds are indicators of the health of the countryside. Like the "canary in the coalmine", birds can provide early warning systems for the degradation or loss of ecosystems, and the services such ecosystems provide. Birds satisfy many of the criteria of effective indicators, are often used as an early-warning system to detect emergence of environmental problems, and have been widely used to inform decision making and land use management policy including within agricultural ecosystems.[16] The decline in farmland bird populations is telling us that we need to do more to maintain a healthy balance of nature across Irish farmland.

To protect our natural heritage, actions and measures must be underpinned by the best information available. In some cases, we must improve our understanding of threats in order to properly deal with them through new research.

[16] Gregory, R. D., A. van Strien, P. Vorisek, A. W. Gmelig Meyling, D. G. Noble, R. P. B. Foppen and D. W. Gibbons. 2005. Developing indicators for European birds. Philos. T. R. Soc. B 360: 269-288.

Information on how to deliver on objectives and priorities must be available to everyone involved in delivery at all levels (from the Government Ministers to individual citizens), seeking out experts on certain issues where required, and ensuring dissemination is accessible to all.

An integrated monitoring and evaluation programme is essential to ensure that policies and actions are delivering on objectives. Monitoring needs to be at many levels, and must use indicators that reflect the actual impacts of the actions on objectives and priorities. Evaluation must ensure that strengths are highlighted to show the value of the work being done. It must also ensure that any gaps are addressed to ensure a comprehensive delivery.

Farmland birds

Humans depend upon biodiversity for health, wealth and survival. Biodiversity provides the basis for agricultural productivity, providing ecosystem services such as pollination, maintenance of soil fertility and control of crop pests. As well as agriculture benefitting from biodiversity, many species benefit, and are even dependent upon, farming to create and manage the habitats they require. Many semi-natural habitats and the associated flora and fauna depend on sustainable management, in relationships that have evolved over thousands of years. We would have far fewer Yellowhammers if we had no cereal crops, and probably no Corncrakes without late-cut hay meadows. However, changes in recent decades have occurred too rapidly for many habitats and species to adapt, hence the catastrophic losses in biodiversity we are witnessing today.

Ireland's biodiversity is facing very severe threats, as evidenced by declining populations of many bird species and the loss in extent and quality of many semi-natural habitats. In Ireland, many previously common birds have suffered major population and range declines since the 1970's[17]. Declining bird populations indicate declining health of the natural environment. They reflect losses in habitat extent and quality and often equate to losses in ecosystems services which are a valuable asset to Ireland. The decline in farmland bird populations is telling us that we need a sea change to maintain a healthy balance of nature across Irish farmland.

Like the "canary in the coalmine", birds can provide early warning systems for the degradation or loss of ecosystems, and the services such ecosystems provide. Birds satisfy many of the criteria of effective indicators, are often used as an early-warning system to detect emergence of environmental problems[18]. Bird indicators have been widely used to inform decision making and land use management policy including within agricultural ecosystems.[19]

Addressing Farmland Bird Declines

It is well-documented that many modern, intensive farming practices leave little space for birds or biodiversity.[20] Many birds that use farmland habitats that were previously common have suffered major population declines since the 1970's.

[17] Colhoun K. & Cummins, S. 2013 Birds of Conservation Concern in Ireland 2014-19. *Irish Birds* **9**:523-544.
[18] 2010 Biodiversity Indicators Partnership 2010
[19] Gregory, R. D., A. van Strien, P. Vorisek, A. W. Gmelig Meyling, D. G. Noble, R. P. B. Foppen and D. W. Gibbons. 2005. Developing indicators for European birds. *Philos. T. R. Soc. B* **360**: 269-288.
[20] Newton, I. 2004. The recent declines of farmland bird populations in Britain: an appraisal of causal factors and conservation actions. *Ibis* **146**: 579-600.

As a group, farmland birds have experienced some of the largest population declines and range contractions of any bird species in Ireland. Corn Bunting (a tillage-specialist) has become extinct as a breeding bird in Ireland, with the last confirmed breeding in the 1990s.[21]

The Countryside Bird Survey (CBS) monitors farmland bird populations (as well as the populations of other bird species occurring in the wider countryside). However, it was established in 1998 and as such was arguably too late to pick up many of the more dramatic or long-term declines that have taken place in farmland species, many of which occurred prior to this period, and especially from the 1970s onwards. These earlier declines have been illustrated by bird atlases. They have also been shown in other western European countries that have had ongoing monitoring schemes in operation since the 1970s, such as Britain and France, where similar changes in agriculture have taken place. **The Farmland Bird Index cannot be used in isolation as an indicator of the performance of Irish agriculture. It is misleading as it does not adequately reflect ongoing declines in breeding waders in particular.** This must be rectified.

Figure 1 shows the breeding season range (as expressed by the number of occupied 10km squares in Ireland where breeding was either confirmed or considered probable) from the three breeding bird atlases undertaken in Ireland (around 1970, 1990 and 2010) for the nine lowland farmland bird species that are Red-listed in the Birds of Conservation Concern in Ireland (BoCCI)[22] . For all nine species, the number of occupied 10km squares has at least halved since 1970.

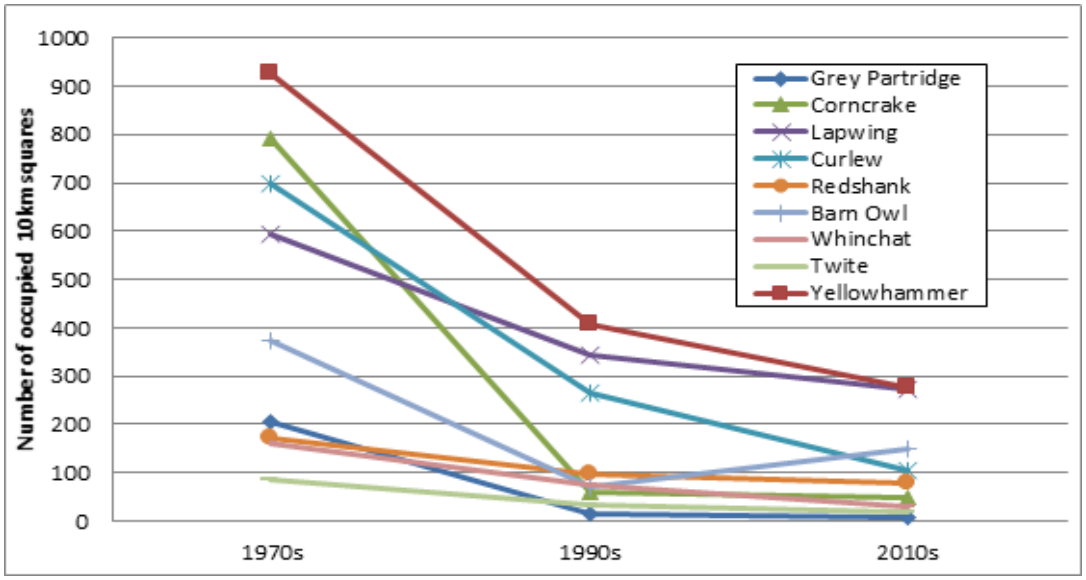


Figure 1: Range (number of occupied 10km squares) in 1970, 1990 and 2010 breeding bird atlases of Red-listed lowland farmland bird species in Ireland.

[21] Lynas, P., Newton, S.F. & Robinson, J.A. (2007) The status of birds in Ireland: an analysis of conservation concern 2008 – 2013. *Irish Birds* **8**: 149-166.

[22] Colhoun K. & Cummins, S. 2013 Birds of Conservation Concern in Ireland 2014-19. *Irish Birds* **9**:523-544.

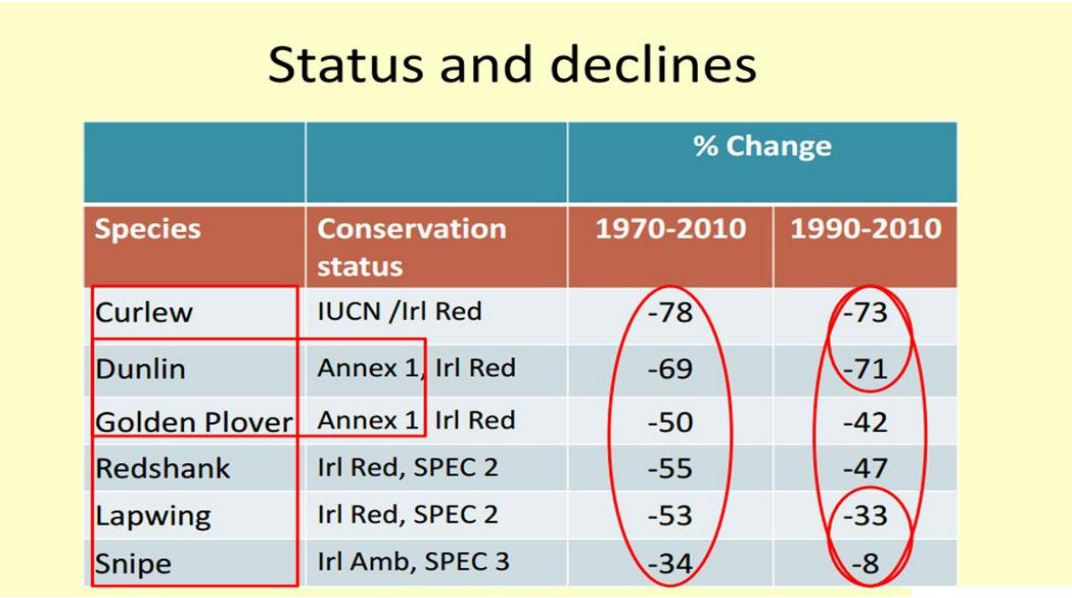


Figure 2: This data shows declines in breeding waders which are experiencing further declines to this day.

There has been extensive research in the UK in particular which has related farmland bird declines to changes in agricultural practices since the 1970s.

Specific causes for change included a variety of practices, including increased use of pesticides and fertilisers, increased mechanisation and loss of hedgerow extent and quality. These changes in agriculture also took place in Ireland over the same period.

Since 1990, only one Red-listed species (Barn Owl) has shown a range increase in the bird atlas data. This is most likely due to greater recording from an intensive project underway since 2006. This work has been focused on locating Barn Owl nesting sites throughout the country, providing Barn Owl nesting boxes in key areas, and studying aspects of the species ecology, particularly the appearance and spread of two introduced prey species.

For other species, the rate of decline between 1990 and 2010 has reduced compared to that between 1970 and 1990. In some cases, these slower rates of decline may be linked to a reduction in the level of agricultural intensification in the last twenty years compared to the twenty-year period before that, when larger areas of farmland would have been agriculturally improved (cleared, drained, re-seeded, etc.). **However, recent declines of previously common farmland birds, i.e. Kestrel and Stock Dove, show that recent intensification in the last 5 years may now be further impacting farmland bird populations**[23].

