



Department of Agriculture, Food and the Marine

Environmental Report

Agri-Food Strategy to 2030

602974-02-04

RSK



RSK GENERAL NOTES

Project No.: 602974-02-04

Title: Environmental Report
Agri-Food Strategy to 2030

Client: Department of Agriculture, Food and the Marine

Date: July 2021

Office: Dublin

Status: Final

Author	Nisha Rehm, Poppy Grange	Technical reviewer	Rob Edwards
Date:	16/07/21	Date:	16/07/21

RSK Environment Ltd (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

CONTENTS

1	INTRODUCTION	1
1.1	Purpose of this Report.....	1
1.2	Structure of this Report	1
2	AGRI-FOOD STRATEGY TO 2030	3
2.1	Background	3
2.2	Agri-Food Strategy to 2030	4
2.3	Characterisation of the Agri-Food Strategy Area	9
3	SEA FRAMEWORK AND ASSESSMENT METHODOLOGY.....	12
3.1	Best Practice Guidance.....	12
3.2	The SEA Process	12
3.3	Links with Appropriate Assessment	14
3.4	Sustainability Topics and SEA Objectives	14
3.5	Assessment Methodology	16
4	FINDINGS OF THE SCOPING PROCESS.....	20
4.1	Scoping Consultation Responses	20
4.2	Other Plans, Programmes and Environmental Protection Objectives	20
4.3	Summary of Baseline Data.....	23
4.4	Key Environmental and Sustainability Issues and Likely Future Trends	38
5	CONSIDERATION OF ALTERNATIVES.....	42
5.1	The Process	42
5.2	Alternative Strategy Options / Delivery Mechanisms	42
5.3	Assessment of Alternatives	44
5.4	Reasons for Selection of Chosen Alternative.....	51
6	ASSESSMENT OF IMPACTS OF THE AGRI-FOOD STRATEGY TO 2030.....	52
6.1	High Level Assessment.....	52
6.2	Detailed Matrix Assessment.....	95
6.3	Uncertainties.....	116
6.4	Summary of Conclusions of the Appropriate Assessment.....	116
6.5	Cumulative Effects Assessment.....	117
6.6	Transboundary Effects	125
7	MITIGATION AND RECOMMENDATIONS	127
7.1	The Requirement for Mitigation	127
7.2	Minimising Adverse Effects	127
7.3	Cross Sector Mitigation and Enhancements	131
8	MONITORING	132
8.1	Monitoring Proposals.....	132
8.2	Additional Proposals.....	138
9	THE CONSULTATION PROCESS	140
9.1	Consultation on the Environmental Report	140
9.2	Modifications to the Strategy following the Public Consultation	140
9.3	Implications of Strategy changes for SEA.....	143
10	NEXT STEPS	144
11	REFERENCES	145

TABLES

Table 2.1: Area and Population of Ireland	9
Table 2.2: Designated Sites in Ireland	11
Table 3.1: Stages in the SEA Process	13
Table 3.2: SEA Objectives	15
Table 3.3: Significance of Effects Matrix	18
Table 4.1: Relationship with Other Plans and Programmes	21
Table 5.1: Assessment of Alternatives	45
Table 6.1: High Level Matrix Assessment of Strategy	53
Table 6.2: Detailed Matrix Assessment	96
Table 7.1: Proposed Mitigation Measures	128
Table 8.1: Monitoring Proposals	133
Table 8.2: Additional Proposals	138

FIGURES

Figure 2.1: Agri-Food Strategy Missions and Goals	6
---	---

APPENDICES

APPENDIX A: SCOPING CONSULTATION RESPONSES
APPENDIX B: ENVIRONMENTAL PROTECTION OBJECTIVES
APPENDIX C: ENVIRONMENTAL BASELINE MAPS
APPENDIX D: SCOPING REPORT BASELINE
APPENDIX E: NIS SECTION 3.5.1
APPENDIX F: STATUTORY CONSULTATION RESPONSES
APPENDIX G: SUMMARY OF PUBLIC CONSULTATION SUBMISSIONS ON THE DRAFT AGRI-FOOD STRATEGY 2030

Acronyms and Abbreviations

AA	Appropriate Assessment
ACA	Architectural Conservation Area
AD	Anaerobic Digestion
AEOS	Agri-Environmental Options Scheme
AKIS	Agricultural Knowledge & Innovation System
AMR	Antimicrobial Resistance
AONB	Areas of Outstanding Natural Beauty
ASSI	Area of Special Scientific Interest
ASSAP	Agricultural Sustainability Support and Advisory Programme
BAT	Best Available Technology
BC	Black Carbons
BDGP	Beef Data and Genomics Programme
BIM	Bord Iascaigh Mhara
CAP	(EU) Common Agricultural policy
CBS	Countryside Bird Survey
CFRAM	Catchment Flood Risk Assessment and Management
CFP	(EU) Common Fisheries Policy
CSO	Central Statistics Office
DAFM	Department of Agriculture, Food and the Marine
DCHG	Department of Culture, Heritage and the Gaeltacht
DECC	Department of the Environment, Climate and Communications
DHLGH	Department of Housing, Planning and Local Government and Heritage
EC	European Commission
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ESD	Effort Sharing Decision
ETS	Emissions Trading System
FAO	Food and Agriculture Organisation
GAEC	Good Agricultural and Environmental Condition
GES	Good Environmental Status
GHG	Greenhouse Gas
GIS	Geographic Information System

GLAS	Green Low-Carbon Agri-Environment Scheme
GVA	Gross Value Added
GSI	Geological Survey of Ireland
HCB	Hexachlorobenzene
HLIC	High Level Implementation Committee
HNV	High Nature Value
HSE	Health Service Executive
IBIA	Integrated Biodiversity Impact Assessment
IFA	Irish Farmers Association
IED	Industrial Emissions Directive
IGAS	Irish Grain Assurance Scheme
IHF	Irish Heart Foundation
IPM	Integrated Pesticide Management
IUU	Illegal, Unreported and Unregulated
IPM	Integrated Pesticide Management
MACC	Marginal Abatement Cost Curves
MNE	Multinational Enterprise
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
NCC	National Competitiveness Council
NECD	National Emissions Ceiling Directive
NFS	National Farm Survey
NGO	Non-governmental Organisation
NHA	Natural Heritage Areas
NIAH	National Inventory of Architectural Heritage
NIEA	Northern Ireland Environment Agency
NMVOs	Non-Methane Volatile Organic Compounds
NOx	Nitrogen Oxides
NPWS	National Parks & Wildlife Service
NR	Nature Reserves
OREDP	Offshore Renewable Energy Development Plan
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PM	Particulate Matter
RBMP	River Basin Management Plan
R&D	Research and Development

RDP	Rural Development Programme
RE	Renewable Energy
RPM	Record of Monument and Places
RPS	Record of Protected Structures
SAC	Special Areas of Conservation
SCI	Site of Community Importance
SDG	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SEAI	Sustainable Energy Authority of Ireland
SFS	Sustainable Food Systems
SME	Small and Medium-Sized Enterprises
SO ₂	Sulphur Dioxide
SPA	Special Protection Areas
TAC	Total Allowable Catch
TSP	Total Suspended Particulates
UTP	Unfair Trading Practices
WFD	Water Framework Directive
WHO	World Health Organisation

Glossary

Agri-food	Primary agriculture, fisheries, aquaculture and fish processing, forestry and forestry processing, the food and beverage industry, and the equine sector.
Antimicrobial	A substance or material that is active against microorganisms.
Biosecurity	Procedures or measures designed to protect the population against harmful biological or biochemical substances.
Cumulative effects	Effects on the environment that result from incremental changes caused by the strategic action together with other past, present, and reasonably foreseeable future actions. These effects can result from individually minor but collectively significant actions taking place over time or space.
Natura 2000 sites	A network of nature protection areas in the territory of the European Union. It is made up of Special Areas of Conservation and Special Protection Areas designated under the Habitats Directive and the Birds Directive, respectively.
Natural capital	The world's stock of natural assets which include geology, soil, air, water and all living things.
Material assets	Natural resources essential for the functioning of society such as soils, minerals, forestry and the human use of these resources for functions such as waste management, food production and materials production and usage.
Invasive species	An invasive species is an organism that is not indigenous, or native, to a particular area.
Ramsar sites	Ramsar sites are wetlands of international importance that have been designated under the criteria of the Ramsar Convention on Wetlands for containing representative, rare or unique wetland types or for their importance in conserving biological diversity
Scoping	Scoping identifies the issues that are likely to be of importance during an SEA and eliminates those that are of little concern. Helping to decide the context and level of detail of the SEA.
Screening	The process of deciding whether a plan or programme is likely to have significant effects on the environment and therefore require an SEA.
Sustainable Food System	Food system that delivers food security and nutrition for all in such a way that the economic, environmental and social bases to generate food and nutrition for future generations are not compromised.

1 INTRODUCTION

1.1 Purpose of this Report

RSK Ireland Ltd (hereafter 'RSK') has been instructed by the Department of Agriculture, Food and the Marine (DAFM) to carry out a Strategic Environmental Assessment (SEA) of the Agri-Food Strategy to 2030. The Agri-Food Strategy to 2030 is a voluntary stakeholder led strategy facilitated by the DAFM.

SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at the earliest appropriate stage of decision making, with a view to promoting sustainable development. The process of SEA was introduced under European Directive 2001/42/EC12 on the assessment of the effects of certain plans and programmes on the environment (SEA Directive), and came into force in 2001.

The Directive requires the Department, as the programming authority, to assess the likely significant effects of its plans and programmes on: *“the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of the above factors” including “secondary, cumulative, synergistic, short, medium, and long-term, permanent and temporary positive and negative effects”*.

The requirements of the SEA Directive are transposed into Irish domestic law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI 435/2004 and SI 200/2011), and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI 436/2004 and SI 201/2011).

The purpose of this report is to evaluate the likely environmental effects of implementing the Agri-Food Strategy as per the requirements of the Directive and Regulations. This includes an assessment of realistic alternative approaches and options, as well as the suggestion of mitigation and enhancement measures to prevent, reduce and offset any significant adverse effects on the environment of implementing the Strategy.

This post consultation edition of the Environmental Report has been produced to take account of responses received during the public consultation on it and the Agri-Food Strategy and to reflect changes to the Strategy itself resulting from the same process.

1.2 Structure of this Report

The areas considered in this Environmental Report, and their location in the document are as follows;

- Summary of the Agri-Food Strategy – Section 2.2
- SEA objectives and assessment methodology – Chapter 3
- Summary of Scoping Consultation Responses – Section 4.1

- Relationship with other plans, programmes and conservation objectives – Sections 4.2
- Relevant aspects of the current state of the environment – Section 4.3
- Existing environmental problems and the likely evolution of the environment without the Agri-Food Strategy – Section 4.4
- Consideration of alternatives – Chapter 5
- Identification and assessment of likely significant effects on the environment – Chapter 6
- Mitigation and enhancement measures – Chapter 7
- Proposed monitoring programme and next steps regarding the adoption process – Chapter 8
- Summary of the consultation process – Chapter 9

A non-technical summary of the information provided in this report has been provided separately.

2 AGRI-FOOD STRATEGY TO 2030

2.1 Background

The agri-food sector is a key aspect of Ireland's economy, community and culture, exporting to at least 180 countries around the world and contributing a significant aspect of Ireland's global profile and reputation.

The 2030 Strategy builds on its predecessor programmes; Food Harvest 2020 and most recently Food Wise 2025.

Food Wise 2025

Food Wise 2025 is the current agri-food strategy, which was published in 2015. The strategy includes eight overarching sustainability recommendations with over 80 individual environmental actions.

An Environmental Sustainability Committee was established as a sub-group of the High Level Implementation Committee, following a recommendation in Food Wise 2025 and the accompanying SEA. The Environmental Sustainability Committee identified 26 priority actions within the sustainability chapter. At the end of 2019, approximately 27% of these actions are reported as target achieved; 42% have substantial action undertaken and are ongoing; and 31% of actions have commenced and are progressing. Approximately 88% of all of the actions in the sustainability chapter are reported as target achieved/substantial action undertaken and ongoing. The remaining actions are all either ongoing or annual actions. Some of the positive environmental actions that have taken place include:

- Pilot Farm Hazardous Waste Collection Scheme;
- Code of Good Practice for Reducing Ammonia Emissions from Agriculture;
- Voluntary Nitrates Derogation Review;
- DAFM Water Network;
- Agricultural Sustainability Support and Advisory Programme (ASSAP);
- Profiling energy use within the agriculture sector;
- Establishment of an Inventory Refinement Group: to ensure standardisation and use of common data in the inventories for the agriculture and land use sector;
- A high-level Bioeconomy Implementation Group;
- Publication of the Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan;
- European Innovation Partnerships projects focusing on themes such as: the preservation of agricultural landscapes; water quality; resource efficiency; climate mitigation/adaptation and biodiversity;
- Number of workshops including the Grassland Symposium, the Cross-sectoral Seminar on Climate Change Adaptation and the 2018 Environmental Sustainability Dialogue;
- Public consultation and publication of the climate and air roadmap for the agriculture sector; and,
- Research projects such as LANDMARK Project and scheme evaluations including Beef Data and Genomics Programme (BDGP) and Green Low-Carbon Agri-Environment Scheme (GLAS).

Despite a number of positive actions, there has been an increase in greenhouse gas (GHG) emissions and in air pollutants such as ammonia over the Strategy period; which presents a particular challenge as emissions from the sector have been higher than the limits set in the National Emissions Ceilings Directive (NECD) since 2016. Furthermore, water quality has declined and biodiversity continues to decline, with many of the European designated sites in unfavourable condition. Further information is provided in Section 3, which covers the current baseline data.

2.2 Agri-Food Strategy to 2030

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.

The backdrop to the development of the strategy takes into account the importance of the agri-food sector to the Irish economy, the contribution of primary producers to this and the consequent importance of the sector to regional and rural prosperity and employment. It also considers Food Wise 2025, including the context and environment in which it was developed, the projections that were agreed for output, export, value-added and employment growth, the five pillars of innovation, competitiveness, environmental sustainability, human capital and market development, and then a brief review of performance so far; the evolving external environment, particularly issues such as Covid-19, Brexit, EU policy changes, the natural environment including climate change, changes in the global food system, international trade developments and the emergence of disruptive technology and the growing importance of the bioeconomy. These were set out in Appendix I of the Public Consultation Document that was issued by DAFM as part of the public consultation process in 2019.

The Committee has agreed to adopt a 'Food Systems' approach in the development of the Strategy. The Strategy defines a Sustainable Food System (SFS) based on the Food and Agriculture Organisation (FAO) definition as *"a food system that delivers food security and nutrition for all in such a way that the economic, social and environmental bases to generate food and nutrition for future generations are not compromised"* (FOA, 2017). This means that:

- It is profitable throughout (economic sustainability)
- It has broad based benefits for society (social sustainability)
- It has a positive or neutral impact on the natural environment (environmental sustainability).

Considering the context and the opportunities and challenges likely to face the agri-food sector in the period to 2030, the Strategy has developed four main missions which will act as the anchor for the core of the Strategy:

1. A climate smart, environmentally sustainable agri-food sector.
2. Viable and resilient primary producers with enhanced well-being.

3. Food which is safe, nutritious and appealing: trusted and valued at home and abroad.
4. An innovative, competitive and resilient agri-food sector, driven by technology and talent.

Each of these sets out a mission statement and proposes a set of goals which are underpinned by a series of actions. The four missions and their related goals are shown in Figure 2.1.



Figure 2.1: Agri-Food Strategy Missions and Goals

Mission 1: A Climate Smart, Environmentally Sustainable Agri-food Sector

Mission 1 includes seven goals and a range of associated actions aimed at urgently tackling existing environmental problems. The following high-level targets have been set for Mission 1:

- A Climate-neutral food system by 2050, with verifiable progress achieved by 2030, encompassing emissions, biodiversity and water quality:
 - GHGs - biogenic methane reduction of a minimum of 10% by 2030;
 - Air quality – reduce ammonia emissions below 107,500 tonnes by 2030;
 - Water quality – agriculture will reduce nutrient losses to water by 50% by 2030;
 - Biodiversity – 10% of farmed area prioritised for biodiversity, spread across all farms throughout the country by 2030;
- Forestry: increase afforestation and double the sustainable production of biomass from forests by 2035;
- Organic farming: reach at least 7.5% of utilisable agricultural area by 2030;
- Seafood: Achieve 30% of marine protected areas by 2030;
- Halve per capita food waste by 2030;
- A strengthened Origin Green, with an emphasis on metrics and evidence.

Goals and associated actions are proposed to mitigate GHG emissions, adapt to climate change, restore and enhance biodiversity, improve water quality and aquatic ecosystems, ensure that the forestry and seafood sectors play their part, and all while developing Ireland's rapidly evolving bioeconomy.

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-being

Mission 2 includes four goals and associated actions. The high-level targets for Mission 2 are:

- High ambition for primary producers, focusing on the premiumisation of output, increased integration of certain sectors, and diversification of activity and income streams:
 - Improved primary producer performance across a range of indicators, as measured by the National Farm Survey (NFS) and Bord Iascaigh Mhara (BIM);
 - Strong and functioning collaborative structures for primary producers;
 - Increased tillage, horticulture, organic and agro-forestry production;
- A more equitable distribution of value along the value chain, with recognition that higher ambition in sustainability has a cost:
 - Increase market transparency, including transposition of the Unfair Trading Practices (UTP) Directive and establishment of the office of the National Food Ombudsman (title tbc);
- Enhanced social sustainability, encompassing well-being (including health and safety), generational renewal and diversity:
 - Strong supports including mandatory health and safety training;
 - Improved primary producer performance across a range of indicators, as measured by the NFS.

Mission 2 focuses on the areas which offer the best tools for improving economic viability and resilience of primary producers, issues that are within their control but also policies, approaches and technologies that they and others in the agri-food sector can implement to improve their overall economic standing. Primary producers can bolster their financial and economic sustainability by focusing on efficiencies; embracing new, diversified systems of agriculture; meeting standards required for greater premiumisation that can offer higher market returns; and being rewarded for the delivery of a range of eco-system services.

Mission 3: Food which is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad

Mission 3 has four goals, each with a number of associated actions. The high-level targets for Mission 3 are:

- Coherence of policies for food, health and nutrition, nationally, at the EU level and through international policy generally:
 - Co-ordinate national policies for food, health and nutrition;
 - Better labelling and reformulation for healthier diets;
- Enhancement of consumer trust through providing evidence of safe and ethical food production;
- Creation of value-add, through insight and innovation, supporting the food sector and continuing to develop market opportunities at home and abroad;
 - Sustainably develop Ireland's food and drink offering, with new ambition for value-add and new markets with a view to agri-food exports reaching €21 billion by 2030.

Mission 3 proposes improved policy coherence for food, nutrition and health through the establishment of a high-level implementation group co-chaired by the Department of Health and the DAFM. Mission 3 also addresses the changing societal expectations for the sector.

Mission 4: An Innovative, Competitive and Resilient Sector, driven by Technology and Talent

Mission 4 has seven goals, each with a range of actions, based around the high level targets:

- An innovation, knowledge and technology driven sector:
 - Implementation of the recommendations of the High-Level Innovation Team;
 - Private research and development (R&D) to reach 1% of turnover by 2025;
- Improvement of competitiveness and resilience along the food chain:
 - An enabling public policy including appropriate supports, ensuring access to finance and a focus on competitiveness issues specific to the agri-food sector;
- Attraction and nurturing of diverse talent:
 - Develop a strategy for the agri-food sector on education, skills and talent attraction and retention.

Mission 4 seeks to address the need for an effective innovation system, a strategic approach to R&D funding and an engaged and responsive knowledge exchange environment. Continuous improvements are needed, particularly to bring them into line with the latest thinking on effective innovation systems and to ensure maximum impact for publicly-funded research. Mission 4 also aims to prepare the sector for new labour and human capital dynamics, to provide an optimum mix of diverse, skilled, and appropriately trained talent.

Following the public consultation held between 19 April and 15 June, a number of modifications were made to the Strategy to address the consultation responses. These changes are summarised in Section 9.2.

2.3 Characterisation of the Agri-Food Strategy Area

The geographic area covered by the Strategy comprises the whole of the Republic of Ireland including Ireland's Exclusive Economic Zone (EEZ). The Irish agri-food industry is comprised of the agriculture; food and beverage; fishery; fish processing; forestry; and forestry processing sector.

Ireland has 26 counties and is split into three Regional Assembly Areas: Northern and Western Region, Eastern and Midland Region and Southern Region. Ireland's EEZ extends out to a 200 nautical mile limit. Table 2.1 below provides statistics on the land area, population size and population density of Ireland's counties and regions, as at the 2016 census which is the most recent complete publicly available dataset.

Table 2.1: Area and Population of Ireland

County or Region	Area (km ²)	Population (2016)	Population Density (people/km ²)
Northern & Western (IE04)			
Border Region (IE041)			
Cavan	1,931	76,176	39
Donegal	4,857	159,192	33
Leitrim	1,588	32,044	20
Monaghan	1,294	61,386	47
Sligo	1,836	65,535	36
West Region (IE042)			
Galway	6,151	258,058	42
Mayo	5,588	130,507	23
Roscommon	2,547	64,544	25
Southern (IE05)			
Mid-West Region (IE051)			
Clare	3,443	118,817	35
Limerick	2,755	194,899	71

County or Region	Area (km ²)	Population (2016)	Population Density (people/km ²)
Tipperary	4,303	159,553	37
South-East Region (IE052)			
Carlow	896	56,932	64
Kilkenny	2,071	99,232	48
Waterford	1,857	116,176	63
Wexford	2,370	149,722	63
South-West Region (IE053)			
Cork	7,503	542,868	72
Kerry	4,813	147,707	31
Eastern & Midlands (IE06)			
Dublin Region (IE061)			
Dublin	936	134,7359	1,439
Mid-East Region (IE062)			
Kildare	1,694	222,504	131
Louth	826	128,884	156
Meath	2,342	195,044	83
Wicklow	2,025	142,425	70
Midlands Region (IE063)			
Laois	1,719	84,697	49
Longford	1,091	40,873	37
Offaly	2,000	77,961	39
Westmeath	1,838	88,770	48
Republic of Ireland	70,272	4,761,865	70

Source: Central Statistics Office (CSO), 2017 and Ordnance Survey Ireland, 2019.

There are a number of nature conservation, landscape and cultural heritage designations in Ireland. These are designated as either statutory (protected by law) or non-statutory (a material planning consideration), and can be of international, national or local importance. Information on local and/or non-statutory designations is held by individual local authorities and has not been obtained for this strategic level assessment.

The number and/or area of statutory nature conservation, landscape and cultural heritage designated sites in Ireland are provided in Table 2.2 below (obtained from various GIS data sets).

Table 2.2: Designated Sites in Ireland

	Border Region	Midland Region	Western Region	Dublin Region	Mid-East Region	Mid-West Region	South-East Region	South-West Region	Ireland Total*
Special Protection Areas (SPA)	39	19	42	10	11	14	15	29	154
Special Areas of Conservation (SAC)	76	47	150	13	33	67	29	53	433 plus 6 offshore sites
Ramsar sites	8	9	8	5	2	1	6	6	45
Natural Heritage Areas (NHA)	27	23	59	3	5	32	1	15	155
Proposed NHAs	189	120	234	31	104	158	109	167	1,089
National Nature Reserves (NNR)	9	8	13	4	7	5	9	25	80
National Parks	1	0	2	0	1	1	0	1	6
World Heritage Sites	0	0	0	0	1	0	0	1	2
National Monuments	16,403	11,707	27,541	3,025	12,048	24,779	16,966	31,553	145,252
Accessible Monuments	11	5	14	9	15	14	14	12	94

* The total number of sites may be less than the number of sites in each region added up, because some sites extend over more than one region.

Source: GIS datasets from NWPS, Ramsar Sites Information Service, National Monuments Service.

3 SEA FRAMEWORK AND ASSESSMENT METHODOLOGY

3.1 Best Practice Guidance

Our SEA approach takes into account the procedures provided under the following guidance documents:

- European Commission (EC) (2003) Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment;
- EC (2013) Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment;
- Government of Ireland (2004) Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment Guidelines for Regional Authorities and Planning Authorities;
- Environmental Protection Agency (EPA) (2020) SEA Pack;
- EPA (2020) Good Practice Guidance on Cumulative Effects Assessment in SEA;
- EPA (2020) Guidance on SEA Statements and Monitoring;
- EPA (2019) Integrating Climatic Factors into the Strategic Environmental Assessment Process in Ireland;
- EPA (2019) Good Practice note on SEA for the Forestry Sector;
- EPA (2015) Developing and Assessing Alternatives in Strategic Environmental Assessment;
- EPA (2013) Integrated Biodiversity Impact Assessment – Streamlining AA, SEA and EIA Processes: Practitioner’s Manual;
- EPA (2003) Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland - Synthesis report; and
- Office of the Deputy Prime Minister, Scottish Executive, Welsh Assembly Government and Department of Environment (2005) A Practical Guide to the Strategic Environmental Assessment Directive.

To ensure the SEA follows best practice and adds real value to the Strategy, the following relevant documents were also consulted:

- EPA (2020) Second Review of Strategic Environmental Assessment Effectiveness in Ireland;
- EPA (2012) Review of Effectiveness of SEA in Ireland Key Findings & Recommendations;
- EPA (2018) SEA Effectiveness in Ireland – Action Plan 2018 – 2020; and
- EPA (2020) Ireland’s Environment – An Integrated Assessment 2020.

3.2 The SEA Process

SEA guides were produced by the Government of Ireland in 2004, updated through the EPA Pack, most recently in 2020. In common with other SEA guidance documents, these set out a multi stage process for carrying out SEA. These stages have been amalgamated in Table 3.1 below.

Table 3.1: Stages in the SEA Process

Stage	Tasks
Pre-review	If SEA is not mandatory, screen for possible significant environmental effects
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope Initial public consultation	Step 1: Describe briefly the statutory purpose, geographic area, population, and timeframe of the plan, and its relationship (both vertical and horizontal) with other plans/programmes.
	Step 2: Summarise the main findings of the survey and analysis stage.
	Step 3: Describe in general terms the current state of the physical environment of the area, with particular reference to (a) areas of environmental importance (such as protected sites); and (b) areas experiencing environmental problems (such as waste, or air or water pollution) at present. Describe how that environment would be likely to evolve on the basis of current development trends but no change in current policies.
	Step 4: Define (a) broad planning policy objectives for the area based on Steps 1 and 2; and (b) relevant environmental policy objectives for the area taking account of national policy and any relevant international legal obligations (e.g. EU Directives).
	Consult the Consultation Bodies on the scope of the SEA.
Stage B: Developing and refining alternatives and assessing effects Stage C: Preparing the Environmental Report	Step 5: Identify a number of reasonable alternative development strategies for the area which are capable of fulfilling the policy objectives established in Step 4.
	Step 6: Evaluate these alternative strategies against the chosen planning and environmental policy objectives (step 4), with a view to establishing the most sustainable option.
	Step 7: Select the preferred strategy (which may combine elements of different strategies), stating reasons for the choice, and work it up with detailed policy objectives.
	Step 8: Carry out an environmental assessment of the preferred strategy to determine whether implementation would be likely to cause any significant effects on the environment (in particular, the aspects listed in Annex I of the SEA Directive, such as biodiversity, air, cultural heritage, etc.).
Stage C: Preparing the Environmental Report	Step 9: Modify the preferred strategy to eliminate, reduce or offset any significant adverse effects, as appropriate.
	Step 10: Propose monitoring measures in relation to any likely significant environmental impacts.
	Step 11: Prepare a non-technical summary.
Stage D: Consulting on the draft plan or programme and the Environmental Report	Consult the public and Consultation Bodies on the draft plan or programme and the Environmental Report.
	Assess significant changes.
	Make decisions and provide information.
	Develop aims and methods for monitoring.

Stage	Tasks
Stage E: Monitoring the significant effects of implementing the plan or programme on the environment	Respond to adverse effects.

This Environmental Report is the main output of Stage C of the SEA process presented above, incorporating Stage B.

3.3 Links with Appropriate Assessment

Under Article 6(3) of the Habitats Directive, an appropriate assessment (AA) is required where a plan or project is likely to have a significant effect upon a European site, either individually or in-combination with other projects. The purpose of AA is to protect sites designated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) – collectively known as Natura 2000 sites – including maintaining the integrity of the internationally important species and habitats for which they were designated. As Northern Ireland is a part of the UK and therefore no longer a part of the EU, Natura 2000 sites here are now known as the 'National Site Network' however as a matter of consistency across this document we use the terminology that applies in the primary jurisdiction of the SEA and therefore refer only to Natura 2000 sites.

There are clear links and analogies between AA of plans and SEA. They are parallel but separate processes that commonly overlap but also differ in some key respects. AA is narrower in focus and requires more rigorous tests, with the conservation and protection of Natura 2000 sites at its core. Nonetheless both SEA and AA contribute to the integration of environmental considerations in the adoption of a plan and promote sustainable development.

The three main inter-relationships between AA and SEA are:

- AA is a tool that assists in addressing environmental issues as part of the SEA in relation to Natura 2000 sites;
- AA assists the SEA process in the systematic and explicit appraisal of alternatives in relation to Natura 2000 sites; and
- Undertaking AA in parallel with SEA provides for an efficient use of resources and expertise. Both processes benefit each other's findings.

The AA is carried out alongside the SEA of the Agri-Food Strategy. The results of the AA process are summarised in Section 6.4 of this report and can be read in full in the Natura Impact Statement.

3.4 Sustainability Topics and SEA Objectives

SEA Objectives

The baseline data, key environmental issues and SEA Objectives have been presented through a series of sustainability topics derived from Annex I(f) of the SEA Directive, namely: biodiversity, flora and fauna; population; human health; soil; water; air; climatic factors; material assets; cultural heritage (including architectural and archaeological heritage); landscape; and the inter-relationship between these.

The purpose of the SEA Objectives is to ensure that the assessment process is transparent and robust and that the review of the Strategy areas considers and addresses potential environmental effects. The SEA Objectives against which the Agri-Food Strategy has been assessed against are detailed in Table 3.2 below.

Table 3.2: SEA Objectives

SEA Objective	Sub-objective (Will the Strategy...?)
1. Biodiversity and Flora and Fauna– Contribute to the protection of biodiversity and help reverse the decline in nature	<ul style="list-style-type: none"> a. Maintain and enhance internationally and nationally designated terrestrial, freshwater and marine designated sites, specifically SPAs, SACs, Ramsar sites and Natural Heritage Areas b. Improve the ecological coherence/favourable conservation status of Annex 1 habitats outside of Natura 2000 sites c. Maintain and restore terrestrial, freshwater and marine habitats, species and natural heritage sites d. Support uptake of biodiversity measures through agri-environment schemes e. Prevent, minimise or address the spread of invasive species f. Protect and maintain migratory species, connectivity and cross border habitats
2. Population – Reduce deprivation and improve social cohesion of the community	<ul style="list-style-type: none"> a. Improve accessibility to education, employment and community facilities/services b. Reduce deprivation and inequality c. Support the economic viability of primary producers and others agri-food sector businesses
3. Human Health– Improve health and quality of life	<ul style="list-style-type: none"> a. Improve long-term health and wellbeing b. Improve long-term health and wellbeing of primary producers and others employed in the sector c. Maximise opportunities for the agri-food sector to support recreational activities and access to the countryside
4. Soil and Land Use – Protect and enhance soil quality	<ul style="list-style-type: none"> a. Safeguard and improve the highest quality soil and agricultural land b. Reduce soil pollution, degradation and erosion including geohazards such as landslides c. Support increased uptake of sustainable management of soil resources and fertility
5. Water – Protect, enhance and manage water resources and flood risk	<ul style="list-style-type: none"> a. Protect drinking water and other water resources from pollution, particulate nitrate and phosphorous pollution with no further deterioration of water quality status b. Support the Water Framework Directive objectives of preventing deterioration, achievement of good ecological status by 2027 and achieving compliance with the requirements of designated protected areas c. Protect and maintain physical habitat, hydrological processes and regimes and biological diversity d. Support the Marine Strategy Framework Directive achievement of good environmental status by protecting and improving the quality of marine waters, particularly those involved in seafood growing and fishing e. Minimise exposure to flood risk and droughts

SEA Objective	Sub-objective (Will the Strategy...?)
6. Air Quality – Reduce air pollution and ensure continued improvements to air quality	a. Support achievement of the NECD objectives for NO _x , SO ₂ , NH ₃ , NMVOC, PM _{2.5}
7. Climate Change – Support national objectives to address climate change	a. Support the agri-food sector in reducing its GHG footprint per unit of output b. Improve the climate change resilience and adaption capacity of the sector c. Support land management practices that protect and capture carbon, particularly from peatlands and forests
8. Material Assets – Conserve natural resources and reduce waste production	a. Safeguard natural resources (including minerals, forestry and peatland) and minimise unsustainable use b. Increase recycling rates and re-use of materials c. Promote sustainable use of pesticides
9. Cultural Heritage – Protect, enhance and manage Ireland's rich archaeological and cultural heritage	a. Preserve and enhance designated and non-designated built heritage b. Preserve and enhance designated and non-designated archaeological sites and areas, including all National Monuments
10. Landscape – Protect, enhance and manage the character and quality of Ireland's distinctive landscape and seascape	a. Maintain and support farming and marine harvesting practices that maintain and enhance the scenic landscape b. Maintain and enhance designated sites, including Ireland's six National Parks, two World Heritage Sites and three UNESCO Global Geoparks. c. Maintain and enhance cross border landscapes
11. Natural Capital and Inter-relationships - To support an agri-food sector that continues to deliver wider natural capital benefits including carbon sequestration, protection from flooding and access to the countryside.	a. Preserve and enhance the ability of an area to provide services such as carbon sequestration and flood resilience, as well as supporting other ecosystem services b. Improve knowledge and understanding of and connection with the natural environment c. Support agri-food based tourism and recreation d. Protect, and where possible enhance, existing important ecological corridors on farmland

3.5 Assessment Methodology

This stage of the SEA process involves the identification and evaluation of the likely significant effects on the environment of implementing the Agri-Food Strategy and its reasonable alternatives. This follows a matrix approach and has been carried out in

several stages to include high level and detailed matrix assessments, and a descriptive cumulative effects assessment.

High Level Matrix Assessment

The first step of the assessment process, the high level assessment, is used to identify the likely adverse, beneficial, neutral and uncertain effects of the Agri-Food Strategy on the environment. Presented in matrix format, the assessment ascertains how well each of the strategic priorities of the Strategy meets each of the SEA Objectives. A descriptive summary of the likely effects is provided alongside the matrix.

A high level matrix assessment has also been carried out on the different alternatives, including the 'do nothing' option. This enables comparisons to be drawn between how well each alternative option correlates with the SEA Objectives.

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.

The key used in the high level matrices is as follows:

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
--	Likely strong adverse effect
+/-	Uncertain effect

Detailed Matrix Assessment

The second step of the assessment process is used to scrutinise the potential adverse or uncertain adverse effects that have been identified by the high level assessment. Each strategic priority identified as potentially having such effects has been analysed against each of the SEA Objectives in more detail (including those objectives for which beneficial effects were identified).

In order to determine the likely significance of effects, the second stage of the assessment addresses the range of criteria identified in Annex II of the SEA Directive (reproduced below).

Characteristics of the effects and of the area likely to be affected, having regard, in particular, to

- the probability, duration, frequency and reversibility of the effects;
- the cumulative nature of the effects;
- the transboundary nature of the effects;
- the risks to human health or the environment (e.g. due to accidents);
- the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected);








- the value and vulnerability of the area likely to be affected due to:
 - special natural characteristics or cultural heritage;
 - exceeded environmental quality standards or limit values;
 - intensive land-use; and,
- the effects on areas or landscapes which have a recognised national, Community or international protection status.

The detailed SEA matrices used in the assessment of the Strategy include consideration of the duration, frequency, permanence and geographic extent of effects (including transboundary effects) which feed into the consideration of magnitude (i.e. the degree of change that the proposed scheme would have on the environment). This is then correlated with the value and vulnerability of the receiving environment, which includes consideration of the protected status of the area. Table 3.3 below shows how significance of effect is determined.

Table 3.3: Significance of Effects Matrix

		MAGNITUDE OF CHANGE			
		High	Medium	Low	Negligible
VALUE / VULNERABILITY	High	Major	Major / Moderate	Moderate	Moderate / Minor
	Medium	Major / Moderate	Moderate	Moderate/ Minor	Minor
	Low	Moderate	Moderate / Minor	Minor	Minor / Negligible
	Negligible	Moderate/ Minor	Minor	Minor/ Negligible	Negligible

The significance of effect can be either adverse or beneficial. The key used in the detailed matrices is therefore as follows:

Key for Significance of Effect	
	Major or Major / Moderate beneficial effect
	Moderate or Moderate / Minor beneficial effect
	Minor or Minor / Negligible beneficial effect
	Negligible beneficial / adverse effect or neutral effect
	Minor or Minor / Negligible adverse effect
	Moderate or Moderate / Minor adverse effect
	Major or Major / Moderate adverse effect

A descriptive summary of the significance of likely effects for each SEA objective and an overall verdict on the measure or scheme assessed is provided alongside the matrix.

Cumulative Effects Assessment

The SEA Directive (in Annex I) also requires identification and evaluation of likely secondary, cumulative and synergistic effects of the Agri-Food Strategy. Cumulative effects are best considered by looking at the Strategy as a whole, as the insignificant effects of specific priorities may combine with one another to create a significant effect. Synergistic effects go beyond this, producing a total effect that is greater than the sum of the individual effects. Secondary effects are those that are not a direct result of the strategy, but where, over time the original effects lead to additional impacts. These terms are not mutually exclusive, and often the term 'cumulative effects' is taken to include secondary and synergistic effects.

In order to ensure that cumulative effects are considered throughout the SEA and Strategy preparation process, some consideration has been given through the SEA Objective 'Natural Capital', which is a broad topic that looks at the inter-relationship between all of the other sustainability topics. Such effects have also been considered through the review of other plans and programmes carried out during the scoping process.

The main purpose of the cumulative effects assessment is to report on the identified significant cumulative effects in a transparent and accessible way. This is done in descriptive format, with particular focus on analysis of effects on selected environmental resources; past impacts and future impacts relating to these resources; cumulative impact pathways (including cause-effect relationships); uncertainties and assumptions; and in-combination effects (of Strategy priorities identified as having potentially adverse effects in the high level or detailed matrix assessments) with the plans and programmes identified in Section 4.2.

4 FINDINGS OF THE SCOPING PROCESS

4.1 Scoping Consultation Responses

The SEA Directive requires authorities with “environmental responsibilities” (hereafter referred to as the Consultation Bodies) to be consulted on the scope and level of detail of the information which must be included in the Environmental Report (Article 5(4)). The Directive does not require full consultation with the public or bodies other than Consultation Bodies until the Environmental Report is finalised.

The Scoping Report was issued to the Consultation Bodies on 11 August 2020. This included:

- the Environment Protection Agency (EPA);
- Department of Housing, Local Government and Heritage (DHLGH)¹;
- Department of the Environment, Climate and Communications (DECC)¹;
- Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (DTCAGSM)¹; and
- DAFM.

Due to the potential of transboundary effects, it also included the Northern Ireland Environment Agency (NIEA). The Scoping Report was also published on the DAFM website.

Consultation Bodies must provide a view, once consulted, within four weeks. Responses were received from DECC, Department of Housing, Planning and Local Government, DAFM, EPA and NIEA². Consultation responses were also received from members of the public, including a number of organisations. Consultation responses on the Scoping Report are reproduced in Appendix A, along with a comment on how they have been accounted for in the preparation of this Environmental Report.

4.2 Other Plans, Programmes and Environmental Protection Objectives

Assessing the relationship of the Agri-Food Strategy with the existing International, European and National framework of plans and programmes and identifying gaps and conflicts is a key part of the SEA process. This includes the consideration of statutory and non-statutory environmental protection objectives.

The scoping process involved an initial review of plans, programmes and environmental protection objectives. This revealed that, in most cases the Strategy is expected either to support the other plans and programmes through similar objectives. Indeed, many of the strategies set out in the Agri-Food Strategy explicitly reference environmental protection objectives or other policy objectives set out or to have no relationship with them.

¹ Note that at the time of the Scoping consultation the previous Department names applied, those stated here reflect the updates that occurred in late 2020.

² Respondent department names referred as they were at the time of the scoping consultation.

Plans and programmes containing environmental protection objectives which are relevant to the Strategy are listed below in Table 4.1. An indication is given as to whether the plan or programme directly supports (or is supported by), indirectly supports, or has potential conflicts with the Strategy. Further information on how these environmental protection objectives will be supported through the Strategy is given in Appendix B.

Table 4.1: Relationship with Other Plans and Programmes

Plan or Programme directly supports / is supported by the Agri-Food Strategy	
EC (2020) Farm to Fork Strategy	EC (2018) CAP Strategic Plans Briefing
EC (2020) EU Biodiversity Strategy for 2030	EU (2019-) European Green Deal
EC (2014) A policy framework for climate and energy in the period from 2020 to 2030	EC (2013) A Clean Air Programme for Europe
EC (2008) Marine Strategy Framework Directive (MSFD), as amended.	EC (2020) A new Circular Economy Action Plan (CEAP)
EC (2013) Common Fisheries Policy	Bord Bia (2016 -). Origin Green.
Fine Gael, Fianna Fail, Green Party (2020) Programme for Government – Our Shared Future	DAFM (2015) Forestry Programme 2014-2020
DAFM (2014) Rural Development Programme (RDP) 2014-2020.	Inland Fisheries Ireland (IFI) (2015): National Strategy for Angling Development (NSAD)
Irish Water (2016) National Wastewater Sludge Management Plan (NWSMP)	DHPLG (2018) River Basin Management Plan for Ireland 2018-2021
IFI (2016) Corporate Plan 2016-2020	DHPLG (2020) National Marine Planning Framework Consultation (NMPF) - Draft
DHPLG (2020) Update to Ireland's Marine Strategy.	DHLGH. Shellfish Waters Final Characterisation Reports and Pollution Reduction Plans (PRP)
DAFM (2012) Harnessing Our Ocean Wealth: An Integrated Marine Plan for Ireland	DAFM (2015) National Strategic Plan for Sustainable Aquaculture Development (NSPA)
DCHG (2017) National Biodiversity Action Plan (NBAP) 2017-2021	DCCAE (2017) National Mitigation Plan
DCCAE (2019) Climate Action Plan	DAFM (2020) 'Ag-Climatise' – A Roadmap towards Climate Neutrality
DCCAE (2018) National Adaptation Framework: Planning for a Climate Resilient Ireland	DCCAE (2017) Ireland's fourth National Energy Efficiency Action Plan 2017-2020
DAFM (2019) Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan	National Waste Prevention Programme
DCCAE (2020) Waste Action Plan (WAP) for a Circular Economy	

Plan or Programme indirectly supports / is supported by the Agri-Food Strategy	
Project Ireland 2040: National Planning Framework (NPF)	Project Ireland 2040: National Development Plan (NDP) 2018-2027
DCCAE (2018) Sustainable Development Goals National Implementation Plan 2018 – 2020	DRCD (2021) Our Rural Future, Rural Development Policy 2021-2025
DoT (2018) National Policy Statement on the Bioeconomy (NPSB)	DAFM (2018) DRAFT Plan for Forests & Freshwater Pearl Mussel in Ireland
Irish Water (2015) Water Services Strategic Plan (WSSP)	DCHG (2018) National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022
DCCAE (2017) Cleaning our Air Public Consultation to inform the development of a National Clean Air Strategy	DCCAE (2019) National Air Pollution Control Programme (draft NAPCP report)
EC (2018) A Clean Planet for all: A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy	
Plan or Programme has potential conflicts with the Agri-Food Strategy	
UK Fisheries Bill [HL] 2019-21	HM Government, NI Executive, Scottish Government, Welsh Assembly Government (2011) UK Marine Policy Statement (UKMPS)
DAERA (2018) Draft Marine Plan for NI (MPNI)	DOE (2006) An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 – 2026
Project Ireland 2040: National Planning Framework (NPF)	Project Ireland 2040: National Development Plan (NDP) 2018-2027
DCHG (2018) National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022	DAFM (2018) DRAFT Plan for Forests & Freshwater Pearl Mussel in Ireland
DCCAE (2017) Cleaning our Air Public Consultation to inform the development of a National Clean Air Strategy	DCCAE (2019) National Air Pollution Control Programme (draft NAPCP report)
Plan or Programme has no relationship with the Agri-Food Strategy	
DAHG (2015) A National Landscape Strategy for Ireland 2015-2025	DoH, DAERA and FSA (2019) Changing the Culture 2019-2024: One Health Tackling Antimicrobial Resistance (AMR) in Northern Ireland
DAERA (2019) Environment Strategy for Northern Ireland Public Discussion Document	DBEIS (2019) The UK's Draft Integrated National Energy and Climate Plan (NECP)

The plans and programmes listed above that have the potential to conflict with the Agri-Food Strategy are assessed further through the in-combination assessment in Section

6.5, as are those which, though supportive of the objectives of the Strategy, may have similar adverse effects on environmental receptors.

Additional plans and programmes (without environmental protection objectives) identified through the scoping process as potentially likely to have adverse in-combination effects with the Strategy (which are also assessed in Section 6.5 of this report where relevant), are:

- DCENR (2014) Offshore Renewable Energy Development Plan (OREDPP);
- DoT (2018). Global Ireland: Ireland's Global Footprint to 2025.

4.3 Summary of Baseline Data

Schedule 2 of the Ireland SEA Regulations specifies that the Environmental Report must contain the following information in respect of baseline conditions:

“(b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.

(c) The environmental characteristics of areas likely to be significantly affected.

(d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or the Habitats Directive.”

A summary of the current state of the environment in Ireland, in respect of each of the sustainability topics is provided below. Where appropriate, Geographic Information Systems (GIS) have been used to assist with analysis of this data; maps have been produced to display relevant spatial information and can be seen in Appendix C. A more detailed baseline description is provided in the Scoping Report, with only a summary produced here. The full Scoping Report baseline can be seen Appendix D. Analysis of baseline information has been carried out to provide an evidence base for current and likely future environmental conditions without the Agri-Food Strategy (it must be noted that DAFM does not have responsibility for all environmental issues, some lie outside its remit). Key environmental and sustainability issues for Ireland have also been identified.

Information for this section has been obtained from Government websites such as those of the National Parks and Wildlife Service (NPWS) and the EPA; the 2020 EPA report ‘Ireland’s Environment’ and other documents as referenced.

Biodiversity and Flora and Fauna

Strengths and Opportunities

- Ireland has a rich diversity of ecosystems and wildlife as it is home to over 31,000 recorded species and supports globally important populations of birds, fish, mammals, invertebrates, plants and fungi (NPWS, 2020).
- Ireland has designated 439 Special Areas of Conservation (SACs), 165 Special Protected Areas (SPAs), 45 Ramsar sites, 155 Natural Heritage Areas (NHA), 80 Nature Reserves (NRs), 7 Refuges for Fauna and 68 Wildfowl Sanctuaries.
- Under the OSPAR Convention to Protect the Marine Environment of the North East Atlantic, Ireland has also committed to establishing Marine Protected Areas

(MPA) to protect biodiversity: nineteen of its SACs are MPAs for marine habitats (NPWS, 2020).

- Ireland has a number of internationally important habitats representing 59 of those listed in Annex I of the Habitats Directive, not all of which are located within designated areas. Of these, 16 are deemed to be priority habitats at the national level.
- Peat bogs cover approximately 13.7% of land, the majority of which are located in the south-west, west and north of the country (EPA, 2018).
- A significant proportion of the floral and faunal biodiversity resource is located outside areas under formal European designation (SAC, SPA, NHA, Ramsar). Many surface waters, which are not formally designated, support stocks of Annex II species designated under the Habitats Directive (Inland Fisheries Ireland, 2020).
- Ireland includes important breeding habitat for seabirds, its coastal areas provide habitat for internationally important numbers of swans and geese and its wetlands are an important resource for over 50 species of overwintering migratory birds. Blanket bog and upland areas including agricultural areas provide habitats for a number of bird species (NPWS, 2020).
- Of the Habitats Directive-listed species in Ireland, 57% are in favourable condition and 72% demonstrate stable or improving trends (DCHG, 2019).
- The recent Countryside Bird Survey (CBS) identified that over an 18-year period, population trend analyses indicate that 47% of species are increasing and 27% of species are stable (Lewis, L. et al., 2019). In terms of seabirds, monitoring data identified that over approximately 16 years, 85% of assessed species were increasing (Cummins, S. et al., 2019).
- The NPWS has published detailed site-specific conservation objectives for 327 SACs and 37 SPAs (NPWS, 2020).
- Ireland achieved Good Environmental Status (GES) for some elements of biological diversity, in particular for the majority of larger marine vertebrates assessed in 2019, under the Marine Strategy Framework Directive (MSFD) assessment of the marine environment (Department of Housing, Planning and Local Government (DHPLG), 2020).
- A number of farmers participated in schemes such as Green, Low-Carbon, Agri-Environment Scheme (GLAS), Burren Programme, Hen Harrier Programme, the Pearl Mussel Project and the Curlew Conservation Programme which are aimed at improving conservation (DCHG, 2017; Biodiversity Working Group, 2020). The GLAS scheme in particular included approximately 50,000 farmers and covered around 40% of agricultural land. Fisheries schemes include the Sustainable Fisheries Scheme, Inshore Fisheries Conservation Scheme and Marine Biodiversity Scheme.
- High nature value (HNV), a type of low-intensity farming system which is particularly valuable for wildlife and the natural environment, the west of Ireland and its upland areas are rich in HNV farmland (EPA, 2020).

Weaknesses and Threats

- The EC has recently decided to refer Ireland to the Court of Justice of the EU because Ireland failed to designate 154 out of 423 Sites of Community Importance (SCI) as SACs within the appropriate deadline as well as failing to establish site-specific conservation objectives for 87 sites and conservation measures for any of the 423 sites (EC, 2020).
- The conservation status of 85% of EU protected habitats in Ireland is unfavourable, while 46% are demonstrating ongoing declines in conservation

status with peatlands, grassland and some marine habitats a particular concern (Biodiversity Working Group, 2020).

- Approximately 65% of Ireland's coastal habitat types are considered to be in an unfavourable condition, in particular lagoons, large shallow inlets and bays, halophilous scrub and fixed dunes (EPA, 2020).
- To date only 2.1% of Ireland's maritime area has been designated for protection (EPA, 2020). Therefore there is a need to increase the extent of Marine Protected Areas in order to meet the goals of designating 10% of marine and coastal areas under the Convention on Biological Diversity and 30% by 2030 under the EU Biodiversity Strategy.
- Agriculture (and to a lesser extent forestry) has been identified as a key contributor to the declines in habitat conservation status, with over 70% of habitats being impacted by agricultural practices (DCHG, 2019). A feature of the distribution of protected sites in Ireland is such that the burden for their protection falls unequally on different agricultural sectors, with upland and marginal farmers, where farming is often less profitable, having the greatest responsibility for implementation of habitat and species conservation and climate change mitigation. For more in depth information on the impacts of agriculture on Natura 2000 sites see section 3.5.1 of the Natura Impact Statement or Appendix E of this report.
- The recent European Court of Auditors report on *Biodiversity on Farmland* (2020), concluded that the effect of common agricultural policy (CAP) direct payments on farmland biodiversity is limited and that agricultural intensification remains one of the main causes of biodiversity loss and ecosystem degradation.
- Based on an ammonia monitoring study carried out, ammonia concentrations have increased across the monitored sites. The observed mean was above the 1 µg/m³ critical level set to protect lichens and bryophytes but less than the 3 µg/m³ critical level set to protect higher plants (Doyle, B. et al, 2017). A recent study estimated that nitrogen deposition in Irish grasslands ranged from 2 to 22 kg/ha per year and that 35% of mapped acid grasslands exceeded the empirical critical load of 15 kg/ha per year.
- Based on current scenarios, exceedances of critical loads of eutrophication is not predicted to change by 2030, owing to national increases in reduced nitrogen deposition (Aherne et al., 2020).
- Biodiversity-related critical loads for nitrogen indicates that Irish habitats are more sensitive to nitrogen deposition than the recommended empirical critical load ranges for European habitats (Aherne et al., 2020). This means that current estimates of the extent of nitrogen impacted habitats are likely to be underestimated.
- Of the Habitats Directive-listed species in Ireland, 30% are in unfavourable condition and 15% demonstrate trend of ongoing decline (DCHG, 2019). For approximately 13% of Habitat Directive-listed species the status is unknown (EPA, 2020).
- Red List assessments have shown that just over 14% of the taxa were assessed as under threat of extinction (including 30 species of bees, European eel (*Anguilla anguilla*), Arctic char (*Salvelinus alpinus*), and natterjack toad (*Epidalea calamita*)) (DCHG, 2017).
- Stocks of Atlantic salmon (*Salmo salar*) have been declining and only 34% of Irish salmon waters are considered to have healthy salmon populations.
- The Irish Pollan (*Coregonus Pollan*) is unique to the Island of Ireland but its distribution is limited to five lakes, Lough Allen, Lough Ree and Lough Derg and Lough Neagh and Lower Lough Erne (Inland Fisheries Ireland, 2020).

- The MSFD assessment found that for marine reptiles and 41% of non-commercial fish species assessed, the environmental status is currently unknown and that for 18 of 56 non-commercial fish species assessed, GES has not been achieved (DHPLG, 2020).
- The most recent assessment under the MSFD by the Commission in 2018 of the Irish Programme of Measures also reported that there are gaps especially in that the measures do not seem to fully address pressures/activities and associated impacts for biodiversity descriptors water column habitats, seabed habitats or the extraction of seaweed.
- According to the Marine Institute Stockbook 2018 and Shellfish Stockbook 2018, there are 28 stocks whose biomass levels are below those capable of delivering maximum sustainable yield (MSY) and 60 were unknown (Biodiversity Working Group, 2020). The MSFD assessment found that 44 stocks did not achieve GES and for 99 stocks the status is unknown (DHPLG, 2020)³.
- The breeding distributions of bird species associated with farmland have declined substantially over the recent decades. Short term assessments undertaken for breeding bird populations and a selection of wintering bird populations reported declines of 18% and 52% respectively. The CBS identified that over an 18-year period, population trend analyses indicate that approximately 26% of species are in decline (Lewis, L. et al., 2019). In terms of seabirds, over a 32 year period, 21% of species have decreased (Cummins, S. et al., 2019). The number of the Birds of Conservation Concern on the Red list and the Amber list has increased in the latest assessment compared to the previous assessment.
- Pressures and threats on different bird groups include agriculture and forestry, development, climate change, energy production (e.g. wind farms), hunting, recreational and other disturbance, fishing, shellfish harvesting and aquaculture, bycatch, mixed source water pollution/eutrophication, mammalian predation and plastic waste (Lewis, L. et al., 2019; Cummins, S. et al. 2019).
- Coastal and marine biodiversity is coming under pressure from human activities including nutrient and chemical discharge and through direct physical disturbance and habitat degradation from pollution, litter, man-made noise and light, fishing and by-catch of marine mammals (DCHG, 2017).
- There are concerns that as a result of the UK's withdrawal from the EU, along with potential future increased restrictions on access to UK waters and restrictions on direct landings of certain fishery products such as live bivalve molluscs to UK ports, this may result in displacement of vessels to Irish waters, resulting in additional pressure on fish stocks and general marine biodiversity (DAFM, 2020).
- Climate change is also expected to have an increasingly negative impact on habitats, particularly coastal and upland habitats, and various species as well as increasing ocean acidification (DCHG, 2017; 2019).
- Invasive and non-native species are increasing and while to date the majority of invasive species have been plants, in the future invertebrates and vertebrate species may increase (DCHG, 2017).
- While there is data on protected areas and the threats they are facing, there is a lack of data on the status of biodiversity in other areas used for agriculture which creates difficulty in addressing negative impacts (EPA, 2016). However, other policies are being developed to reverse these trends, such as the All Ireland

³ Since the commencement of the SEA process the updated 2020 stockbooks have been published but this analysis is retained as a previous conclusion of the Interim Review of the Implementation of the National Biodiversity Action Plan, 2017-2021.

Pollinator Plan, Partial and Remnant HNV classification and GLAS targeting of non-designated habitats and species.

Transboundary Considerations

- Northern Ireland has a large area of land of nature conservation value, including 17 SPAs, 57 SACs, 21 Ramsar sites, 394 Areas of Special Scientific Interest (ASSIs), 12 National Nature Reserves and a number of MPAs. Some of the designated sites are located on the border with Ireland, including 10 SACs, 4 SPAs, 4 Ramsar sites and a number of ASSIs.
- A proportion of Natura 2000 sites are in poor condition and approximately 35% of ASSI features are in unfavourable condition, compared to 62% in favourable condition (NIEA and DAERA, 2020).
- There has been a steady decline in biodiversity, including a decline in priority habitats and species (NIEA, 2013).
- The key pressures on biodiversity were found to be land-use change, particularly agriculture and development, pollution, invasive species and fisheries practices (NIEA and DAERA, 2020).
- Ammonia/nitrogen deposition is seen as a threat for approximately 75% of Northern Ireland's terrestrial priority habitats and as a threat of high significance for 45% of these habitats (Expert Working Group on Sustainable Agricultural Land Management for N. Ireland, 2017).
- Although there has been an increase in common bird species between 1994 and 2018, there has been a decrease in wetland bird species (NIEA and DAERA, 2020).

Population

Strengths and Opportunities

- The Census 2016 results show that Ireland's population stood at 4,761,865 in April 2016, an increase of 173,613 (3.8%) since April 2011 (CSO, 2016). CSO estimate that the population in April 2020 was 4,977,400 an increase of 215,535 or 4.5% since the last census in April 2016 (CSO, 2020).
- According to the *Business of Seafood 2019* (BIM, 2019) the Irish sea food industry was worth €1.22billion in 2019 with approximately 16,150 people directly and indirectly employed within the industry around Ireland's coastline.
- The agri-food sector plays a key role in Ireland's economy employing roughly 163,600 people which is approximately 7.1% of total employment in the country. However, outside Dublin and mid-east region the agri-food sector provides between 10% and 14% of total employment emphasising the importance of the agri-food sector in rural and coastal areas.
- Agri-food product exports were valued at €14.2 billion in 2020 (data supplied by DAFM, 2021) with demand predicted to rise over the next ten years.
- Horticulture Industry was worth €477m (farm gate value) in 2019, which is the 4th highest sector in terms of gross agricultural commodity output value (Bord Bia, 2020).
- The new *Programme for Government Our Shared Future* (Fine Gael, Fianna Fail, Green Party, 2020) aims to address the economic and wellbeing challenges facing Ireland in the coming years.
- Ireland has significant strengths in research, technology, development and innovation and a growing international industry base centred on ICT and life sciences. These, coupled with a strength in marine science and technology,

provide the means to enable smart, knowledge-based enterprises to target global markets.

- The 2016 CSO Census data shows how Ireland has an increasing number of people retiring from the workforce as they reach retirement age which presents opportunities through the implementation of new farming methods.

Weaknesses and Threats

- The number of unemployed persons is currently around 140,800, unemployment rate of 5.8% (does not include claimants of the Pandemic Unemployment Payment) (CSO, 2021).
- The *Annual Review and Outlook for Agriculture, Food and the Marine 2020* (DAFM, 2020) considers gender diversity in agriculture and notes that in 2019 only 13% of workers in the agriculture, forestry and fishing sector were female. The percentage of women in agriculture in Ireland is much lower than the EU average of 28% (from 2016 data).
- There are problems relating to access to services and public transport frequency and connectivity for rural dwellers, which has subsequent impacts on those who do not own private transport (Department for Education and Skills, 2013).
- Traverse routes in Ireland suffer from bottlenecks and congestion or slow journey times, and are in need of improvement.
- The 2016 CSO Census data shows how Ireland has an increasing number of people retiring from the workforce as they reach retirement age, this can lead to loss of farming knowledge and continuity.

Human Health

Human Health is a combination of good levels of physical health, mental health and wellbeing (World Health Organisation (WHO), 2020).

Strengths and Opportunities

- As of 2016, life expectancy at birth in Ireland is 80 years for males and 83 for females (WHO, 2020).
- The Irish Health Survey (CSO, 2015) shows 83% of people rate their own health as good or very good whilst 32% have a long-standing illness or health problem.
- According to the *Farmers have Hearts Study* which began back in 2007 and was carried out in partnership between the National Centre for Men's Health at IT Carlow, Teagasc, the Health Service Executive (HSE), the Irish Heart Foundation (IHF) and Glanbia, death rates in Ireland have been generally falling.
- Balanced ecosystems can help to support farming in relation to soil, crop and flood management. For people, areas of high biodiversity can encourage going outdoors for physical exercise which improves cardiovascular health and as noted above can also benefit mental health and wellbeing.

Weaknesses and Threats

- Approximately 25% of the population are expected to experience mental health challenges in their lifetime and the level of suicide amongst younger age groups is amongst the highest in the EU. Mental health therefore is a growing health, social and economic problem for Ireland.
- Although the *Farmers have Hearts Study* found that death rates are generally falling, it found that farmers show the slowest reduction of any socio-economic group.

- The most recent 2018 report found that from the 868 male farmers who participated in the baseline phase of the study, one in eight (13%) reported experiencing stress 'often' or 'very often'.
- More than one in three farmers (34.9%) scored 'poor' or 'below average' on the self-administered short well-being scale.
- Although agriculture only accounts for 5% of the working population, it accounts for 40% of workplace fatalities, with over 20 deaths for every 100,000 workers. Both fatal and non-fatal accidents have been rising over the past few years (Health and Safety Authority).
- There are around 1,300 premature deaths per year attributable to the effects of poor air quality in Ireland (EPA, 2020) with the agricultural industry being a contributor of particulate matter (PM) in ambient air.
- The Healthy Ireland Survey (Department of Health, 2019) identified that 37% of the surveyed population are overweight and 23% are obese. However, among those aged 65 and over, 74% are overweight or obese.
- The healthy Ireland Survey identified that only 46% of surveyed respondents were achieving the minimum level of activity recommended by the National Guidelines, although this had increased from 44% in 2015 (Department of Health, 2019).

Soil and Land Use

Strengths and Opportunities

- Ireland is one of the most geologically diverse regions in the world relative to its land area and has substantial mineral deposits.
- The 2018 CORINE (Coordination of Information on the Environment) assessment shows that agriculture is the primary land use and land cover type within Ireland (67.6% national land cover), followed by wetlands (14.9%) and forestry (9.5%, although other sources show forestry covering 11%). When breaking down agricultural land use in Ireland further, the main agricultural class is pasture (55.1% national land cover), that is interspersed with areas of natural vegetation (6.9%), and arable land (4.5%).
- Ireland can use carbon dioxide removals from 'land use, land use change and forestry' of up to 26.8 Mt CO₂eq of the Effort Sharing Regulation target in recognition of the challenges to achieving emissions reductions within agriculture (EPA, 2020).
- Soil types vary significantly throughout the Ireland; in the south east Ireland has well drained, highly fertile and highly productive soils (e.g. acid brown earths), while other regions (north west and south west) are covered by blanket peats that have limited use for agricultural production.
- Some peatland soils in the country are protected under the Habitats Directive and NHA designation.
- The soil in Ireland is considered to be in good condition and is relatively rich in soil organic matter, especially wetter soils and blanket and basin peats.
- There has been a recent improvement in the quantity of soils which have optimum soil pH levels needed for improved grass yields based on 57% of Teagasc soil samples having optimum soil pH in the period 2017-2019 compared to 34% in the period 2014-2016 (EPA, 2020).
- Soil sampling by Teagasc identified a continuing trend of slow improvement in soil fertility with 21% of soils tested with optimum soil pH, P & K (Teagasc, 2020).

- Regulation of soils falls under Cross Compliance under the basic-payment scheme of the Common Agricultural Policy and, where project-related, under EIA Regulation for On-Farm Development 2011 (SI 456 of 2011). Under the basic-payment scheme, farmers are obliged to comply with Good Agricultural and Environmental Conditions (GAEC) which cover the topics of minimum soil cover (GAEC 4), soil erosion (GAEC 5) and maintenance of soil organic matter (GAEC 6).
- The EPA and Teagasc have developed an Irish Soil Information system to inform decision makers in terms of protecting the soil resource.

Weaknesses and Threats

- There has been a small decrease in total agricultural land use since the last assessment from 2012, but there is an overall downward trend with a reduction of 8,230 ha since 1990 (EPA, 2020).
- Since 2000, the main change in land cover has been from agriculture to forestry (10% increase) and a further 15% increase in artificial area due to increases in urban, commercial and industrial development, transport infrastructure, and recreational facilities (EEA, 2015).
- There has been a 20% reduction of wetland land cover since 1990, the change has been mainly from peat bogs to transitional woodland scrub and coniferous planting (EPA, 2020).
- Many peatland soils are not protected and may be vulnerable to intensification of use with consequential impacts (amongst others) on carbon sequestration.
- Land drainage, reclamation for agricultural purposes and peat extraction have all impacted peatlands. Only 10% of the original raised bog and 28% of the original blanket peatlands resource are suitable for conservation (as natural peatlands). The loss of peatland also has an effect on climate change prevents carbon sequestration and reduces the available carbon stock as, when drained, peat oxidises and CO₂ is released (EPA, 2020).
- Although there has been an increase in lime use in the last decade, lime use has been low compared to the 1970's to the mid 1980's. Since the mid 1980's soil acidity has increased on Irish farms resulting in a large requirement for lime (Teagasc, 2020).
- The main pressure on soils in Ireland is from soil sealing, and artificial areas with sealed soils have increase by 65% since 1990, although this has stabilised a bit since 2012 (EPA, 2020).
- Soil compaction is another pressure which can lead to increased surface run-off, flooding, erosion and transport of nutrients and agrochemicals to open water.
- Intensive land management can also lead to negative impacts on soil biodiversity (EPA, 2020).
- In Ireland there is very little specific legislation or policy mechanism to protect soils (apart from habitat based legislation) and to deal with the remediation of contaminated soils (EPA, 2020).

Water

Strengths and Opportunities

- The assessment of water quality in Ireland shows signs of encouragement, such as improvements in the ecological status of lakes and groundwater with Irish coastal waters maintaining their status as some of the best in Europe.

- Approximately 53% of river water bodies are in good or high ecological status. Overall, 301 river water bodies have improved in ecological status (EPA, 2019).
- In Ireland, 50.5% of lake water bodies are good or high ecological status. When compared to the last assessment period (2010-2015), there has been a 4.3% improvement in the number of lake water bodies meeting this criteria (EPA, 2019).
- 80% of coastal water bodies are in good or high ecological status, the highest for any surface water category. This is considerably higher than the European average of 54.6%, making Ireland's coastal waters some of the best quality in Europe (EPA, 2019).
- The quality of Ireland's canal system has remained stable since the last assessment (87%), with 87% (13 out of 15) in good or better ecological condition (EPA, 2019).
- Approximately 92% of groundwater bodies were found to be in good chemical and quantitative status, accounting for 98% of the country by area (EPA, 2019).
- The government is adopting a more collaborative approach to facilitate improvements in water quality and as agriculture is the most frequent significant pressure in water bodies that are not meeting their WFD targets, priority catchments are identified where the status of the water is at risk of falling. In this instance, ASSAP will focus its resources on addressing the agricultural pressures and where one is identified will offer farmers a free visit from an ASSAP advisor (Teagasc, 2017).
- The Catchment Flood Risk Assessment and Management (CFRAM) Programme has been created to provide direction in Ireland's long-term flood risk management and mitigation plan. The CFRAM also aims to deliver core components of the National Food Policy and meeting requirements of the EU Foods Directive (Office of Public Works (OPW) Catchments Unit, 2019).

Weaknesses and Threats

- There has been a decline in high status water bodies, from 12.9% in the assessment period 2007-2009 to 8.5% in the current assessment period. Approximately 52.8% of surface water bodies (rivers, lakes, transitional, coastal) assessed meet either good or high ecological status, this is a net 4.4% decline in the quality of surface water bodies since the last assessment period 2010-2015 (EPA, 2020).
- Overall, 429 river water bodies have declined and 1,612 remained unchanged, resulting in a net decline of 128 (or 5.5%) river water bodies meeting WFD targets since 2010-2015.
- The number of seriously polluted bad status river water bodies has increased to nine having reached a low of six water bodies in the last assessment period 2010-2015 (EPA, 2020).
- Between 2013 and 2018, over a quarter of monitored river sites increased phosphorus and nitrogen concentrations with over a third (35.8%) of monitored river sites failing to meet the environmental quality standard for phosphorus of 0.035 mg/l P in the same period (EPA, 2020).
- For the period 2013-2018, over a quarter (28.8%) of lakes had increasing trends of total phosphorus concentration that is significantly higher than the 11.3% increase of lakes in the period 2006-2015. The environmental quality standard for total phosphorus is 0.025 mg/l P, meaning almost a third of lakes failed to meet the standard (EPA, 2020).

- Since 2013, nitrogen concentrations in groundwater, mainly arising through losses to groundwater from agricultural soils, have started to increase in the southern and south-eastern parts of the country (EPA, 2020).
- Transitional water bodies are the worst performing type of water body with only 38% in good or high ecological status, however, this figure is still above the European average which is at 30.2% (EPA, 2019).
- Loadings of nitrogen and phosphorus to the marine environment have started to increase since 2014, an increase of 16% for nitrogen and 31% for phosphorus (EPA, 2020).
- Agriculture impacts on just over half (780) of the 1,452 water bodies that are 'at risk' of not achieving their water quality objectives (EPA, 2020). According to the EPA (2019), the main significant pressures impacting water quality in Ireland include agriculture, wastewater discharges, physical impacts on habitats including excess fine sediment and pressures from forestry activities. Ammonium arising from drainage of organic soils for agriculture and/or forestry is also an issue of concern.
- Groundwater is also impacted by point source contamination such as farmyard wastes, septic tank effluent, sinking streams, leakages, spillages, pesticides used for non-agricultural purposes and leachate from waste disposal sites, and diffuse sources, such as spreading of fertilizers and pesticides (Department of the Environment and Local Government, EPA and GSI, 1999).
- At the end of 2019, the EPA was investigating 31 supplies serving just under 294,300 people because of failures to meet the necessary pesticide standard (EPA, 2020).

Transboundary Considerations

- There are a number of rivers that run through both Ireland and Northern Ireland and a number of lakes that straddle the border.
- Two sea loughs, Lough Foyle and Carlingford Lough, are located between the border of Ireland and Northern Ireland. Both loughs include Shellfish Water Protected Areas.
- In 2018, only 31.3% of Northern Ireland river water bodies were classified as good or better and only 5 out of 21 lake water bodies were classified as good or better.
- Lough Foyle is classified as good status and Carlingford Lough is classified as moderate status (NIEA, 2020).
- The average monitored winter dissolved inorganic nitrogen in marine water bodies has increased in 2019 (NIEA and DAERA, 2020).

Air Quality

Strengths and Opportunities

- Ireland's national air quality monitoring programme has expanded from 30 monitoring stations to more than 80 (EPA, 2020).
- Air quality in Ireland is good compared to other EU member states and monitoring stations show that Ireland continues to meet the EU air quality standards for most atmospheric pollutants.
- The EPA's latest *Informative Inventory Report 2020* estimated an overall reduction in emissions between 1990 and 2018 of sulphur dioxide (SO₂), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs), carbon monoxide (CO), Particulate Matter (PM₁₀, PM_{2.5}), polycyclic aromatic hydrocarbons (PAH), total suspended particulates (TSP), black carbon (BC),

priority metals, other metals (apart from copper), dioxins and furans (PCDD/F), hexachlorobenzene (HCB) and polychlorinated biphenyls (PCB).

- Measures to reduce ammonia emissions, which contribute to particulate matter, are being put forward as part of *A Code of Good Agricultural Practice for reducing Ammonia Emissions from Agriculture* (DAFM, 2019), the Nitrates Derogation Review 2019 (Nitrates Expert Group, 2019) and *Ag Climatise A Roadmap towards Climate Neutrality* (DAFM, 2020).

Weaknesses and Threats

- Nitrogen dioxide (NO₂) levels are above the specified EU limit values for air quality in traffic-impacted areas of Dublin and are projected to remain above these limit values due to road traffic (EPA, 2020).
- Particulate matter (PM) levels, although within the EU limit value, have exceeded the WHO annual guideline values. Solid fuel use such as coal, peat and wood continue to contribute to localised high levels polycyclic aromatic hydrocarbons (PAH) and PM levels (EPA, 2020).
- Agricultural emissions of NO_x, NMVOCs, PM₁₀, PM_{2.5} and TSP are predicted to have increased between 1990 and 2018. In 2018 agricultural emissions accounted for 32.4% of NO_x emissions, an increase of 6.1%, 39.4% of NMVOC emissions, an increase of 17.6% and 31.7% of PM₁₀ emissions, an increase of 4.1% (EPA, 2020). NO_x emissions are projected to be in non-compliance with the NECD 2020 emission reduction ceiling and NMVOCs are projected to be in non-compliance with the 2030 emission reduction ceiling (EPA, 2020). However NO_x and NMVOCs emissions from manure management and agricultural soils are not included in the NECD emission reduction ceilings.
- The implementation of Food Harvest 2020, Food Wise 2025 and the removal of milk quotas, has resulted in an expansion of the Irish agriculture sector, resulting in an increase in emission of the air pollutant ammonia, primarily due to an increase in dairy numbers and fertiliser use. Ammonia emissions, which contribute to PM, are estimated to have increased by approximately 8.7% between 1990 and 2018 (EPA, 2020). Approximately 99% of ammonia emissions are generated by the agricultural sector. Ammonia emissions are projected to be in non-compliance with the NECD 2020 and 2030 emission reduction ceilings (EPA, 2020).

Transboundary Considerations

- As Ireland shares a land boundary with Northern Ireland there is potential for transboundary air quality impacts.
- Air quality in Northern Ireland is generally improving.
- Ammonia emissions have been increasing, mainly due to emissions from livestock (NIEA and DAERA, 2020).
- Approximately 89.3% of Northern Ireland is estimated to receive ammonia concentrations above the critical level set to protect lichens and bryophytes (1 µg/m³) and approximately 22.8% receives ammonia concentration above the level set to protect higher plants (3 µg/m³) (Rowe, E. et al., 2019).