In other cases, the reduced rate of decline may be linked to direct conservation action, such as the Corncrake Grant Scheme which was introduced in Ireland in the early 1990s. **However, for some species (such as Curlew, Whinchat or Twite) the rate of decline is such that further extinctions of these breeding species are likely without targeted and sustained intervention, and re-imagining how landscapes will support these species in the long term**.

[23] Lewis, L. J., Coombes, D., Burke, B., O'Halloran, J., Walsh, A., Tierney, T. D. & Cummins, S. (2019) Countryside Bird Survey: Status and trends of common and widespread breeding birds 1998-2016. Irish Wildlife Manuals, No. 115. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

Halting further Breeding Wader Declines

Recent data from the 2007-2011 Bird Atlas confirms that, as a group, breeding waders in Ireland are experiencing significant declines in populations size and range (see Figure 1 for trends for Lapwing, Curlew and Redshank). Many breeding wader species, including Curlew, Lapwing, Redshank and Snipe are largely dependent upon grassland habitats. The decline in many of these species has been linked to various effects of grassland intensification, including drainage, increased use of fertilisers, re-seeding and increased stocking rates[24]. Agri-environment measures that are being trialled in Ireland (and elsewhere) have shown that population declines can be halted, provided that sympathetic grassland management techniques are used.

Many breeding waders are dependent upon farming, such as extensive grazing of upland commonages or machair grassland, to create and maintain habitats that offer all their ecological requirements (e.g. appropriate vegetation for nests, chick-feeding areas, etc.) during the breeding season. Dunlin and Golden Plover are listed on Annex 1 of the Birds Directive; Curlew has recently been added to the IUCN Red List of globally threatened species; Lapwing, Redshank, Curlew and Golden Plover are now on the Red List of Birds of Conservation Concern in Ireland, due to significant population and/or range contractions over the last 50 years, with Snipe and Dunlin on the Amber List because of similar, though less severe, declines.

Although there has been no national survey of breeding waders in the Republic of Ireland, trends have been calculated from the best available data (see Figure 2). As can be seen, these national estimates indicate very serious declines of Curlew, Lapwing and Redshank in particular.

We estimate that there may have been around 5,000 pairs of Curlew in Ireland in the late 1980s. The population has subsequently undergone a decline of 97% in 40 years. The number of breeding pairs remaining in the Republic of Ireland is so low that the species is now facing national extinction.

These declines are confirmed by recent atlas data, which records a 54% loss of occupied 10km squares for Lapwing, 53% reduction for Redshank, 85% decline in occupied 10km squares for Curlew and 34% range contraction for Snipe. The changes are largely attributed to land use changes, in particular those associated with agricultural improvement, including:

- The widespread loss of wetlands; more than 600,000 acres of agricultural land were drained between 1947 and 1997.
- The more intensive management of grasslands; for example, fertiliser use increased by 400% in the second half of the last century.
- Direct loss of marginal upland habitat through, *inter alia*, afforestation. For example, there was a 60% increase in the area of forestry between 1980 and 2000.

[24] Lauder, C. & Donaghy, A. 2008. *Breeding waders in Ireland 2008: A Review and Recommendation for Future Action*. Unpublished BirdWatch Ireland report to the National Parks and Wildlife Service.

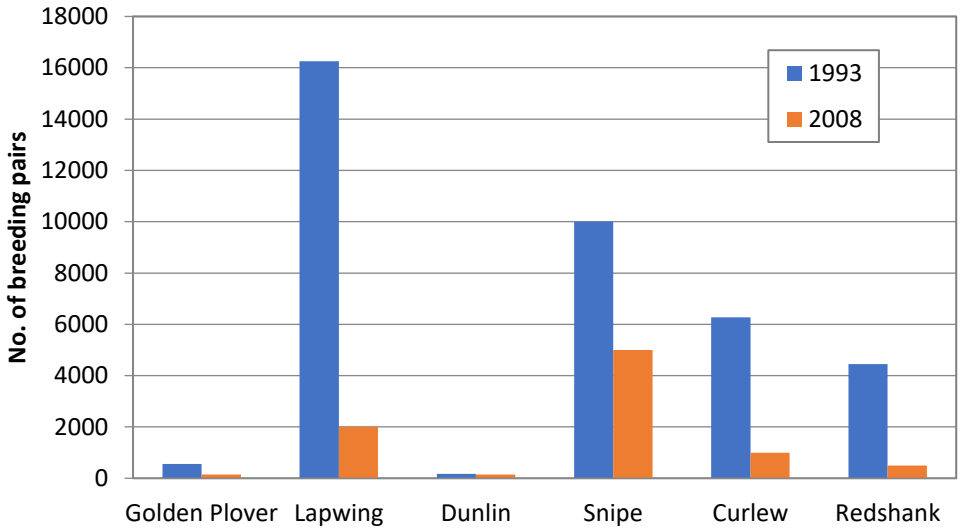


Figure 2: Number of breeding pairs of six key wader species in Ireland between 1993 and 2008 (data from Lauder & Donaghy, 2009)

Unfortunately, the lack of targeted measures for biodiversity and the incentivisation for further uptake of dairy enterprises and the high premia for afforestation are putting further pressure on breeding waders and other species. The current supports systems are not providing sufficient incentivisation for HNV farming or for saving breeding waders and other species.

Addressing the loss of farmland pollinators

Pollination, which plays a vital role in the reproductive cycle of flowering crops and wild plants, brings substantial economic benefits to agriculture, tourism and exports, as well as human health and wellbeing. Pollinators are important to farmers who grow pollinator-dependent crops and to those of us who want to grow our own fruits and vegetables. Even if we don't currently grow these crops, we should aim to retain the ability to do so for future generations. We know that 78% of our wildflowers also benefit from being pollinated by insects - without bees we will lose the colourful and distinct natural beauty of our landscape which makes it a pleasant place to live, an attractive destination for tourists, and a selling point for our agricultural produce abroad.

Unfortunately, our pollinators are in decline, and the problem is serious. One third of our 99 bee species are threatened with extinction from the island of Ireland.

If we want them to be here to pollinate crops and wild plants for future generations, we need to manage the landscape in a more pollinator friendly way and create a network of diverse and flower-rich habitats. The All-Ireland Pollinator Plan 2015-2020[25] is supported by over 68 governmental and non-governmental organisations who have pledged to deliver 81 actions to achieve this goal and make Ireland, North and South, more pollinator friendly.

Appropriate land management practices are essential to conserve pollinators in Ireland. Traditional farming was very pollinator friendly because it was naturally flower-rich. There were hay meadows, annual flowers in cereal crops, more wildflowers along lanes and in field corners due to less spraying, more flowers in hedgerows due to less mechanisation and we grew more of our own fruits and vegetables. In the past 50 years, changes in farming have reduced the number of flowers and, therefore, we now have fewer bees.

[25] http://www.biodiversityireland.ie/wordpress/wp-content/uploads/All-Ireland%20Pollinator%20Plan%202015-2020.pdf

A reformed CAP must not only make space for habitats that pollinators can use but ensure that there is large scale restoration of semi-natural grassland habitats. Tinkering around the edges in urban areas and encouraging no mowing will not replace the loss of thousands of hectares of semi-natural grassland.

Tackling the Loss of HNV farmland and Semi-natural grassland Habitats

Within the EU it is recognised that the loss of semi-natural habitats associated due to agricultural intensification is a major driver of biodiversity loss. Over 50% of Europe's most highly valued biotopes occur on low-intensity farmland. Of Europe's most threatened habitats and species, 57 types of habitat and 257 species depend on or are associated with farming. Worryingly over 75% of these habitats and at least 70% of the species are in unfavourable conservation status.

The need to protect farming systems in Europe of greatest biodiversity value is recognised as being necessary if the EU is going to halt biodiversity loss under the 2020 biodiversity agreement. These farming systems have been defined by the EU Commission as High Nature Value (HNV):

"*High Nature Value farmland comprises those areas in Europe where agriculture is a major (usually the dominant) land use and where that agriculture supports or is associated with either a high species and habitat diversity, or the presence of species of European, and/or national, and/or regional conservation concern, or both*." Indeed "*the highest grade of HNV farmland is that which supports the presence of species of European conservation concern*."

Semi-natural grassland habitats, which are often extensively grazed, are rich in flora and fauna and are hugely valuable to agriculture and wider society. These threatened habitats are one example of threatened HNV habitats in Ireland. Extensively grazed grasslands have many species of seed producing grasses which support a variety of invertebrates and birds. Some semi-natural grassland habitats are protected by the Habitats Directive because they have declined so much in extent across the EU and will be lost unless measures are taken to protect them and ensure that they are managed appropriately. Annex I habitats under the Habitats Directive which are reliant on farming practices include Calaminarian grassland, Molinia meadows, Hydrophilous tall herb, Lowland hay meadows and the priority habitats Orchid-rich calcareous grassland and Species-rich Nardus upland grassland. However, many semi-natural grasslands are not protected by legislation, and are therefore considered vulnerable due to poor conservation status.[26] Ireland is even losing those that are protected as evidence by the 2019 Annex 1 grassland resurvey.[27]

Extensive grazing has maintained these HNV farmed habitats for thousands of years and such HNV farming needs to be maintained and supported if they are to continue to deliver the range of public benefits which they are valued for.

In Ireland, the overall quality of each of the Annex I grassland habitats surveyed in response to Article 17 requirements of the Habitats Directive was 'Unfavourable – Bad', emphasising their vulnerability in Ireland and the urgency with which they need to be studied, monitored and offered suitable management support measures.

[26] O'Neill et al; Irish Semi-natural Grasslands Survey, Annual Report No. 4, November 2013. National Parks and Wildlife Service https://www.npws.ie/sites/default/files/publications/pdf/ISGS13_Western_Report.pdf

[27] Martin, O'Neill and Daly, 2018). Martin, J R, O'Neill, F H and Daly, O H (2018) The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. Irish Wildlife Manuals 102, National Parks and Wildlife Service, Ireland.

In most cases, the implementation of appropriate management would improve the condition of the habitat, and assessment scores of Favourable would be attainable in the medium term.[28] The "main threat recorded for Annex I grassland habitats surveyed in 2009 was encroachment/undergrazing, highlighting the urgency with which the problem of land abandonment needs to be tackled."[29]

Agri-environment measures that are being trialled in Ireland (and elsewhere) have shown that wildlife population declines can be halted, provided that sympathetic grassland management techniques are used.

CAP economics and environment in Ireland

Data published by the DAFM in the CAP beneficiaries database[30] was investigated by BirdWatch Ireland and reveals an allocation of just over €1.6 Billion to the Irish agri-food sector for all measures under CAP (Pillar 1 and Pillar 2) in 2016. Within this allocation, nearly €365 million (22.7% of the total CAP budget) was drawn upon from Pillar 2 for measures 'Improving Environment and Countryside'. However, the allocation of these funds across Ireland is very different (see Figure 4 and Figure 5) and is not going to those farmers who need it most to support biodiversity and water.

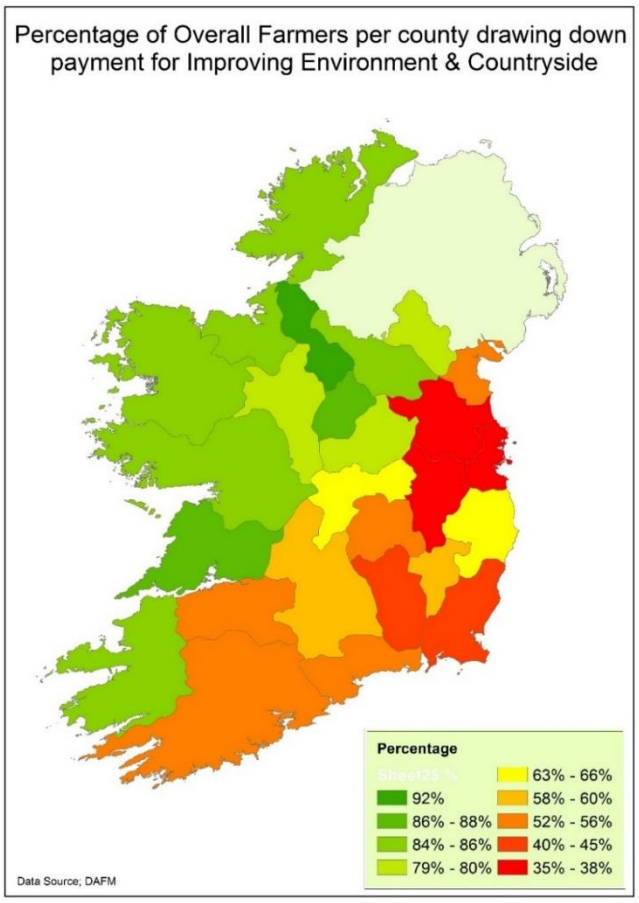


Figure 4: Number of farmers (as percentage) drawing down payments from CAP in 2016 for Improving Environment and Countryside as a percentage of overall farmer numbers (farmer numbers derived from the CSO farm census 2010)

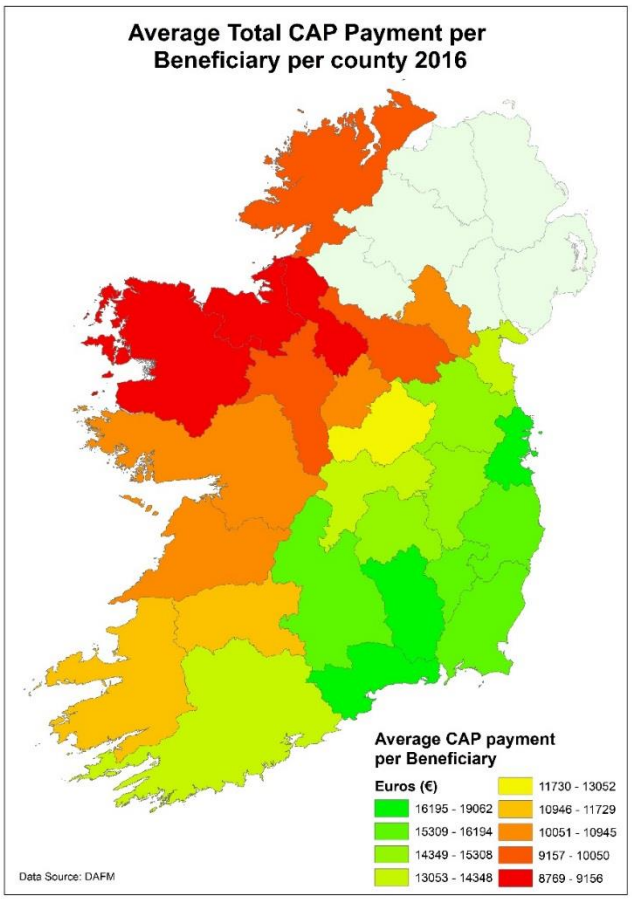


Figure 5: Displays the average total CAP payment received by individual beneficiaries in each county of Ireland for 2016.

[29] O'Neill et al., 2009, from the Irish Semi-natural Grasslands Survey Annual Report, National Parks and Wildlife Service (https://www.npws.ie/sites/default/files/publications/pdf/ONeill_et_al_2009_ISGS.pdf)

[30] Data derived from CAP beneficiaries database (https://www.agriculture.gov.ie/agri-foodindustry/euinternationalpolicy/commonagriculturalpolicycap/capbeneficiariesdatabase/); accessed Jan-18

Figure 4 shows the proportion of farmers drawing down Pillar 2 payments for measures associated with "Improving the Environment and Countryside" in 2016 on a county-by-county basis. The number of farmers in each county is based upon CSO statistics from 2010 (the most recent census data available). The Pillar 2 measures include agri-environment schemes and the Areas of Natural Constraint (ANC) schemes. By contrast, Figure 5 shows the average payment per county to CAP beneficiaries (under Pillar 1 and/or Pillar 2) in 2016. The differences between the two figures are striking, with a clear north-west: south-east divide. The scale of this divide is also substantial, with farmers in Cos Kilkenny and Waterford receiving almost twice the average CAP payment compared to farmers in Mayo, Sligo and Leitrim, yet perhaps only half the proportion of farmers in these areas undertake environmental management measures in comparison to the north-west.

What is even more stark, and when considering the value for money of overall CAP funding, is to compare these economic maps with indicators for the delivery of public goods. For example, Figure 6 shows the likelihood of HNV farming in Ireland. This map uses five variables (Corine landcover data split into three classes; farmed semi-natural land, semi-natural land and non-semi-natural land; average stocking density; hedgerow density; river and stream density and soils diversity) that are available at a national scale to map HNV farmland likelihood at an Electoral Division scale.[31]

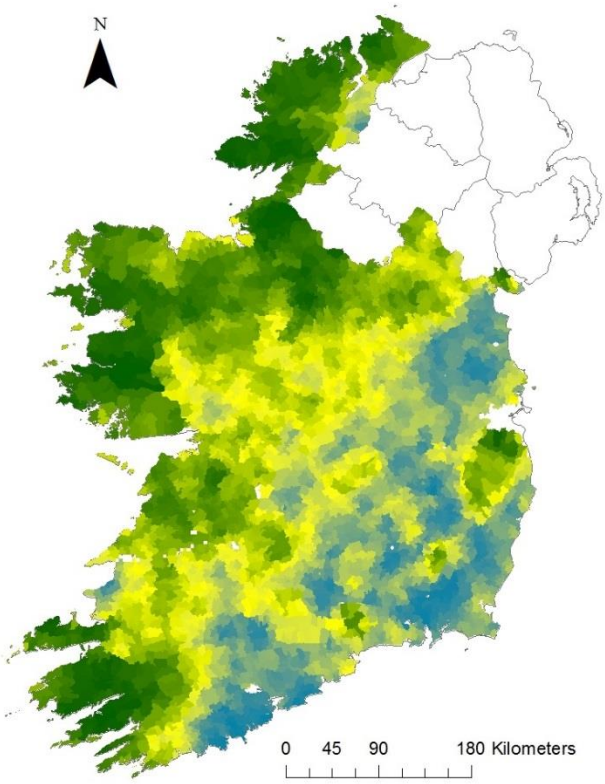


Figure 6: Map showing likelihood of HNV farming in Ireland; green indicates high likelihood; yellow indicates intermediate likelihood and blue indicates low likelihood of having HNV farmland. (Map sourced from IDEAL-HNV (http://www.high-nature-value-farmland.ie/hnv-distribution/)).

[31] This map was downloaded from the IDEAL-HNV project http://www.high-nature-value-farmland.ie/hnv-distribution/ (accessed March 2018); please see this website for further information on HNV farming, and the uses and limitations of this map.

It is clear that HNV farming occurs where average CAP payments are lowest (e.g. the north-west) and the proportion of farmers drawing down payments to improve the environment and countryside (such as agri-environment or ANC payments) is highest. To meet CAP and EU objectives, funding should be directed towards areas delivering non-market, public goods (such as a healthy environment). It is clear from Figures 5 and 6 that the current CAP model instead directs money to areas where environmental outputs are low.

Water-dependent Habitats and Species

Diffuse agricultural pollution is known to be one of the greatest pressures on water quality and freshwater biodiversity in Ireland. According to the NPWS only five (11%) of Irelands water-dependent habitats are deemed to be at Favourable Conservation Status, while only eleven (50%) water dependent species are at Favourable Conservation Status. The loss of high ecological status is a critical conservation issue for Ireland's internationally important populations of Freshwater Pearl Mussel (*Margaritifera margaritifera*) the endemic subspecies the Nore Freshwater Pearl Mussel (*Margaritifera durrovensis*) and the Atlantic Salmon (*Salmo salar*). The Freshwater Pearl Mussel and the Nore Freshwater Pearl Mussel are listed under Annex II and V of the Habitats Directive while salmon are an Annex II species. According to the NPWS both species have bad conservation status with an overall declining trend in conservation status. These species require high water status and agricultural intensification and its associated water quality impacts of eutrophication and sedimentation are having a negative impact on their conservation status. Diffuse pollution to surface waters due to agricultural activities are considered as one of the greatest threats to these species.

The decline in high status sites and the continued decline in water quality generally will be discussed more in the section on Water quality. High-status sites are protected under the Water Framework Directive and many are also protected under the Habitats and Birds Directives due to the presence of important water-dependent habitats and species. Where these designations overlap Ireland is legally required to prevent a deterioration in water quality under both the WFD and Habitats and Birds Directives. The CAP has an important role to play in meeting Irelands obligations under the WFD. This will involve promoting measures which address diffuse agricultural pollution right across the country and also supporting framing systems which are associated with the protection of High Status Waterbodies and freshwater SACs and SPAs.

The following information highlights our significant concerns in relation to water-dependent birds:

- 40% of our wintering waterbirds have declined in 20 years with changes in land use threatening geese, swans and some wader species.[32]
- Eutrophication of freshwater bodies is considered to pose a high-level pressure and medium-level threat to four waterbird species namely, Goldeneye, Pochard, Scaup and Tufted Duck; and a medium-level pressure and threat to Coot and Gadwall.[33]
- The NPWS Article 17 report to the European Commission on the status of protected species (2019) including water-dependent species states **'The Agriculture category represents the highest percentage of High-importance pressures (Figure 9) relative to other categories,**

[32] Burke, B., Lewis, L. J., Fitzgerald, N., Frost, T., Austin, G. & Tierney, T. D. (2018) Estimates of waterbird numbers wintering in Ireland, 2011/12 – 2015/16. Irish Birds No. 41, 1-12; Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. (2013) Bird Atlas 2007-11: the breeding and wintering birds of Britain and Ireland. BTO Books, Thetford.
[33] Lewis, L. J., Burke, B., Fitzgerald, N., Tierney, T. D. & Kelly, S. (2019) Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10-2015/16. Irish Wildlife Manuals, No. 106. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

with the incidence predicted to increase over the next 12 years; this has been linked to the threat from fertiliser and pollution on selected fish species.[34]

Restoration management of grazed peatland habitats

Healthy peatlands are valuable to society for the range of services they provide, including water regulation and purification, carbon storage and sequestration and biodiversity. Restoration and conservation management of peatland habitats is widely lauded as a prime example of a nature-based solution to climate change mitigation and adaptation.