Climate Change

Strengths and Opportunities

- Ireland's total national GHG emissions were estimated to be 59.9 million tonnes carbon dioxide equivalent (MtCO_{2e}) in 2019 (EPA, 2020). This is down from 2005 when emissions were close to 70 MtCO_{2e}.
- Under the EU's Effort Sharing Decision (ESD) Ireland has to reduce GHG emissions outside the EU's emission trading scheme by 20% by 2020 as compared with 2005 levels.
- Ireland has a target of 30% reduction in the non-Emissions Trading System (ETS) sector by 2030 relative to 2005 levels (Government of Ireland, 2019).

Weaknesses and Threats

- The impacts of climate change are likely to impact Ireland in many ways. Agriculture is highly susceptible to disruption due to climate change and extreme weather events such as prolonged periods of rainfall, drought and snow, whilst flood risk is also of particular concern for infrastructure
- Agriculture is the largest sectoral contributor with 20.63 MtCO_{2e} (34% of Ireland's total GHG emissions) in 2018, slightly higher than their 1990 and 2005 values (20.40 and 19.80 MtCO_{2e}).
- As noted in the 2030 Agri-Food Strategy Background Paper, agricultural GHG emissions increased by approximately 14.8% in the period 2011 and 2018 (DAFM, 2020).
- Breaking down the agricultural sector's 34% of total emissions further, in 2018, 57.8% of emissions came from enteric fermentation, 29.5% from agricultural soils, 9.9% from manure management and 2.3% from liming. Emissions are projected to increase as animal numbers continue to increase.
- Temperature records for Ireland show a mean increase of 0.8°C for the last 110 years, with an increase in the number of warm days (temperatures over 20°C) and a decrease in the number of annual frost days (temperatures below 0°C).
- Ireland exceeded its 2018 annual limit set under the EU's Effort Sharing Decision (ESD) by 5.59 MtCO_{2e} and is set to miss the 2020 target.
- In addition annual national rainfall has increased by approximately 600 mm, which is an increase of approximately 5% in the period 1981-2010 compared to 1961-1990.

Material Assets

Strengths and Opportunities

- Ireland has significant natural resources such as water, carbon rich soils and high quality grassland, whilst natural resources are also available for renewable energy generation.
- Ireland is currently meeting all eight EU Recovery and Recycling targets (EPA, 2020).
- Between 28,000 and 30,000 tonnes of farm plastics are recycled each year (EPA, 2020).
- The current and future focus for Ireland's waste is prevention, reuse, maximising recycling and using waste as a fuel. As part of this, Ireland has reduced the number of landfills for the disposal of municipal waste from 18 to 6 since 2012.

- There has been an increase in number/capacity of anaerobic digestion (AD) facilities and segregated food waste at recycling centres, which is helping to reduce GHG emissions (EPA, 2016).
- Approximately 500,000 tonnes of animal by products are produced in Ireland per annum which generates approximately 27,000 tonnes of biofuel (Department of Communications, Climate Action and Environment (DCCAE), 2014).

Weaknesses and Threats

- Since 2012 municipal waste generation has increased by 15%. Although the amount sent to landfill has decreased, much of it has been going to energy recovery rather than recycling (EPA, 2020).
- Ireland generates over 1 million tonnes of food waste annually, approximately 53% is generated by commercial and household sectors and approximately 47% is generated by the manufacturing section. A significant amount of household and commercial food waste is not being segregated for separate collection (EPA, 2020).
- Marine litter is a growing issue with seabed litter was reported on average in 62% of seabed survey trawls in Irish waters between 2012-2018 (excluding 2015) (EPA, 2020).
- National municipal landfills and waste-to-energy facilities are operating at capacity and Ireland has some significant waste infrastructure deficits (EPA, 2020).
- Although current recycling targets are being met, there has been a decline in recycling and achieving future more stringent EU targets will be a challenge (EPA, 2020).
- The Farm Hazardous Waste Collection pilot saw a total of 9,000 farmers using the 46 collection centres over 5 years, with almost 1,000 tonnes of hazardous and potentially hazardous waste collected, including significant quantities of highly toxic pollutants (EPA, 2019).
- The quantity of sewage sludge used on agricultural land has been increasing with 52,139 tonnes used on agriculture and 6,099 tonnes sent for composting and subsequently used on agriculture in 2019 (EPA, 2020).
- The majority of land fill sites are in private ownership and therefore there is risk that if these companies fail the State could be responsible for any mitigation required as a result.
- Landfills and waste facilities are also subject to a high number of odour complaints which has the potential to impact on the health of the local people.

Cultural Heritage

Strengths and Opportunities

- There are two heritage assets inscribed on the World Heritage List: the Archaeological Ensemble of the Brú Na Bóinne and Skellig Michael (DCHG, 2020).
- Ireland has almost 1,000 individual monuments at 768 locations under state care.
- The Record of Monument and Places (RMP), a statutory list of all known archaeological monuments, comprising over 140,000 monuments. RMP shows that the existence of above and below-ground archaeological heritage is spread relatively evenly across the country, with a slightly higher density in the west. The lower quality farming land in the west of Ireland is said to have helped preserve a higher level of above and below ground monuments.

- The organic environment of waterlogged bogs and peatland also help to preserve below ground artefacts.
- The Underwater Archaeology Unit which has recorded over 18,000 shipwrecks (DCHG, 2019).
- The National Inventory of Architectural Heritage (NIAH) is a state record which identifies, records and evaluates the built heritage of Ireland and provides a resource for the identification of structures and sites that should be placed in the Record of Protected Structures (RPS).
- Collection of buildings and sites of historic, architectural or cultural value are protected as part of an Architectural Conservation Area (ACA) designated by local authorities.
- Overall the historic environment represents approximately 1% of Ireland's gross value added (GVA) and 2% of overall employment (Ecorys and Fitzpatrick Associates, 2011).

Weaknesses and Threats

- An issue for rural areas across Ireland has been the on-going and gradual decline in archaeological monuments in the countryside and degradation of field monuments (Dublin and Mid-East Regional Authorities, 2010).
- The main pressures on Irish archaeology includes urban change, road building, construction of houses and other developments, access to uplands and wetlands, concentration and intensification of commercial farming, scrub encroachment and extensive afforestation on traditional rural landscapes, exploitation of peatlands and marginalisation of built heritage within national and EU environmental conservation measures (University College Dublin, 2006).
- Public consultation as part of the new national heritage plan identified concerns over built heritage including tourism, derelict structures, demolition of structures, lack of care of historic structures, decline in traditional crafts (DCHG, 2020).
- Ireland's built and archaeological heritage is vulnerable to impacts of climate change (DCHG, 2019).

Landscape

Strengths and Opportunities

- Ireland has attractive, largely unspoilt and high quality rural landscapes, numerous protected area designations and major rural tourism attractions.
- Ireland occupies over 70,000 square kilometres, of which about four million hectares are agricultural land, the remainder being mountain, peat bog, forest and settlements. Ireland has approximately 2,797 km length of coast (Department of Arts, Heritage and the Gaeltacht, 2011).
- There are six areas in the Ireland that have been designated as National Parks due to the national importance of the landscape.
- Landscapes are protected at the local level by designations such as 'Areas of High Amenity' and 'Protected Views' through development plans.
- Farmers play a critical role as landscape managers, a role that should be recognised and supported more effectively. Agricultural landscapes are hugely significant cultural reference points, and their multifunctional nature means they deliver a range of services (Heritage Council, 2010).
- The National Landscape Strategy was published in 2015 in line with Ireland's obligations under the European Landscape Convention (Department of Arts,

Heritage and the Gaeltacht, 2015). The Strategy recognises the contribution that landscape makes to the well-being of society, environment and economy.

- A draft Regional Seascape Character Assessment has recently been published which identified 13 distinct seascape character types (6 of which are off the border counties) and 15 regional seascape character areas (4 of which are off the border counties) and the two border local scale seascape character areas (Marine Institute, 2020).

Weaknesses and Threats

- Extensive new housing, major roads and other infrastructure is resulting in urbanisation and landscape fragmentation which may affect Ireland's tourist economy, as scenery is the single most important reason why people visit and holiday in Ireland (Heritage Council, 2006).
- The number of state bodies which influence landscapes at a variety of scales, result in a fragmented approach to landscape management, with lack of uniformity between counties in terms of the approach to the designation of landscapes and protected views, which leads to inconsistency in their management (Heritage Council, 2010).
- Although commitment has been made to prepare 'State of Landscape Reports' and National Landscape Character map, these have not yet been implemented which makes it difficult to plan important strategic infrastructure (EPA, 2020).

Transboundary Considerations

- Northern Ireland has eight areas designated as Areas of Outstanding Natural Beauty (AONB) making up 20% of its total land. The Ring of Gullion AONB is located on the border with Louth, while the Mourne AONB is located in close proximity with the border (OpenDataNI, 2020).
- The Northern Ireland Regional Seascape Character Assessment has been published which provides a strategic understanding of different areas of regional seascape character along the entire Northern Ireland coast (NIEA, 2014).

Natural Capital

The Natural Capital approach is a good way of taking into account these inter-relationships as it provides a way to understand the value of natural resources and our dependence on them for our economic, social and health.

Strengths and Opportunities

- There are a number of studies being carried out to identify the value of natural assets.
- A study on the ecosystems services provided by freshwater (Feeley, H.B. et al, 2017) identified their importance for:
 - Provision of water;
 - Mediation of waste, toxics and other nuisances;
 - Mediation of flows;
 - Maintenance of physical, chemical and biological conditions;
 - Physical and intellectual interaction with biota, ecosystems and landscapes; and
 - Other cultural outputs.

- A study looking at the value of marine ecosystems identified the economic value provided by fisheries and aquaculture, seaweed harvesting, recreational, carbon absorption, waste assimilation, scientific and educational, coastal defence and aesthetic services (Norton, D. et al, 2018).
- The Pollival project identified the economic value that pollinators and pollination services have as well as many other non-market and non-use values for human health, well-being and society (Stout, J.C. et al., 2019).
- DAFM has commissioned a project on valuing agricultural catchments ecosystems services which aims to create an inventory of the ecosystem services provided by farmers in agricultural catchments and place economic values on these services. Agricultural ecosystems supply market services such as food, fibres, fuels and other non-market services vital to human well-being (Irish Forum on Natural Capital, 2020).

Weaknesses and Threats

- There is still difficulty in accounting for non-market and non-use values for human health, well-being and society.
- The inter-relationships between the sustainability topics mean that negative impacts or the worsening of status or quality of a sustainability topic affects the other sustainability topics, for example:
 - Biodiversity is affected by negative impacts on soils and land, air, water, landscape and climatic factors.
 - Human health is affected by impacts on air, water, soils, climate factors and biodiversity. The Pollival project identified that pollinator loss and resultant dietary changes and micronutrient deficiencies could result in non-communicable and malnutrition-related diseases (Stout, J.C. et al., 2019).
 - Population (socio-economics) is affected by all of the sustainability topics.

4.4 Key Environmental and Sustainability Issues and Likely Future Trends

In 2012 the Irish Government launched the new sustainable development framework to identify and prioritise policy areas and mechanisms where sustainable measures will add value to the lives of current and future generations. The framework set out clear objectives, defines timelines and allocates key responsibilities. The project aims to promote the green economy as part of the economic recovery and produce a framework for the coherent approach to policy and sustainable development.

In September 2015, 193 UN Member States, including Ireland, adopted the Sustainable Development Goals (SDGs) to 'end poverty, protect the planet and ensure prosperity for all' as part of the new 2030 Agenda for Sustainable Development - Transforming our World. The 17 SDGs cover the three dimensions of sustainable development; economic growth, social inclusion and the protection of the environment. Though voluntary and therefore not legally binding, countries have pledged to achieve the Goals by 2030.

Ireland's current policy in relation to the Goals, the *Sustainable Development Goals National Implementation Plan 2018-2020* (DCCAE, 2018) sets out the role of Government in implementing the SDGs here at home and supporting countries around the world to do the same.

A 2007 survey carried out in Ireland by the Heritage Council into public attitudes on the environmental and heritage found that 92% of respondents felt more should be done to protect the Irish countryside and 70% felt that access to heritage and the environment improves their quality of life.

When asked what their preferences for spending additional tax revenue on the environment would be (out of 8 categories), 29% opted for restoration of canals and rivers, 22% for safeguarding and improving coastal landscapes, and 12% for protection and improvement of habitats. Cultural heritage assets and attractive landscapes were deemed to be less important. A survey carried out in 2015 of the public's awareness and understanding of Irish heritage found that 93% of respondents felt that protecting Irish heritage was very or fairly important (Heritage Council, 2015).

A survey conducted by the EU in 2014 found that approximately 56% of the survey respondents in Ireland felt that protecting the environment was very important, 38% felt that it was fairly important and 6% felt that it was not very or not at all important. The survey found that the environmental issue of most concern to the public in Ireland was water pollution, followed by waste, air pollution, the impact on health of chemicals used in everyday products and shortage of drinking water.

The EPA's 2020 state of the environment report identified the following key environmental messages for Ireland:

- SOE 1 Environmental Policy Position: *A national policy positive for Ireland's environment.*
- SOE 2 Full implementation: *Full implementation of existing environmental legislation and a review of the governance around the coordination on environmental protection across public bodies.*
- SOE 3: Health & Wellbeing: *Protecting the Environment is an Investment in Our Health and Wellbeing.*
- SOE 4 Climate: *Systemic change is required for Ireland to become the climate-neutral and climate resilient society and economy that it aspires to be.*
- SOE 5 Air Quality: *Adoption of measures to meet the World Health Organization air quality guideline values should be the target to aim for in the Clean Air Strategy.*
- SOE 6 Nature: *Safeguard nature and wild places as a national priority and to leave a legacy for future generations.*
- SOE 7 Water Quality: *Improve the water environment and tackle water pollution locally at a water catchment level.*
- SOE 8 Marine: *Reduce the human-induced pressures on the marine environment.*
- SOE 9 Clean Energy: *Ireland needs to move rapidly away from the extensive use of fossil fuels to the use of clean energy systems.*
- SOE 10 Environmentally-sustainable Agriculture: *An agriculture and food sector that demonstrates validated performance around producing food with a low environmental footprint.*
- SOE 11 Water Services: *Drinking water and wastewater infrastructure must meet the needs of our society.*
- SOE 12 Circular Economy: *Move to a less wasteful and circular economy where the priority is waste prevention, reuse, repair and recycling.*

- SOE 13 Land Use: *Promote integrated land-mapping approaches to support decision making on sustainable land use.*

From analysis of the baseline data and consultations carried out to date, the key sustainability issues facing Ireland and relevant to the policy area of the Agri-Food Strategy are identified to be:

- **Biodiversity and Flora and Fauna:**
 - Unfavourable condition of habitats and species in protected sites due to unsustainable agricultural, and fishing practices;
 - Continuing declines in species and habitats within protected areas;
 - Continuing decline in species and habitats outside of protected areas;
 - Threats facing areas outside of protected areas;
 - Potential impacts of climate change; and
 - Increasing problems of pests, diseases and invasive species.
- **Population:**
 - Risk to reputation of Ireland and farmers as a food producing nation with strong environmental credentials; and
 - Balance between supporting the viability of small and medium-sized enterprises (SME) producer businesses, with managing the potential environmental impact of agricultural intensification and unsustainable fishing.
- **Human Health:**
 - Air quality impacts on health relating to agricultural emissions including ammonia and particulates;
 - High levels of obesity, particularly among the older population;
 - Increase in farm accidents; and
 - High levels of mental health illnesses amongst the population; more specifically it has been found that farming can bring about a high level of stress and isolation, subsequently leading to poor physical and mental health for those working in the sector.
- **Soil and Land Use:**
 - Increasing pressure on soils from settlement patterns, generation of slurry and sludge, nutrient loss from soil to water, ammonia emissions to the atmosphere and soil organic carbon losses; and
 - Ireland's extensive peatland exists in a degraded state due to land drainage, reclamation for agricultural purposes and peat extraction.
- **Water:**
 - Increased trends in nitrate and phosphate pollution, much of which is linked to agricultural activity;
 - Physical modifications to, and drainage of, water bodies such as rivers and lakes; and
 - Risk of increased flooding due to climate change.
- **Air Quality:**
 - Increasing emissions of the air pollutant ammonia, which contributes to PM, from agriculture and non-compliance with NECD emission targets;
 - Increasing NO_x and NMVOC emissions from agriculture; and
 - Challenge in meeting more stringent WHO and EEA reference guidelines.
- **Climate Change:**

- Increase of GHG emissions from agricultural sector with emissions projected to rise;
- Risk to farmers and producers due to extreme weather events and climate breakdown; and
- Increasingly frequent and severe weather events such as flooding are disrupting infrastructure and agriculture.
- **Material Assets:**
 - None identified.
- **Cultural Heritage and Landscape:**
 - Effect of development, public access, intensive farming, extensive afforestation and exploitation of peatlands;
 - Vulnerability of built and archaeological heritage to impacts of climate change; and
 - Landscapes have been affected by housing and infrastructure development, agricultural intensification, forestry and decline/ loss of natural and cultural features.
- **Natural Capital:**
 - Understanding of the non-monetary value of natural assets; including the ability of smaller farmers to receive benefits for ecosystem services provided; and
 - Ireland is also susceptible to causing or being affected by transboundary effects with Northern Ireland, particularly in relation to water bodies, biodiversity, landscape and climate, and for activities taking place in coastal and border areas.

Information Gaps

As indicated by the baseline section, a wealth of existing data exists about the state of Ireland's environment. This is necessarily focused on national or regional levels and therefore it is acknowledged that the large-scale trends discussed may not in every case fully represent sub-regional circumstances.

The information available does not allow for the specific effects of the predecessor strategies to be isolated from the observed general trends, this is therefore identified as an information gap for the SEA process.

5 CONSIDERATION OF ALTERNATIVES

5.1 The Process

Consideration of alternatives is a key feature of the SEA process as defined by the SEA Directive and the SEA Regulations. In practical terms, it refers to possible alternative mechanisms for delivering the goals of the Agri-Food Strategy, and the assessment of the impacts of each of these options against the SEA objectives.

The recommended approach to consideration of Alternatives is addressed in the EPA Research Report; *Developing and Assessing Alternatives in Strategic Environmental Assessment* (EPA, 2015).

SEA guidance recognises that it is not for the SEA to decide on the options to be considered. This SEA therefore focuses on the alternative delivery options actually considered in the preparation of the Agri-Food Strategy by the 2030 Committee, and with reference to the previous 2025 Food Wise SEA process.

5.2 Alternative Strategy Options / Delivery Mechanisms

The agri-food sector in Ireland is extremely diverse ranging from sole trader, subsistence-oriented producers to multi-national processor and retail businesses. Similarly the range of producer-and processor-based activities range widely in nature, extent and location across the marine and terrestrial sectors.

The Strategy is not intended to provide a prescriptive plan for the sector, it instead represents a strategic framework for the sector as a whole and within which the future direction for the sector should be framed.

There is also a desire to build on the 2025 Food Wise Strategy approach, recognising its successes and limitations to create a stronger strategy for the period to 2030. As a sectoral Strategy, rather than a government driven one, a key aspect of this throughout different implementation periods has been allowing for public and industry perceptions on strategy performance to be reflected in subsequent implementation periods.

This is addressed through the public consultation on the 2030 Strategy, conducted in 2019.

These responses (Q5) indicated that only 18% of respondents agreed or strongly agreed that Food Wise 2025 was *“delivering on its vision of thriving primary producers and agri-food businesses at the heart of vibrant communities across the country”*. However there was general support for continuation of the similar themes from Food Wise; Q6 asked if *“the five themes in Food Wise 2025 (human capital, competitiveness, market development, innovation and environmental sustainability) should continue to feature in the next 10 year strategy”*.

In response, 67% of respondents indicated that they agreed or strongly agreed, with only 20% indicating that they disagreed or strongly disagreed.

Q7 asked respondents *“if these five themes are to continue in the next strategy, please rank them in order of their importance (1 being most important, 5 being least important)”*.

In response, the most selected 1st choice answer was 'Environmental Sustainability', ranked as most important by 52% of respondents and second most important by a further 23%. 'Human Capital' was selected as the 2nd most popular answer, selected as 1st choice by 21% of respondents and as 2nd choice by a further 48%.

Q8 asked respondents to “*rank the seven contributions of the primary sector (farmers and fishers) in our society (1 being most important and 7 being least important).*”

In response, the top three weighted responses were in descending order of rank:

- Ensuring a supply of safe, healthy and diversified food;
- Protecting biodiversity and water quality; and
- Addressing climate change.

Q9 asked respondents to “*rank the following eight orders of priority for the next 10 year strategy to address at primary production level (1 being most important and 8 being least important)*”:

In response, the top three weighted responses were in descending order of rank:

- Climate change mitigation and adaption;
- Protection and improvement of biodiversity; and
- Water and air quality improvements.

Q12 asked respondents to rank five objectives in order of priority for the next 10 year strategy to address at processing level (1 being most important, 5 being least important). Of the objectives provided “*Environmental sustainability (including climate change mitigation)*” was ranked 1 by 56% of respondents and ranked 2 by a further 18%.

Reasonable Alternatives

The public consultation indicates a clear support for the 2030 Strategy to place an increased emphasis on environmental sustainability, particularly climate change resilience and protection of biodiversity and water quality. However, some support was also expressed for continuation of the 2025 Food Wise priorities either in full or part.

Following on from the public consultation and the SEA scoping process, three alternatives were identified by the 2030 Committee, which are described below.

Alternative 1: Base Case ‘Do Nothing’

This alternative is representative of what would likely happen in the absence of a new strategy. The base case is assumed to comprise continuation of the output seen in recent years; including that the dairy herd continues to increase and the suckler herd continues to decrease slowly.

Alternative 2: Greater Emphasis on Reduced Output

This alternative assumes that the focus of the strategy should give greater priority to the environmental strand of sustainability; even if this results in reduced output, with implications for the social and economic strands.

Alternative 3: Balanced Approach

This alternative assumes an increased focus on all three strands of sustainability - environmental, economic and social. This involves taking elements of both improved environmental sustainability to deliver on the 2030 climate ambition and put the sector on a trajectory towards a climate neutral economy by 2050; in combination with measures to increase prosperity and value-add, with any increased output value in beef and dairy coming from within the existing herd. This alternative also takes a food systems approach that considers the connections of the food system with nutrition, health and the environment.

5.3 Assessment of Alternatives

High Level Matrix Assessment

A high level summary of how well each of these three alternative options perform against the SEA Objectives is provided in the matrix below in Table 5.1.

Alternative 1: Base Case ‘Do Nothing’

As indicated in Table 5.1, Alternative 1 performs least well when assessed against the SEA objectives. This alternative is a ‘Do Nothing’ scenario which means that the current Food Wise 2025 Strategy would continue. Alternative 1 would see agricultural practices continue on the current trajectory with dairy herds increasing and suckler herds decreasing slowly. No additional environmental protection or support for farmers would be implemented to reduce their environmental impact. This is predicted to result in strong adverse effects in terms of the environmental SEA objectives including biodiversity, flora and fauna, water, air quality and natural capital because it means that the current trends in declining biodiversity, water quality and increased air pollutants are likely to continue. Additionally, adverse effects are also anticipated for both soil and land use and climate change.

A positive effect is predicted on population with uncertain effects on human health and material assets as Food Wise 2025 was concerned chiefly with economics and investments in primary producers. This is indicated in the *Steps to Success 2019* (DAFM, 2019) document which indicates increases in exports, primary production and the sector’s value to the economy. This is likely to have a positive effect on the rural and coastal economy, potentially increasing employment and reducing deprivation.

Table 5.1: Assessment of Alternatives

SEA OBJECTIVES		ALTERNATIVES					
		Alternative 1: Base Case - Do Nothing		Alternative 2: Greater Emphasis on Reduced Output		Alternative 3: Balanced Approach	
1	Biodiversity and Flora and Fauna	--	Despite some positive actions there has been a continuing decline in biodiversity and many European designated sites are in unfavourable condition with ongoing declines, in particular peatlands, grasslands and some marine habitats. Agricultural practices (and to a lesser extent forestry) are attributed as key contributors to the declines in conservation status. Overfishing, physical disturbance and damage to seafloor habitats is also reducing fish stocks. The absence of a new strategy is likely to see this trend continue.	++	A focus on improved environmental protection would yield positive results for biodiversity and flora and fauna, as agricultural practices such as overgrazing, pollution, drainage and pesticides have been contributing to the deterioration of habitats.	+	It is anticipated that this alternative will have beneficial effects on biodiversity, flora and fauna through its ambitions for a climate neutral economy and focus on sustainability including within the seafood sector. Many actions of this strategy lean towards improving the natural environment and terrestrial and marine habitats across Ireland.
2	Population	+	The 2019 Steps to Success Food Wise 2025 progress report showed that there has been an increase of 24.1% in the value added in the agri-food, fisheries and wood production sector versus the baseline. The current strategy supports the economic viability of primary producers in a number of ways including ongoing market development to broaden the range of countries that Ireland exports Agri- food products to.	-	Reduced agricultural output may result in a negative impact on the economic viability of primary producers and others in the agri-food sector, resulting in reduced agricultural employment. This could have a negative effect on Ireland's rural and coastal economy.	+/-	A focus on the environmental, economic and social strands of sustainability is likely to have positive impacts upon the wider population. However it is difficult to determine what the economic effect of creating a climate neutral economy would have on population as a whole. There could be positive gains for some sectors of the population, but negative effects for others.

SEA OBJECTIVES		ALTERNATIVES					
		Alternative 1: Base Case - Do Nothing		Alternative 2: Greater Emphasis on Reduced Output		Alternative 3: Balanced Approach	
3	Human Health	+/-	Current health indicators including physical health, mental health and wellbeing are somewhat mixed. The most recent 2018 report found that from the 868 male farmers who participated in the baseline phase of the study, one in eight (13%) reported experiencing stress ‘often’ or ‘very often’ (Teagasc, 2018). 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. The absence of a new strategy may increase pressure on farmers and the environment leading to negative impacts on overall health and wellbeing, however this is difficult to determine.	-	Overall improvements in the environment, in particular in water and air quality, will have a positive effect on the health of the population. However if this was prioritised at the detriment of agricultural outputs, large parts of the rural workforce and economy would be negatively impacted leading to increased economic hardship, stress and a lower quality of life.	+	Human health will see multiple benefits from a food systems approach that focuses on improved nutrition, dietary choices and actions to create a functioning, sustainable and less polluted environment.
4	Soil and Land Use	-	Agriculture is the primary land use and land cover type within Ireland (67.6% national land cover). Overall soil in Ireland is considered to be in good condition however many peatland soils are not protected and may be vulnerable to intensification of use with consequential impacts (amongst others) on carbon sequestration. The overall status of designated peat habitats such as blanket bogs and raised bogs are assessed as bad and deteriorating. Although historically agriculture has contributed to this bad status, current protections mean that they are no longer farmed and will not have a direct impact on deterioration.	+	Prioritising the environment and reduced agricultural output will have generally positive effects on soil and land use through a reduction in compaction and erosion, fewer synthetic fertilisers, waste contaminates and pesticides.	+	Direct positive impacts are anticipated on soil and land use as this alternative considers the food system approach and its connections to nutrition, health and the environment. This would involve changes to the food production system and good soil quality is key in achieving this.

SEA OBJECTIVES		ALTERNATIVES					
		Alternative 1: Base Case - Do Nothing		Alternative 2: Greater Emphasis on Reduced Output		Alternative 3: Balanced Approach	
5	Water	--	The agricultural sector is one of the main significant pressures on water quality. The continuation of output seen in recent years and in particular increase in the dairy herd is likely to result in increased pressure and deterioration of water quality. Unless there was a significant rise in the uptake of the Green Low-Carbon Agri-Environment Scheme (GLAS) it is likely water quality would continue to decline.	++	Prioritising the environment and reduced agricultural output will have positive effects on water as agriculture is a significant pressure on water resources. A reduced agricultural output, particularly reduced livestock based outputs and fertiliser and pesticide use may help reverse the recent trend in decreasing water quality.	+	This alternative places emphasis on reducing chemical nitrogen fertilisers, especially in regions with existing water quality issues. A key goal of the Agri-Food Strategy is to enhance the environmental sustainability of the seafood sector. In addition, implementing the Clean Oceans Initiative which will use fishing trawlers to address plastic and marine litter.
6	Air Quality	--	Since 1990 there has been an increase in emissions of a number of pollutants from the agricultural sector. Ammonia emissions, which are almost exclusively from the agricultural sector, have increased and present significant challenge to meeting the NECD reduction targets. A continuation of the output seen in the recent years, particularly increases in the dairy herd, in absence of significant mitigation options, is likely to continue this trend of increasing ammonia emissions and result in failure to meet the NECD reduction targets.	++	Prioritising the environment and reduced output will have positive effects on air quality. Recent increases in ammonia emissions are attributed to the increased dairy herd and fertiliser use. A reduction in dairy herd numbers and reduced fertiliser use would help to reverse the trend of increasing ammonia emissions and help meet the NECD target.	+	Positive impacts are anticipated on air quality through a strong focus on sustainability and achieving environmental targets, in particular measures to reduce ammonia emissions. It is assumed that there would not be a significant increase in livestock numbers which would result in an increase in ammonia emissions.
7	Climate Change	-	Despite some positive actions there has been an increase in absolute greenhouse gas emissions (GHG) over the last few years. A continuation of the output seen in the recent years, particularly increases in the dairy herd and in absence of mitigation options, is likely to continue this observed trend of increasing GHG emissions.	++	Prioritising the environment and reduced I output would result in positive effect on climate change as agriculture is the largest sectoral contributor to Ireland's GHG emissions, assuming there is no displacement of production from Ireland to other countries with less efficient agricultural systems resulting in carbon leakage and a global increase in emissions.	+	With its focus on achieving a climate neutral economy, positive impacts are anticipated through potential reduction in GHG emissions as well as climate change resilience and support for land managers.

SEA OBJECTIVES		ALTERNATIVES					
		Alternative 1: Base Case - Do Nothing		Alternative 2: Greater Emphasis on Reduced Output		Alternative 3: Balanced Approach	
					Recent years has seen an increase in GHG emissions due to increasing dairy herd, and a reduction in animal numbers is likely to help reverse the trend.		
8	Material Assets	+/-	Increasing recycling rates and the re-use of materials was not a key focus of Food Wise 2025 and it is uncertain what impact a 'do nothing' scenario would have on Material Assets.	+	Prioritising the environment and the reduced agricultural output will have uncertain effects on material assets although advances may be made in waste management, recycling and sustainable pesticide use and safeguarding natural resources such as peatlands.	+	It is anticipated that positive benefits will be seen through a circular economy, increase in bioeconomy, improved waste management, conserving natural resources and cross cutting action to encourage best practice in agriculture.
9	Cultural Heritage	0	Cultural heritage remains neutral as the current strategy does not focus on this aspect. Cultural heritage is vulnerable to exploitation of peatlands, replacement of traditional rural landscapes, afforestation and climate change, however there is limited data on the recent trend in the cultural heritage baseline.	+/-	Strong focus on the environment will have uncertain effects on cultural heritage as this is not a focus of this alternative. It is difficult to understand if any direct or indirect impacts both positives or negatives would arise.	+/-	As this alternative does not specifically focus on heritage it is uncertain what the direct or indirect, positive and negative impacts may be from this strategy.
10	Landscape	+/-	There is some potential for indirect effects on the landscape if the dairy herd continues to increase with negative impacts on soil and land use, water and biodiversity. However, current landscapes are highly agricultural and hold a significant cultural reference point to Ireland's landscape character.	+/-	Reduced agricultural output along with measures to improve the environment may have positive effects on landscape due to improvements to soil and land use, water and biodiversity which are interconnected with landscape. However, overall changes to the landscape are uncertain as impacts such as farm abandonment may rise if farms are not economically viable anymore. Agricultural landscapes are also widely valued culturally and aesthetically so reducing the amount of land that is farmed may be seen as a negative effect by some parties.	+/-	It is difficult to determine the impacts of a strategy that focusses on all three strands of sustainability of the environmental, economic and social would have on the landscape as a whole without further knowledge. However, improvements in other environmental aspects such as biodiversity and climate change would likely impact positively on landscape.

SEA OBJECTIVES		ALTERNATIVES					
		Alternative 1: Base Case - Do Nothing		Alternative 2: Greater Emphasis on Reduced Output		Alternative 3: Balanced Approach	
11	Natural Capital and Inter-relationships	--	Due to inter-relationships between the above objectives, the worsening of water and air quality and increase in GHG from the agricultural sector seen during the recent years result in effects on biodiversity and human health as well as landscape to some extent. A continuing trend would have a negative effect on the natural capital services provision.	+	Improvements in soil and land use, water quality, air quality and biodiversity due to reduced agricultural output will have positive impacts on the ability to sustain and enhance the services provided by the natural capital.	+	Potential positive effects on air quality, water, soil and land use would have positive overall effects on biodiversity, landscape and human health. On balance, this alternative is structured towards a climate neutral economy which will enhance the ability of the agricultural sector to be more sustainable, which along with improved environment would help sustain the services provided by the natural capital.
Key for Likely Effects							
++		Likely strong beneficial effect					
+		Likely beneficial effect					
0		Neutral / no effect					
-		Likely adverse effect					
--		Likely strong adverse effect					
+/-		Uncertain effect					

Alternative 2: Greater Emphasis on Reduced Output

Alternative 2 places greater emphasis on the environmental strand of sustainability, even if this results in reduced output. The outcome of these actions would be beneficial for many of the environmental SEA objectives including biodiversity, flora and fauna, water, air quality, climate change, soil and land use, material assets and natural capital.

Overall reduction in the agricultural sector would benefit the environment through lower levels of GHG and air pollutant emissions, waste, fertilisers and pesticides. Along with less intense land use practices which would create healthier, well-functioning ecosystems and habitats. Strong beneficial effects are therefore predicted for biodiversity, flora and fauna, water, air quality and climate.

It is uncertain what implications this alternative will have on cultural heritage and landscape as the potential for both beneficial and adverse effects will depend largely on the scale of change.

A reduced output may not be compensated by increased prices due to the majority of Ireland's agri-food output being sold on international markets which may or may not deliver price premiums. Agriculture plays a significant role in Ireland's rural economy, reductions in output, with potential effects on economic viability, would negatively impact on large parts of the rural and coastal workforce, leading to increased economic hardship with potential implications for health and wellbeing. This may also increase the risk of ongoing rural depopulation which may indirectly lead to undergrazing 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.

Overall this alternative performs better in terms of the environmental SEA objectives than both Alternative 1 and 3. However, out of all the alternatives it performs least well in terms of population and human health.

Alternative 3: Balanced Approach

Alternative 3 would take a more balanced approach which assumes an increased focus on all three strands of sustainability - environmental, economic and social. These three aspects of sustainability interlink strongly, meaning it is likely that beneficial effects will occur across the majority of the SEA objectives.

This alternative would promote more sustainable use of natural resources alongside a food system approach which should promote best practice when it comes to soil health. For this reason, positive effects are anticipated on the soil and land use and material assets objectives.

This alternative assumes an increased focus on environmental sustainability and a trajectory towards a climate neutral economy. This is likely to result in less pollution, waste and reduced GHG emissions and in turn see improvements to air and water quality, climate, biodiversity and natural capital.

Beneficial effects are therefore predicted on the environmental SEA objectives including biodiversity, flora and fauna, water, air quality, climate change and natural capital. In turn, this may also have beneficial effects on human health, along with a food systems approach that also focuses on improved nutrition and dietary choices.

Despite this, it is difficult to perceive how a climate neutral economy would impact on the population objective. Additionally, it is difficult to determine the effects on landscape and cultural heritage.

No definite adverse effects are anticipated for this alternative.

5.4 Reasons for Selection of Chosen Alternative

Alternative 3 represents the chosen strategic alternative, developed by the 2030 Stakeholder Committee. This is on the basis that Alternative 3 provides a balanced approach which covers all three strands of sustainability - environmental, economic and social. This best aligns with the terms of reference of the 2030 Committee which was *“The strategy will 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.”* Although Alternative 2 is predicted to have stronger beneficial effects on a number of the environmental SEA objectives when compared to Alternative 3, it performs worse in terms of the population and human health objectives. Through careful consideration of the three alternatives it has been determined that implementation of Alternative 3 would be the preferred option to replace the current Food Wise 2025 Strategy. Alternative 3 as the preferred option is assessed in further detail in Section 6.

6 ASSESSMENT OF IMPACTS OF THE AGRI-FOOD STRATEGY TO 2030

6.1 High Level Assessment

A high level matrix assessment has been carried out on the chosen alternative; this can be seen in Table 6.1 below. The matrix is structured around qualitatively assessing each of the four main missions and their associated goals and actions, against the identified SEA Objectives. The missions, goals and actions are as supplied by the Secretariat to the 2030 Committee but for the purposes of brevity, they have in places been merged or summarised.

Table 6.1 Legend

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
--	Likely strong adverse effect
+/-	Uncertain effect

Table 6.1: High Level Matrix Assessment of Strategy

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 1: Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality													
1.1	Action 1	Immediately implement the ‘Ag-Climatise’ Roadmap.	+	0	+	+	++	++	++	0	0	0	+
1.2	Action 2	Produce detailed plans by Q2 2022 to manage the sustainable environmental footprint of the dairy and the beef sectors.	+	0	+	+	+	+	+	0	0	0	+
1.3	Action 3	Update Ag-Climatise, as required, to ensure consistency with new targets agreed nationally and internationally for the agri-food sector.	+	0	+	0	0	+	+	0	0	0	+
1.4	Action 4	Roll out ‘Carbon Farming’.	+	0	+	+	0	+	+	0	0	0	+
1.5	Action 5	Ireland will play a leading role in shaping how greenhouse gas emissions from livestock farming are understood and addressed.	+	0	+	+	0	+	+	0	0	0	+
1.6	Action 6	Research and promote the concept of ‘Regenerative Agriculture’.	+	0	0	+	+	+	+	0	0	0	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
1.7	Action 7	Scale up renewable energy (RE) sources, especially anaerobic digestion and biorefining, and solar PV and energy efficiency.	+/-	+	+	0	0	++	++	++	-	-	+
1.8	Action 8	The food and beverage industry will continue to drive down GHG emissions and develop zero waste approaches.	0	+	+	0	0	+	+	0	0	0	0
1.9	Action 9	Prepare for climate change through implementing the actions contained in the statutory Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan.	+	+	+	+	+	+	+	0	0	0	+
1.10	Action 10	Carry out a risk analysis to assess the impact of climate change on Irish food production and food safety.	+	+	+	+	+	+	+	0	0	0	+
Goal 2: Restore and Enhance Biodiversity													
2.1	Action 1	Carry out baseline biodiversity studies including habitats and hedgerows on every farm to inform future policy development and measure progress.	+	0	0	0	+	0	0	0	0	+	+
2.2	Action 2	Put in place more targeted agri-environmental schemes under	++	0	0	+	+	0	0	0	0	+	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		the next Rural Development Programme (RDP) to protect and enhance Ireland’s habitats and species.											
2.3	Action 3	Undertake a national land use review and support the DECC led development of a land use strategy.	+	0	0	+	+	+	+	0	0	+	+
2.4	Action 4	Ireland will play an active and constructive role in the development of measures to realise the objectives for pesticide use reduction in the EU Biodiversity Strategy 2030 and the Farm to Fork Strategy and in particular, the objective of reducing pesticide use by 50% by 2030.	+	0	+	+	+	+	+	0	0	+	+
2.5	Action 5	Conduct appropriate and relevant assessments of the impact of the more detailed Commission proposals for pesticide use reduction.	+	+	0	+	+	0	+	+	0	0	+
2.6	Action 6	Ensure the necessary actions for agriculture are included in the new All-Ireland Pollinator Plan and that they are disseminated to farmers.	++	0	0	0	0	0	0	0	0	+	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
2.7	Action 7	Ensure that farms and forests do not contribute to habitat destruction and isolation, and also protect features of cultural heritage and traditional landscapes.	+	0	0	+	+	+	+	0	+	+	+
2.8	Action 8	Carry out restoration management of grazed peat land habitats (through, for example, European Innovation Partnerships).	++	0	0	++	+	0	+	0	0	+	++
2.9	Action 9	Build on the measures introduced to protect and foster greater biodiversity in forests.	+	0	0	0	+	0	+	0	+	+	+
Goal 3: Protect high status sites and contribute to achieving good water quality and healthy aquatic ecosystems, as set out in the Water Framework Directive													
3.1	Action 1	To protect waters from agricultural pollution, transition the agricultural sector to a lower-chemical nitrogen use system, and urgently in regions with identified water quality problems, particularly from diffuse losses of nitrogen.	++	0	+	+	++	+	+	0	0	0	+
3.2	Action 2	To further protect waters from agricultural pollution, all systems of agriculture (Dairy, Beef, Tillage etc) will manage	+	0	+	+	++	+	+	0	0	0	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		and mitigate the losses of phosphorous and sediment to water.											
3.3	Action 3	Reduce the risk of agricultural use of pesticides impacting water, particularly drinking water, in terms of safety and the health of the aquatic environment.	+	0	+	+	++	0	0	0	0	0	+
3.4	Action 4	Support farmers to target the right measure in the right place.	+	0	+	+	++	+	+	0	0	0	+
3.5	Action 5	Launch a National Soil Sampling and Analysis Programme to develop a baseline of information in relation to nutrient cycling, primary production and carbon sequestration functions in soils and develop a National Soils Strategy that will assess all appropriate soil health parameters and will inform future policies on good soil management practices, including at a regional level.	+	+	+	++	+	0	+	0	0	0	+
Goal 4: Develop Diverse, Multi-Functional Forests													
4.1	Action 1	Develop a new Forestry Strategy for Ireland.	+	+	+	+	+	+	+	0	0	+	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
4.2	Action 2	Examine options for afforestation on state owned lands, building on initiatives from Coillte and Bord na Mona.	+	0	+	+	0	+	+	0	0	+	+
4.3	Action 3	Place farmers at the centre of a new and improved afforestation scheme.	+	+	+	+	+	+	+	0	0	+	+
4.4	Action 4	Encourage businesses to play their part when it comes to increasing forest cover.	+	+	+	+	+	+	+	0	0	+	+
4.5	Action 5	Implement Project Woodland, to ensure that the licensing system for tree felling, thinning, roads and afforestation provides a predictable and efficient service for applicants, while complying with environmental requirements and those measures listed in the <i>Forests & Water Achieving Objectives under Ireland's River Basin Management Plan 2018-2021</i> .	+	0	0	+	+	+	+	0	0	+	+
4.6	Action 6	Promote and develop the benefits of increased use of wood and wood products as a	0	+	0	0	0	0	+	0	0	0	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		pathway to reducing carbon footprints.											
Goal 5: Enhance the Environmental Sustainability of the Seafood Sector													
5.1	Action 1	Develop a successor to 'Harnessing Our Ocean Wealth', the integrated marine plan for Ireland encompassing all aspects of the marine, with a greater focus on sustainability.	+	+	0	0	+	0	0	0	0	0	+
5.2	Action 2	Total Allowable Catches (TAC) should continue to be informed by science and then implemented under a robust fisheries control system underpinned by sustainable fishing practices.	+	+	0	0	+	0	0	0	0	0	+
5.3	Action 3	Continue towards improved fisheries sustainability and meet the 'Landing Obligation'.	+	+	0	0	0	0	0	0	0	0	+
5.4	Action 4	It will be essential to maintain a level playing field between the EU and UK on issues such as the landing obligation and technical conservation measures to ensure the long-term conservation of fish stocks and protect the ongoing sustainability of the Irish fleet.	0	+	0	0	0	0	0	0	0	0	0

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
5.5	Action 5	Implementation of the Irish Inshore Fisheries Sector Strategy 2019-2023.	+	+	0	0	+	0	0	0	0	0	+
5.6	Action 6	Follow the 11 objectives of the new National Strategic Plan for sustainable Aquaculture (NSPA) development for the period 2021 - 2030.	+	+	0	0	+	0	+	0	0	0	+
5.7	Action 7	Realise our outstanding target of 10% of Marine Protected Areas under the Marine Strategy Framework Directive as soon as is practical and aim for 30% of marine protected areas by 2030.	++	0	0	0	+	0	0	0	0	0	+
5.8	Action 8	Seafood Sustainability Programmes should be further developed to provide independent evidence to customers of good practice.	+	0	0	0	0	0	0	0	0	0	+
5.9	Action 9	Prioritise the Clean Oceans Initiative in the effort to collect, reduce and reuse marine litter.	+	0	0	0	+	0	0	+	0	0	+
5.1	Action 10	Carry out an assessment of the potential impacts of climate change for the seafood sector.	+	+	0	0	0	0	+	0	0	0	0

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 6: Embed the Agri-Food Sector in the Circular, Regenerative Bioeconomy													
Primary Sector													
6.1	Action 1	Develop new bio-based value chains based on Ireland's comparative advantage in the production of grass, legumes and other perennial species.	0	+	0	0	0	0	+	++	0	0	0
6.2	Action 2	Scale up resource-efficient, circular and low carbon solutions based on principles of renewable energy, cascading and circular use of sustainable biological resources.	0	0	0	0	0	0	+	+	0	0	0
Cross-cutting													
6.3	Action 3	Develop a plan for the scaling up of circular bioeconomy approaches.	0	0	0	0	0	0	+	+	0	0	0
6.4	Action 4	A Knowledge Hub including an Observatory for Biomass Resources should be considered for development.	0	0	0	0	0	0	+	+	0	0	0

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Food Loss & Waste and Packaging													
6.5	Action 5	The DECC is the lead on food waste prevention and the draft Waste Action Plan contains twenty actions many of which relate to the agri-food sector. DAFM will work collaboratively with the DECC in implementing these.	0	0	0	0	0	0	0	+	0	0	0
6.6	Action 6	In line with the commitment in the Waste Action Plan, work with stakeholders to develop a National Food Waste Prevention Roadmap.	0	0	0	0	0	+	+	+	0	0	0
6.6	Action 6	Research the extent of food loss at the production (primary) stage in an Irish context.	0	0	0	0	0	0	0	+	0	0	0
6.7	Action 7	The industry should urgently pursue more sustainable packaging.	+	0	0	0	0	0	0	+	0	0	0
Goal 7: Strengthen and invest in Origin Green and other sustainability supports to reflect the higher level of ambition for the agri-food sector													
7.1	Action 1	Promote and encourage participation in the new Origin Green Gold Membership.	+	+	+	+	+	0	+	+	0	0	+
7.2	Action 2	Emissions targets	+	0	+	+	+	+	+	0	0	0	+

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
7.3	Action 3	The metrics and evidence base from Origin Green need to be improved. A framework for delivering this involves building on Origin Green participant companies performance and metrics on sustainability, and the associated quality assurance programmes at farm level, especially in the key areas of climate, animal health and welfare, the circular bioeconomy, and incorporating measures from Ag-Climateise.	+	+	+	+	+	0	+	+	0	0	+
7.4	Action 4	Develop closer links to AKIS.	+	+	+	+	+	0	+	+	0	0	+
7.5	Action 5	Further explore the health and sustainability benefits of grass-based food.	+	0	+	0	0	0	0	0	0	0	0
7.6	Action 6	Encourage companies and farmers that are not already signed up to Origin Green to urgently get on board.	+	+	+	+	+	0	+	+	0	0	+
7.7	Action 7	Communicate credible, market relevant environmental and social sustainability credentials to trade customers and	0	+	0	0	0	0	0	0	0	0	0

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		consumers in both national and international markets.											
7.8	Action 8	Establish thought leadership and market insight platforms.	0	+	0	0	0	0	0	0	0	0	0
7.9	Action 9	Drive industry engagement with SEAI programmes such as the recently updated Exceed Grant Scheme and the Energy Efficiency Obligation Scheme to support companies to meet their energy saving targets.	0	+	0	0	0	0	+	0	0	0	0
7.10	Action 10	Increase focus on awareness building of sustainability supports among Enterprise Ireland’s Food & Drinks clients.	0	+	0	0	+	+	+	+	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 1: Improve Competitiveness and Productivity of Primary Producers													
Dairy													
1.1	Action 1	Promote greater integration of the dairy and beef sectors.	0	+	0	0	0	0	0	0	0	0	0
1.2	Action 2	Address societal concerns.	0	+	+	0	0	0	0	0	0	0	0
1.3	Action 3	Under the auspices of the 2030 process, produce a detailed plan by Q2 2022 to manage the sustainable environmental footprint of the dairy sector.	+	0	+	+	+	+	+	0	0	+	+
1.4	Action 4	Continue progress on genetics.	0	+	+	0	0	0	+	0	0	0	0
1.5	Action 5	Continue measurable improvements in animal health and welfare.	0	+	+	0	0	0	+	0	0	0	0
1.6	Action 6	Address labour issues.	0	+	+	0	0	0	0	0	0	0	0
1.7	Action 7	Explore potential for the development of specific volatility and risk management measures.	0	+	0	0	0	0	0	0	0	0	0
1.8	Action 8	Continue the move to higher-quality, value-added dairy produce, positioning Irish dairy	+/-	+	0	0	+/-	+/-	+/-	0	0	0	+/-

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		as a premium grass-fed product.											
1.9	Action 9	Build a strategy for the development of new markets for Irish organic dairy products and encourage participation at farm level.	+/-	+	+	+	+/-	+/-	+/-	0	0	0	+/-
1.10	Action 10	Continue to work in collaboration across the sector.	0	+	0	0	0	0	0	0	0	0	0
Beef & Sheep													
1.11	Action 11	Recognise the suckler herd as a key asset to Irish agriculture.	0	+	0	0	0	0	0	0	0	0	0
1.12	Action 12	Promote Irish Grass-Fed beef and lamb as premium products, nationally and internationally, including for organic lamb and beef.	+/-	+	0	0	+/-	+/-	+/-	0	0	0	+/-
1.13	Action 13	Develop and support dairy calf-to-beef systems.	0	+	0	0	0	0	0	0	0	0	0
1.14	Action 14	Under the auspices of the 2030 process, produce a detailed plan by Q2 2022 to manage the sustainable environmental footprint of the beef sector.	+	0	+	+	+	+	+	0	0	+	+
1.15	Action 15	Continue to drive improvements in breeding strategies for cattle and sheep.	0	+	0	0	0	0	0	0	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
1.16	Action 16	Continue improvements in pasture management.	0	+	0	+	+	+	0	0	0	0	+
1.17	Action 17	Continue measurable improvements in animal health and welfare.	0	+	+	0	0	0	+	0	0	0	0
1.18	Action 18	Increase targeting of farm income supports to environmental, economic and social sustainability.	+	+	0	+	+	+	+	0	0	+	+
1.19	Action 19	Continue to work in collaboration.	0	+	0	0	0	0	0	0	0	0	0
Pigmeat & Poultry													
1.20	Action 20	Develop the sector both in terms of domestic market share for Irish-produced product and new export markets.	+/-	+	0	0	+/-	+/-	+/-	0	0	0	+/-
1.21	Action 21	Continue to improve productivity in terms of breeding and feed input.	0	+	0	0	0	0	0	0	0	0	0
1.22	Action 22	Address specific environmental targets and actions	+	+	0	0	+	+	+	+	0	0	+
1.23	Action 23	Address wider societal concerns	0	+	+	0	0	0	0	0	0	0	0
1.24	Action 24	Develop measures to improve biosecurity, verify animal health and welfare standards and best	0	+	+	0	0	0	0	0	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		practice, including through Bord Bia QA Scheme.											
1.25	Action 25	Develop targeted supports and advice	0	+	0	0	0	0	0	0	0	0	0
1.26	Action 26	Examine measures to improve financial and operational risk management.	0	+	0	0	0	0	0	0	0	0	0
Tillage													
1.27	Action 27	Stakeholders will work to develop the sector to take advantage of potential growth.	+/-	+	+	+/-	+/-	+/-	0	0	0	+/-	+/-
1.28	Action 28	Continue the focus on soil management.	0	+	0	+	+	+	0	+	0	0	0
1.29	Action 29	Research should continue in the effort of developing effective Integrated Pesticide Management techniques. This is a constant challenge for researchers as crop pathogens and pests continue to evolve and circumvent both genetic resistance and pesticide efficacy.	+	+	+	0	+	0	0	+	0	0	+
1.30	Action 30	Stakeholders will consider aligning the Irish Grain Assurance Scheme (IGAS) with Origin Green.	+	+	+	+	+	0	+	+	0	0	+

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
1.31	Action 31	Investment in precision and other technologies will be required within the sector.	+	+	0	+	+	+	+	0	0	0	0
Horticulture													
1.32	Action 32	Develop a strategy.	+/-	+	0	+/-	+/-	+/-	+/-	0	0	+/-	+/-
Forestry													
1.33	Action 33	Develop a new Forestry Strategy for Ireland.	+	+	+	+	0	+	+	0	0	+	+
Seafood													
1.34	Action 34	The Minister for Agriculture, Food and the Marine has set up a Seafood Sector Task Force involving seafood industry representatives and other stakeholders to provide recommendations on the appropriate measures that will best support the sector and the local coastal communities. ⁴	0	+	0	0	0	0	0	0	0	0	0
1.35	Action 35	The Seafood sector will continue on a path of sustainable economic and	+	+	0	0	+	0	0	0	0	0	+

⁴ The inaugural meeting took place on 10 March 2021.

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		environmental development by carefully managing the utilisation of sea-fisheries and aquaculture.											
Goal 2: Improve the Creation and Equitable Distribution of Value													
The Unfair Trading Practice Directive													
2.1	Action 1	Ensure that the UTP Directive is transposed in Ireland and the office of the National Food Ombudsman is established, with appropriate powers.	0	+	0	0	0	0	0	0	0	0	0
Market and Price Transparency													
2.2	Action 2	Ireland will engage fully with the Commission work and continue to develop national initiatives on market and price transparency.	0	+	0	0	0	0	0	0	0	0	0
Co-operatives & Producer Organisations (POs)													
2.3	Action 3	Support the establishment of co-operatives and Producer Organisations in farming and enhance the role of the fishery producer organisations co-operatives.	0	+	0	0	0	0	0	0	0	0	0
Origin Green / Quality Assurance (QA) Schemes													
2.4	Action 4	All farms and seafood operators will be in a quality	+	+	+	+	+	+	+	0	0	0	+

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		assurance scheme. Sectoral stakeholder groups will consider how to address barriers to entry and increase participation.											
2.5	Action 5	Quality assurance schemes will be continuously reviewed.	+	+	+	+	+	+	+	0	0	0	+
Contractual Arrangements													
2.6	Action 6	Promote and develop contractual arrangements to bring more production and price certainty to primary producers.	0	+	0	0	0	0	0	0	0	0	0
2.7	Action 7	The fishing industry should explore these arrangements to ascertain if improvements in the first sale price can be achieved for the different fleet segments.	0	+	0	0	0	0	0	0	0	0	0
Certification, Accreditation and Geographical Indicators													
2.8	Action 8	Support food producers to apply for Geographical Indicators and other quality indicators.	0	+	0	0	0	0	0	0	0	0	0
2.9	Action 9	Continue the development of grass-fed certification and branding.	0	+	0	0	0	0	0	0	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 3: Increase Primary Producer Diversification & Resilience													
Organic Farming													
3.1	Action 1	The recommendations in the “Review of Organic Food Sector and Strategy for its Development 2019-2025” should continue to be implemented and reviewed.	+	+	+	+	0	0	0	0	0	0	+
3.2	Action 2	Continue to support the organic sector to achieve at least 7.5% of Utilisable Agricultural Area under organic production.	+	+	+	+	0	0	0	0	0	0	+
Other Options													
3.3	Action 3	Develop a protein strategy to reduce dependence on imported protein crops and open up opportunities in the bioeconomy.	0	+	0	0	0	+	+	+	0	0	0
3.4	Action 4	Communicate the broad range of options for diversification more effectively to farmers, who will need support to adopt them.	0	+	0	0	0	0	0	0	0	0	0
3.5	Action 5	Broaden the seafood product range and develop seafood protein leadership.	0	+	+	0	0	0	0	0	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 4: Improve the Social Sustainability of Primary Producers													
4.1	Action 1	Teagasc Sustainability Reporting should broaden to incorporate issues such as: generational renewal and collaborative farming models; gender balance; diversity and inclusion; education and training; and health and safety (including incidence of farm accidents, stress and rates of isolation).	0	+	+	0	0	0	0	0	0	0	0
4.2	Action 2	Protect and enhance cultural heritage, physical and intangible, which is an important source of wellbeing and of broader social sustainability of rural areas.	0	0	+	0	0	0	0	0	+	+	0
Generational Renewal													
4.3	Action 3	Continue to provide appropriate CAP and CFP supports to encourage generational renewal, including older farmers.	0	+	0	0	0	0	0	0	0	0	0
4.4	Action 4	Pursue progressive taxation policies.	0	+	0	0	0	0	0	0	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
4.5	Action 5	Support and further develop collaborative farming models.	0	+	0	0	0	0	0	0	0	0	0
4.6	Action 6	Ensure adequate access to finance.	0	+	0	0	0	0	0	0	0	0	0
4.7	Action 7	Promote the diversity of careers in agriculture and seafood.	0	+	0	0	0	0	0	0	0	0	0
Gender Balance													
4.8	Action 8	Promote women's participation in farming through KT Groups facilitated by a female advisor.	0	+	0	0	0	0	0	0	0	0	0
4.9	Action 9	Hold a National Dialogue on Women in Agriculture.	0	+	0	0	0	0	0	0	0	0	0
4.10	Action 10	Capture gender data on policy implementation e.g. participation by women in schemes and measures.	0	+	0	0	0	0	0	0	0	0	0
4.11	Action 11	Represent the agri-food sector in the development of the next National Women and Girl's Strategy.	0	+	0	0	0	0	0	0	0	0	0
Diversity and Inclusion													
4.12	Action 12	Promote LGBTI+ inclusion and combat isolation.	0	+	+	0	0	0	0	0	0	0	0
Education and Training													
4.13	Action 13	Ensure education and training course content keeps up with	+	+	+	+	+	+	+	+	+	+	+

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		the changing demands of farming and seafood.											
4.14	Action 14	Promote education and training including life-long learning and peer to peer learning.	0	+	0	0	0	0	0	0	0	0	0
4.15	Action 15	Empower farmers to become educators, trainers and leaders in areas such as environmental sustainability wherever possible.	+	+	+	+	+	+	+	+	+	+	+
Health and Safety													
4.16	Action 16	Introduce mandatory health and safety skills training for all those working on farms.	0	+	++	0	0	0	0	0	0	0	0
4.17	Action 17	Enhance awareness of health and safety throughout the sector.	0	+	+	0	0	0	0	0	0	0	0
4.18	Action 18	LEAN programmes will be mainstreamed to all primary producers.	0	+	+	0	0	0	0	0	0	0	0
Mental Health and Well-Being (including isolation)													
4.19	Action 19	Continued roll-out of actions in the Teagasc/Mental Health Ireland manual 'Coping with The Pressures of Farming' by both public and private advisory service, and the National	0	+	+	0	0	0	0	0	0	0	0

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		LGBTI+ Inclusion Strategy and the National Wellbeing Framework and engage with the Roadmap for Social Inclusion.											
4.20	Action 20	Continue to support the Farm Animal Welfare Advisory Council's "Early Warning/Intervention System".	0	+	0	0	0	0	0	0	0	0	0
4.21	Action 21	Create social opportunities for primary producers within their localities	0	+	+	0	0	0	0	0	0	0	0
4.21	Action 22	Continue to promote "social farming".	0	+	+	0	0	0	0	0	0	0	0
Rural Development													
4.23	Action 23	Government will continue to focus on Rural Development.	0	+	+	0	0	0	0	0	0	0	0
4.24	Action 24	Rapid roll-out of the National Broadband plan.	0	++	+	0	0	0	0	0	0	0	0
4.25	Action 25	DAFM will ensure that the contribution of the entire agri-food sector to the economic and social fabric of the country is recognised in public policy.	0	0	0	0	0	0	0	0	0	0	0

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad			SEA OBJECTIVES										
Goals			1	2	2	4	5	6	7	8	9	10	11
			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 1: Prioritise coherent food and health policies to deliver improved health outcomes													
1.1	Action 1	Improve coherence of policies for food, health and nutrition through the establishment of a high-level implementation group co-chaired by the Departments of Health and Agriculture, Food and the Marine.	0	+	+	0	0	0	0	0	0	0	0
1.2	Action 2	Ensure that the healthy and sustainable choice is made as accessible to consumers as possible.	+	+	+	+	+	+	+	+	0	+	+
1.3	Action 3	Promote best practice on labelling.	+	0	+	0	0	+	+	0	0	0	0
1.4	Action 4	Agree a stakeholder Roadmap for Food Product Reformulation	0	0	+	0	0	0	0	0	0	0	0
1.5	Action 5	Develop public procurement policies to promote healthy and sustainable diets.	+	0	+	0	0	+	+	0	0	0	0
1.6	Action 6	Continue to invest in the food, health and diet/consumption systems research required to generate the evidence base to inform our national policies.	0	+	+	0	0	0	0	0	0	0	0
Goal 2: Enhance Customer and Consumer trust in our food system, providing evidence of a safe, ethical food supply													
Safe and Authentic Food													
2.1	Action 1	Implement the 'Food Safety and Food Authenticity Strategy' action plan.	0	0	+	0	0	0	0	0	0	0	0

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
2.2	Action 2	Revise the ‘National Farmed Animal Health Strategy’ when the current one expires in 2022.	0	+	+	0	0	0	0	0	0	0	0
2.3	Action 3	Leverage the expertise and resources of all organisations involved in control of the food system to continue to enhance the reputation of Irish food and drink.	0	+	+	0	0	0	0	0	0	0	0
2.4	Action 4	Publish a new National Action Plan for Antimicrobial Resistance (iNAP), co-sponsored by the Department of Agriculture, Food and the Marine and the Department of Health, to replace the current plan which expires in 2020.	+	+	+	+	+	0	0	0	0	0	0
2.5	Action 5	Implement the newly launched National Biosecurity Strategy.	0	+	+	0	0	0	0	0	0	0	0
2.6	Action 6	DAFM and other relevant agencies should ensure that vulnerability assessments are conducted on the food chain.	0	+	+	0	0	0	0	0	0	0	0
Transparency and Trust													
2.7	Action 1	Continuously review systems for transparency, traceability, food safety, food authenticity and animal welfare information along the food chain.	0	+	+	0	0	0	0	0	0	0	0
2.8	Action 2	New technologies and platforms will be created and used.	+	+	+	+	+	+	+	0	0	0	0

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
2.9	Action 3	Implement the new National Animal Welfare Strategy (2021 - 2025).	+	+	+	0	0	0	0	0	0	0	0
Goal 3: Increase Value add in Food & Drink Through Insight, Product Development and Differentiation													
3.1	Action 1	Develop the evidence to demonstrate the differentiating attributes of sustainably produced Irish food and beverages, particularly around taste, nutritional profile and health inducing properties.	0	+	+	0	0	0	0	0	0	0	0
3.2	Action 2	Develop value-added functional foods and ingredient solutions with proven health benefits.	0	+	++	0	0	0	0	0	0	0	0
3.3	Action 3	The food and beverage industry should take advantage of digital innovations and artificial intelligence (AI).	0	+/-	+	0	0	0	0	+	0	0	0
3.4	Action 4	Industry will use R&D and innovation to progress reformulation of energy-dense and nutrient poor processed foods to reduce the levels of disadvantageous components.	0	+/-	++	0	0	0	0	0	0	0	0
3.5	Action 5	Further develop on Bord Bia's 'Thinking House' model of targeting product and market segments based on consumer and market insights.	0	+	0	0	0	0	0	0	0	0	0
3.6	Action 6	Industry will further leverage the various sectoral technology centres.	0	+	0	0	0	0	0	0	0	0	0

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
3.7	Action 7	Consider the feasibility of extending innovation hub models to new sectors.	0	+	0	0	0	0	0	0	0	0	0
3.8	Action 8	Support for early-stage food businesses.	0	+	0	0	0	0	0	0	0	0	0
Goal 4: Develop Market Opportunities at Home and Abroad													
Export Markets													
4.1	Action 1	Prioritise markets and target segment(s) by continuing to conduct and use trade customer and consumer and market insights, both at company, sector and national level.	0	+	0	0	0	0	0	0	0	0	0
4.2	Action 2	Defend and build market share in the UK, building on British trade customer consumer confidence in Irish food and beverages as quality, trusted, sustainably produced and 'close to home'	0	+	0	0	0	0	0	0	0	0	0
4.3	Action 3	Increase efforts to gain and maintain market access for key product categories to priority international markets.	0	+	0	0	0	+/-	+/-	0	0	0	0
4.4	Action 4	Intensify the programme of Ministerial trade missions to priority international markets.	0	+	0	0	0	+/-	+/-	0	0	0	0
4.5	Action 5	Enhance the presence of DAFM and Bord Bia in those markets where a need is identified.	0	+	0	0	0	+/-	+/-	0	0	0	0

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
4.6	Action 6	Carry out an update on the 2018 'Prioritising Markets: Opportunities for Growth' exercise in 2022 in conjunction with industry stakeholders.	0	+	0	0	0	0	0	0	0	0	0
4.7	Action 7	Tailor new product development to the needs of trade customers and consumers, particularly those in high value markets and market segments	0	+	0	0	0	0	0	0	0	0	0
4.8	Action 8	Further integrate primary producers into market engagement in order to keep them informed of market developments and product requirements in their main export markets.	0	+	0	0	0	0	0	0	0	0	0
4.9	Action 9	The relevant Irish authorities will work to maintain and enhance a rules-based and equitable multilateral trading system.	+	+	+	+	+	+	+	0	0	0	0
Domestic and Local Markets													
4.10	Action 1	Explore domestic market opportunities.	0	+	0	0	0	+	+	0	0	0	0
4.11	Action 2	Promote short, efficient routes to market that connect small food producers to the consumer.	0	+	0	0	0	+	+	0	0	0	0
4.12	Action 3	Support opportunities for direct local sales e.g. through developing farmers'	0	+	0	0	0	+	+	0	0	0	0

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
		markets and online direct sales platforms.											
4.13	Action 4	Support small and artisan food producers.	0	+	0	0	0	+	+	0	0	0	0
4.14	Action 5	Continue to develop linkages between local food and tourism offerings.	0	+	0	0	0	+	+	0	0	0	0

Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
Goal 1: Move to a Challenge Focused Innovation System													
1.1	Action 1	Implement the recommendations of the High-Level Innovation Team.	0	+	0	0	0	0	0	0	0	0	0
1.2	Action 2	Engage with EU and international partners.	+	+	+	+	+	+	+	+	0	+	+
1.3	Action 3	Examine the development of ‘Targeted Innovation Activities’ for specific agri-food sectors.	0	+	+	0	0	0	0	0	0	0	0
Goal 2: A Strategic Funding Approach for Research, Development and Innovation													
2.1	Action 1	Maintain publicly-funded research in agri-food at an appropriate funding level.	+	+	+	+	+	+	+	0	0	+	+
2.2	Action 2	Target privately funded R&D to reach 1% of turnover on average by 2025.	0	+	0	0	0	0	0	0	0	0	0
2.3	Action 3	Strengthen links between agri-food R&D and other national research priority areas.	+	+	+	+	+	+	+	+	0	+	+
2.4	Action 4	Review R&D tax credits to address specific issues that relate to the agri-food sector.	0	+	0	0	0	0	0	0	0	0	0
Goal 3: Develop a Dynamic Knowledge Exchange Environment													
3.1	Action 1	Develop an Agricultural Knowledge & Innovation System in line with the CAP Strategic Plan.	0	++	0	0	0	0	0	0	0	0	0
3.2	Action 2	Embed knowledge exchange principles and include a knowledge exchange component in publicly funded research.	0	+	0	0	0	0	0	0	0	0	0

Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
3.3	Action 3	Strengthen primary producer advisory and extension services to cover environmental and climate performance, innovation and digitalisation, as well as agronomic, technical and financial aspects.	+	++	+	+	+	+	+	0	0	+	+
3.4	Action 4	Develop, test and share knowledge and experiences through for example focus groups, living labs, incubators, and other co-operative activities.	0	++	0	0	0	0	0	0	0	0	0
Goal 4: Enhance the Use of Technology & Data													
4.1	Action 1	Develop the digital transition of the agri-food sector.	0	+	0	0	0	0	0	0	0	0	0
4.2	Action 2	Develop the digital transition in fisheries.	+	+	0	0	+	0	0	+	0	+	+
4.3	Action 3	Increase co-investment between the public and private sector for ag/food-tech and bio-economy accelerator programmes.	0	+	0	0	0	0	0	+	0	0	0
4.4	Action 4	Undertake research and increase engagement with initiatives to address the socio-economic impact of agri-digitalisation with a particular focus on data governance issues.	0	+	0	0	0	0	0	0	0	0	0
4.5	Action 5	Labour-saving automation research and development, including a focus on advanced manufacturing, should be pursued.	0	+/-	+/-	0	0	0	0	0	0	0	0

Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
4.6	Action 6	Rapid roll-out of the National Broadband plan.	0	++	+	0	0	0	0	0	0	0	0
Goal 5: Improve Competitiveness and Resilience													
5.1	Action 1	Promote the take-up of appropriate supports for companies.	0	+	0	0	0	0	0	0	0	0	0
5.2	Action 2	Review current levels of state aid to support increased levels of indigenous and foreign direct investment in enabling technology, including ensuring the needs of food & drink companies are fully reflected in Ireland's inputs to the upcoming review of State aid rules scheduled for 2022.	0	+	0	0	0	0	0	0	0	0	0
5.3	Action 3	Continuously review access to finance, particularly for SMEs, including farmers and fishers.	0	+	0	0	0	0	0	0	0	0	0
5.4	Action 4	Actively engage with the National Competitiveness and Productivity Council (NCPC).	0	+	0	0	0	0	0	0	0	0	0
5.5	Action 5	Facilitate closer economic interactions between SMEs and MNEs.	0	+	0	0	0	0	0	0	0	0	0
Goal 6: Attract and Nurture Diverse and Inclusive Talent													
6.1	Action 1	Employers in the agri-food industry should prioritise the development of an education, skills and talent attraction and retention strategy.	0	+	+	0	0	0	0	0	0	0	0
6.2	Action 2	To address labour shortages in some key areas.	0	+	0	0	0	0	0	0	0	0	0

Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent			SEA OBJECTIVES										
			1	2	2	4	5	6	7	8	9	10	11
Goals			Biodiversity and Flora and Fauna	Population	Human Health	Soil and Land Use	Water	Air Quality	Climate Change	Material Assets	Cultural Heritage	Landscape	Natural Capital and Inter-relationships
6.3	Action 3	Education and training programmes including new apprenticeships, will be kept under review.	+	+	+	+	+	+	+	+	+	+	+
6.4	Action 4	Promote and improve gender balance at all levels, but particularly at senior management and board level.	0	+	0	0	0	0	0	0	0	0	0
6.5	Action 5	Promote and develop initiatives to improve diversity and inclusion.	0	+	0	0	0	0	0	0	0	0	0
Goal 7: Policy coherence and synergies in Sustainable Food Systems (SFSs) between Ireland’s domestic policy and its development cooperation and foreign policy													
7.1	Action 1	Promoting food and nutrition security, and SFSs, will be a central part of delivering on Ireland’s ambition of the achieving the UN aid target of 0.7% of GNI by 2030.	0	+	+	0	0	0	0	0	0	0	0
7.2	Action 2	Ireland will advocate that SFSs are an important part of the deepening strategic relationship between Africa and the EU.	0	+	0	0	0	0	0	0	0	0	0
7.3	Action 3	Ireland will play a leadership role at the FSS in September 2021.	0	+	0	0	0	0	0	0	0	0	0
7.4	Action 4	Work to secure the establishment of a network of international experts to develop a composite indicator or index of sustainable food systems.	+	+	+	+	+	+	+	+	0	+	+

Assessment by Mission

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector

Mission 1 is made up of seven main goals with many associated actions that will help to achieve them.

Goal 1 is focussed on developing a climate neutral food system so that by 2050 the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by their removal from the atmosphere. This will mainly be achieved through a implementing the 'Ag-Climate' Roadmap (Action 1), scale up of renewable energy sources to displace fossil fuels (Action 7) whilst driving down GHG emissions from the food and beverage industry (Action 8). Additional actions include a roll out of carbon farming to align with the EU carbon farming initiative. This goal is therefore expected to produce beneficial effects on the water, climate change and air quality objectives.

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).

Actions to implement environmentally sustainable land management techniques discussed in Action 4 coupled with improvements in climate change and air quality are expected to result in beneficial but uncertain effects on biodiversity, flora and fauna and natural capital. Success will depend on the types for sustainable land management techniques implemented.

Action 7 is anticipated to have uncertain but possibly adverse effects on cultural heritage as developments such as an AD plants or solar PV could have adverse effect on the setting of cultural heritage assets nearby and could also potentially damage below ground assets on site. Renewable energy generation at farm level is likely to change the composition of the agricultural landscape which has strong cultural ties to Ireland's overall landscape character. It is therefore anticipated that Action 5 will have likely adverse effects on landscape.

Land use change from agriculture to energy production could have uncertain impacts on biodiversity, flora and fauna as habitat reduction and fragmentation can cause adverse effects on species that rely on agricultural landscapes, however this would depend on the scale of change and the location.

Renewable energy developments would be subject to controls through the planning process and relevant regulations to ensure that there are no significant adverse effects from proposed renewable energy developments.

Goal 2 will restore and enhance biodiversity through nine actions that cover pesticides, pollinators and habitats, which is likely to cause beneficial and strong beneficial effects for biodiversity, flora and fauna. This is due to a focus on pollinators (Action 6), peat land habitat restoration (Action 8), carrying out baseline habitat surveys (Action 1) and increase biodiversity in forests (Action 9), alongside, reducing pesticides (Action 4) and addressing the decline of farmland birds through targeted agri-environmental schemes (Action 2). The extent of any positive effects are as yet uncertain as they will be influenced by the implementation measures adopted for these actions.

Actions that promote the conservation of habitats such as peat land (Action 8) and increase biodiversity through the protection of pollinators (Action 6) enhance the capacity for natural capital services. 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. Action 7 also includes for protecting features of cultural heritage and traditional landscapes.

Goal 3 is focused on achieving good water quality and healthy aquatic systems, implemented through five actions. Overall it is expected that these actions will all either have beneficial or strong beneficial outcomes in terms of water and natural capital objectives. This will be achieved through a transition to lower chemical nitrogen use within the agricultural system (Action 1), controlling phosphorous and sediment losses (Action 2), reducing the risks that pesticides pose to drinking water (Action 3), targeted measures in the right places (Action 4) and soil management (Action 5).

All the above actions are likely to bring about beneficial effects on the biodiversity, flora and fauna and soil and land use objectives. Action 5 is predicted to result in strong beneficial effects on soil through a dedicated strategy focused on soil health and soil's role as a habitat.