Peatland habitats in Ireland are in extremely poor condition in Ireland, with all of the annexed peatland habitats (wet heath, dry heath, blanket bog and raised bog) found to have 'bad' conservation status.[35] While there are a range of threats to peatland habitats, many designated and undesignated peatland habitats are managed by extensive grazing on upland peaty soils. Upland sites with thin peaty soils are sensitive to overgrazing. Once eroded, appropriate grazing levels alone is insufficient to restore the habitats ecological functioning. Eroded peatlands release carbon, impact water quality downstream, result in loss of wildlife and ecosystems services, damage fisheries and increase costs of treatment for drinking water.

Taking even the climate change mitigation ecosystem services associated with peatlands highlights the importance of managing this national asset sustainably. Covering a mere 3% of the world's terrestrial surface, peatlands contain an estimated 550 Gigatonnes (Gt) of carbon. This is equal to 30% of all soil carbon, as much carbon as all terrestrial biomass, and two times the carbon sink of all forests in the world. In Ireland peat soils cover 20.6% of the national land area and contain more than 75% of the national soil organic carbon. It was revealed that near-intact peatlands may actively sequester c. 57,402 t C/year over the whole country. However, damaged peatlands are a persistent source of carbon dioxide (CO2) and, at the national level, Irish peatlands are a large net source of carbon.

This is a very real cost to society, in terms of both the loss of valuable ecosystem services as well as actual damage to habitats and fisheries interests. However, peatland restoration, as with afforestation, is not a substitute for cutting the direct greenhouse gas emissions from agriculture.

Compliance with Environmental Law

Although some protection of birds (and other habitats) is afforded within protected areas (Special Areas of Conservation and Special Protection Areas for birds) though the Birds and Habitats Directives, Ireland has struggled to deliver the conservation requirements for most species within protected sites due to lack of implementation of this legislation, failure to link agri-environment schemes adequately with conservation objectives of Natura sites and failure to properly pay for the very special ecosystem services farmers in these areas deliver to the public (carbon sequestration and storage, supporting wild bird populations and many more).

In addition to threats to species and habitats within EU-designated sites (SACs and SPAs), there are a number of requirements in the Birds Directive, the Habitats Directive, and the EIA and SEA Directives to protect species and habitats outside of designated and protected areas.

[34] NPWS (2019). The Status of EU Protected Habitats and Species in Ireland, pg 90 https://www.npws.ie/publications/search?title=article+17&keyword=&author=&series=All&year=&x=31&y=8

[35] Conservation Status in Ireland of Habitats and Species listed in the European Council Directive on the Conservation of Habitats, Flora and Fauna 92/43/EEC. NPWS, 2008.

In ECJ Ruling C418-04, the Court found that despite a requirement for Member States to "make a serious attempt at protecting those habitats which lie outside the SPAs" Ireland had not "transposed that provision fully and correctly by taking suitable steps to avoid pollution or deterioration of the habitats lying outside the SPAs. It is thus clear, in the present case, that Ireland must endeavour to take suitable steps to avoid pollution or disturbances of the habitats."[36] This case is still open.

In pursuing the range of targets associated with government policies, such as the increase of agricultural production, flood control, housing or other development, there will be a general requirement for a change, intensification or industrialisation of land use. Although in some areas on certain land types this may be achieved without any significant negative impacts on the natural environment or on protected species and habitats, there may be other cases where this could result in damage reducing potential for a range of species and habitats to meet the Favourable Conservation Status required by law. It is necessary to develop and implement a range of effective regulatory measures which ensure, beyond reasonable doubt, that such impacts will not occur, before such actions are implemented.

The Habitats Directive, also applicable to Birds Directive, outlines a hierarchy of avoidance of adverse impacts, followed by mitigation of those impacts. Mitigation measures are measures which avoid or reduce the impact of the (proposed) activity or activities to the point where the plans or proposals no longer have a risk of an adverse effect. This procedure is laid out in Article 6 of the Habitats Directive and there is a body of guidance and case law which clarifies the requirements.

It is also important to note that European Court of Justice case law against Ireland in the nature and environment field illustrates Ireland's legacy of failures to adequately implement Environmental Law including the Nitrates Directive, the Birds Directive, the Habitats Directive and the EIA Directive and Regulations. This situation reflects how Ireland still does not benefit from a cohesive body of legislative instruments, policy and procedures to protect the environment from accelerating degradation and points to the need for assessment of the impacts and measures to mitigate potential impacts at the source of policy developments rather than any approach which might rely on existing Irish law and policy to ensure compliance.

Despite these well-recognised failures on Ireland's part in implementing nature protection requirements, it is clear that significant short-comings still exist. Within the new Programme for Government[37] there is neither mention of biodiversity conservation nor protection of nature, beyond the very limited measures already agreed and in operation through EU-funded schemes.

In addition, the shockingly poor funding of the National Parks and Wildlife Service and the lack of political will has meant delays in fully designating Natura sites, failure to complete Conservation Objectives, and put in place management measures for Natura sites. This has resulted in Ireland being referred to the European Court of Justice in June 2020. These failures mean that there is inadequate coherence between agriculture policy and protecting important farmed habitats in Natura sites.

[36] JUDGMENT OF THE COURT (Second Chamber) 13 December 2007; Paragraphs 179-181 of C418-04

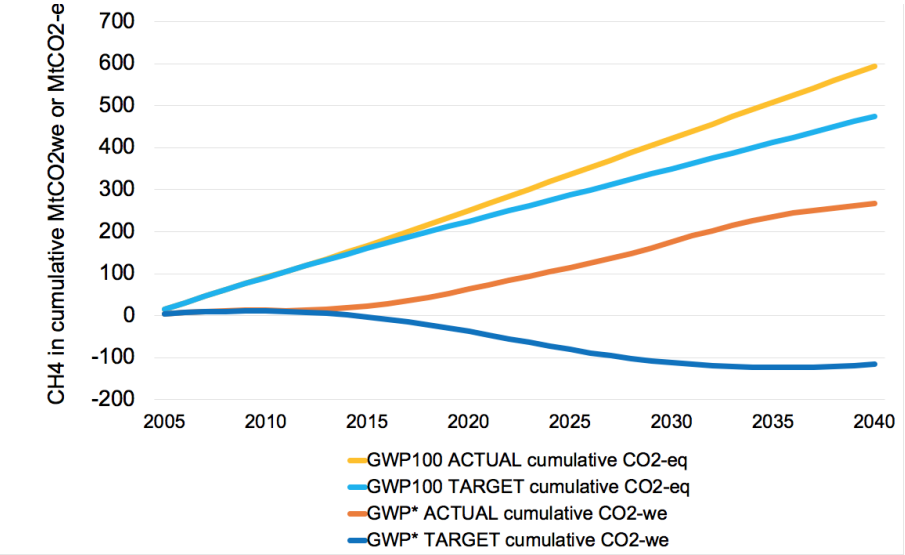
[37] http://www.merrionstreet.ie/MerrionStreet/en/ImageLibrary/Programme_for_Partnership_Government.pdf

Climate and Air

Climate

- Agricultural strategy since 2010 has brought about an ill-advised reversal in climate action policy in Ireland completely undoing prior mitigation achieved in agriculture. This is true whichever GHG metric is used.
- Agricultural policy and climate polluting emissions are remarkably correlated. Changes in beef and cattle numbers and fertiliser inputs are the key drivers. Three distinct trends are evident from 1990 to 2020:
    - 1990–1997: Irish agricultural emissions rose as EU CAP subsidies enabled greater beef cattle and pig numbers, and maintained high sheep numbers. These increases outpaced reduced dairy emissions due to the milk quota.
    - 1998–2011: Nitrogen inputs, cattle numbers and total emissions decreased due to efficiencies within the EU milk quota and extensification. These policies resulted in reducing nitrogen inputs and falling beef and dairy cattle numbers as Teagasc research confirmed at the time[38].
    - 2012–2020: Due to intentional policy change to promote agricultural intensification and expansion from 2010 onward, nitrous oxide and methane emissions have increased rapidly. Contrary to EU climate and pollution reduction policy, Ireland's Food Harvest 2020 and Food Wise 2025 agri-strategies developed by the agri-food industry and approved by the government halted and reversed earlier mitigation.
- Nitrogen use increased by about 38% from 2011 to 2018 boosting production but also boosting nitrogen pollution (N2O, NH3 and nitrates), and methane emissions increased due to increased grass and feed fed to more cattle..
- Ireland's per capita emissions of methane and nitrous oxide are each three times the EU average, and over 92% of each gas are from agriculture.
- Methane and ammonia emissions are strongly correlated with fertiliser use and cattle numbers because more feed intake results in rising per head annual methane emissions and nitrogen excretion for dairy cattle, which have trended steadily upward from 1990 to now.
- Current international GHG accounting uses the GWP100 metric but recent livestock industry advocacy has pushed for a change to use of the GWP* metric developed by Oxford Martin group climate scientists rather than GWP100. However, these proponents have failed to present a GWP* analysis of Irish agricultural methane.

[38] Humphreys 2008 http://onlinelibrary.wiley.com/doi/abs/10.1111/j.1471-0307.2008.00372.x



As the chart above shows, using GWP100 indicates only a difference of 120 MtCO2-eq between the actual pathway due to intensification after 2011 and what might have been had mitigation continued to 2020. Using GWP* shows that mitigation continued to 2020 would have been equivalent to removing 115 MtCO2 from the atmosphere, whereas increasing Irish agricultural methane emissions since 2011 has been equivalent to adding 265 MtCO2 to the atmosphere compared to 2005. Therefore, using GWP* reveals the true extent of intentional policy reversal in agriculture due to strategy since 2011 as being equivalent to adding an additional 380 MtCO2 to the atmosphere, greatly increasing the resultant warming due to agriculture compared to what it might have been with continued mitigation. This is equivalent to more than 10 years of Irish fossil fuel emissions at the 2018 rate. Therefore, changing the GHG equivalence metric for agricultural methane from GWP100 to GWP* more starkly reveals the severity of climate action failure that has been driven by the agri-strategies adopted since 2010.

- Agricultural methane reduction in the near-term is critical to Paris-aligned climate action. Cutting agri methane quickly to 2030 would avoid high risk, high cost dependence on afforestation and bioenergy with carbon capture and storage (BECCS), which would have far more severe impacts on land use and on rural society.
- Biogas and anaerobic digestion on farms can only be on a limited basis at farm-only scale. Otherwise, methane leakage and planned increased fertiliser use related to large numbers of AD plants is likely to cancel out any climate benefit.
  Carbon sequestration (increasing land carbon stocks through afforestation and soil carbon increase) is of extremely limited usefulness to climate policy compared to protecting existing land carbon stocks by blocking drainage on all organic soil pasture, ending all peat extraction and limiting timber harvest. Land carbon is of far lower economic or climate policy value than ensuring that fossil carbon remains unextracted.
    - Carbon sequestration is: highly uncertain so difficult and costly to verify; highly vulnerable to re-release through reseeding, ploughing, fire etc;
    - Moreover, Ireland has very large land use CO_2 emissions due to grassland organic soils and peat extraction being far greater than forestry and wood product removals, therefore any sequestration is merely refilling previously lost land carbon.
    - **Scientifically it makes no sense for CO_2 removals via carbon sequestration to be used as offsets for continued or increasing non-CO_2 methane emissions.**

- It is estimated that at the national level, emissions from Irish peatlands and related activities (e.g. combustion, horticulture) are around 11.01 Mt CO2 yr-1 to the atmosphere. In comparison annual C sequestration rates provided by the Department of agriculture are equivalent to 1.56 to 2.39 Mt CO2 yr-1 for the first commitment period 2008-2012. Without even considering ongoing emission from carbon rich soils, it is clear that the land use sector in Ireland is a net source of emissions and there is no budget available to offset further agricultural emissions. There is no credible approach to LULUCF In Ireland or the EU unless peat and soil carbon sink issues are addressed. The management and protection of carbon stocks in existing highly organic soils such as those found in the uplands, peatlands, grasslands and native forests would be complementary to the Biodiversity Strategy and Ireland's obligations under the Birds and Habitats Directives and commitments under the National Peatland Strategy.
- Pointing to "jam tomorrow" measures such as highly uncertain carbon sequestration or methane reduction (e.g. seaweed feed additives) is no substitute for methane reduction action now by reducing total nitrogen inputs and cattle and sheep numbers.
- Total nitrogen fertiliser imports in fertiliser and feed should be reduced to 2011 levels by 2025 resulting in greatly reduced intensive cattle numbers and reduced GHGs and nitrogen pollution.
- A national nitrogen budget within a declining cap on total feed and fertiliser reactive nitrogen usage is required as part of a national food policy to ensure nitrogen is used for food crops rather than wastefully used on grass and feed production.
- **Continuing the current strategy direction is aligned with further climate action failure. Therefore, for the benefit of farmers and society the current strategy direction needs take a U-turn toward farm extensification and diversification within rapidly reducing nitrogen fertiliser limits. This cannot happen soon enough to cut emissions of nitrous oxide and methane as quickly as possible.**
- Cutting fertiliser use in line with Farm to Fork will require the acknowledgement of the inherently very low nitrogen and GHG efficiency of milk and beef relative to the much higher food efficiency of food (not feed) crops and forestry.
- Therefore, Farm to Fork will require diversification in Ireland toward tillage, horticultural, supporting farmers to halt the losses and restore wild bird populations, pollinators, semi-natural habitats and native woodland with far more extensive, low input livestock. This trajectory is essential to reduce climate and horticultural impacts. It will protect rural society and health, enable biodiversity recovery and provide a real basis for sustainability, and play a fair part in limiting rather than increasing climate impacts in Ireland and globally.

Ammonia

The EPA have indicated that the targets in Food Wise 2025 are exacerbating ammonia emissions, with clear links to increasing dairy cow numbers and fertiliser use, and in 2015 Teagasc outlined that significant policy measures would be necessary to implement uptake of ammonia abatement measures, and many could only be implemented at huge cost, and this may constrain agricultural growth.

This conflict between policy ambition and environmental commitments was clearly outlined by Teagasc[39] in 2018, when they outlined that there is a:

'continuing dilemma between policy driven and industry motivated ambitions to increase agricultural activity levels and commitments to reduce emissions. The resolution of this dilemma is perhaps the most important challenge currently facing the Irish agri-food sector'

Low-emission slurry spreading (LESS) is presented as the solution to reducing ammonia emissions, but it is only one of a multitude of measures which would be necessary to achieve compliance with the National Emissions Ceiling Directive (NECD) ammonia thresholds. DAFM have produced a Code of Good Agricultural Practice for reducing ammonia, which is a range of voluntary measures which farmers can implement, with no clear funding stream to support action. According to previous MACC modelling by Teagasc every single possible abatement measure would need to be implemented to even come close to reducing ammonia emissions sufficiently, and even then it is likely to be impossible. We understand that updated MACC models due this year will indicate that it is technically possible to reduce ammonia in line with our legal commitments, but the practical and financial feasibility of achieving this remains extremely doubtful.

- The priority needs to be laying out a credible roadmap to get Ireland to NECD compliance, including mandatory enforced measures, a clear funding stream, with an immediate ban on splash plate slurry spreading.
- The Ag-Climatise plan will not deliver ammonia emissions as suggested in the draft chapter, as it relies on the Code of Good Agricultural Practice, the weaknesses of which are outlined above. The Code of Good Practice is a box ticking exercise, not a credible tool.
- Nor will the Nitrates Directive, with water quality a clear indication of its current failure to prevent nitrate loss to water, and by proxy to air.
- Ireland has been in breach of the National Emission Ceilings Directive for the last 3 years, and the European Commission have assessed Ireland as being at high risk of non-compliance with our ammonia reduction commitments beyond 2030[40]
- Agricultural ammonia poses a significant health threat, responsible for ⅛ of global deaths caused by air pollution, and causes serious health problems globally, including Ireland.
- It is also ecologically damaging for bogs, heaths and other sensitive European protected sites.
- Failing to address ammonia emissions is a significant public health issue, an environmental problem, and a legal failing.

Water Quality

The impact of agriculture on water quality and status needs to be more clearly articulated in this chapter, so as to fully reflect the findings of the EPA catchment characterisation and Local Authority Waters Programme (LAWPro) catchment assessment. While the current text indicates that agriculture is the most prevalent pressure, and that excess nitrogen "can be linked to our intensive systems of agricultural production," the significance of agriculture as the main source of water pollution (from nutrients, sediment and pesticides) and the link between agricultural intensification

[39] Lanigan et al (2018) An Analysis of Abatement Potential of Greenhouse Gas Emissions in Irish Agriculture 2021-2030. Teagasc.

[40] European Commission. Reduction of national emissions of atmospheric pollutants – Review of the EU Air policy - Environment - European Commission [Internet]. 2020 [cited 2020 Jul 3]. Available from: https://ec.europa.eu/environment/air/reduction/index.htm

under Food Harvest 2020 and Food Wise 2025 and declining water quality needs to be made more clearly. Furthermore, in the context of the commitment in the Programme for Government to 'ensure that the State complies with the EU Water Framework Directive', it must be clearly stated that agriculture is the primary cause of Ireland's ongoing failure to meet the Water Framework Directive requirements.

We are currently into the second of three river basin management planning cycles before the final WFD deadline of 2027 but, rather than making progress towards meeting our obligations, water quality is actually in decline:

- More than half our rivers, lakes and estuaries (47%; 49.5%; and 62% respectively) are not in a healthy state i.e. they are failing WFD mandatory standards of 'good ecological status'
- River water quality has declined by 5.5% since the last EPA assessment period[41]
- Also, as stated in draft Chapter 10, numbers of high-status waterbodies have fallen by a third since 2009 (now numbering 20, down from over 500 in the early 1990s).

Given the significant investment in water management through the EPA Catchment Unit and LAWPRo, this decline is especially disappointing and begs the question, why? The most significant change in national policy since the last water quality report is in agriculture. The national herd has increased by 0.74m head since 2010, driven by growth in dairy cow numbers, with a 33% increase in dairy cows since 2010 and synthetic nitrogen imports are also up 38% since 2011.

The EPA have expressed explicit concern about the link between increased agricultural intensification and increased water pollution (from nitrates), especially in the South and South-East of the country. According to the latest EPA Water Quality Report[42], "Since 2013 nitrogen emissions to water have increased as both cattle numbers and fertiliser use have increased" and "the increase in nutrient concentrations, which coincide with areas impacted by agricultural activities, are a particular concern."

This link between declining water quality and agricultural intensification, needs to be stated as a clear and urgent issue, which must be addressed as a priority in the Agri-Food Strategy.

This issue also highlights the importance of Agri-Food 2030 being brought fully in line with the EU Green New Deal, in this case in relation to nutrient inputs. This must include, as a binding target, a national reduction in the use of fertilisers by at least 20% by 2030 and a reduction of nutrient losses by 50%.

While the draft chapter identifies sediment as an issue, this needs to be elaborated, including identification of what activities are causing it and the policy drivers behind these. Sediment loss is caused by overland flow, but also by degradation, drainage and physical alterations to waterbodies and riparian wetlands.

[41] The decline is between the EPA water status assessment period 2010-2015 reported in EPA (2016) 'Water Quality in Ireland 2010-2015' (available here:https://www.epa.ie/pubs/reports/water/waterqua/waterqualityinireland2010-2015.html
and the 2013-2018 assessment period reported in EPA (2019) 'Water Quality in Ireland 2013–2018' (available here https://www.epa.ie/pubs/reports/water/waterqua/waterqualityinireland2013-2018.html

[42] EPA (2019) 'Water Quality in Ireland 2013–2018'. Wexford https://www.epa.ie/pubs/reports/water/waterqua/waterqualityinireland2013-2018.html

Catchment assessments by the Local Authority Waters Programme (LAWPro) have found that widespread unregulated wetland and riparian drainage and other modifications to river systems (under the WFD, classified as 'hydro-morphological alterations') carried out on agricultural land are a significant issue. They also report that such drainage is linked in some areas to farmers increasing productive land as they move into more intensive dairying.

In addition, physical alterations to waterbodies carried out by agricultural landowners are also a pressure in their own right and should be identified as such in Chapter 10. These include altering the ecology of the river bed and riparian zone and thus impacting aquatic ecology, in addition to altering the flow and hydrological regime of the river, which impacts the ecological status of the waterbody.

Agri-Food 2030 must also identify the threat posed by agricultural pesticides on water ecology and also on drinking water quality, e.g. exceedances of MCPA permitted levels have been identified in 27 Irish Water drinking supplies according to the EPA Drinking Water report, published this month[43]. In this regard also, Agri-Food 2030 must be brought in line with the EU Green New Deal and include reduction in the overall use and risk of chemical pesticides by 50% by 2030.