As a consequence of improved water quality through the above actions it is assessed that there would be uncertain but likely beneficial effects on human health, particularly through the aim to reduce the risk to drinking water from pesticides (Action 3).

Goal 4 works on the development of diverse, multi-functional forests through six actions. Actions relating to improvements in the quality and quantity of Ireland's forests is anticipated to result in mostly positive effects although many remain uncertain due to lack of detail around the implementation of the actions. The resulting current uncertainty over the implementation makes it difficult to understand the consequential effects and the scale of change they will produce. However, likely beneficial effects would occur around biodiversity flora and fauna, landscape, natural capital, climate change, soil and land use, and to a lesser extent water, human health and population.

Beneficial effects on the population objective are seen through support for primary producers either through incentives to plant trees (Action 4) or allowing them greater flexibility to plant trees in order to hit targets (Action 3). Mostly uncertain but likely beneficial effects are anticipated for Actions 2, 3 and 4. Where uncertainties are identified these relate mostly to the current lack of definition around the incentive mechanisms to be provided and the extent to which these may benefit farmers and landowners economically. Although overall these actions are likely to be generally positive, the extent to which it impacts on the SEA objective is uncertain.

Goal 5 seeks to enhance the environmental sustainability of the seafood sector which is accomplished through ten actions. These actions focus on improving the environmental and social sustainability of the seafood sector such as carrying out assessments to better understand the effects of climate change on the sector (Action 10) and prioritising the Clean Oceans Initiatives to address the problem of marine litter and plastic pollution in Irish waters (Action 9).

Positive outcomes are therefore expected around biodiversity, flora and fauna, natural capital, and water. An increase in Marine Protected Areas by 2030 (Action 7) is likely to enhance and support the conservation of important marine ecosystems and ensure that

human activity is kept at a level which will allow natural productivity and sustain biological diversity, resulting in strong beneficial effects. Enabling oceans to be resilient and function efficiently is key to maintaining a healthy and abundant stock of fish. Therefore Actions 1 to 6 also have some beneficial but mainly uncertain beneficial effects on population through supporting the continued and sustainable economic viability of primary producers and maintaining long-term viability of seafood.

Goal 6 is concerned with embedding the agri-food sector in a circular economy through scaling up and adopting circular principles to make production systems regenerative. This goal is highly focused on the improvement and better use of waste materials from fisheries, farms and timber production, therefore it is expected to generate benefits in material assets across all actions that support this goal. Likely but somewhat uncertain positive effects are also expected for the climate change objective through the scaling up of energy efficient and low carbon renewable energy sources and a circular bioeconomy.

Goal 7 aims to strengthen and invest in Origin Green to reflect higher ambition in the agri-food sector. Ten actions cover this goal with Actions 1, 3 and 6 achieving the most likely beneficial effects in terms of the SEA objectives. The metrics and evidence base from Origin Green need to be improved. A framework for delivering this involves building on Origin Green participant companies performance and metrics on sustainability, and the associated quality assurance programmes at farm level, especially in the key areas of climate, animal health and welfare, the circular bioeconomy, and incorporating measures from Ag-Climate. Beneficial and some uncertain but likely beneficial effects are anticipated for biodiversity flora and fauna, soil health, water, climate change, material assets and natural capital. As this is anticipated to make businesses more sustainable and create a healthier overall environment it is also expected that there would be likely beneficial effects on the population and human health objectives.

Goal 1 was taken forward for detailed assessment, which is provided later in this section.

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being

Mission 2 has four key goals, each of which has a number of associated actions.

Goal 1 is to improve the competitiveness and productivity of primary producers and a number of actions that relate to promoting or supporting the various sub-sectors within the agri-food sector. This goal is therefore expected to have a beneficial effect on the population objective as it is likely to support the economic viability of primary producers.

There may be some beneficial effects on human health due to the inclusion of anti-microbial stewardship in the dairy sector plan under Action 2 and potentially due to Action 23 which also lists anti-microbial stewardship as one of the societal issues to consider along with food safety risks. Anti-microbial resistance is a growing public health threat and measures to reduce overuse of anti-microbials, including in agriculture, is needed to reduce the long-term health risk. Indirect, although uncertain benefits on human health, may arise from measures to improve animal health and welfare as well as from developing pest and disease resistant crop varieties, which is likely to result in reduced pesticide use.

Some of the actions are likely to have beneficial effects on the environmental SEA objectives due to plans to minimise total emissions, address soil fertility, improve soil and pasture management, including reducing chemical nitrogen use and increasing clover

and multi-species swards, formalise environmental targets and actions, and protecting and increasing woodland creation (noting that the 2020 MacKinnon Report into afforestation schemes in Ireland noted a long-term tendency of under-delivery). The Mackinnon Report also recognises that not all tree planting schemes have historically been supportive of other priorities including biodiversity and advocates a greater emphasis on ‘the right tree in the right place’ to ensure that planting schemes are sensitive to local characteristics and place an emphasis on diversity of woodland cover at a whole Ireland scale. The assessment provided here assumes that the Strategy actions relating to woodland creation will integrate with those of the Mackinnon Report but as this is a political decision the direction of which is yet to be fully established, there are inherent uncertainties in the assessment of these actions.

Increased targeting of farm income supports to environmental sustainability (Action 18) and aligning Irish Grain Assurance Scheme with Origin Green (Action 30) may also have beneficial effects although it is not as certain which of the environmental objectives may be beneficially affected and to what extent.

Beneficial effects or potentially beneficial effects are also predicted on material assets due to actions to explore bioeconomy opportunities, use of organic manures, and develop pest and disease resistant crops which may result in more sustainable use of pesticides.

Actions 8 and 12 revolve around promoting the sub-sectors in order to grow and develop new and existing markets, while Actions 20, 27 and 32 focus on sectors working together or producing a strategy to develop new markets or take advantage of growth. It is understood that any new demand from the development of new markets is envisaged to come through value-added produce as opposed to increased output. Nevertheless, there is still a risk that the establishment of new markets and increased demand may result in intensification, which could result in adverse effects on a number of the environmental objectives.

Goal 2 is to improve the creation and equitable distribution of value. The actions under this goal are expected to have beneficial effects on population as they would support the economic viability of primary producers.

There is also some potential for beneficial effects on the environmental objectives from Actions 4 and 5 which seek to promote participation of all farms and seafood operators in a quality assurance scheme and for schemes to be continuously reviewed. Depending on which schemes are entered into, there could be beneficial effects, although it is difficult to be certain which environmental objectives would benefit and to what extent.

Goal 3 is to increase primary producer diversification and resilience, and is likely to generally have beneficial effects on population. It includes actions to increase organic farming which is likely to have indirect beneficial effects on human health due to the reduced pesticide and antibiotic use, with potential beneficial but uncertain effects on biodiversity, flora and fauna, soil and land use and national capital and population.

Production of a strategy to reduce dependence on imported protein crops and open up opportunities in bioeconomy is likely to result in reduced transport emissions as well as benefit the domestic economy. The production of bioenergy and biogas would help reduce the use of fossil fuels as well as reuse organic waste material, although it may increase competition for land with crop production. Overall, beneficial effects are anticipated on population, air quality, climate change and material assets.

Goal 4 is to improve the social sustainability of primary producers. The actions under this goal have generally beneficial effects on population due to actions to encourage generational renewal, gender balance, diversity and inclusion, provision of education and training and rural development. This is likely to increase access to training and support economic viability. Increased training in best practice in environmentally and socially sustainable farming may also result in beneficial effects on a number of the environmental objectives, although the extent of which is uncertain.

A number of the actions also have beneficial effects on human health as they focus on farm safety and mental health and well-being, both of which are key issues within the farming community. The introduction of mandatory health and safety skills training in particular is likely to result in strong beneficial effects. Agriculture accounts for 40% of workplace fatalities, and the number of farm accidents have been increasing over the past few years. The introduction of mandatory training should help to reduce the risk of farm accidents.

Goal 1 is taken forward to the detailed assessment stage.

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad

Mission 3 has four main goals with a number of associated actions.

Goal 1 is to prioritise coherent food and health policies to deliver improved health outcomes. This goal is likely to have beneficial effects on the human health objective because actions to promote healthy nutritious food and to give consumers greater access and choice to healthy nutritious food is likely to lead to improved diet and long-term health.

Some of the actions also focus on sustainability and may have beneficial effects on some of the environmental SEA objectives, although it is not as certain which of the environmental objectives may be beneficially affected and to what extent.

Goal 2 is to enhance customer and consumer trust in the food system, providing evidence of a safe, ethical food supply. The actions cover topics such as food safety and authenticity, animal health, antimicrobial resistance and biosecurity. The focus on food safety and antimicrobial resistance is likely to have beneficial effects on human health. There are also likely to be beneficial effects on population due to reduced risk of food safety incidents and increased animal health which would support the economic viability of manufacturers and primary producers.

The potential for effects on the more environment focused objectives, positive or negative, is more limited. There may be some indirect beneficial effects but these are less certain.

Goal 3 is to increase value add in food and drink through product development and differentiation. This goal centres on the use of R&D and innovation as key drivers of increasing value-add and developing new products. A strong beneficial effect is anticipated on human health due to the action focusing on nutritious food and ingredients with health benefits. The use of R&D, innovation and technology and sharing of information is anticipated to improve production and reduce costs and thereby increase economic viability, having a beneficial effect on the population objective.

Action 3 revolves around taking advantage of digital innovations and artificial intelligence (AI) and Action 4 entails the use of R&D and innovation to progress reformulation of energy-dense and nutrient poor processed foods. SMEs with less ability or financial capacity to carry out R&D or take advantage of digital innovations and AI may be disadvantaged compared to the larger food manufacturers with more capability.

Goal 4 is to develop market opportunities at home and abroad. The focus on developing markets and supporting small and local food producers is likely to help maintain and increase economic viability and most of the actions are anticipated to have beneficial effects on the population objective. There may be indirect benefits to other SEA objectives but this is currently uncertain.

Action 3 of Goal 4 is to increase efforts to gain and maintain market access for key product categories to priority international markets. It includes maintaining and building on existing market access. This includes a target to increase agri-food exports to €21 billion by 2030 (an addition €2 billion from the 2025 target). It is uncertain whether it would entail increasing exports which may have adverse effects on the air quality and climate objectives due to increased food miles, or if it would deliver increased value from the same volume of exports through capturing more value in premium markets. Actions 4 and 5 are also based on supporting international trade. Conversely, the actions focusing on domestic and local markets may result in reduced food miles because of the promotion of domestic produce.

Action 9 could have beneficial effects on a number of the environmental objectives if efforts to ensure that imports into the EU meet the same high standards for food safety and authenticity, traceability and environmental standards as food produced in the EU are successful. However it is difficult to assess this with any certainty.

Goals 3 and 4 are taken forward to the detailed assessment stage.

Mission 4: An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent

This mission is covered by seven individual goals.

Goal 1 revolves around the move to a challenge focussed innovation system. Likely beneficial results are anticipated for all of the environmental SEA objectives alongside population and human health from Action 2. This action focusses on engaging with EU and international partners to aid an environment and climate led transition to a carbon neutral agri-food sector and circular bioeconomy. These actions will therefore have beneficial effects on the environment as collaboration and networking and development of innovation actions could result in lower GHG emissions, increased carbon sequestration, lower emission technology and improved efficiency throughout the sector.

Uncertainties were found surrounding Action 3 as specific details are not identified for 'targeted innovation activities' and it is therefore difficult to foresee the impacts this action would have on the SEA objectives. There may be beneficial effects on primary producers and the population as a whole if certain societal challenges are addressed. Action 1 remains neutral for all of the SEA objectives apart from population. This action focusses on supporting businesses to develop an innovation culture that includes stakeholder collaboration to create, design, test and learn about new advances in the real word setting. This would therefore support the economic viability of primary producers and agri-food sector businesses.

Goal 2 is concerned with the development of a strategic funding approach for research, development and innovation. Actions 1 and 3 under this goal aim to find practical solutions to the challenges faced within the sector, many of which are environmental. These include challenges such as ways to adapt to climate change, improvements to soil health and creating a circular economy. Therefore likely beneficial effects are predicted for Actions 1 and 3 on the biodiversity, flora and fauna, soil and land use, water, air quality, climate change and natural capital objectives. Positive but indirect effects are expected on the quality of the landscape through changes to land management techniques, therefore likely beneficial but uncertain effects are anticipated.

All actions under Goal 2 would help to develop solutions to the challenges faced in the agri-food sector. Therefore, likely beneficial effects are anticipated for population as these solutions will hopefully increase productivity and profit, aiding the economic viability of primary producers. In general, other objectives examined against Actions 2 and 4 are likely to be neutral as they did not specifically target or indirectly impact other SEA objectives.

Goal 3 aims to develop a dynamic knowledge exchange environment which looks to improve the way information is relayed to primary producers and rural communities. As this will help them apply new knowledge and find practical, real world applications and solutions, it is anticipated that there will be likely strong beneficial effects on the population objectives for Actions 1, 3 and 4 and likely beneficial effects on population for Action 2.

Action 3 is based on strengthen the advisory services to cover environmental and climate performance, innovation and digitalisation such as the adoption of sustainable technologies and practices on climate and biodiversity. It is therefore expected that both biodiversity, flora and fauna and climate change will see likely beneficial effects. This action is also likely to have indirect and therefore uncertain, beneficial effects on soil and land use, water, air quality, landscape, natural capital and human health.

Goal 4 sets out six actions to enhance the use of technology and data. All actions apart from Action 5 are likely to have strong beneficial or likely beneficial effects on population. This is linked to a focus on improving digitalisation of the agri-food and fisheries sectors. Digitalisation will help to map, sequence, observe and predict the oceans and introduce new technologies to support the economic viability of primary producers through growth and development of their businesses. This would also have likely beneficial effects on water quality and the environmental objectives. Action 6 is to increase broadband connectivity which will result in likely beneficial effects on human health and population as this will close the 'digital divide' and improve access to economic opportunity and social cohesion in the community.

Other likely beneficial effects are anticipated for material assets from Action 3 which is to increase co-investment for bio-economy accelerator programmes.

Uncertainties arise around Action 5 which explores opportunities to research and develop labour saving automation technologies. Labour saving technologies can cut costs for employers by automating repetitive manual roles undertaken by many people. It may also have a beneficial effect on human health due to less strenuous and physically demanding activities. However, automation also presents a risk to employment rates in the sector, particularly amongst lower skilled sources of employment. If workers are not retrained to replace jobs lost to automation this will lead to

unemployment and can potentially cause detrimental effects on health and wellbeing through lower income and joblessness.

Goal 5 is made up of five actions that will improve competitiveness and resilience throughout the agri-food sector, including both foreign and Irish-owned multi-national firms, mid-cap companies and a large number of SMEs. These actions focus on providing investment opportunities and access to funding, allowing agri-food businesses to build resilience, innovate and grow. This will promote business expansion, diversification and support the future proofing of the agri-food sector and is therefore expected to produce likely beneficial effects on the population objectives. Other SEA objectives are unlikely to be affected as they are not a key focus of this goal.

Goal 6 seeks to attract and nurture diverse and inclusive talent through the implementation of five actions. Beneficial effects are anticipated for the population objective from Actions 1, 2, 3, 4 and 5. These actions focus on developing skills, talent and education for those working in the agri-food sector in addition to measures to address labour shortages through upskilling, apprenticeships and rebranding throughout all levels of the sector. The actions to promote gender balance and diversity and inclusion would also help to improve social cohesion. Overall it is expected that this development and nurturing of the workforce will improve access to education and improve the economic viability of primary producers and agri-food businesses with little downside in terms of the other SEA objectives.

In turn, it is also anticipated that where investments are made into upskilling and educating people, this will be expected to have indirect but generally beneficial effects on the overall health and wellbeing of employees in the agri-food sector and their families. There is an acknowledged correlation in most developed nations between socio-economic prosperity and general wellbeing.

Action 3 looks to continually review education, training programmes and apprenticeships so that they meet changing needs in terms of environmental sustainability and advances such as organic farming techniques, social sustainability, animal health and welfare and food safety. It is therefore predicted that there will be likely but uncertain beneficial effects on the environmental SEA objectives including biodiversity, flora and fauna, soil health, water, air quality, climate change, material assets, landscape and natural capital.

Goal 7 promotes policy coherence in Sustainable Food Systems (SFSs) using the Irish experience of agriculture and rural transformation to advocate internationally for improved food and nutrition security. Action 1 discusses the promotion of food and nutrition security and SFSs as part of Ireland's overseas development assistance, using an integrated approach involving the governmental, private sector, civil society and the university sector. This action is likely to help support the economic viability of the agricultural sector in Africa and potentially other developing countries. The focus on food and nutrition security would also help improve the long term health and wellbeing of the population in developing countries.

Actions 2 and 3 plans for Ireland to advocate for SFS's to deepen the relationship with Africa, alongside Ireland playing a leadership role at the Food Systems Summit in September 2021. There are uncertainties around effect on the population objective as it is not clear what direct or indirect impacts Ireland being an advocate or playing a leadership role will have on the wider population or primary producers, but it may lead to increasing Ireland's reputation in the international market. It is unlikely that these actions

will have strong beneficial or adverse effects on the other SEA objectives and therefore they are rated as neutral. Action 4 could have beneficial effects on the environmental SEA objectives if the development of a composite indicator or index of SFSs results in actions to improve sustainability of food systems. However the likelihood and extent of any effect is uncertain.

Goal 4 is consequently taken forward for further assessment.

6.2 Detailed Matrix Assessment

Where specific goals were predicted to have actions with adverse or uncertain adverse effects at the high level assessment stage, they have been analysed further in the detailed matrix assessment to ascertain the significance of the potential adverse effects and how these can be avoided or minimised. The detailed matrix presented below (Table 6.2 with accompanying key) shows the likely environmental effects of these goals.

Table 6.2: Detailed Matrix Assessment

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector											
Goal 1: Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Biodiversity and Flora and Fauna	The change of use that would occur at farm level to scale up renewable energy production could see the removal of farmland habitats and vegetation. Such developments would be subject to controls through the local planning process and other associated processes. This is likely to ensure that significant adverse effects to biodiversity do not occur. Indirect beneficial effects are anticipated for biodiversity through improvements in sustainability and a push for climate neutrality in the Agri-food sector which are likely to be underpinned by an uptake in agri-environmental schemes that will improve habitats and ecological function of ecosystems. Multiple actions also address reducing ammonia emissions. Agriculture accounts for 99% of ammonia emissions, which can have detrimental effect on biodiversity.	Long Term	Continuous	Reversible	Local	Medium	High to low	Moderate	Low	Yes
2	Population	Overall this goal is aimed at environmental improvements of the sector rather than increasing economic viability. However, actions that support farm diversification and the ability for farms to produce their own energy and sell excess back to the grid will open up financial opportunities and help increase economic viability of primary producers.	Long Term	Continuous	Permanent	National	Low	Medium	Moderate/ Minor	High	No
3	Human Health	There may be indirect beneficial effects on health from an improvement in air quality due to a shift away from more polluting non-renewable energy and a reduction in ammonia emissions which contribute to the formation of fine particulate matter. Fine	Long Term	Continuous	Permanent	Local	Low	High	Moderate	Medium	No

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector											
Goal 1: Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
		particulate matter can cause and have effects on people with respiratory disease and other health vulnerabilities. Farm scale renewable schemes will give farmers more options in terms of farm diversification and income improving livelihoods and wellbeing.									
4	Soil and Land Use	Likely beneficial and some uncertain (but likely beneficial effects) are predicted from Goal 1. This should be realised through a reduction in the negative environmental impacts of agricultural production which would likely see less synthetic fertilisers used, improvements in erosion and nutrient depletion of soils.	Long Term	Continuous	Permanent	Local	Low	Medium	Moderate/ Minor	High	No
5	Water	Some actions are likely to result in indirect and possibly beneficial effects on water through the implementation of Ag-climatise which includes for reducing nutrient losses. Nutrient pollution is a key existing pressure on waterbodies.	Long Term	Continuous	Permanent	Regional	Low	High to low	Moderate/ Minor	low	No
6	Air Quality	Implementation of Ag-Climatise and requirement to produce detailed plan to manage the sustainable environmental footprint of dairy and beef sectors would likely see a reduction of ammonia emissions which would have beneficial effects on air quality. Agriculture accounts for almost all ammonia emissions produced. Reducing ammonia emissions from agriculture would help to meet the NECD reduction targets.	Long Term	Continuous	Permanent	Cross Border	High	High	Major	High	No
7	Climate Change	Beneficial effects for climate change are anticipated through actions to develop a climate neutral food system by 2050. This includes for a number of actions	Long Term	Continuous	Permanent	Cross Border	High	High	Major	High	No

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector											
Goal 1: Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
		to reduce GHG emissions from agriculture and food and drink industry. Actions also include for Ireland playing a leading role in shaping how GHG emissions from livestock farming are understood and addressed making the sector more environmentally sustainable. Energy produced from renewable sources will reduce GHG emissions, helping to mitigate climate change. The actions also include for climate change resilience and adaption.									
8	Material Assets	Overall the actions from Goal 1 do not impact material assets strongly and for the most actions the effects are neutral. However, Action 5 is focused on using renewables instead of fossil fuels which will help to conserve finite products and safeguard natural resources. Bioenergy generated from waste can reduce the amount of waste that goes to landfill.	Long Term	Continuous	Permanent	National	Low	Medium	Moderate	Medium	No
9	Cultural Heritage	Overall, most of the actions from this goal are not expected to have significant effects on cultural heritage. However, Action 5 on scaling up of renewable energy projects may have adverse effect on the setting of cultural heritage assets on a transboundary scale and could also potentially damage below ground assets. Renewable energy developments would be subject to controls through the local planning process. This is likely to ensure that significant adverse effects do not occur.	Long Term	Regular	Permanent	Cross border	Low	High to low	Minor	Medium	Yes
10	Landscape	Most actions under Goal 1 do not strongly impact the landscape. However, farm scale renewable energy schemes will visually impact the landscape. Landscape character is a large part of Ireland's	Long Term	Regular	Reversible	Local	Low	High to low	Minor	Medium	Yes

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector											
Goal 1: Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
		tourism industry and landscape character may be changed if land use changes from agricultural fields to new renewable energy developments.									
11	Natural Capital and Inter-relationships	Likely beneficial effects are anticipated for natural capital due to improvements in climate change, air quality, biodiversity, water and material assets that will allow for better functioning ecosystems and habitats.	Long Term	Continuous	Permanent	National	Medium	Medium	Moderate	Medium	No

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being											
Goal 1: Improve Competitiveness and Productivity of Primary Producers											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Biodiversity and Flora and Fauna	Actions to promote the sub-sectors in order to grow and develop new markets could have adverse effects if this leads to intensification. However there may be indirect beneficial effects due to actions to reduce ammonia emissions, targeting farm income support to environmental sustainability, aligning with Origin Green and developing Integrated Pest Management (IPM) techniques which may lead to lower use of pesticides.	Long-term	Continuous	Permanent	Cross border	Negligible	High to low	Minor	Low	Yes
2	Population	Actions to improve the competitiveness of and productivity of primary producers such as promotion of Irish livestock as premium grass-fed products, developing strategies and working together to take advantage in growing demand for tillage and horticulture products, investing in fishing operations and gear technology as well as actions to improve breeding, animal health and soil management is likely to improve the economic viability of primary producers. However there may be some adverse effects if better use of automation technology leads to reduced employment in the horticultural sector.	Long-term	Continuous	Temporary to permanent	National	Medium	Medium	Moderate	Medium	No
3	Human Health	Actions include addressing societal concerns such as anti-microbial stewardship and food safety risks. Indirect, although uncertain benefits on human health, may arise from measures to improve animal health and welfare as well as from developing IPM techniques which may result in reduced pesticide use.	Long-term	Continuous	Permanent	National	Negligible	High	Minor	Low	No
4	Soil and Land Use	Actions to promote the sub-sectors in order to grow and develop new markets could have adverse effects if this leads to intensification, particularly from the proposed expansion of tillage and horticulture.	Long-term	Continuous	Permanent	National	Negligible	Medium	Minor	Low	Yes

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being											
Goal 1: Improve Competitiveness and Productivity of Primary Producers											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
		However actions to continue improvements in soil and pasture management, including reducing chemical nitrogen use and increasing clover and multi-species swards, and targeting farm income support to environmental sustainability is likely to have beneficial effects.									
5	Water	Actions to promote the sub-sectors in order to grow and develop new markets could have adverse effects if this leads to intensification. However there are likely to be beneficial effects from Action 3 and 14 which requires that detailed plans are produced to manage the environmental footprints of the dairy and beef sub-sectors which includes for making a positive contribution to water quality. Further actions include to continue improvements in soil and pasture management, including reducing chemical nitrogen use and increasing clover and multi-species swards, targeting farm income support to environmental sustainability, aligning with Origin Green and development of IPM techniques which may lead to reduced use of pesticides.	Long-term	Continuous	Permanent	Cross border	Negligible	High to low	Minor	Low	Yes
6	Air Quality	Actions to promote the sub-sectors in order to grow and develop new markets could have adverse effects if this leads to intensification. However there are likely to be beneficial effects from Action 3 and 14 which requires that detailed plans are produced for the dairy and beef sub-sectors to manage their environmental footprint including minimising total emissions. Further actions include to continue improvements in soil and pasture management, including reducing chemical nitrogen use.	Long-term	Continuous	Permanent	Cross border	Negligible	High	Minor	Low	Yes

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being											
Goal 1: Improve Competitiveness and Productivity of Primary Producers											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
7	Climate Change	Actions to promote the sub-sectors in order to grow and develop new markets could have adverse effects if this leads to intensification. Conversion to tillage could also result in increased carbon dioxide emissions. However there are likely to be beneficial effects from Actions 3 and 14 which requires that detailed plans are produced for the dairy and beef subsectors to manage their environmental footprint including minimising total emissions. Further actions include aligning the Irish Grain Assurance Scheme to Origin Green and progressing genetics for methane efficiency.	Long-term	Continuous	Permanent	Cross border	Negligible	High	Minor	Low	Yes
8	Material Assets	Actions to explore bioeconomy opportunities such as the use of pig manure, as well as use of organic manures in the tillage sector would make good reuse of manure, resulting in more sustainable use. Actions to develop IPM techniques may result in more sustainable use of pesticides.	Long-term	Regular	Permanent	National	Low	Medium	Minor	Medium	No
9	Cultural Heritage	Actions to develop a strategy to take advantage of growing demand for fruit, vegetables and whole foods could result in intensification, conversion of land from pasture and increase in polytunnels and glasshouses which could potentially affect the setting of historic landscapes and cultural heritage features at a transboundary scale.	Long-term	Continuous	Permanent	Cross border	Negligible	High to low	Minor	Low	Yes
10	Landscape	Actions to take advantage of potential growth in the tillage sub-sector and develop a strategy to take advantage of growing demand for fruit, vegetables and whole foods could result in intensification and conversion of land from pasture, as well as increase in polytunnels and glasshouses, which could change landscape character. However, there may also	Long-term	Continuous	Permanent	Local	Negligible	High to low	Minor	Low	Yes

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being											
Goal 1: Improve Competitiveness and Productivity of Primary Producers											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
		beneficial effects from increased targeting of farm income support to environmental sustainability.									
11	Natural Capital and Inter-relationships	There is potential for both beneficial and adverse effects on a number of the environmental objectives, which may affect their ability to provide ecosystem services.	Long-term	Continuous	Permanent	Cross border	Negligible	Medium	Minor	Low	Yes

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad											
Goal 3: Increase Value add in Food & Drink Through Insight, Product Development and Differentiation											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Biodiversity and Flora and Fauna	No effects are anticipated on biodiversity and flora and fauna from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
2	Population	The use of R&D, innovation, artificial intelligence and sharing of information is anticipated to improve production costs and thereby increase economic viability. However, SME may not have the ability to carry out R&D or invest in digital innovation and AI, leaving them disadvantaged compared to the larger manufacturers. Some of this may be offset by support for early-stage food businesses under Action 8. Overall there is still likely to be a beneficial effect from this goal, although it may not be equally distributed across the sector.	Long-term	Continuous	Temporary to permanent	National	Low	Medium	Minor	Medium	No
3	Human Health	Actions to develop value-added functional foods and ingredient solutions with proven health benefits and the use of R&D and innovation to progress energy-dense and nutrient poor processed foods would have beneficial effects if it results in reducing the quantifies of disadvantages components such as sugar, salt, nitrates and/or trans fat. The baseline review identified that a large percentage of the population is overweight or obese. The reduction of sugar and trans fat as well as salt, which can lead to high blood pressure, heart disease and stroke, is likely to lead to improved diet and long-term health and well-being.	Long-term	Continuous	Permanent	National/cross border	Medium	High	Major/Moderate	Low	No
4	Soil and Land Use	No effects are anticipated on soil and land use from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad											
Goal 3: Increase Value add in Food & Drink Through Insight, Product Development and Differentiation											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
5	Water	No effects are anticipated on water from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
6	Air Quality	No effects are anticipated on air quality from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
7	Climate Change	No effects are anticipated on climate change from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
8	Material Assets	Digital innovations and AI could be used to develop versatile and affordable sensors applied for the real-time, control of food processing, thereby minimising waste. Reducing waste production would have a beneficial effect.	Long-term	Continuous	Permanent	National	Low	Medium	Minor	Low	No
9	Cultural Heritage	No effects are anticipated on cultural heritage from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
10	Landscape	No effects are anticipated on landscape from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
11	Natural Capital and Inter-relationships	No effects are anticipated on natural capital from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad											
Goal 4: Develop Market Opportunities at Home and Abroad											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Biodiversity and Flora and Fauna	Action 9 on working towards maintaining and enhancing a rules-based and equitable multilateral trading system to ensure that imports meet the same environmental standards as food produced in the EU could have some benefits. For example it could discourage the use of certain pesticides or fertilisers in other countries which have negative effects on pollinators. It could also reduce overfishing by encouraging controls to prevent illegal, unreported and unregulated fish and fishery products from entering the food supply chain. However it may be less effective in terms of reducing the conversion of natural habitat into agricultural land in other countries.	Long-term	Continuous	Permanent	Cross border	Negligible	High to low	Minor	Low	No
2	Population	The focus on maintaining and developing markets by building on the reputation of Irish food and beverages and meeting the needs of consumers is likely to help maintain and potentially increase economic viability. The support for local and small food producers would help small business to grow and to become viable.	Long-term	Continuous	Temporary to permanent	National	Medium	Medium	Moderate	Medium	No
3	Human Health	Action 9 on working towards maintaining and enhancing a rules-based and equitable multilateral trading system to ensure that imports meet the same food safety and authenticity and traceability standards as food produced in the EU is likely to have benefits in terms of food hygiene, reducing potential for contaminants or potentially unsafe additives.	Long-term	Continuous	Permanent	National	Low	High	Moderate	Low	No
4	Soil and Land Use	Action 9 on working towards maintaining and enhancing a rules-based and equitable multilateral trading system to ensure that imports meet the same environmental standards as food produced in the EU could have some environmental benefits abroad, but	Long-term	Continuous	Permanent	Cross border	Negligible	Medium	Minor	Low	No

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad											
Goal 4: Develop Market Opportunities at Home and Abroad											
SEA Objective	Description of Effect		Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
		it is unlikely to reduce the intensification of land or conversion of natural habitat into agricultural land.									
5	Water	Action 9 on working towards maintaining and enhancing a rules-based and equitable multilateral trading system to ensure that imports meet the same environmental standards as food produced in the EU could have some environmental benefits abroad. For example it could discourage the use of certain chemicals which could run-off and affect drinking water.	Long-term	Continuous	Permanent	Cross border	Negligible	High to low	Minor	Low	No
6	Air Quality	Increasing efforts to gain and maintain market access to priority international markets could result in a growth of exports rather than just a growth of value, which may result in increased transport emissions. This may be offset to some extent by actions to explore domestic market opportunities if this results in reduced imports as well as actions to promote small food producers and support direct local sales.	Long-term	Regular	Permanent	Cross border	Negligible	High	Minor	Low	Yes
7	Climate Change	Increasing efforts to gain and maintain market access to priority international markets could result in a growth of exports, resulting in increased food miles and GHG emissions from transport. This may be offset to some extent by actions to explore domestic market opportunities if this results in reduced imports as well as actions to promote small food producers and support direct local sales.	Long-term	Regular	Permanent	Cross border	Negligible	High	Minor	Low	Yes
8	Material Assets	No effects are anticipated on material assets from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
9	Cultural Heritage	No effects are anticipated on cultural heritage from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad											
Goal 4: Develop Market Opportunities at Home and Abroad											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
10	Landscape	No effects are anticipated on landscape from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
11	Natural Capital and Inter-relationships	No effects are anticipated on natural capital from this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No

Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent											
Goal 4: Enhance the Use of Technology & Data											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
1	Biodiversity and Flora and Fauna	Overall, biodiversity, flora and fauna are unlikely to be strongly impacted by the enhanced use of technology and data. However, Actions 2 will utilise improvement in technology and data gathering to enhance ecosystem assessments and fully map, sequence, observe and predict the oceans and therefore see indirect but uncertain beneficial effects. This will allow for better understanding of opportunities and threats and therefore see likely beneficial effects for this objective.	Long Term	Continuous	Permanent	Cross Border	Negligible	Low to high	Minor	Medium	No
2	Population	Overall, actions under this goal will see likely beneficial effects through enhancing the use of new technology and data analysis to improve productivity and profitability throughout the sector. However, it is uncertain what impacts Action 5 would have. Labour- saving can save money for individual employers by automating repetitive manual roles, however this can also lead to loss of lower skilled jobs within the sector resulting in unemployment. However, due to existing labour shortages within the sector, widespread unemployment is unlikely.	Long Term	Continuous	Permanent	Regional	Medium	Medium	Moderate	Low	No
3	Human Health	Overall, actions under Goal 4 will not have significant effects on human health. Although, there are uncertainties around Action 5 which looks at labour saving in repetitive manual roles. This may have a beneficial effects due to less strenuous and physically demanding activities. Alternatively, if workers are not retrained this will lead to unemployment and knock on effects on health and wellbeing through lower income. Due to existing labour shortages within the sector, widespread unemployment is unlikely.	Long Term	Continuous	Permanent	Regional	Negligible	High	Minor	Low	No

Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent											
Goal 4: Enhance the Use of Technology & Data											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Value / Vulnerability	Significance	Certainty	Mitigation Required
4	Soil and Land Use	This goal is unlikely to have a significant effect on soil and land use either positive or negative.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
5	Water	Overall most actions under this goal do not have significant effects on water. However, Action 2 is anticipated to have beneficial effects on water through ambitions to work towards a sustainable blue bioeconomy.	Long Term	Continuous	Permanent	Cross Border	Low	Low to high	Minor	High	No
6	Air Quality	No significant effects anticipated on air quality for this goal.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
7	Climate Change	The actions that underpin this goal are unlikely to have a significant effect on climate change.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
8	Material Assets	Overall, it is anticipated that most actions will not significantly affect this objective. However, Action 3 aim to increase investment in bio-economy accelerator programme which could have beneficial effects if it encourages early stage bioeconomy companies.	Long Term	Continuous	Permanent	National	Medium	Medium	Moderate	High	No
9	Cultural Heritage	The actions that underpin this goal are unlikely to have an effect on cultural heritage.	N/A	N/A	N/A	N/A	N/A	N/A	Neutral	Medium	No
10	Landscape	Overall most actions under this goal do not have significant effects on landscape. However, Action 2 is anticipated to have likely beneficial effects on landscape through efforts to fully map, sequence, observe and predict the oceans alongside working with EU Mission Starfish to restore marine ecosystems and seascapes.	Long Term	Continuous	Reversible	National	Negligible	Low to high	Minor	High	No
11	Natural Capital and Inter-relationships	Overall most actions under this goal do not have significant effects on natural capital. However, Actions 2 is focussed on improving ocean sustainability which will improve the ability for the marine environments to deliver ecosystem services.	Long Term	Continuous	Permanent	National	Negligible	Medium	Minor	High	No

Mission 1: A Climate Smart, Environmentally Sustainable Agri-Food Sector

Goal 1 was taken forward for detailed assessment as a result of potential adverse effects resulting from the scale up of renewable energy schemes at farm level through Action 7.

Likely adverse and uncertain effects are anticipated for Action 7 which aims to scale up renewable energy (RE) sources, especially microgeneration and on farm anaerobic digestion (AD) plants and solar energy.

On farm renewable energy developments such as solar farms and AD plants could change land use from one that is agricultural to that of energy production, thus altering landscape character. Agricultural landscapes in Ireland hold strong cultural and societal ties that connect local people to their past and reinforce a sense of belonging. They make up a large part of Ireland's rural landscape character, changes to the traditional farm landscape may therefore degrade landscape quality. In some areas, this is likely to have adverse effects on the visual amenity of the surrounding area. This issue would be particularly important in protected areas.

Developments of this nature may also negatively impact on designated and non-designated cultural heritage assets and historic landscapes as changes to the local landscape can alter the site and setting of an asset. Other potential risks include damage to structures or potential disruption to below ground assets. This will be of particular importance in areas that are in close proximity to protected structures, historic monuments or sites.

This type of land use change may also have adverse effects on biodiversity, flora and fauna. Many species rely on elements of agricultural landscapes to survive. On farm renewable energy developments may promote further fragmentation, the removal of vegetation and important habitats such as hedgerows that are commonly found in agricultural landscapes. Furthermore, demand for biofuels production can lead to the increased in monocultures and the intensity of pesticides and fertiliser use.

Although the potential for significant adverse effects would be controlled through the planning process, there could be small scale incremental changes resulting in an adverse effect.

Alternatively, adverse effects could be avoided if managed sensitively, working alongside other actions in this Goal such as Action 1 which aims to immediate implement the 'Ag-climate' Roadmap. 'Ag-climate' supports actions to enhance and increase the numbers of hedgerows on farms and the creation of buffer strips to minimise soil erosion and improve biodiversity.

Other SEA objectives are likely to be beneficially affected by Action 7, farm diversification is key to the future of some farming businesses. The digestate by-product of the AD can be sold as fertiliser and excess energy produced can be sold back to the grid and therefore support the economic viability of primary producers. Biomass production can provide an important GHG offset, promoting soil carbon sequestration as crops grow.

Comprehensive assessment at the planning stage is paramount to understanding the level of impact such developments would have, and to implement required mitigation techniques. The outcome of Action 7 is somewhat uncertain as outcomes will depend largely on the scale of uptake in on-farm renewable energy production, however there is the potential for minor adverse effects on the landscape and cultural heritage objectives.

Overall Goal 1 is anticipated to have minor to major beneficial effects on the remaining SEA objectives.

Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being

Goal 1: Improve Competitiveness and Productivity of Primary Producers

Goal 1 was taken forward for detailed assessment because of the potential for adverse effects from actions promoting the sub-sectors in order to grow and develop new markets.

Action 8 of the current Strategy is to move to higher-quality, value-added dairy produce, positioning Irish dairy as a premium grass-fed product, and references opportunities to grow and develop new markets. Further actions include promoting Irish grass-fed beef and lamb as premium products with reference to grow and develop new markets, in particular for organic lamb and beef. It is understood that these products are to be promoted as premium products and that the growth and development of new markets would entail value-added produce rather than an increase in the herd size. It is not specified exactly what is meant by value-added but it is understood that it is focused on increasing the return to producers per unit of output through more effective promotion and marketing of produce, and further developing the reputation of Irish produce as a premium product. Action 9 and Action 12 both refer to developing markets for organic products which may have beneficial effects if converting from more intensive systems.

However there may still be a risk that growing and developing new markets could result in increased demand which may see an unintended continuation of the recent growth in output of certain categories, most notably milk. The growth of the dairy sector, in response to the removal of milk quotas has in particular resulted in increased emissions to air (air pollutants and GHG) and water, which has indirect effects on biodiversity. There is a risk that promoting the value of Irish produce may indirectly stimulate an increase in output due to the increased economic incentive to farmers and producers. Whilst this is not an objective of the Strategy, should such changes occur as a result of market forces the mechanisms to prevent such expansion through policy or regulatory means are likely to be relatively limited.

However Actions 3 and 14 include producing a detailed plan to manage the sustainable environmental footprint of the dairy and beef subsectors. This includes minimising total emissions as well as making a positive contribution to improved water quality and biodiversity and relates to Action 2 of Mission 1 Goal 1.

Actions under the beef and sheep sub-sectors also include continued improvements in pasture management including reducing chemical nitrogen use and increasing clover and multi-species swards as well as increase targeting of farm income supports to environmental sustainability. These actions as well as the above actions would have beneficial effects on the water, air quality, climate change, biodiversity, flora and fauna objectives and therefore on the natural capital objective.

In terms of the pigs and poultry sub-sector, Action 20 is for stakeholders to continue to work collaboratively to develop the sector both in terms of domestic market share for Irish-produced product and new export markets. The action does not specify the promotion of premium product or value-added produce and there is a risk of supply increasing if there is increased demand from the development of new markets, which could have an adverse effect on a number of the environmental objectives. Pig and

poultry housing and manure spreading is a key contributor to ammonia emissions. Closely located units can result in cumulative effects and be a threat to the local environment, particularly nutrient sensitive habitats. Action 22 does however require the stakeholders to examine specific environmental targets and actions for the sector, encompassing GHG and ammonia emissions reductions, better energy efficiency and bioeconomy opportunities e.g. for the use of pig manure.

These measures would have beneficial effects on a number of the environmental objectives. In addition, pig and poultry rearing (above a certain size) is controlled through Industrial Emissions Directive (IED) licences issued by the EPA, which requires the use of Best Available Techniques (BAT) to control emissions. Many of the principles of BAT can be applied to the sector in general to support high environmental performance, even where the individual units fall beneath the stated thresholds.

The Strategy proposes expansion in the tillage and horticultural sub-sectors. Action 27 requires stakeholders to work to develop the sector to take advantage of potential growth in:

- 1) high value output (malting barley, wheat, oats and rye) to distilling and brewing;
- 2) high value food markets such as oats, oils and salad and chipping potatoes;
- 3) meeting domestic protein crop demand for livestock diets.

An expansion of the tillage sub-sector could result in intensification and/or conversion of pasture land to arable. This may have adverse effects on the landscape objective as it would entail a change to local landscape character. Conversion to arable can also result in increased carbon dioxide emissions due to land use change and soil disturbance from tilling and compaction. Potato cultivation often requires intensive tillage which can result in soil erosion and nutrient losses which could impact nearby water bodies. Nitrogen losses from tillage are higher compared to losses from grassland, with potential impacts on water quality. Increased arable land could also require increased use of pesticides and fertilisers compared to extensive farming, with potential adverse effects on the soils, water, air quality and climate change objectives, with indirect adverse effects on the biodiversity, flora and fauna objective as well as the natural capital objective. However it is uncertain how much land may be affected by increased tillage. Adverse effects would be offset to some extent by the action to continue to improve soil management, including the reduction of chemical nitrogen use, the action to further research the development of Integrated Pest Management (IPM) techniques and the action to align Irish Grain Assurance Scheme (IGAS) with Origin Green. These actions, in particular the reduction in chemical nitrogen use and the potential to reduce pesticide use due to IPM techniques, would have beneficial effects on the above mentioned environmental objectives.

Action 32 requires the development of a strategy to take advantage of the growing demand for fruit and vegetables and whole-foods; to increase production and consumption of Irish produce on the domestic market and, where possible, to take advantage of expanding opportunities internationally. The Strategy notes that it is important that the area under cultivation is at least retained with an ambition to increase the area. it may inadvertently encourage further conversion from permanent pasture, although the extent to which this may occur would depend on other influences and policies. As horticulture currently only accounts for 1.5% of the agricultural area in Ireland, it is unlikely that this would lead to significant conversion from permanent pasture.

However, an increase of horticulture could have adverse effects on landscape if it results in an increase in polytunnels and/or glasshouses which could change local landscape character, including potentially the setting of historic landscapes and cultural heritage features.

An increase in production may also require increased use of pesticides and fertilisers, with potential adverse effects on the soils, water, air quality and climate change objectives, with indirect adverse effects on the biodiversity, flora and fauna objective as well as the natural capital objective. Some of the adverse effects could be offset by the requirement to formalise specific environmental targets and actions for the sector, encompassing the maximisation of carbon sequestration.

The action to develop a new Forestry Strategy is likely to have beneficial effects based on requirement for sustainable forest management. Poorly managed tree planting and forestry operation can cause damage to habitats and impact water quality.

In terms of the Seafood sub-sector, Action 34 is to continue on a path of sustainable economic and environmental development by carefully managing the utilisation of sea-fisheries and aquaculture. This includes to expand and invest in fishing operations and gear technology to develop the industry and improve productivity. While this could lead to increased fishing, it could equally lead to reduced by-catch which would have beneficial effects on marine biodiversity. The focus on carefully managing the sea-fisheries and aquaculture sub-sector is key to ensuring the adverse effects are minimised and beneficial effects realised.

Overall Goal 1 is anticipated to have both adverse and beneficial effects. The beneficial effects are likely to offset the adverse effects to some extent, but there still exists the potential for minor adverse effects on the environmental SEA objectives.

Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad

Goal 3: Increase Value add in Food & Beverages Through Insight, Innovation and Product Differentiation

Goal 3 was taken forward for detailed assessment because of the potential for adverse effects on SMEs.

Goal 3 promotes the use of R&D, innovation and AI. The use of R&D, innovation, AI and sharing of information from technology and research centres is anticipated to improve production costs and thereby increase economic viability. Action 3 in particular encourages the food and beverage industry to take advantage of digital innovation and AI to develop sensors to control food processing, facilitate the development of food systems and decision-support tools to assess and improve Irish crop production and develop new sales and distribution channels. The promotion of R&D and innovation may also lead to an increase in science jobs.

However, SMEs may not have the ability to carry out R&D or invest in digital innovation and AI as promoted under Action 3 and 4, leaving them disadvantaged compared to the larger food and beverage manufacturers. This may be offset to some extent by Action 8 which recommends that support for early stage food businesses should be networked and linked to each other and to the larger scale national innovation centres. Actions under

Goal 4 which seek to support small food producers within domestic and local markets may also help in this regard.

On the whole there is still likely to be a beneficial effect on the population objective from this goal, although it may not benefit SME to the same extent as the larger companies. Minor beneficial effects are therefore predicted for the population objective. Neutral to major / moderate beneficial effects are assessed on the other SEA objectives.

Goal 4: Develop Market Opportunities at Home and Abroad

Goal 4 was taken forward for detailed assessment because of uncertain effects on the air quality and climate change objectives.

Goal 4 aims to continue to diversify and develop markets, both local and international. Increasing efforts to gain and maintain market access to priority international markets under Action 3 could result in a growth of exports. While the objective may be to deliver increased value from the same volume of exports, there is a potential risk that this results in an increase in export volume. This may result in an increase in air freight and/or shipping, and the increased transport emissions could result in adverse impacts on air quality in Ireland and abroad. This may be offset to some extent by actions to promote domestic markets if this results in reduced imports. Actions to promote small food producers and support direct local sales would also support shorter transport routes and reduced emissions.

Although increasing freight transport may not jeopardise Ireland's ability to meet the NECD reduction ceiling and emissions may be offset actions to support domestic markets, a minor adverse effect is still predicted on the air quality objective as this action would affect air quality in Ireland and abroad.

A similar impact is predicted for climate change due to the increased food miles if exports are increased. Again, this may be offset to some extent through the actions to promote domestic markets and support for small and local food producers. Nevertheless, a minor adverse effect is predicted on the climate change objective due to the potential for increased GHG emissions if exports are increased. Neutral to moderate beneficial effects are assessed on the remaining SEA objectives.

Mission 4: An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent

Goal 4: Enhance the Use of Technology & Data

Goal 4 was taken forward for detailed assessment because of the uncertain effects of labour saving automation of low skilled and repetitive roles on population and human health.

This action explores opportunities to research and develop labour saving automation technologies. Labour saving technologies can improve profitability for agri-food businesses by automating repetitive manual roles that are usually undertaken by a large workforce. In other sectors an increase in minimum wage has encouraged the uptake of automation to cut the need for large teams of low skilled workers.

If automation is undertaken correctly there will be opportunities for businesses to upskill and further educate workers, which is discussed in the actions covering Goal 6 of this

mission. However, upskilling may not always be an option and therefore presents a risk of unemployment particularly amongst lower skilled workers. However, it is noted that there is a shortage of labour supply in the agri-food sector, especially in the horticulture (farm), dairy (farm) and meat processing subsectors. Labour-saving automation is required in some of the sub-sectors to fill the labour gap. Therefore the likelihood of large scale unemployment resulting from this action is unlikely.

Overall moderate beneficial effects are still predicted from Goal 4 on the population objective.

There are likely to be both positive and negative impacts from labour saving automation on human health. Beneficial outcomes may be seen due to less strenuous and physically demanding activities placed on agri-food sector workers. However, if workers are not retrained into other positions this will lead to unemployment and cause detrimental effects on health and wellbeing due to joblessness and reduced income. Because it is unlikely the action would result in widespread unemployment, overall, minor beneficial effects are still predicted on the human health objective.

Overall, Goal 4 presents neutral or minor to moderate beneficial effects on the other SEA objectives.

6.3 Uncertainties

There are a number of uncertainties in the high level and detailed assessment processes, the main sources of which are described above. The majority of the uncertainty in the process results from two principal factors:

- Uncertainty in the implementation of the Strategy goals and actions and how this will manifest in terms of the impact on the SEA objectives.
- Uncertainty in terms of the nature and extent of indirect or unforeseen impact, particularly in terms of local effects at farm or producer level which by their nature are difficult to predict at the strategic level of this assessment.

Monitoring proposals through the Strategy implementation period are therefore an essential component in the strategy development process. These are detailed in subsequent sections of this report and focus, in part, on establishing measures of monitoring and testing these known areas of uncertainty over the life of the Strategy.

6.4 Summary of Conclusions of the Appropriate Assessment

The AA undertook a thorough review of the Strategy and all of the missions, goals and actions were assessed in terms of their potential for impacts on Natura 2000 sites. The missions, goals and actions were reviewed with respect to direct, indirect and cumulative impacts.

It was determined that, in general, positive sustainable measures were included with respect to agricultural intensification, diffuse and atmospheric pollution and fisheries. Safeguards and best practice measures, with environmental good and sustainability at its core, means that the Strategy is generally supportive of the continued protection of Natura 2000 sites.

A key recommendation is that the location and extent of Natura 2000 habitats and species (including appropriate buffer zones) should be taken into account throughout the Strategy. It is suggested that these sites should form an important consideration in any future agri-environment scheme, as well as receiving protection through strengthened Environmental Impact Assessment (Agriculture) Regulations. This is particularly important for Natura species and habitats of restricted distribution, of particular sensitivity, or for which Ireland is a key European stronghold. An all-Ireland baseline survey of farms, focusing particularly on farms with Natura habitats is integral to this process.

Where data gaps exist, either in terms of the known distribution of Natura 2000 habitats and species, or in the knowledge of field staff, these should be addressed through relevant education programmes in identification and assessment of habitats and species. Recommendations are also made with respect to the move towards grass-fed systems.

The AA concluded that the implementation of the measures in the Strategy would not have any significant adverse effects upon the integrity of any Natura 2000 site provided the recommended mitigation measures are implemented, including:

- Documenting the location of Natura 2000 sites in relation to potential agricultural activities and targeting of Natura 2000 sites by future agri-environment schemes;
- Any risk/s to any Natura 2000 sites as a result of new agricultural activities or enterprise should be subject to suitable environmental assessment requirements under the AA and EIA (Agriculture) criteria, and best practice in this respect could be further extended to include assessment of all agricultural activities;
- Conversion to grassland systems should not be at the expense of Natura 2000 habitats;
- Provision of information and training on impacts, Annex I habitats and Annex II/IV species (Habitats Directive) and Annex I species (Birds Directive);
- Avoidance of operations in known areas during Annex 1 bird breeding or wintering season;
- There should be a firm commitment that the relevant authority in Northern Ireland will be consulted in all cases where transboundary effects could occur. This should apply to all agricultural projects, plans and policies
- As a matter of good practice, appropriately assessed mitigation should be applied to any unforeseen or uncertain effects of the Strategy.

6.5 Cumulative Effects Assessment

Cumulative Effects within the Strategy

Biodiversity and Flora and Fauna

A large majority of actions within Mission 1 are anticipated to have beneficial effects on the biodiversity and flora and fauna objective, particularly Goal 2 which is to restore and enhance biodiversity. These actions would help to reduce the existing impacts of agriculture, forestry and fisheries on habitats and species.

Strong beneficial effects are predicted due to Action 6 of Goal 2 which is to ensure the necessary actions for agriculture are included in the new All-Ireland Pollinator Plan and that they are disseminated to farmers. The baseline review identified that 30 species of bees are assessed as under the threat of extinction and that pollinators are vital to maintaining biodiversity as well as animal-pollinated crops. Action 2 on putting in place

more targeted agri-environmental schemes to protect habitats and species is also likely to have strong beneficial effects. Action 8 under Goal 2 is to carry out restoration management of grazed peat land habitats. Many designated peatlands are in ongoing decline and therefore restoration management is essential and would have strong beneficial effects on this objective.

Strong beneficial effects are also predicted due to Action 7 under Goal 5, which is to meet the outstanding 10% target for Marine Protected Areas and to increase this to 30% as soon as practicable. The increase of nationally protected areas would be a positive enhancement.

Indirect beneficial effects are anticipated from Mission 1 from the proposed reduction to ammonia and methane emissions, which is assessed to have moderate beneficial effects in the detailed assessment. The baseline review identified that many Irish habitats are sensitive to nitrogen deposition and therefore reduction in ammonia emissions is vital to maintaining biodiversity. Methane is a particularly potent GHG leading to increased levels of climate change. Climate change is recognised as being an increasing pressure on a wide range of terrestrial and marine habitats and species, including Natura 2000 habitats and associated species.

Some of the actions in Missions 2, 3 and 4 would also have beneficial effects on biodiversity and flora and fauna, as many of these relate to actions within Mission 1.

The detailed assessment identified that there is potential for minor adverse effects from Goal 1 in Mission 2. The proposed expansion of tillage and horticulture sub-sectors and the potential for unintended growth through the promotion of the grass-fed dairy, beef and sheep as premium products as well as development of the pig and poultry sub-sectors could result in an increase in emissions to air and water which would have indirect effects on habitats and biodiversity in general. The potential for adverse effects depends on whether these actions are likely to result in an increase in livestock and an increase or intensification of land under arable and horticulture and to what extent they are offset by the beneficial effects of Goals 1-3 of Mission 1.

The AA concluded that there would be no significant adverse effects upon the integrity of any Natura 2000 sites provided that recommended mitigation measures are implemented.

Overall the combined effects of the Strategy on the biodiversity, flora and fauna objective would be beneficial.

Population

The majority of the actions under Missions 2, 3 and 4 are anticipated to have beneficial effects on the population objective as the goals within these missions are likely to help support the economic viability of primary producers and other agri-food businesses. There has been a trend of migration away from rural areas, leading to social isolation in some rural area (Department of Rural and Community Development, 2018). Actions to improve economic viability would help to mitigate the risk of rural depopulation.

A number of actions within Mission 4 are anticipated to result in strong beneficial effects due to actions to roll-out the National Broadband plan and strengthening the knowledge exchange environment. Beneficial effects are also predicted from Actions 1, 3 and 4 of Goal 6 as these promote education and training programmes from apprenticeship level

to post-doctoral level. Alongside upskilling of the current workforce with a focus on environmental sustainability, social sustainability, new technology, management, food safety, animal welfare and health. These actions will strengthen the long term resilience and future development of the sector. Some of the actions within Mission 1 are also likely to have beneficial effects due to the inclusion of funding as well as the potential for improved long-term economic viability through increased sustainability and resilience, these are mainly found under Goal 1, 4 and 7. Goal 1 is anticipated to have moderate / minor beneficial effects due diversification of farms through renewable energy developments.

The detailed assessment identified that there would be moderate beneficial effects from Goal 1 of Mission 2 due to actions to improve the competitiveness and productivity of primary producers. Minor beneficial effects are anticipated from Goal 3 of Mission 3 due to the use of digital innovation and AI, while moderate beneficial effects are anticipated from Goal 4 due to the focus on maintaining and developing markets. The detailed assessment identified that there would be moderate beneficial effects on the population objective from Goal 4 of Mission 4.

Overall the combined beneficial effects of the Strategy on the population objective are assessed to be significant.

Human Health

A number of actions from Goals 1, 3, 4 and 7 within Mission 1 are likely to have indirect beneficial or potentially beneficial effects on the human health objective due to improvements in air quality and water quality, reduced chemical nitrogen use and an overall healthier environment. Increased woodland cover anticipated from Goal 4 may also result in improved air quality as well as potentially support recreational activities and access to the countryside.

Beneficial effects are anticipated from Goal 4 in Mission 2 which includes actions on health and safety, mental health as well as promoting inclusion and combating isolation. Strong beneficial effects are anticipated for Action 16 of Goal 4 because this seeks to introduce mandatory health and safety training for farm workers. Some of the other actions in Mission 2 may also result in beneficial effects on human health due to the inclusion of anti-microbial stewardship and the potential for IPM to result in reduced pesticide use.

The majority of actions from Goals 1, 2 and 3 in Mission 3 are anticipated to have beneficial effects on human health due to a focus on safe and nutritious food. The detailed assessment predicted major / moderate beneficial effects on human health due to actions to develop value-added functional foods and ingredient solutions with proven health benefits and R&D and innovation to progress energy-dense and nutrient poor processed foods. This has the potential to reduce to the quantifies of disadvantages components such as sugar, salt, nitrates and / or trans fat which is likely to lead to improved diet and long-term health and well-being. Moderate beneficial effects are also predicted from Action 9 of Goal 4 which includes for working towards maintaining and enhancing a rules-based and equitable multilateral trading system. Ensuring that imports meet the same food safety and authenticity and traceability standards as food produced in the EU is likely to have benefits in terms of food hygiene, reducing potential for contaminants or potentially unsafe additives.

A number of actions in Mission 4 are also likely to have beneficial effects on the human health objective.

Overall the combined beneficial effects of the Strategy on the human health objective are assessed to be significant.

Soil and Land Use

Goals 1, 2, 3, 4 and 7 in Mission 1 and their associated actions are likely to generally have beneficial effects on soil and land use. Action 5 of Goal 3 is predicted to result in strong beneficial effects on soil and land use through the launch of a National Soil Sampling and Analysis Programme and development of a National Soils Strategy which would promote sustainable soil management practices to reduce soil compaction, soil erosion and increase organic matter. Strong beneficial effects are anticipated from the action (Action 8 of Goal 2) to carry out restoration management of grazed peat land habitats as it would reduce degradation and improve peat soils. The detailed assessment also identified that there could be moderate / minor beneficial effects from Goal 1.

Although some of the actions within Mission 2 would have beneficial effects, mainly through actions to improve soil and pasture management, there is also potential for adverse effects under Goal 1. The detailed assessment identified the potential for minor adverse effects from Goal 1, if the proposed expansion of tillage and horticulture results in intensification which could have negative impacts on soil resource through soil erosion and soil carbon loss. However this would be offset by actions to continue improvements in soil management under Goal 1 and as well as from the actions in Mission 1.

Indirect beneficial effects or potentially beneficial effects are also predicted from some of the actions in Mission 4 where research, training or collaborative working is proposed which would aid a better understanding of environmental challenges and how to address them. The majority of the actions in Mission 3 are likely to be neutral on soils and land use.

Overall the combined effects from the Strategy on soils and land use objective would be beneficial.

Water

Beneficial effects on the water objective are predicted for a number of the actions within the goals of Mission 1, apart from Goal 6, for which neutral effects are assessed. Goal 3 seeks to achieve good water quality and healthy aquatic ecosystems as set out in the Water Framework Directive. Strong beneficial effects are predicted from Action 1, 2, and 3 to reduce chemical nitrogen use and pesticide use and mitigate the loss of phosphorus and sediment, as well as to implement immediately the recommendations of Ag-Climatise (Goal 1, Action 1). These actions would help to protect drinking water and other water resources from pollution, including surface and groundwater. Action 4 is also likely to result in strong beneficial effects because it seeks to support farmers to target the right measures in the right place through programmes such as ASSAP, targeted regulations and targeted support under the next CAP and RDP.

Goal 5 seeks to enhance the environmental sustainability of the seafood sector and actions that revolve around creating sustainable fishing and aquaculture and increasing Marine Protected Areas would help to protect and maintain physical habitat, hydrological

processes and regimes and biological diversity as well as supporting the Marine Strategy Framework Directive achievement of good environmental status. The detailed assessment also identified that there would be moderate / minor beneficial effects from Goal 1 due to the implementation of Ag-climatise.

Some of the actions under Mission 2 are likely to have beneficial effects on water due to actions to improve soil management including reducing chemical nitrogen use, producing detailed plans to manage the environmental footprint of dairy and beef subsectors including minimising emissions and making positive contribution to water quality, and developing IPM techniques which may result in reduced pesticide use. The detailed assessment identified that there is potential for minor adverse effects from Goal 1. Goal 1 could result in an unintended increase in output through the promotion of the value of Irish produce. An expansion of the tillage and horticultural sub-sectors could also lead to increased use of fertiliser and pesticides, resulting in risk of water pollution, both surface and groundwater. Increased intensification of land use can also lead to increased abstraction and effects on the physical characteristics of watercourses and associated biological diversity if not carefully controlled. These effects should be offset to some extent by the actions mentioned above which would reduce chemical nitrogen and pesticide use, as well as the actions in Mission 1 (in particular, implementing Ag-climatise, implementing the right measures in the right place and mitigate the losses of phosphorous and sediment to water).

Indirect beneficial effects or uncertain beneficial effects are also predicted from some of the actions in Mission 4 where research, training or collaborative working is proposed which would aid a better understanding of environmental challenges and how to address them. The detailed assessment identified that there would be minor beneficial effects from Goal 4 due to the action to develop the digital transition in fisheries with the aim to provide the science-based deliverables to sustain underpin a sustainable blue bioeconomy. The majority of the actions in Mission 3 are likely to be neutral on the water objective.

Overall the combined effects from the Strategy on the water objective would be beneficial.

Air Quality

There are a number of beneficial effects predicted from Mission 1, in particular from Goals 1 and 4. The detailed assessment identified that there would be major beneficial effects from Goal 1. Goal 1 seeks to improve air quality by actions to reduce ammonia emissions, particularly through implementation of Ag-Climatise Roadmap, which is based on the Teagasc Marginal Abatement Cost Curves (MACC). This would help to achieve the NECD objectives for ammonia as agriculture is the main contributor to ammonia emissions. Goal 4 relates to the actions to develop multi-functional forests and an increase in trees is likely have beneficial effects on air quality by removing pollutants from the air.

The detailed assessment identified that there is potential for minor adverse effects on the air quality objective from Goal 1 in Mission 2. Unintended increase in output through the promotion of the value of Irish produce and expansion of the tillage and horticultural sub-sectors could result in increased use of fertiliser. Both chemical nitrogen fertiliser and organic manure can result in an increase in ammonia emissions. Most of the actions in Goal 1 also include for reducing chemical nitrogen use and the proposed detailed plans

for the dairy and beef subsectors also include for reducing total emissions. Although there are less actions in Goal 1 related to organic manure use, these are covered by the actions from Mission 1 relating to the implementation of the Ag-Climatise Roadmap.

The detailed assessment identified that there could be minor adverse effects from Action 3 of Goal 4 in Mission 3 as there could be an increase in transport emissions if the volume of exports to international markets increase rather than just an increase in export value from the same volume. These would be offset to some extent by actions to explore import substitution opportunities and promote small food and local producers.

Indirect beneficial effects or uncertain beneficial effects are also predicted from some of the actions in Mission 4 where research, training or collaborative working is proposed which would aid a better understanding of environmental challenges and how to address them.

Overall the combined effects from the Strategy on the air quality objective would be beneficial.

Climate Change

There are a number of beneficial effects predicted from Mission 1 on the climate change objective. The detailed assessment identified that there would be major beneficial effects from Goal 1. Goal 1 seeks to develop a climate neutral food system by 2050 with the impact of methane reduced to zero. Similar to air quality above, the implementation of the Ag-Climatise Roadmap, based on the MACC would help to reduce methane emissions. Actions also include for scaling up renewable energy sources and food and beverage industry will continue to drive down GHG emissions. Overall the actions would help the agri-food sector in reducing its GHG footprint and improving resilience.

The detailed assessment identified that there is potential for minor adverse effects on the climate change objective from Goal 1 in Mission 2. Unintended increase in output through the promotion of the value of Irish produce and expansion of the tillage and horticultural sub-sectors could result in increased in GHG emissions, although it is expected that this would be in most cases a substitution for decreased emissions resulting from reduced livestock output. Most of the actions in Goal 1 also include for reducing chemical nitrogen use and the proposed detailed plans for the dairy and beef subsectors also includes for minimising total emissions. The adverse effects would also be offset from the actions in Mission 1 which aim to achieve a carbon neutral food system.

The detailed assessment identified that there could be minor adverse effects from Action 3 of Goal 4 in Mission 3 as there could be an increase in food miles if the volume of exports to international markets increase. These would be offset to some extent by actions to promote domestic markets and small food and local producers.

Indirect beneficial effects or uncertain beneficial effects are also predicted from some of the actions in Mission 4 where research, training or collaborative working is proposed which would aid a better understanding of environmental challenges and how to address them.

Overall the combined effects from the Strategy on the climate change would be beneficial.

Material Assets

Beneficial effects are predicted on the material assets objective from a number of actions in Mission 1, primarily from Goal 6, which focuses on the circular bioeconomy and improvement and better use of waste materials. This would support the re-use of materials. The detailed assessment also identified the potential for moderate beneficial effects from Goal 1, where the action to scale up renewable energy sources is likely to help conserve finite fossil fuels and make use of bioenergy, helping to reduce waste generation.

Some beneficial effects are also predicted from the actions in Mission 2, which encourages the use of manure as fertiliser as well as promoting IPM. The detailed assessment therefore identified that there would be minor beneficial effects from Goal 1 of Mission 2.

While many of the actions in Mission 3 and 4 are likely to have neutral effects on material assets, there are some actions related to research and innovation to minimise waste production. The detailed assessment also identified that there could be moderate beneficial effects due to the action in Goal 4 to increase investment in bio-economy accelerator programme which could have beneficial effects if it encourages early stage bioeconomy companies involved in anaerobic digestion or other technologies to reuse waste material for energy.

Overall the combined effects from the Strategy on the material assets would be beneficial.

Cultural Heritage

Beneficial effects on cultural heritage are predicted from Actions 7 and 9 of Mission 1, Goal 2. Action 7 seeks to protect cultural heritage and traditional landscapes through better enforcement. Action 9 requires building on measures introduced to protect and foster greater biodiversity in forests including setbacks from archaeological features. This is likely to help preserve designated and non-designated archaeological sites from damage from afforestation and/or forestry activities. Action 2 under Goal 4 of Mission 2 seeks to protect and enhance cultural heritage, acknowledging it as an important source of wellbeing and social sustainability of rural areas. There is also some potential for beneficial effects if cultural heritage is included as part of education and training courses under Actions 13 and 15 of Mission 2, Goal 4, and Action 3 of Mission 4, Goal 6, although the likelihood of cultural heritage being included is uncertain.

There could be adverse effects from the action to scale up renewable energy sources in Goal 1 of Mission 1. Renewable energy developments could have impacts on the setting of designated and non-designated archaeological sites and historic landscapes as well as impact on buried archaeological assets. However, renewable energy developments would be subject to planning controls which would require significant adverse effects to be mitigated. The detailed assessment therefore concluded that there could be minor adverse effects on cultural heritage.

A potential increase in polytunnels and glasshouses under Action 32 of Goal 1 in Mission 2 could potentially affect the setting of historic landscapes and cultural heritage features, which was assessed as minor in the detailed assessment.

The remaining goals and associated actions under the four missions are not anticipated to have effects on cultural heritage.

Although there may be some beneficial and adverse effects, overall the effects of the Strategy on cultural heritage is likely to be negligible.

Landscape

Some indirect beneficial effects are predicted on the landscape objective from the actions in Mission 1, mainly from Goal 2, which is to restore and enhance biodiversity and Goal 4 which is to develop multi-functional forests. However, the detailed assessment identified that there could be minor adverse effects on the landscape objective from the action to scale up renewable energy schemes which could result in a change in local landscape character.

The detailed assessment predicted potential minor adverse effects on landscape due to the potential for intensification and / or conversion of pasture land to arable and increase in polytunnel and glasshouses for horticulture under Goal 1 of Mission 2.

Indirect beneficial effects, although mainly uncertain, are predicted from some of the actions in Mission 4 where research, training or collaborative working is proposed which would aid a better understanding of environmental challenges and how to address them. The detailed assessment also identified that there could be minor beneficial effects from Goal 4 as the use of digital media to map, sequence, observe and predict the oceans would help provide the science-based information required to understand and improve seascapes. The effects of Mission 3 were generally considered to be neutral.

Overall the combined effects from the Strategy on the landscape would be beneficial.

Natural Capital

Although the assessment has identified potential for some adverse effects, overall more beneficial effects are predicted on the environmental objectives such as biodiversity, flora and fauna, soils and land use, water and air quality. These actions would help to maintain and enhance the provision of services, with indirect beneficial effects on landscape, human health and population. In addition, Action 3 of Goal 2 in Mission 1 includes for a national land use review and support of a land use strategy with the aim of linking to work begun by Natural Capital Ireland on devising Natural Capital accounts for Ireland.

Overall the combined effects from the Strategy on the national capital would be beneficial.

Cumulative Effects with Other Plans and Programmes

The Scoping exercise found that, in general the Strategy is likely to be well-aligned with other Plans and Programmes assessed. The review of alignment with environmental protection objectives of these other Plans and Programmes also shows a high level of alignment and positive environmental synergy. A key reason for this is that the Goal 1 of Mission 1 commits the sector to implement the Ag-Climate roadmap. This therefore means that the Strategy is inherently aligned to the targets within Ag-Climate which itself is aligned to EU and national level environmental policy on climate, air quality, water quality and biodiversity. Proposals for increases in afforestation and renewable energy (which have the potential for adverse environmental effects in certain contexts) are not likely to be cumulative because they are aligned to and not additional to the Ag-Climate objectives.

However, the situation regarding the marine environment and the socio-economic viability of the Irish fishing sector is still somewhat uncertain. The Plans and Programmes were assessed prior to the signing of the UK-EU Trade and Cooperation Agreement at which point there was the very real possibility of a 'no-deal' scenario which would have prohibited EU boats from fishing in UK waters. This would have severely impacted the socio-economic viability of Irish fishing (34% of Irish fish landed are caught in UK waters) and might have led to displacement of other EU boats into Irish waters (and vice-versa) with unsustainable in-combination effects on fish stocks. The agreement as signed means a 25% reduction in EU fishing quotas. The impact of Brexit on coastal fishing communities is particularly significant. The cost of the final quota transfer by Ireland will amount to 15% loss of the overall value by 2026, with 60% of this reduction applying in 2021 alone. This will have an adverse impact on Ireland's fishing industry as well as some displacement effects.

These issues are acknowledged in the Strategy (Action 4 of Mission 1 Goal 5). A Task Force has been established under Action 34 of Mission 2 Goal 1 to recommend appropriate measures to address the socio-economic impact on the fishing industry and coastal communities. Otherwise, displacement effects from other EU countries should be addressed through the Total Allowable Catches and Landing Obligations requirements of the Common Fisheries Policy. The UK-EU agreement sets out dispute mechanism and strategic dialogue to ensure net quotas are respected but these are yet to be tested.

6.6 Transboundary Effects

Ireland shares a border with Northern Ireland and habitats on both side of the border are connected. Several rivers run through both Ireland and Northern Ireland. There are lakes which straddle the border and two sea loughs, both with Shellfish Protected Areas, are located between the border. There are also a number of designated sites and cultural heritage sites in Northern Ireland located on or near the border. There is potential for transboundary effects through:

- Emissions to air;
- Pollution or physical changes to rivers which flow into Northern Ireland or into the border lakes or sea loughs;
- Impacts on marine areas;
- Impacts on mobile or migratory species; and
- Physical changes to land near the border.

The assessment has identified that there is some potential for adverse effects due to the expansion of the tillage and horticultural sub-sectors and potential unintended growth from the promotion of Irish produce. As the specific locations where there may be a growth or intensification in farms is not known, transboundary effects on Northern Ireland are not certain at this stage, however any effects would be minor and not significant. Any expansion of the tillage and horticulture sectors is likely to focus on substitution of livestock based outputs, acting to reduce or offset any adverse effects.

However, on the whole, beneficial effects are predicted due to the measures contained in Mission 1 which cover reducing ammonia and methane emissions, achieving good water quality and health aquatic systems, restoring and enhancing biodiversity, enhancing the environmental sustainability of the seafood sector and strengthening

Origin Green. These could have beneficial transboundary effects on Northern Ireland. These would help to offset the potential for adverse effects from unintended growth and expansion of the tillage and horticulture sub-sectors.

Beneficial transboundary effects are also likely due to the actions in Goal 7 of Mission 4, which seeks to promote SFS as part of Ireland's overseas development assistance. This could have beneficial effects on agricultural economy and health and wellbeing of African and other developing countries.

Throughout the scoping consultation process the NIEA was consulted to gain further knowledge of possible transboundary effects of the Strategy. Additional information and datasets have been used to inform the Environmental Report including the potential for transboundary effects on the marine environment and cultural heritage assets.

7 MITIGATION AND RECOMMENDATIONS

7.1 The Requirement for Mitigation

Annex 1 of the SEA Directive requires the Environmental Report to set out *‘the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme’*. This chapter therefore sets out mitigation measures appropriate to minimising the adverse effects identified in Chapter 6.

Though not a legal requirement, this chapter also includes enhancement measures to maximise the beneficial effects offered by the Strategy.

The SEA team has engaged extensively through the Strategy drafting process with both the 2030 Committee and DAFM as the programme body. A number of environmental stakeholders have also participated fully in this process both as members of the 2030 Committee, the associated Environmental Analysis Steering Group and through consultation on the Scoping stage of the SEA. A range of inputs have been made to the strategy drafting team through these processes and considered in the Strategy, particularly in the development of the measures in Mission 1; A climate smart, environmentally sustainable agri-food sector.

Whilst these measures have been important in shaping the environmental measures, and therefore the performance of the Strategy they are not mitigation in the statutory sense and hence are not the main focus of this section.

Many of the mitigation measures proposed relate to implementing means of further monitoring the identified adverse or uncertain effects and hence this section should be read in conjunction with the following section on monitoring.

7.2 Minimising Adverse Effects

Table 7.1 lists the identified adverse or uncertain effects by Mission and Goal as referred to in the assessment section, together with proposed measures to mitigate these effects. The primary focus, as the requirements of the SEA process, are on mitigating significant or potentially significant adverse effects. Although the statutory SEA process only requires that significant effects are mitigated, as a matter of good practice mitigation is suggested for all identified uncertain or adverse effects.

Table 7.1: Proposed Mitigation Measures

		Proposed Mitigation
Mission 1: A Climate Smart, Environmentally Sustainable Agri- Food Sector		
Mission 1, Goal 1, Action 7	Scale up renewable energy (RE) sources, especially anaerobic digestion and biorefining, and solar PV and energy efficiency.	<p>Whilst positive in many aspects, increased renewables deployment if not adequately regulated may present adverse effects on species, habitats, landscape and cultural heritage. Local planning controls already provide a means of regulating such effects and hence the Environmental Working sub-Group should monitor the rate of new applications over the Strategy period and will engage with decision making bodies to establish the extent to which decisions reflect and take account of such issues. If the need is identified, additional planning guidance will be issued to authorities.</p> <p>Assessment should be carried out for developments near protected or sensitive sites. Appropriate inter-planting, wildlife corridors and boundaries to be considered where appropriate.</p> <p>Landscape is important to Irish tourism and cultural heritage. Careful consideration of scale and siting of developments should be taken. Shrubs and trees can be used to screen certain developments. Wildlife corridors should be maintained and enhanced.</p>
Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being		
Mission 2, Goal 1, Action 8 (Dairy)	Continue the move to higher-quality, value-added dairy produce, positioning Irish dairy as a premium grass-fed product.	<p>Environmental performance of the product should form a component of 'premium' status, linked to adoption of Origin Green measures with a particular emphasis on reducing carbon and GHG emissions and effective management and reduction of emissions to water and air.</p> <p>Focus of Strategy supported R&D activities should include initiatives relating to improving the sustainability and environmental performance of the livestock sector.</p>
Mission 2, Goal 1, Action 12 (Beef and Sheep)	Promote Irish Grass-Fed beef and lamb as premium products, nationally and internationally.	<p>As above.</p> <p>Further research should be supported to establish sustainable levels of grazing in designated sites and other environmentally sensitive areas.</p>

		Proposed Mitigation
Mission 2, Goal 1, Action 20 (Pig and Poultry)	Develop the sector both in terms of domestic market share for Irish-produced product and new export markets.	<p>There is currently uncertainty around what this measure entails in practice. Monitoring should therefore be carried out to establish if new pig and poultry units established over the Strategy period exceed what would be expected due to baseline trends.</p> <p>New units developed over the plan period should be encouraged to adopt high standards of emissions reduction and control particularly around emissions to air and water and GHG emissions. This could include promotion of BAT requirements for all sites, not just those requiring an IED licence (required for intensive pig and poultry units above a certain size).</p> <p>The effectiveness of local planning controls in ensuring appropriate siting of intensive units should be researched and if need be additional guidance will be issued to decision-making bodies.</p>
Mission 2, Goal 1, Action 27 (Tillage)	Stakeholders will work to develop the sector to take advantage of potential growth.	<p>Proposals to grow output from the tillage and cereals sectors should focus on increased productivity from existing arable land. Conversion of extensive or biodiversity rich permanent pasture should be discouraged unless it can be demonstrated to be not damaging to biodiversity, soil, water and other environmental parameters.</p> <p>Implementation of this action should seek to synchronise with the objectives of the National Soil Strategy as referred under Mission 1.</p>
Mission 2, Goal 1, Action 32 (Horticulture)	Develop a strategy.	At this stage there is uncertainty over what this action will entail beyond development of a Horticulture Industry Strategy. It is suggested that this strategy should seek to carry forward the environment and sustainability focus of the Agri-Food Strategy, particularly around the key themes of emission reduction, restoration of biodiversity and carbon neutrality.
Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad		
Mission 3, Goal 3, Action 3	The food and beverage industry should take advantage of digital innovations and artificial intelligence (AI).	<p>Measures to support AI adoption in the sector should not disadvantage SME producers, processors and marine businesses.</p> <p>AI uptake measures should be accompanied by re-training and education initiatives to support the transition and re-skilling of jobs lost or threatened by AI and automation.</p>
Mission 3, Goal 3, Action 4	Industry will use R&D and innovation to progress reformulation of energy-dense and	Measures to support R&D should not disadvantage SME producers, processors and marine businesses.

		Proposed Mitigation
	nutrient poor processed foods to reduce the level of disadvantageous components.	
Mission 3, Goal 4, Action 3	Increase efforts to gain and maintain market access for key products to key international markets.	Measures that result in increased export food miles should be accompanied by measures to promote domestic carbon offsetting particularly in on-farm environments such as woodland recreation, plugging emissions from carbon rich soils and protection and restoration of peat soils.
Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent		
Mission 4, Goal 4, Action 5	Labour-saving automation research and development, including a focus on advanced manufacturing, should be pursued.	Measures to support AI adoption in the sector should not disadvantage SME producers, processors and marine businesses. AI uptake measures should be accompanied by re-training and education initiatives to support the transition and re-skilling of jobs lost or threatened by AI and automation.

7.3 Cross Sector Mitigation and Enhancements

The following mitigation and enhancement measures are not specific to any individual action but are identified as additional measures for consideration by the strategy.

- Development of sector-wide strategy to tackling the issues relating to surface water pollution from agricultural sources.
- Promotion of cross-boundary exchange of best practice with Northern Ireland based stakeholder.
- Consultation should take place with relevant authorities within Northern Ireland where uncertain or adverse effects have been identified and may become transboundary.
- Development of measures to focus ecological and soils restoration objectives under Mission 1 on the areas of greatest degradation and need.
- Further examination of the findings of the MacKinnon report into woodland planting and development of a sector wide response (expected to form part of Project Woodland as referred to in Mission 1, Goal 4).
- Further research into opportunities presented by afforestation such as the use of certain tree species to minimise air pollution.
- Enhanced Forest Service oversight when/where forestry related operations are planned in high status catchments.

8 MONITORING

8.1 Monitoring Proposals

Article 10 of the SEA Directive requires the High Level Implementation Committee (HLIC), as the Managing Authority, to monitor significant environmental effects of implementing the Strategy. This must be done in such a way as to also identify unforeseen adverse effects and to take appropriate remedial action. Monitoring should commence as soon as the programme is adopted, with annual reporting carried out for the life of the programme. It may be necessary to revise the monitoring programme periodically so that it takes account of new methods and increased understanding of the baseline environment.

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. In accordance with the Ireland SEA Regulations, monitoring should also focus on aspects of the Strategy where environmental impacts are predicted to be significant (or uncertain).

An Environmental Working Sub-Group should be established to oversee monitoring, review and reporting of environmental issues and report back to the HLIC. Indicators that the sub-group could consider to monitor the environmental impact and achievement of the Strategy are listed below in Table 8.1 by Mission and Goal. The measures proposed are focused on the identified adverse and uncertain effects but consideration is also given to monitoring of the anticipated beneficial effects of Strategy.

The monitoring proposals have been further developed through consideration of the responses from the consultation process (see Section 9) and further information provided in the SEA Statement.

Table 8.1: Monitoring Proposals

Strategy Mission and Goals	Adverse or Uncertain Effects Identified by the SEA	Proposed Monitoring Measures and Indicators
Mission 1: A Climate Smart, Environmentally Sustainable Agri- Food Sector		
Goal 1: Develop a climate neutral agri-food system	Scale up renewable energy (RE) sources, especially anaerobic digestion and biorefining, and solar PV and energy efficiency; possible unintended adverse impact on landscape, cultural heritage and biodiversity.	<p>Monitor the rate of new applications over the strategy period and the numbers of these that are within or adjacent to designated landscapes and ecological sites or within 1 km of a designed heritage site.</p> <p>Annual estimate and reporting on carbon and GHG emission savings due to increased deployment of farm-scale renewables.</p> <p>Publication of climate change risk assessments relating to the food production and safety processes referred under Action 10.</p> <p>Successful adoption of at least one carbon farming scheme under Action 4.</p> <p>Annual measurement and reporting of methane and other GHG emissions for the agricultural sector (all Actions).</p>
Goal 2: Restore and enhance biodiversity	None	<p>Publication of national land use review study (as Action 3).</p> <p>Annual measurement and reporting of pesticide use, with focus on 50% reduction target by 2030 (Action 4).</p> <p>Review annually the number of agricultural EIAs completed (Action 7).</p> <p>Annual reporting on agri-environment scheme take-up through the new RDP (Action 2).</p> <p>Annual measurement and reporting of native broadleaf species composition in new woodland planting (Action 9).</p>
Goal 3: Protect high status sites and contribute to achieving good water quality and healthy aquatic ecosystems, as set out in the Water Framework Directive	None	<p>Monitor nitrogen fertiliser usage rates over the Strategy period to establish if rates fall (as Action 1), 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).</p> <p>Increase the overall amount of water bodies monitored.</p> <p>Monitor nitrogen and phosphorus levels of waterbodies, especially those already known to be effected by agriculture.</p>

Strategy Mission and Goals	Adverse or Uncertain Effects Identified by the SEA	Proposed Monitoring Measures and Indicators
		<p>Annual reporting around on farm chemical fertiliser use in relation to herd numbers.</p> <p>Annual reporting on agri-environment scheme take-up through the new RDP with specific reporting of uptake by more intensive farms where uptake has previously been lowest (Action 4).</p> <p>Publication of National Soils Strategy (as Action 5).</p>
Goal 4: Develop diverse, multi-functional forests	None	<p>Annual reporting on afforestation rates.</p> <p>Of above measure, reporting of the proportion of new planting that was for native broadleaved species.</p> <p>Measurement of number of individual farmers and land-owners participating in afforestation schemes and monitoring of how this changes over the Strategy period.</p>
Goal 5: Enhance the environmental sustainability of the seafood sector.	None	<p>Measure the % of Marine Protected Areas and report on progress towards the target of 30% by 2030.</p> <p>Monitor uptake of Clean Oceans Initiative by the seafood sector and subject to availability of suitable data seek to measure the quantity of plastics based litter removed each year.</p>
Goal 6: Embed the agri-food sector in the circular, regenerative bioeconomy	None	<p>Publish preliminary data on food loss at primary production stage (Action 7) and develop indicators to monitor the trend in this aspect over the Strategy implementation period.</p> <p>Annual measurement and reporting on plastics packaging substitution rates for agri-food products (Action 8).</p>
Goal 7: Strengthen and invest in Origin Green and other sustainability supports to reflect higher level of ambition in agri-food sector	None	<p>Monitor additional uptake of Origin Green over Strategy period (Action 4).</p>
Mission 2: Viable and Resilient Primary Producers with Enhanced Well-Being		
Goal 1: Improve competitiveness and productivity of primary producers	Potential for increased productivity objective to result in increased output for livestock based sectors and associated potential for impact on air, water, biodiversity and climate.	<p>Monitor new applications and developments of pig and poultry units to establish if the Strategy is stimulating an increase in the sectors.</p>

Strategy Mission and Goals	Adverse or Uncertain Effects Identified by the SEA	Proposed Monitoring Measures and Indicators
	Potential for increased output in the tillage and horticultural sector to lead to increased fertiliser and pesticide use and permanent pasture conversion.	Monitor and report on uptake of Origin Green and new agri-environment schemes in each of the sectors targeted by this goal (i.e., dairy, beef, sheep, pigs, poultry, horticulture and tillage). Annual reporting of permanent pasture conversion rates. Publication of National Soil Strategy during the Strategy period and that this reflects the broader sustainability objectives of the Strategy. Publication of Horticulture Strategy during the Strategy period and that this reflects the broader sustainability objectives of the Strategy.
Goal 2: Improve the creation and equitable distribution of value	None	Monitor and report on % of registered primary producers and fishery producers participating in quality assurance schemes (Action 4). Publication of proposal for grass-fed certification scheme during the Strategy period (Action 9).
Goal 3: Increase primary producer diversification and resilience	None	Annual monitoring and reporting on progress towards 6% of utilisable agricultural area to be under organic production (Action 2).
Goal 4: Improve the social sustainability of primary producers	None	No environmental monitoring measures identified for this goal.
Mission 3: Food that is Safe, Nutritious and Appealing, Trusted and Valued at Home and Abroad		
Goal 1: Prioritise coherent food and health policies to deliver improved health outcomes	None	No environmental monitoring measures identified for this goal.
Goal 2: Enhance customer and consumer trust in our food system, providing evidence of a safe, ethical food supply	None	No environmental monitoring measures identified for this goal.
Goal 3: Increase value add in food & drink through insight, product development and differentiation	The SEA identifies the potential that a focus on R&D and focus on digital innovation and AI may disadvantage smaller producers who have less capacity to invest. The SEA also highlights the opportunity for improved environmental performance should the research related measures under this Goal	Annual monitoring and reporting on R&D activities funded and what proportion of these incorporate measures focused on the environment and / or SMEs. Monitoring and reporting on re-training initiatives for low skilled workers most at risk of being displaced by technological innovation and AI.

Strategy Mission and Goals	Adverse or Uncertain Effects Identified by the SEA	Proposed Monitoring Measures and Indicators
	incorporate a greater environmental and sustainability focus.	Reporting of the proportion of these training initiatives that have an environment or sustainability focus.
Goal 4: Develop market opportunities at home and abroad	The SEA identifies the potential for increased focus on exports to lead to an increase in food-miles and carbon footprint for some produce (Action 3)	Annual monitoring and reporting on export value of Irish sourced agri-food products. Uptake of farm-scale carbon offsetting schemes during the Strategy period, for example through woodland creation or peat restoration.
Mission 4: An Innovative and Competitive Agri-Food Sector, Driven by Technology and Talent		
Goal 1: Move to a challenge focused innovation system	None	Monitor and report on climate based innovation measures supported by the Strategy (Action 2).
Goal 2: A strategic funding approach to research, innovation and development	None, although it is identified as an enhancement opportunity that investment in research, innovation and development provides an opportunity for support for sustainability, climate and environment focused measures.	Monitor the proportion of funded research activities which have an environment or sustainability component and report on the outcomes of these projects.
Goal 3: Develop a dynamic knowledge exchange environment	None but it is identified that knowledge exchange activities supported under Strategy provide an opportunity for further integration of environment and sustainability related messaging into producers, processors and other agri-food businesses.	Monitor the proportion of knowledge exchange programmes supported through the Strategy that have an environmental or sustainability related component.
Goal 4: Enhance the use of technology and data	None	No environmental monitoring measures identified for this goal.
Goal 5: Improve competitiveness and resilience	None	No environmental monitoring measures identified for this goal.
Goal 6: Attract and nurture diverse and inclusive talent	None	No environmental monitoring measures identified for this goal.
Goal 7: Policy coherence and synergies in Sustainable Food Systems (SFSs) between Ireland's	The SEA identifies uncertain effects on the population objective in terms of how Ireland's	The identified uncertain or adverse effects only relate to the population SEA objective. No environmental monitoring measures are identified.

Strategy Mission and Goals	Adverse or Uncertain Effects Identified by the SEA	Proposed Monitoring Measures and Indicators
domestic policy and its development cooperation and foreign policy	participation in international initiatives will influence domestic policy and consumption.	

8.2 Additional Proposals

In addition to the above measures which are specifically focused on the Strategy implementation, it is also recommended that the Strategy monitoring proposals also seek to measure and report the following key environmental parameters which the baseline identifies are specific issues relating to agriculture and fisheries in Ireland and which the Strategy is able to influence in combination with other plans and programmes.

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. However, including these aspects in the monitoring framework will ensure that the HLIC is informed of current status of these identified key issues and able to evaluate the extent to which the Strategy is contributing to observed improvements or deteriorations. In many cases the data reporting against the proposed indicators already exists through other initiatives in which cases the Strategy should not seek to duplicate existing efforts but should coordinate and engage with other parties to report annually.

Table 8.2: Additional Proposals

SEA Objective	Aspects Requiring Monitoring	Suggested Indicators
Biodiversity, Flora and Fauna	Conservation status of protected sites	% of sites in favourable or improving condition
	Ammonia deposition at protected sites	Average site ammonia deposition rates in comparison with critical level
	Habitats Directive species	% of species in favourable conservation status over Strategy duration
	Coastal habitats status	% of marine habitats in favourable status
Population and Health	Incidences of stress, physical and mental illness in farming and fishing communities	% of workings in farming and fisheries scored 'below average' in self-administered mental well-being checks
	Notifiable accidents in farming and fisheries workers	Death and injury rates per 100,000 workers
	Farm retention rates amongst younger generations	Average age of workers identifying as working in agriculture or fisheries from census data.
Soil and Land-Use	Change in wetland and agricultural cover	% landcover based on CORINE data
	Peatland soils status	Proportion of peatland soils subject to protection or management under agri-environment schemes.
Water	Surface water body ecological status	% in good or high status.

SEA Objective	Aspects Requiring Monitoring	Suggested Indicators
	Agricultural pollution levels in rivers	% of locations exceeding the nitrate and phosphorous environmental quality standard. % of waterbodies failing WFD targets.
Air	Atmospheric concentrations of key agricultural pollutants	Annual average background concentrations of NOx, NMVOC, particulates and ammonia at locations recording these parameters.
Climate	Agricultural contribution to GHG	Annual recorded sectoral emission statistics

9 THE CONSULTATION PROCESS

9.1 Consultation on the Environmental Report

The consultation version of this Environmental Report (including the NTS) was presented for public and statutory consultation alongside the Natura Impact Statement and the draft Agri-Food Strategy 2030 Consultation Document over the period 19 April to mid-day 15 June.

The statutory Environmental Authority for Ireland is the EPA, along with DAFM, DECC, DTCAGSM and the DHLGH. The Environmental Report and the Natura Impact Statement was also issued to the NIEA and the Loughs Agency in Northern Ireland. The purpose of this stage is to give the public and the Consultation Bodies an opportunity to express their opinions on the findings of the Environmental Report, and to use it as a reference point in commenting on the Strategy.

Consultation comments were received from the EPA, DECC (Geological Survey Ireland and Inland Fisheries Ireland), DAFM (Seafood Policy and Management Division), DHLGH NPWS and NIEA. Consultation comments were also received from 91 members of the public and other stakeholders. These responses are reproduced in Appendix F and Appendix G, along with a comment on how they have been accounted for in the preparation of this Final Environmental Report and the Strategy. In line with the SEA Directive and Regulations, the 2030 Stakeholder Committee must take account of the Environmental Report and of any opinions which are expressed upon it as it prepares the Strategy for adoption. Therefore, comments received from the Consultation Bodies, members of the public and other stakeholders during the consultation process must be considered and, if appropriate, addressed in the final Strategy document.

9.2 Modifications to the Strategy following the Public Consultation

The public consultation process as described above has informed the development of the final strategy, with the following main changes incorporated post-consultation:

- Incorporation of mitigation measures arising through the SEA and AA processes.
- Expanded definition of what is intended by a 'Food Systems Approach'.
- Increased reference to the CAP Strategic Plan and further development of the expected relationship between this and the Strategy.
- Correction to the quantitative objectives relating to ammonia emission reductions by 2030.
- Addition of annual targets and quantified objectives for afforestation levels by 2035.
- Enhanced discussion of the environmental context within which Strategy will operate, referencing the EPA 2020 State of the Environment report, and acknowledge that the Strategy will need to contribute towards addressing some of the noted environmental challenges.

- Acknowledgement of the challenges likely to be presented to food systems by climate change and increased frequency of extreme weather events.
- Enhanced reference to the linkages between human health and sustainable diets.
- Addition of reference to the role of agri-food businesses and staff as key workers during the Covid-19 pandemic and the increased emphasis this has placed on working conditions within the sector.
- Increased discussion of the role of forestry and forestry products in providing carbon sequestration services.
- Acknowledgement of the challenges presented in some areas in achieving Ag Climatise targets in the context of increasing dairy cow numbers.
- Incorporation of additional sub-action under Mission 1, Goal 1, Action 4, relating to establishing a working group to examine the development of a Carbon Market to enable farmers monetise the benefit from carbon sequestered on their farms.
- Insertion of an additional Action to Mission 1, Goal 2: *“Input into the next National Biodiversity Action Plan, particularly on how the agriculture, forestry and fisheries sectors can contribute to the conservation and restoration of threatened habitats, species and protected areas.”*
- Insertion of additional text to Mission 1, Goal 2, Action 3: *“Significant resources are being invested in this using remote sensing”*.
- Amended wording to Mission 1, Goal 3 to refer to ‘protection and restoration’ of surface waters.
- Incorporation of additional commitments under Mission 1, Goal 3, Action 2, relating to reduction of nutrient pollution from agriculture.
- Incorporation of additional measures under Mission 1, Goal 3, Action 3 relating to the reduction of pollution from agricultural pesticides.
- Increased emphasis on native woodlands and re-wilding under Mission 1, Goal 4, Action 3.
- Revision to Action 5 of Mission 1, Goal 4 to include ensuring that forests play a positive role in the environment.
- Insertion of two additional Actions to Mission 1, Goal 4:

“Work with the European Commission initiative to introduce a regulation that aims to minimize the risk that products linked to deforestation and forest degradation are placed on the EU market and to develop a definition of deforestation-free supply chains. In addition, use the EU Timber Regulation to prevent the introduction of illegally harvested timber on the EU market.”

“Promote the positive role of woodlands in relation to human health and mental wellbeing. Also acknowledging the benefits of trees for animal welfare for shelter and shade.”
- Mission 1, Goal 6, Action 6: addition of reference to food waste hierarchy.
- Mission 1, Goal 6, Action 8: addition of reference to reducing packaging in addition to making packaging more sustainable.

- Revision of text in Mission 1, Goal 7, Action 3 to specify what improvements need to be made to the evidence base from Origin Green.
- Added reference under Mission 2 to contribution of small-scale market garden horticulture to delivery of Strategy objectives, plus the role of the horticulture sector in general in providing carbon sequestration services.
- Mission 2: expanded reference to the role of organic farming in contributing to sector climate neutrality by 2050, plus added reference to the EU Organic Action Plan.
- Increased reference to horticulture as a diversification option under Mission 2.
- Addition of a new Action under Mission 2, Goal 3: *“Using Just Transition Principles, build socio-economic resilience through diversification, including by building on Action 13 of Ag-Climate, which aims to review and analyse the full suite of land diversification options that offer economic opportunities while also reducing and/or sequestering emissions (note, this will need to link closely to the actions contained in Mission 4 Goal 3 ‘Develop a Dynamic Knowledge Exchange Environment’)”*.
- Insertion of text to Mission 2, Goal 4 to highlight the importance of generational renewal.
- Increased linkage with *‘Our Rural Futures’ recommendations around local markets and local food initiatives*.
- Mission 3: addition of linkage between high quality and produce and economic viability of primary producers.
- Insertion of text to Mission 3, Goal 2, Action 4 to include continuing the work of the Anti-Parasitic Resistance Group.
- Inclusion of community agri-food initiatives in Action 3 of Mission 3, Goal 4.
- Mission 4, Goal 6: added reference to desire to prevent precarious working conditions in the sector.
- Addition of two additional Actions under Mission 4, Goal 7:
 - “Implement improvements to the management and operation of the Africa Agri-Food Programme so that future calls have enhancements to eligibility criteria and funding conditions, additionality, and due diligence.”*
 - “DAFM will align policy development and implementation with Ireland’s commitments under the SDGs taking account of specified goal targets and indicators.”*
- Increased prominence of environmental measures and dialogue and engagement in the monitoring and implementation framework, and commitment to applying any learning from Food Wise 2025.
- Addition of provisions relating to an annual ‘stock-take’ during the implementation and monitoring period to allow for updating of recommendations and actions to reflect the position as it develops.
- Enhanced definition of the role of the Environmental Working Sub-Group and its remit and responsibilities during the implementation and monitoring period.

- Increased reference of the need for monitoring to compliment that from other related programmes and strategies, most notably the new CAP and related EU programmes.

9.3 Implications of Strategy changes for SEA

The Strategy updates detailed above that result from the SEA and associated consultation processes are anticipated to strengthen the environmental performance of the Strategy, with those measures relating to the adoption of the SEA mitigation measures, incorporation of additional environment focused goals and enhanced clarity over monitoring anticipated to be the most significant measures. No potential adverse effects were identified as a result of the changes summarised, and hence the assessments provided through the SEA are considered to remain valid.

10 NEXT STEPS

Once the Agri-Food Strategy 2030 has been adopted, an SEA Statement will be produced to provide information on how the Environmental Report and consultees' opinions were taken into account in deciding the final form of the Strategy.

11 REFERENCES

Aherne et al. (2020) Critical Loads and Soil-Vegetation Modelling. EPA Research Report No. 323.

BIM (2019) The Business of Seafood 2019.

Biodiversity Working Group (2020). Interim Review of the Implementation of the National Biodiversity Action Plan 2017 -2021.

Bord Bia (2020) Irish Horticulture Industry. Retrieved from <https://www.bordbia.ie/industry/irish-sector-profiles/irish-horticulture-industry/> in December 2020.

Bord Bia (2020) Irish agriculture, food and drink sector overview. Retrieved from <https://www.bordbia.ie/industry/irish-sector-profiles/irish-agriculture-food-drink-sector/> in June 2020.

CSO (2021) Monthly Unemployment. CSO statistical release, 03 March 2021. Retrieved from <https://www.cso.ie/en/releasesandpublications/er/mue/monthlyunemploymentfebruary2021/> in March 2021.

CSO (2020) Population and Migration Estimates. CSO statistical release, 20 August 2020. Retrieved from <https://www.cso.ie/en/releasesandpublications/er/pme/populationandmigrationestimatesapril2020/> in March 2021.

CSO (2017) 2016 Census Results: E2001 Population at Each Census 1841 to 2016 by County, Sex and Census Year (1841-2016).

CSO (2017) Ireland's Population change and historical perspective.

CSO (2015) Irish Health Survey 2015. Retrieved from <https://www.cso.ie/en/releasesandpublications/ep/p-ihs/irishhealthsurvey2015/>

CSO (2015) Irish Health Survey 2015. Retrieved from: www.cso.ie/en/releasesandpublications/ep/p-ihs/irishhealthsurvey2015/ct/ in June 2020.

Cummins, S. et al. (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.

DAFM (2020) Ag Climatise: A Roadmap towards Climate Neutrality.

DAFM (2020) Annual Review and Outlook for Agriculture, Food and the Marine 2020.

DAFM (2020) 2030 Agri-Food Strategy Background Paper: Environmental Sustainability of the Agri-Food Sector.

DAFM (2020) Agri-Food Strategy to 2030 Environmental Sustainability The Challenge for Fisheries. Presentation to the Agri-Food Strategy Committee on 18th June 2020.

DAFM (2019) Steps to Success 2019. Retrieved from: <https://wayback.archive-it.org/org-1444/20201125204645/https://www.agriculture.gov.ie/media/migration/foodindustrydevelopmenttrademarkets/agri->

[foodandtheeconomy/foodwise2025/stepstosuccess2019/StepstoSuccess2019MLU310719.pdf](https://www.foodandtheeconomy.com/foodwise2025/stepstosuccess2019/StepstoSuccess2019MLU310719.pdf)

DAFM (2019) Code of Good Agricultural Practice for reducing Ammonia Emissions from Agriculture.

DAFM (2019) Nitrates Derogation Review 2019.

DAFM (2018) Agriculture, Forest and Seafood - Climate Change Sectoral Adaption Plan.

DAFM (2020) Brexit and the Irish Fishing Industry Factsheet.

DAFM (2015) National Strategic Plan for Sustainable Aquaculture Development.

DAFM (2014) CORINE Landcover 2012 Final Report.

DAFM (2014). Environmental Analysis of Food Harvest 2020. Prepared by Philip Farrelly and Co. for DAFM. Retrieved from: www.agriculture.gov.ie/media/migration/ruralenvironment/climatechange/FoodHarvest2020EnvironmentalAnalysisFINAL050214.pdf in June 2020.

DAFM (2014) Rural Development Programme 2014-20.

Department of Arts, Heritage and the Gaeltacht (2015) National Landscape Strategy for Ireland 2015 – 2025.

Department of Arts, Heritage and the Gaeltacht (2011) A National Landscape Strategy for Ireland: Strategy Issues Paper For Consultation.

Department of Rural and Community Development (2018) Realising Our Rural Potential - Action Plan for Rural Development.

DCHG (2020) World Heritage Ireland. Retrieved from www.worldheritageireland.ie/home/ in June 2020.

DCHG (2019) Ireland's Biodiversity Sectoral Climate Change Adaptation Plan: Public Consultation.

DCHG (2019) Status of EU Protected Habitats and Species in Ireland.

DCHG (2019) Heritage Ireland 2030. Analysis of Submissions Received through Public Consultation.

DCHG (2019) Built & Archaeological Heritage Climate Change Sectoral Adaptation Plan.

DCHG (2017) The National Biodiversity Action Plan 2017 -2021.

DCCAE (2018) Sustainable Development Goals National Implementation Plan 2018 – 2020.

DCCAE (2014) Draft Bioenergy Plan 2014.

DCENR (2014) Offshore Renewable Energy Development Plan.

DCENR (2014) Draft Bioenergy Plan.

Department for the Economy (DfE) (2017) Industrial Strategy for Northern Ireland.

Department of the Environment and Local Government, EPA and GSI (1999) Groundwater Protection Schemes.

DHPLG (2020) Marine Strategy Framework Directive 2008/56/EC: Article 17 update to Ireland's Marine Strategy Part 1: Assessment (Article 8), Determination of Good Environmental Status (Article 9) and Environmental Targets (Article 10).

Doyle, B., Cummins, T., Augustenborg, C. and Aherne, J. (2017) Ambient Atmospheric Ammonia in Ireland, 2013-2014. EPA Research Programme 2014-2020.

Dublin Regional Authority and Mid-East Regional Authority (2010) Regional Planning Guidelines for the Greater Dublin Area 2010-2022.

EC (2020) Nature: Commission decides to refer IRELAND to the Court of Justice of the EU over failure to take appropriate conservation measures. Press Release. Retrieved from https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1235 in July 2020.

EC (2020) Farm to Fork Strategy.

EC (2020) European Commission – Environment – Soil.

EC (2020) Key EU Policies for Ireland – Agriculture.

EC (2018) EU agricultural outlook for markets and income, 2018-2030. European Commission, DG Agriculture and Rural Development, Brussels.

EC (2014) Eurobarometer: Attitudes towards the environment.

EC (2013) Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment.

EC (2006). Proposal for a Directive of the European Parliament and of the Council establishing a Framework for the Protection of Soil and amending Directive 2004/35/EC. Commission of the European Communities. Brussels, 22.9.2006, COM(2006) 232 final 2006/0086 (COD).

EC (2003) Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment.

EC (2001) Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

Ecorys and Fitzpatrick Associates (2011) Economic Value of Ireland's Historic Environment.

EEA (2015) Land use - State and impacts (Ireland).

EPA (2020) Ireland's Environment – An Integrated Assessment 2020.

EPA (2020) Letter to DAFM. Re: SEA Scoping for Agri-Food Strategy to 2030. 17 September 2020. Ref. SCP200802.1.

EPA (2020) Towards A Resource Efficient Ireland, A National Strategy to 2020.

EPA (2020) Progress to EU Targets 2020. Accessed: <http://www.epa.ie/nationalwastestatistics/targets/>

EPA (2020) Agriculture: Impact on Climate change, Air Pollution and Water. Presentation to the Agri-Food Strategy Committee on 18th June 2020.

EPA (2020) Ireland's Final Greenhouse Gas Emissions 1990-2018.

EPA (2020) SEA Pack.

EPA (2020) Ireland's Environment – Land and Soil.

EPA (2020) Second Review of Strategic Environmental Assessment Effectiveness in Ireland.

EPA (2020) Ireland Informative Inventory Report 2020: Air Pollutant Emissions in Ireland 1990–2018 Reported to the Secretariat of the UNECE Convention on Long-Range Transboundary Air Pollution and to the European Union.

EPA (2020) Ireland's Air Pollutant Emissions 1990 -2030.

EPA (2020) Main Water Legislation.

EPA (2019) Water Quality in Ireland 2013-2018.

EPA (2019) Integrating Climatic Factors into the Strategic Environmental Assessment Process in Ireland.

EPA (2019) Air Quality in Ireland 2018.

EPA (2019) Ireland's Transboundary Gas Emissions. 1990-2030.

EPA (2019) Farm Hazardous Waste Collections 2013–2017.

EPA (2018) CORINE 2018. Retrieved from: <https://gis.epa.ie/GetData/Download> in June 2020.

EPA (2017) Irish Freshwater Resources and Assessment of Ecosystem Services Provision EPA Research Report (2014-W-LS-5)

EPA (2016) Ireland's Environment – An Assessment 2016.

EPA (2016) Composting and Anaerobic Digestion in Ireland.

EPA (2015) Developing and Assessing Alternatives in Strategic Environmental Assessment.

EPA (2012) Review of Effectiveness of SEA in Ireland Key Findings & Recommendations.

EU (2009) DECISION No 406/2009/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009.

European Court of Auditors (2020) Biodiversity on farmland: CAP contribution has not halted the decline.

Expert Working Group on Sustainable Agricultural Land Management for N. Ireland (2017) Making Ammonia Visible an Annex to "Delivering Our Future, Valuing Our Soils: A Sustainable Agricultural Land Management Strategy for Northern Ireland".

FAO (2017) Nutrition and food systems. HLPE Report 12.

Feeley, H.B. et al (2017) Irish Freshwater Resources and Assessment of Ecosystem Services Provision. EPA Research Report 207.

Fine Gael, Fianna Fail, Green Party (2020) Programme for Government – Our Shared Future.

Government of Ireland (2004) Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment Guidelines for Regional Authorities and Planning Authorities.

Health and Safety Authority (No Date) Who's Responsible? Health and Safety at Marts.

Heritage Council (2006) Landscape Character Assessment (LCA) in Ireland: Baseline Audit and Evaluation.

Inland Fisheries Ireland (2020) Letter to DECC. Re: 'Agri-food Strategy to 2030' - Strategic Environmental Assessment Scoping Consultation. 24 September 2020.

Inland Fisheries Ireland (2015) National Strategy for Angling.

Lewis, L. et al. (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.

Lewis, L. et al. (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.

Marine Institute (2020) Regional Seascape Character Assessment for Ireland 2020: Draft Consultation Report.

NIEA (2020) NIEA Water Information Request Viewer. Retrieved from <https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/index.html?id=7e234827aa7a405d990359aa92c7c287> in December 2020.

NIEA (2014) Northern Ireland Regional Seascape Character Assessment.

NIEA and DAERA (2020) Northern Ireland Environmental Statistics Report.

NIEA (2013) From Evidence to Opportunity: A Second Assessment of the State of Northern Ireland's Environment.

Nitrates Expert Group (2019) Nitrates Derogation Review 2019.

NPWS (2020) Protected Sites in Ireland. Retrieved from www.npws.ie/protected-sites in June 2020.

Norton, D. et al, (2018) Valuing Ireland's Coastal, Marine and Estuarine Ecosystem Services (2014-NC-MS-1) EPA Research Report.

Office of Public Works, (2019) Flood Risk Management Climate Change Sectoral Adaptation Plan. Dublin: Government of Ireland.

Office of the Deputy Prime Minister, Scottish Executive, Welsh Assembly Government and Department of Environment Northern Ireland (2005) A Practical Guide to the Strategic Environmental Assessment Directive.

OpenDataNI (2020) Areas of Outstanding Natural Beauty. Retrieved from: <https://www.opendatani.gov.uk/dataset/areas-of-outstanding-natural-beauty/resource/00347e51-c3ca-46c0-a638-0b15b085060a> in December 2020.

OPW Catchments Unit (2019) Ireland's Catchment Flood Risk Assessment and Management (CFRAM) Programme.

Rowe E, Sawicka K, Mitchell Z, Smith R, Dore T, Banin LF & Levy P (2019) Trends Report 2019: Trends in critical load and critical level exceedances in the UK. Report to Defra under Contract AQ0843, CEH Project NEC05708. <https://uk-air.defra.gov.uk/library/>.

Stout, J.C., et al (2019) Assessing Market and Non-market Values of Pollination Services in Ireland (Pollival) (2016-NC-MS-6) EPA Research Report.

Teagasc (2020) Teagasc Soil Fertility Report 2020.

Teagasc (2020) Soil pH & Liming. Retrieved from <https://www.teagasc.ie/crops/soil--soil-fertility/soil-ph--liming/> in November 2020.

Teagasc, (2017) ASSAP - farming for water quality. Retrieved from <https://www.teagasc.ie/environment/water-quality/farming-for-water-qualityassap/assap-in-detail/> in July 2020

WHO (2020) Country Profile of Ireland. Retrieved from www.who.int/countries/irl/en/ in June 2020.

APPENDIX A: SCOPING CONSULTATION RESPONSES

Table A1: Statutory Consultee Comments

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
Organisation: Department of Housing, Planning and Local Government - Marine Environment, Water Division				
Date received: 25 August 2020				
1	1	2.7 & Appendix A	<p>Section 2.7 on page 12 refers to the plans and programmes and conservation objectives that have been considered and these are listed in Appendix A. The list on page 12 of Appendix A does not include Ireland's Marine Strategy under Article 5 of the Marine Strategy Framework Directive (2008/56/EC) as updated during the second cycle of the directive. Part 1 of this update was published in June 2020 and contains a new assessment of the status of the marine environment, a revised determination of good environmental status and revised environmental targets and, where relevant, threshold values for marine and transitional waters (Ireland's EEZ and the soil and subsoil of the extended continental shelf). Some of these environmental targets relate specifically to commercial fish and shellfish and to contaminants in seafood, while others relate to biodiversity, marine litter and seafloor integrity. See the links here:</p> <p>https://www.housing.gov.ie/sites/default/files/publications/files/2020_june_article_17_update_to_irelands_marine_strategy_part_1_articles_8_9_10_final.pdf</p> <p>https://www.housing.gov.ie/sites/default/files/publications/files/appendices_-_assessment_sheets_.pdf</p>	Addressed in Section 4.2 and Appendix B of the Environmental Report.
2	1	Appendix A	<p>Similarly, the June 2020 Programme for Government makes a commitment to achieving specific levels of marine protection (page 83 of the programme and reproduced below). This consultation process has now commenced and this commitment should be included with the other points listed on pages 17 and 18 of Appendix A. This commitment is also cross cutting through the commitments under the national biodiversity action plan, UN SDG14, the OSPAR strategy for the northeast Atlantic and the UN Convention on biological diversity.</p>	Addressed in Appendix B of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>Marine Protection Areas</p> <p>We support the principles and ambition of the EU Biodiversity Strategy and will develop comprehensive legislation for the identification, designation and management of Marine Protected Areas (MPAs) in Irish territorial waters. We will realise our outstanding target of 10% under the Marine Strategy Framework Directive as soon as is practical and aim for 30% of marine protected areas by 2030. This will be done on the basis of scientific expertise and in close consultation with all stakeholders, in particular the fishing industry as well as environmental and community representatives. This consultation process will begin in the first 100 days of Government. We will examine the establishment of an offshore maritime area as Ireland's seventh national park. This would form part of the expanded MPA's and allow for a learning experience in the maritime environment.</p>	
3	1	Table 4.1	<p>Finally, Section 4.1, Table 4.1 (SEA Objective) row 5 (Water – protect, enhance and manage water resources and flood risk) point c should be amended to reflect the requirements of the Marine Strategy Framework Directive – and mirror point b for freshwater.</p> <p>Proposed new wording for point c: Support the Marine Strategy Framework Directive achievement of good environmental status by protecting and improving Protect and improve the quality of marine waters, particularly those involved in seafood growing and fishing.</p>	Point 5c updated in Table 3.2 of the Environmental Report
Organisation: Department of Environment, Climate and Communications - Geological Survey Ireland				
Date received: 1 September 2020				
4	1		With reference to your email dated 28 August 2020, regarding the AGRI-FOOD STRATEGY 2030, Strategic Environmental Assessment Scoping Report, please note that Geological Survey Ireland has no further comment or observations to make on this matter since our previous response (copied below).	Noted.
5	1		<p>Groundwater</p> <p>Groundwater is important as a source of drinking water, and it supports river flows, lake levels and ecosystems. It contains natural substances dissolved from the soils and rocks that it flows through, and can also be contaminated by human actions on the land surface. As a clean, but vulnerable, resource, groundwater needs to be understood, managed and protected.</p>	Included within Section 3.6 of the Scoping Report

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
6	1		Through our Groundwater Programme, Geological Survey Ireland provides advice and maps to members of the public, consultancies and public bodies about groundwater quality, quantity and distribution. Geological Survey Ireland monitors groundwater nationwide by characterising aquifers, investigating karst landscapes and landforms and by helping to protect public and group scheme water supplies. We recommend the use of GSI's National Aquifer, Vulnerability and Recharge maps. Further information is available on our Map viewer.	Data viewer used in the review of baseline information in Section 4.3 of the Environmental Report.
7	1		With regard to Flood Risk Management, there is a need to identify areas for integrated mitigation and management. Our GWFlood project is a groundwater flood monitoring and mapping programme aimed at addressing the knowledge gaps surrounding groundwater flooding in Ireland. The project is providing the data and analysis tools required by local and national authorities to make scientifically-informed decisions regarding groundwater flooding. We recommend using the GSI's GWFlood tools found under our programme activities to this end.	Noted
8	2		With regards to Climate Change, there is a need to improve the monitoring capacity of groundwater levels in Ireland so that the potential impacts of climate change can be monitored and assessed. In this context the GSI has established the GWClimate project in January 2020. GWClimate will 1) establish a long-term strategic groundwater level monitoring network and 2) develop modelling and analytical approaches for evaluating the impacts of Climate Change to Irish groundwater systems. Further information can be found on the Groundwater flooding page of the Groundwater Programme.	Included within Section 3.6 of the Scoping Report
Organisation: Department of Environment, Climate and Communications - Inland Fisheries Ireland				
Date received: 25 September 2020				
9	2		Aquatic Biological Diversity Pollan for example are a rare endangered and protected species listed and protected under Annex 5 of the Habitats Directive. The Irish Pollan (<i>Coregonus Pollan</i>) is unique to the Island of Ireland with its current known distribution being limited to five lakes, Lough Allen, Lough Ree and Lough Derg and Lough Neagh and Lower Lough Erne. The Arctic char (<i>Salvelinus alpinus</i> – as mentioned in Section 3.2 of the SEA Scoping Report) is another example of a highly sensitive fish species endemic to Irish upland waters and which is protected under national legislation. Furthermore the European Eel is now endangered and additional protection measures have	Addressed in Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			also been introduced in that regard - it is incumbent on Ireland to ensure that the eel and its range and habitat are properly protected. Please also note that there are many surface waters, which are not formally designated but which support stocks of Annex II species designated under the Habitats Directive.	
10	2		The National Fisheries Resource – sustainable exploitation and the economy It is important to highlight that (freshwater and marine recreational angling) directly supports over 11,000 existing Irish jobs, many of which are located in the most peripheral and rural parts of the Irish countryside and along our coastline (IFI, 2015). Within the sector participation rates totalled 446,000 people who were involved in recreational angling in Ireland in 2015, with over 170,000 of these travelling from Northern Ireland and overseas. Over a quarter of a million Irish adults (273,000) held a fishing rod in that period, with sea angling along with salmon and brown trout angling, observed as the most popular categories where domestic anglers are concerned. The quality of the Irish angling product, the friendliness and hospitality of the Irish people and the country's outstanding scenery were cited amongst the principal attractions of Ireland as an international destination for recreational angling.	Addressed in Section 4.3 of the Environmental Report.
11	3	3.6	The EU Water Framework Directive WFD monitoring has identified agricultural diffuse and point source pollution as the most significant risk to surface waters and a significant pressure in 780 (53%) of the 1,460 water bodies identified as At Risk of not meeting their environmental objective. Water quality indicators include the presence of high phosphate, nitrate or ammonium concentrations related to agricultural practices; key risks include the presence of surface-flow pathways for nutrients, chemicals (fertilizers, pesticides, herbicides etc.) and sediment to surface waters, land drainage with associated siltation, instream habitat impacted by riparian zone management and agricultural abstraction pressures.	Addressed in Section 4.3 of the Environmental Report.
12	3-4		Agri-food Strategy to 2030 As outlined in the Scoping Report, the 'Agri-Food Strategy to 2030' proposed plan and associated SEA, AA and EIA reports should fully consider and make appropriate reference to and provision for aquatic biological diversity, the fisheries resource and stakeholder interest. These documents should recognise that protection of the aquatic environment / habitat not	Addressed in Table 3.2 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			only requires the protection of water quality but also necessitates the protection and maintenance of physical habitat, hydrological processes and regimes and broader biological diversity. In this context and bearing in mind State obligations to ensure sustainable development, it is advocated that such plans prioritise maintenance and restoration of ecological status in all surface waters with a particular emphasis on high quality Q5 sites and systems which have recently been flagged again by the EPA (SWMI Report 2019) as showing a worrying decline.	
13	4		Climate Disruption / Biodiversity Crisis With ambition to deliver in the context of the Strategic Framework for Public Sector Energy Efficiency, the National Adaptation Plan and most recently Ireland's Climate Action Plan (and upcoming Climate Bill), IFI has identified a number of actions and outputs under the strategic heading of 'IFI's Climate Action Framework' which will be further developed along with measures to address the Sustainable Development Goals in IFI's 'Climate Action Mandate', 2020. Plan and decision makers must take account of climate disruption / the biodiversity crisis and associated possible mitigation measures when considering any strategic plans / frameworks or proposals. As mentioned in the previous section, the measures required to achieve 'a climate smart, environmentally sustainable agri-food sector' should be fully explored and resolved, in particular in the context of increasing 'absolute greenhouse gas (GHG) emissions' and how the agri-food strategy can contribute to reversal of this trend working toward carbon neutrality (at latest by 2050).	Noted.
14	4		Specific Ecological Pressures The potential negative impacts of any strategic plan framework on aquatic habitats should also be addressed with reference to water abstraction and other riparian zone activities, (e.g. increased abstraction and intensification of land use can have a significant negative impacts on the physical characteristics of watercourses, associated biological diversity and their riparian zones if not carefully planned and controlled). These pressures are further exacerbated by climate disruption impacts reflected in increased likelihood of drought conditions as seen in 2018 and 2020. Climate disruption is also resulting in an increasing number of 'exotic invasive species' in Irish waters. DAFM is encouraged to continue developing comprehensive biosecurity measures to safeguard the aquatic environment from harmful anthropogenic	Taken into consideration in Section 6 of the Environmental Report

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			introductions and consideration of these issues should be taken in the next stage of the current SEA process.	
15	4	5.2	Reasonable Alternatives IFI advocates future development of the 'Agri-food Strategy to 2030' framework as outlined in 'Alternative 2' (Section 5.2) - to fully take account of and reflect results of the public consultation which showed strong support for an increased emphasis on environmental sustainability, particularly climate change resilience and protection of biodiversity and water quality.	Reasonable alternatives reviewed and reworded. See Section 5 of the Environmental Report
16	4-5	Table 2.2 and 4.1	Scope of the SEA IFI endorses the selection of sustainability topics as outlined in Section 5.4. When developing the 'Agri-food Strategy to 2030' framework further, IFI advocates consideration of the following areas in terms of potential environmental impacts with relevance to Ireland's fisheries resource (and in particular in the context of sustainability topics as outlined in the SEA Scoping document Table 2.2 – Ecology and Nature Conservation, Soil and Land Use, Water, Natural Capital and Climate and SEA Objectives in Table 4.1): <ul style="list-style-type: none"> • Biological diversity • Climate Disruption • Water quality • Surface water hydrology • Fish spawning and nursery areas • Passage of migratory fish / biological connectivity • Areas of natural heritage importance including geological heritage sites • Ecosystem structure and functioning • Sport and commercial fishing and angling • Amenity and recreational areas • Sediment transport • Alien invasive species 	Taken into consideration in Table 3.2 of the Environmental Report
17	5		The long-term environmental sustainability of any activity that may impact on the status of fish species, their habitats, fisheries and/or the recreational angling or related commercial activities that may utilise these resources is of primary concern to IFI. IFI is among the public	Noted

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			bodies that have a role in making policies, plans or programmes relevant to surface waters in Ireland. Critical and sensitive habitats and species (both designated and otherwise) must be protected. A number of fish species and associated habitats are protected under European Directives in Ireland. From an IFI perspective, all fish species and associated habitats within its remit require protection and management for conservation and development. IFI advocates application of the precautionary principle when considering the fisheries resource in the current process. In addition, all available consideration and support should be afforded to the national 'Blue Dots Catchment Programme' which focuses on the protection or restoration of high ecological status water bodies – a vital component in fisheries ecology, freshwater ecosystems and in Ireland's aquatic biological diversity more generally.	
Organisation: Department of Environment, Climate and Communications - Waste Policy & Resource Efficiency Division				
Date received: 25 September 2020				
18	1	3.9	There is a reference in it to previous Resource Efficiency Action Plan and a mention of the public consultation for our current plan. (Chapter 3.9). This should be updated with reference to the newly publish Waste Action Plan for a Circular Economy.	Addressed in Section 4.2 and Appendix B of the Environmental Report.
19	1	2.7 & Appendix A	There is a reference to 2 Departmental Resource Efficiency Action Plans (DAFM and DEBI) in Chapter 2.7. These Action Plans are non-statutory, administrative actions only. Suggest deleting references to both DAFM and DBEI Resource Efficiency Action Plans.	Departmental Resource Efficiency Action Plans removed.
20	1	3.9	The document is dated in its detail on Ireland's achievement of EU targets, in respect of ELVs, WEEE and batteries. (Chapter 3.9). The link to the EPA national waste statistics website. http://www.epa.ie/nationalwastestatistics/targets/ shows Ireland has achieved those targets.	Updated in Section 4.3 of the Environmental Report
Organisation: Environmental Protection Agency				
Date received: 25 September 2020				
21	1		Overall the EPA welcomes the information and level of detail in the Scoping Report and the associated Appendices. The suggestions in the following sections and Appendices are seeking to inform and assist the ongoing SEA process and the preparation of the Strategy and SEA Environmental Report. We also recommend integrating the findings of the environmental assessments (SEA and Appropriate Assessment (AA)) into the Strategy.	Noted

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
22	1-2		Additionally, the EPA's submission to the Agri-Food Stakeholder Committee 'Strategic priorities to 2030 for A Climate Smart, Environmentally Sustainable Agri-Food Sector' is included as Appendix 3, to consider in preparing the Strategy and the SEA). The submission sets out the EPA's overall recommendations to establish an environmentally sustainable agri-food sector, while also recognising the need to achieve a balance between economic, social and environmental considerations. This should be treated as part of this scoping submission and the issues raised should be addressed as part of the Strategy making and SEA processes.	Submission has been reviewed as part of both Strategy and SEA
23	2		<p>Some of the key aspects raised in the submission to the Agri-Food Stakeholder Committee include:</p> <ul style="list-style-type: none"> • Promote the use of protected urea over less environmentally sustainable fertilisers and opt for nutrient management activities that have multiple environmental benefits, supported by relevant training and awareness through ASSAP1. • Support the need to focus on breaking the link between animal numbers, fertiliser use and deteriorating water quality. This will also see reductions in greenhouse gases and ammonia emissions. • In catchments with known nitrogen pollution, measures need to be implemented immediately to halt and reverse the continuing nitrogen emissions to water. • The Strategy should look to prevent the continued loss of diffuse phosphorus in catchments under pressure, and support measures to protect and use riparian zones/ buffer strips as barriers to protect our water bodies from pollutants. This approach will also serve to protect biodiversity, reduce sediment and pathogens such as VTEC, in our water courses. • The promotion of more widespread high-nature value farming initiatives, particularly in high status waterbody areas. • Provide more clarity in terms of how the Strategy will address the EU Farm to Fork Strategy and its targets to transform the EU's food system. • Support and promote agri-environmental schemes based more on payments for results and ecosystem service activities rather than the current 'payments for costs incurred or income foregone' approach. 	Reviewed as part of 2030 Strategy Committee Stakeholder contribution
24	2-3		<p>Sustainable Development Goals & Key Actions for Ireland</p> <p>Our most recent State of Environment Report Ireland's Environment- An Assessment 2016</p>	The Environmental Report has taken into

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			(EPA, 2016) identified seven Key Actions for Ireland which align with many of the UN Sustainable Development Goals (SDGs). The relevant aspects of these Key Actions and the SDGs should be taken into account in preparing the Strategy and SEA and should be reflected in the principles/objectives/measures in the Strategy. This will ensure that the Strategy aligns with and contributes to achieving Ireland's sustainable development and environmental protection ambitions.	consideration the key messages from the 2020 report, which also account for the 2016 key actions.
25	3	3	Ireland's Environment 2020 is due to be published in Quarter 4 2020. Once published, the relevant chapters and aspects of the 2020 report should be taken into account in finalising the Strategy. In particular reference should be made to the chapter on agriculture and key relevant related chapters (for example: water, climate, biodiversity, industry).	Addressed in Section 4.3 of the Environmental Report.
26	3	2.7 & Appendix A	The relevant objectives and policy commitments of the National Planning Framework should also be aligned with and considered, as appropriate.	Addressed in Appendix B of the Environmental Report.
27	3		Transition to a low carbon climate resilient economy and society You should ensure that the Strategy aligns with relevant national commitments on climate change mitigation and adaptation, as well as any relevant sectoral, regional and local adaptation plans.	Addressed in Appendix B of the Environmental Report.
28	3		Scope of the SEA The Strategy should clearly set out the scope, remit and implementation related elements of the Strategy. These will have implications for the SEA, in terms of guiding the level of assessment applicable at the appropriate level for the Strategy. Where it is envisaged that measures proposed in the Strategy will be implemented via other plans, which themselves have been or will be subject to SEA, this should be explained in the Environmental Report and taken into account in the assessment. Where specific measures will be implemented directly through the Strategy, further detail should be provided in the Environmental Report and Strategy on the relevant environmental assessments to be carried out at the project stage and relevant mitigation measures to be applied, as appropriate. There may be merit in exploring this issue further with the relevant Environmental Authorities during the Strategy preparation and SEA processes.	Agreed, reflected in SEA ER

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
29	3-4		Integration of SEA and Strategy All recommendations from the SEA and AA processes, including mitigation measures, should be integrated in the Strategy. We recommend that the Strategy includes summary tables outlining the key findings of the SEA and linking the significant environmental effects identified to the proposed mitigation measures, monitoring programme and Strategy policies/measures.	Strategy will reference the SEA process
30			Monitoring, Review & Reporting We recommend including a commitment in the Strategy to prepare a parallel Implementation Strategy/Programme to facilitate monitoring the implementation of the Strategy, including its ongoing environmental performance. Establishing an Environmental Working Sub Group would also provide for oversight of the Strategy related environmental monitoring and reporting. The arrangements in place for the implementation stages of plans such as Food Wise 2025, Grid 25, Offshore Renewable Energy Development Plan and the Wild Atlantic Way Operational Programme would be worth considering, as appropriate. The Strategy should include a commitment to implement the environmental monitoring programme and associated reporting. We suggest including a separate section on 'Environmental Monitoring, Review and Reporting' in the Strategy, setting out the provisions for monitoring and reporting, including parameters, frequency and responsibilities, on the implementation of the Strategy and periodic reviews. Where possible, aligning the periodic reviews of the Strategy to coincide with existing cyclical reporting would be useful to consider e.g. Ireland's Environment, National Planning Framework, Water Framework Directive, Marine Strategy Framework Directive etc. In between review periods for the Strategy, we recommend that Strategy related implementation reports are published annually, or biennially, as appropriate. We recommend aligning these with the environmental monitoring required under the SEA legislation. This will enable the environmental performance of the Strategy to be evaluated, allow significant negative trends to be determined and acted upon. It will also provide for increased transparency during implementation.	Implementation chapter will be included in the Strategy

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
31	4		The SEA-related monitoring should address positive, negative and cumulative effects where they are likely to occur and should include provision for on-going review to facilitate an early response to any significant environmental issues including trends that may arise. The Environmental Report should specify the monitoring frequency and responsibilities and include provisions for reporting on the monitoring. To avoid duplication in data collection, the same indicators should, where possible, be used for the Strategy-related environmental monitoring and SEA-related monitoring.	To be taken into account in preparation of monitoring framework.
32	4	2.7	Integration with other key Plans and Programmes We recommend including relevant schematics in the Strategy and SEA Environmental Report, showing the links and key inter-relationships with other relevant national, regional, sectoral and environmental plans, programmes or strategies.	Noted. Links to other Plans, Programmes and Strategies are included.
33	5		Available Guidance & Resources Our website contains various SEA resources and guidance, including: <ul style="list-style-type: none"> • SEA process guidance and checklists • Inventory of spatial datasets relevant to SEA • Topic specific SEA guidance (including Good practice note on Cumulative Effects Assessment (EPA, 2020), Guidance on SEA Statements and Monitoring (EPA, 2020), Integrating climatic factors into SEA (EPA, 2019), Developing and Assessing Alternatives in SEA (EPA, 2015), and Integrated Biodiversity Impact Assessment (EPA, 2012)). Environmental Sensitivity Mapping (ESM) Webtool EPA SEA WebGIS Tool EPA WFD Application EPA AA GeoTool State of the Environment Report – Ireland’s Environment 2016	EPA guidance and information sources have been used in the SEA process.
34	5		Environmental Authorities Under the SEA Regulations, you should also consult with: <ul style="list-style-type: none"> • The Minister for Housing, Planning and Local Government; • The Minister for Agriculture, Food and the Marine, and the Minister for Communications, Climate Action and Environment • The Minister for Culture, Heritage and the Gaeltacht 	The Scoping Report has been issued to these Environmental Authorities, and they will be consulted on the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
35	7	2.6	Scope of the SEA We note in section 2.6 - Spatial and Temporal Scope that a longer-term view will be taken on potential impacts rather than seeking a set fixed temporal scope. We recommend that the Strategy is supported by environmental monitoring and reporting at regular intervals over its lifetime. The Strategy and SEA should seek to align with other relevant long-term plans / programmes / strategies at national, EU and international level in the context of ensuring the appropriate alignment and integration of relevant environmental commitments and targets over the lifetime of the Strategy.	To be considered in the Environmental Report during drafting of monitoring proposals.
36	7	Table 2.2	We note the sustainability topics covered in Table 2.2, we recommend adding an additional row for the inter-relationships between each of those sustainability topics.	Natural capital is intended as a means for assessing the inter-relationship of topics and is combined with this overarching topic. Addressed in Table 3.2 of the Environmental Report.
37	7	2.7	Relationship to other plans and programmes Farm to Fork While the Scoping report refers to the Farm to Fork Strategy in relation to some key influential plans and programmes, the SEA and the Strategy should consider setting out the specific reduction targets to be achieved under this Farm to Fork Strategy, with regard to fertilisers, pesticides, antimicrobials used on farm animals and ambition to achieve 25% of agricultural lands under organic farming by 2030. The EU Farm to Fork and EU Biodiversity strategies should receive greater focus in the SEA Environmental Report and the Strategy. The influence of the CAP reform and increased focus on environmental credentials under these EU strategies should also be reflected in the SEA and Strategy.	While the Farm to Fork Strategy (F2F) sets out a number of targets these are not legally binding and will be the subject of legislative changes to be preceded by Impact Assessments. So agree that F2F and Biodiversity Strategies set a framework/vision which needs to be taken into account, however, specific targets for individual

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
				countries are not clear at this stage.
38	7	3	Baseline We note that LULUCF is recognised as a key component in helping monitor the national strategic long-term vision for prosperous, modern, competitive and climate neutral economy by 2050. It is important to also recognise in the Strategy the role LULUCF can play in monitoring land use change. Monitoring land use/ land use change will help us understand how well land use activities are progressing when it comes to supporting the national efforts of addressing climate change and the decline in nature.	The strategy refers to the need to develop a land use strategy
39	7	3.2 and Table 2.2	Biodiversity / Natural Capital We suggest a subsection is included which incorporates Biodiversity and Flora and Fauna (as set out in the SEA Directive). Natural Capital could be addressed as a sub-section under biodiversity.	Sustainability topic has been renamed Biodiversity and Flora and Fauna. Natural capital is intended as a means for assessing the inter-relationship of topics and is combined with this overarching topic.
40	7	3.3	We also note that Chapter 3 includes a subsection on socio-economics. In the SEA Directive, these are addressed under the criteria 'Population and Human health'. We suggest that the population and human health aspects are retained in the SEA, while the economic related aspects be moved into the Strategy for consideration there, rather than in the environmental assessment itself.	Sustainability topics have been amended to Population and Human Health.
41	7		In relation to Green Corridors, the SEA could promote the need to protect, and where possible enhance, existing important ecological corridors on farmland.	Addressed in Table 3.2 of the Environmental Report.
42	8	3.2 and 3.7	With regards the impact of nitrogen on ecosystems, a recent EPA Research Report 'Critical Loads and Soil-Vegetation Modelling (Aherne et al., 2020) highlights several relevant concerns in relation to the impact of agricultural nitrogen emissions on ecosystems: <ul style="list-style-type: none"> • Based on current scenarios, exceedances of critical loads of eutrophication is not predicted to change by 2030, owing to national increases in reduced nitrogen deposition. • Biodiversity-related critical loads for nitrogen indicates that Irish habitats are more sensitive 	Addressed in Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>to nitrogen deposition than the recommended empirical critical load ranges for European habitats. This means that current estimates of the extent of nitrogen impacted habitats are likely to be underestimated.</p> <p>The scope of the SEA should specifically consider and address the risks posed to Irish habitats and ecosystems as a result of agricultural emissions to atmosphere, and how sustainable practices can contribute to preserving these ecosystems. In addition, consideration should also be given to supporting and contributing to mechanisms for the ongoing monitoring and evaluation of agricultural emissions on natural ecosystems.</p>	
43	8	3.2	<p>Marine</p> <p>While we acknowledge that the Scoping Report includes references to marine protected areas, we recommend also referring to the need to increase the extent of Marine Protected Areas, to meet the current international requirements of conservation of 10% of marine and coastal areas, with a greater target of 30% of all coastal/marine areas by 2030, under the EU Biodiversity Strategy.</p> <p>We note that the Scoping Report acknowledges that the seafood industry has a big impact on fish stocks and the marine environment. As mentioned in our previous submission, with regard to commercial exploitation of natural marine kelp / microalgae forests, a precautionary approach needs to be taken, given the role these ecosystems play in terms of climate mitigation and adaptation and supporting marine biodiversity.</p>	Addressed in Section 4.3 of the Environmental Report.
44	8	3.6	<p>Water Quality</p> <p>The Scoping Report clearly recognises the challenges facing the Agri-Food sector with regards protecting water quality from further decline. In preparing the SEA Environmental Report (ER), it will be important that the appropriate water quality mitigation measures are established, implemented and monitored to ensure water quality status is improved and the Strategy is implemented in an environmentally sustainable manner. These will need aligning with WFD obligations. The SEA should look to promote mitigation measures with multiple environmental co-benefits, where possible.</p>	The need to address existing challenges for water quality has been fed back to the strategy team and reflected in the actions proposed. Additional mitigation is proposed in the mitigation section of the SEA Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
45	8	3.5	<p>Section 3.5 Soil and Land Use</p> <p>This section should be updated to reflect the latest available information from Teagasc, with regards current soil pH/fertility issues currently occurring in Ireland. These are well documented by Teagasc. See for example: https://www.teagasc.ie/crops/soil--soil-fertility/soil-ph--liming/)</p> <p>With reference to land, the scoping report should refer to the 26.8 Mt CO₂eq credits available to Ireland under the LULUCF Regulation (2018/841 (EU)).</p>	Addressed in Section 4.3 of the Environmental Report.
46	8-9	3.7	<p>In Table 3.4: Emissions from the Agriculture sector, the percentage value for NO_x should be updated to 33.4% for 2018. Additionally, the supporting text should also consider the adjusted emission values which are used for compliance purposes. The following link provides more information on this.</p> <p>http://epa.ie/pubs/reports/air/airemissions/irelandsairpollutantemissions2018/</p>	Addressed in Section 4.3 of the Environmental Report.
47	8-9	3.7	<p>The text below Figure 3.4: Contribution to Ammonia Emissions in 2018 (EPA, 2020), should be updated to reflect the following report :</p> <p>http://epa.ie/pubs/reports/air/airemissions/irelandsairpollutantemissions2018/ and our data and Inventory Report submission which can be found at: https://www.ceip.at/status-ofreporting-and-review-results/2020-submissions</p>	Addressed in Section 4.3 of the Environmental Report.
48	8-9	3.7	<p>On page 35, the subsection on policy response should also refer to the DAFM Draft National Climate and Air Roadmap for the Agriculture Sector to 2030 ("Ag-Climatise").</p>	Addressed in Section 4.3 of the Environmental Report.
49	9	3.6	<p>In Section 3.6 Water, consider referring to the actual requirements of the WFD in terms of its key aims. The SEA (and Strategy) should refer specifically to the relevant objectives of the National River Basin Management Plan for Ireland. The baseline water quality information should take account of the most recent available water quality information and reports from the EPA. While the Strategy acknowledges the need for good status of quality under the Water Framework Directive (WFD), it should also highlight the equally important objectives for no deterioration, protection of high-status waters or protected areas objectives of the WFD also.</p>	Addressed in Table 3.2 and Section 4.3 of the Environmental Report and Appendix B.
50	9	3.6	<p>While the link with the Habitats Directive is addressed, the SEA should also consider to a greater extent the interlinkages on policy between biodiversity and the water quality under the WFD.</p> <p>The SEA should include a reference to the Marine Strategy Framework Directive and the EU</p>	Noted in the SEA preparation and comment passed to AFS team to

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			Biodiversity Strategy. Additionally, the SEA (and Strategy) should refer to the forthcoming CAP Reform and include a commitment to amend the Strategy, once the CAP Reform has completed to ensure that the Strategy aligns with our relevant European level commitments. This is particularly important, given that the CAP will probably be the most critical aspect underpinning the socio-economic and environmental considerations for the Strategy.	address in the Strategy as they see fit.
51	9	3.2	Page 17: Reference should be made to the new CAP, as a key Strategy that will influence the Strategy.	Addressed in Section 4.2 of the Environmental Report and Appendix B.
52	9	3.6	Page 28: We note the reference to Groundwater abstractions as being a negligible component of primary abstraction, groundwaters account for about 20% of Public Water Supplies and should be recognised in this context.	Noted.
53	9	3.6	Page 28: We suggest including a reference to the River Basin Management Plan	Information from the River Basin Management Plan has been used.
54	9	3.6	Page 28: we note the reference to a Teagasc document that indicates the EPA decided on the priority catchments that the ASSAP teams are working in (this is incorrect, the EPA facilitated the process, while decisions were actually made by public authority stakeholders, including elected representatives)	Corrected in Section 4.3 of the Environmental Report.
55	9	3.6	Page 28: includes a reference to an EPA pers comm reference to agricultural intensification has caused localised water quality issues. The term 'localised' underplays the problems, and their widespread impact in places should be also referred to.	Corrected in Section 4.3 of the Environmental Report.
56	9	3.6	Page 31: refers to a Dept/EPA report from 1999 indicating that groundwater is mainly impacted by point source agricultural sources. The context is misplaced because significant groundwater impact e.g. to a water supply is going to come from the point sources (petrol tanks, silage leaks etc.), but diffuse pressures from land spreading or grazing animals are having an impact on surface water via diffuse groundwater pathways (and to a small number of Water Supplies).	Corrected in Section 4.3 of the Environmental Report.
57	10	3.6	Page 30: Ammonium arising from drainage of organic soils for agriculture and/or forestry is also an issue of concern.	Addressed in Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
58	10	3.6	Page 31: The indication that Ireland's marine waters are not showing signs of nutrient pollution is not correct. Marine waters include nearshore coastal waters and estuaries, many of which are showing signs of eutrophication. Reference could be made to the Water Quality issues mentioned in the MSFD Article 17 report. (https://www.housing.gov.ie/water/water-quality/marine-strategy/marinestrategy-framework-directive-200856ec-article-17-update)	Addressed in Section 4.3 of the Environmental Report.
59	10	3.6	Page 32: while a number of policy response areas are included, more may arise once the overall analysis begins, and any significant ones should be included.	Noted.
60	10	3.6 and 6.5	Page 32 and Page 54: Despite measures being 'successfully implemented' under a range of policy responses, there are continuing declines in all the environmental indicators. In light of this, the robustness of implementation or suitability of the existing measures should be assessed. It will be an important consideration for the Strategy that there are robust and practical indicators developed early on, that directly link the measures to environmental outcomes, so that the Strategy can be quickly adapted if or when it is seen to be having a negative impact on the environment.	Considered by the Strategy development team
61	10	3.13	Page 45: Should also include the following as a threat to water: physical modifications to, and drainage of, water bodies such as rivers and lakes	Addressed in Section 4.4 of the Environmental Report
62	10	3.13	Page 45: While reference is made to ammonium and phosphate being the nutrients of concern for water, should it refer instead to nitrates and phosphate.	Addressed in Section 4.4 of the Environmental Report
63	10	3.6	With regards to flooding, the SEA should recognise and support options for natural flood risk management, which would provide additional environmental co-benefits, in terms of support for biodiversity for example. The benefits of maintaining wetlands or poorly drained areas, in terms of their biodiversity value and climate mitigation potential should be recognised and supported.	Noted
64	10	3.6	Forestry The SEA should recognise that in relation to high status waters, sediment loss in upland catchments is the most important pressure impacting high status waters. The SEA should consider including a mitigation measure recommending a greater level of Forest Service oversight when/where forestry related operations are planned in high status catchments.	Addressed in Section 4.3 of the Environmental Report. To be considered in the mitigation measures

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			Immediate remediation actions are also needed where forestry is currently causing water quality problems.	
65	10	3.7 and 3.8	<p>Air Quality / Climate Change</p> <p>We acknowledge that the Scoping report clearly identifies the impact of the Agri-Food sector on climate change and air quality, with regards the levels of greenhouse gases and ammonia emissions. Reducing sectoral greenhouse gas and ammonia emissions will be a critical component for success of the Strategy.</p> <p>Air quality and air pollutant parameters should be clearly defined. For example, emissions of the air pollutant ammonia into the atmosphere is not per se an air quality issue, but its contribution as a source of secondary particulate matter (PM) in the air we breathe is an issue.</p>	Addressed in Sections 4.3 and 4.4 of the Environmental Report
66	11		<p>Environmental Sustainability</p> <p>Clear commitments are required regarding sustainable farming and land management practices, including promotion of organic farming practices, such as the use of protected urea etc.</p>	Considered as part of Strategy Development
67	11		In our previous submission (Appendix 3), we highlighted the need for outcome-focussed metrics and activity-based metrics, both of which should be linked, to allow for accountability in land use and land management practices.	Considered as part of Strategy Development
68	11		We also highlighted the need to consider sustainability related food labelling for national produce, showing carbon intensification/sustainability information. These aspects should be considered and promoted.	Considered as part of Strategy Development
69	11		Emissions of ammonia from the intensive pig and poultry sector, currently stand at about 11% nationally. This is significantly lower than from cattle and for the most part, these are addressed within current IED licensing controls. It is worth noting however that there are large numbers of pigs and poultry activities operating below the IED threshold under LA planning. Despite only contributing to 11% of national ammonia emissions, in the border region (County Cavan and County Monaghan) spatially, they are quite concentrated, with over 115 EPA licensed installations and an additional 24 new applications on hand in the pig and poultry sector, at an approx. ratio of 80:20 (Monaghan/Cavan). The cumulative impacts of ammonia from these and other installations/operations on nearby Natura 2000 sites needs to be better understood and considered, in preparing the Strategy. This is particularly important in the	Ammonia issues considered as part of the Strategy and Agri Climate and Air roadmap development

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			context of ensuring environmental sustainability. Ammonia has especially detrimental effects on species and habitats that are sensitive to elevated levels of nitrogen input. The concentration of intensive agriculture sites, in-combination with other farming activities (e.g. dairy and beef), have the potential to impact on the critical level and critical loads for sensitive species at Natura sites in this region also.	
70	11		We recommend that the SEA (and Strategy) include a reference to the relevant Best Available Techniques (BAT) Conclusions which are statutory requirement for existing Industrial Emission licenced activities from February 2021. The BAT Conclusions cover emissions such as ammonia, odour, noise, and the storage and management of organic fertiliser. They are applicable for new licensable activities, since their introduction in February 2017. Existing licensed activities have until February 2021, to implement all requirements. Information on these BAT conclusions is available at https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32017D0302&from=EN .	Considered within Section 6 of the Environmental Report
71	11		We refer you the EPA report Ireland's Transboundary Gas Emissions – 1990-2030 (EPA, 2019) to take into account with regards transboundary emissions considerations.	This report has been used in compiling Section 4.3 of the Environmental Report.
72	11		Consider developing and encouraging: <ul style="list-style-type: none"> • economically sustainable farm systems and practices for less intensive farms that focus on producing quality food for a premium price. • promoting 'high nature value' farming and the wealth of environmental benefits to gained from these initiatives • developing and supporting agri-environmental schemes that provide payments for results-based, ecosystem services. 	Considered as part of Strategy Development
73	12		The current model of 'payments for costs incurred or income foregone' promotes a concept that farming with the environment is a burden or results in negative outcomes for the farmer which is not accurate or effective. A review of the existing national taxation and subsidy system is needed, to identify agri-food related relief schemes that are environmentally harmful and that are unsustainable and replace them with schemes that reward environmental sustainability.	Outside the remit of the Strategy