The text currently references the importance of 'the right measure in the right place'. However, it then goes on to explain that the GAPP regulations are the main measure to protect water from agricultural sources, outlining the provisions of these regulations to achieve this and also recent changes to the regulations. However, there is a contradiction here which needs to be addressed in the final text:

- The inadequacies in the GAPP regulations in addressing water pollution from agriculture should be clearly identified, including the fact that they do not provide for implementing the 'right measure in the right place' because they take only an overarching national approach and do not include interception measures tailored to on-farm physical and hydrological conditions, and they permit the spreading of slurry on fields with Soil P 4, even though this poses a risk to receiving waters.

ASSAP is cited as one of the initiatives taken "to try to address agriculture's contribution to declining water quality" and that "it is hoped...that positive results will be seen ..". It is accurate to use such circumspect language. It should furthermore be clarified that there is no evidence yet of water quality benefits from ASSAP, nor even any comprehensive information on how many measures have been implemented. The need for an evidence-based assessment of the efficacy of ASSAP in achieving WFD standards in impacted waterbodies should be identified.

Finally, while the 'right measure in the right place' approach is appropriate in particular for phosphorus where the pathway is the most critical factor, it is the source that is the most significant factor when it comes to nitrogen. In both cases, but particularly for nitrogen, it must be ensured that at the national level, the volume of manure being produced by the national herd does not exceed that which can be safely land-spread or otherwise managed in a way that does not cause water pollution or environmental damage. When taking into account the 'assimilative capacity' of the area of land available for land-spreading, excluding the proportion which is unsuitable due to nutrient loss susceptibility, the evidence does not yet exist that the volume of manure produced nationally under Food Wise 2025 is environmentally sustainable from a water quality / WFD perspective. This needs to be determined in order to inform Agri-Food 2030.

[43] EPA (2020) 'Drinking Water Quality in Public Supplies 2019' Wexford. Available here: https://www.epa.ie/pubs/reports/water/drinking/DW%20Quality%20in%20Public%20Supplies%202019_web.pdf

In particular, as committed to in the Programme for Government, an urgent assessment of impacts of the Nitrates derogation on water quality is needed before Agri-Food 2030 can be finalised.

As part of this, the following questions must be answered:

1. What impact, if any, has the application of derogations had on water quality in the catchments of derogation farms to date?[44]
2. Where are the derogation farms and how is this broken down by county and catchment?
3. What impact will the further expansion in derogation farming have on the state of Ireland's waters generally, and on the status of water-bodies in catchments of derogation farms?
4. Does the granting of the derogation have an impact on the meeting of Nitrates Directive and Water Framework Directive (WFD) obligations?
5. How is nutrient loss from derogation farms prevented when no consideration of physical and hydrological conditions, nor transport interception measures, are included in derogation stipulations?

On-farm best practice techniques are subsidiary to this fundamental issue. The effectiveness of on-farm efficiencies and technical solutions will be limited if taking place within a flawed system where there may well be a fundamental mis-match between the volume of organic nutrients in the form of slurry and the ability of the national agricultural land-bank to absorb it.

Marine ecosystems and fisheries

It is positive that the Background paper on Environmental Sustainability acknowledges a number of challenges relating to environmental protection in the marine environment. The Marine Protected Areas are not mentioned. However, these could be included as an opportunity, as if any activity in those sites is restricted or eliminated, it can support ecosystem restoration.

- The Background paper states that "The Landing Obligation was also fully implemented in 2019. The objective of the Landing Obligation is to eliminate the wasteful and unsustainable practice of discarding fish which will, over time, lead to an improvement in the state of the stocks." We do not agree with this statement. There is ongoing failure of the State to end overfishing and to implement the landing obligation properly. These, in addition to having a penalty points system in place are far bigger constraints on our fisheries than the Conservation Objectives for Natura 2000 sites.
- This document hasn't identified the opportunity to greatly increase the value of our fisheries by restoring fish stocks and managing them sustainably.
- The whole outlook is focused on the profitability of the pelagic sector and the producers, with very little consideration given to the inshore sector. The ban on large trawlers in the inshore area has created an opportunity for better management moving forward. Why isn't this identified as a priority to create jobs where they are most needed?
- The Strategy seems driven to shoehorn more Pacific Oysters into sensitive bays around the coast; more focus should be put into recovering stocks like Celtic Sea Herring, which have collapsed.

[44] We note that the Commission Implementing Decision requires the generation of such data, including in map form (European Commission (2018) COMMISSION *IMPLEMENTING DECISION (EU) 2018/209 of 8 February 2018 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* Brussels.

- According to research carried out in 2016 on the benefits of pathways to MSY for EU Northeast Atlantic fisheries, the study found achieving MSY for fish stocks in the Northeast Atlantic fisheries could generate about €4.64 billion in operating profit annually. From an Irish perspective, the economic benefits relative to 2012-14, of rebuilding EU fish stocks to MSY could provide Ireland with an additional 200,000 tonnes of fish landings annually. This would generate an additional €270 million in earnings, potentially supporting 2,200 new jobs.
- The Irish Government and the EU have failed to meet the Common Fisheries Policies 2020 legal deadline to end overfishing. At last year's December Council 46% (51 out of 110) of Total Allowable Catches (TACs) agreed were in excess of scientific advice. According to BirdWatch Ireland's own analysis of TACs for which Ireland has a relative stability share 51% (23 out of 45) exceeded the best available scientific advice for 2020. This increases to 57% (8 out of 14) when only the TACs which Ireland has a share of <33.33% are taken into consideration. This increases again to 62% (8 out of 13) when the only the TACs which Ireland has a share of <40% are taken into consideration. This suggests that TACs for which Ireland has a greater influence on TAC setting are managed less sustainably than the average across the NE Atlantic, providing further evidence of the negative role the Irish government has played in driving overfishing at EU negotiations.
- Since the reform of the CFP, progress has been made in the management of some commercially important stocks of relevance to Ireland, however the speed and scale of progress has been insufficient. Less commercially important stocks such as data limited precautionary approach (PA) and bycatch species continue to be overfished, as do several commercially important Herring and Cod stocks. The Irish government should follow the relevant ICES headline advice for MSY and PA stocks when setting TACs.
- Ireland has a relative stability share in a high proportion of the least sustainably managed stocks in the North East Atlantic. For example there are eight stocks which Ireland has a relative stability share that have zero TAC advice for 2020 (Herring 5b, 6b & 6aN; Herring 7bc, 6aS; Herring 7h-k; Cod 6a, 5b; Cod 7b-c, e-k, 8, 9 & 10 & 34.1.1; Whiting 7a; Blue Ling 2 & 4; Plaice 7hjk).
- According to the North Western Waters (NWWAC) Choke Identification Tool 2019 there are ten stocks which are classified as high risk chokes and Ireland has a relative stability share in all of them. These overfished stocks constrain fishing and threaten to close entire fisheries due to their poor management (Haddock 7b-k; Cod 7e-k; Sole 7hjk; Plaice 7hjk; Cod, Haddock and Whiting 6a; Cod 6b; Cod 7a and Whiting 7a).

The ongoing failure of the Irish Government to ensure adequate monitoring and control of commercial fisheries in Ireland EEZ needs to be urgently addressed. We would urge the relevant authorities to support the Commission in the implementation of REM on vessels, including CCTV. Greater effort must also be made to improve data collection for PA stocks.

Forestry and afforestation

Under the Irish Forestry Programme 2014-20201, a target has been set to increase Ireland's forest cover area from 10.7% to 18% by 2046. This, it is projected, will require over 46,000 ha of land to be afforested by an estimated 25,000 landowners. Between 1990-2015 Ireland has had the highest rate of afforestation in the EU (4.6%).

Given the challenge of land mobility and the demand for agriculturally productive land the expansion of forestry in Ireland is being targeted within areas with marginal farmland. These areas often coinciding with peat soils and located in the Ireland uplands and western counties which due to a range of physical and socio-economic factors have avoided the scale of agricultural intensification which has occurred in other parts of the country.

These areas are often dominated by extensive grazing and tradition forms of land management. Extensive forms of grazing in particular are positively correlated with HNV farming.

The afforestation of these areas is leading to the irreversible loss of HNV farmland and the exacerbation of many of the negative socio-economic issues such as emigration and ageing demographics which have historically plagued these communities. Farming is the backbone around which many of these marginal communities have evolved and their loss due to Government policies and capital investment is a serious threat to the social cohesion of communities right across the West of Ireland. The CAP investment must do more to support HNV farmers who provide a vast wealth of public goods and services but receive a fraction of financial support (see above BirdWatch Ireland investigation into CAP beneficiaries).

This drive to afforest vast areas of farmland across the country in combination with the ongoing intensification of agricultural land will result in one of the most dramatic changes in land-use on the island in centuries. Invariably the scale of the social and environmental changes will have far reaching consequences for biodiversity. Looking forward, whether forestry in Ireland will have a net positive or negative influence on biodiversity will ultimately depend on a range of factors, such as where afforestation takes place, the model of forestry used and the environmental safeguards that are implemented. According to the National Parks and Wildlife Service (NPWS) in their reports to the European Commission on the status of EU protected habitats and species including birds, forestry and afforestation a significant threat and pressure on habitats and species protected under the Habitats Directive and the Birds Directive. According to the Environmental Protection Agency forestry is the greatest pressure nationally on our last remaining lakes and rivers of high ecological value. More information can be found in BirdWatch Ireland's Greening Irish Forestry report.[45]

The indications are that unless there's a shift in government policy then the predominance of non-native plantations and the use of clear-felling within Irish forestry will continue. That is to say that plantations of non-native conifers will be planted on marginal farmland and clear-felled. The expansion of forestry will therefore exacerbate the accepted negative biodiversity and water quality impacts associated with this model of forestry on a regional and catchment scale. One of the most pressing concerns for the Environmental Pillar is that afforestation is and will continue to be strategically targeted on marginal agricultural land, particularly in areas where low intensity land uses such as hill farming have persisted for generations. This marginal farmland contains some of the important remaining areas for biodiversity in the country, including high-status waters bodies, protected semi-natural habitats, important sites for ground nesting birds including red-listed species and High Nature Value farmland (HNVf).

Commercial forestry in its current form is not compatible with these sites. In order to ensure that Irish forestry is sustainable moving forward we must ensure that the right trees are planted in the right places and are managed appropriately. There is a need for a root and branch reform of the current forestry model. We need to reconsider where afforestation takes place, the model of forestry used and the environmental safeguards that are implemented. As a priority the government must take urgent steps to ensure full compliance with Irish and EU law and not implement the specific recommendations of the MacKinnon Report that would undermine environmental oversight and public participation. The State must not create, or worsen the situation for biodiversity in Ireland, by trying to tackle a climate change. Emissions cuts in agriculture are a must in the first instance.

[45] https://birdwatchireland.ie/publications/birdwatch-ireland-2019-greening-irish-forestry-report/

Aquaculture

While the draft chapter outlines that the six high-level principles (Responsible Planning; Ecosystem Protection; Science-based Approach; Compliance; Openness, Transparency & Accountability; Industry Best Practice) will provide a broad direction to guide the ongoing development of sustainable aquaculture, we would observe that many of these principles are not currently implemented, and relying on these to provide for sustainable development of aquaculture is ill-advised.