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
74	12	3.9	Waste In Section 3.9 – Material Assets, on page 38, on recycling targets, the SEA should reflect the most recent EPA publication on this http://epa.ie/newsandevents/news/name,69297,en.html	Addressed in Section 4.3 of the Environmental Report.
75	12	3.9	We acknowledge that the Scoping report includes references to the Food Waste Charter under the National Waste Prevention Programme and Smart Farming initiative. This section would benefit from also recognising the benefits of supporting the development of an all-of-value-chain National Food Waste Reduction Roadmap. This should include clear national and sectoral targets for 2025 and 2030, in order to meet the relevant national food waste prevention targets.	Noted
76	12	3.9	With reference to Food Waste, that may arise in implementing the Strategy, the SEA and Strategy should also look to support the following: <ul style="list-style-type: none"> • The development & implementation of a National Food Waste Roadmap, building on the national stopfoodwaste.ie householder campaign and the business-focused Food Waste Charter. • Implement a systematic programme to identify and reduce on-farm losses of food produced for human consumption, for reporting in national statistics. • Strengthen the 'Origin Green' brand through the inclusion of food waste prevention action plans with robust reporting of carbon saving for processing, distribution and retail businesses. • Promote public behaviours to prevent household food waste through high-profile DAFM agencies & activities - such as Bord Bia and the "Food Dudes Programme". 	Food waste is being considered in the Strategy
77	12	3.9	The Scoping report includes references to "new and more efficient use of wastes, e.g. food waste". The Strategy and SEA should acknowledge that food waste must be managed in accordance with the food waste hierarchy (see the figure below). Where prevention of food waste is prioritised, the emphasis can then focus on 'new and more efficient uses of wastes'.	Strategy is taking a food system approach
78	12	3.9	With regard to hazardous wastes that may arise in implementing the Strategy, the SEA and Strategy should consider: Introducing measures to address the large amounts of hazardous waste generated through agricultural production. Producer Responsibility initiatives including take-back of surplus product; along with training on best practice to maximise efficiency in using farm chemicals are potentially strong prevention measures.	Considered as part of Strategy Development

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
79	12	3.9	Supporting the establishment of a national collection scheme for unavoidable farm hazardous waste, should be pursued as a matter of urgency. The EPA pilot scheme which operated from 2013-2017 demonstrated the feasibility and demand for such a service. The pilot scheme identified the typical chemicals requiring disposal and estimated quantities stockpiled on farms and which are being generated annually.	Considered by the Strategy development team
80	13	3.9	The SEA should specifically consider the risks posed to the environment and food with respect to hazardous waste management. The EPA farm hazardous waste collection pilot scheme collected nearly 1,000 tonnes of hazardous waste from farmers around the country. Of this waste, 68 tonnes were waste pesticides (some banned for use for decades) and 53 tonnes were waste veterinary products. The SEA should therefore consider risks related to storage of chemicals on farms, the need to properly manage prohibited substances and the development of a long-term mechanism to support the safe management and collection of farm hazardous waste to ensure that it does not enter the environment.	Noted but not within the direct remit of the Strategy
81	13	3.9	The SEA should highlight the need for sustainable use of pesticides and their management as well as in the Strategy. The next review of the National Action Plan for the Sustainable Use of Pesticides should include specific and measurable reductions in the use of pesticides of concern along with timeframes for the achievement of those reductions. This is in order to attain the reduction of 50% usage of hazardous pesticides by 2030 in accordance with the EU Farm to Fork initiative. The Strategy should, in particular, take this into account.	Comment passed to Strategy development team for consideration
82	13	3.9	Further research into development of biopesticides should be encouraged in the Strategy and the SEA.	Considered by the Strategy development team
83	13	3.9	There is a need to increase enforcement of biocides regulations for waste pesticides storage. This is necessary to ensure that pesticides which can no longer be used are removed from circulation in an environmentally safe manner. This aspect should be reflected in the Strategy and the SEA.	Considered by the Strategy development team
84	13		Smarter Farming Practices We recommend that the SEA and Strategy recognise, support and promote the need for greater uptake of sustainable farming practices across all agricultural sectors. This can be achieved through the establishment of case studies, networks, knowledge exchange, supports & tools. The farmer led Smart Farming initiative is an exemplar programme in this area, which	Considered by the Strategy development team

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			has demonstrated reduced environmental impacts while delivering savings and efficiencies to participating farmers. This Smart Farming and other similar models should be reflected in the Strategy and SEA.	
85	13-14	3.9	Municipal Sewage Sludge on Farmland Studies have found municipal sludges, in addition to containing useful nutrients, also contain other man-made chemicals some of which are persistent and likely to accumulate in the soil. EPA research (Healy et al., 2017) has highlighted a number of concerns in relation to the use of 'biosolids' on agricultural land. The effects of many of these substances, e.g. nanomaterials, both individually and in combination with other chemicals, on both human health and the environment are not yet fully understood. As municipal sludge could be a source of food contamination for a range of hazardous substances, the SEA should consider the current use of municipal sludge on food producing soils, taking into consideration approaches to sludge management and reuse in other EU Member States. It is also very timely to review the reuse of sewage sludge on farmland given the recently commenced review process for the EU Directive on the use of sewage sludge in agriculture, see https://ec.europa.eu/info/law/betterregulation/have-your-say/initiatives/12328-Evaluation-of-the-Sewage-Sludge-Directive-86-278-EEC- .	Passed to Strategy development team for consideration
86	14	3.11	Section 3.11 Landscape, on page 40, in the pressures' subsection, reference is made to 29 counties - this should be corrected to 26.	Noted.
87	14	3.13	We acknowledge the review of the SOER Key Issues and Challenges and highlighting the ones most appropriate to the Strategy. Once the SOER for 2020 is published, we recommend including a reference to taking the updated identified issues and challenges into account, as relevant to the Strategy.	Addressed in Section 4.4 of the Environmental Report.
88	14	3.13	On page 45 of this section, reference is made to increasing NOx and NMVOC emissions and compliance targets. Emissions of both of these pollutants are not included in compliance targets under the NECD as per Article 4 para 3(d).	Corrected in Section 4.4 of the Environmental Report.
89	14	3.14	Data Gaps In Section 3.14 – Information Gaps, we suggest that the EPA SOER 2020, due to be published in November 2020, should be reviewed in the context of taking into account the most recent available information, in preparing and implementing the Strategy.	EPA SOER 2020 has been taken into account in Section 4.3 and 4.4 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
90	14	3.14	We welcome the various environmental maps provided in the Appendix of the Scoping Report. The EPA supported Environmental Sustainability Mapping Webtool (www.enviromap.ie) may also help in showing environmental baseline information across a range of environmental criteria. It has recently been used in preparing the SEA for the National Planning Framework and Regional Spatial and Economic Strategies.	Noted.
91	14	Table 4.1	Chapter 4 – SEA Framework The objectives should capture the contribution the Strategy can make to the specific topic objectives. For example, contribute to the protection of biodiversity and helping reverse the decline in nature, supporting the national effort to address climate change etc. <ul style="list-style-type: none"> • Objective 6, the sub-objective could be reworded as follows “Support achievement of the NECP objectives for ...” • Objective 11, the sub-objective could be reworded “Preserve and enhance the ability of an area to provide services such as carbon sequestration and flood resilience, as well as supporting other ecosystem services” 	Objectives reworded in Table 3.2 of the Environmental Report.
92	15	5.1 and 5.2	Assessment of Alternatives In Section 5 – Alternatives and Scope of the SEA, we acknowledge that the EPA guidance document ‘Developing and Assessing Alternatives in Strategic Environmental Assessment (EPA, 2015)’ has assisted in the consideration of alternatives. We also welcome the findings of the public survey / consultation responses on the 2030 Strategy, that indicated a strong support for environmental sustainability. We also note the alternatives considered for the Strategy. For Alternative 4: Blended Approach (mix of Environment Sustainability and Production/Value), this approach should look to maximise environmentally sustainable agriculture and land management practices over a need to continue to intensification / expansion of unsustainable elements of the sector.	Alternatives reviewed
93	15	5.3	In subsection 5.3, we note the identified potential significant effects of the Agri-Food Strategy. In relation to potential cumulative effects. We recommend that you consult our recent SEA good practice guidance note on Cumulative effects assessment in Strategic Environmental Assessment (EPA, 2020). This may be of use when considering and assessing potential for cumulative environmental effects.	Guidance has been used in assessing cumulative effects in Section 6.5 of the Environmental Report

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
94	15	5.4	Scope of the SEA It is recognised that the assessment and selection of the preferred alternative(s) and selection of the relevant mitigation measures, should consider the economic and technical aspects to ensure that the measures are viable and implementable and that the alternatives are realistic.	Noted, the alternatives as defined have been developed with the intention of being viable and implementable.
95	15		In Chapter 6 – Next Steps, we suggest that you consider including a glossary of terms used in the Strategy and the SEA ER. In addition, consideration should be given to including a definition of environmental sustainability in the context of the Strategy as well as describing any commonly used acronyms in the SEA.	A glossary and list of acronyms has been included.
96	15	6.5	Monitoring Considerations Monitoring Implementation of the Programme, (the section title should be amended to reflect that it is a Strategy. The EPA publication Guidance on Strategic Environmental Assessment (SEA) Statements and Monitoring (EPA, 2020) may also assist you when looking at these stages of the SEA process for the Strategy. We also suggest that you consider how the environmental monitoring will be used to determine how environmentally sustainability is being achieved over the lifetime of the Strategy.	Guidance has been used in Section 8 of the Environmental Report
97	16	Appendix A	We acknowledge the extensive list of plans, programmes and environmental protection objectives described in Appendix A of the Scoping Report. We suggest that there is also merit in including a reference to the National Wastewater Sludge Management Plan (Irish Water) , in relation to land spreading aspects that may impact or be impacted on, in implementing the Strategy. Additionally, the Pollution Reduction Programmes for Shellfish Waters should also be taken into account, as appropriate and where relevant. Information on these can be found at: https://www.housing.gov.ie/water/water-quality/shellfish-waters/shellfish-waters-finalcharacterisation-reports-and-prps	Addressed in Appendix B of the Environmental Report.
98	16	Appendix A	In relation to the description of the main objectives and requirements of the National Waste Prevention Programme and how it effects or is affected by the Strategy, we suggest a revision of the text in the interests of clarity	Addressed in Appendix B of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
99	16	7	In Section 7 – References, (page 58), the text referring to “EPA Catchments Unit (2019) Ireland’s Catchment Flood Risk Assessment and Management (CFRAM) Programme” should be attributed to the OPW, rather than the EPA.	Corrected in Sections 4.3 and 9 of the Environmental Report.
Organisation: Department of Agriculture, Environment and Rural Affairs - Northern Ireland Environment Agency				
Date received: 18 September 2020				
100	1		The scoping in of transboundary issues is welcomed. DAERA would like the SEA Environmental Report to contain a clear statement indicating the opinion about whether or not the implementation of the of the strategy is likely to have a significant effect on Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment.	Trans-boundary effects on Northern Ireland included in assessment section of the SEA ER
101	1-2		Natural Environment Division Comments A number of useful information sources that highlight the current state of the environment in Northern Ireland at a regional level and which could be referenced in appendix A are: Northern Ireland State of the Environment Reports: https://www.daera-ni.gov.uk/publications/state-environment-report-2013 Northern Ireland Environmental Statistics Reports: https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report	These reports have been used in compiling the transboundary sections of the baseline in Section 4.3 of the Environmental Report.
102	2	Table 4.1	In terms of the scoping of transboundary SEA issues, the objectives contained in table 4.1 are broad. When refining targets, the potential disturbance to/impact on NI/RoI migratory/mobile species such as salmon (for example within the River Foyle Special Area of Conservation use tributaries which are within both Northern Ireland and the Republic of Ireland), Hen Harriers (in the Slieve Beagh Special Protection Area adjacent to the border), Marsh Fritillary butterfly metapopulations, bats and breeding waders should be given consideration. Cross border peatlands, river basins, European sites in Northern Ireland adjacent to or with pathways to the Republic of Ireland and other landscape types also require special attention as ecological functionality and ‘views’ of landscape cross political boundaries.	Addressed in Table 3.2 and Section 6.6 of the Environmental Report.
103	2		Other relevant web-links are; Designated Scientific Sites: www.daera-ni.gov.uk/landing-pages/protected-areas Regional Landscape Character Map viewer: https://www.daera-ni.gov.uk/services/regional-landscape-character-areas-map-viewer	Noted

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			DAERA have a map browser for NI protected sites and known priority habitat: www.daera-ni.gov.uk/services/natural-environment-map-viewer	
104	2		Appropriate Assessments should refer to the status of habitats and species in the relevant reports available on the JNCC website as follows: UK Article 17 report for the Habitats Directive https://jncc.gov.uk/our-work/article-17-habitats-directivereport-2019/ and the UK Article 12 report for the Birds Directive https://jncc.gov.uk/our-work/european-reporting/#birds-directive-reporting	Covered in the Appropriate Assessment
105	2	Table 2.2	Marine and Fisheries Division Comments Sustainability Topics Explicit reference to designated sites within the marine environment in the subtopic of the Ecology and Nature Conservation topic of Table 2.2 Sustainability Topics is welcomed. However, it seems odd that the statement “including those within the marine environment” does not apply to all the other sub-topics listed within this topic. The reference to “character of coastal areas” is also welcomed within the sub-topic of the Landscape topic.	Marine environment has been taken into account within the other subtopics.
106	3	Table 2.2	The Sustainability Topic on Water would benefit from explicit reference to marine waters within the sub-topic section. This would create a stronger link to the section on Transitional, Coastal (marine) and Canal on page 29, the pressures outlined in relation to offshore marine waters on page 31 and the SEA Objectives / Sub-Objectives on page 46. Similarly, consideration could be given to including an explicit marine reference within the Climate Change sub-topic with respect to global warming on sea temperatures. Within the Natural Capital topic the services provided by the marine ecosystem could also be highlighted.	Noted.
107	3	3	Transboundary Considerations The Report acknowledges (Section 2.6) that consideration of transboundary impacts with Northern Ireland is likely to be particularly relevant with some topics for example, ecology, climate, air, water and landscape and this is further acknowledged in Section 3.13 on Natural Capital. Yet, transboundary considerations have only been included (as sub-headings) in relation to Biodiversity and Nature Conservation and Air Quality within the Baseline Data chapter. It is further advised that consideration should also be given to transboundary impacts with the Northern Ireland marine environment, particularly given the cross border loughs of Carlingford	Addressed in Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			Lough and Lough Foyle. For example, Baseline Data on Water (section 3.6) includes a section on Transitional, Coastal (Marine) and Canal, yet there is no Transboundary Considerations section for this topic.	
108	3	Table 4.1	SEA Objectives It is important marine aspects within the Sustainability Topics and sub-topics are reflected within the SEA Objectives and sub-objectives outlined in Section 4 and Table 4.1. This will ensure the assessment is robust and transparent in relation to the consideration of impacts on the marine environment and importantly potential transboundary marine environmental effects.	Addressed in Table 3.2 of the Environmental Report.
109	3	Appendix A	It is noted both the DAFM (2012) Harnessing Our Ocean Wealth and DHPLG (2020) draft National Marine Planning Framework consultation have been included within Annex A. Given these inclusions and to take account of transboundary aspects in relation to the marine environment, it is advised that both UK Government (2011) UK Marine Policy Statement and DAERA (2018) draft Marine Plan for Northern Ireland should be included under the NI/UK section. This will strengthen the inclusion and consideration of potential transboundary marine environmental effects within the SEA Objectives and overall assessment.	Addressed in Section 4.2 and Appendix B of the Environmental Report.
110	3-4		Understanding that this is a very wide scale SEA, but possible impacts on the Shellfish Water Protected Areas which are in the Lough Foyle and Carlingford Lough transboundary areas need to be included as they have not been mentioned in the documentation provided. Lough Foyle and Carlingford Lough contain Shellfish Water Protected Areas under Directive 2000/60/EC ("The Water Framework Directive"). These Shellfish Water Protected Areas contain commercial shellfish harvesting areas which must meet stringent bacteriological and chemical standards laid down in the Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 and the EU Food Hygiene Regulations (EC/852/2004, EC/853/2004 and EC/854/2004). This must be taken into account when assessing any plan/project adjacent to a Shellfish Water Protected Area.	Noted
111	4	3	DAERA Inland fisheries has within our jurisdiction several transboundary waterways the majority of which maintain populations of Salmonids, European Eels, Lamprey and several other species of significance. The main catchments include (but not exclusively) –	Noted, transboundary effects considered in assessment stage of the SEA Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>1) The Skeoge in the Northwest, which drains to Lough Swilly.</p> <p>2) The Erne and the Melvin/MacNean catchment which both drain to Donegal Bay.</p> <p>3) The Castletown catchment with its two main Northern Ireland rivers of the Flurry and the Fane catchments which drain to Dundalk Bay.</p> <p>4) The Blackwater which is part of the Lough Neagh/Bann catchment.</p> <p>These rivers provide both a valuable game and coarse angling resource and also hold a considerable nature conservation and biodiversity value. Any environmental report should include these catchments and examine their potential for improvement and any possible impacts within these transboundary jurisdictions. The report also has the potential to identify mutually beneficially programmes of research and/or conservation. Whilst the report is primarily focussed on the designated sites (e.g. ASSI's, SPA's and RAMSAR's etc.) the opportunity should not be missed to consider ground and surface water bodies and how they are impacted by intensive agriculture and also possible approaches to achieve 'Good Ecological Status' as per the Water Framework Directive. The impacts of aquaculture sites within these catchments and their estuarine and coastal environments should be evaluated in full, for example, how sea lice and other parasites have the potential to significantly impact fisheries interests throughout these transboundary watercourses. Given the transboundary nature of these watercourses there is the potential for co-operation in regard to any legal framework for proposed development or permitting of works within these waterbodies and the potential impacts from such actions.</p>	
112	4-5		<p>The Loughs Agency is the lead body for provision of advice regarding impacts to salmonid and inland fisheries interests within the catchments of Lough Foyle and Carlingford Lough. Consequently, said agency should be consulted in relation to this consultation. DAERA Inland Fisheries will provide fisheries advice for those areas outside of the catchments of Foyle and Carlingford Loughs.</p>	To be consulted during the public consultation of the Environmental Report.
113	5	5.4	<p>Historic Environment Division Comments</p> <p>HED welcome that cultural heritage is to be carried forward to environmental assessment stage. While we advise that we consider it unlikely that there would be direct adverse effects of this programme on Northern Ireland's Historic Environment, we note that as with landscape considerations many cultural heritage characteristics within the landscape have transboundary</p>	To be considered as applicable in the Environmental Report

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			qualities and relationships which add to their understanding, and we highlight the presence of transboundary heritage assets such as historic routeways, earthworks and waterways.- Our historic environment datasets are available at the link below and may aid in environmental assessment. https://www.communities-ni.gov.uk/publications/historic-environment-digitaldatasets	
114	5	5.4	In addition to the above we also highlight the value of considering potential impacts on understanding of transboundary post medieval vernacular heritage and historic settlement patterns, aspects of the historic environment which are very much intertwined with landscape, and which can be indicated through historic ordnance survey maps.	To be considered as applicable in the Environmental Report
Organisation: Department of Agriculture, Food and the Marine - Sea-Fisheries Policy and Management Division				
Date received: 6 November 2020 & 13 November 2020				
115	1		The Scoping Report notes the important role of the agri-food sector in the economy of rural and coastal areas. In particular, the fishing industry (encompassing both fisheries and fish processing) provides valuable employment opportunities in coastal areas where there may be few other employment options. While the Report does make reference to sea-fishing and the marine environment, there is very scant coverage of this area overall	Further baseline data relating to marine and coastal addressed in Section 4.3 of the Environmental Report.
116	1	Appendix A	Under Appendix A: A review of other plans, etc, it is important to include the Common Fisheries Policy (CFP) [Regulation (EU) No. 1380/2013]. The CFP provides the framework for the long-term conservation and sustainability of fish stocks around our shores and is designed to ensure the long-term sustainability of fishing in Ireland and throughout EU waters. Thus providing for the continued economic viability of fishing fleets and fish processing, while supporting the communities that depend on a vibrant fishing industry.	Addressed in Section 4.2 and Appendix B of the Environmental Report.
117	1	7	We note the list of references includes the DAFM (2018) Brexit and the Irish Fishing Industry Factsheet. Please note there is an updated factsheet dated July 2020 which should be referred to instead	Noted, referencing updated
118	2	3	Fisheries come within the scope of the Agri-food strategy -2030, however the document focuses primarily on the agricultural aspect and with only a handful of references to fisheries. Everything the scoping document outlines for the agricultural aspect would also need to be done for fisheries. There are numerous sources of information that the scoping document could use for the fisheries assessment	Information sources have been used where relevant in compiling Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<ul style="list-style-type: none"> - The National Seafood Survey (BIM) - The Fishing Atlas - The Shellfish Atlas - The Marine Strategy Framework Directive (MSFD) Article 17 report (including D3- Commercial Fish and Shellfish) - Various Habitats Directive and Birds Directive assessments of fisheries - The Marine Institute (MI) Stock Book and associated Sustainability Statements, the TACs and outtakes etc, Progress towards CFP objectives - The MI has also carried out an Integrated Ecosystem Assessment for Irish waters which covers fisheries, aquaculture and impact of agriculture on the marine environment. This can be passed on to DAFF to set context, priorities and define gaps. 	
119	2	3	Further detail and examples from the text of where further focus on the marine/seafood sector would be required are as follows: Habitat protection/biodiversity characterisation p14-22– A summary of terrestrial and marine species and habitats and status of Natura & Water Framework Directive (WFD), but no mention of MSFD assessment output	Addressed in Section 4.3 of the Environmental Report
120	2	3.2	Policy response p19- biodiversity. The paper lists biodiversity action plan and several specific agricultural schemes (eg GLAS) but no specific coastal /marine policies/schemes	Addressed in Section 4.3 of the Environmental Report
121	2	3.3	Socio-Economic characterisation p22- The breakdown of agriculture sectors could have more details on the breakdown of fisheries/aquaculture sectors for a more balanced summary	Noted.
122	2	3.5	Soil and land use p25+- should there be further reference to aquaculture?	Aquaculture related effects now assessed as part of the relevant measures within the AFS
123	2	3.6	Water p28- There is detailed reference to WFD, but none on MSFD. The main focus is on agriculture	Addressed in Section 4.3 of the Environmental Report
124	2	3.11	Landscapes p40- There is limited mention of marine/coastal landscapes and their value/pressures - however SEA objectives makes the link to marine landscapes on p47 with reference to the marine harvesting sector	Addressed in Section 4.3 of the Environmental Report

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
125	2	3.12	<p>Natural capital p41 does provide information on the marine and freshwater capital</p> <p>For a balanced and comprehensive review on the environment and natural capital, the summaries of the relevant sections of the recent MSFD Article 8-10 submissions can be used - see https://www.housing.gov.ie/water/water-quality/marine-strategy/marine-strategy-framework-directive-200856ec-article-17-update</p> <ul style="list-style-type: none"> For values on natural capital, figures don't seem to be consistent with others in the report and should be used/quoted from single sources, for instance the value of sea fisheries and aquaculture is put at €664 million on p42 but recreational angling is valued at €836 million and supports "11,000 jobs" while the value of Irish seafood industry on p 23 is 1.22billion employing 16k people. 	Noted and discrepancies removed.
126	2	Table 4.1	SEA objectives- p47 biodiversity objectives are very broad- could give more focus on specific critical issues like is done subsequently under WFD;	Noted, SEA objectives are considered suitable for the purpose intended which is to assess the impact of the AFS on a full range of biodiversity related receptors
127	2	Appendix A	National and EU plans and programmes (Appendix a) include specific marine as well as general/terrestrial plans. Programmes such as CFP must be incorporated. Marine Protected Area plans don't seem to be mentioned although they are in the Programme for Government.	Addressed in Appendix B of the Environmental Report.

Table A2: Public Consultation Comments

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
Organisation: An Taisce				
Date received: September 2020				
1	1		OVERARCHING LEGAL CONSIDERATIONS It is submitted that both the draft document circulated and the objective of proceeding with a new ten-year AgriFood strategy is systemically in breach of both national and EU law and will expose the Department and the State to multiple legal actions.	Noted.
2	1		CLIMATE ACTION Since this document was prepared the Irish Supreme Court upheld the action by Friends of the Irish Environment that the National Mitigation Plan does not meet the requirement of the Climate Action and Low Carbon Development Act 2015.	Noted.
3	1-2		THE PROPOSED NEW SEA PROCESS FAILS TO ADDRESS UNRESOLVED ARTICLE 10 SEA OBLIGATION FOR MONITORING AND REMEDIATION OF FOOD WISE 2025 WHICH HAS 5 YEARS LEFT TO RUN Any strategy under the SEA Directive seeking to supersede an existing one at mid term point must address the SEA status and compliance of the existing strategy. Section 1.3 of the RSK the Draft Strategic Environmental Assessment (SEA) Scoping Report fails to address the fact that the existing 10 year strategy Foodwise 2025 which was approved in 2015 has five years left to run. This Government strategy was subjected to the Strategic Environmental Assessment in 2015. Section 1.3 of the RSK Document with regard to Foodwise 2025 states that ONLY 27 % OF TARGETS HAVE BEEN ACHIEVED. In relation to the remainder vague phrases like “commenced or progressing” or “undertaken and ongoing” are used.	Noted.
4	2		Article 10 of the SEA Directive sets out the provisions for monitoring of a programme subject to SEA and obligation for remedial action where unforeseen adverse effects arise. The provisions of Article 10 are not just for monitoring, but notably for the remediation of unforeseen adverse effects. The monitoring which has been carried out by the Department co-ordinated High Level Implementation Committee (HILC) and in particular set out in the May 2020 “Environmental Sustainability Committee Report to the 2030 Agri Food Strategy Group ESC Environmental	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			Monitoring". This shows that GHG emissions, dairy cow numbers and fertilizer use in 2019 exceeded the figures for 2020 on which the 2015 SEA process and projections were based. However, no effective remedial action was proposed even on these two impacts as required by Article 10 of the SEA Directive.	
5	2		Irish dairy industry expansion has now passed the tipping point of unsustainability in intensification of nitrate fertiliser grassland; dependence on feed imports; expansion of milking parlours, milk powder and cheese factory processing; and consequent multiple adverse impacts include on human health with ammonia air pollution exceeding EU emission ceiling levels since 2016, increased greenhouse gas emissions, nitrates impacts on water quality, biodiversity impacts including farm bird loss, and inadequate research on chemicals and pesticides.	Noted.
6	2		<p>PREMATURITY OF PROCEEDING WITH SEA CONSULTATION AND ADOPTION OF NEW AGRI FOOD 2030 STRATEGY IN ADVANCE OF ADOPTION OF NATIONAL CAP STRATEGIC PLAN</p> <p>Only passing reference is given to the Cap Strategic Plan process which is progressing. No consideration is provided by RSK as to how the proposed SEA process for AgriFood 2030 is to be integrated with the Irish CAP plan process.</p> <p>In parallel to the drafting for SEA consultation of a new 10 year programme by AgriFood 2030 Strategy Committee, the consultation process for the national CAP Strategic Plan is proceeding with a stakeholder forum which is still at preliminary stage in considering the Needs process.</p> <p>Proceeding with a 2030 AgriFood strategy in advance of the CAP plan, which will need to comply with the EU Biodiversity Strategy 2030 and Farm to Fork Strategy, would be premature.</p>	The 2030 strategy is a separate process to the CAP - it covers a much broader area than the CAP, and while the two processes are running in parallel, they have different mandates. The 2030 Strategy is taking account of the EU Farm to Fork and Biodiversity Strategies.
7	3	1.3, 2.2, 2.7	<p>INADEQUATE DEFINITION OF "STRATEGIC PRIORITIES" IN FAILING TO MEET THE REQUIREMENTS OF THE SEA DIRECTIVE</p> <p>SEA is a legal process. The framework for defining strategic priorities is set out in Annex I (f), which lists the headings under which an SEA is required to be framed. The considerations adopted by the DAFM Committee responsible for the SEA process proposed are set out 4 points under section 1.3.</p> <p>In Chapter 2, Section 2.2 the consultants set out "Sustainability Topics".</p>	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			Section 2.7 gives passing reference to “EU Farm to Fork” but none to the EU Biodiversity Strategy to 2030. It is submitted that the considerations set out by RSK are systemically deficient with regard to addressing EU Directives on SEA and air quality, EU food and biodiversity policy, the Paris Agreement 2015 and national climate legislation.	
8	3-4		EU A FARM TO FORK AND EU BIODIVERSITY STRATEGY 2030 The draft document submitted by RSK is not fit for purpose even on its stated objective in providing the ten year AgriFood Strategy to 2030, as it does not properly address the overarching EU policy framework. In May 2020 in furtherance of the 2019 European Green Deal the European Commission published in parallel: “A Farm to Fork strategy for a fair healthy and environmentally friendly food system” and EU Biodiversity Strategy for 2030 - Bringing nature back into our lives”. The draft RSK document gives only passing mention of the of Farm to Fork and none to EU Biodiversity Strategy 2030 in Chapter 2. The 14-point EU Nature Restoration Plan in Section 2.2.9 of the Biodiversity Strategy which set out objectives which are almost entirely applicable to agriculture, fisheries and land use and need to form the basis of all EU and Irish agricultural fisheries and food policy for the decade ahead, No 14 being specific to fishing. Current and continuing nitrate fertiliser grass based bovine agriculture levels in Ireland, is incompatible with these objectives.	Noted.
9	5		EU COURT OF AUDITORS REPORT ON BIODIVERSITY LOSS The RSK Draft does not address the May 2020 The EU Court of Auditors report on the EU wide failure of successive agri-environmental schemes under CAP to reverse biodiversity loss.	Addressed in Section 4.3 of the Environmental Report.
10	5	3	ADEQUACY OF BASELINE DATA SET OUT IN CHAPTER 3 OF RSK DRAFT The Current State of Ireland’s Environment RSK have not set out adequate baseline considerations in Chapter 3 of the Draft document under the headings set out in Annex 1 (f) of the SEA Directive (Schedule 2 of the Irish SEA regulations) on the current state of the environment.	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
11	5-6	3.2	<p>Ecology and Nature Conservation</p> <p>The following are not addressed:</p> <ul style="list-style-type: none"> • Data on insect and pollinator decline from National Biodiversity Data Centre and other sources, with consequent issues of fertiliser, slurry spreading and herbicide use and land management generally; • Particular farm bird species population decline; • 6 yearly Article 17 Report from Ireland to European Commission in August 2019 on status of habitats and species with critical data on adverse agricultural impacts; • Assessment of Biodiversity impact of exceeding of EU ammonia air pollution thresholds since 2016 with 2% annual increase 98% caused by agriculture impact on priority habitats under Habitats Directive on designated peatlands in particular; • Data on ecological impact on aquaculture and seaweed and kelp harvesting; • Overview of overfishing impact; • The considerations on transboundary impact from Northern Ireland (p13) does not address high ammonia emissions in NI. 	<p>The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy, these issues are considered to be incorporated in the analysis.</p>
12	6	3.3	<p>Socio-Economic</p> <p>Data is not provided on employment and welfare conditions and health protection of workers in agriculture, factory processing and fisheries sectors including fishing boats.</p>	<p>The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy, these issues are considered to be incorporated in the analysis.</p>
13	6-7	3.4	<p>Data on health exposure of workers in agricultural facilities with high ammonia air pollution levels, and potentially greater exposure impact to respiratory diseases and viruses in view of exceeding of EU Ammonia air pollution thresholds since 2016 with 2% annual increase 98% caused by agriculture is required.</p> <p>Healthy working conditions for meat factory works, which have been highlighted by COVID 19 are not addressed.</p> <p>In February 2019 international coverage was generated on the issue of the ill-treatment and exploitation of migrant workers in the Irish fishing industry.</p> <p>UN special rapporteurs stated in a warning letter to the Irish government that Ireland's</p>	<p>The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy, these issues are considered to be incorporated in the analysis.</p> <p>The SEA team has been notified of further mediation in relation</p>

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			permit scheme for migrant workers on its fishing trawlers breaches international human rights law. The four UN rapporteurs – on modern slavery, trafficking in persons, racial discrimination and human rights – joined together to issue an exceptional rebuke to the Irish government, saying they had received information that the permits were making migrants from outside the EU vulnerable to modern slavery and serious abuse on Irish fishing vessels.	to the issue of migrant workers in the fishing industry.
14	7	3.5	<p>No consideration is provided on:</p> <ul style="list-style-type: none"> • Level of increased carbon loss from horticultural peat extraction and use of peat for animal bedding, in Ireland and for export; • Impact of horticultural peat extraction on drinking water; • Carbon loss in high carbon soil from land drainage for agricultural land use change; • Carbon soil erosion in areas affected by agricultural land burning. 	The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy, these issues are considered to be incorporated in the analysis.
15	7	3.6	<p>Water</p> <p>EPA and other data on meeting of water quality, including continuing decline of high status waters with consequent impact on fertiliser, slurry spreading and herbicide use and land management generally is not cross-referenced with evaluative data on nitrate excess. No consideration is given to exceedances of trihalomethanes (THMs) in drinking water supplies in Ireland when organic matter, such as suspended peat sediment from horticultural peat extraction sites, are treated with chlorine at water treatment plants.</p>	Noted but peat extraction not anticipated to be within the scope of the strategy.
16	7	3.7	<p>Air</p> <p>The policy response on breaching of EU ammonia air pollution ceiling thresholds since 2016 with 2% annual increase, 98% caused by agriculture is referenced. However, there is no consideration provided on the adequacy of the draft DAFM farm code (page 27) which is voluntary, and how nitrates are to be reduced to at least below EU ceiling levels.</p>	The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the strategy, these issues are considered to be incorporated in the analysis.
17	7-8	3.8	<p>Climatic Factors</p> <p>Ireland's Environmental Protection Agency has reported that from 2011 to 2018 (the most recently reported year) agricultural nitrous oxide emissions increased by 18% and methane increased by 15%. The primary driver has been an increase in reactive nitrogen usage via fertiliser and feed in sector-driven intensive cattle farming, particularly dairy. Synthetic</p>	The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy,

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>nitrogen fertiliser imports increased by 38% over this period.</p> <p>In additional to the GHG emission accounting under the current EU system, the full post 2027 calculation of Land Use Change will require accounting.</p> <p>The RSK considerations do not address additions GHG impact of carbon soil loss for land use change inclusion horticultural peat extraction and land drainage.</p> <p>Pages 20 and 29 on adaptation in referring to disruption due to “prolonged periods of rainfall drought and snow” do not address the impact of 2018 drought in causing a fodder crisis requiring increased animal feed import and use of peat for animal bedding because of straw shortage and vegetable harvest impact.</p>	these issues are considered to be incorporated in the analysis.
18	8	3.9	<p>Material Assets</p> <p>The considerations set out by RSK do not address:</p> <ul style="list-style-type: none"> • Increased disease risk to industrial animal and crop agriculture, as shown by 2020 Co Monaghan Chicken Flu; • Debt risk and sustainability of investment in increased milk production and beef and dairy processing in creating “stranded assets”; • Greenhouse gas migration or “carbon leakage” as the Dutch Cheese company Royal A Ware and Norwegian TINE seek to locate processing plants in Ireland; • Potential of fishing vessels being unusable because of requirement to meet marine conservation fish population targets. 	The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy, these issues are considered to be incorporated in the analysis.
19	8	3.1	<p>Cultural heritage including architectural and archaeological heritage</p> <p>No consideration is given to impact of currently unregulated horticultural and animal bedding peat compost extraction and agricultural land reconfiguration on archaeology.</p>	Noted but peat extraction not anticipated to be within the scope of the Strategy.
20	8	3.11	<p>Landscape</p> <p>No consideration is given to</p> <ul style="list-style-type: none"> • Effectiveness of DAM Regulations on hedgerow and field boundary removal; • Landscape impact of increased bovine animal housing. 	The relevance of these issues is noted but the baseline is meant to be a high level summary at the same scale as the Strategy, these issues are considered to be incorporated in the analysis.
21	9	3.12	<p>Natural Capital</p> <p>RSK seek to look at the “ interrelationships between the sustainability topics”.</p>	Natural capital topic has been expanded further to include

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<ul style="list-style-type: none"> • Health impact on workers in agricultural processing facilities and increased ammonia levels; • The impact of nitrates reaching a tipping point in water quality and biodiversity impacts; • Health interrelationship between healthy diet and access to clear air; and • Nitrates impact on aquaculture. 	interrelationships between sustainability topics.
22	9	4.1	SEA FRAMEWORK The 11 SEA Objectives set out in Section 4.1 under SEA Objectives are systemically deficient in the quantified timetabled and targeted objectives required and not fit for purpose. The ineffectuality and vagueness of language of what is set out in the 11 tabulated boxes particularly evident for Water, Air Quality, and Climate Change.	The SEA objectives have been drafted following guidance.
23	9	4.1	Any agri food strategy must address a range of internationally and EU defined targets and objectives on climate, biodiversity, nitrates and water as well as public health.	While the Strategy is being framed within the context of various targets referred to, measures to address targets are subject of separate policy documents.
24	9	Table 4.1	For Objective 5, Water, the table merely states protecting and improving water quality rather than stating the requirement for Ireland to meet its commitments to the Water Framework Directive by 2027. Agriculture is responsible for the greatest pressure on water. Intensification and expansion of animal agriculture since 2010 under Irish agri-food strategy policy has greatly increased this pressure on water quality. Therefore it is grossly inadequate to merely aspire to protect and improve water quality from a current basis that is already damaged and degraded by policy since 2010. RSK fail to note the key requirement to limit total synthetic fertiliser inputs to agriculture to reduce nutrient loading nationally.	Addressed in Table 3.2 of the Environmental Report.
25	9	Table 4.1	Similarly for Objective 6, Air Quality, the stated aim to “support improvements in air quality” is grossly inadequate given Ireland has been breaching its NECD ammonia limit since 2016 and the EPA and EU Commission have stated that proposed measures will not reduce ammonia emissions sufficiently to meet the target in future. Bringing ammonia back under EU emission ceiling levels is a legal obligation as well as public health and biodiversity loss reversal imperative.	Addressed in Table 3.2 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
26	9-10	Table 4.1	For Objective 7, Climate Change, it is extremely troubling that RSK state “[s]upport the agrifood sector in reducing its GHG footprint per unit of output”, which indicates that RSK are unaware that climate change impact depends on absolute total agriculture sector emissions, not on an efficiency footprint measure. In the absence of a reducing cap on total emissions such an efficiency focus merely enables cost savings that are reinvested to increase production and emissions. Since 2011, methane emissions are up 15% and nitrous oxide emissions are up 18%, despite constant policy and strategy measures focused on footprint improvement.	Noted.
27	10	Table 4.1	Also for Objective 7, Climate Change, the phrasing “Support land management practices that protect and capture carbon, particularly from peatlands and forests” is extremely weak. It fails to clearly state the critical distinction that prioritising immediate measures to prevent ongoing carbon losses from land use is of far greater climate action priority than policy supporting slow, uncertain and impermanent sequestration measures. Ongoing carbon losses from organic soils under pasture are 6 MtCO ₂ /year and from peat extraction for horticulture 2 MtCO ₂ /yr. Managed forestland in Ireland is already a net source and afforestation is slow so near-term restrictions on forest harvest are needed to prevent carbon loss.	Noted.
28	10	5.1	CONSIDERATION OF ALTERNATIVES The 2030 Committee membership, as for 2025 Food Wise, is heavily biased toward agri-food industry vested interests with only a single environmental NGO member among over 30 members. It is grossly negligent for this scoping document to fail to highlight this inadequate and improper lack of independence in defining “reasonable alternatives”.	The scoping stage was open for public consultation giving all stakeholders an opportunity to input. Strategy Committee representation is outside of the remit of the scoping process.
29	10	5.2	This is a false statement. Recorded data since 1990 for Ireland’s agriculture sector shows that it responds extremely quickly to policy changes. As the chart below shows the Irish agri sector is primarily responsive to the total amount of nitrogen fertiliser being used nationally, which drives ruminant production and resultant methane emissions and nitrogen pollution (nitrous oxide, ammonia and nitrates). EU policy from 1998 to 2011 based on intensification and the milk quota ensured emission reductions, but Ireland’s agri-strategies since 2010, designed by the agri-food industry has reversed these policies at the	Noted

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			cost of increasing climate, air and water pollution. Therefore, reversing the current strategy and first limiting total nitrogen inputs to the 2011 level and following a path continuing the 1998–2011 trends in nitrogen and cattle numbers would be and obvious, evidence-based reasonable alternative.	
30	11	5.2	There no such widespread desire and none at all among environmental NGOs. This statement is based only on the answers to the biased leading questions in the Public Consultation. If the respondents had been first made fully aware that environmental indicators have been increasingly negative under the existing approach it is very likely that a fully engaged consultation with a much greater population sample would have arrived at very different results. At the very least the scoping document could comment on this possible likely bias.	Noted.
31	12	5.2	As has been pointed out in a peer-reviewed article by Kenny et al. 2016 the “sector-driven” Irish strategies since 2010 have seen a “distinct absence of public health representation in the process, an avoidance of some key public health challenges and the dominance of a ‘business as usual’ approach”. In the opinion of eNGOs including An Taisce the same is true for the inadequate approach of the strategy committees and strategies to environmental and climate concerns.	The Strategy is taking a food systems approach
32	12	5.2	Contrary to the assertion of RSK the public consultation cannot be taken to indicate a clear support for the 2030 Strategy. Nor are the proposed Reasonable Alternatives given in the scoping document in any way adequate to be used in an SEA. Nor is the sector-driven 2030 Strategy Committee sufficiently independent to review any proposed SEA alternatives.	Noted
33	12	5.2	On p.41, Alternative 2 is the only “reasonable alternative” stressing environmental factors whereas three others are merely variations on the business-as-usual approach of intensification and dairy expansion under Food Wise 2025. This is a grossly inadequate alternative that is not reasonably supported. Even if the detail has yet to be defined for Alternative 2 it is extremely unclear from this description what this alternative means even in qualitative terms. Comparing this alternative on the basis of a fractional change of FW2025 and only emphasising added "promotion of greater sustainability in food production and processing" is not a reasonable alternative. It suggests that marketing promotion of claims is the aim rather than real, immediate and long-term	Alternatives reviewed

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			improvements in the environmental indicators that have been damaged by Irish sector-driven agri-strategies since 2010.	
34	12	5.2	<p>In fact, given the reversal since 2010 of previously improving environmental and emission trends, the most reasonable alternative would be to reverse the strategy direction since 2010 by first limiting total synthetic nitrogen inputs to the 2011 level immediately (below 300,000 tN) and showing a path continuing the 1998–2011 trends in nitrogen and cattle numbers.</p> <p>This is an evidence-based reasonable alternative to the sector-driven strategy since 2010 that is far more likely to meet climate, ammonia and water targets in the near term. It is essential that the reasonable alternative meets these targets very quickly, primarily by limiting total synthetic nitrogen inputs in Ireland (which increased by 38% from 2011 to 2018).</p>	Noted.
Organisation: Association of Farm & Forestry Contractors in Ireland (FCI)				
Date received: September 2020				
35	1		Farm & Forestry Contractors in Ireland have a key role to play in providing cost-effective and efficient mechanisation services to allow Ireland to remain a world leader in the production, management and marketing of low carbon, high-quality sustainable and traceable food. Through our judicious investments in modern low-emission and high output farm machinery, Farm & Forestry Contractors are playing their part in supporting in maximising farm production efficiency whilst minimising the effects on the climate and reducing the environmental footprint of agriculture. This fact needs to be recognised in the Agri-Food Strategy 2030.	Considered by the Strategy development team
36	1		Our FCI members are early adopters of scientific research and the best practices at farm level. Contractors have also a track record of working in partnership with their farmer clients and farm advisors, as we strive to achieve national climate goals. We believe that Farm & Forestry Contractors can play a very significant part in a national collaborative effort to ensure a just lower carbon transition for all Irish farmers. This strategy needs to be recognised and incorporated into the Agri-Food Strategy 2030,	Considered by the Strategy development team
37	2		As the providers of a dominant amount of the mechanisation services on Irish farms we can work together in new technical and management partnerships with farmer clients and their	Considered by the Strategy development team

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			advisors, to ensure long-term sustainability, from an economic, social and environmental perspective. All such partnership discussions must now include the knowledge and expertise of Farm & Forestry Contractors to adequately inform farm advisory programmes.	
38	2		Support for Farm & Forestry Contractors to invest at a more rapid pace, in newer more fuel efficient machinery systems that guarantee a reduction in the average carbon footprint, and lower ammonia emissions needs to be examined. At FCI we believe that the Department of Agriculture, Food and the Marine should use the opportunity for the review of the Agri-Food Strategy 2030 to help the agri-food sector achieve the maximum possible progress in climate change mitigation and adaptation, and reduction of greenhouse gas emissions, consistent with commitments at EU level. Farm & Forestry Contractors can play a significant role in achieving this vital progress.	Considered by the Strategy development team
39	2		At FCI we would contend that the uniquely valuable Farmer: Contractor relationship brings huge performance improving added value to the production on Irish farms, because the very survival of the Farm & Forestry Contractor depends on the performance on the farm. This investment in the profitability of Irish farms, through constant Farm & Forestry Contractor tangible investment in more efficient machines and better work practices, is more far more intrinsically linked to the continued growth in decades of Irish farm output than some of the advice provided by those operating at arm's length from the farm gate.	Considered by the Strategy development team
40	2		Ammonia Reduction Farm & Forestry Contractors in Ireland support the action of enhancing soil fertility and nutrient efficiency by reducing nutrient loss to the environment during slurry spreading. As contractors are the dominant providers of slurry spreading machinery systems and apply the bulk of the 40 million tonnes (Mt) of animal manures produced annually on Irish farms, we believe that working in partnership with farmers, the Department of Agriculture, Food and the Marine and advisory services that the target of 60% of all slurry spread by low emissions slurry spreading by 2022; 75% by 2025; and a longer-term ambition of 90% can only be achieved through active policy partnership programmes with Farm & Forestry Contractors.	Considered as part of Climate and Air Roadmap
41	2		We believe that it is important to support the role of the Farm & Forestry Contractor to invest in new slurry spreading Low Emission Slurry Spreading (LESS) technology in the same	Outside scope of Strategy

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			way that farmers are supported. Contractors will do most of the work, provide economies of scale on farms and use more modern, low emission tractors to power this machinery. We believe that in the absence of equality and fairness in support programmes for investment in LESS machinery, that all grant aid for the systems should be suspended immediately.	
42	3		Currently, the Department of Agriculture, Food and the Marine (DAFM) oversee and administer the Targeted Agricultural Modernisation Schemes (TAMS) which supports capital investment in a number of target areas. FCI believes that current TAMS grants for the purchase of low emission slurry spreading equipment should be withdrawn and replaced with more targeted grants for increased farm nutrient storage.	Outside scope of Strategy
43	3		Irish Farm & Forestry Contractors have not invested in higher technology slurry management machinery to the same extent as their European counterparts due to the presence of the farmer-focused machinery grant aid system which is making investment in more accurate and more efficient spreading systems that incorporate Precision Farming systems with high levels of transparency, uncompetitive.	Outside scope of Strategy
44	3		FCI believes that there must be more investment in education for farmers on slurry management rather than on the purchase of slurry spreading machinery. FCI believes that there is a need for farmers to understand that not all animal slurry is the same. There are significant operational differences in slurry agitation and spreading for current low emission slurry spreading systems, based on real-world Irish conditions where baled silage is being fed to animals in slatted sheds.	Considered by the Strategy development team
45	3		FCI believes that currently in the region of 40% of slurry on Irish farms is not suitable for use with the dribble bar/trailing shoe system. This confirms that there needs to be some changes to the management of the slurry, not to the machines. Many trailing shoe systems are not considered to be farmer friendly, due to maceration blockage issues. These machines can only function to their optimum design specification in the hands of skilled Farm Contractor operators.	Considered by the Strategy development team
46	3		FCI believes that the current GLAS grant aid scheme should be extended to all farmers to use Farm Contractor based Low Emission Slurry Spreading (LESS) systems. FCI proposes a voucher grant support system for the use of Farm Contractor LESS systems. If all LESS slurry spreading was grant aided based on Farm Contractor invoices, not just to the GLAS farmers,	Outside scope of Strategy

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			the cost to the Government would be significantly less. The cost to the state of the current GLAS limited voucher system at €1.20/ cubic metre for 50% of the slurry to be spread by LESS systems would be €15 million per annum and it would be guarantee that the low emission systems were being used and would be fully traceable.	
47	3		<p>The scale of Irish farming (farm size) does not justify the investment in Precision Farming technology, which will be essential for all farms in achieving compliance. This approach would support Farm Contractors to invest in the use of the technology, such as the John Deere HarvestLab system, and costing in the region of €20,000, it would help to provide assured traceability of the quantities and quality of animal manure products spread on farmland.</p> <p>This grant/voucher proposal would also allow the creation a national register of Farm Contractors under the scheme who could then avail of technology updates through Knowledge Transfer systems (from which they are currently excluded) to ensure continuous improvement in the standards of manure application strategies.</p>	Outside scope of Strategy
48	4		FCI is suggesting some flexibility to use the splash plate spreading system for part of the work of slurry spreading, but only early in the spring. There are often practical difficulties in spreading the first loads from slatted shed slurry pits, due to under capacity issues which in turn lead to agitation difficulties. These sheds do not have the capacity to allow for the dilution of high dry matter slurries during agitation prior to spreading and these high dry matter slurries cannot be effectively land spread using the current LESS machine systems.	Outside scope of Strategy
49	4		<p>Precision Farming (PA) Technology</p> <p>There should be support to stimulate the wider use of PA technologies will be necessary to eliminate the negative impacts of the small farm scale. If no such supportive action to improve the uptake of PA technologies for farms below 100ha (average farm size in Ireland 32.4ha) were to be taken, it could become increasingly difficult for these farms to compete with farms in the USA, Canada and New-Zealand or even with larger Irish farms, all of which invest in PA technologies. Not only could smaller Irish farms thus lose their competitiveness. They might struggle to comply with greening targets and EU environmental policy goals.</p>	Considered by the strategy development team
50	4		PA technologies are one of the most efficient tools to improve sustainability and productivity in farming. PA technologies offer solutions to produce more with less and	Considered by the Strategy development team

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>enhance food security and safety. Practically, PA technologies provide farmers with extra sensors which give them more information on how to manage natural variations like weather conditions, pests, insect and fungal infestation.</p> <p>Some of the most prominent environmental benefits of PA technologies are:</p> <ul style="list-style-type: none"> • Preventing ground water pollution by optimizing manure and chemical spraying • Reducing fresh water withdrawals with precision irrigation • Limiting crop damages by responding rapidly and effectively to pest, fungal infestation • Allowing new types of poly culture (critical to stimulate biodiversity, noticeably for pollinators) 	
51	4		<p>Some PA diagnostic technologies are already highly affordable and thus available to smaller farms thanks to smart phones or tablets and their applications. Such applications can directly signal a problem on the field or connect to an online service for further probing. Other fundamental PA technologies are less available to smaller farms and should therefore be promoted by the Agri-Food Strategy 2030. These technologies can be divided in three categories:</p> <ol style="list-style-type: none"> 1. Guidance Systems 2. Variable Rate Applications (VRT) & Nutrient Sensing 3. Precision Livestock Farming (PLF) Technologies <p>Each of these technologies offers distinct advantages in terms of sustainability and profitability for farmers.</p>	Considered by the Strategy development team
52	4		<p>Fuel use & CO2 Reduction in Farm & Forestry Contracting in Ireland</p> <p>Farm & Forestry Contractor services provide a unique value-added component to the chain of Irish agricultural production ensuring the competitiveness of Irish agricultural production through the use of efficient and modern lower carbon machinery systems. We estimate that the proposal to increase Carbon Tax to €80 per tonne will add a minimum of an extra €100 million to the cost of our services at the final stage of this tax with incremental increases from the level proposed this year of €6/tonne, which in itself will mean increases in the costs of our services to Irish farming as we can no longer absorb the increasing fuel costs.</p>	Taxation outside the remit of the Strategy

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
53	5		CO2 emissions are highly correlated to fuel use. Almost all of the carbon in diesel fuel is emitted in the form of CO2 efficiency in converting fuel (diesel) into usable energy is one of the main demands of Farm & Forestry Contractors. Therefore, improving fuel economy has been and will be one of the main drivers for innovation. As a result CO2 emissions in agricultural machinery applications have substantially decreased in the last decades.	Noted
54	5		Summary of Achievable CO2 Reductions Farm & Forestry Contractors remain excluded from the Carbon Tax Rebate System, (Finance (No.2) Act 2013 Edition - Part 23) which is open solely to farmers. This is despite the fact that our members carry out 90% of the farm mechanisation work on Irish farms consuming close to 350 million litres of green diesel annually valued at €262 million. This alone is 62% of the total energy bill for the entire Irish agricultural sector based on the total expenditure on energy and lubricants increased by €33.8 million (+8.7%), increasing from €390.2 million in 2017 to €424.1 million in 2018. (Source: Dept. of Agriculture Annual Review & Outlook 2019).	Outside the remit of the Strategy
55	5		Farm & Forestry Contractor Agricultural Knowledge and Innovation Systems Agricultural Knowledge and innovation Systems (AKIS) have a key role to play in meeting challenges faced by agriculture and rural areas. Farm & Forestry Contractors are often excluded from this process so that new technology systems are not being address to the key operators so that new technology opportunities are insufficiently applied in practice especially among smaller farmers. There is need involve Farm & Forestry Contractors in new knowledge and innovative solutions to achieve quicker innovation and better uptake of existing knowledge to achieve climate and productivity objectives. Farm & Forestry Contractors can play an important role in supporting the digital transition in agriculture through the use of scale-efficient farm machinery resources.	Considered by the strategy development team
56	5		The Association of Farm Contractors in Ireland (FCI), research has shown that Farm & Forestry Contractors in Ireland employ close to 10,000 people operating machines on farms. Farm & Forestry Contactors use more than 350 million litres of diesel annually (61% of total agricultural energy consumption) in carrying out this farm work and operate more than 20,000 modern and fuel efficient tractors. Contractor machines harvest 90% of the Irish silage crops each year along with managing the sustainable spreading more than 20 billion	Considered by the Strategy development team

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			litres of slurry, as well as establishing and harvesting many different crops. Farm & Forestry Contractors can play a significant role in partnership with farmers, the Department of Agriculture, Food and the Marine and advisory services as we work together to provide workable solutions to the significant challenges that Ireland faces in attempting to its climate change and air quality targets. The important role of Farm & Forestry Contractors needs to be recognised and incorporated into the Agri-Food Strategy 2030.	
Organisation: BEET Ireland				
Date received: September 2020				
57	3	2.7	It is noted that the SEA Scoping Report provides a comprehensive backdrop to the current policy framework and it highlights significant challenges currently facing the industry. This backdrop must also be considered in the context of the recent Government Programme for Government, Our Shared Future	Addressed in Section 4.2 and Appendix B of the Environmental Report.
58	3	1.3	Committee Approach These themes are all critically important for the future of the agri-food industry in Ireland. The challenge ahead is how these themes are aligned against the objectives set out in current Government policy and the SEA objectives.	Noted.
59	3		Horticulture It is noted that horticulture is referenced once in the document, in Appendix A. This is a serious oversight and must be addressed in the next stages of policy development. The sectors relating to mushrooms, potatoes, vegetables, protected crops and amenity production play an important role in the agri-food industry however they have been ignored in the SEA Scoping document.	Addressed in Section 4.3 of the Environmental Report.
60	3	3.9	Baseline Data In the context of the above it is noted that while there has been some increase in the number of AD facilities in Ireland since 2014, the opportunities that exist for increasing the level of AD adoption in the agri-food sector has not been underpinned by appropriate Government policies. Accordingly Ireland has not seen the widespread adoption of AD technologies in the agricultural sector and this remains a lost opportunity. It is noted that a significant bioethanol production opportunity if the Government and fuel industry move from E5 to E10. The proposed biofuels blending obligation of 11% from	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			January 2020 is simply a recognition of the status quo for today's biofuels deployment in Ireland, i.e. 5% real use of ethanol in petrol plus 7% real biodiesel, which is reported as 14% under double counting. This is not an appropriate policy to bring about significant environmental benefits. A 12% obligation from 2020, instead of 11%, would bring E10 petrol into the system.	
61	5-6	5.2	<p>Alternatives</p> <p>The above illustrates a flawed assumption in terms of Foodwise 2025. It is clear from the current Government Programme and Climate Change policy documents and the baseline data outlined in the scoping document that any Strategic Environmental Assessment must place an increased emphasis on environmental sustainability. However the assumption that "the continuation of the 2025 Food Wise priorities either in full or part" is seriously flawed, when considered against the baseline data. As noted above the impact of key elements of the Food Wise 2025 is causing serious negative environmental problems. It is therefore not reasonable to conclude that the proposed base case is appropriate.</p> <p>It is clear from the above that neither Alternative 1 or Alternative 3 are appropriate for the next stages of the SEA analysis. It is further noted that these 2 alternatives are not in keeping with the EPA Recommended Guidelines for Alternative Assessments.</p> <p>Alternative 2 seeks to consider this option in comparison with 2025 Food Wise as the baseline case. The development of Alternatives with 2025 Food Wise as the base case is seriously flawed.</p>	Alternatives reviewed
62	5-6	5.2	<p>It is therefore recommended that alternatives be considered in the context of the 2030 and 2050 climate change targets that the current Government has signed up to. In this context it is suggested the following alternative scenarios be considered:</p> <ol style="list-style-type: none"> 1. Alternative Base Case <ol style="list-style-type: none"> a. Use the year 2020 as the current base case and reference year to define current status of industry. 2. Alternative Sustainable Approach <ol style="list-style-type: none"> a. Assume the 2030 Government climate change and biodiversity targets as the benchmark to be achieved and outline the range of policies required to meet these targets. 3. Alternative Sectoral Approach 	Alternatives reviewed

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>a. Taking a sectoral approach to the agri-food industry, define the role as well as challenges and opportunities facing the creation of “A climate smart, environmentally sustainable agri-food sector”</p> <p>4. Alternative Material Assets Approach</p> <p>a. Taking a land & sea use and material assets approach, define how Ireland can take a 2050 horizon timeline which will ensure that the agri-food sector is aligned with Government Programme to “sustainability at the heart of our fiscal, enterprise, innovation, and environmental policies.</p>	
63	6		<p>The framing of the current scoping exercise will define the direction of the final SEA and this will play an important role in guiding the future 2030 Agri-Food policies. Insufficient consideration was given to the 2025 Food Wise SEA analysis and this resulted in significant conflicts between production expansion and environmental impacts. The current SEA scoping analysis is therefore very important.</p>	Noted.
Organisation: Heseltine Institute for Public Policy, Practice and Place, University of Liverpool				
Date received: September 2020				
64	1		<p>On the 31 July 2020, the Supreme Court quashed the National Mitigation Plan (NMP) 2017. Food Wise 2025 was a key part of the NMP in respect of the so called “sustainable intensification” of Irish agriculture. The Supreme Court ruled that the successor to the NMP must set out, with a sufficient level of detail, how Ireland will achieve the National Transition Objective by 2050. The successor strategy to Food Wise 2025 must unequivocally do this. The Teagasc MACC mitigation measures, as included in the subsequent Climate Action Plan, have thus far failed to have any meaningful effect whatsoever on rising agriculture emissions.</p> <p>The recently negotiated Programme for Government proposed a new Climate Act which will mandate an average -7% per annum emissions reduction to 2030 (~-50% over a decade) with legally binding 5-year carbon budgets. Each sector, particularly agriculture which accounts for ~30% of total ESD emissions, will be required to develop a clear strategy to achieve its sectoral target.</p> <p>It is simply not credible , or possible, to expand the agricultural productivism in the context of the scale of rapid emissions reductions that Ireland is required to make. Agriculture will</p>	Considered as part of Strategy Development

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			be required play its part. The overarching agri-food strategy to 2030 must be one of sustainable DE-intensification.	
65	1		Ireland also has legally binding emissions under the National Emissions Ceiling Directive to reduce ammonia emissions. 90% of ammonia coming from animal manure. Failure to implement policies to reduce ammonia emissions will expose Ireland to legal action to force it to comply. Any successor strategy to Food Wise 2025 must include such policies.	Considered as part of Agri Climate and Air Roadmap
66	1		Ireland further has legally binding requirements under the Water Framework Directive. According to the EPA, agriculture continues to be a major cause of declining water quality. Again, failure to implement policies to reduce water pollutants from agriculture will expose Ireland to legal action to force it to comply. Any successor strategy to Food Wise 2025 must include such policies.	Considered as part of Strategy Development
67	1		It is unimpeachable from readily available empirical evidence (EPA) that the agriculture productivism promoted by Food Wise 2025 is incompatible with environmental limits and legally mandated requirements pursuant to EU law. This cannot continue.	Considered in the Development of the Strategy
68	1		The EU has signalled a clear direction of travel for post-2020 CAP through the Farm to Fork strategy. This proposes a radical reorientation of agricultural policy away from headlong productivism towards a more holistic land-use management approach and rewarding farmers for environmental goods. This direction of travel is only going one way.	Considered in the Development of the Strategy
69	1		Ireland needs to use this opportunity to strategically reset agricultural policy through a fundamental change of approach and to maximise income to farmers through early adoption of this new paradigm. We need to shun our reflex as a reluctant jurisdiction on environmental protection. Failure to do so will simply store up significant costs for the future and make the challenge of the inevitable transition away from the flawed expansionary agricultural model of the past decade much more difficult.	New Strategy takes a food systems approach
70	1		No doubt Ireland's high-emission agri-industrial complex will rail against and stymie the policies required. The choice for the Government is between the short-term profiteering and predatory delay of corporate interests, and the long term viability of Irish food production.	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
Organisation: Irish Farmers Association (IFA)				
Date received: September 2020				
71	2		Irish agriculture rightly has a global reputation for high environmental standards. It is important that the Strategic Environmental Assessment (SEA) fully recognises the positive actions taken by farmers and builds on these to further improve the sustainability of the sector.	Addressed in Section 4.3 of the Environmental Report which identifies the various schemes which have been taken up by farmers.
72	2		<p>Positive actions taken by farmers</p> <p>Irish farmers are fully engaged with sustainable agricultural practices and committed to climate action. The actions undertaken by farmers clearly demonstrate their willingness to improve sustainability and to actively contribute to climate change mitigation, when focussed supports are introduced. Some of the actions being undertaken by farmers to meet the environmental challenges of reducing greenhouse gas (GHG) and ammonia emissions, increased carbon capture, improved water quality, protecting and improving biodiversity include:</p> <p>All farmers in receipt of a basic payment maintain their land in Good Agricultural and Environmental Condition (GAEC) across a range of areas.</p> <p>As highlighted in the SEA Scoping Report, 50,000 farmers participate in the Green Low Carbon Agri Environment (GLAS) Scheme, The GLAS scheme makes a positive difference for the climate, water quality and biodiversity in the following ways:</p> <ul style="list-style-type: none"> •Almost 13000km of watercourses will be fenced off from livestock. •Almost 46000ha of traditional hay meadow will be planted. •Almost 240,000ha of carbon sequestering low-input permanent pastures will be created, •360km of arable grass margins, as well as 62km of riparian margins will be created. Over 212,000 carbon assessments have been completed on farms using the Teagasc/Bord Bia carbon navigator as part of Bord Bia's Origin Green Programme. 	Noted.
73	2		Farmers have also moved beyond the regulatory environmental obligations, participating in voluntary programmes such as Smart Farming, the Agricultural Sustainability Support and Advisory Programme (ASSAP) and European Innovation Partnerships, such as the BRIDE Project. Such proactive engagements by farmers to improve their farms sustainability have	Noted

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>resulted in:</p> <ul style="list-style-type: none"> - Almost doubling of phosphorous use efficiency over the past two decades. - Ireland has the 23rd lowest nitrogen surplus of the EU with the 6th highest water quality. - Ireland's dairy farmers having the lowest greenhouse gas GHG emissions per kilo of output in the EU. - Ireland's beef and dairy farmers are in the top five for lowest GHG emissions per kilo of output. - Farmer demand for ammonia reducing equipment (Low Emission Slurry Spreading) currently exceeds supply. - Farmers have fully taken up all air quality and climate action policy measures. 	
74	2		Any environmental assessment that evaluates environmental consequences must be logical and identify actions that can build on Irish agricultures green credentials whilst maximising the economic growth of the agri-food sector in an environmentally sustainable way. Irish farming has and will continue to play its part when it comes to addressing environmental challenges.	Noted.
75	3		<p>Improving Farm Sustainability</p> <p>Farmers can improve the environmental sustainability of their farms if properly supported.</p>	Noted.
76	3		<p>Introduction of Sustainable Development Programme</p> <p>Funding is required to introduce a Sustainable Development Programme (SDP) to co-ordinate the delivery of price supports for farm-scale and community-based renewables and to ensure the maximum delivery of the Teagasc MACC climate roadmap. This roadmap sets out key measures to displace on farm fossil fuel use, to recognise carbon sequestered by the sector and to support greater farm level efficiency.</p>	Outside Strategy remit
77	3		<p>Improved Low Emissions Slurry Spreading Scheme</p> <p>The existing Low Emissions Slurry Spreading (LESS) scheme, which while currently well backed by farmers, requires additional support to escalate action to address air quality (ammonia) challenges.</p> <p>IFA proposes that:</p> <ul style="list-style-type: none"> - That the overall grant aid available for individual farmers is increased to 60%. - That the separate limit to general TAMS is increased. 	Outside Strategy remit

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<ul style="list-style-type: none"> - That it remains a strong measure in future environmental schemes. - That investment in LESS equipment is VAT exempt. 	
78	3		<p>Support increased use of protected urea, lime, slurry additives and soil aeration technologies</p> <ul style="list-style-type: none"> - The use of coated or protected urea is recommended by Teagasc, to help address climate and ammonia challenges. They report that using protected urea can reduce ammonia losses into the atmosphere by 80% compared to standard urea. Protected urea is more expensive and is less readily available to purchase. To encourage uptake, an incentive scheme should be introduced to close the differential gap and includes an additional top up incentivise uptake of protected urea. - Lime is an important element to neutralise the acidity in Irish soils and restore them to optimum soil pH, which supports crop growth and overall soil quality, whilst reducing risk of run-off and nutrient losses. Two thirds of soils are at sub-optimum pH levels. As per the Programme for Government Commitment, there is an urgent need for the Department to introduce a liming scheme to support use on Irish farms, as suggested by Teagasc. - Slurry additives applied in winter slurry storage are recognised by Teagasc as helping to reduce emissions. Such slurry additives are costly and some farmers have questioned the efficacy of the claims made by the slurry additive suppliers. A support should be put in place to encourage slurry additives uptake, and Teagasc or the Department should publish an annual list of slurry additive products that they have tested and that deliver the outcomes claimed. - Soil structure is critical in determining the provision of nutrients, water and air in soil as this is dictated by soil structure. Soil aeration can speed up the recovery process by improving drainage, air diffusion and root exploration, which in turn promotes growth. The introduction of supports for soil aeration equipment will benefit soil structure and production. 	Considered in development of Agri Climate and Air Roadmap
79	4		<p>Expansion of current sustainability schemes</p> <ul style="list-style-type: none"> - In 2019, the average cost savings identified on participating farms that took part in the Smart Farming Programme was €6,300 with associated GHG reductions of 10%. As recommended in the Joint Oireachtas Climate Action Committee Report Climate Change: A 	Outside Strategy remit

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			<p>Cross-Party Consensus for Action March 2019, the programme should be developed and expanded³.</p> <ul style="list-style-type: none"> - The Beef Data and Genomics Programme (BDGP) has been effective in improving the efficiency of the national suckler cow herd. This scheme must be simplified and built upon with an increase in the allocation for the scheme. The Irish Cattle Breeding Federation (ICBF) estimate that by 2030, the genetic gain achieved through the programme will reduce GHG emissions by 14% per kg of beef produced⁴. - The GLAS scheme is oversubscribed, which demonstrates the willingness and interest of farmers to participate in agri-environment schemes. Farmers are enthusiastic about seeking ways to improve the sustainability of their farms and they must be supported with a payment for delivering the public service beyond income forgone and cost incurred. 	
80	4		<p>Support for anaerobic digestion and on-farm renewables</p> <p>Micro-energy, anaerobic digestion, farm-scale and community renewable energy projects have all been recognised for a long time as important tools to displace fossil fuel use in rural areas, reduce environmental risks (water, air, climate) and generate alternative income streams. In 2019, their important role was highlighted in the Oireachtas Committee on Climate Action Cross-Party Consensus for Action report.</p> <p>If the potential of on-farm renewables is to be realised the following measures are required:</p> <ul style="list-style-type: none"> - The Department of Housing, Planning and Local Government should review existing planning obligations, for all on-farm renewable projects, to bring planning requirements in line with other EU Member States. - Tiered supports are required for the development of anaerobic digesters, ranging from farm scale (up to 0.5MW), to community/small co-op scale (0.5MW - 2MW) and large co-op (5MW). - The provision of a Capital Grant in the order of 50%-60% which is ring fenced from existing farm supports - Development of a Feed-in Tariff paid on the metered output - Planning exemptions for farmers for small scale developments. One-stop advice clinics should be provided to assist project developers to submit successful applications. 	Outside Strategy remit

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
81	4		<p>Carbon sinks from forests, permanent pastures and hedgerows must be fully counted The positive climate impact achieved through carbon sinks, such as forests, hedges and permanent pastures, are currently not fully counted. This has led to an unbalanced picture of agriculture's climate impact. For example, afforestation since 1990 will remove an estimated net 4.5m tonnes of CO₂ from the atmosphere per annum, over the period 2021 - 2030. Yet the climate value of this will not be fully recognised, but any changes in methane and cattle numbers will be fully counted.</p> <p>The Department of Agriculture, Food and Marine must further incentivise carbon sinks on farms and these sinks, associated with forestry, hedgerows and permanent pasture , must be counted when measuring agriculture's climate contribution.</p>	Considered by the strategy development team
82	5		In addition to identifying positive actions that can be built on to improve sustainability at farm level, it is important that the SEA considers the environmental consequences of proposed plans or programmes within a wider context considering "transboundary impacts" beyond the island.	Addressed in Section 6.6 of the Environmental Report.
83	5		<p>Within Ireland, the Environmental Protection Agency (EPA) are tasked with reporting and monitoring Ireland's environmental performance, which is submitted to the European Union (EU) and the United Nations (UN) on an annual basis for review. When documenting trends such as GHG the accounting methodology must be in line with the Intergovernmental Panel on Climate Change (IPCC) guidelines for National GHG inventories, As part of this methodology, methane and other GHGs are currently accounted for using the GWP (Global Warming Potential) methodology.</p> <p>However, it is questionable as to how appropriate this methodology is in accurately depicting the GHG's warming effect on the planet. Under current policies, long and short lived GHG are treated as being interchangeable, when in-fact the warming effect on the planet between long and short lived GHG is very different.</p> <p>Taking methane as an example, it has a strong warming potential early in its life cycle but then diminishes rapidly within approximately 10 - 12 years. In comparison to carbon dioxide, the warming affect is much lower but extends over a longer timeframe of approximately 1,000 years and accumulates in the atmosphere long after it was emitted from the source,</p>	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
84	5		As climate research continues to evolve, policies must also evolve to more effectively align GHGs and their effects on the warming of the planet. Research from the University of Oxford proposes a more accurate method of evaluating the climate impact of short lived GHGs, such as methane known as GWP*. In evaluating this evidence base, the GWP* calculation should be adopted at national, EU and UN levels,	Noted.
85	5		Aside from the counting methodology used to report on GHGs, it is questionable if targets used are framed within the correct units for the benefit of the overall global environment. Under the effort sharing legislation, GHG reduction targets were set, focusing solely on reducing absolute or total emissions from sectors such as; transport, agriculture, infrastructure and waste. While the focus on overall emissions is important, this does not account or consider the efficiency of production from the use of resources. For example, the carbon footprint of a kilo of beef or milk produced.	To be considered in the Strategy development
86	5		Reducing overall emissions is critical, although GHGs do not respect national and EU boundaries as recognised in the SEA to some degree through "transboundary" movements. Policies must ensure that in the movement to reduce overall emissions, aligned with targets, that this is not having a contrary consequence on emissions globally.	To be considered in the Strategy development
87	5-6		Examining this in the context of agriculture and food production, the demand for food is rising with the world population predicted to grow to 9.7 billion by 2050. Therefore, in a shift to lower overall emissions, it would be counterproductive to limit carbon efficient food production in a country such as Ireland, as market demands would be replaced from countries that have a higher carbon footprint. This is commonly known as carbon leakage. Teagasc estimate that a 50% reduction in Irish beef being displaced by South America would lead to a further net 3.6 million tonnes of GHG emissions.	Noted.
88	6		It is of paramount importance that policies do not hinder sustainable food producing countries in the aspirations to meet absolute or 'total' reduction targets that disguise efficient use of resources. The emphasis should be on carbon efficiency, environmental and economic sustainability.	To be considered in the Strategy development
89	6		The agri-food sector plays a vital role in the Irish economy and within rural Ireland. From the earlier sections of this submission, the proactive engagement and willingness to adopt sustainable practices by farmers is affirmative. Equally of importance, is that this willingness	Noted.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			at farm level is supported by addressing the three pillars of sustainability in equity. The financial and social aspect of sustainability is often secondary to the environmental aspect.	
90	6		The capabilities and potential of one pillar is limited by the resources of another, put simply, farmers cannot be green while their finances are in the red. Consumers willingness to pay for environmental services in food produced to the highest standards, must match any ambitions put forward. There is a need for public money for public goods, and it is of fundamental importance that a pre-emptive approach is taken in addressing concerns raised in the draft and final SEA through the many actions and measures identified in this submission.	To be considered in the Strategy development
Organisation: Irish Water				
Date received: September 2020				
91	1	3.6	Water availability Irish Waters responsibility involves providing over 3.9 million customers with an average of 1.7 million litres of drinking water each day via a network of 1,208 groundwater and surface water abstractions, 788 individual water treatment plants and 63,000 kilometres of distribution network. Historically this service was provided by 31 individual local authority water service functions. Under this management model, water supplies in many areas developed over time on a reactive basis, based on the need in the immediate vicinity. As a result, outside the main urban centres, water supplies are generally characterised by a fragmented network of isolated supplies, often abstracting from relatively small waterbodies, causing reliability / sustainability issues and the potential for environmental impact.	Noted
92	2	3.6	The situation, although manageable in the short term, will become increasingly untenable due to population growth, competing needs for water within catchments (including changes to agricultural land use), more stringent environmental conditions on water abstraction, and climate change impact. In addition to this, although as a country our average rainfall is relatively high, it is unevenly distributed, with more in the west than the east. The areas with lowest rainfall happen to have the greatest population density (although this density is low compared to European norms), and also have the most intensive agricultural	Noted