Compliance: Appropriate Assessment and EIA

- Environmental NGOS have previously highlighted failures in the Appropriate Assessment (AA) procedure in a multitude of submissions on aquaculture referrals. The main issue is that the DAFM are utilising a 15% disturbance threshold, which they attribute to advice from the NPWS. There is no apparent legal basis for allowing for a threshold of disturbance in a Natura site, and despite this being highlighted numerous times, the DAFM continues to licence applications based on this rationale. In accordance with Article 6(3) of the Habitats Directive, a licence must be refused unless an adverse effect on the integrity of the site can be ruled out beyond reasonable scientific doubt.
- In Case C258/11 Sweetman, the loss of approximately 1% of the protected habitat was considered to be an adverse effect on the integrity of the site. As a result of the assumption in almost all of the AAs for aquaculture licences whereby a disturbance of up to 15% of the site is permissible, there is a lack of sufficient evidence to satisfy the test on absence of adverse effect. This is a major flaw in the aquaculture licensing process, and one that, in our opinion, is in contravention of the Habitats Directive.
- We have seen multiple examples where the AA has highlighted a lack of necessary data, generally speaking it is data on birds, but the aquaculture licences are granted regardless. We would consider this lack of compliance with the Habitats Directive to be a very serious legal issue, and one that undermines the sustainability of the whole aquaculture sector.
- In addition to that, in regard to Environmental Impact Assessment (EIA) there is a general lack of EIA screening for shellfish aquaculture based on the rationale that it is extensive, as opposed to intensive. We believe that under Article 2 of the EIA Directive, and Annex ll Class 1 which refers to intensive fish farming, this distinction is not valid, and these licences should indeed be screened for EIA, particularly in light of their cumulative impact.

Public participation/transparency/openness

There are failings in the public participatory requirement of the aquaculture licensing process, as outlined below:

- We have received reports from several of our members in regard to the advertisement of aquaculture licence applications occurring in the local newspaper with the lowest circulation, resulting in many communities being unaware of these applications. Should the licence or licences then be granted, the costs involved in taking an appeal to ALAB would quickly become prohibitive if it is necessary to appeal 20-30 licences in a single bay, which, in our experience, can frequently be the case.
- This is in contravention of the requirements of the Aarhus Convention. Articles 9(3) and (4) of the Aarhus Convention entitle individuals or organisations to access to both judicial and administrative review procedures on a basis that is fair and equitable and not prohibitively expensive. Case C203/15 Lesoochranarske and the cases that follow on from it, including in an Irish context Case C-476/16 NEPPC, all emphasise that Aarhus is a fundamental part of European law and that national procedural rules must be interpreted in accordance with it.

- It is our opinion that the current system is not sufficiently allowing for effective public participation. We would highlight that, given that 600 licensing decisions have been fast tracked through the system in the last two years, it is a full time job for anyone to review the licence applications, and assess the ramifications of licensing decisions on foot of those.
- While this fast tracking was seen to be of benefit to aquaculture operators who have applied for new licences, it was very much to the detriment of public participation, by means of overloading the system making it very challenging for both statutory consultees and the public to review the applications and decisions and as such to participate in a meaningful way.

Suggested priorities for sustainable aquaculture:

- For effective public participation, there should be a thorough review of the current practices and requirements for public consultation, and appeal procedures.
- The establishment of an ecological carrying capacity should be implemented. This assessment cannot be based on the MSFD GES assessment, as it does not provide the necessary information to determine ecological impact.
- There should be an explicit requirement for compliance with the relevant EU Directives, with a review of the current legal compliance within the system, in particular with the Habitats and EIA Directives. The current method of undertaking appropriate assessment of bays and not individual aquaculture operations is not in line with the Habitats Directives as it is incapable of providing 'precise and definitive findings' of assessment of impacts and which the European Court of Justice jurisprudence requires.

The Bioeconomy

EU Bioeconomy policy has created an exaggerated expectation at the potential of bioenergy and biobased material like corn starch or cellulose to replace fossil fuel energy and petroleum-based materials. This is reflected in the Irish Bioeconomy strategy adopted in 2018 (link to Environmental Pillar member An Taisce's submission on this strategy.[46]

Transitioning to Sustainable Food production -Content for a new Agri-Food 2030 policy

"We'll never grow our way into food security: the more food we produce, the more we'll waste and over-consume, degrade the environment and issues of equity and access will remain. To solve these problems, we need to recognise local and planetary boundaries and grow food sustainably within them..."

2014 Tim Benton, Global Food Security Champion

Ireland's new agri-food policy must facilitate the transition of Ireland's food and farming system to environmental, social and economic sustainability across all sectors, in particular by:

- ensuring sustainable production, processing, trade and consumption of food and other products **without harm to the environment** in Ireland and elsewhere, in line with the Sustainable Development Goals
- providing adequate financial support for biodiversity on farms
- creating conditions for healthy, transparent and informed consumption of food
- minimising food waste and progressing the circular economy

[46] https://assets.gov.ie/2523/301018150640-783418f89ed44a12a8a744077ea88083.pdf

Less meat and dairy consumption

Consumption has been identified as one of the most important drivers of pressure on biodiversity. In particular, what, and how much we eat or consume directly affects what, and how much is produced. In Europe and globally, food production is driving biodiversity loss, environmental pollution and depletion of essential natural resources. The future food production in Ireland must take account of changing trends in diets and moves to more vegetable/plant-based diets as well as reducing the amount of meat and dairy consumption.

Debates about how to feed the world, or how to ensure 'food security', are often dominated by the assumption that food production must be increased in order to address current global hunger and malnutrition and to feed future generations. Such assumptions are used to justify further intensification and expansion of the unsustainable 'high input, high output' model, and, in Europe at least, the exporting of meat and dairy to meet growing global demand.

The EU Farm to Fork Strategy states, "While about 20% of the food produced is wasted, obesity is also rising. Over half of the adult population are now overweight, contributing to a high prevalence of diet-related diseases (including various types of cancer) and related healthcare costs. Overall, European diets are not in line with national dietary recommendations, and the 'food environment' does not ensure that the healthy option is always the easiest one. If European diets were in line with dietary recommendations, the environmental footprint of food systems would be significantly reduced."

Globally, enough calories to feed the world's population are already produced,[47] but what is produced is not shared equitably. In 2017, nearly 821 million people were classed as undernourished, while 672 million adults were classed as obese (as were 38.3 million children).[48] The picture has been further complicated by the coexistence of undernutrition with obesity which is commonly referred to as the "double burden" of malnutrition.[49] Simply producing more will not solve the political and economic issues that are already preventing us from feeding, and nourishing, the world today.

The influential 2018 report by the RISE foundation[50] finds that the vast majority of EU countries would need to reduce their stocking densities—in many cases to less than 30% of their current level—to stay within safe operating space in terms of climate change, nitrogen and public health. The report classified sustainable stocking density limits for achieving biodiversity benefits as between 0.5 and 1 livestock units per hectare.

The industrial food chain (production, processing, distribution etc) is responsible for negative human health outcomes, excessive food waste, and poor standards of animal welfare. Citizens and the state can no longer justify supporting this model financially and politically. Ultimately the solution to these issues lies in a change to the farming model as well as educating consumers to create the market demand for sustainable food. Our current consumption patterns are simply not viable and farmers and consumers must work together to instigate the change that is needed. This should underpin all facets of the new CAP arrangements. Any other short-term measures looking to address food waste or anti-microbial resistance will inevitably fail to justify the taxpayers money invested in its implementation.

[47] http://www.fao.org/docrep/x0262e/x0262e05.htm; http://www.fao.org/docrep/005/AC911E/ac911e05.htm
[48] http://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf
[49] http://www.fao.org/3/I9553EN/i9553en.pdf
[50] http://www.risefoundation.eu/images/files/2018/2018_RISE_LIVESTOCK_FULL.pdf

In relation to health, it is worth emphasising the risks from anti-microbial resistance, and the industrial pork and beef production systems which use substantial amounts of antibiotics as a matter of course that are contributing to this problem.

In order to meet requirements to support biodiversity, good water quality and address climate breakdown, Irish livestock agriculture needs significant reform. The current commodity driven food system based on high volume-low prices is serving no one. It is contributing to food waste, unhealthy diets and significant environmental damage.

Focus on supporting extensive grazing systems which support high nature value habitats and on organic food production in the next Agri-Food Strategy

There urgently needs to be a focus away from "conventional" chemical and high-input agriculture towards regenerative, agroecological approaches which integrate farms into functional ecosystems and increase biodiversity, landscape and human health, and legitimise the subsidies paid to farm production in the eyes of the public. The current predominant research focus of Teagasc on increasing production levels from existing farming practices, and grass-based systems in particular, needs to be examined to determine overall value for money, particularly in light of current agricultural systems failing to meet existing needs to reduce greenhouse gas emissions, protect water, air and soils, enhance food security and conserve biodiversity. **Maximising production at all costs (and irrespective of environmental damage) is no longer appropriate given the huge gap that exists between current agricultural production systems and the sustainability of the environment on which it depends**. This is particularly the case with greenhouse gas emissions, where reducing total emissions is the only option to meet climate targets. Ultimately, a revised agriculture research programme is urgently needed in Ireland where the requirements for a vision for agriculture in 2030 can be delivered. **Maintaining the status quo of production and output-based research cannot continue as this not only fails to address urgent environmental needs but is making the problem worse.**

The reduction in overall volumes of livestock production should go hand in hand with a shift to extensive grazing. Grazing at low stocking densities has a role to play in maintaining many High Nature Value (HNV) systems. Grazing is important for healthy grasslands that create favourable habitat for many species (e.g. species such as the starling, Hen Harrier, and Red Grouse which rely on open areas, others such as curlew and lapwing require tussocky swards). A tailored approach is needed to provide a diversity of habitats for different species. In some areas this may mean reducing stocking density, but in others it may require an increase in livestock numbers to address under-grazing. The shift to organic food production is supported by EU targets. Diversification of farm activity is also critical.

Going forward, food production in Ireland must have quality rather than quantity as an objective in order to balance social, economic and environmental needs. Increasing quality and aiming for added value markets (such as organic, locally-branded or artisan production) as opposed to higher volume would reduce stocking pressure on farms and allow for the development of mixed farms, rotational grazing, increased agroforestry and other wildlife friendly measures. Specifically, much work needs to be done in Ireland to explore and promote non-livestock farming systems, particularly to establish which plant crops that are best suited to the Irish environment (e.g. fruit, vegetables, etc.). Furthermore, farming in Ireland should be limited to the carrying capacity of the Irish ecosystem instead of supplementing fertility with artificial fertilisers and feeds with imported GM Soya and other feeds. Not only are these often themselves the product of highly unsustainable farming practices and deforestation overseas, but such an approach would reduce sectoral risks from, for example, the current fodder crisis.