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			production. This means that water resources in our more populated areas are locally under pressure.	
93	2	3.6	As part of our first supply demand balance assessment, we have identified that, based on our current water supply assets, over 50% of our water supplies are currently in deficit or will fall into deficit at some stage over the next 25 years if we do not intervene. This means that the reliability of our water supplies is suboptimal and that, if we do nothing, our existing customers will experience interruptions to supply with increasing frequency, and our ability to cater for population and economic growth could be impacted. Consideration should be given to proactive multi-stakeholder resource planning at a catchment level, to ensure that these future challenges can be met.	Noted
94	3	3.6	Integrated Catchment Management Irish Water prepares Drinking Water Safety Plans (DWSP) which seek to protect human health by managing risks to water quality, taking a whole catchment approach to manage risks from source through to the tap. Both the World Health Organisation (WHO) and the EPA strongly endorse the Drinking Water Safety Plan approach to managing drinking water supplies effectively in the interests of public health. Protection of the water source is the most effective way of reducing the cost of water treatment. Catchment management is a process that recognises a catchment as the appropriate unit for understanding and managing land, water and ecosystems and guides people towards an agreed vision for their catchment, and towards acting together to manage it. Water quality in catchments is impacted by multiple pressures, from various sources including wastewater and agriculture. A balanced approach between the sectors is required, with impacts from wastewater services and agriculture being addressed as part of a coordinated approach in each catchment, towards the achievement of agreed water body objectives.	Noted.
95	3	3.6	A number of pesticides have been detected in low concentrations in a large number of rivers across Ireland over the past number of years. With the proposed intensification of agricultural production, there is a risk that pesticide usage may increase, with a resultant potential increase in drinking water supplies with Pesticide failures. DAFM have been working with Irish Water as part of the National Pesticides and Drinking Water Action Group (NPDWAG) to promote the use of Integrated Pest management and to follow best practice	Addressed in Table 3.2 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			when using any pesticide product, especially in the vicinity of a drinking water source. To ensure that agricultural production is environmentally sustainable we would propose that the catchment management approach promoted by the EPA and other stakeholders in Ireland should be incorporated in the SEA and include actions / commitments in relation to the sustainable use of pesticides.	
96	3	3.6	Water: include a subsection on baseline water availability and discuss baseline of pesticides in catchments	Pesticides is discussed as one of the main pollutants impacting on waterbodies in Section 4.3 of the Environmental Report.
97	3-4	3.13	Include the following issues: o Increased detections in pesticide pollution, much of which is linked to agricultural activity o Risk of reduced water availability due to climate change	Noted
98	4	Table 4.1	Under objective number 5 include an objective relating to the protection of drinking water sources.	Addressed in Table 3.2 of the Environmental Report.
99	4	Appendix A	Include Irish Water plans (https://www.water.ie/projects-plans/our-plans/), in particular: o Irish Water Water Services Strategic Plan o Irish Water National Water Resources Plan (when published	Addressed in Section 4.2 and Appendix B of the Environmental Report.
Organisation: Projects Policy Advocacy				
Date received: September 2020				
100	1	3.2	European sites, also known as Natura 2000 sites...': the preamble here notes N2K sites and elsewhere refers to habitats but the text omits the overarching Article 2 objective of the Habitats Directive as explicit on the need to restore all Annex I habitats (and Annex II species) to favourable conservation status at Member State level - not just in N2K (SAC & SPA) sites. I believe and the SEA should establish that there are very large areas of Annex 1 habitats outside of N2K sites. Article 10 of the Habitats Directive specifically covers obligations beyond N2K sites. This reemphasises the need to assess impacts beyond N2K sites and indeed to do this in the context of improving the ecological coherence/favourable conservation status of the whole Natura 2000 network (i.e. including all Annex 1 habitats).	Addressed in Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	Scoping Report Ref.	Comment	Actions Carried out to Address Comment
			This context - of improving the ecological coherence/favourable conservation status – of Annex 1 habitats should be reflected in the section: Conservation Status (Page 16).	
101	1	Table 4.1	SEA Objective: 1. Ecology and Nature Conservation – Protect, restore and support Ireland’s unique biodiversity assets – the table should explicitly reflect my above points about Annex 1 habitats by adding a further bullet along the lines: Improving the ecological coherence/favourable conservation status of Annex 1 habitats outside N2K sites.	Addressed in Table 3.2 of the Environmental Report.
102	1	5.2	Add a further scenario: an alternative to the #EUGreenDeal in agriculture is the production line and the unlimited race for the intensity and mass production of agricultural production. At the end of this race, there will be no more family farms, but large agro-industrial networks.	Noted, alternatives text is as provided by Strategy development team

APPENDIX B: ENVIRONMENTAL PROTECTION OBJECTIVES

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
Republic of Ireland		
Fine Gael, Fianna Fail, Green Party (2020). Programme for Government – Our Shared Future	<p>Specific policies within the Missions that contain relevant environmental protection objectives include:</p> <ul style="list-style-type: none"> • A National Clean Air Strategy – may impose further limitations on ammonia emissions from agriculture • Decarbonisation of Road Transport – not likely to have implications for agricultural vehicles at current point but may have implications for wider food industry. • Carbon tax - €1.5 billion to be hypothecated to future agri-environment scheme, but not clear if this tax will have implications for agri-food sector. • Green New Deal reinforces 2030/50 GHG emissions targets in particular role of agriculture – so AFS will need to be clear on how it supports these targets. Also mentions a strategy to expand afforestation, which may conflict with agricultural production objectives (or may even complement depending on strategy details – e.g. agroforestry). Strategy for offshore renewables will need to be complementary to aquaculture ambitions of AFS. The AFS may potentially be affected by strategies for biodiversity and water. • Marine Protection Areas (MPA). The government has committed to develop legislation for identification, designation and management to meet their outstanding target of 10% and the 2030 target of 30%. The prospect of a marine national park has also been raised. This may create additional requirements of the AFS with respect to aquaculture and fisheries in particular. 	<p>Contribution to climate action, air quality, water quality and biodiversity objectives in Our Shared Future are set out in Goals 1-3 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”, and specific environmental targets that will developed for each AFS sector (“Viable and Resilient Primary Producers with Enhanced Well-Being”)</p> <p>Contribution to greater afforestation set out in Goal 4.</p> <p>The commitment to the MPA obligations is set out in Goal 5.</p>
DCCAE (2018): Sustainable Development Goals National Implementation Plan 2018 – 2020	<p>This plan has actions listed under the different priorities and the mainstreaming of SDGs related directly or indirectly to the global food system, including food security which is linked to SDG2 (zero hunger) and SDG3 (good health and well-being). Livelihoods and</p>	<p>The AFS indirectly supports all of these objectives.</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	rural development are reflected in SDG1 (no poverty), SDG6 (decent work and economic growth), and SDG10 (reduced inequalities). Sustainable resource use and climate change mitigation are contained within SDG12 (responsible consumption and production), SDG13 (climate action), SDG14 (life below water) and SDG15 (life on land).	
DCCAE (2017): National Mitigation Plan	Chapter 6 of the NMP specifically outlines actions required for carbon neutrality in Agriculture, Forest and Land Use sectors, including sustainable use of farm manures and agri residues.	Goal 1 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards climate change objectives. These commit the sector to the plans set out in Ag-Climatise and the National Climate and Air roadmap. Sector-specific targets for GHG will be set as part of Goal 1 of “Viable and Resilient Primary Producers with Enhanced Well-Being”
DCCAE (2018): National Adaptation Framework: Planning for a Climate Resilient Ireland	Sets goals for the development of the bioeconomy, including transitioning towards a circular, low carbon and resource-efficient bioeconomy. Links to research and innovation across all agri-food sectors, including resource-efficient production and distribution systems, value chains based on new and more efficient use of wastes (e.g., food waste), residues and by-products, as well as new business models that maintain and enhance natural capital.	Goal 6 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out objectives with respect to the bioeconomy.
DCCAE (2019): Climate Action Plan	The agricultural sector will be required to respond and play its part in the transition to a low carbon, climate resilient economy and society for the future, while also taking advantage of the opportunities that this challenge presents. The 10% to 15% emissions reduction target for agriculture in the Climate Action plan, translates to a reduction in emissions from 20.2 Mt CO ₂ eq in 2017 to between 17.5 and 19 Mt CO ₂ eq by 2030. This plan also requires agriculture to enhance CO ₂ removals from the landscape by at least 26.8 Mt CO ₂ eq and contribute to the development of sustainable decarbonised energy systems.	Goal 1 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards climate change objectives. These commit the sector to the plans set out in Ag-Climatise and the National Climate and Air roadmap. Sector-specific targets for GHG will be set as part of Goal 1 of “Viable and Resilient Primary Producers with Enhanced Well-Being”

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
DAFM (2020): 'Ag-Climatise' A Roadmap towards Climate Neutrality	<p>The document sets out six 'tasks' (slightly abridged):</p> <ul style="list-style-type: none"> • Reduce GHG emissions from agriculture; • Increase carbon sequestration/storage potential from land use; • Reduce nutrient loss and contributed to improved water quality and biodiversity; • Meet ammonia reduction targets; • Build sustainable, resilient food production and land use management systems that meet four obligations above as well as market expectations; • Transparent communications. <p>These will be achieved through the following 'actions':</p> <ol style="list-style-type: none"> 1. Reduce chemical N use to max 325 kT/annum by 2030 (interim 350kT/annum by 2025) 2. Promote use of protected-N products; 3. Herd genotyping 4. Increase ratio of grazed grass to silage in diet 5. Enhance animal health strategies 6. Reduce crude protein in feedstuffs 7. Invest in novel feed additives 8. Increase proportion of home grown protein in feed 9. Increase area of organic to 350k ha by 2030 10. Increase area of tillage above 300k ha by 2030 11. Enhance carbon credentials of horticulture sector 12. Promote sustainable circular bioeconomy 13. Explore options for land use diversification 14. Increase afforestation 15. Reduce management intensity on 40k ha of peat soils 16. Protect/enhance/increase hedgerow resource 17. On-farm carbon trading pilot 18. 20% energy use reduction by 2030; 20% renewable deployment 19. Double sustainable biomass from forests 20. Engagement on anaerobic digestion 	<p>All the goals of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" are aligned towards these objectives, especially Actions 1-20. Most notably, Goal 1 includes a requirement on DAFM to immediately implement the Ag-Climatise roadmap.</p> <p>The other three Missions of AFS will also support actions 12, 21-29.</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	21. Strategic agri-knowledge and innovation systems 22. CPD for advisors 23. Network of demonstration farms 24. Centre of excellence 25. Information portal 26. Bord Bia roadmap 27. Review ambition of RDP 2014-2020 schemes and fiscal support 28. Develop strategic investment fund 29. Dialogue to ensure a just transition	
DAFM (2019): Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan	<p>This plan aims to raise awareness of climate adaptation issues arising in the Irish agriculture, seafood and forestry sector and attempt to start a conversation around building resilience in the sector. The overall objective is to 'Build resilience to the effects of climate change and weather-related events in the agriculture, forest and seafood sector, reduce any negative impacts where possible, take advantage of any opportunities and to contribute to achievement of DAFM Statement of Strategy Goals'. There are a further four overarching objectives:</p> <ul style="list-style-type: none"> • Ensure a joined-up approach to adaptation planning in the Department of Agriculture, Food and the Marine • Raise awareness of the impacts of climate change in the agriculture, forest and seafood sector • Reduce vulnerability of the agriculture, forest and seafood sector to main climate impacts and seek to increase resilience <p>Embed adaptation planning in agriculture, forest and seafood sectoral policies</p>	The AFS will be directly influenced by this adaptation plan across multiple common objectives and through DAFM joined-up approaches and cross-sectoral engagement in the agriculture, forest, food and seafood sectors.
DCCAE (2017): Cleaning our Air Public Consultation to inform the development of a National Clean Air Strategy	This document is a consultation paper which aided in the development of a national Clean Air Strategy. As such it does not provide direct objectives.	Goal 1 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" sets out commitments towards air quality objectives. Sector-specific targets for ammonia will be set as part of Goal 1 of "Viable and Resilient Primary Producers with Enhanced Well-Being"

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
		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.
DCCAE (2019) National Air Pollution Control Programme (draft NAPCP report)	This document is a consultation paper for the National Air Pollution Control Programme. As such it does not provide direct objectives. Reporting of national air pollutants and air quality is an obligation for all European member states. Annual emissions of atmospheric pollutants and limits for ambient air quality are primarily regulated in European member states under the National Emissions Ceilings Directive [2016/2284/EU] (NECD) and the Ambient Air Quality and Cleaner Air for Europe Directive [2008/50/EC] (AAQD) respectively. Where a member state anticipates a breach of these directives at the time of the National Air Pollution Control Plan (NAPCP) drafting, the NAPCP requires that the member state sets out specific actions to address the breach and thereby avoid non-compliance.	Goal 1 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards air quality objectives. Sector-specific targets for ammonia will be set as part of Goal 1 of “Viable and Resilient Primary Producers with Enhanced Well-Being” 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.
DCHG (2017) National Biodiversity Action Plan (NBAP) 2017-2021	The new NBAP for 2017-2021 demonstrates Ireland’s continuing commitment to meeting and acting on its obligations to protect their biodiversity for the benefit of future generations through a series of targeted strategies and actions. The plan has seven objectives; 1. Mainstream biodiversity into decision-making across all sectors 2. Strengthen the knowledge base for conservation, management and sustainable use of biodiversity 3. Increase awareness and appreciation of biodiversity and ecosystems services 4. Conserve and restore biodiversity and ecosystem services in the wider countryside 5. Conserve and restore biodiversity and ecosystem services in the marine environment	Goal 3 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards biodiversity objectives. Goal 4 also commits Ireland towards more biodiverse woodlands. The approach to the development of the aquaculture sector in AFS (Goal 5 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission will address outstanding environmental objectives from the MSFD.

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<p>6. Expand and improve management of protected areas and species</p> <p>7. Strengthen international governance for biodiversity and ecosystem services.</p>	
DAFM (2018): DRAFT Plan for Forests & Freshwater Pearl Mussel (FPM) in Ireland	The plan sets out objectives for forestry in FPM catchments.	Contribution to water quality and biodiversity objectives in Our Shared Future are set out in Goals 2-3 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” 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 FPM if not appropriately mitigated.
DCHG (2018) National Raised Bog Special Areas of Conservation (SACs) Management Plan 2017-2022	<p>The aim of this plan is to provide guidance and clarity on how Ireland’s network of raised bog SACs will be managed, conserved and restored in future years, including national restoration targets for raised bog habitats. The five objectives of the plan are:</p> <ol style="list-style-type: none"> 1. To understand and describe the conservation status and the ecological and hydrological conditions of our raised bogs; 2. To put in place a raised bog national designated network that will be sustainable into the future; 3. To develop mechanisms to restore and rehabilitate protected habitats within the network of designated raised bogs; 4. To manage protected raised bogs in a manner compatible with their uses and the concerns of stakeholders whilst maintaining their biodiversity and natural function; and <p>To raise awareness and understanding of the benefits and values of raised bogs and encourage community involvement to inform future decisions.</p>	Contribution to climate action, air quality, water quality and biodiversity objectives in Our Shared Future are set out in Goals 1-3 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”, and specific environmental targets that will developed for each AFS sector (“Viable and Resilient Primary Producers with Enhanced Well-Being”). This includes plans to address GHG targets through delivering abatement through LULUCF sector which may indirectly support greater peatland conservation. 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.

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
DHPLG (2018) River Basin Management Plan for Ireland 2018-2021	<p>This second River Basin Management Plan (RBMP) outlines the new approach that Ireland will take as it works to protect its rivers, lakes, estuaries and coastal waters over the next four years. This is to meet the objectives of the Water Framework Directive:</p> <p>(1) to prevent the deterioration of water bodies and to protect, enhance and restore them with the aim of achieving at least good status; and</p> <p>(2) to achieve compliance with the requirements for designated protected areas.</p> <p>The following evidence-based priorities have been adopted for this river basin planning cycle:</p> <ul style="list-style-type: none"> • Ensure full compliance with relevant EU legislation • Prevent deterioration • Meet the objectives for designated protected areas • Protect high-status waters • Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objective and (2) addressing more complex issues that will build knowledge for the third cycle 	<p>Contribution to water quality objectives in Our Shared Future are set out in Goal 2 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”, and specific environmental targets that will developed for each AFS sector (“Viable and Resilient Primary Producers with Enhanced Well-Being”).</p>
Irish Water (2015) Water Services Strategic Plan (WSSP)	<p>The WSSP sets out strategic objectives for delivery of water services up to 2040. It provides the framework under which the NSWMP and NWRP sit (see below)</p>	<p>See below.</p>
Irish Water (2016). National Wastewater Sludge Management Plan (NWSMP)	<p>Key actions are:</p> <ul style="list-style-type: none"> • The introduction of a quality assurance system including annual audits and Standard Operating Procedures for wastewater sludge management • Advanced anaerobic digestion is the preferred option. Lime stabilisation at off-site centres will be phased out and any on-site lime treatment will be strictly controlled • The network of hub treatment sites and satellite dewatering plants will be further developed, with hubs considered on a regional rather than county basis 	<p>Contribution to water quality objectives in Our Shared Future are set out in Goal 2 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”, and specific environmental targets that will developed for each AFS sector (“Viable and Resilient Primary Producers with Enhanced Well-Being”). This includes actions to address declining soil fertility (and thus reduced chemical fertiliser inputs).</p> <p>Goal 6 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out objectives with respect to the bioeconomy</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> The preferred option for re-use of treated wastewater sludge (biosolids) is reuse on land. Non-food tillage crops will be the primary focus for agricultural reuse of biosolids; A detailed feasibility study will be carried out to investigate alternative sludge outlet options to reduce the dependence on the use of agricultural land for wastewater sludge reuse. 	
Irish Water (in preparation) National Water Resources Plan (NWRP)	<p>The NWRP is currently under preparation and is expected to be finalised in 2020, following two stages of consultation and SEA.</p> <p>No objectives are available at this time.</p>	N/A
Inland Fisheries Ireland (IFI) (2015): National Strategy for Angling Development (NSAD)	<p>The strategy aims to ensure that Ireland's fish stocks and angling infrastructure are protected and enhanced with a view to ensuring a sustainable habitat and delivering the economic, health and recreational benefits they offer to communities across Ireland.</p>	<p>The approach to the development of the aquaculture sector in AFS is set out in Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission.</p> <p>Contribution to water quality and biodiversity objectives in Our Shared Future are set out in Goals 2-3 of the "A Climate Smart, Environmentally Sustainable Agri-Food Sector"</p>
IFI (2016): Corporate Plan 2016-2020	<p>The plan includes a number of high-level objectives including:</p> <ul style="list-style-type: none"> Fish- To ensure that Ireland's fish populations are managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling product, and that pristine aquatic habitats are also enjoyed for other recreational uses. Habitats- To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected. Stakeholders- To grow the number of anglers and ensure the needs of IFI's other key stakeholders are being met in a sustainable conservation focused manner. Our people- We will invest in our people to achieve operational excellence and become one of the best places to work. 	<p>The approach to the development of the aquaculture sector in AFS is set out in Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission.</p> <p>Contribution to water quality and biodiversity objectives in Our Shared Future are set out in Goals 2-3 of the "A Climate Smart, Environmentally Sustainable Agri-Food Sector"</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	Corporate management- IFI will promote a culture of value for money and continual evaluation of its performance in a measurable, transparent and accountable manner.	
DAFM (2012) Harnessing Our Ocean Wealth: An Integrated Marine Plan for Ireland	The Plan aims to support an integrated system of policy and programme planning for marine affairs in Ireland. Its vision is to provide a healthy ecosystem by protecting/conserving rich marine biodiversity and ecosystems, managing the living and non-living resources in harmony with the ecosystem and implementing/complying with environmental legislation. The plan outlines three main goals: <ol style="list-style-type: none"> 1. Thriving Maritime Economy 2. Healthy Ecosystems 3. Engaging with the Sea 	See below on the Marine Strategy.
DHPLG (2020). Update to Ireland's Marine Strategy.	Under the EU's Marine Strategy Framework Directive (MSFD) Ireland is required to achieve or maintain "good environmental status" (GES) in the marine environment by 2020. Ireland established Part 1 (initial condition assessment) of its Marine Strategy in 2013, Part 2 (monitoring programmes) in 2015 and Part 3 (programme of measures) in 2016. The condition assessment was updated this year.	The approach to the development of the aquaculture sector in AFS (Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission) will address outstanding environmental objectives from the MSFD.
DAFM (2015) National Strategic Plan for Sustainable Aquaculture Development (NSPA)	The Plan aims to promote a sustainable and competitive aquaculture sector, where production will grow according to market and consumer demand and in balance with nature and society. Summary of actions within this Plan: <ul style="list-style-type: none"> • Aiming for Growth • Knowledge, Innovation and Technology • Ensuring Sustainability • Coordinated Spatial Planning • Aquaculture Licensing 	The approach to the development of the aquaculture sector in AFS (Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission) will explicitly follow the NSPA.
DHPLG (2020) National Marine Planning Framework Consultation (NMPF) - Draft	The NMPF is part of the Government's efforts to squarely incorporate relevant SDG's into marine planning and policy under <i>Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</i> . Specific SDG's are:	The approach to the development of the aquaculture sector in AFS (Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission) will explicitly follow the NSPA,

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> • 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution • 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans • 14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information. 	MSFD and follow Clean Oceans Initiative on plastic and marine litter.
DHLGH. Shellfish Waters Final Characterisation Reports and Pollution Reduction Plans (PRP)	These set out pressures/risks and programmes of measures to address them.	Goal 2 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards water quality objectives. The approach to the development of the aquaculture sector in AFS (Goal 5 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission will explicitly follow the NSPA, MSFD and follow Clean Oceans Initiative on plastic and marine litter.
DAHG (2015) A National Landscape Strategy for Ireland 2015-2025	The plan references agriculture in relation to encouraging the inclusion of landscape categories in established award schemes such as those in agriculture, and those linked to enhancing landscape education and research through agriculture.	There is little relationship between the Plans
DCCAE (2017): Ireland's fourth National Energy Efficiency Action Plan 2017-2020	This is the fourth National Energy Efficiency Action Plan which sets out progress towards the target of improving energy efficiency by 20% by 2020 across Ireland. It also sets out the measures needed to maximise progress to the target. The plan looks at sectors such as buildings, public bodies, the commercial sector, energy supply and transport.	Goal 1 of “Viable and Resilient Primary Producers with Enhanced Well-Being” sets out various strategies intended to improve efficiency of primary production.
DCCAE (2020) Waste Action Plan (WAP) for a Circular Economy	The WAP has specific policies for: municipal waste, food waste, plastics and packaging waste, single use plastics, construction and demolition waste, textiles and by-products. It also sets out policies for consumer protection, citizen engagement, indigenous	Contributions to circular economy objectives are set out in Goal 6 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<p>treatment capacity, end-of-waste treatment, producer responsibility, waste enforcement, public procurement, enforcement and permitting, monitoring, research and innovation.</p> <p>Food waste: a commitment to halve food waste by 2030 has implications for the food production sector directly (40% of waste) but also indirectly due to enhanced producer responsibility. This may have implications for overall production targets.</p> <p>Plastic and Packaging waste: the agri-food sector is a contributor to plastic and packaging waste, in particular single-use plastics. The WAP includes a range of measures intended to reduce this which the AFS will need to consider.</p> <p>Extended producer responsibility will be extended to fishing gear under the Single Use Plastics Directive and the government is considering further arrangements for farm hazardous waste and medicines. Both of these could have impacts on the fisheries and agriculture industries.</p>	<p>and includes policies for addressing food waste, plastic and packaging waste.</p> <p>Goal 5 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” also commits to the Clean Oceans Initiative on plastic/marine litter.</p>
National Waste Prevention Programme	<p>The National Waste Prevention Programme (NWPP) is a Government of Ireland initiative, led by the EPA, which supports national-level, strategic programmes to prevent waste and drive the circular economy in Ireland.</p> <ul style="list-style-type: none"> NWPP priority areas are food waste, construction & demolition, plastics, agriculture, resources & raw materials and local waste prevention. 	<p>Contributions to circular waste reduction objectives are set out in Goal 6 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” and includes policies for addressing food waste, plastic and packaging waste.</p> <p>Goal 5 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” also commits to the Clean Oceans Initiative on plastic/marine litter.</p>
Project Ireland 2040: National Planning Framework (NPF)	<p>The relevant objectives of the NPF are listed below:</p> <ul style="list-style-type: none"> Carefully managing the sustainable growth of compact cities, towns and villages to achieve effective density and consolidation through a streamlined and co-ordinated approach to their development. Reinforcing accessibility between key urban centres of population and their regions. 	<p>Objectives on low-carbon and climate resilience are set out in the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission (Goal 1).</p> <p>Objectives on natural and environmental resources are set out in the remaining Goals of this mission.</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> Ensuring that the fabric of rural areas is strengthened and the contribution of rural communities is harnessed as a major part of Ireland's strategic development. Continuing to enhance Ireland's public transport and the environmental sustainability of our mobility systems. Fostering enterprise and innovation and attracting investment and talent by building regional economic drivers and by supporting opportunities to diversify and strengthen the rural economy. Further supporting Ireland's high-quality international connectivity which is crucial for overall international competitiveness and addressing opportunities and challenges from Brexit through investment in our ports and airports. Enhancing amenities and heritage linked to and integrated with our built, cultural and natural heritage. Achieving a transition to a competitive, low-carbon, climate-resilient and environmentally sustainable economy by 2050. Safeguarding Ireland's abundant natural and environmental resources through the sustainable management of water, waste and other environmental resources. Improving access to quality education and health and childcare services 	<p>Objectives with respect to the rural economy are set out in the "An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent" and "Viable and Resilient Primary Producers with Enhanced Well-Being" missions.</p> <p>The marine / aquaculture objectives of the AFS conflict with the objective to invest in ports.</p>
Project Ireland 2040: National Development Plan (NDP) 2018-2027	<p>The National Development Plan sets out the investment priorities that will underpin the successful implementation of the new National Planning Framework (NPF). The objectives of the National Development Plan match those of the NPF.</p> <ul style="list-style-type: none"> 	See above.
DCENR (2014) Offshore Renewable Energy Development Plan (OREDPP)	<p>The OREDPP also has three high-level goals which are to ensure that:</p> <ul style="list-style-type: none"> Ireland harnesses the market opportunities presented by offshore renewable energy to achieve economic development, growth and jobs There is increased awareness of the value, opportunities and societal benefits of developing offshore renewable energy 	<p>If offshore renewable energy developments are not appropriately sited and mitigated, this strategy has the potential to conflict with the objectives of the aquaculture sector in AFS is set out in Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission.</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	Offshore renewable energy developments do not adversely impact our rich marine environment and its living and non-living resources	
DCENR (2014) Draft Bioenergy Plan	<p>In line with the other energy policies developed by the Irish Government this plan has the overall objective of ensuring a secure and sustainable supply of competitively priced energy to all consumers. The plan has the vision that bioenergy resources will be contributing to economic development and sustainable growth, generating jobs for citizens, supported by coherent policy, planning and regulation, and managed in an integrated manner. The plan has three high-level objectives:</p> <ul style="list-style-type: none"> • To harness the market opportunities presented by bioenergy in order to achieve economic development, growth and jobs • To increase awareness of the value, opportunities and societal benefits of developing bioenergy • To ensure that bioenergy developments do not adversely impact the environment and its living and non-living resources 	<p>Contribution to renewable energy objectives in Our Shared Future are set out in Goal 1 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”,</p> <p>Goal 6 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out objectives with respect to the bioeconomy which will examine the role of AD and biogas and wood-based materials.</p>
DoT (2018) National Policy Statement on the Bioeconomy (NPSB)	<p>The strategic policy objectives for this plan include:</p> <ul style="list-style-type: none"> • Sustainable economy and society • Decarbonisation of the economy • Jobs and Competitiveness • Regional Prosperity 	Goal 6 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out objectives with respect to the bioeconomy which will examine the role of AD and biogas and wood-based materials. This will indirect support the NPSB.
DCCAE (2019): Delivering the National Broadband Plan (NBP)	<p>The key objectives are to:</p> <ul style="list-style-type: none"> • Ensure that every home and business will have access to high speed broadband with a choice of service providers. • Deliver the intervention as quickly as possible to ensure a national high-speed broadband network for Ireland. • Ensure that the network can meet current and future demand. • Maximise re-use of existing infrastructure. • Incentivise additional commercial investment. <ul style="list-style-type: none"> • Stimulate growth and retention in jobs while enabling Smart Farming, eHealth, trading online, education, tourism, savings for consumers etc. 	<p>Investments in rural infrastructure complement the social objectives of the AFS, as set out in “Viable and Resilient Primary Producers with Enhanced Well-Being” Goal 4.</p> <p>Although the installation of broadband infrastructure may have environmental impacts if not mitigated, as the national ambition is already for full coverage, the AFS objective does not represent a potential in-combination effect.</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
Bord Bia (2016 -). Origin Green.	Origin Green is Ireland's food and drink sustainability programme. It provides sustainability assessments and accreditation/verification for 53000 farms and 320 food/drink companies representing 90% of food/drink export and more than 70% of domestic retailers.	A key objective of the AFS is to develop (Goal 7 under the "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission) is to further develop Origin Green's role in sustainability assessment of primary producers and the rest of the food and drink supply chain.
DAFM (2014). Rural Development Programme (RDP) 2014-2020.	<p>Environmental protection objectives in the RDP are expressed in terms of achievement with respect to a set of target/result and impact indicators covering biodiversity, water quality, soils, water resources, climate change, renewables, carbon sequestration, as well as other socio-economic aspects of farming not associated with direct production (social inclusion, poverty reduction and economic development in rural areas).</p> <p>The RDP will be replaced by the CAP Strategic Plan in 2021 (see below). Details of the CAP Strategic Plan for Ireland are yet to be published and so cannot be assessed at this point. In any case transitional arrangements will still apply so the current RDP will still be relevant to the emerging AFS.</p>	Contribution to climate action, air quality, water quality and biodiversity objectives in Our Shared Future are set out in Goals 1-3 of the "A Climate Smart, Environmentally Sustainable Agri-Food Sector", and specific environmental targets that will developed for each AFS sector ("Viable and Resilient Primary Producers with Enhanced Well-Being"). Other socio-economic aspects are also addressed in the "Viable and Resilient Primary Producers with Enhanced Well-Being" mission.
DCRD (2018): Realising our Rural Potential: Action Plan for Rural Development.	<p>This sets out policies to improve quality of life in rural areas, small towns and villages. Topics / key objectives are:</p> <ul style="list-style-type: none"> • Sustainable Communities. Revitalised 600+ towns/villages • Enterprise & Employment. Support 135,000 new jobs by 2020. • Tourism & Recreation. Increase overseas visitors by 12% • Culture & Creativity. Invest €50+m in sports, recreation and cultural facilities. <p>Infrastructure & Connectivity: Ensure all homes/businesses are connected to broadband.</p>	Investments in rural infrastructure complement the social objectives of the AFS, as set out in "Viable and Resilient Primary Producers with Enhanced Well-Being" Goal 4. Although the installation of broadband infrastructure may have environmental impacts if not mitigated, as the national ambition is already for full coverage, the AFS objective does not represent a potential in-combination effect.
DAFM (2015) Forestry Programme 2014-2020 (FP)	<p>The programme sets objectives to:</p> <ul style="list-style-type: none"> • Increase on a permanent basis, Ireland's forest cover to capture carbon, produce wood and help mitigation; • Increase and sustain the production of forest-based biomass to meet renewable energy targets; 	The AFS in Goal 4 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector", sets out an ambition to develop a new FP with more ambitious targets for sustainable and strategic afforestation to help meet other environmental objectives (e.g. water quality).

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> Support forest holders to actively manage their plantations; and Optimise the environmental and social benefits of new and existing forests. 	
Northern Ireland / UK		
DfE (2017) Economy 2030: A consultation on and Industrial Strategy for Northern Ireland	This is a consultation document at this stage.	Although the AFS has an “All-Ireland” element in Goal 7 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” there are unlikely to be any relevant environmental potential objectives.
DoH, DAERA and FSA (2019) Changing the Culture 2019-2024: One Health Tackling Antimicrobial Resistance (AMR) in Northern Ireland	Structure reflects UN IACG Framework for Action aimed at tackling Antimicrobial Resistance by: <ul style="list-style-type: none"> reducing infections and unintentional exposure, optimising use of medicines, and investing in innovation, supply and access. 	Although the AFS has an “All-Ireland” element in Goal 7 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” , the AFS does not refer to anti-microbial resistance explicitly.
DAERA (2019) Environment Strategy for Northern Ireland Public Discussion Document	The purpose of the document is to give the people of Northern Ireland who will be affected by environmental decisions taken in the future, an opportunity to express their views on what the Northern Ireland environment should look like in the future, what the environmental priorities and objectives should be, and how these should be achieved.	It is unclear how this strategy will affect or be affected by the AFS at the current time as this is a public discussion document.
DOE (2006) An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 – 2026	Strategy aims for the coast include: <ul style="list-style-type: none"> establish and maintain a sustainable quality of life maintain, enhance, and develop coastal infrastructure maintain the distinct cultural identities, traditions and skills maintain and enhance natural resources and the condition of designated nature conservation sites conserve, protect and where possible enhance the estuarine and coastal environment and terrestrial ecosystems 	The approach to the development of the aquaculture sector in AFS (Goal 5 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission will explicitly follow the NSPA, MSFD and follow Clean Oceans Initiative on plastic and marine litter. However, for transboundary parts of the coastal zone, there is potential for inconsistency or conflict between

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> • secure a vibrant economic future through the sustainable use of the natural resources of the coastal zone • maintain the visual appeal and environmental quality of Northern Ireland's coastal landscapes and seascapes • maintain and enhance safe passage to ports and harbours for commercial shipping, fishing and recreational navigation • provide statutory mechanisms to develop and implement integrated planning for the coastal zone • establish a lead agency and structures to assist the delivery of ICZM, co-ordinate efforts and to facilitate participation • provide co-ordinated services to support ICZM including research, databases and mapping 	environmental protection objectives. This will require more detailed assessment.
DBEIS (2019) The UK's Draft Integrated National Energy and Climate Plan (NECP)	This plan outlines a National Energy and Climate strategy which would span the devolved nations of the UK. It would cover the five dimensions of the Energy Union which include; Energy security, Energy efficiency, Decarbonisation, Internal energy market, and Research, innovation and competitiveness.	This plan outlines international partnerships on research towards clean energy and innovation. However, it is unlikely that this plan will affect or be affected by the AFS.
UK Fisheries Bill [HL] 2019-21	The Bill will allow the UK to control who may fish in UK waters, and on what terms upon the cessation of the transition period. The Bill includes powers to ensure fisheries management decisions are taken strategically, for the benefit of the whole marine environment.	The approach to the development of the aquaculture sector in AFS is set out in Goal 5 of "A Climate Smart, Environmentally Sustainable Agri-Food Sector" mission. This explicitly acknowledges the uncertainty over whether changes in quotas will increase the stress on Irish fish stocks.
HM Government, NI Executive, Scottish Government, Welsh Assembly Government (2011) UK Marine Policy Statement (UKMPS)	<p>The UKMPS provides the framework for preparing national and sub-national Marine Plans in the UK. It sets a vision for the oceans and seas to be 'clean, healthy, safe, productive and biologically diverse'. High level objectives are:</p> <ul style="list-style-type: none"> • Achieving a sustainable marine economy • Ensuring a strong, healthy and just society • Living within environmental limits • Promoting good governance • Using sound science responsibly 	See below for the NI plan.

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<p>Principles and considerations for marine planning are set out at high and detailed level in terms of the relevant policy areas. Specific objectives are set out for:</p> <ul style="list-style-type: none"> • Marine Protected Areas, • Defence and national security, • Energy production and infrastructure development • Ports and shipping, • Marine aggregates, • Telecommunications cabling, • Aquaculture, • Surface water management and waste water treatment and disposal • Tourism and recreation. 	
DAERA (2018) Draft Marine Plan for NI (MPNI)	<p>The draft MPNI has been prepared under the framework of the UKMPS described above, as applied to NI.</p> <p>Stated objectives are:</p> <ul style="list-style-type: none"> • To promote the sustainable development of productive activities, which support employment at all skill levels while fully considering the requirements of other marine interests. • To help realise the potential of energy resources and energy storage within the marine area, while fully considering the requirements of other marine interests. • To promote the development of vibrant, accessible and sustainable coastal communities. • To promote the marine resource, its recreational value and its wider economic, environmental and social benefits to all. • To promote the preservation and enjoyment of marine related heritage assets. • To promote a healthy, resilient and adaptable marine ecosystem and an ecologically coherent network of Marine Protected Areas. 	<p>The approach to the development of the aquaculture sector in AFS is set out in Goal 5 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission.</p> <p>The AFS has an “All-Ireland” element in Goal 7 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector”</p> <p>However, policies for aquaculture and commercial fishing have the potential for in-combination effects on marine habitats and fish stocks, especially as the UK will no longer be under the aegis of the MSFD.</p> <p>Other policies in the MPNI have the potential to affect the aquaculture and fisheries aspects of the AFS due to their impact on the marine environment (e.g. changes to sea bed, nursery grounds, waste and pollution, changes in shipping patterns).</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> • To contribute towards climate change mitigation and adaptation measures. • To continue to develop a sound marine evidence base in a co-ordinated manner, to increase understanding and to support the development, monitoring and review of marine plans. <p>Policies are set out for:</p> <ul style="list-style-type: none"> • Aquaculture • Carbon capture and storage • Commercial fishing • Defence and national security • Dredging • Energy • Marine Aggregates • Port Harbours and Shipping • Telecommunications Cabling • Tourism and Recreation 	
EU / Other		
EC (2013) A Clean Air Programme for Europe	<p>Air quality objectives for the period up to 2030, include:</p> <p>Reducing health impacts (premature mortality due to particulate matter and ozone) by 52%, and</p> <p>Reducing ecosystem area exceeding eutrophication limits of 35% by 2030.</p> <p>To achieve the new air policy targets for 2030, the proposed NEC Directive requires ammonia reductions of 27%. The Directive provides a set of source measures to be taken into account by Member States when developing national programmes.</p>	<p>Goal 1 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards air quality objectives. These commit the sector to the plans set out in Ag-Climatise and the National Climate and Air roadmap. Sector-specific targets for ammonia will be set as part of Goal 1 of “Viable and Resilient Primary Producers with Enhanced Well-Being”</p>
EC (2014) A policy framework for climate and energy in the period from 2020 to 2030	<p>Key Elements of the 2030 framework include:</p> <ul style="list-style-type: none"> • Greenhouse gas emissions reduction target of 40% • A renewable energy target at EU level of at least 27% • Energy Efficiency increase of 25% in 2030 • Reform of the Emissions Trading System 	<p>Goal 1 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out commitments towards climate change objectives. These commit the sector to the plans set out in Ag-Climatise and the National Climate</p>

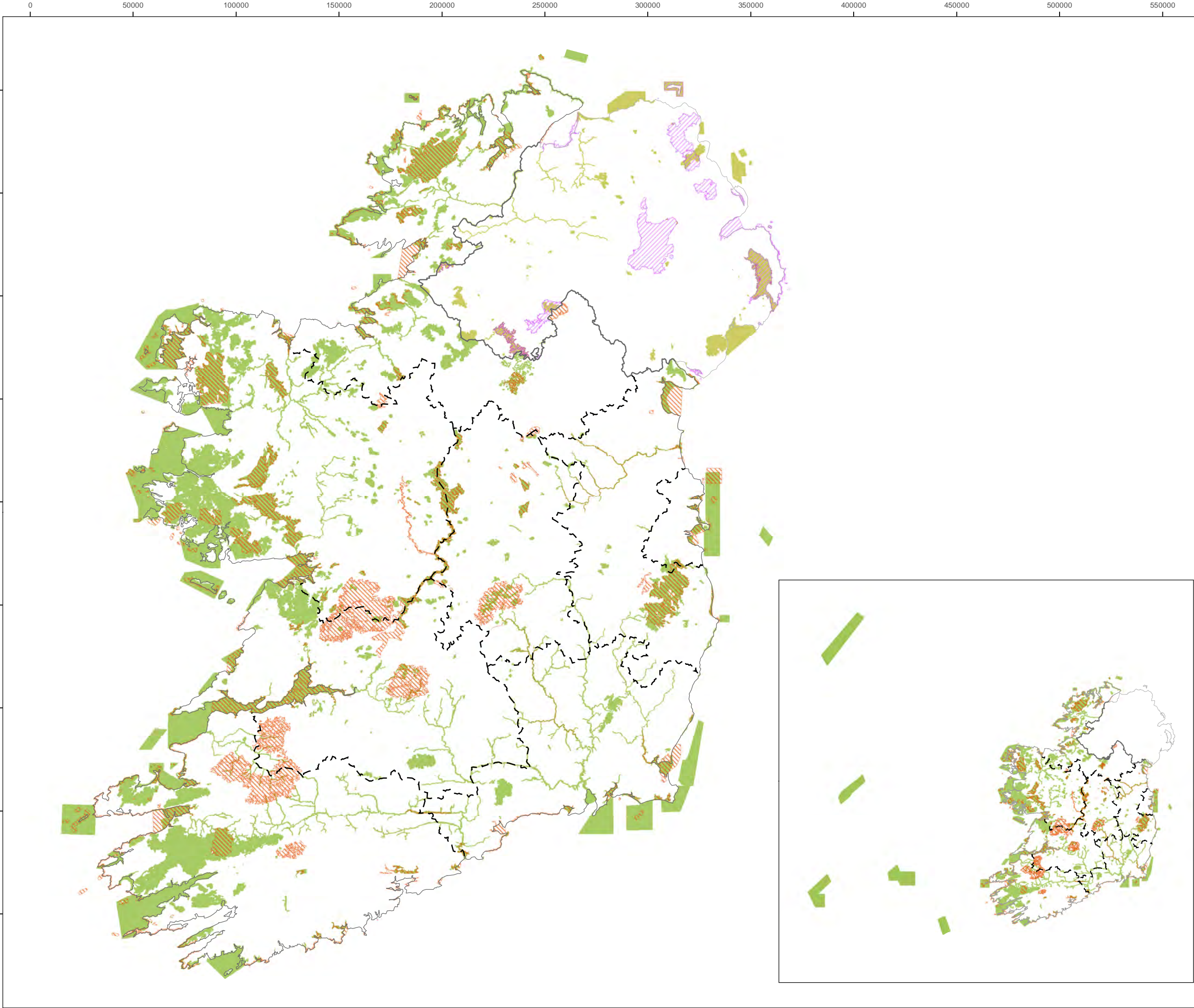
Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> Ensuring competition in integrated markets Competitive and affordable energy for all consumers Promoting security of energy supply <p>National targets are set under the EU 2030 framework in relation to environmental sustainability, bioeconomy and sustainable development goal recommendations.</p>	<p>and Air roadmap. Sector-specific targets for GHG will be set as part of Goal 1 of “Viable and Resilient Primary Producers with Enhanced Well-Being”</p> <p>Goal 6 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” sets out objectives with respect to the bioeconomy</p>
<p>EC (2018)</p> <p>A Clean Planet for all: A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy</p>	<p>The proposed Strategy does not intend to launch new policies, nor does the European Commission intend to revise 2030 targets. This strategy involves two main areas which are Transition to a net-zero greenhouse gas emissions economy; and Investing into a sustainable society.</p> <p>One of the priorities listed in the Strategy, guided by the transition to a climate neutral Europe, is to promote a sustainable bio-economy, diversify agriculture, animal farming, aquaculture and forestry production, further increasing productivity while also adapting to climate change itself, preserve and restore ecosystems, and ensure sustainable use and management of natural land and aquatic and marine resources.</p>	<p>There are no additional objectives but the strategy reinforces objectives set out in other EC plans/programmes and the AFS will thus indirectly reflect this.</p> <p>In additional Goal 3 (Increase Farm System Diversification) of “Viable and Resilient Primary Producers with Enhanced Well-Being” sets out commitments to develop and promote the bioeconomy.</p>
<p>EU (2019-) European Green Deal</p>	<p>The European Green Deal is a roadmap for sustainability in the EU with actions to boost efficient resources by moving to a clean, circular economy, restore biodiversity and cut pollution. Key elements of this include the Biodiversity Strategy to 2030, the Circular Economy Action Plan and the Farm to Fork Strategy. These are discussed below.</p>	<p>See below.</p>
<p>EC (2020)</p> <p>EU Biodiversity Strategy for 2030</p>	<p>This strategy sets out an enhanced governance framework to fill remaining gaps, ensures the full implementation of EU legislation, and pulls together all existing efforts. It covers three main areas: Protecting and restoring nature in the European Union, Enabling transformative change, and The European Union for an ambitious global biodiversity agenda.</p>	<p>Contribution to biodiversity objectives are set out in Goal 3 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”.</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
EC (2020) A new Circular Economy Action Plan (CEAP)	<p>The plan sets out a number of areas to focus on:</p> <ul style="list-style-type: none"> • A sustainable product policy framework • Key product value chains • Reducing waste • Making circularity work for people, regions and cities • Crosscutting action • Leading efforts at a global level • Monitoring progress <p>Section 3.7 of the CEAP relates directly to food, water and nutrients and links to EU Farm-to-Fork Strategy.</p>	<p>Contributions to circular economy objectives are set out in Goal 6 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector. Contribution to more efficient nutrient use and recovery objectives are set out in Goal 2 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector”. These outline the need for more research and innovation on reducing N losses and recovering N from manures.</p>
EC (2020) Farm to Fork Strategy	<p>Objectives include:</p> <ul style="list-style-type: none"> • ensuring that the food chain, covering food production, transport, distribution, marketing and consumption, has a neutral or positive environmental impact, preserving and restoring the land, freshwater and sea-based resources on which the food system depends; helping to mitigate climate change and adapting to its impacts; protecting land, soil, water, air, plant and animal health and welfare; and reversing the loss of biodiversity; • ensuring food security, nutrition and public health – making sure that everyone has access to sufficient, nutritious, sustainable food that upholds high standards of safety and quality, plant health, and animal health and welfare, while meeting dietary needs and food preferences; and • preserving the affordability of food, while generating fairer economic returns in the supply chain, so that ultimately the most sustainable food also becomes the most affordable, fostering the competitiveness of the EU supply sector, promoting fair trade, creating new business opportunities, while ensuring integrity of the single market and occupational health and safety. 	<p>The objectives of Farm to Fork are supported across the entire AFS. Environmental impacts are addressed in the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” Mission.</p> <p>Economic and Social impacts are addressed in “Viable and Resilient Primary Producers with Enhanced Well-Being” mission.</p> <p>Competitiveness objectives are addressed in “An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent”.</p>
EC (2018) CAP Strategic Plans Briefing	<p>The 9 objectives of the future CAP are:</p> <ul style="list-style-type: none"> • to ensure a fair income to farmers; • to increase competitiveness; 	<p>The objectives of the CAP Strategic Plan are supported across the entire AFS. Environmental impacts are addressed in the “A Climate Smart,</p>

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> to rebalance the power in the food chain; climate change action; environmental care; to preserve landscapes and biodiversity; to support generational renewal; vibrant rural areas; to protect food and health quality. <p>Future CAP will continue to ensure access to high-quality food and strong support for the unique European farming model. There will be mandatory requirements related to: preserving carbon-rich soils through protection of wetlands and peatlands; obligatory nutrient management tool to improve water quality, reduce ammonia and nitrous oxide levels; crop rotation instead of crop diversification.</p>	<p>Environmentally Sustainable Agri-Food Sector.” mission</p> <p>Economic and Social impacts are addressed in “Viable and Resilient Primary Producers with Enhanced Well-Being” mission.</p> <p>Competitiveness objectives are addressed in “An Innovative, Competitive and Resilient Agri-Food Sector, Driven by Technology and Talent”</p>
EC (2008) Marine Strategy Framework Directive (MSFD), as amended.	<p>Under the EU’s Marine Strategy Framework Directive (MSFD) Ireland is required to achieve or maintain “good environmental status” (GES) in the marine environment by 2020.</p> <p>The MSFD also requires Member States to set out programmes of measures to meet commitments towards Marine Protected Areas under other international agreements (e.g. 10% coverage by 2020 under UN Convention on Biological Diversity).</p>	See under Ireland’s Marine Strategy and Programme of Government.
EC (2013) Common Fisheries Policy (CFP) [Regulation (EU) No. 1380/2013]	The Common Fisheries Policy (CFP) aims to ensure that fishing and aquaculture are environmentally, economically and socially sustainable. It aims to ensure that fish stocks are maintained in the long-term as well as that a fair standard of living for fishing communities is achieved.	The approach to the development of the aquaculture sector in AFS is set out in Goal 5 of “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission.
EU-UK (2020) Trade and Cooperation Agreement	The agreement sets out provisions for trade and cooperation across a number of sectors and themes. From an environmental perspective the is a reciprocal commitment ‘not to reduce the level of environmental or climate protection or fail to enforce its laws in a manner that has an impact on trade’. There are reciprocal commitments to GHG reduction targets though the UK and EU are	The Agreement presents a challenge to the Irish fishing industry which must effectively hand back 15% of its quota (as acknowledged in Goal 5 of the “A Climate Smart, Environmentally Sustainable Agri-Food Sector” mission). It is not clear from the AFS how the shortfall will be met

Plan or Programme	Relevant Environmental Protection Objectives of the Plan or Programme	How the Strategy will support these Environmental Protection Objectives
	free to set their own policies. Reciprocal fishing in respective waters is still permitted, but approximately 25% of the average EU annual quota for UK waters will be transferred back to UK vessels.	nor whether there will still be risk that other EU vessels increase their activity in Irish waters. There is also the potential for un-coordinated fishing with the UK fleet with new dispute / coordination mechanisms yet to be tested.

APPENDIX C: ENVIRONMENTAL BASELINE MAPS



- Special Protection Areas
- Special Area of Conservation

Northern Ireland

- Special Protection Area
- Special Area of Conservation

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter



00	30/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

Agri-food Strategy to 2030
SEA Scoping Report



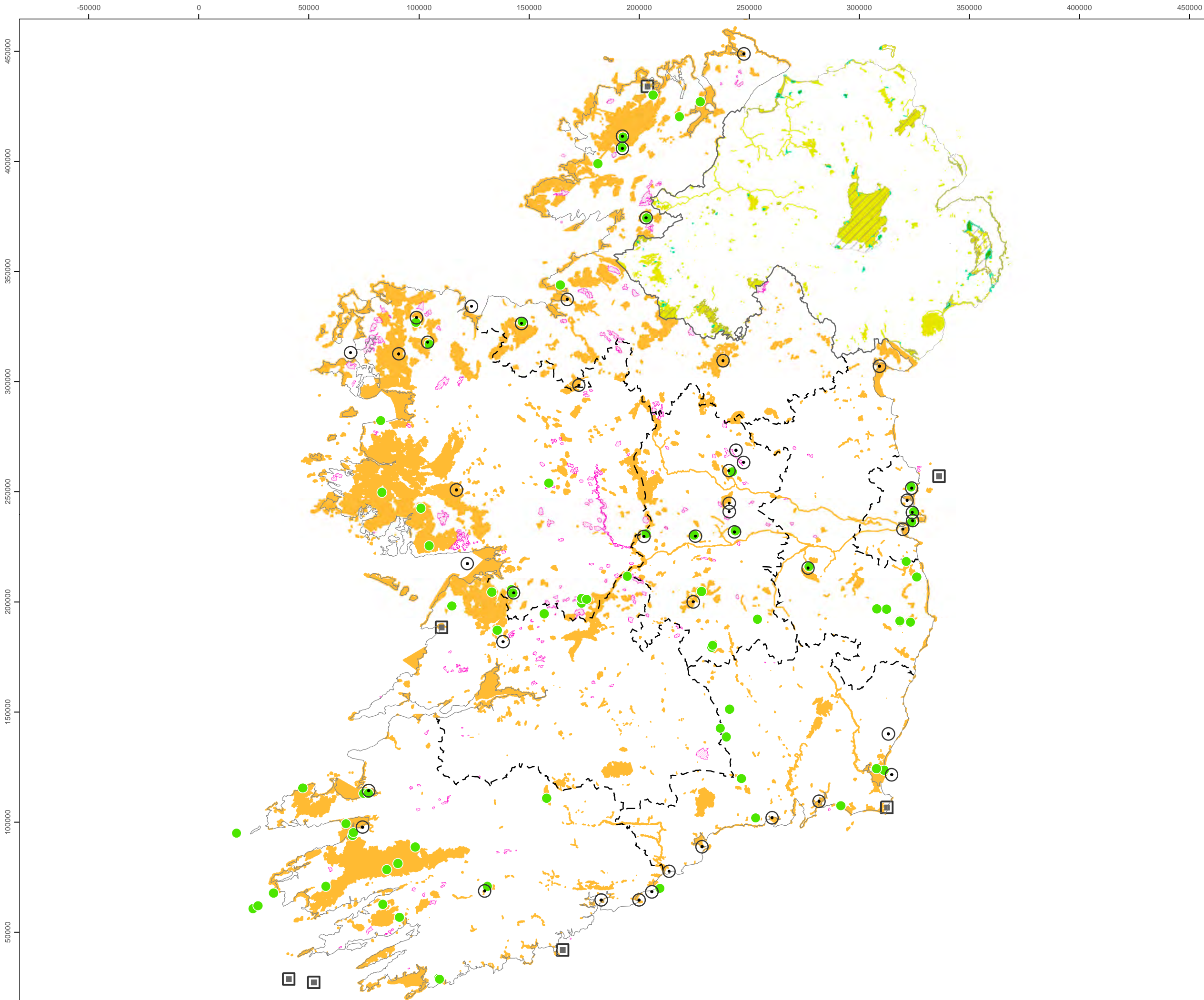
TITLE: Figure 1:
Natura 2000 Sites
Map 1 of 1








SCALE:1:1,750,000 @ A3






REV 00



-  Ramsar
-  Refuge for Fauna
-  National Nature Reserve
-  Natural Heritage Area
-  Proposed Natural Heritage Area

Northern Ireland

-  Ramsar area / site
-  National Nature Reserve
-  Area of Special Scientific Interest

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

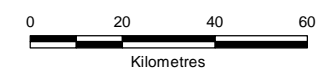


00	17/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

Agri-food Strategy to 2030 SEA Scoping Report

RSK

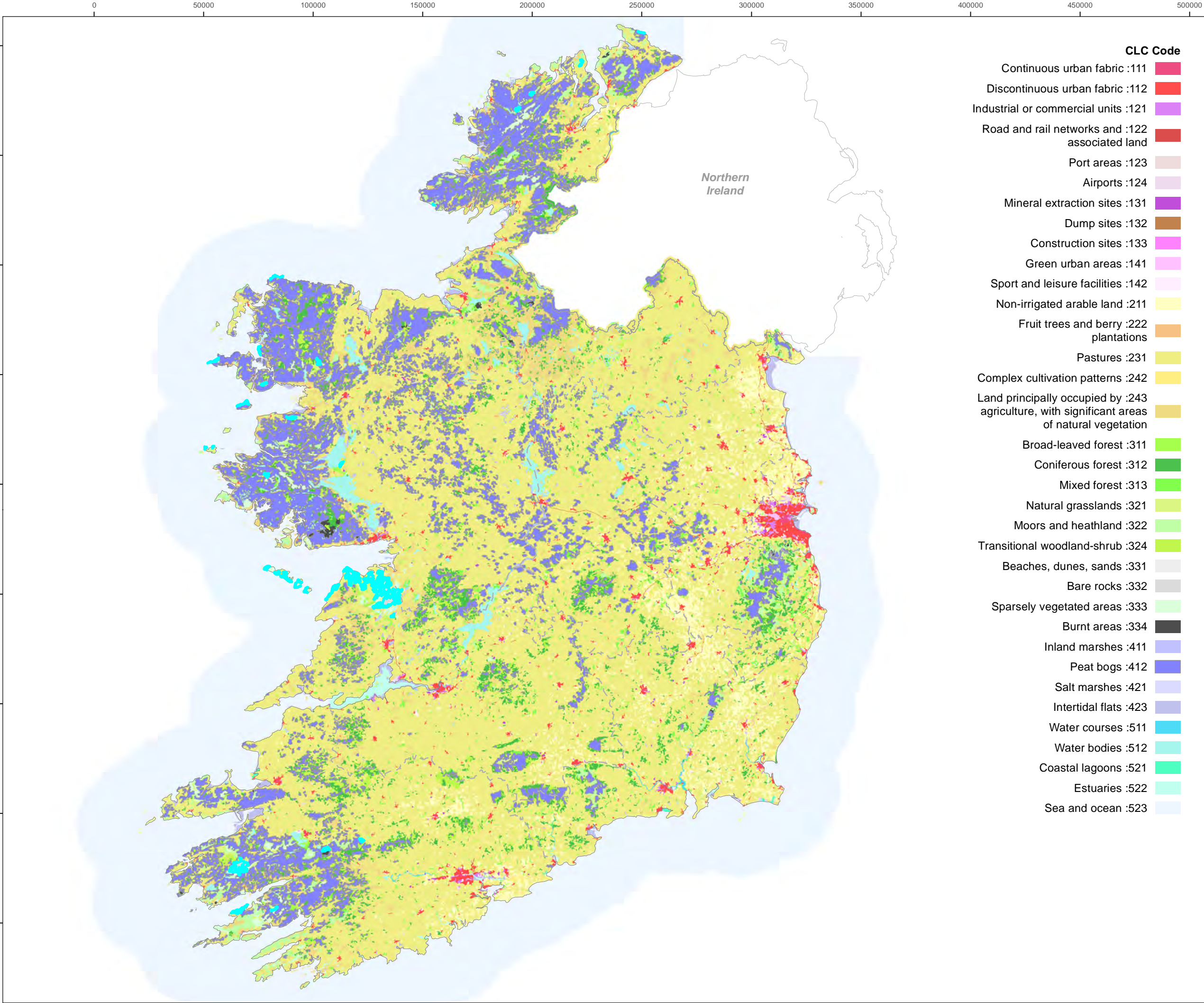
TITLE: Figure 2:
Other Designated Nature
Conservation Sites
Map 1 of 1



SCALE:1:1,635,000 @ A3



REV 00



- CLC Code**
- Continuous urban fabric :111
 - Discontinuous urban fabric :112
 - Industrial or commercial units :121
 - Road and rail networks and :122 associated land
 - Port areas :123
 - Airports :124
 - Mineral extraction sites :131
 - Dump sites :132
 - Construction sites :133
 - Green urban areas :141
 - Sport and leisure facilities :142
 - Non-irrigated arable land :211
 - Fruit trees and berry :222 plantations
 - Pastures :231
 - Complex cultivation patterns :242
 - Land principally occupied by :243 agriculture, with significant areas of natural vegetation
 - Broad-leaved forest :311
 - Coniferous forest :312
 - Mixed forest :313
 - Natural grasslands :321
 - Moors and heathland :322
 - Transitional woodland-shrub :324
 - Beaches, dunes, sands :331
 - Bare rocks :332
 - Sparsely vegetated areas :333
 - Burnt areas :334
 - Inland marshes :411
 - Peat bogs :412
 - Salt marshes :421
 - Intertidal flats :423
 - Water courses :511
 - Water bodies :512
 - Coastal lagoons :521
 - Estuaries :522
 - Sea and ocean :523

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

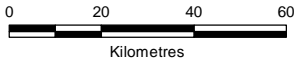


00	15/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

Agri-food Strategy to 2030
SEA Scoping Report



TITLE: Figure 3:
CORINE Landcover 2018
Map 1 of 1



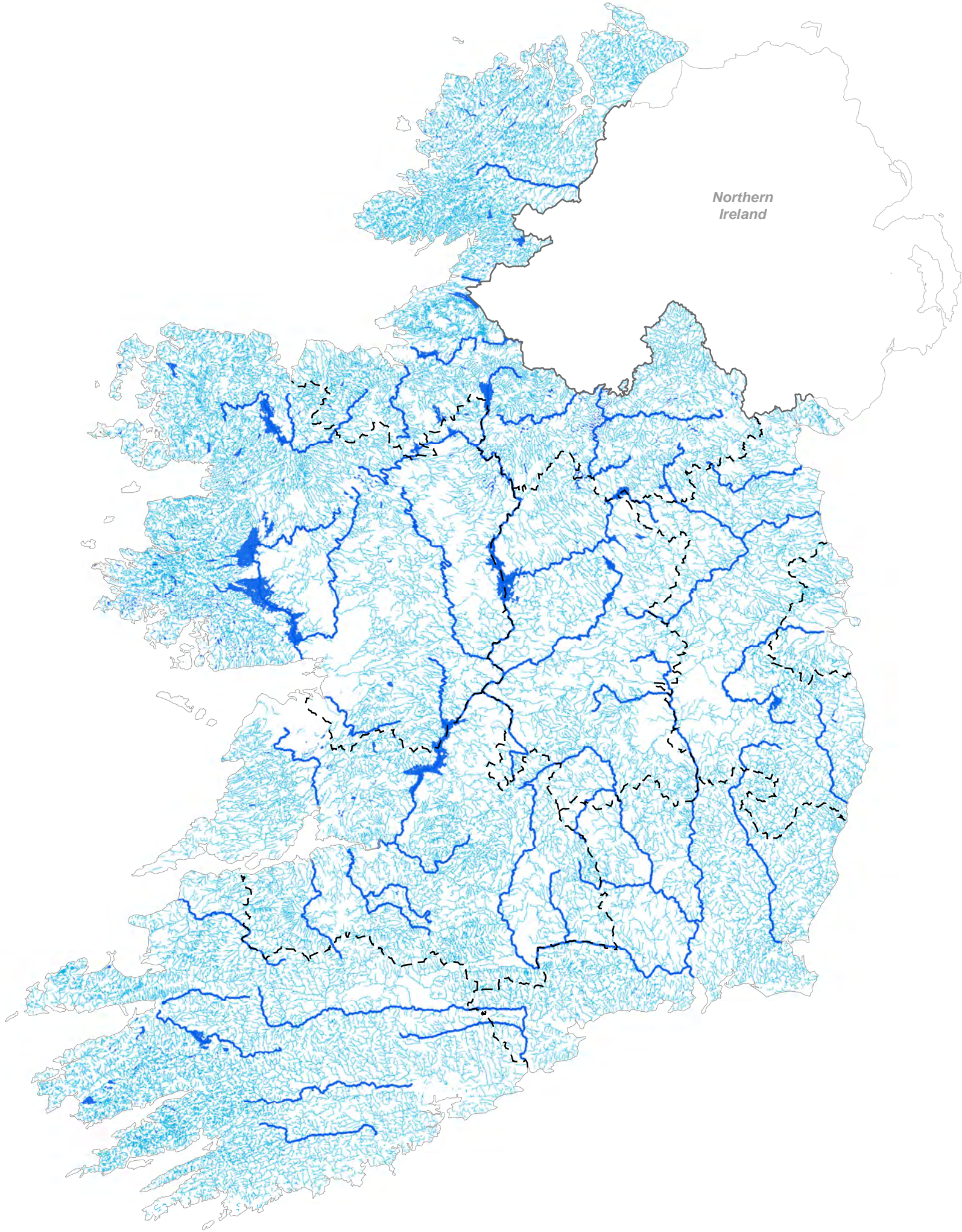
SCALE:1:1,635,000 @ A3



REV 00

-50000 0 50000 100000 150000 200000 250000 300000 350000 400000 450000

450000
400000
350000
300000
250000
200000
150000
100000
50000



- Waterbodies
- National Rivers Network
- Main Rivers

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

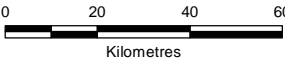


00	17/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

Agri-food Strategy to 2030
SEA Scoping Report



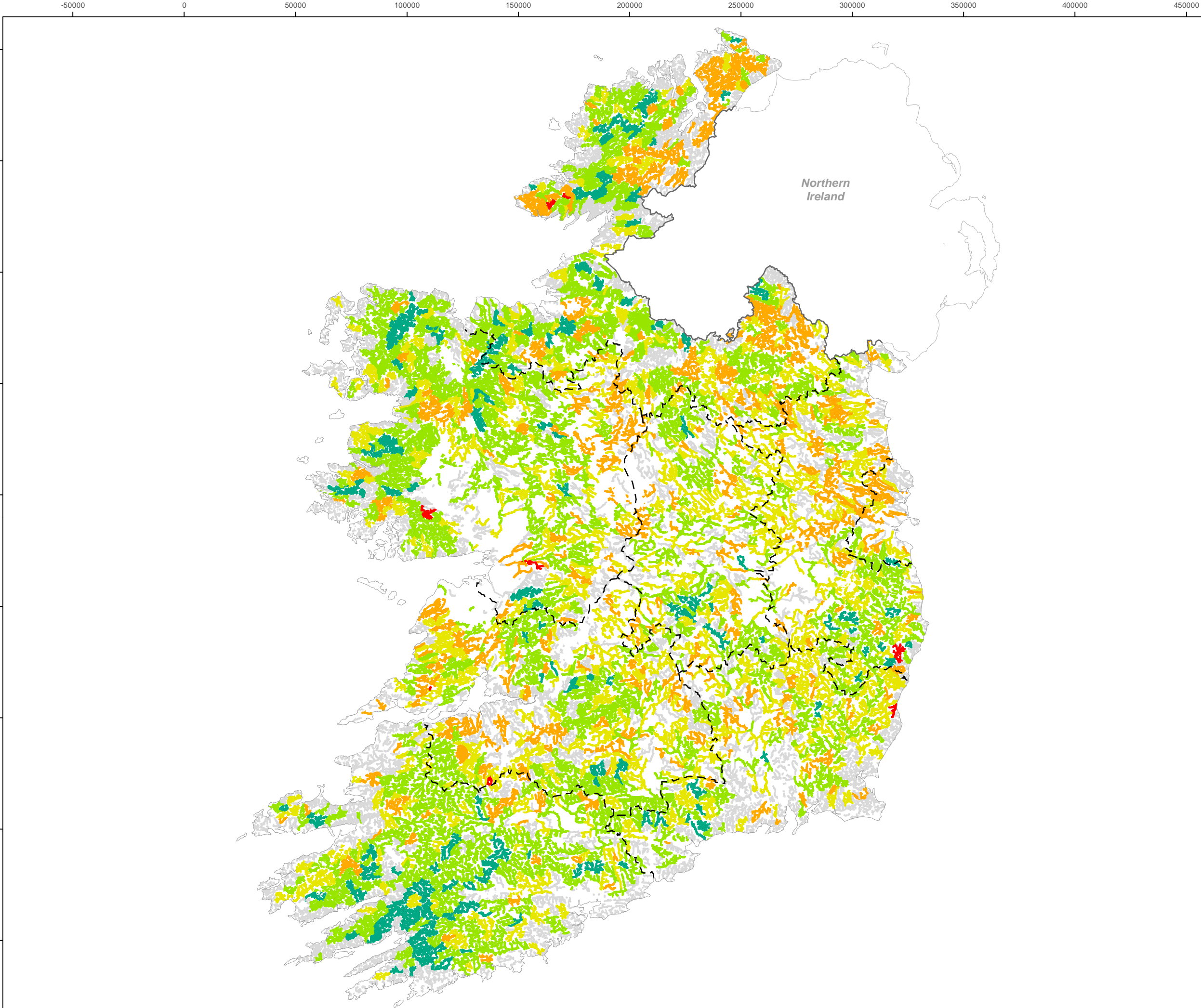
TITLE: Figure 4:
Rivers and Waterbodies
Map 1 of 1



SCALE 1:1,635,000 @ A3



REV 00



Ecological Status

- High
- Good
- Moderate
- Poor
- Bad
- Unassigned

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

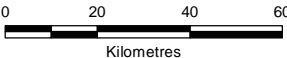


00	17/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

**Agri-food Strategy to 2030
SEA Scoping Report**



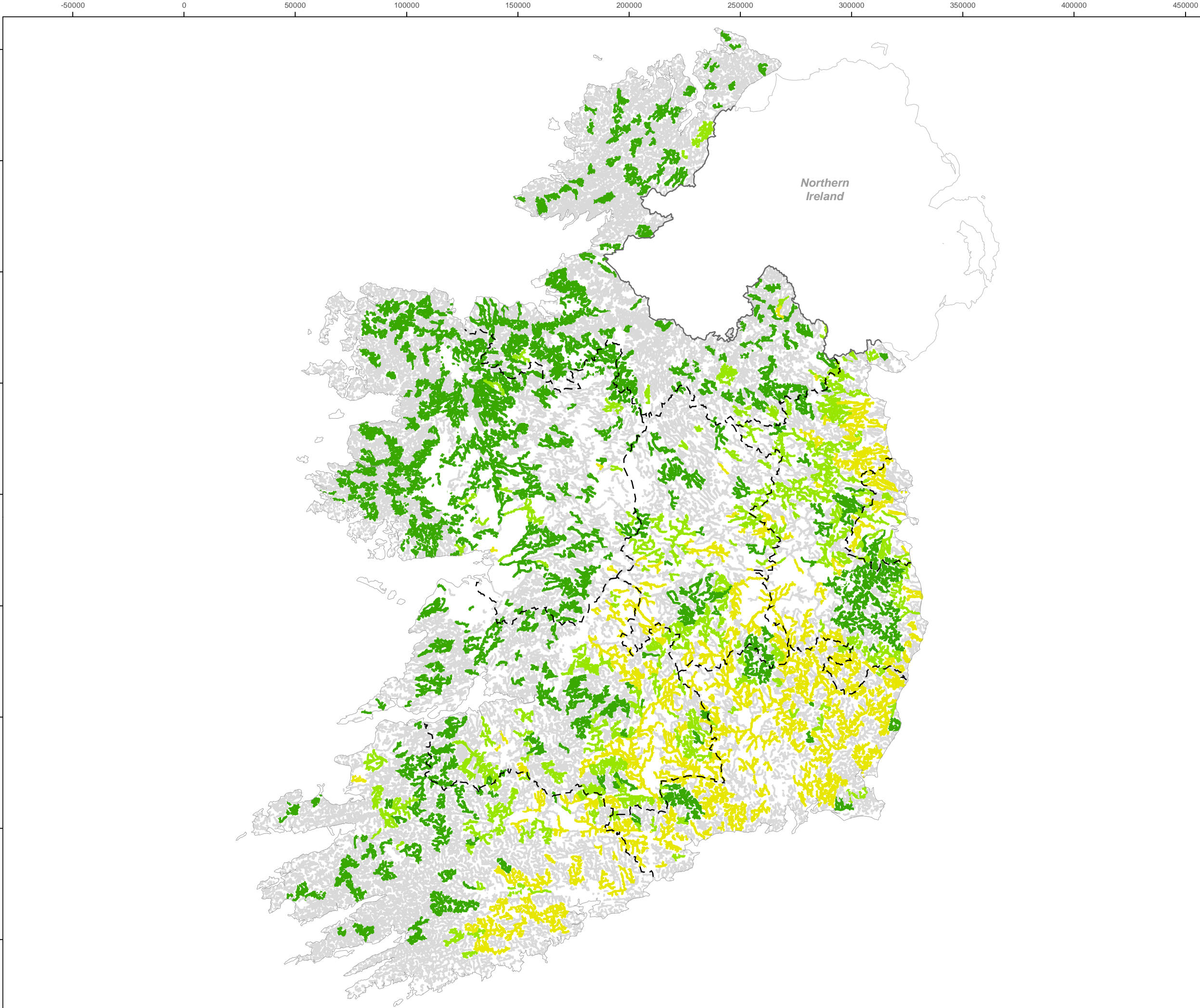
TITLE: Figure 5:
Water Quality - Ecological Status
Map 1 of 1



SCALE:1:1,635,000 @ A3



REV 00



Nitrate Concentration

- High quality
- Good quality
- Moderate quality
- Unassigned

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

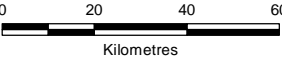


00	30/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

**Agri-food Strategy to 2030
SEA Scoping Report**



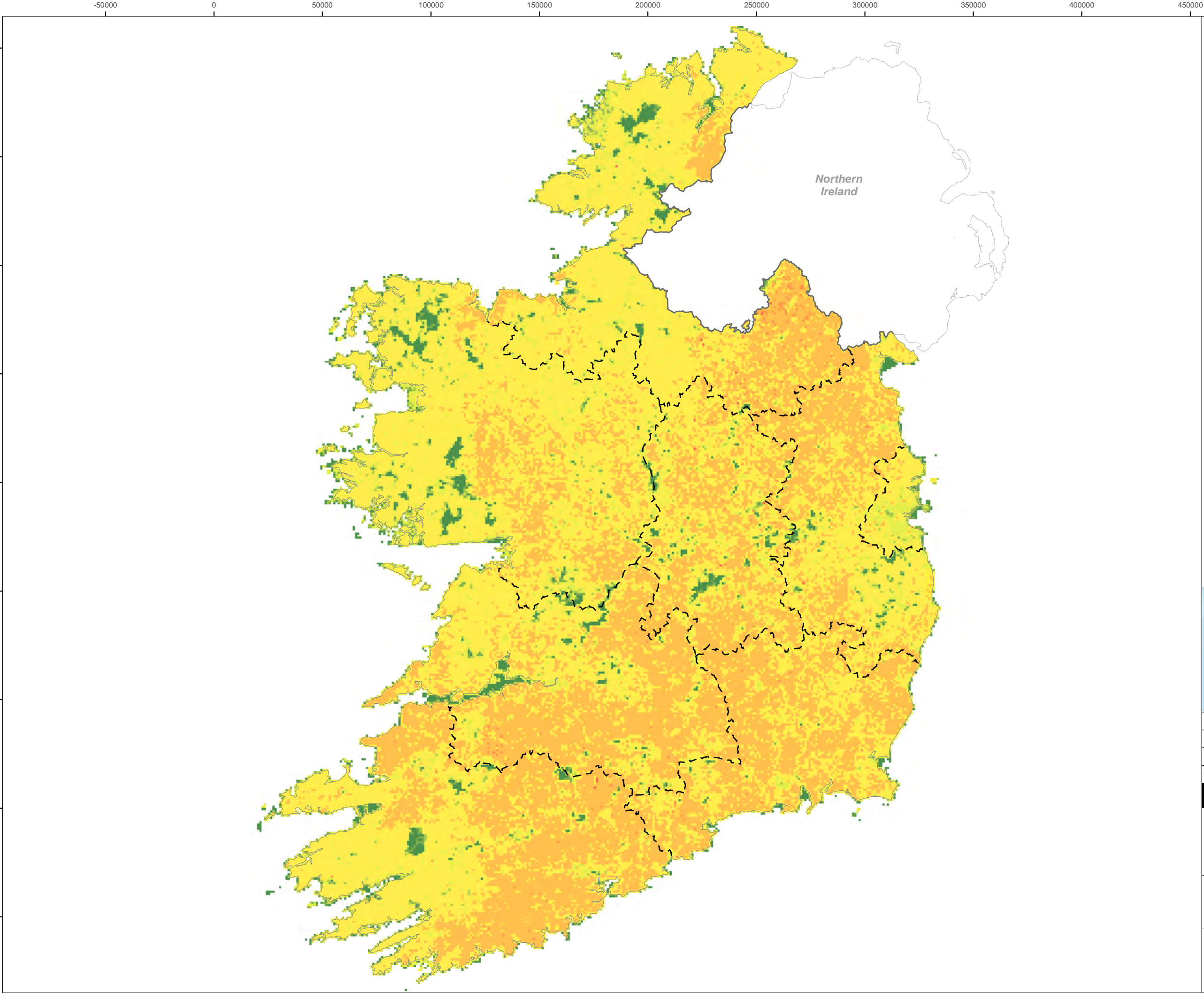
TITLE: Figure 6:
Water Quality - Nitrate Concentration
Map 1 of 1



SCALE:1:1,635,000 @ A3



REV 00



NH₃ emissions

- 0.000000 - 0.000002
- 0.000003 - 0.000013
- 0.000014 - 0.000069
- 0.000070 - 0.000358
- 0.000359 - 0.001856
- 0.001857 - 0.009615
- 0.009616 - 0.049802
- 0.049803 - 0.257952

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter

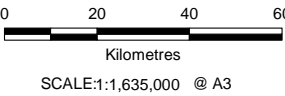


00	15/07/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

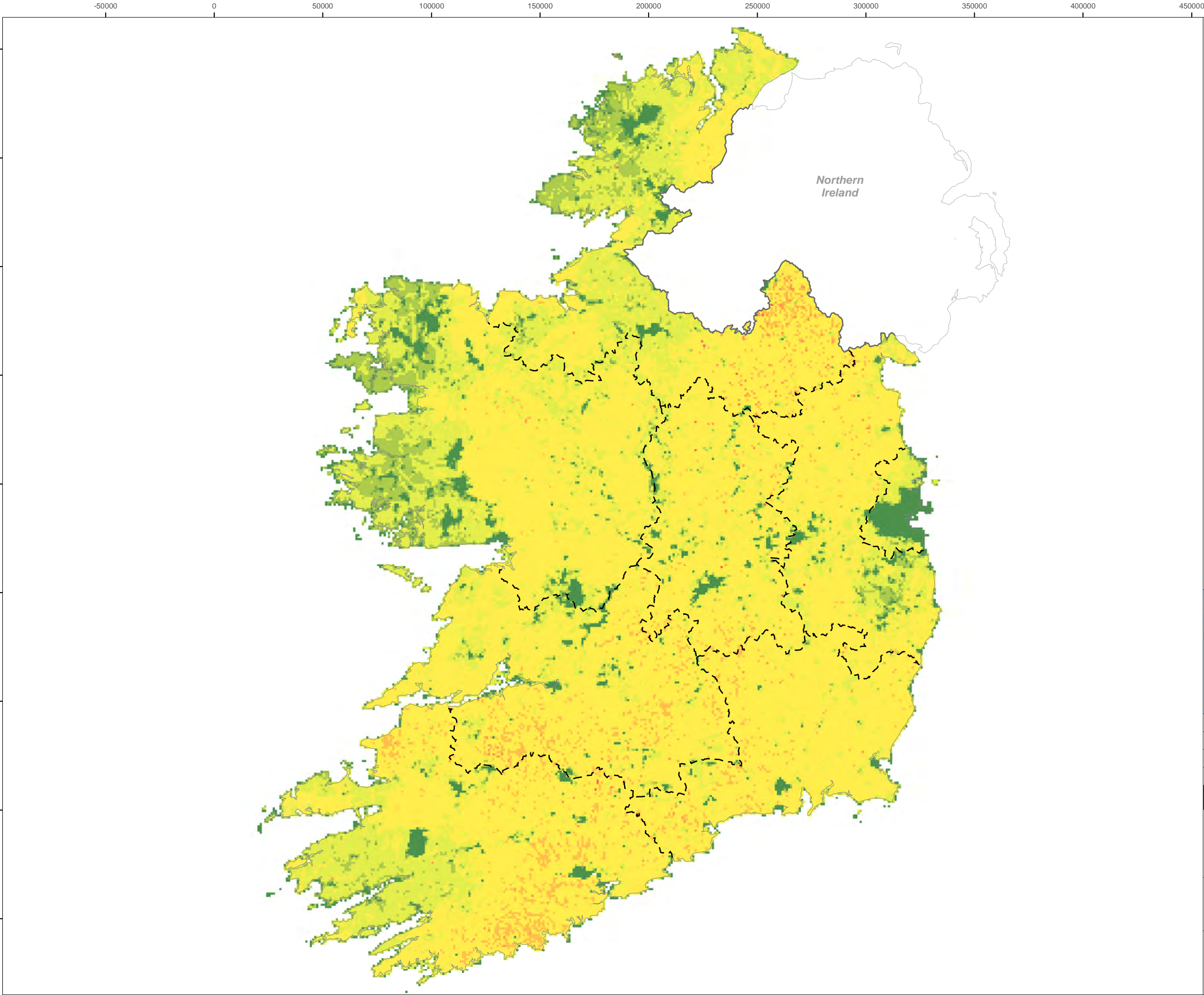
Agri-food Strategy to 2030
SEA Scoping Report



TITLE: Figure 7a:
National Total Ammonia Emissions
Map 1 of 1



REV 00



NH₃ emissions

- 0.000000 - 0.000002
- 0.000003 - 0.000013
- 0.000014 - 0.000069
- 0.000070 - 0.000358
- 0.000359 - 0.001856
- 0.001857 - 0.009615
- 0.009616 - 0.049802
- 0.049803 - 0.257504

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter



00	15/07/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

**Agri-food Strategy to 2030
SEA Scoping Report**



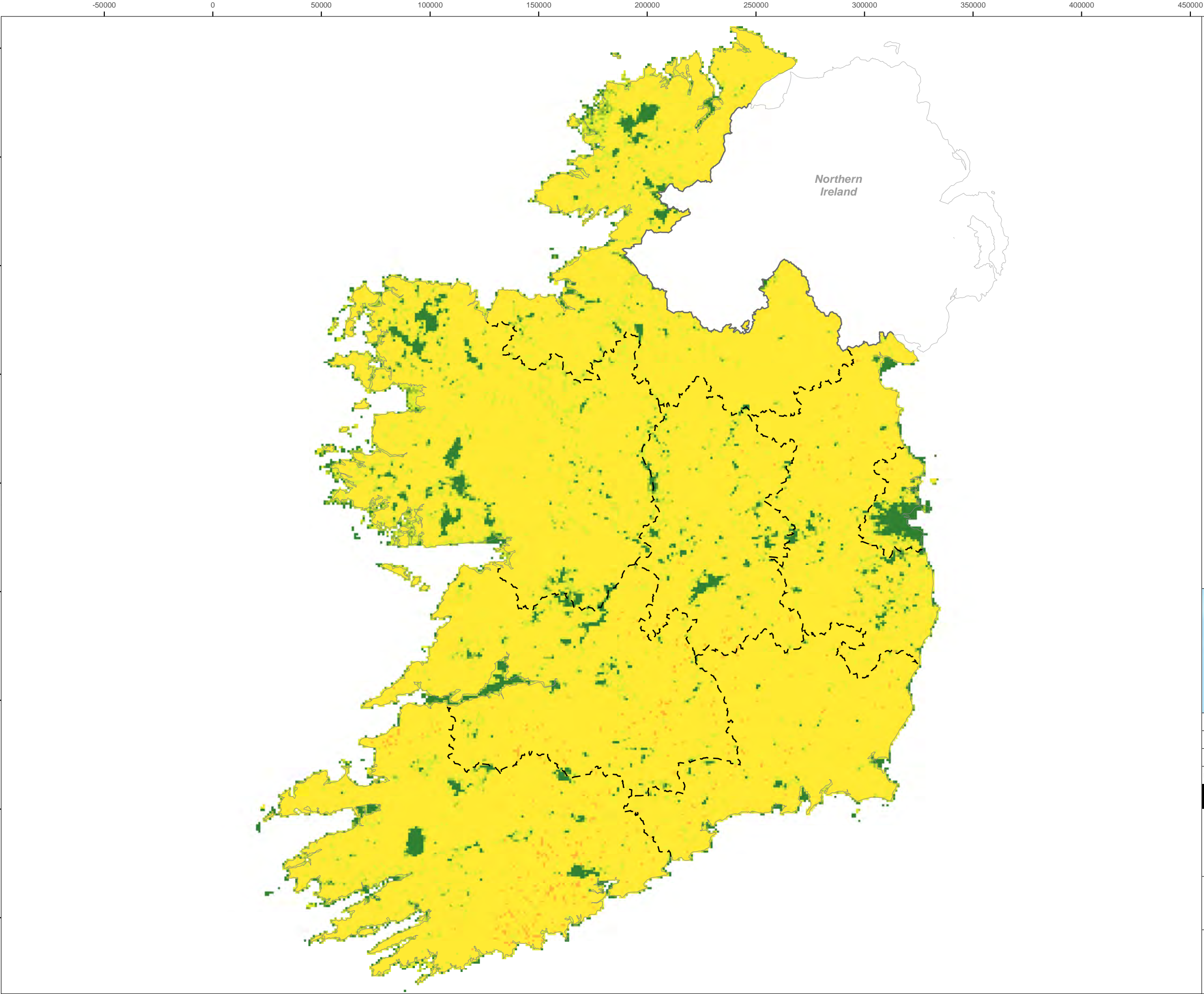
TITLE: Figure 7b:
Ammonia Emissions from Agriculture
- Livestock
Map 1 of 1



SCALE:1:1,635,000 @ A3



REV 00



NH₃ emissions

- 0.000000 - 0.000002
- 0.000003 - 0.000013
- 0.000014 - 0.000069
- 0.000070 - 0.000358
- 0.000359 - 0.001856
- 0.001857 - 0.009615
- 0.009616 - 0.049802
- 0.049803 - 0.257952

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator
Datum: TM65
Units: Meter



00	15/07/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

**Agri-food Strategy to 2030
SEA Scoping Report**



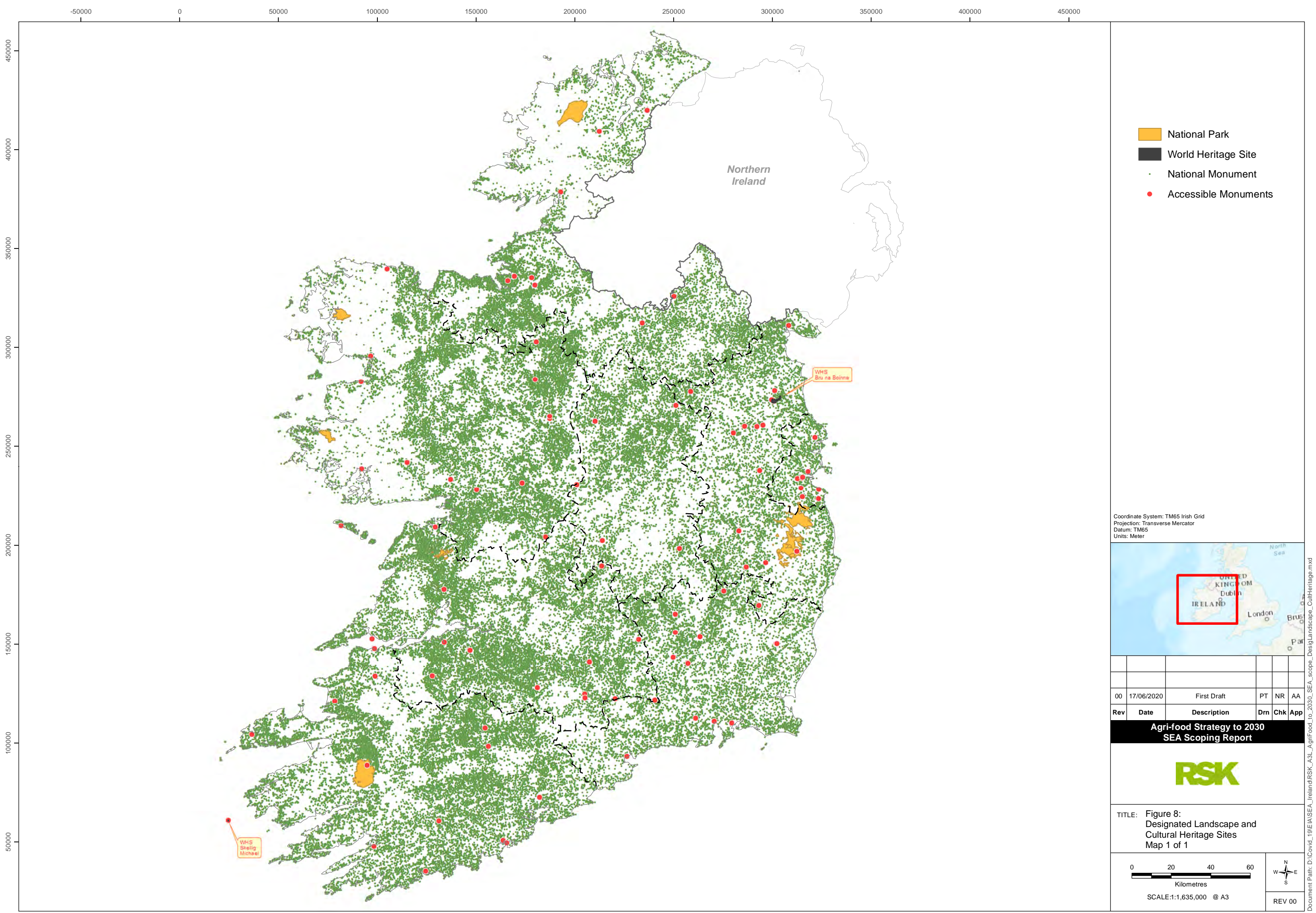
TITLE: Figure 7c:
Ammonia Emissions from Agriculture
- Other
Map 1 of 1



SCALE:1:1,635,000 @ A3



REV 00



00	17/06/2020	First Draft	PT	NR	AA
Rev	Date	Description	Drn	Chk	App

Agri-food Strategy to 2030
SEA Scoping Report



TITLE: Figure 8:
Designated Landscape and
Cultural Heritage Sites
Map 1 of 1

0204060
Kilometres
SCALE:1:1,635,000 @ A3

N
W
E
S

REV 00

APPENDIX D: SCOPING REPORT BASELINE

3 BASELINE DATA

3.1 The Current State of Ireland's Environment

Schedule 2 of the Ireland SEA Regulations specifies that the Environmental Report must contain the following information in respect of baseline conditions:

“(b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.

(c) The environmental characteristics of areas likely to be significantly affected.

(d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or the Habitats Directive.”

A description of the current state of the environment in Ireland, in respect of each of the sustainability topics is provided below. Where appropriate, Geographic Information Systems (GIS) have been used to assist with analysis of this data; maps have been produced to display relevant spatial information and can be seen in Appendix B.

Analysis of baseline information has been carried out to provide an evidence base for current and likely future environmental conditions without the Strategy. Key environmental and sustainability issues for Ireland have also been identified.

Information for this section has been obtained from Government websites such as those of the National Parks & Wildlife Service (NPWS) and the EPA; the 2016 EPA report ‘Ireland’s Environment’ and accompanying website resource; and other documents as referenced.

3.2 Ecology and Nature Conservation

Ireland’s Biodiversity Resource

Ireland has a rich diversity of ecosystems and wildlife as it is home to over 31,000 recorded species and supports globally important populations of birds, fish, mammals, invertebrates, plants and fungi. Ireland has 28 species of land mammal, over 400 species of birds, more than 4,000 plant species and over 12,000 species of insect (NPWS, 2020).

Maps showing the key nature conservation designations across Ireland can be seen in Appendix B.

European sites, also known as Natura 2000 sites, are protected sites for flora and fauna designated under the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC). Ireland has:

- 439 Special Areas of Conservation (SACs) covering approximately 1,350,000 ha; and
- 154 Special Protected Areas (SPAs) covering approximately 597,000 ha.

The EC has recently decided to refer Ireland to the Court of Justice of the EU because Ireland failed to designate 154 out of 423 Sites of Community Importance (SCI) as SACs

within the appropriate deadline as well as failing to establish site-specific conservation objectives for 87 sites and conservation measures for any of the 423 sites (EC, 2020).

A total of 45 sites have been designated as Ramsar sites, which are wetlands of significant value for nature (Irish Ramsar Wetlands Committee, 2020). Under the OSPAR Convention to Protect the Marine Environment of the North East Atlantic, Ireland has also committed to establishing Marine Protected Areas (MPA) to protect biodiversity: nineteen of its SACs are MPAs for marine habitats (NWPS, 2020).

Ireland has a number of internationally important habitats representing 59 of those listed in Annex I of the Habitats Directive. Of these, 16 are deemed to be priority habitats at the national level, including limestone pavements, machair, turloughs and active peatlands, whilst the country is relatively rich in bryophytes, algae and lichens. Peat bogs cover approximately 13.7% of land, the majority of which are located in the south-west, west and north of the country as shown on the CORINE 2018 landcover map in Appendix B (EPA, 2018).

Ireland includes important breeding habitat for seabirds, and is particularly important for its breeding populations of manx shearwater (*Puffinus puffinus*) and storm petrel (*Hydrobates pelagicus*). Coastal areas provide important habitats for chough (*Pyrrhocorax pyrrhocorax*) and breeding dunlin (*Calidris alpina*). Ireland's wetlands are an important resource for over 50 species of overwintering migratory birds such as light-bellied brent goose (*Branta bernicla hrota*), black-tailed godwit (*Limosa limosa*), whooper swan (*Cygnus cygnus*), greenland white-fronted goose (*Anser albifrons flavirostris*) and ringed plover (*Charadrius hiaticula*). Blanket bog and upland areas provide habitats for species like merlin (*Falco columbarius*) and golden plover (*Pluvialis apricaria*). Agricultural areas also represent a share of the SPA network and upland agricultural areas provide habitat for hen harrier (*Circus cyaneus*) while the more intensively farmed coastal lowlands provide habitat for internationally important numbers of swans and geese (NPWS, 2020).

Nationally important areas for wildlife are designated as Natural Heritage Areas (NHA). This is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection. To date, 75 raised bogs, mainly in the midlands, have been designated as NHAs, covering approximately 23,000 ha. In addition, 73 blanket bogs, located mostly in western areas, are also designated as NHAs, covering approximately covering 37,000 ha. Furthermore, there are number of proposed NHAs, which were published on a non-statutory basis, but have not yet been statutorily proposed or designated and are afforded limited protection. The pNHAs cover approximately 65,000 ha (NWPS, 2020).

Ireland also has Nature Reserves, which are areas of importance to wildlife, and Refuges for Fauna, which are designated to protect habitats of named species.

High nature value (HNV) is a type of low-intensity farming system which is particularly valuable for wildlife and the natural environment. A recent study mapped the likely distribution of HNV farmland based on established European indicators which identified that higher likelihood of HNV potential was located in the north-west, west and south-west of Ireland (EPA, 2016).

Conservation Status

According to the *Interim Review of the Implementation of the National Biodiversity Action Plan 2017-2021* (Biodiversity Working Group, 2020) the conservation status of 85% of EU protected habitats in Ireland is unfavourable, while 46% are demonstrating ongoing declines in conservation status with peatlands, grassland and some marine habitats a particular concern. For comparison, the overall proportion of protected habitats with an unfavourable conservation status in EU is 72%, showing that Ireland has a higher proportion of sites in unfavourable status than the EU average (European Court of Auditors, 2020).

There are 68 Habitats Directive-listed species in Ireland, of which 8 are described as vagrants. Of the remaining 60 species, 57% are in favourable condition and 30% are in unfavourable condition. While 72% demonstrate stable or improving trends, 15% demonstrate trend of ongoing decline. Population increases and range expansion have been observed for several bat species, marsh fritillary (*Euphydryas aurinia*), otter (*Lutra lutra*) and pine marten (*Martes martes*), however ongoing declines are reported for all whorl snails, freshwater pearl mussel (*Margaritifera margaritifera*), lesser horseshoe bat (*Rhinolophus hipposideros*) and maërl species (DCHG, 2019).

Ireland has undertaken Red List assessments of the threat of extinction of vascular plant, bryophyte and non-marine vertebrate taxa as well as the better known invertebrate groups. Although most are not considered threatened, just over 14% of the taxa were assessed as under threat of extinction (including 30 species of bees, European eel (*Anguilla anguilla*), Arctic char (*Salvelinus alpinus*), and natterjack toad (*Epidalea calamita*)) (DCHG, 2017).

Stocks of Atlantic salmon (*Salmo salar*) have been declining and only 34% of Irish salmon waters are considered to have healthy salmon populations. According to the Marine Institute Stockbook 2018 and Shellfish Stockbook 2018, there are 28 stocks whose biomass levels are below those capable of delivering maximum sustainable yield (MSY), 46 stocks were above levels that could support MSY and 60 were unknown (Biodiversity Working Group, 2020). To avoid overfishing and ensure a sustainable long-term seafood industry, fisheries are managed through the EU Common Fisheries Policy (CFP). This includes for the setting of annual Total Allowable Catches (TAC) for most commercial fish stocks from which national quotas are derived.

In addition, the breeding distributions of bird species that are associated with farmland, such as the curlew (*Numenius arquata*), lapwing (*Vanellus vanellus*) and yellowhammer (*Emberiza citrinella*) have declined substantially over recent decades, with curlew on the brink of local extinction according to survey work in 2015 and 2016 (DCHG, 2017). However, the Curlew Conservation Programme has been running for three years to implement conservation measures in core breeding areas and in 2019 a record high number of breeding pairs and increase in breeding productivity was recorded (Biodiversity Working Group, 2020).

Short term assessments also undertaken for breeding bird populations and a selection of wintering bird populations reported declines of 18% and 52% respectively (Biodiversity Working Group, 2020). The 2013 assessment of the status of 185 regularly occurring bird species placed 37 species on the Birds of Conservation Concern in Ireland Red list, 90 on the Amber list and 58 on the Green list. The number of Red-listed species had

increased by 12 and Amber-listed species by five since the previous review in 2007 (DCHG, 2017). The more recent Countryside Bird Survey (CBS) (Lewis, L. et al., 2019) identified that over an 18-year period, population trend analyses indicate that 47% of species are increasing, 27% of species are stable and approximately 26% are in decline. In terms of seabirds, monitoring data identified that over approximately 16 years, 85% of assessed species were increasing while two were showing stable trends and one was decreasing. However, when compared to approximately 32 year period, 68% species were estimated to have increased, 11% showing stable trends and 21% decreased (Cummins, S. et al., 2019).

Pressures

Agriculture (and to a lesser extent forestry) has been identified as a key contributors to the declines in conservation status described above. *The Status of EU Protected Habitats and Species in Ireland* (DCHG, 2019) reports that over 70% of habitats are being impacted by agricultural practices, including:

- inappropriate grazing regimes (over or undergrazing);
- land abandonment (abandonment of grassland management);
- activities generating diffuse pollution to surface and groundwaters; and
- activities generating air pollution.

In addition, agricultural practices such as inappropriate drainage and inappropriate herbicide and pesticide use are also contributing to the deterioration of habitats.

Blanket bog, alpine heath and wet heath were cited as being particularly vulnerable to air pollution (further information on air pollution such as ammonia emissions is provide in Section 3.7 on Air Quality). Certain forestry practices (e.g. clear-felling) have also been implicated in the decline of some aquatic species such as the freshwater pearl mussel (*Margaritifera margaritifera*).

A feature of the distribution of protected sites in Ireland is such that the burden for their protection falls unequally on different agricultural sectors, with upland and marginal farmers, where farming is often less profitable, having the greatest responsibility for implementation of habitat and species conservation and climate change mitigation.

The recent European Court of Auditors report on *Biodiversity on Farmland* (2020), identified that populations of birds and grassland butterflies, which are good indicators of change in farmland biodiversity, have declined in Europe by more than 30% since 1990. The report 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.

Non-agricultural pressures include primarily alien and problematic species and development, construction and use of residential, commercial, industrial and recreational infrastructure and areas.

There are a number of pressures and threats on different bird groups including:

- Terrestrial birds - agriculture and forestry (changes to grazing and grassland management and use of pesticides), development and climate change (Lewis, L. et al., 2019);

- Wintering waterbirds - climate change, energy production (e.g. wind farms), hunting, recreational and other disturbance, shellfish harvesting and aquaculture, as well as afforestation, bycatch, and mixed source water pollution/eutrophication (Lewis, L. et al., 2019); and,
- Seabirds - offshore wind energy developments, climate change, the fishing industry via overfishing or by way of incidental seabird bycatch, mammalian predation, recreational disturbance and plastic waste (Cummins, S. et al. 2019).

In line with global trends, coastal and marine biodiversity is coming under pressure from human activities including nutrient and chemical discharge and through direct physical disturbance and habitat degradation from pollution, litter, man-made noise and light. These pressures are mainly in transitional and coastal waters. Fishing impacts on both pelagic (i.e., water column) and seabed communities, particularly for species with low growth rates, soft substrates or cold water coral reefs, and some areas have been heavily impacted by this activity. There are also concerns about the level of by-catch of birds and marine mammals in certain fisheries (DCHG, 2017).

There are also concerns that increased restrictions on access to UK waters as a result of Brexit may result in displacement of vessels to Irish waters, resulting in additional pressure on fish stocks and general marine biodiversity (DAFM, 2020).

Climate change is also expected to have an increasingly negative impact on habitats, particularly coastal and upland habitats, and various species as well as increasing ocean acidification. The rise in temperatures, changes in precipitation patterns, weather extremes (storms and flooding, sea surges, flash floods) and sea-level rise is predicted to affect the abundance and distribution of some Irish species. Degraded upland habitats are likely to become less resilient to the impacts of climate change (DCHG, 2017). Climate change is also predicted to result in increased spread of invasive species, affecting terrestrial, freshwater and marine ecosystems (DCHG, 2019).

Invasive and non-native species are increasing and species such as the zebra mussel (*Dreissena polymorpha*), grey squirrel (*Sciurus carolinensis*) and Pacific oyster (*Crassostrea gigas*), may displace native species and considerably alter biodiversity, and subsequently, ecosystem processes and services. While to date the majority of invasive species have been plants (including hottentot fig (*Carpobrotus edulis*), giant rhubarb (*Gunnera tinctoria*), and giant hogweed (*Heracleum mantegazzianum*)), in the future invertebrates and vertebrate species may increase (DCHG, 2017). Invasive species are having a greater impact on freshwater and marine species (Biodiversity Working Group, 2020). The direct annual cost of invasive species to Ireland's economy was estimated in 2013 to be over €200 million, but may be higher with the increasing trend of invasive species (DCHG, 2017).

While there is data on protected areas and the threats they are facing, there is a lack of data on the status of biodiversity in other areas used for agriculture which creates difficulty in addressing negative impacts (EPA, 2016).

Policy Response

The *National Biodiversity Action Plan 2017-2021* (DCHG, 2017) was published in 2017 and reiterates Ireland's vision for biodiversity:

“That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.”

The Plan provides a framework of actions towards achieving the seven objectives set out in the second Biodiversity Action Plan (BAP):

1. Mainstream biodiversity into the decision making process across all sectors;
2. Strengthen the knowledge base for conservation, management & sustainable use of biodiversity;
3. Increase awareness & appreciation of biodiversity & ecosystems services;
4. Conserve & restore biodiversity & ecosystem services in the wider countryside;
5. Conserve & restore biodiversity & ecosystem services in the marine environment;
6. Expand & improve on the management of protected areas & species;
7. Strengthen international governance for biodiversity & ecosystem services.

The recent BAP notes that the second Action Plan has had a number of achievements, but that overall a significant proportion of Ireland's biodiversity is still in a vulnerable state.

The National BAP acknowledges the critical role that agriculture, rural development and forestry policies have on delivery of Objective 6 Expand & improve on the management of protected areas & species. A central priority of the Irish Rural Development Plan (RDP) is restoring, preserving and enhancing ecosystems related to agriculture and forestry and agri-environment schemes such as the Green, Low-Carbon, Agri-Environment Scheme (GLAS) and Locally Led Agri-Environment Schemes (LLAES) will continue to be developed and implemented (DCHG, 2017).

The NPWS has published detailed site-specific conservation objectives for 327 SACs and 37 SPAs (NPWS, 2020). The objective of the Habitats Directive is to maintain or restore the favourable conservation status of habitats or species and the conservation objectives define the favourable conservation condition for a particular habitat or species at that site. Some of the below schemes are specifically targeted at SAC/SPA conservation objectives.

Approximately 50,000 farmers participated in the GLAS scheme under the RDP 2014-2020 and as of 2019 approximately 796,000 ha were covered by area based actions. Approximately 23,191 ha of land is covered by the Burren Programme, a locally led Agri-environment climate measure, with 328 participating farmers. Another programme is the Hen Harrier Programme, which is aimed at farmers with land designated for the protection of breeding hen harrier. Currently 57,732 ha is covered by this scheme. The Pearl Mussel Project, a European Innovation Partnership (EIP) for Freshwater Pearl Mussel catchments, covers approximately 21,405 ha of farmland (Biodiversity Working Group, 2020).

Transboundary Considerations

As Ireland shares a boundary with Northern Ireland, there is potential for the Agri-Food Strategy to affect biodiversity and nature conservation in Northern Ireland, in particular designated nature conservation sites near the border or with hydrological connections and mobile species such as birds and bats.

Northern Ireland has a large area of land of nature conservation value, including 17 SPAs, 57 SACs, 21 Ramsar sites, 394 Areas of Special Scientific Interest (ASSIs), 12 National Nature Reserves and a number of MPAs. Some of the designated sites are located on the border with Ireland, including 10 SACs, 4 SPAs, 4 Ramsar sites and a number of ASSIs. A proportion of Natura 2000 sites are in poor condition and approximately 35% of ASSI features are in unfavourable condition, compared to 62% in favourable condition (NIEA and DAERA, 2020).

Northern Ireland's State of the Environment Report (NIEA, 2013) determined that despite increased action to halt biodiversity loss, there has been a steady decline. There has been an overall decline in priority habitats, in particular grasslands, as well as a decline in priority species such as breeding waders. The key pressures on biodiversity were found to be land-use change, particularly agriculture and development, pollution, invasive species and fisheries practices. While the Northern Ireland Breeding Bird Survey suggested an average increase in common bird species between 1994 and 2018, there has been a decrease in wetland bird species (NIEA and DAERA, 2020).

3.3 Socio-Economics

The Census 2016 results show that Ireland's population stood at 4,761,865 in April 2016, an increase of 173,613 (3.8%) since April 2011 (CSO, 2016).

The same census data shows the change of urban and rural population, 2011 to 2016 as shown in Figure 3.1 below. The majority of population change is seen in areas classed as more urban showing people are continuing to move away from the countryside into more built up areas.

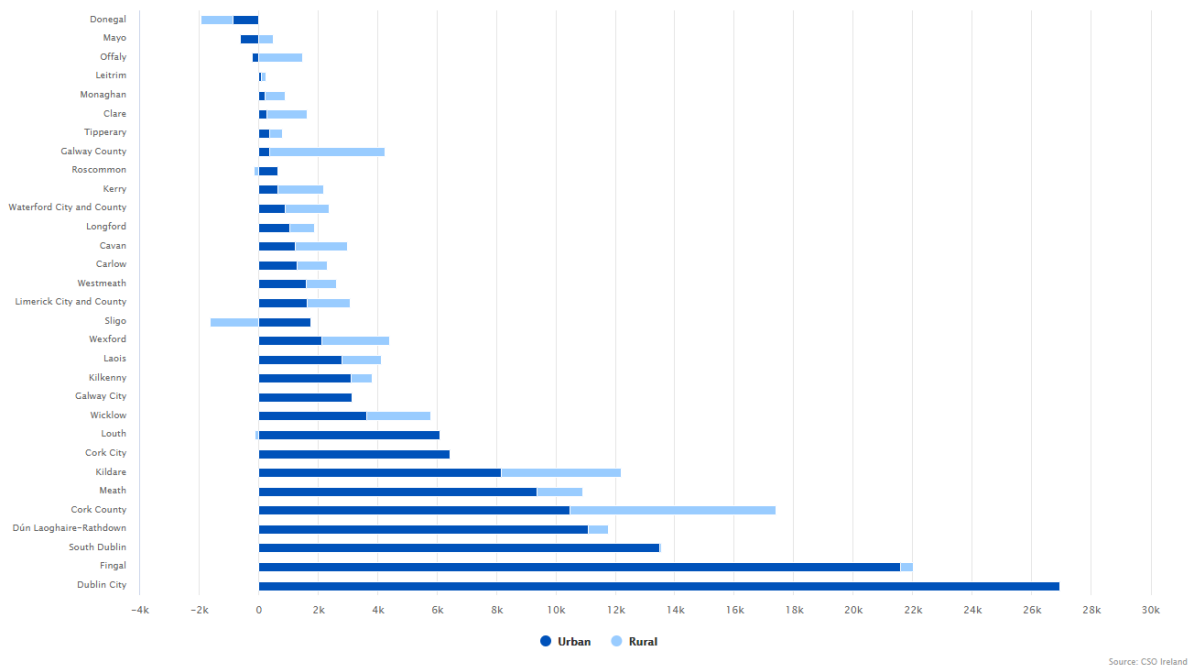


Figure 3.1: Urban and Rural Population Change, Ireland between 2011 and 2016

Figure 3.2 below shows the level of education across Ireland in 2016. The figure shows that amongst the adult population in Ireland a greater proportion of the younger generation have achieved higher education levels.

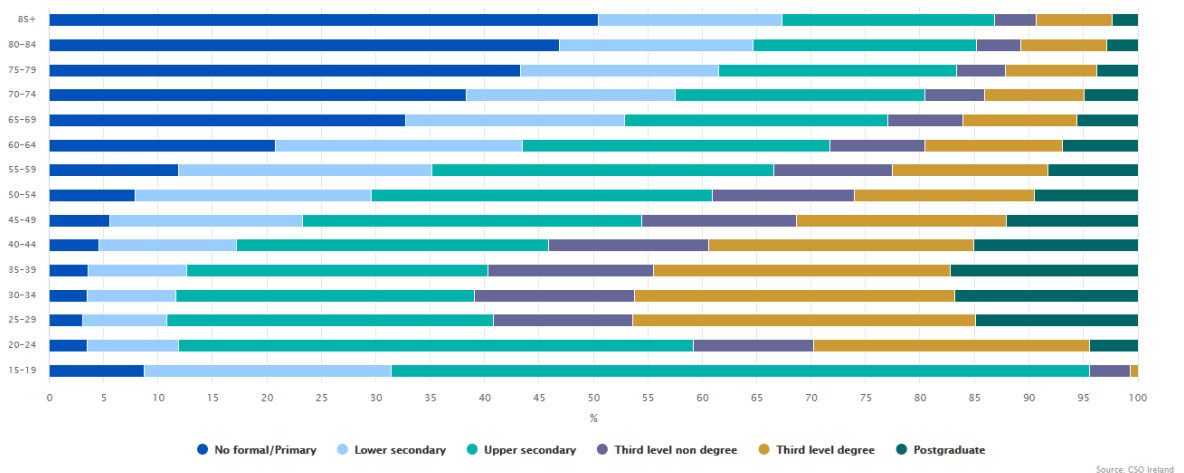


Figure 3.2: Age and Level of Education in Ireland, 2016 (CSO, 2016)

As shown in Table 3.1, in Quarter 1 of 2020, the employment rate for people aged 15-64 years old in Ireland is 69.8% (Ireland Employment Statistics, 2020). The unemployment rate for people of the same age is 4.7%. The number of unemployed persons aged 15-74 is currently around 114,400. In percentage terms, this level of unemployment is comparable to other similar European economies.

The effect of the Covid-19 pandemic is likely to be to increase levels of unemployment in the short to medium term particularly amongst younger and lower skilled groups, with the lasting long term impact as yet uncertain. However at the time of writing, this effect is yet to be seen in the available statistics.

Table 3.1: Ireland Employment Statistics, Quarter 1, 2020

Indicator	Standard LFS Methodology (ILO)
Employed persons aged 15 years and over	2,353,500
Employment rate for those aged 15-64 years	69.80%
Unemployed persons aged 15-74 years	114,400
Unemployment rate for those aged 15-74 years	4.70%
In labour force	2,467,900
Not in labour force	1,490,500

Source: CSO, 2020.

The agri-food sector plays a key role in Ireland's economy employing roughly 164,400 people which is approximately 7.1% of total employment in the country. However, outside Dublin and mid-east region the agri-food sector provides between 10% and 14% of total employment emphasising the importance of the agri-food sector in rural and coastal areas. Agri-food product exports were valued at €14.5 billion in 2019 with demand predicted to rise over the next ten years (DAFM, 2019). Demand is expected to reflect a shift towards more sustainable and environmentally aware produce and animal derived products and as such the agri-food industry should be adaptive to the opportunities available to meet such demand. In 2019 the distribution of agri-food and drink exports based on CSO statistics were as follows:

- Dairy products (35%);
- Beef (16%);
- Beverages (12%);
- Pigmeat (6%)
- Fish (4%);
- Cereal and cereal preparation (4%);
- Live animals (3%)
- Forestry (3%)
- Sheepmeat (2%)
- Poultry (2%)

The beef and dairy categories are the largest and account for 27% and 32% of goods output at producer prices respectively.

According to the *Business of Seafood 2019* (BIM, 2019) the Irish sea food industry was worth €1.22billion in 2019 with approximately 16,150 people directly and indirectly employed within the industry around Ireland's coastline. These areas are often characterised by being relatively remote from other major sources of employment and hence fishing is often disproportionately important to coastal towns and villages.

The 2016 CSO Census data shows how Ireland has an increasing number of people retiring from the workforce as they reach retirement age. As per Table 3.2 below, the largest age group of farm holders across the State is that aged 65 and above. As more of these farm holders look to retire or withdraw from farm operations there is both weaknesses in lost farming knowledge and continuity and opportunities to seek new farming methods.

Table 3.2: Age of Farm Holders in Ireland

Age	Number of Farm Holders 2013	Number of Farm Holders 2016
State wide		
Under 35 years	8,200	7,400
35 - 44 years	22,800	21,400
45 - 54 years	34,800	32,500
55 - 64 years	35,600	34,700
65 years and over	37,700	41,200

Source: CSO, farm surveys 2013 and 2016.

The *Annual Review and Outlook for Agriculture, Food and the Marine 2019* (DAFM, 2019) considers gender diversity in agriculture and notes that in 2018 only 16.4% of workers in the agriculture, forestry and fishing sector were female, although this is an increase from an average of 14.2% between 2000 to 2009. Nevertheless, the percentage of women in agriculture in Ireland is much lower than the EU average of 28%.

In the seafood industry, only approximately 1% of the fisheries workforce and 8% of the aquaculture workforce is female. However approximately 33% of the processing workforce are female (BIM, 2020).

The new *Program for Government Our Shared Future* (Fine Gael, Fianna Fail, Green Party, 2020) aims to address the economic challenges facing Ireland in the coming years. The Programme acknowledges that there will be greater clarity as to the likely economic impact of the Covid-19 pandemic (both domestically and internationally) when Budget 2021 is announced in October 2020. The programme aims to address some of these challenges by stabilising public finances, improving competitiveness, getting people back to work and supporting businesses.

The Programme for Government also focuses on housing healthcare, transport and energy whilst acknowledging that Ireland has a major role to play in combating climate change. The parties commit Ireland to an average 7% per annum reduction in overall greenhouse gas emissions from 2021 to 2030, which is a 51% reduction over the decade, with the aim of achieving net zero emissions by 2050. Ireland's rural economy is based

primarily on the SME sector with a variety of strong indigenous businesses. Rural areas exhibit a strong sense of community and local identity as well as a strong developed community infrastructure. Ireland has significant strengths in research, technology, development and innovation and a growing international industry base centred on ICT and life sciences. These, coupled with a strength in marine science and technology, provide the means to enable smart, knowledge-based enterprises to target global markets.

There are problems relating to access to services and public transport frequency and connectivity for rural dwellers, which has subsequent impacts on those who do not own private transport (Department for Education and Skills, 2013). Traverse routes in Ireland suffer from bottlenecks and congestion or slow journey times, and are in need of improvement.

Ecosystems provide provisioning services which assist with the production of food and water, regulating services that help control climate and disease and supporting services that help nutrient cycling and crop pollination. Preventing biodiversity loss and enhancing these networks can therefore positively influence the economic output of Ireland's agri-food strategy giving greater security during production processes.

3.4 Health and Quality of Life

Human Health is a combination of good levels of physical health, mental health and wellbeing (World Health Organisation (WHO), 2020). As of 2016, life expectancy at birth in Ireland is 80 years for males and 83 for females (WHO, 2020). The Irish Health Survey (CSO, 2015) shows 83% of people rate their own health as good or very good whilst 32% have a long-standing illness or health problem.

Mental health illnesses are prevalent in Ireland and the number of people experiencing such problems is expected to increase in the coming years. Approximately 25% of the population are expected to experience mental health challenges in their lifetime and the level of suicide amongst younger age groups is amongst the highest in the EU. Mental health therefore is a growing health, social and economic problem for Ireland.

According to the *Farmers have Hearts Study* which began back in 2007 and was carried out in partnership between the National Centre for Men's Health at IT Carlow, Teagasc, the HSE, the Irish Heart Foundation (IHF) and Glanbia, death rates have been falling in Ireland generally, but farmers show the slowest reduction of any socio-economic group. This could be due to a number of key factors underpinning health inequalities among farmers such as lower education attainment, limited access to health services, rural living conditions, social exclusion, gender and being a 'hard to reach group'. The most recent 2018 report found that from the 868 male farmers who participated in the baseline phase of the study, one in eight (13%) reported experiencing stress 'often' or 'very often'. However, more than one in three farmers (34.9%) scored 'poor' or 'below average' on the self-administered short well-being scale. This supports the idea that farming can bring a high level of stress and isolation which can lead to poor physical and mental health for farmers (The Irish Farmers Association (IFA), 2020). The IFA have distributed literature advising farmers on the need for improved healthier diets, an increase in the level of exercise they undertake and a greater awareness of how stress can affect them and their loved ones.

Other studies such as the Teagasc National Farm Survey reported high levels of stress amongst farmers, identifying three-quarters of dairy farmers, 57% of cattle and tillage farmers and 37% of sheep farms reported elevated stress levels in 2018. The main factors contributing to this were weather conditions, workload and financial pressure (Dillon, E. et al., 2018). There are around 1,200 premature deaths per year attributable to the effects of poor air quality in Ireland (EPA, 2016) with the agricultural industry being a contributor of particulate matter (PM) in ambient air. Further information on air quality is provided in Section 3.7. As seen in the 2016 CSO Census data, the population density of Ireland is unevenly spread across the country. Higher population numbers are generally found to the east and in and around main urban settlements. Some areas to the west can be seen as having the lowest density of population in the country. As these areas to the west are some of the most rural areas, they may be targeted for increased agricultural use but a smaller number of people in the area may result in a lack of local labour availability to sustain such expansion, resulting in increased use of private transport.

The Healthy Ireland Survey (Department of Health, 2019) identified that 37% of the surveyed population are overweight and 23% are obese. However, among those aged 65 and over, 74% are overweight or obese. There is also a higher proportion of overweight or obese people in deprived areas. Access to high quality, healthy food is one factor in maintaining physical health across the population and primary agriculture is the first stage in providing fresh produce.

Similarly, safe drinking water is essential to maintaining good physical health and must be clear of microorganisms and substances that could endanger health. There are a large number of public and private water sources across the country reflecting the dispersed settlement pattern and standards/regulations should be maintained to ensure herbicides, pesticides, fertilisers and other contaminants do not enter the water table.

Impacts to mental health and wellbeing can arise from damage to the environment, be that noise or odour issues or the loss/negative changes to open space. Research has shown that environments that encourage people to spend more time in natural settings can improve mental health and wellbeing. Green and blue spaces should therefore be maintained to provide a full range of sustainability benefits whilst remaining accessible for all. Preventing biodiversity loss links to both physical and intangible benefits for agriculture and human health. Balanced ecosystems can help to support farming in relation to soil, crop and flood management. For people, areas of high biodiversity can encourage going outdoors for physical exercise which improves cardiovascular health and as noted above can also benefit mental health and wellbeing. The healthy Ireland Survey identified that only 46% of surveyed respondents were achieving the minimum level of activity recommended by the National Guidelines, although this had increased from 44% in 2015 (Department of Health, 2019).

3.5 Soil and Land Use

Ireland is one of the most geologically diverse regions in the world relative to its land area and has substantial mineral deposits. Bedrock geology has a major influence on landform and provides the parent material from which soils are created. The nature of the bedrock determines the nature and chemistry of the soil formed, which strongly affects the natural vegetation and the type of agriculture that it can sustain.

A healthy soil is a vital component in creating and maintaining a balanced and productive natural ecosystem that provides a medium for the growth of plant and animal life. According to the European Commission, it is estimated that approximately one-quarter of all living species live in soils (bacteria, fungi, invertebrates etc.), all of which play a crucial role in the regulation of the atmosphere as well as water quality and quantity. Furthermore, as soil is biologically active, soil organic matter aids and improves water and air quality and provides carbon sequestration alleviating issues associated with climate change. As a finite resource that supports a range of critical functions, soil must be protected and managed with caution.

Land Use

CORINE (Coordination of Information on the Environment) is a Pan-European land use and land cover (LULC) mapping programme established by the European Community and is the main source of national-scale LULC information. The initiative was devised in order to compile geo-spatial environmental information for European countries to allow for standardisation and comparison (DAFM, 2014a). The most recent assessment shows that agriculture is the primary LULC type within Ireland (67.6% national land cover), followed by wetlands (14.9%) and forestry (9.5%, although other sources show forestry covering 11%). Work is underway by the Ordnance Survey of Ireland and the EPA to develop a high-resolution map of Ireland that will eventually lead to the development of a national land use map, to be used in reporting under the LULUCF Regulations (Regulation (EU) 841/2018) (EPA, 2020). In 2018, agriculture remains the dominant national land cover type at 67.6%. While this represents a small decrease in total since the last assessment from 2012, there is an overall downward trend with a reduction of 8,230 ha since 1990 (EPA, 2020). When breaking down agricultural land use in Ireland further, the main agricultural class is pasture (55.1% national land cover), that is interspersed with areas of natural vegetation (6.9%), and arable land (4.5%). Since 2000, the main change in land cover has been from agriculture to forestry (10% increase) and a further 15% increase in artificial area due to increases in urban, commercial and industrial development, transport infrastructure, and recreational facilities (EEA, 2015). A balance between placing a demand on soils for agricultural intensification objectives set in Food Wise 2025 and 'green', environment focused objectives of the Common Agricultural Policy must be met in order to encourage sustainable increase in agriculture productivity.

Soil

Soil types vary significantly throughout the Ireland; in the south east Ireland has well drained, highly fertile and highly productive soils (e.g. acid brown earths), while other regions (north west and south west) are covered by blanket peats that have limited use for agricultural production. Some peatland soils in the country are protected under the Habitats Directive and NHA designation, but many may be vulnerable to intensification of use with consequential impacts (amongst others) on carbon sequestration.

The drainage and fertility characteristics of soils largely determine their use and value from an agricultural perspective. For example, grey brown earths are well drained and have high fertility, while peats are poorly drained and have poor fertility. Wet soil conditions have been identified as the most important factor limiting the utilisation of

grazing grass on Irish farms (Creighton et al., 2011). In such lands, there is likely to be an enhancement of farm drainage schemes in order to increase stock carrying capacities (DAFM, 2014b).

Pressures

The soil in Ireland is considered to be in good condition and is relatively rich in soil organic matter, especially wetter soils and blanket and basin peats. However, Ireland's soil is fragile due to damage from a number of factors, including settlement patterns, generation of slurry and sludge, nutrient loss from soil to water, ammonia emissions to the atmosphere and soil organic carbon losses. Adverse effects can include reduced soil quality and quantity, such as erosion, loss of organic matter, compaction, salinisation, landslides and flooding, soil sealing, loss of biodiversity and contamination (Dublin and Mid-East Regional Authorities, 2010).

Land drainage, reclamation for agricultural purposes and peat extraction have all impacted peatlands. Only 10% of the original raised bog and 28% of the original blanket peatlands resource are suitable for conservation (as natural peatlands). The loss of peatland also has an effect on climate change prevents carbon sequestration and reduces the available carbon stock as, when drained, peat oxidises and CO₂ is released (EPA, 2020).

Policy Response

Few EU Member States have specific legislation for the protection of soil resources, but a *Soil Thematic Strategy* (COM(2006) 231) was produced in 2006 with the objective to protect soils across the EU. The proposal for a Soil Framework Directive (EC, 2006) was withdrawn in 2014, but the Seventh Environment Action Programme (EC, 2020) recognises soil degradation as a serious challenge and provides that by 2020 land is managed sustainably, soil is adequately protected and the remediation of contaminated sites is well underway. It specifically commits the EU and Member States to increasing efforts to reduce soil erosion and increase soil organic matter.

Regulation of soils falls under Cross Compliance under the basic-payment scheme of the Common Agricultural Policy and, where project-related, under EIA Regulation for On-Farm Development 2011 (SI 456 of 2011). Under the basic-payment scheme, farmers are obliged to comply with Good Agricultural and Environmental Conditions (GAEC) which cover the topics of minimum soil cover (GAEC 4), soil erosion (GAEC 5) and maintenance of soil organic matter (GAEC 6).

The EPA and Teagasc have developed an Irish Soil Information system to inform decision makers in terms of protecting the soil resource.

3.6 Water

Ireland's Water Resource and Condition

Ireland has a water network comprising 84,800 km of mapped river channels, 12,000 lakes, 514 groundwater bodies, 844 km² of estuaries and 13,325 km² of coastal waters (EPA, 2019). Abstraction of water from the groundwater system for primary production is negligible due to high rainfall and the relative absence of irrigation systems.

Water quality is assessed by the EPA and the DHLGH through local authorities against Water Framework Directive (WFD) standards. Overall classification utilises a combination of biological, chemical and hydromorphological quality elements including macroinvertebrates, pH (measure of acidity or alkalinity of a solution) and ammonia to assign status of river quality in one of five classes; high, good, moderate, poor or bad. The key aim of the WFD is for all water bodies to achieve good ecological and chemical status (Teagasc, 2017). The original target year to meet this was 2015 but further deadlines are set for 2021 (end of 2nd River Basin Management Cycle) and 2027 (end of 3rd River Basin Management Cycle) (River Basin Management Plan, 2018). As a result of this slow progress, the government is adopting a more collaborative approach to facilitate improvements in water quality and as agriculture is the most frequent significant pressure in water bodies that are not meeting their WFD targets, it was decided that the EPA would identify priority catchments where the status of the water is at risk of falling. In this instance, ASSAP will focus its resources on addressing the agricultural pressures and where one is identified will offer farmers a free visit from an ASSAP advisor (Teagasc, 2017).

The most recent EPA's *Water Quality in Ireland 2013-2018* report (EPA, 2019) sets out the Ireland's achievements with respect to WFD targets.

Overall

Approximately 52.8% of surface water bodies (rivers, lakes, transitional, coastal) assessed meet either good or high ecological status. Overall this is a net 4.4% decline in the quality of surface water bodies since the last assessment period 2010-2015. In particular is the decline in high status water bodies, from 12.9% in the assessment period 2007-2009 to 8.5% in the current assessment period.

Agricultural intensification is acknowledged as a contributor to localised water quality issues where they exist (pers comm. EPA).

Rivers

Approximately 53% of river water bodies are in good or high ecological status. The report stated that 301 river water bodies have improved in ecological status, 429 declined and 1,612 remained unchanged, resulting in a net decline of 128 (or 5.5%) river water bodies meeting WFD targets since 2010-2015. This decline is marked by a drop in the number of high status river water bodies, which have declined by a third since the baseline assessment in 2007-2009 and an increase in the number of poor status river water bodies by a third in the same time frame. The number of seriously polluted bad status river water bodies has increased to nine having reached a low of six water bodies in the last assessment period 2010-2015. Between 2013 and 2018, over a quarter of monitored river sites increased phosphorus and nitrogen concentrations with over a third (35.8%) of

monitored river sites failing to meet the environmental quality standard for phosphorus of 0.035 mg/l P in the same period (EPA, 2020).

However, across Europe, 41.5% of river water bodies have good or high ecological status, leaving Ireland's river water bodies in better ecological condition than the European average.

Lakes

In Ireland, 50.5% of lake water bodies are good or high ecological status. When compared to the last assessment period (2010-2015), there has been a 4.3% improvement in the number of lake water bodies meeting this criteria. However, overall lake status has seen little change when compared to the baseline assessment (2007-2009) and Irish lake water quality lags the EU average (53.6% at high or good status).

Despite the improvement in ecological status noted above, trend analysis over the latest assessment period (2013-2018) has identified total phosphorus concentration has increased in over a quarter of lakes that were analysed. For the period 2013-2018, over a quarter (28.8%) of lakes had increasing trends of total phosphorus concentration that is significantly higher than the 11.3% increase of lakes in the period 2006-2015. The environmental quality standard for total phosphorus is 0.025 mg/l P, meaning almost a third of lakes failed to meet the standard (EPA, 2020). As phosphorous is a key contributor to algal blooms in lakes, higher concentrations observed now could be a precursor to a decline in future ecological status.

Transitional, Coastal (Marine) and Canal

Transitional water bodies are the worst performing type of water body with only 38% in good or high ecological status. This figure is still above the European average which is at 30.2%. Conversely, 80% of coastal water bodies are in good or high ecological status, the highest for any surface water category. This is considerably higher than the European average of 54.6%, making Ireland's coastal waters some of the best quality in Europe. The quality of Ireland's canal system has remained stable since the last assessment (87%), with 87% (13 out of 15) in good or better ecological condition.

After many years of reductions, loadings of phosphorus and nitrogen to the marine environment have started to increase. Phosphorus loads have increased by 31% (329 tonnes) and nitrogen by 16% (8,806 tonnes) since the lowest three-year average value in 2012-2014. Just under a quarter (23.3% of estuaries and coastal waters failed the assessment criteria for dissolved inorganic nitrogen (EPA, 2020).

Groundwater

Groundwater provides between 20% and 25% of drinking water supplies in Ireland, although in some areas this is much higher, particularly in some rural areas not served by public or group water schemes (Department of the Environment and Local Government, EPA and Geological Survey of Ireland (GSI), 1999). Approximately 92% of groundwater bodies were found to be in good chemical and quantitative status, accounting for 98% of the country by area. This is a 1% improvement in the number of water bodies in good chemical and quantitative status when compared with the previous assessment period (2010-2015) and is higher than the European average of 74%.

Flooding

Flooding within the River Shannon catchment in late December 2015 into New Year 2016 caused severe impacts on local communities and businesses. The event highlighted the need for greater investment, thought and debate into how the risks of flooding can be mitigated, managed and alleviated in Ireland. The *Flood Risk Management – Climate Change Sectoral Adaption Plan* notes that significant work has been undertaken since to assess the level of risk associated with flooding in Ireland, through the Preliminary Flood Risk Assessment (PFRA) which acts as a national screening for flood risk under current conditions at a national level to identify the areas potentially significant flood risk (Office of Public Works, 2019). In addition, the Catchment Flood Risk Assessment and Management (CFRAM) Programme has been created to provide direction in Ireland's long-term flood risk management and mitigation plan. The CFRAM also aims to deliver core components of the National Food Policy and meeting requirements of the EU Foods Directive (EPA Catchments Unit, 2019). The aim of the programme is to map and assess the existing and potential future flood risk on inland watercourses and coastlines in Ireland in order to identify suitable, cost-effective and sustainable flood mitigation options (EPA, 2016). As the CFRAM Programme covers the whole of Ireland, it is split into more local River Basin Districts and each district has a flood risk management plan. More recent development of the programme lead to a consideration of the potential for an increase in flood risk from the effects of climate change.

Climate change is likely to have an impact on groundwater flooding, affecting the severity, frequency and duration of flood events. The GWClimate project aims to establish a long-term strategic groundwater level monitoring network and develop an approach to evaluating the impacts of climate change on groundwater (GSI, 2020).

Pressures

According to the EPA (2019), the main significant pressures impacting water quality in Ireland include agriculture, wastewater discharges, physical impacts on habitats including excess fine sediment and pressures from forestry activities. Agriculture covers almost 70% of the land area of Ireland and diffuse pollution from agriculture is the most frequently observed significant pressure on water bodies (EC, 2020). The main pollutants are nutrients (nitrogen and phosphorus), sediment, pesticides and faecal indicator organisms. Elevated phosphorus levels have been recorded in various parts of Ireland including areas in north west, north east, east coast and south east (EPA, 2019). Monitored nitrogen losses to water have increased since 2013 and elevated nitrogen levels are the main issue for estuaries and coastal waters and are currently of concern in the south and south east of Ireland (EPA, 2019). Figure 3.3 illustrates the main pressures placed on Ireland's aquatic environment.

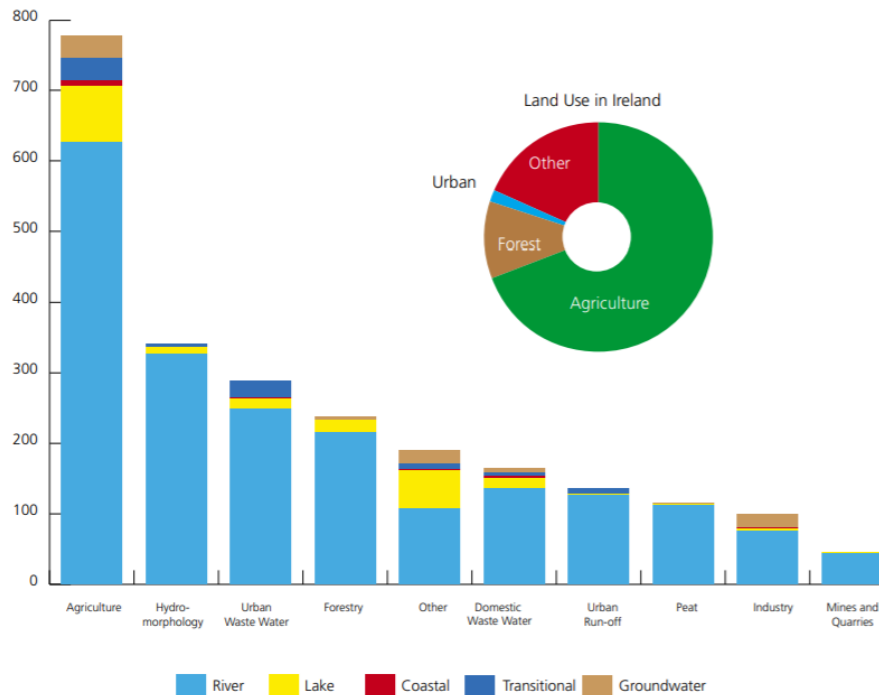


Figure 3.3: A Breakdown of the Main Significant Pressures Placed on Ireland's Aquatic Environment (EPA, 2019)

Agricultural losses to water bodies arise from point sources on farms (e.g. slurry stores), diffuse sources such as fertiliser or pesticide spreading or direct emissions from livestock (especially if they have access to a watercourse). On the back of Food Harvest 2020, Foodwise 2025 and the removal of milk quotas, the Irish agriculture sector has expanded in recent years in terms of area under management and number of livestock units. The increase in the number of dairy cows (typically an intensive activity) is particularly notable at 27% between 2013 and 2018 (EPA, 2020). This increase, and the increase in sales of nitrogen fertiliser correlate with the increase in nitrogen losses to water observed above, and the geographies associated with elevated nutrient levels are typically those which have seen the largest expansions in livestock number.

Groundwater is mainly impacted by point source contamination such as farmyard wastes (mainly silage effluent and soiled water), septic tank effluent, sinking streams, leakages, spillages, pesticides used for non-agricultural purposes and leachate from waste disposal sites. While point sources have caused most of the contamination problems identified to-date, there is evidence that diffuse sources, such as spreading of fertilizers (organic and inorganic) and pesticides, are increasingly impacting on groundwater (Department of the Environment and Local Government, EPA and GSI, 1999).

Ireland's offshore marine waters currently show no evidence of nutrient pollution but it could become problematic if nutrient loading continues to increase. Ireland's marine environment faces different pressures, mainly as a result of climate change. With marine water temperatures and sea levels continue to increase, increases in storm frequency

and pH continuing to decrease, Ireland's coast and coastal cities could potentially be at serious risk.

Policy Response

Measures to reduce pollution have been successfully implemented through the Water Services Investment Programme, the Nitrates Action Programme (under the Nitrates Directive) and River Basin Management Plans. All public bodies are required to coordinate their policies and operations to maintain the good status of water bodies that are currently unpolluted and to improve polluted water bodies to good status in accordance with agreed WFD cycle deadlines, i.e. 2021, 2027.

The assessment of water quality in Ireland shows signs of encouragement, such as improvements in the ecological status of lakes and groundwater with Irish coastal waters maintaining their status as some of the best in Europe. However, the continuing decline of rivers' ecological health, increasing concentrations of nutrients in surface water bodies and an overall net decline in water quality since 2013 is concerning. With only 52.8% of water bodies achieving the required minimum 'good status' and with the number of sites achieving the 'high quality status' falling, delivery on the WFD will prove a challenge.

3.7 Air Quality

Overview

The Clean Air for Europe Directive requires that member states designate "Zones" for the purpose of managing air quality. Ireland has defined four zones within the Air Quality Standards Regulations 2011 (as amended). The main areas defined in each zone are:

Zone A: Dublin

Zone B: Cork

Zone C: Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise.

Zone D: Rural Ireland.

The EPA coordinates and manages the monitoring programme for ambient air quality. A nationwide network of 57 monitoring stations measures levels of air pollutants in each zone (EPA, 2019).

Pollutants Other than Ammonia

Air quality in Ireland is good compared to other EU member states and monitoring stations show that Ireland continues to meet the EU air quality standards for most atmospheric pollutants as shown in Table 3.1.

Table 3.3: Key Pollutants Measured in 2018

Pollutant	Number of Stations where Monitored 2018	EU Legal Limit Values	WHO Air Quality Guideline (AQG) Level or EEA Reference Level
PM ₁₀	26	No exceedance	Above WHO AQG level at 9 of the 26 stations
PM _{2.5}	20	No exceedance	Above WHO AQG at 1 of the 20 stations
NO ₂	17	No exceedance	Above WHO hourly AQG level at 1 station
Ozone	15	No exceedance	Above WHO AQG level at 13 stations
PAH	4	No exceedance	Above EEA reference level at 3 stations
Dioxins	37	No exceedance	n/a
All other pollutants		No exceedance	Below AQG levels

Source: EPA, 2019

However, there are some localised air quality issues associated with these pollutants. Nitrogen dioxide (NO₂) levels are close to the specified EU limit values for air quality in traffic-impacted areas of Dublin and Cork. In some smaller towns and villages particulate matter (PM) levels are also elevated from combustion of solid fuel due to the lack of alternative fuel such as gas.

Wood, upland and peat burning is emerging as a potentially significant contributor to polycyclic aromatic hydrocarbons (PAH) and PM levels, along with a wide variety of other solid fuel products that are on the market (EPA, 2016). In addition, when compared to the more stringent WHO guidelines and EEA reference level values, ozone, PM and PAH are pollutants of concern in the short term, while NO₂ is projected to increase due to increase in road traffic (EPA, 2016).

As a party to the United Nations Economic Commission for Europe (UNECE) Convention on Long-Range Transboundary Air Pollution (CLRTAP), Ireland annually reports emission data for a wide range of air pollutants and other substances released into the atmosphere. The EPA's latest *Informative Inventory Report 2020* estimated an overall reduction in emissions between 1990 and 2018 of sulphur dioxide (SO₂), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs), carbon monoxide (CO),

Particulate Matter (PM₁₀, PM_{2.5}), polycyclic aromatic hydrocarbons (PAH), total suspended particulates (TSP), black carbon (BC), priority metals, other metals (apart from copper), dioxins and furans (PCDD/F), hexachlorobenzene (HCB) and polychlorinated biphenyls (PCB).

However, although overall these emissions have been decreasing, for some of the emissions, the agricultural contribution has been rising rather than decreasing (Table 3.2).

Table 3.4: Emissions from the Agricultural Sector

Pollutant	Percentage of Emissions from Agriculture Out of Total Emissions in 2018	Percentage Increase in Emission from Agriculture Since 1990
NO _x	34.9%	6.1%
NMVOCs	39.4%	17.6%
PM ₁₀	31.7%	4.1%
PM _{2.5}	7.4%	7.1%
TSP	18.9%	9.1%

Source: EPA, 2020

The inventory report also predicted that NO_x emission would not meet the 2020 emission reduction target set by the National Emissions Ceiling Directive (NECD) (2016/2284), although they are predicted to meet the 2030 emission reduction target. The report predicts that NMVOCs would not meet either the 2020 or the 2030 emission reduction targets. NO_x and NMVOCs emissions have been non-compliant with the emission ceilings from the previous NECD (2001/81/EC) for the period 2010 to 2018 (EPA, 2020).

Ammonia

Modelled ammonia emissions are estimated to have increased by approximately 7.9% between 1990 and 2018 (EPA, 2020). This tallies with the findings from physical monitoring carried out between June 2013 and July 2014 which reported an annual average of 1.72 µg/m³ across 25 sites as compared to the 1.45 µg/m³ average of a 1999-2000 study (Doyle, B. et al, 2017). This observed mean is above the 1 µg/m³ critical level set to protect lichens and bryophytes but less than the 3 µg/m³ critical level set to protect higher plants. The increase of atmospheric ammonia results in increased nitrogen deposition, which may impact on sensitive ecosystems such as peatlands, semi-natural grasslands, lakes and forests. A recent study estimated that nitrogen deposition in Irish grasslands ranged from 2 to 22 kg/ha per year and that 35% of mapped acid grasslands exceeded the empirical critical load of 15 kg/ha per year.

Ammonia concentrations were found to be higher in areas with higher agricultural intensity such as the north-east midlands and the south-east of the country. The station with the lowest mean concentration (0.48 µg/m³) was Mace Head, Connemara, County Galway, while the highest mean (2.96 µg/m³) was at Leiter, County Cavan (Doyle, B. et al, 2017).

Ammonia emissions are almost entirely driven by the agricultural sector. Figure 3.1 shows the contributing activities, including manure management (46.7%), organic fertilisers (29.8%), urine and dung deposited by grazing animals (12.2%) and inorganic fertilisers applied to soil (10.5%). Dairy cattle and non-dairy cattle account for the major part of the agriculture sector's ammonia emissions at approximately 38.2%.

As mentioned previously, the implementation of Food Harvest 2020, Foodwise 2025 and the removal of milk quotas, has resulted in an expansion of the Irish agriculture sector in terms of area under management and number of livestock units. There has been an increase in dairy numbers of 27% between 2013 and 2018 as well as an increase of 37% in synthetic fertiliser use (EPA, 2020).

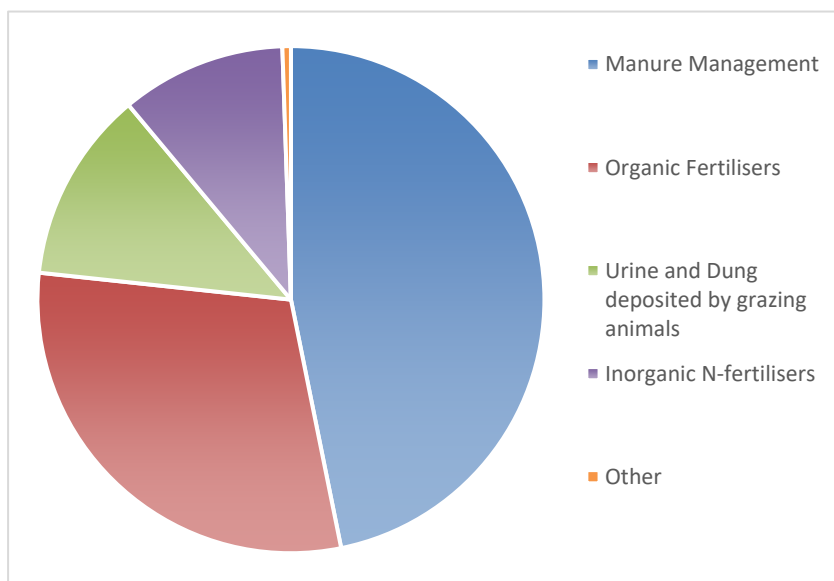


Figure 3.4: Contribution to Ammonia Emissions in 2018 (EPA, 2020)

Since 2016, ammonia emissions have exceeded the NECD national total ammonia emission ceiling of 116 kilotonnes (EPA, 2020). New emission reduction targets apply from 2020. Ammonia emissions present a significant challenge to meeting the NECD 2020 emission reduction target of 1% compared to 2005 levels and the 2030 emission reduction target of 5% compared to 2005. The emission projections in the EPA's Informative Inventory Report 2019 are based on projected activity data provided by Teagasc, taking into account the Food Wise 2025 objectives. Two emission projections are provided and both, including the 'With Additional Measures' projection (based on Teagasc Marginal Abatement Cost Curve) indicate non-compliance with both the 2020 and 2030 reduction targets (EPA, 2020).

Policy Response

A *Code of Good Agricultural Practice for reducing Ammonia Emissions from Agriculture* was published in November 2019 to help farmers identify appropriate actions to reduce ammonia emissions from their farms (DAFM, 2019). Ammonia emissions have also been considered in the *Nitrates Derogation Review 2019* which recommended a number of

measures to help reduce ammonia including adoption of a farm scale liming programme and use of low emission slurry spreading (LESS) equipment (Nitrates Expert Group, 2019).

Transboundary Considerations

As Ireland shares a land boundary with Northern Ireland there is potential for transboundary air quality impacts. Air quality in Northern Ireland is generally improving, however, ammonia emissions have increased by 8.7% between 2001 and 2018. Ammonia emissions from livestock have increased by 10.6% since 2001, and approximately 90% of emissions in 2018 are estimated to come from livestock (NIEA and DAERA, 2020). Approximately 89.3% of Northern Ireland is estimated to receive ammonia concentrations above the critical level set to protect lichens and bryophytes ($1 \mu\text{g}/\text{m}^3$) and approximately 22.8% receives ammonia concentration above the level set to protect higher plants ($3 \mu\text{g}/\text{m}^3$) (Rowe, E. et al., 2019).

3.8 Climate Change

Ireland's total national greenhouse gas (GHG) emissions were estimated to be 60.93 million tonnes carbon dioxide equivalent (MtCO₂e) in 2018 (EPA, 2020). This is down from 2005 when emissions were close to 70 MtCO₂e, mainly driven by increased energy efficiency and increased share of renewables in energy generation.

Agriculture is the largest sectoral contributor with 20.63 MtCO₂e (34% of Ireland's total greenhouse emissions) in 2018, slightly higher than their 1990 and 2005 values (20.40 and 19.80 MtCO₂e). Breaking down the agricultural sector's 34% of total emissions further, in 2018, 57.8% of emissions came from enteric fermentation, 29.5% from agricultural soils, 9.9% from manure management and 2.3% from liming. Emissions are projected to increase as animal numbers continue to increase.

The slight increase in total agricultural emissions reflects the increase in livestock numbers under Food Harvest 2020, FoodWise 2025 and the removal of milk quotas. This has caused dairy cow numbers to increase by 27% (contributing to methane emissions) and synthetic fertiliser use to increase by 37% (contributing to nitrous oxide emissions) in the period 2013-2018. This also suggests that the increase in agricultural output envisaged in FoodWise 2025 will provide a significant challenge for Ireland in meeting future emissions targets, reiterating the idea that any future expansion of output will have to be carried out whilst maintaining environmental sustainability; particularly as agriculture comprises one-third of national emissions and 44% of the non-Emission Trading Sectors (non-ETS) (Lanigan, G.J. and Donnellan, T. et al., 2019).

Despite individual economic sectors within Ireland not having specific GHG emission targets at this time (July 2020), the fact that the latest data shows the agricultural sector accounting for such a large percentage of non-ETS emissions suggests that it has a significant role to play in the national solution in terms of absolute reductions in GHG.

Under the EU's Effort Sharing Decision (ESD) Ireland has to reduce GHG emissions outside the EU's emission trading scheme by 20% by 2020 as compared with 2005 levels. It is noted however that agricultural GHG emissions increased by approximately 14.8% in the period 2011 and 2018 (DAFM, 2020). Ireland exceeded its 2018 annual limit set

under the EU's Effort Sharing Decision (ESD) by 5.59 MtCO₂e and is set to miss the 2020 target. Although agriculture is the largest contributing factor, there have also been increases in other sectors (in particular transport) (EPA, 2020).

Beyond 2020, the Paris Agreement forged at COP21, provides further impetus for strong action on climate change mitigation in Ireland and internationally. Ireland is expected to contribute to Paris Agreement via the Nationally Determined Commitment which commits to a 40% reduction in EU-wide emissions by 2030 (compared to 1990 levels). Ireland has a target of 30% reduction in the non-Emissions Trading System (ETS) sector by 2030 relative to 2005 levels (Government of Ireland, 2019).

Adaptation

The impacts of climate change are likely to impact Ireland in many ways. Agriculture is highly susceptible to disruption due to climate change and extreme weather events such as prolonged periods of rainfall, drought and snow, whilst flood risk is also of particular concern for infrastructure (e.g. roads, railways, sewage treatment works, electricity substations and hospitals).

Changing climatic conditions may increase the threat from pests and diseases (particularly in agricultural and forest environments), as well as from invasive non-native species. The food and drinks industry is also susceptible to climate change impacts due to extreme weather events which have the potential to effect the quantity and quality of water availability. Extreme weather events also have the potential to effect transportation as well as damage caused by flooding. The *Agriculture, Forest and Seafood - Climate Change Sectoral Adaption Plan* identifies the impacts of climate change on the sector and recognises the need to support and foster sustainable growth (DAFM, 2019).

Temperature records for Ireland show a mean increase of 0.8°C for the last 110 years, with an increase in the number of warm days (temperatures over 20°C) and a decrease in the number of annual frost days (temperatures below 0°C). In addition annual national rainfall has increased by approximately 600 mm, which is an increase of approximately 5% in the period 1981-2010 compared to 1961-1990. The marine environment will also be affected with the Irish Sea being observed to increase by 0.6°C per decade since 1994 and sea levels rising by approximately 4-6 cm since the early 1990s. Climate change impacts are expected to increase, with a mean annual temperature increase of 1-1.6°C by mid-century, as well as decrease of rainfall in spring and summer with an increase of heavy rainfall in winter and autumn (DAFM, 2018).