Risk Management

The current focus on farming in Ireland seeks to increase production levels and specialise production methods. Both these carry substantial risk. In the case of specialisation, farmers may be limited to a single market and the volatility intrinsic to individual, specialised markets (e.g. dairy) whereas traditionally they may have been selling into multiple markets (e.g. beef and dairy). Putting all the eggs in one basket in terms of commodity production, and with price volatility evident on agricultural commodity markets as seen in recent years, support for diversification of farming should be encouraged rather than advised against.

Additionally, a focus on quality rather than quantity in production and marketing in Ireland, as well as bringing production more in line with the carrying capacity of Irish ecosystems would mean less risk and instability. Farmers would not be forced to constantly increase production and enter into increasing debt and risk to increase land holdings, acquire stock or feed for them. Risk management should mean avoiding dependence on imported feeds, such as has been seen in the recent fodder crises (and avoidance of such risk would also have positive environmental outcomes), avoiding increased farm debt, ensuring prices paid to producers cover the costs of production, and diversification of the farm economy.

With many small farmers in Ireland, it is essential to focus on supporting the farm family rather than solely the agricultural business, which gives preferential treatment to the larger factory farming, which also deliver fewer public goods and place increased pressure on the environment. A failure to focus on the wider rural economies, as can be seen throughout Ireland, places pressure on these areas to support, keep or attract young people.

Finally, the supports already available to farmers through Direct Payments provide a safety net to income, and essentially operate as a risk management tool; diverting CAP funds to other risk management measures will put undue pressure on an already over-stretched CAP (and EU) budget.

Encouraging young farmers into farming

There is an imminent crisis in farm succession in Ireland, with an ageing farming population and an exodus of young people from rural areas. In order to reverse this trend, there is a need to open up access to land for landless young people in Ireland who wish to engage in farming. The alternative will see a huge drop in the number of small-medium sized farms which make up the main structure of rural economies and social life.

To support young farmers, who will be essential to the re-imagining of the CAP and the future of farming in Ireland, there must be a concerted effort to invest in training and education opportunities. These investments in education and training must focus on ensuring that farming in Ireland is sustainable, **and young farmers must be supported to transition into sustainable agriculture and one in line with redefining agriculture in Ireland to be in line with good water quality, significantly reduced greenhouse gas emissions and where farmland birds and other biodiversity is restored**. However, the first part of this process must be to listen to young farmers to see what they want, what they need, and how this can be realised to maximise benefits.

In addition to supporting young farmers deliver sustainable agriculture, there also needs to be investment in the fabric of rural Ireland to ensure that young farmers want to stay and work in these areas. This includes suitable infrastructure such as broadband, but also social supports (such as rural transport). Additionally, there needs to be promotion of farming as a career to make it attractive to new, younger entrants. The link with food production, and particularly quality, artisan or environmentally or socially-sustainable production systems may be useful mechanisms to do this.

Similarly to supporting young farmers, action needs to be taken to support women in the agri-food sector in Ireland. This includes supporting women entering farming as well as developing and supporting opportunities within the CAP for artisan food processing and related markets, that would support wider diversification on individual farms to encourage greater resilience within farming families.

Research and innovation

There urgently needs to be a focus away from "conventional" chemical and high-input agriculture towards regenerative, agroecological approaches which integrate farms into functional ecosystems and increase biodiversity, landscape and human health, and legitimise the subsidies paid to farm production in the eyes of the public. The current research focus on increasing production levels from existing farming practices, and grass-based systems in particular, needs to be examined to determine overall value for money, particularly in light of current agricultural systems failing to meet existing needs to reduce greenhouse gas emissions, protect water, air and soils, enhance food security and conserve biodiversity. Maximising production at all costs (and irrespective of environmental damage) is no longer appropriate given the huge gap that exists between current agricultural production systems and the sustainability of the environment on which it depends. This is particularly the case with greenhouse gas emissions, where reducing total emissions is the only option to meet climate targets. Ultimately, a revised agriculture research programme is urgently needed in Ireland where the requirements for a vision for agriculture in 2030 can be delivered. Maintaining the status quo of production and output-based research cannot continue as this not only fails to address urgent environmental needs, but is making the problem worse.

Advisory organisations should play a positive role in farm education and in diversification. Support needs to be given to specialist advisors across the range of topics facing the agri-food sector, including environment, but also (for example) advisory services to encourage the formation of new producer's organisations which reflect the changing interests of Irish farmers. The need for an agriculture qualification to give advice to farmers may not be appropriate in all cases (e.g. in the delivery of environmental advice, business planning, etc.) and the need for an agricultural qualification alone for agri-environment planning clearly needs to be revised. To support a diversified advisory service, the role of specialist NGOs must be acknowledged, and their advice sought and supported to help farmers, and the farming sector as a whole, deliver on its aims and objectives.

Finally, simplification in the draw-down and delivery of EU research funding is urgently required, particularly where this can be targeted to smaller-scale research projects seeking to specifically tackle issues around the sustainability of farming in the EU.

Suggestions on farm investments

Investments on farms will be crucial in delivering a re-imagined agriculture sector. Investments can be thought of in two ways: those that seek to improve efficiency or profitability (including diversification into alternative farming practices, alternative land-use management, including non-farming activities) and those that seek to deliver non-market public goods.

For the latter, support is needed for farmers to undertake such actions, and this should continue to be delivered through schemes such as agri-environment (GLAS) or non-productive investment schemes (TAMS), **where only non-market public goods are created or supported**. In addition to the existing types of actions already available in agri-environment schemes, consideration should be given to flood management and alleviation works, such as the creation of wetlands to reduce down-stream flood events.

For investments that will deliver financial benefits to the recipient, consideration should be given to part-funding such works, with the beneficiary required to offer some level of co-financing. These need to be considered on a case-by-case basis to determine what an appropriate level of co-financing would be to support the beneficiary in taking in new (and potentially risky) ventures, but the need for co-financing should reduce risks to the spending of public money. In support of such investment activities, the provision of targeted financial instruments, such as low-interest or long-term loans may be appropriate, particularly if these loans can be used to invest in new technologies that deliver environmental as well as economic benefits.

It is important that those seeking to invest in such a way can be supported as much as possible to ensure they can take on the responsibility of such innovation with reduced financial stress. Examples of these could include investing in renewable energy systems on farms, or development of new, sustainable cropping systems, anaerobic digestion, and pollution control.

Strengthening the socio-economic fabric of rural life

Education, particularly at primary and also secondary level, is essential to support the fabric of rural areas by creating a local identity to make communities proud of their area, and young people want to stay and work in these areas.

The CAP can support rural areas by helping to rebuild broken and disjointed local food production systems, stimulating the rural economy and local employment. Creating a market for local produce, though labelling or local promotion (including farmer's markets, but also labelling initiatives to support locally-sourced food), may be a very useful way of sustaining local jobs. Such an approach would deliver far more benefits nationally than the focus on export-driven production, which only seeks to improve profit margins for a small number of large companies.

In a similar vein, CAP should encourage renewable energy production on farms where it is ecologically appropriate, mainly wind, solar and hydro power. These systems should be locally installed and maintained, again creating and maintaining long-term, sustainable jobs in local areas.

Finally, CAP must continue to support farm diversification, through activities such as rural tourism, particularly off the main tourist routes, through walking, cycling and other initiatives. Supports for on farm accommodation and other measures should be introduced to stimulate this.

Position of Farmers in the Supply Chain

Farmers have consistently been told that there is nothing they can do about price, all they can do is increase production, which is categorically untrue. Meat and dairy processing in Ireland exert an inordinate dominance in the food chain. This urgently need to be tackled politically in order to reveal the extent of their influence in the Irish food system, and their imprudent control over policy.

The CAP should introduce mechanisms for farmers to establish marketing boards independent of the large processors, provide funding for new small and medium scale processing units.

Farmers should be encouraged to market their produce both in local and regional markets directly and through cooperatives, thus bypassing the monopoly of agribusiness interests which dominates Irish farming. Supporting local markets not only has benefits for farmers through improving farm gate prices, but also has added benefits of supporting local communities, and the reduction in "food miles" (and associated transport costs and emissions) has environmental benefits as well. Furthermore, identifying food needs at local levels also allows farmers to diversify into gaps in the market, increasing resilience of farming locally along with reduction in risk to farm incomes.

Sustainable Development Goals (SDGs) and Agri-Food Strategy 2030

We must also remember Ireland's commitment to the Sustainable Development Goals (SDGs), which Ireland adopted in 2015, as intrinsic to this strategy. The SDGs provide a framework for environmental, societal and economic sustainability, underpinned by equality. As such, this strategy must take into account the rights and well-being of all individuals who work within the agri-food sector in Ireland, including migrant and seasonal workers across the fisheries, meat processing and horticultural sectors.

The need to ensure the health, safety and well-being of workers has been highlighted during the Covid-19 pandemic.

Specific recommendations to ensure that the Agri-food 2030 Strategy is fully sustainable and in line with our commitments under the SDGs include:

- Safeguards to protect and uphold the rights and standards workers across the horticultural and agri-food industry.
- All grants and financial support must include a clause to protect workers' rights while setting targets and steps for this industry to reduce greenhouse emissions
- Carry out a regime of workplace inspections on both health and safety and workers' rights including unannounced inspections across all aspects of the industry.

NOTE:

Detail on impacts of Agriculture on EU protected habitats (As stated by Minister Madigan to a Parliamentary Question on 6th of June 2019 https://www.oireachtas.ie/en/debates/question/2019-09-06/2032/)

The most frequent pressures recorded in habitats relate to the agriculture category. Over 70% of habitats were impacted by pressures relating to agricultural practices, and the pressure was ranked as High importance in more than 50% of habitats. The most prevalent sub-category of agricultural pressures was “Intensive grazing or overgrazing by livestock”, which was recorded in 55% of habitats in which agricultural impacts were noted (39% of habitats overall), the next most frequent agricultural pressure being “Extensive grazing or undergrazing”, which was noted at 21% of habitats impacted by agriculture (15% of habitats overall). Inappropriate grazing (either too much or too little) was recorded in 62% of all habitats where agricultural impacts were reported, and in 44% of habitats overall. “Abandonment of grassland management (e.g. cessation of grazing or mowing)” and “Agricultural activities generating diffuse pollution to surface or ground waters” were the next most frequent agricultural impacts, each affecting 19% of habitats where agricultural impacts were noted, or 14% of habitats overall. All eight of the habitats affected by diffuse pollution were either lake or groundwater-dependent habitats. Analysis of the proportion of habitat exceeding Nitrogen deposition thresholds arising from “Agricultural activities generating air pollution” has highlighted Blanket bog, Alpine heath and Wet heath, Juniper and Limestone pavement as particularly vulnerable to this type of pollution. The impacts of “Agricultural activities generating marine pollution” are reported at High importance in three of the marine habitats.