While climate change impacts are projected to increase, it is hard to predict the scale and extent of its impacts on Ireland; this is due in part to the inherent variability and turbulent nature of the climate system. Therefore, it is crucial that climate change adaption is integrated into as many policies, measures and schemes in the agri-food sector so as the industry as a whole can evolve and keep pace with the consequences of a changing climate.

3.9 Material Assets

Ireland has significant natural resources such as water, carbon rich soils and high quality grassland, whilst natural resources are also available for renewable energy generation.

The Low Carboniferous carbonate rocks of the Irish Midland are host to one of the great orefields of the world. Ireland is ranked first in the world for zinc discovered per square kilometre and second with respect to lead (EPA, 2016).

The soils in Ireland have evolved slowly after long periods of time and are therefore considered as a finite resource. Soil is a complex resource made of many components and is fundamental to terrestrial ecosystems and agriculture, consequently it is valued as a highly valuable natural resource for Ireland. Further information on soils is provided in Section 3.5.

Ireland is seen as one of the best practice examples for how it deals with its waste and is currently meeting five of its eight EU Recovery and Recycling targets which includes the Packaging and Packaging Waste Directive, Landfill Directive, Waste Framework Directive and efficiencies towards recycling of batteries. Three of these targets are categorised as not met and they relate to recycling vehicles at their end of life, recycling of waste electrical and electronic equipment and recycling of batteries.

The current and future focus for Ireland's waste is prevention, reuse, maximising recycling and using waste as a fuel. This circular economy approach will lend itself to reducing the use of resources and thus the amount of waste being handled across the country. As part of this, Ireland has reduced the number of landfills for the disposal of municipal waste from 18 to 6 since 2012. This does bring a challenge however as the majority of these are in private ownership and therefore there is risk that if these companies fail the State could be responsible for any mitigation required as a result. Landfills and waste facilities are also subject to a high number of odour complaints which has the potential to impact on the health of the local people.

The *Towards A Resource Efficient Ireland* (EPA, 2020) publication contains objectives relating to increasing efficiencies in the use of water, material and natural resources in business. Agri-food businesses are subject to these objectives and can help to improve the overall effectiveness of resource use.

There has been an increase in number/capacity of anaerobic digestion (AD) facilities and segregated food waste at recycling centres. There was an increase in the quantity of waste accepted for treatment at composting and AD plants of 11% (EPA, 2016). This waste is being turned into biofuels which is helping to reduce the use of fossil fuels therefore helping to reduce GHG emissions. Approximately 500,000 tonnes of animal by products are produced in Ireland per annum which generates approximately 27,000 tonnes of biofuel. An increase in agricultural production will generate additional waste products however Ireland is well placed to accept and re-use this waste. This in turn will lead to an increase in the availability of sustainable fuels across Ireland. An increase in fuel security will help underpin economic growth and further development in the agri-food industry (Department of Communications, Climate Action and Environment (DCCAE), 2014).

3.10 Cultural Heritage

Cultural heritage in Ireland ranges from sites of local and regional importance to those of national and global significance. Archaeological sites in Ireland are legally protected from

unauthorised interference or damage by the National Monuments Acts and Amendments 1930-1994.

There are two heritage assets in Ireland inscribed on the World Heritage List: the Archaeological Ensemble of the Brú Na Bóinne (Europe's largest and most important concentration of prehistoric megalithic art, which straddles the border of the Counties of Louth and Meath) and Skellig Michael (an early monastic complex on an island off the southwest coast) (DCHG, 2020).

In addition, Ireland has almost 1,000 individual monuments at 768 locations under state care, comprising individual or groups of monuments ranging in age from the Neolithic period to the 20th Century. The Record of Monument and Places (RMP) is a statutory list of all known archaeological monuments, comprising over 140,000. A map showing key cultural heritage designations across Ireland can be seen in Appendix B.

The Archaeological Survey of Ireland has recorded 142,891 sites within the RMP. The RMP shows that the existence of above and below-ground archaeological heritage is spread relatively evenly across the country, with a slightly higher density in the west. The lower quality farming land in the west of Ireland is said to have helped preserve a higher level of above and below ground monuments. The organic environment of waterlogged bogs and peatland also help to preserve below ground artefacts. Underwater archaeology is recorded by the Underwater Archaeology Unit which has recorded over 18,000 shipwrecks (DCHG, 2019).

The National Inventory of Architectural Heritage (NIAH) is a state record which identifies, records and evaluates the built heritage of Ireland. Although properties listed on the NIAH are not statutorily protected, it provides a resource for the identification of structures and sites that should be placed in the Record of Protected Structures (RPS) which is managed by local authorities. Collection of buildings and sites of historic, architectural or cultural value are also protected as part of an Architectural Conservation Area (ACA) designated by local authorities.

The Economic Value of Ireland's Historic Environment report (Ecorys and Fitzpatrick Associates, 2011) identified that the historic environment of Ireland supports 25,000 FTE jobs, however, this number would increase to 40,000 if the indirect jobs are accounted for. Overall the historic environment represents 1% of Ireland's gross value added (GVA) and 2% of overall employment. The report found that Ireland's historic environment is estimated to account for €1.5 billion annually to GVA, with almost half of this coming through tourism. The importance of cultural heritage to tourism is acknowledged in Ireland's policy statement on tourism: *People, Place and Policy: Growing Tourism to 2025* (Department of Transport, Tourism and Sport, 2015).

A report by University College Dublin (2006) revealed a number of major drivers of change facing Irish archaeology. Those listed include:

1. Urban change, road building and other developments, including one-off houses;
2. Growing demands for public access to upland and wetland areas;
3. Further concentration and intensification of commercial farming, especially in the more productive agricultural areas of Munster and south Leinster;

4. The replacement of traditional rural landscapes with scrub encroachment, and extensive afforestation with commercial coniferous species, particularly in western counties;
5. The relative marginalisation of the built heritage within national and EU environmental conservation measures; and
6. Exploitation of peatlands.

Similarly, the Heritage Council (2007) revealed various challenges for Irish archaeology. These included a need to increase public participation and enjoyment of Ireland's archaeological heritage; ensure development-related work be undertaken within an agreed research framework; and ensure that results of archaeological work be published. An issue for rural areas across Ireland has been the on-going and gradual decline in archaeological monuments in the countryside and degradation of field monuments (Dublin and Mid-East Regional Authorities, 2010).

The DCHG is currently developing Ireland's new national heritage plan; Heritage Ireland 2030, which is due to be published later in 2020. Responses from the public consultation on the new plan identified that concerns over built heritage including tourism, derelict structures, demolition of structures, lack of care of historic structures, decline in traditional crafts (DCHG, 2020).

Climate change is also seen a big threat to Ireland's heritage. The Built & Archaeological Heritage Climate Change Sectoral Adaption Plan (DCHG, 2019) has recently been published, which acknowledges the vulnerability of Ireland's built and archaeological heritage to impacts of climate change and includes actions to build adaptive capacity and reduce vulnerability as well as identify and capitalise on various potential opportunities in the sector.

3.11 Landscape

Ireland occupies over 70,000 square kilometres, of which about four million hectares are agricultural land, the remainder being mountain, peat bog, forest and settlements. Ireland has approximately 2,797 km length of coast (Department of Arts, Heritage and the Gaeltacht, 2011). Agriculture accounts for approximately 67% of the land cover, of which approximately 55% is pasture.

Ireland has attractive, largely unspoilt and high quality rural landscapes, numerous protected area designations and major rural tourism attractions. A map showing landscape designations across Ireland can be seen in Appendix B. There are six areas in the Ireland that have been designated as National Parks due to the national importance of the landscape. The landscapes of these protected areas vary dramatically, from the Burren's shattered limestone rock garden (County Clare), to the Wicklow Mountains, blanketed with heath and bog (County Wicklow). Landscapes are also protected at the local level by designations such as 'Areas of High Amenity' and 'Protected Views' through development plans.

Pressures

According to the Landscape Character Assessment (LCA) in Ireland report (Heritage Council, 2006), LCAs have been carried out for 19 of the 29 counties in Ireland, however, only 15 have the correct level of detail. Surveys of Heritage Officers, planners and

consultants showed most people did not find the LCA guidelines helpful and almost all respondents thought they needed to be rewritten. Nevertheless they have been used widely in planning in Ireland and are most commonly used in wind development applications, as well as for afforestation proposals.

The report raises concerns over the unprecedented urbanisation and landscape fragmentation experienced in Ireland due to extensive new housing, major roads and other infrastructure projects, and the affect this may have on Ireland's tourist economy, because scenery is the single most important reason why people visit and holiday in Ireland.

The Heritage Council's Proposals for Ireland's Landscapes (2010) also raised concerns over the number of state bodies which influence Ireland's landscapes at a variety of scales, resulting in a fragmented approach to landscape management. There is a lack of uniformity between counties in terms of the approach to the designation of landscapes and protected views, which leads to inconsistency in their management.

The report acknowledges that farmers play a critical role as landscape managers, a role that should be recognised and supported more effectively. Agricultural landscapes are hugely significant cultural reference points, and their multifunctional nature means they deliver a range of services.

Policy Response

The National Landscape Strategy was published in 2015 in line with Ireland's obligations under the European Landscape Convention. The strategy acknowledges that "*the Irish landscape is an integral component of our surroundings and well-being, a visual expression of the diversity of our shared cultural and natural heritage, and intrinsic to our identity as an island nation*" (Department of Arts, Heritage and the Gaeltacht, 2015). The Strategy recognises the contribution that landscape makes to the well-being of society, environment and economy. It includes six core objectives including:

1. Recognise landscapes in law;
2. Develop a National Landscape Character Assessment;
3. Develop landscape policies;
4. Increase landscape awareness;
5. Identity education, research and training needs; and
6. Strengthen public participation.

3.12 Natural Capital

This section looks at the inter-relationship between the preceding sustainability topics and links the environmental, social and economic issues in a more integrated way, and emphasises that a good quality environment is essential to continuing social and economic prosperity. There are a number of inter-relationships between the sustainability topics such as dependence of biodiversity on landscape, water, soil, air and climatic factors or the relationship between water quality with air and soil quality. Human economic and social well-being is also tied to these natural assets as well as cultural heritage and material assets.

The Natural Capital approach is a good way of taking into account these inter-relationships as it provides a way to understand the value of natural resources and our dependence on them for our economic, social and health. According to the Irish Forum on Natural Capital:

“Natural capital is defined as the stock of natural assets (air, water, land, habitats) that provide goods and services which benefit society, the economy and business. Natural capital provides goods and critical “ecosystem services” essential for a functioning economy and society.”

There are a number of studies being carried out to identify the value of natural assets. The EPA commissioned a study to document the ecosystem services (e.g. provisioning, regulating and maintenance, and cultural services) provided by freshwater systems in Ireland (Feeley, H.B. et al, 2017). Freshwater systems were determined to have high importance for a number of services such as:

- Provision of water;
- Mediation of waste, toxics and other nuisances;
- Mediation of flows;
- Maintenance of physical, chemical and biological conditions;
- Physical and intellectual interaction with biota, ecosystems and landscapes; and
- Other cultural outputs.

Another study commissioned by the EPA (Norton, D. et al, 2018) looked at the value of the Irish marine ecosystems, identifying that the economic value included:

- Recreational services - €1.6 billion;
- Fisheries and aquaculture - €664 million;
- Carbon absorption services - €819 million;
- Waste assimilation services - €317 million;
- Scientific and educational services - €11.5 million;
- Coastal defence services - €11.5 million;
- Seaweed harvesting - €4 million; and
- Aesthetic services added to value of housing stock near shore - €68 million.

In addition, in terms of recreation and tourism it is estimated that freshwater and marine angling supports over 11,000 jobs and was worth €836 million to the Irish economy (Inland Fisheries Ireland, 2015).

The Pollival project estimated that the annual value of animal pollination to home-produced crops in Ireland was estimated to be €20–59 million per year. It was also estimated that the agri-food industry is at risk from pollinator losses overseas. If all of the animal-pollinated crops that are imported are taken into account, the estimated value of global pollinators to Ireland rises by an additional €153–843 million per year. The study however concluded that pollinators and pollination services also have many other non-market and non-use values for human health, well-being and society, and that more work was required to define this value (Stout, J.C. et al., 2019).

DAFM has commissioned a project on valuing agricultural catchments ecosystems services which aims to create an inventory of the ecosystem services provided by farmers in agricultural catchments and place economic values on these services. Agricultural

ecosystems supply market services such as food, fibres, fuels and other non-market services vital to human well-being (Irish Forum on Natural Capital, 2020).

3.13 Key Environmental and Sustainability Issues and Likely Future Trends

In 2012 the Irish Government launched the new sustainable development framework to identify and prioritise policy areas and mechanisms where sustainable measures will add value to the lives of current and future generations. The framework set out clear objectives, defines timelines and allocates key responsibilities. The project aims to promote the green economy as part of the economic recovery and produce a framework for the coherent approach to policy and sustainable development.

In September 2015, 193 UN Member States, including Ireland, adopted the Sustainable Development Goals (SDGs) to 'end poverty, protect the planet and ensure prosperity for all' as part of the new 2030 Agenda for Sustainable Development - Transforming our World. The 17 SDGs cover the three dimensions of sustainable development; economic growth, social inclusion and the protection of the environment. Though voluntary and therefore not legally binding, countries have pledged to achieve the Goals by 2030.

Ireland's current policy in relation to the Goals, the *Sustainable Development Goals National Implementation Plan 2018-2020* (DCCAE, 2018) sets out the role of Government in implementing the SDGs here at home and supporting countries around the world to do the same.

A 2007 survey carried out in Ireland by the Heritage Council into public attitudes on the environmental and heritage found that 92% of respondents felt more should be done to protect the Irish countryside and 70% felt that access to heritage and the environment improves their quality of life.

When asked what their preferences for spending additional tax revenue on the environment would be (out of 8 categories), 29% opted for restoration of canals and rivers, 22% for safeguarding and improving coastal landscapes, and 12% for protection and improvement of habitats. Cultural heritage assets and attractive landscapes were deemed to be less important. A survey carried out in 2015 of the public's awareness and understanding of Irish heritage found that 93% of respondents felt that protecting Irish heritage was very or fairly important (Heritage Council, 2015).

A survey conducted by the EU in 2014 found that approximately 56% of the survey respondents in Ireland felt that protecting the environment was very important, 38% felt that it was fairly important and 6% felt that it was not very or not at all important. The survey found that the environmental issue of most concern to the public in Ireland was water pollution, followed by waste, air pollution, the impact on health of chemicals used in everyday products and shortage of drinking water.

An assessment carried out in 2016 by the EPA identified the following key environmental actions for Ireland:

- *"Environment and Health & Wellbeing: Recognition of the benefits of a good quality environment to health and wellbeing;*

- *Climate Change: Accelerate mitigation actions to reduce greenhouse gas emissions and implement adaption measures to increase our resilience in dealing with adverse climate change;*
- *Implementation of Legislation: Improve the tracking of plans and policies and the implementation of environmental legislation to protect the environment;*
- *Restore & Protect Water Quality: Implement measures that achieve ongoing improvements in the environmental status of water bodies from source to the sea;*
- *Sustainable Economic Activities: Integrate resource efficiency and environmental sustainability ideas and performance accounting across all economic sectors;*
- *Nature & Wild Places: Protect pristine and wild places that act as biodiversity hubs, contribute to health and wellbeing and provide sustainable tourism opportunities;*
- *Community Engagement: Inform, engage and support communities in the protection and improvement of the environment.”*

From analysis of the baseline data and consultations carried out to date, the key sustainability issues facing Ireland and relevant to the policy area of the Agri-Food Strategy are identified to be:

- **Ecology and Nature Conservation:**
 - Unfavourable condition of habitats and species in protected sites due to unsustainable agricultural, and fishing practices;
 - Continuing declines in species and habitats within protected areas;
 - Continuing decline in species and habitats outside of protected areas;
 - Threats facing areas outside of protected areas;
 - Potential impacts of climate change; and
 - Increasing problems of pests, diseases and invasive species.
- **Socio-economic;**
 - Risk to reputation of Ireland and farmers as a food producing nation with strong environmental credentials; and
 - Balance between supporting the viability of SME producer businesses, with managing the potential environmental impact of agricultural intensification and unsustainable fishing.
- **Health and Quality of Life;**
 - Air quality impacts on health relating to agricultural emissions including ammonia and particulates;
 - High levels of obesity, particularly among the older population; and
 - High levels of mental health illnesses amongst the population; more specifically it has been found that farming can bring about a high level of stress and isolation, subsequently leading to poor physical and mental health for those working in the sector.
- **Soil and Land Use:**
 - Increasing pressure on soils from settlement patterns, generation of slurry and sludge, nutrient loss from soil to water, ammonia emissions to the atmosphere and soil organic carbon losses; and
 - Ireland's extensive peatland exists in a degraded state due to land drainage, reclamation for agricultural purposes and peat extraction.

- **Water:**
 - Increased trends in ammonia and phosphate pollution, much of which is linked to agricultural activity; and
 - Risk of increased flooding due to climate change.
- **Air Quality:**
 - Increasing ammonia emissions from agriculture and non-compliance with NECD emission targets;
 - Increasing NO_x and NMVOC emissions from agriculture and non-compliance with the NECD emission targets; and
 - Challenge in meeting more stringent WHO and EEA reference guidelines.
- **Climate Change:**
 - Increase of GHG emissions from agricultural sector with emissions projected to rise;
 - Risk to farmers and producers due to extreme weather events and climate breakdown; and
 - Increasingly frequent and severe weather events such as flooding are disrupting infrastructure and agriculture.
- **Material Assets:**
 - None identified.
- **Historic Environment and Landscape:**
 - Effect of development, public access, intensive farming, extensive afforestation and exploitation of peatlands;
 - Vulnerability of built and archaeological heritage to impacts of climate change; and
 - Landscapes have been affected by housing and infrastructure development, agricultural intensification, forestry and decline/ loss of natural and cultural features.
- **Natural Capital:**
 - Understanding of the non-monetary value of natural assets; including the ability of smaller farmers to receive benefits for ecosystem services provided; and
 - Ireland is also susceptible to causing or being affected by transboundary effects with Northern Ireland, particularly in relation to water bodies, biodiversity, landscape and climate, and for activities taking place in coastal and border areas.

3.14 Information Gaps

As indicated by the baseline section, a wealth of existing data exists about the state of Ireland's environment. This is necessarily focused on national or regional levels and therefore it is acknowledged that the large-scale trends discussed may not in every case fully represent sub-regional circumstances.

The information available does not allow for the specific effects of the predecessor strategies to be isolated from the observed general trends, this is therefore identified as an information gap for the SEA process. Cumulative effects of the predecessor programmes, in combination with those of the 2030 Strategy will be taken into account at the Environmental Reporting stage where applicable.

APPENDIX E: NIS SECTION 3.5.1

3.5.1 Potential Impacts on Natura 2000 Sites from Agriculture

It is not the place of this NIS to identify impacts on specific Natura sites, rather to identify impact pathways and to discuss their relevance to site ‘types’. For example, diffuse pollution is likely to have detrimental impacts on a range of water-dependent Natura habitats and species. Impacts are therefore discussed at the ‘strategic level’ in relation to a range of similar sites, and are not broken down to individual site level (as would be appropriate at project level Appropriate Assessment).

Habitats

Agriculture (and to a lesser extent forestry) has been identified as a key contributor to the declines in conservation status described in 3.4. *The Status of EU Protected Habitats and Species in Ireland* (DCHG, 2019) reports that over 70% of habitats are being impacted by agricultural practices, including:

- Inappropriate grazing regimes (over or undergrazing);
- Land abandonment (abandonment of grassland management);
- Activities generating diffuse pollution to surface and groundwaters;
- Activities generating air pollution; and
- Agricultural activities generating marine pollution.

In addition, agricultural practices such as inappropriate drainage and inappropriate herbicide and pesticide use are also contributing to the deterioration of habitats.

Blanket bog, alpine heath and wet heath were cited as being particularly vulnerable to air pollution from nitrogen. Certain forestry practices (e.g. clear-felling) have also been implicated in the decline of some aquatic species such as freshwater pearl mussel (*Margaritifera margaritifera*).

The above assessment is in line with the findings of NPWS (2019a, b) who identified pressures and threats facing 54 of 59 habitats assessed. Of these, the most frequent pressures were found in the agriculture category.

A feature of the distribution of protected sites in Ireland is such that the burden for their protection falls unequally on different agricultural sectors, with upland and marginal farmers, where farming is often less profitable, having the greatest responsibility for implementation of habitat and species conservation and climate change mitigation. This situation has been exacerbated by a north-west – south-east divide in terms of Common Agricultural Policy benefits.

In line with global trends, coastal and marine biodiversity is coming under pressure from human activities including nutrient and chemical discharge and through direct physical disturbance and habitat degradation from pollution, litter, man-made noise and light. These pressures are mainly in transitional and coastal waters. Fishing impacts on both pelagic (i.e., water column) and seabed communities, particularly for species with low growth rates, soft substrates or cold water coral reefs, and some areas have been heavily impacted by this activity. There are also concerns about the level of by-catch of birds and marine mammals in certain fisheries (DCHG, 2017).

There are concerns that as a result of the UK’s withdrawal from the EU, along with potential future increased restrictions on access to UK waters and restrictions on direct landings of certain fishery products such as live bivalve molluscs to UK ports, this may result in displacement of vessels to Irish waters, resulting in additional pressure on fish stocks and

general marine biodiversity (DAFM, 2020).

Climate change is also expected to have an increasingly negative impact on habitats, particularly coastal and upland habitats, and various species as well as increasing ocean acidification. The rise in temperatures, changes in precipitation patterns, weather extremes (storms and flooding, sea surges, flash floods) and sea-level rise is predicted to affect the abundance and distribution of some Irish species. Degraded upland habitats are likely to become less resilient to the impacts of climate change (DCHG, 2017). Climate change is also predicted to result in increased spread of invasive species, affecting terrestrial, freshwater and marine ecosystems (DCHG, 2019). There is a clear link between certain agricultural practices and Greenhouse Gases (e.g. methane production from cattle herds and nitrous oxides from fertilisers).

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.

Species

In general, current pressures on Annex species appear to be less severe. Of 60 species assessed by NPWS (2019a, c), 57% were found to be in favourable status with 30% in unfavourable (inadequate or bad) status. 72% of species showed stable or improving trends whereas 15% showed declining trends. Many species remain in favourable status, with population increases and range expansions for several bat species, otter, pine marten and the majority of cetaceans. Species rated as inadequate or bad include marsh fritillary (though this species has shown population increases), the whorl snails, freshwater pearl mussel and lesser horseshoe.

Impacts from agricultural activities (and to a lesser extent, forestry) can have an effect on a wide range of species – fish, molluscs, terrestrial mammals and vascular plants. This is partly due to the wide sphere of influence of some agricultural activities. For example, point sources of pollution from agriculture may influence a much wider area through groundwater supplies or nearby watercourses. Certain forestry practices (e.g. clear-felling) have also been implicated in the decline of some aquatic species such as the freshwater pearl mussel (*Margaritifera margaritifera*).

The recent European Court of Auditors report on *Biodiversity on Farmland* (2020), identified that populations of birds and grassland butterflies, which are good indicators of change in farmland biodiversity, have declined in Europe by more than 30% since 1990. The report 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.

There are a number of pressures and threats on different bird groups including:

- Terrestrial birds - agriculture and forestry (changes to grazing and grassland management and use of pesticides), development and climate change (Lewis et al., 2019);
- Wintering waterbirds - climate change, energy production (e.g. wind farms), hunting, recreational and other disturbance, shellfish harvesting and aquaculture, as well as afforestation, bycatch, and mixed source water pollution/eutrophication (Lewis et al., 2019); and,
- Seabirds - offshore wind energy developments, climate change, the fishing industry via overfishing or by way of incidental seabird bycatch, mammalian predation, recreational disturbance and plastic waste (Cummins et al. 2019).

Grazing and drainage are the two issues that have most effect on terrestrial SPA bird species.

For example, both under and overgrazing can have detrimental impacts on species such as hen harrier and merlin. Excessive grazing and/or inappropriate cutting times will have negative impacts for corncrake. Drainage is particularly detrimental to breeding waders such as curlew, golden plover and dunlin. In addition, eutrophication of water bodies is a key issue for duck species such as pochard, common scoter and goldeneye.

Invasive and non-native species are increasing and species such as the zebra mussel (*Dreissena polymorpha*), grey squirrel (*Sciurus carolinensis*) and Pacific oyster (*Magallana gigas*), may displace native species and considerably alter biodiversity, and subsequently, ecosystem processes and services. While to date the majority of invasive species have been plants (including hottentot fig (*Carpobrotus edulis*), giant rhubarb (*Gunnera tinctoria*), and giant hogweed (*Heracleum mantegazzianum*)), in the future invertebrates and vertebrate species may increase (DCHG, 2017). Invasive species are having a greater impact on freshwater and marine species (Biodiversity Working Group, 2020). The direct annual cost of invasive species to Ireland's economy was estimated in 2013 to be over €200 million, but may be higher with the increasing trend of invasive species (DCHG, 2017).

Table 6 includes those Annex I bird species assessed as being at threat from agricultural and inshore fishing activities. As with Annex I habitats and Annex II species, apart from a few exceptions, the majority of Ireland's Natura 2000 bird species are included.

More detail on potential effects are described in the following sections.

Agricultural Intensification

The term 'agricultural intensification' as used here encompasses grazing issues and increased fertiliser use. Grazing issues can be subdivided into overgrazing and undergrazing. In terms of SAC habitats, grazing issues will have disproportionate effects on grasslands, heath, mires and some dune systems. Almost all Annex I habitats within these categories have been rated as 'bad' in the latest NPWS assessment (2019a, b). A number of habitats have been especially prone to overgrazing issues (e.g. orchid-rich calcareous grassland, species-rich *Nardus* grasslands, blanket bog, raised bogs, limestone pavement). Overgrazing by sheep is a particular issue. For other habitats, in recent years, agricultural intensification in the form of under-grazing and abandonment have become more important detrimental factors. These include *Molinia* meadows, fens, limestone pavement and heath. Saltmarshes can be prone to both inappropriate grazing regimes as well as land reclamation schemes (conversion to improved grassland). Grazing issues can also have negative impacts on a range of species. Overgrazing is an important factor in the decline of whorl snail species whereas under-grazing is an issue for marsh fritillary (associated with *Molinia* meadows). Appropriate grazing levels are also key in providing suitable structural vegetation conditions for a range of breeding birds. These include chough, hen harrier, merlin and breeding waders. Undergrazing related to land abandonment is recognised as an increasing concern in more remote parts of the west of the country. This could lead to a greater homogenisation of Annex habitats, as well as unwanted scrub encroachment. Conversely, it is also possible that a period of land abandonment could lead to biodiversity gains on previously overgrazed habitat (particularly grasslands, heath and peatlands).

Problems associated with inappropriate grazing levels are often compounded by increases in fertiliser use. Thus, already stressed habitats are prone to further degradation under heavy and continued fertiliser use. This is particularly applicable to grasslands.

For example, the decline of lowland hay meadows is partly attributable to the application of fertilisers and their subsequent conversion to more improved grasslands. Persistent use of fertilisers will lead to a reduction in diversity, favouring a small suite of species suited to nutrient-rich conditions (e.g. perennial ryegrass (*Lolium perenne*) and white clover (*Trifolium repens*)). Fertiliser use will also have detrimental impacts on a range of other habitats such as

bogs and fens. The application of nitrogen and phosphorus are especially problematic (see diffuse pollution below).

Intensification of grasslands through grazing and increased fertiliser use has also had negative impacts on a number of species. For example, range increases in lesser horseshoe populations have been curtailed by a lack of suitable foraging habitat. Conversion and intensification of small areas of habitat have negatively impacted on corncrake numbers, and those of other traditional farmland bird species.

Atmospheric Factors

Nitrogen, in the form of ammonia, associated with intensive pig and poultry farming, is a key concern with respect to low nutrient habitats such as blanket bog, wet and dry heath. Deposition of nitrogen on these habitats can cause increasing vegetation homogenisation and species impoverishment. Dairy and beef production also produce high levels of ammonia emissions. This is particularly relevant to the south and south-east of the country, where ammonia emissions from cattle are highest.

Agricultural activities have been identified as a major contributor to increased levels of GHG. These include nitrous oxide emissions from soils, fertilisers and manure from grazing animals. Cattle are also a significant source of methane, recognised as one of the most important GHG and resultant climate change. Whilst the effects of climate change on species and habitats are to a certain extent speculative, the following impacts have all been cited as possible under different scenarios:

- Shift in species further north and to higher altitudes;
- Phenological mis-matches (e.g. between migrant birds and availability of prey such as caterpillars);
- Changes to plant community composition (i.e. alterations in habitats);
- Particular vulnerability of certain habitats due to altitude e.g. montane;
- Increased risk of spread of non-native and invasive species;
- Increased risk of wildfires;
- Lack of frosts coupled with occasional unseasonal heavy frosts leading to effects on bud dormancy;
- Increased risk of flooding leading to erosional effects (e.g. blanket bog), impacts on habitats suited to intermittently high water tables (e.g. lowland fen sites) and increased concentrations of nutrients such as nitrogen.

Potential effects may be exacerbated through factors such as the poor dispersal ability of some plant (and other) species. Furthermore, habitats that are already in sub-optimal condition (e.g. through inappropriate grazing) are likely to be especially vulnerable to climate change impacts. Increased intensity and frequency of flooding can also have detrimental ramifications for Annex species. For example, the repeated flooding of the Shannon Callows is thought to be implicated in the loss of corncrake from this area. Flooding could also have detrimental impacts on ground-nesting species such as hen harrier and merlin (drowning of chicks and eggs).

Diffuse Pollution of Surface Water and Groundwater

In addition to intensification impacts on the immediate surrounding habitat, fertiliser applications of nitrogen and phosphorus can cause diffuse pollution of surface water and groundwater. In recent years, there have been significant increases in nutrient levels (especially phosphate), sediment and dissolved organic carbon from agricultural activities. In addition, increased rainfall and, in particular, an increase in storm events as a result of climate change, is likely to result in increases in direct losses of chemical fertilisers from agricultural land. Diffuse pollution is having particularly deleterious effects on a range of water-

dependent habitats. These include peatlands (bogs, fens), wet grasslands (e.g. *Molinia* grasslands) and watercourses and water bodies themselves. These last include the following Annex 1 habitats: oligotrophic isoetid lake habitats, hard-water lake habitats, turloughs, acid oligotrophic lake habitats and vegetation of flowing waters.

Species associated with these habitats and especially those suited to low nutrient conditions will also be detrimentally impacted. These include slender naiad, floating water-plantain and pollan. A range of other species will be affected by changes in water nutrient status as well as increases in sediment loading. These would include fish species such as Atlantic salmon, lampreys and shad, as well as freshwater pearl mussel and white-clawed crayfish. A small number of SPA bird species are also tied to shallow water bodies for breeding and these would also be impacted by diffuse pollution. Species affected would include pochard, common scoter and goldeneye. It should be noted that there are many surface waters that are not formally designated as SAC habitats but that support populations of Annex II fish and/or Annex I bird species.

Drainage

Draining of agricultural land can result in severe alterations to major nutrient sinks and sources, increases in soil temperature and humidity and changes to soil structure and composition. The drainage of bogs and wet grasslands as part of the intensification process can result in changes to hydraulic conditions, leading to increased sediment load to water; and a more direct pathway to rivers for pollutants originating on 'dry land'. Oligotrophic and oligo-mesotrophic waters and natural eutrophic and dystrophic lakes in Ireland are under extreme pressure from reduced water levels caused by such activities. Turloughs are also especially vulnerable to impacts on water levels. *Vertigo* species of snail are affected by the drying out of fens as it reduces the suitability of their preferred habitat.

Drainage of wet grasslands and peatlands is also particularly detrimental for breeding wader species such as curlew, dunlin and golden plover.

Reduced Breeding Success or Increased Predation, Possibly Resulting in Reduced Population Viability

Drainage and intensification has reduced the breeding habitat available for ground nesting birds, whilst it has also increased predation of such species through creation of suitable habitat for predators. Effects are likely to be highest at farmland edges, e.g. predation by corvids such as hooded crow (*Corvus cornix*).

The main reason for the decline in freshwater pearl mussel populations is because of a lack of recruitment, i.e. the species has been unable to successfully reproduce, or the young mussels have not survived (DAFM, 2013). This is in part because the gravel river beds within which the mussels live have become infiltrated by sediment and/or overgrown by algae or macrophytes, typically as a result of agricultural activities. The population at several of the priority mussel catchments will become extinct within a generation if the habitat quality within those catchments is not improved.

Inshore and Off-shore fisheries

A number of potential issues are evident in relation to offshore Annex habitats. These include the effects of pollution, encompassing direct run-off from agriculture on-shore and nutrient build-up from aquaculture sources (e.g. salmon farming and mussel farming in in-shore waters). Pollution can affect estuaries, tidal mudflats and saltflats, large shallow inlets and bays and lagoons. This last habitat is highly prone to eutrophication impacts from adjacent agriculture. Inappropriate dredging and other fishing methods that can damage the sea bed can also have detrimental impacts on delicate habitats such as reefs and large shallow inlets and bays. The introduction of alien species (in particular, Pacific oyster) through aquaculture,

will have deleterious effects on a range of marine Annex habitats as well as associated native species.

A range of fish species, associated with inland waters for at least part of their life cycle, have the potential to be overfished. These include salmon, lamprey species and shad. This could be the result of bycatch as well as direct fishing. Overfishing of juveniles could be particularly detrimental to population levels. In addition, a number of Annex bird species, such as divers, petrels and terns, could be susceptible to the effects of overfishing (either directly or through by-catch). Seabirds are also at risk of bycatch themselves (i.e. being caught in fishing lines, etc.). Plastic waste from the fishing industry, as well as from on-shore sources, is a further detrimental factor, smothering marine habitats and being ingested by such species as leatherback turtle.

Relevant Natura 2000 Habitats and Species

The AA seeks to identify which qualifying features of Ireland's Natura 2000 sites are currently under pressure from agricultural activities, and which are thought likely to be under threat in future. Based on the discussion in the preceding paragraphs, it is clear that the majority of habitats and species encompassed by the Natura 2000 series are at risk from agricultural activities. Natura 2000 sites with the Annex I habitats, Annex II or IV species¹ or Annex I bird species listed in *Table 6* could potentially be adversely affected by agriculture, forestry and fisheries activities.

¹ Species listed under Annex IV of the Habitats Directive are not qualifying features of SACs, however they are in need of strict protection at the EU level.

Table 6: Habitats and Species under Pressure from Agricultural Activities

Annex I Habitats	Annex II/IV Species and Annex I Birds
Grasslands	Invertebrates
6130 Calaminarian grasslands of the <i>Violetalia calaminariae</i>	1013 Geyer's whorl snail (<i>Vertigo geyeri</i>)
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco Brometalia</i>)(*important orchid sites)	1014 Narrow-mouthed whorl snail (<i>Vertigo angustior</i>)
6230 Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)	1016 Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>)
6410 <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)	1029 Freshwater pearl mussel (<i>Margaritifera margaritifera</i>)
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	1065 Marsh Fritillary (<i>Euphydryas aurinia</i>)
6510 Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)	1092 White-clawed Crayfish (<i>Austropotamobius pallipes</i>)
Peatlands	Fish
7110 Active raised bogs	1095 Sea Lamprey (<i>Petromyzon marinus</i>)
7120 Degraded raised bogs still capable of natural regeneration	1096 Brook Lamprey (<i>Lampetra planeri</i>)
7130 Blanket bog (*active only)	1099 River Lamprey (<i>Lampetra fluviatilis</i>)
7140 Transition mires and quaking bogs	
7150 Depressions on peat substrates of the <i>Rhynchosporion</i>	1103 Twaite Shad (<i>Alosa fallax</i>)
7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>	5076 Pollan (<i>Coregonus autumnalis</i>)
7220 Petrifying springs with tufa formation (<i>Cratoneurion</i>)	1106 Atlantic Salmon (<i>Salmo salar</i>)
Heath and scrub	Amphibians
4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>	6284 Natterjack Toad (<i>Epidalea calamita</i>)
4030 European dry heaths	Mammals
4060 Alpine and boreal heaths	1303 Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>)
Rocky Habitats	Plants
8210 Calcareous rocky slopes with chasmophytic vegetation	1395 Petalwort (<i>Petallophyllum ralfsii</i>)
8220 Siliceous rocky slopes with chasmophytic vegetation	1528 Marsh Saxifrage (<i>Saxifraga hirculus</i>)
8240 Limestone pavement	1833 Slender Naiad (<i>Najas flexilis</i>)
Freshwater habitats	Birds
3110 Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>)	A001 Red-throated Diver (<i>Gavia stellata</i>)
3130 Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i>	A002 Black-throated Diver (<i>Gavia arctica</i>)
3140 Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp.	A003 Great Northern Diver (<i>Gavia immer</i>)
3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation	A014 Storm Petrel (<i>Hydrobates pelagicus</i>)
3160 Natural dystrophic lakes and ponds	A015 Leach's Petrel (<i>Oceanodroma leucorhoa</i>)

Annex I Habitats	Annex II/IV Species and Annex I Birds
3180 Turloughs	A037 Bewick's Swan (<i>Cygnus columbianus bewickii</i>)
3260 Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation	A038 Whooper Swan (<i>Cygnus Cygnus</i>)
3270 Rivers with muddy banks with <i>Chenopodion rubri</i> p.p. and <i>Bidention</i> p.p. vegetation	A395 Greenland White-fronted Goose (<i>Anser albifrons flavirostris</i>)
Dunes	A396 Barnacle Goose (<i>Branta leucopsis</i>)
2110 Embryonic shifting dunes	A059 Pochard (<i>Aythya farina</i>)
2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	A065 Common Scoter (<i>Melanitta nigra</i>)
2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	A067 Goldeneye (<i>Bucephala clangula</i>)
2140 Decalcified fixed dunes with <i>Empetrum nigrum</i>	A082 Hen Harrier (<i>Circus cyaneus</i>)
2150 Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)	A098 Merlin (<i>Falco columbarius</i>)
2170 Dunes with <i>Salix repens</i> ssp. <i>argentea</i> (<i>Salix arenariae</i>)	A122 Corncrake (<i>Crex crex</i>)
2190 Humid dune slacks	A140 Golden Plover (<i>Pluvialis apricaria</i>)
21a0 Machairs (* in Ireland)	A160 Curlew (<i>Numenius arquata</i>)
Coastal habitats	A466 Dunlin (<i>Calidris alpina schinzii</i>)
1110 Sandbanks which are slightly covered by sea water all the time	A191 Sandwich Tern (<i>Sterna sandvicensis</i>)
1130 Estuaries	A192 Roseate Tern (<i>Sterna dougallii</i>)
1140 Mudflats and sandflats not covered by seawater at low tide	A193 Common Tern (<i>Sterna hirundo</i>)
1150 Coastal lagoons	A194 Arctic Tern (<i>Sterna paradisaea</i>)
1160 Large shallow inlets and bays	A195 Little Tern (<i>Sterna albifrons</i>)
1170 Reefs	A229 Kingfisher (<i>Alcedo atthis</i>)
1230 Vegetated sea cliffs of the Atlantic and Baltic coasts	A282 Ring ouzel (<i>Turdus torquatus</i>)
	A346 Chough (<i>Pyrrhocorax pyrrhocorax</i>)

APPENDIX F: STATUTORY CONSULTATION RESPONSES

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
Organisation: Department of Environment, Climate and Communications - Geological Survey Ireland				
Date received: 9 June 2021				
1	1	Table 3.2	We are pleased to see areas of natural heritage importance, including geological heritage sites taken into consideration in Table 3.2 of the Environmental Report.	Noted.
2	1		We would like to draw your attention to the series of county geological heritage audits now completed for 23 of the 26 counties. Geological heritage highlights the importance of geodiversity (which typically underpins the biodiversity of many ecosystems) at local and national level. Our geological Heritage data sets can be viewed online under the Geological Heritage tab on the online Map Viewer.	Noted.
3	1	Table 3.2	In Table 3.2: SEA Objectives of the Environmental Report, SEA Objective 10, 'Landscape – Protect, enhance and manage the character and quality of Ireland's Distinctive landscape and seascape', we note the sub-objectives b. "Maintain and enhance designated sites, including Ireland's six National Parks and two World Heritage Sites' and c. 'Maintain and enhance cross border landscapes". We would like to highlight the three UNESCO Global Geopark Programmes (Copper Coast, Burren and Cliffs of Moher, and the cross-border Marble Arch Caves), and aspiring geopark project (Joyce Country and Western Lakes). We would welcome consideration of the inclusion of UNESCO global geoparks, and IUCN Guidelines for geoconservation in protected and conserved areas; This best practice guideline, number 31 in the series, is the first to address a fundamental part of nature - geodiversity and geoheritage and its protection and conservation following the broadening of the IUCN definition of a protected area to embrace all of nature.	Geoparks added to objectives in Table 3.2.
Groundwater				
4	1	Section 4.3	We welcome the inclusion of specific references to our groundwater comments and datasets within Section 3.6 of the Scoping Report and Section 4.3 of the Environmental Report	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
5	1/2	Table 3.2	In Table 3.2: SEA Objectives of the Environmental Report, we note within the SEA Objective 5. 'Water', the subobjective 5a, to "Protect drinking water and other water resources from pollution, particulate nitrate and phosphorous pollution with no further deterioration of water quality status" and sub-objective 5b, to "Support the Water Framework Directive objectives of preventing deterioration, achievement of good ecological status by 2027 and achieving compliance with the requirements of designated protected areas". The SEA should consider any potential impact on specific groundwater abstractions and on groundwater resources in general.	Update made to Section 6.5 on to clarify impacts on water include groundwater.
Geochemistry of soils, surface waters and sediments				
6	2	Table 3.2	In Table 3.2: SEA Objectives of the Environmental Report, we note SEA Objective 4. 'Soil and Land Use – Protect and enhance soil quality'. We would like to draw your attention to the activities and datasets of the Tellus Programme.	Noted.
7	2		Geological Survey Ireland provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality. Tellus is a national scale mapping programme which provides multi-element data for shallow soil, stream sediment and stream water in Ireland, at an average sample density of 1 sample per 4km ² on a regular sampling grid across all land uses. At present, mapping consists of the border, western and midland regions. Data is available at https://www.gsi.ie/enie/data-and-maps/Pages/Geochemistry.aspx	Noted.
8	2		This page also hosts urban geochemistry mapping (Dublin SURGE project), Geochemical Mapping of Agricultural and Grazing Land Soil of Europe (GEMAS) and lithogeochemistry (rock geochemistry) from southeast Ireland datasets. Geological Survey Ireland and partners are undertaking applied geochemistry projects to provide data for agriculture (Terra Soil), waste soil characterisation (Geochemically Appropriate Levels for Soil Recovery Facilities) and mineral exploration (Mineral Prospectively Mapping). The objective of Terra Soil is to produce a suite of mapped products on nutrient and trace element availability (Morgan's and Mehlich's tests) and soil properties such as drainage characteristics and carbon content. The research will be disseminated through the	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			relevant Teagasc Advisory services from 2024 and will cover the northern 50% of the country in this initial phase.	
Geophysical data				
9	2		Geological Survey Ireland produces high-resolution geophysical data (Magnetic field, electrical conductivity, natural gamma-ray radiation) of soils & rocks as part of the Tellus programme. These data currently cover approximately 75% of the country and provide supporting geological information on a regional scale useful for assessing environmental impact and risk.	Noted.
Geohazards				
10	2	Table 3.2	In Table 3.2: SEA Objectives of the Environmental Report, in SEA Objective 4. 'Soil and Land Use – Protect and enhance soil quality', to consider the inclusion of geohazards such as landslides. Geological Survey Ireland has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map both of which are available for viewing on our dedicated Map Viewer. Coastal Vulnerability while seen as a potential geohazard, is discussed in more detail under our Marine and Coastal Unit information below.	Geohazards added to objectives in Table 3.2.
Marine and Coastal Unit				
11	2	Table 3.2	in Table 3.2: SEA Objectives of the Environmental Report, we note within the SEA Objective 5. 'Water', the subobjective 5d, to "Support the Marine Strategy Framework Directive achievement of good environmental status by protecting and improving the quality of marine waters, particularly those involved in seafood growing and fishing". We would like to highlight the projects and datasets of our Marine and Coastal Unit which will be of benefit to the SEA.	Noted.
12	2		Our marine environment is hugely important to our bio-economy, transport, tourism and recreational sectors. It is also an important indicator of the health of our planet. Geological Survey Ireland's Marine and Coastal Unit in partnership with the Marine Institute, jointly manages INFOMAR, Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector. The programme delivers a wide range of benefits to multisectoral end-users across the	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			national blue economy with an emphasis on enabling our stakeholders. Demonstrated applications for the use of INFOMAR's suite of mapping products include Shipping & Navigation, Fisheries Management, Aquaculture, Off-shore Renewable Energies, Marine Leisure & Tourism and Coastal Behaviour.	
13	3		INFOMAR also produces a wide variety of seabed mapping products that enable public and stakeholders to visualize Ireland's seafloor environment https://www.infomar.ie/maps/downloadable-maps/maps . Story maps have also been developed providing a different perspective of some of the bays and harbours of the Irish coastline https://www.infomar.ie/maps/story-maps/exploring-dingle-bay-different-perspective . We would therefore recommend use of our Marine and Coastal Unit datasets available on our website and Map Viewer	Noted.
14	3		The Marine and Coastal Unit also participate in coastal change projects such as CHERISH (Climate, Heritage and Environments of Reefs, Islands, and Headlands) and are undertaking mapping in areas such as coastal vulnerability and coastal erosion. Further information on these projects can be found at here	Noted.
Coastal Vulnerability Index				
15	3		Geological Survey Ireland is undertaking a new coastal vulnerability mapping initiative. Maps produced by this project will provide an insight into the relative susceptibility of the Irish coast to adverse impacts of sea-level rise through the use of a Coastal Vulnerability Index (CVI). Currently the project is being carried out on the east coast and will be rolled out nationally, detailed information and maps are available here. These index-based maps will offer a simple, easy visual representation of sensitive areas based on robust methods and conceptualised metrics from latest research, adapted to the Irish context.	Noted.
Organisation: Department of Agriculture, Food and the Marine - Sea Fisheries Policy and Management Division				
Date received: 11 June 2021				
16	1		Pg. 34: On the wording around the fisheries element of TCA, suggest text in red could be added "The agreement sets out a phased period where the transition to a new quota share will take place for certain stocks involving significant reductions, with an overall quota reduction for the EU Fleet of 25%, with 60% of this reduction applying in 2021."	Amendments made to Strategy text.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
17	1		Pg. 41: We suggest the following amendment to the third sentence: “Designed to manage a common resource, it gives all European fishing fleets equal access to EU waters and fishing grounds, subject to allocated fish quotas, and allows fishermen to compete fairly.”	Amendments made to Strategy text.
18	1		Pg. 65: Under Mission 1, Goal 5: Action 1: Develop a successor to “Harnessing our Ocean Wealth”. This wording could give the impression that DAFM is the lead on this. However, the Department of an Taoiseach is the lead Department for the development of the new integrated marine sustainable development plan. Suggesting re-phrasing to “Contribute to the development of a successor....”	Amendments made to Strategy text.
19	1		Pg. 65: Under Mission 1, Goal 5: Action 2: Typo in second last sentence: “This includes for the setting of annual TACs for most commercial fish stocks from which national quotas are derived.”	Amendments made to Strategy text.
20	1		Pg. 65: Under Mission 1, Goal 5: Action 4: Typo in the second last sentence: “While the UK is now an independent Third Country, the TFA TCA commits to...”	Amendments made to Strategy text.
21	1		Pg. 88: There are now 5 fisheries Producer Organisations	Amendments made to Strategy text.
Organisation: Department of Environment, Climate and Communications - Inland Fisheries Ireland				
Date received: 14 June 2021				
22	2		The Irish Pollan (<i>Coregonus Pollan</i>) is unique to the Island of Ireland with its current known distribution being limited to five lakes, Lough Allen, Lough Ree and Lough Derg and Lough Neagh and Lower Lough Erne. The Arctic char (<i>Salvelinus alpinus</i>) is another example of a highly sensitive fish species endemic to Irish upland waters and which is protected under national legislation. Furthermore the European Eel is now endangered and additional protection measures have also been introduced in that regard - it is incumbent on Ireland to ensure that the eel and its range and habitat are properly protected. Please also note that there are many surface waters, which are not formally designated but which support stocks of Annex II species designated under the habitats Directive.	Noted.
23			The EU Water Framework Directive (2000/60/EC) is recognised as a critical regulatory legislative provision. The WFD entered into force in December 2000 and requires the protection of the ecological status of surface and ground waters – this encompasses	Covered in Section 4.3 of the Environmental Report.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			(among other elements) water quality and requires the conservation of habitats for ecological communities. One of the primary objectives of the Directive is to establish a framework which prevents further deterioration and protects and enhances the status of aquatic ecosystems. Protection of aquatic ecosystems requires that surface water systems be protected on a catchment basis - a shared objective between all relevant public authorities. Article 5 of the 2009 Surface Water Regulations requires that a public authority, in performance of its functions, shall not undertake those functions in a manner that knowingly causes or allows deterioration in the chemical or ecological status of a body of surface water. Article 28(2) of the said regulations states that a surface water body whose status is determined to be less than good shall be restored to at least good status not later than the end of 2015. WFD monitoring has identified agricultural diffuse and point source pollution as the most significant risk to surface waters and a significant pressure in 780 (53%) of the 1,460 water bodies identified as At Risk of not meeting their environmental objective. Water quality indicators include the presence of high phosphate, nitrate or ammonium concentrations related to agricultural practices; key risks include the presence of surface-flow pathways for nutrients, chemicals (fertilizers, pesticides, herbicides etc.) and sediment to surface waters, land drainage with associated siltation, instream habitat impacted by riparian zone management and agricultural abstraction pressures.	
24	4	Section 8	<p>IFI welcomes your monitoring proposals as contained in Section 8 of the Environmental Report and notes the following:</p> <ul style="list-style-type: none"> • the High-Level Implementation Committee (HLIC), as the Managing Authority, to monitor significant environmental effects of implementing the Strategy. • An Environmental Working Sub-Group should be established to oversee monitoring, review and reporting of environmental issues and report back to the HLIC. • Goal 3: Protect high status sites and contribute to achieving good water quality and healthy aquatic ecosystems, as set out in the Water Framework Directive - Monitor nitrogen fertiliser usage rates over the Strategy period to establish if rates fall (as Action 1), 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). 	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			<ul style="list-style-type: none"> - Increase the overall amount of water bodies monitored. - Monitor nitrogen and phosphorus levels of waterbodies, especially those already known to be affected by agriculture. - Annual reporting around on farm chemical fertiliser use in relation to herd numbers. - Annual reporting on Agri-Environment scheme take-up through the new RDP with specific reporting of uptake by more intensive farms where uptake has previously been lowest (Action 4). - Publication of National Soils Strategy (as Action 5). 	
25	4		<p>Scope of the SEA: IFI endorses the selection of sustainability topics as outlined in the main document (Draft Agri-food Strategy - Executive Summary – Narrative - Sustainability – Economic, Environmental, Social – (ii) Environmental Sustainability – page 19). We also note the following have been considered in the Environmental Report.</p> <ul style="list-style-type: none"> • Biological diversity • Climate Disruption • Water quality • Surface water hydrology • Fish spawning and nursery areas • Passage of migratory fish / biological connectivity • Areas of natural heritage importance including geological heritage sites • Ecosystem structure and functioning • Sport and commercial fishing and angling • Amenity and recreational areas • Sediment transport • Alien invasive species 	Noted.
26			<p>Inland Fisheries Ireland are supportive of sustainable aquaculture in Ireland. A large body of scientific publications have demonstrated that the current popular model of open net pen aquaculture has not been sustainable and has caused considerable negative impacts to wild salmonid populations. Ireland also has obligations under the NASCO Convention including its goals on sea lice management and containment, and under the EU Habitats Directive to safeguard wild salmon stocks from the impacts of marine salmon farming.</p>	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			Therefore, it is the view of IFI that when the environmental issues are set out, it will be evident that for salmon aquaculture to be sustainable over the 2021-2030 period and beyond, a clear change in approach will be required to more sustainable production systems that minimise and eliminate actual and potential negative impacts to our wild salmonids.	
27	5		The long-term environmental sustainability of any activity that may impact on the status of fish species, their habitats, fisheries and/or the recreational angling or related commercial activities that may utilise these resources is of primary concern to IFI. IFI is among the public bodies that have a role in making policies, plans or programmes relevant to surface waters in Ireland. Critical and sensitive habitats and species (both designated and otherwise) must be protected. A number of fish species and associated habitats are protected under European Directives in Ireland. From an IFI perspective, all fish species and associated habitats within its remit require protection and management for conservation and development. IFI advocates application of the precautionary principle when considering the fisheries resource in the current process. In addition, all available consideration and support should be afforded to the national 'Blue Dots Catchment Programme' which focuses on the protection or restoration of high ecological status water bodies – a vital component in fisheries ecology, freshwater ecosystems and in Ireland's aquatic biological diversity more generally.	Noted.
Organisation: Department of Agriculture, Environment and Rural Affairs - Northern Ireland Environment Agency				
Date: 15 June 2021				
28	1		The layout and content of the Environmental Report is well laid out and straightforward to follow. DAERA is content that the environmental report and the process of consultation follows the SEA Directive. The draft Agri-Food Strategy 2030 and accompanying Environmental Report have been made available to relevant designated authorities, including transboundary bodies and the public. DAERA is happy previous consultations, including the SEA scoping, are documented in the appendixes and the actions relating to each of the comments detailed.	Noted.
29	1		A description of the current state of the environment and how this relates to the proposed Framework is included within the environmental report. Appropriate environmental	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			objectives / targets / indicators for each of the likely environmental receptors is addressed including consideration of alternatives, an assessment of significant impact and complemented with mitigation measures and monitoring programme.	
30	2		NED note that the Agri-Strategy 2030 is limited to the Republic of Ireland and welcome the acknowledgement that consideration has been given to transboundary environment effects within the SEA.	Noted.
31	2	Section 6	NED note the specific locations for environmental effects are unknown at this stage and as such detailed, specific environmental assessment is not possible. NED welcomes that as a matter of good practice mitigation are suggested for all identified uncertain or adverse effects, despite the statutory SEA process only requiring the mitigation of significant effects.	Noted.
32	2		Full assessment relating to the types of impacts and effects will have to be undertaken when specific project details and locations are known. We welcome that this is acknowledged within the report and that specific environmental effects will be addressed in detail at project stage, which is likely to require further consultation with DAERA should projects/programmes, be proposed that may have an effect on Northern Ireland. NED are of the opinion that there should be a solid commitment within the SEA report and the Natura Impact Assessment to consult with the relevant authorities in Northern Ireland at project level should transboundary effects be identified or likely. We understand that transboundary effects are the same as those outlined in the report and therefore are content with the assessment of the likely impacts, should a project have potential for effects on NI.	Update made to Section 7.3 of the Environmental Report.
33	2		Please note following the decision of the United Kingdom to leave the European Union, the collective term of “Natura 2000” sites the network of European protected sites are now known as “National Site Network” sites within the United Kingdom, and this is including Northern Ireland.	Clarified in Section in 3.3 of the Environmental Report.
34	2	Natura Impact Statement	NED welcome the inclusion of an Appropriate Assessment and the consideration of Transboundary concerns. As stated in reference to the SEA, specific project details and locations are unknown, any impacts that are likely to become transboundary impacts are the same as detailed in the assessment and therefore we are content with the mitigation	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			measures on SAC, SPA and Ramsar sites. Please note above reference to the renaming of Natura 2000 sites to National Site Network.	
Drinking Water Inspectorate Comments				
35	2	Section 4.3	The Drinking Water Inspectorate has considered the content and note that it is acknowledged that there is potential impact on Water in relation to transboundary effects (Section 4.3). Furthermore, as Noted. in communication reference No. 94 by Irish Water, they prepare Drinking Water Safety Plans (DWSPs) which seek to protect human health by managing risks to water quality, taking a whole catchment approach to manage risks from sources through to tap. Similarly, under Article 7 of the Water Framework Directive, all catchments within Northern Ireland are considered Drinking Water Protected Areas (DWPA) and so, no works should impact on the quality or quantity of the catchment waters. Consultation with Northern Ireland Water (the water undertaker for Northern Ireland) should be completed to ensure that transboundary areas are accounted for in their DWPA plans and discuss any potential impacts to catchments and reservoirs used for Drinking Water supply.	Noted.
Marine Plan Team Comments				
36	3	Section 4.3	While SEA Topics have remained unchanged it is observed that the Summary of Baseline Data in Section 4.3 includes marine transboundary considerations in relevant topics. Reference to the 2014 Northern Ireland Regional Seascape Character Assessment in the landscape transboundary considerations section could have been included, along with the references to AONBs.	Updates made to Section 4.3 of the Environmental Report.
37	3	Table 3.2, Section 4.4 and 6.6	It is further observed in Table 3.2 that a number of the SEA Objectives and subobjectives include marine aspects and this is welcomed. The recognition given to marine transboundary effects in section 4.4 on Key Environmental and Sustainability Issues and section 6.6 on Transboundary Effects is also welcomed.	Noted.
38	3	Appendix B	It is noted that references to the UK Marine Policy Statement and the draft Marine Plan for Northern Ireland have been included in Appendix B.	Noted.
Department for Communities (DfC) Historic Environment Division (HED) Comments				
39	3	Section 6.6	HED provided comment on the SEA Screening report for the Draft Agri-Food Strategy 2030 in August 2020, welcoming that cultural heritage impacts would be considered at the	Noted. - As below.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			environmental assessment stage. While we considered it unlikely, that there would be direct adverse effects of the strategy on Northern Ireland's Historic Environment, we Noted. that as with landscape considerations, many cultural heritage characteristics within the landscape have transboundary qualities and relationships which add to their understanding. Transboundary heritage assets such as historic routeways, earthworks, waterways, post medieval vernacular heritage and historic settlements are intrinsically linked with and enrich the character of the surrounding landscape.	
40	3	Section 6.5	The cumulative effects of the strategy for cultural heritage, as outlined in Pg.123 concludes the overall effects of the strategy to be negligible, though some potential beneficial and adverse effects have been identified. We note however that the potential for indirect transboundary effects on cultural heritage have not been addressed as part of the summary of baseline data (p.35/36) or in the consideration of transboundary effects (para 6.6 p.125).	Addressed in Section 6.6 of the Environmental Report.
41	4	Section 6.2	In the interests of ensuring a consistent and balanced approach towards impacts on cultural heritage and its relationship with the surrounding landscape, HED recommends that transboundary cultural heritage impacts are considered in the report, particularly in relation to: - Mission 1, Goal 1, Action 7 - scaling up renewable energy schemes at farm level, considering potential effects on the setting of designated and non-designated heritage assets, including historic landscapes and impact on buried archaeological assets (third paragraph p.111) and - Mission 2, Goal 1, Action 32 in relation to erection of polytunnels and glasshouses considering potential effects on the setting of historic landscapes and cultural heritage features.	Addressed in Section 6.2 of the Environmental Report.
42	4	Section 6.6	We would refer to our Historic Environment datasets, maintained by HED on behalf of the Department for Communities, which provide an important evidence base to assist in the assessment of the scope of transboundary cultural heritage effects. Our datasets include recorded designated and non-designated heritage assets and are available at: https://www.communities-ni.gov.uk/publications/historic-environment-digital-datasets .	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			They can also be accessed via our Historic Environment Map Viewer https://www.communities-ni.gov.uk/services/historic-environment-map-viewer	
Organisation: National Parks and Wildlife Service				
Date received: 5 June 2021				
43	4	Natura Impact Statement	The Department notes that a Natura Impact Statement (NIS) has been prepared by consultants ADAS on behalf of the Department of Agriculture, Food and the Marine. The NIS sets out at a high level the impacts of agriculture on biodiversity and the potential pathways for impact arising from the Draft Strategy. It does not however identify which European sites are subject to likely significant effects from the Draft Strategy nor does it set out how the measures proposed will operate to ensure that European sites are protected. The Department is of the view that while measures included in the Draft Strategy to address impacts to biodiversity are most welcome it is entirely unclear what the impacts of such measures will be on European sites. In particular it is not clear that the measures proposed are sufficiently specific and targeted to ensure that negative impacts to European sites are avoided. It is therefore the Department's view that it is not possible to conclude with any certainty that the Draft Strategy will not adversely affect the integrity of a European site or sites.	The final Strategy now includes mitigation measures of the AA.
44	4		The Department notes the Environmental Report that has been prepared as part of the process to prepare the Draft Strategy and acknowledges the integration of environmental issues and concerns into the preparation of the Draft Strategy as a result of this process. The Department notes the examination of Alternatives that has been undertaken and the decision made to choose the alternative which provides for a "Balanced Approach" to sustainability in the preparation of the Draft Strategy. While the Department welcomes the clear recognition of the environmental challenges for the sector, and welcomes the many measures included in the Draft Strategy to address these issues, it is not clear that the measures included in the Draft Strategy are sufficient to ensure that the sector becomes climate-neutral by 2050, and that there will be sufficient and verifiable progress by 2030 in addressing the key issues of emissions, biodiversity and water quality.	The role of the SEA is to assess the Strategy as proposed, not to regulate the implementation of other policy drivers.
45	5		The Department would welcome an opportunity to meet with the Department of Agriculture, Food and the Marine in relation to the development of the Draft Strategy and	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			the environmental assessment processes which are currently being undertaken. You are requested to send any further communications to the Development Applications Unit (DAU) at manager.dau@housing.gov.ie, or to the following address: The Manager, Development Applications Unit (DAU), Government Offices Newtown Road, Wexford, Y35 AP90	
Organisation: Environmental Protection Agency				
Date received: 16 June 2021				
46	7		The SEA environmental report clearly outlines the contents and main objectives of the Strategy. Many aspects of the baseline description outline the relationship to the agriculture sector. The SEA objectives/framework are also clear and the proposed monitoring is achievable.	Noted.
47	7		There may be merit in publishing the scoping report alongside the environmental report and the Strategy on the DAFM website to enhance transparency and accessibility. The scoping report includes detailed information relating to the current state of the environment/sustainability and the likely evolution thereof without the implementation of the Strategy. The SEA environmental report should include the relevant aspects of the current state of the environment and the likely evolution thereof without the implementation of the Strategy, as is required under Schedule 2 of S.I. 435 of 2004, as amended (this baseline information on the current state of the environment was contained within the Scoping Report, but is not brought forward in sufficient detail in the Environmental Report).	The full baseline information from the Scoping Report has been added to Appendix D of the Environmental Report.
48	7		The analysis of the existing environmental problems/pressures in the SEA environmental report briefly mentions agricultural pressures on sites of international nature conservation importance (SPAs/SACs) but does not describe these in any detail. This information is addressed in section 3.5.1 of the appropriate assessment and the information should also be reflected in the SEA environmental report to clearly show any potential significant effects on European sites.	Section 3.5.1 of the Natura Impact Statement describes the effects of agriculture on Natura 2000 sites. This has been referred in Section 4.3 of the Environmental Report and added Appendix E of the Environmental Report.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
49	7		<p>NON-TECHNICAL SUMMARY</p> <p>Section 3 of the Non-Technical Summary describes the current state of the environment – its strengths, weaknesses, opportunities and threats in respect of the SEA topics. These could be better linked to agriculture, the agri-food industry and recognition of the environmental characteristics of particular areas likely to be significantly affected.</p>	NTS provides summary of information contained in the SEA Environmental Report and should not contain any new analysis or assessment beyond that in the main report.
50	7	Table 4.1	<p>RELATIONSHIP WITH OTHER PLANS AND PROGRAMMES</p> <p>We welcome the policy context for which the Strategy is being prepared as presented in Table 4.1. of the environmental report. It would be beneficial to include additional information on the plans/programmes with which the Strategy might have potential conflicts, such as the River Basin Management Plan or the National Biodiversity Action Plan, and the measures which would be put in place to address such conflict.</p>	These plans & programmes are considered through Table 4.1 and Appendix B of the Environmental Report and assessed to not conflict with the Strategy. Hence no further action proposed.
51	8		The links with the United Nations Sustainable Development Goals in the Strategy are welcome, however, they should also be referred to in the environmental report. DAFM should also ensure that the Strategy aligns with key relevant high-level plans and programmes including the CAP Strategic Plan and the National Planning Framework – Project Ireland 2040. The Strategy should also be consistent with the relevant objectives and policy commitments of the Climate Action Plan.	SDG goals are referred to in Section 4.4 of the Environmental Report. Schematic included in Strategy to show relationship between CAP and Strategy.
52	8		Both the SEA environmental report and the Strategy would benefit from the inclusion of a schematic showing the plan hierarchy for agriculture related plans, e.g. CAP Strategic Plan, Agri-Food, AgClimatise, as mentioned in our previous submissions. This would help identify areas which need closer coordination and integration as well as identifying synergies with other relevant Plans	Schematic included in Strategy to show relationship between CAP and Strategy.
Assessment of Alternatives				
53	8	Section 5 and Appendix A	The scoping responses included as Appendix A to the environmental report include a range of proposals for the consideration of alternatives including reducing cattle numbers to 1998-2011 levels and setting environmental targets. The section of the environmental report on the consideration of alternatives should also capture the relevant suggestions regarding alternatives from the scoping responses.	The alternatives considered in the SEA were determined at the scoping stage accounting for the consultations received at that stage. It is not

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
				reasonably possible to account for new alternatives at this stage of the process.
54	8	Section 5	The second alternative option presented in the environmental report relates to environmental sustainability. We note that this alternative has been rebranded since the scoping report from “Greater emphasis on environmental sustainability” to now in the environmental report as “Greater emphasis on reduced output”. The aim of considering alternatives is to identify more environmentally friendly and more sustainable ways of achieving the objectives of the plan (which should themselves include sustainability). The rewording of the second alternative presents an already biased option indicating that it is linking environmental sustainability with reduced output for the agri-food sector. It is recommended this alternative is described as it is in the scoping report.	As above.
55	8	Section 5	In addition, the Strategy would have benefited from the inclusion of alternatives around the individual missions or goals such as limiting total nitrogen inputs to the 2011 level and following a path continuing the 1998-2011 trends in nitrogen and cattle numbers, as proposed by An Taisce at the SEA scoping consultation stage.	As above.
Assessment of Environmental Effects				
56	8		DAFM should assess and document the full range of likely significant environmental effects of implementing the Strategy, including the potential for cumulative effects in combination with other relevant Plans/ Programmes and projects.	Addressed in SEA.
57	8	Table 6.1	Table 6.1 of the environmental report would benefit from the inclusion of a legend to assist with the interpretation of the content of the table. The assessment of environmental effects presented in Table 6.1 should include consideration of the likelihood of an action being implemented or how the implementation of one action may interact with the implementation of another.	Legend added to Table 6.1. Levels of certainty are included in the detailed matrix assessment.
58	8	Section 4.4 and Section 8	Section 4.4 Key Environmental and Sustainability Issues and Likely Future Trends, refers to information gaps for sub-regional information. It also identifies the information gaps relating to specific effects of previous strategies. The monitoring and implementation plan for the Strategy should address these information gaps to ensure availability of this information to inform future strategies and any remedial actions required during	Strategy updated to take on board this suggestion. RSK referred to ESC Report previously provided.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			implementation. The environmental report should review the environmental monitoring from Foodwise 2025 and how it performs against the SEA objectives.	
59	9	Section 6	Despite the well documented impacts of agriculture on European sites, the environmental report does not specifically discuss problems related to agriculture and these sites. The assessment of environmental effects could be better linked with the section 3.5.1 of the Natura Impact Statement for the Strategy on potential impacts on Natura 2000 Sites from agriculture.	Referred to in Section 4.3 and Section 3.5.1 of the Natura Impact Statement added to Appendix E of the Environmental Report.
60	9	Section 6	As a general comment in relation to the conclusions of the assessment of environmental effects, the SEA carried out for Foodwise 2025 identified positive impacts for biodiversity, water and natural capital. However, many of the actual impacts for Foodwise 2025 resulted in a negative impact on the environment. The environmental report for the Strategy concludes again that the impacts of the Strategy will be largely positive. The environmental report should address the negative impacts of Foodwise 2025 and what measures are included in the new Strategy to address this and provide assurances that the actual impacts from the Strategy will be positive as the SEA concludes.	It is respectfully considered that the results of the previous SEA are not of direct relevance to that of the current SEA; no reliance is placed on previous results and the assessments provided in the Environmental Report are independent of any previous findings. The Strategy seeks to address some of the acknowledged issues associated with Food Wise 2025 and it is appropriate for the SEA to assess those measures as proposed now, rather than in the context of the previous strategy. The monitoring measures proposed provide a means of verifying that the impacts forecast in the SEA, positive and negative, are accurate.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
Transboundary Effects				
61	9	Section 6.6	It would be useful for section 6.6 Transboundary Effects to make reference to the transboundary consultation carried out at the scoping stage of the SEA and discuss any outcomes and how any information gleaned from the consultation has been incorporated into the environmental report.	Transboundary consultation added to Section 6.6 of the Environmental Report.
Mitigation Measures				
62	9	Section 7	Where DAFM have identified the potential for likely significant effects, appropriate mitigation measures to avoid or minimise these should be provided. DAFM should ensure that the Strategy includes clear commitments to implement the mitigation measures.	Mitigation measures incorporated into the Strategy, unless where a reason is otherwise given as to why they have not been incorporated.
63	9	Section 7	The environmental report includes mitigation measures which reflect a reasonable approach to improving the effectiveness of the various goals and actions identified. We welcome the inclusion of the cross sectoral mitigation and enhancement proposals. However, it is not clear how, or whether, the measures recommended have been incorporated into the Strategy. The mitigation measures recommended in the environmental report should be included in the Strategy, or an explanation as to why they have not been included should be provided. Likewise, the recommendations from the appropriate assessment should be integrated into the final Strategy. By integrating the recommendations from the respective environmental assessments, the Strategy will reflect the role and importance of the agri-food sector to be managed, and coordinated, in an environmentally sustainable manner.	Mitigation measures incorporated into the Strategy, unless where a reason is otherwise given as to why they have not been incorporated.
Monitoring Measures				
64	9	Section 8	The Monitoring Programme should be flexible to take account of specific environmental issues and unforeseen adverse impacts should they arise. It should consider and deal with the possibility of cumulative effects. Monitoring of both positive and negative effects should be considered. The monitoring programme should set out the various data sources, monitoring frequencies and responsibilities.	Noted.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
65	9	Section 8	The Strategy proposes implementation, monitoring and reporting aligned with the environmental monitoring and reporting required under the SEA legislation. This will assist in evaluating the environmental performance of the Strategy.	Noted.
66	9	Section 8	The monitoring measures presented in the environmental report do not clearly relate to the environmental objectives of the Strategy. The monitoring should provide an indication of what remedial measures will be put in place should negative environmental trends be identified. The monitoring programme should ensure that it will monitor the progress in achievement of the Strategy's high-level targets relating to biogenic methane, ammonia emissions, agricultural nutrient losses to water, farmed areas prioritised for biodiversity, increased afforestation, increased marine protected areas, organic farming and food waste reductions.	Monitoring measures included in SEA Statement amended to reflect this recommendation.
67	10	Table 8.2	Table 8.2, Additional Proposals, refers to monitoring of ammonia deposition at protected sites as an additional measure. Whilst this would be a useful indicator, it would be useful to also include assessment of habitat condition and to look for indicators of ammonia impacts on these habitats (e.g. presence or absence of certain plant species). It is important to directly measure impacts in order to understand the influence of the measured ammonia emissions rather than just the ammonia levels as an indirect indicator. The proposed target to 'Reduce ammonia emissions below 107,500 tonnes by 2030' lacks a focus on environmental outcomes.	Monitoring measures included in SEA Statement amended to reflect this recommendation.
68	10	Section 8	Because of the dominance of the agriculture sector as a source of ammonia, the opportunity to reduce ammonia deposition levels to below specified habitat 'critical loads' should also be considered as a target, in order to specifically protect these sensitive and protected habitats. Assessment of exceedances of habitat specific critical loads of nitrogen should also be employed as a monitoring metric.	Monitoring measures included in SEA Statement amended to reflect this recommendation.
69	10	Section 8	Where the monitoring identifies adverse impacts during the implementation of the Strategy, DAFM should ensure that suitable and effective remedial action is taken. Guidance on SEA-related monitoring is available on the EPA website at https://www.epa.ie/publications/monitoring--assessment/assessment/guidance-on-seastatements-and-monitoring.php	Monitoring measures included in SEA Statement amended to reflect this recommendation.
Future Amendments				

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
70	10		DAFM should screen any future amendments to the Strategy for likely significant effects, using the same method of assessment applied in the “environmental assessment” of the Strategy. This should apply to amendments to the Strategy on foot of the consultation process and prior to its finalisation.	Final draft of the strategy provided to RSK for review.
71	10		Under the SEA Regulations, DAFM should consult with: <ul style="list-style-type: none"> • Environmental Protection Agency; • Minister for Housing, Local Government and Heritage; • Minister for Tourism, Culture, Arts, Gaeltacht, Sport and Media; • Minister for Environment, Climate and Communications; and • Minister for Agriculture, Food and the Marine. 	The environmental authorities have been consulted.
72	10		Once the Plan is adopted, DAFM should prepare an SEA Statement that summarises: <ul style="list-style-type: none"> • How environmental considerations have been integrated into the Plan; • How the Environmental Report, submissions, observations and consultations have been taken into account during the preparation of the Plan; • The reasons for choosing the Plan adopted in the light of other reasonable alternatives dealt with; and, • The measures decided upon to monitor the significant environmental effects of implementation of the Plan. DAFM should send a copy of the SEA Statement with the above information to any environmental authority consulted during the SEA process	Referred to in the SEA Statement.
73	10		Chapter 13 of the SOER2020 relates to the Environment and Agriculture. The chapter addresses the level of pressure that Irish agriculture has on the environment in terms of greenhouse gases, water quality and biodiversity and highlights the risk posed to Irelands reputation as a food producer as a result. Chapter 2 of the SOER2020 relates to Climate Change. This chapter clearly states the scale and pace of greenhouse gas emissions reductions must accelerate. Reducing emissions requires far-reaching transformative change across the whole economy, including in agriculture. Ireland’s greenhouse gas emissions profile – with over one-third of emissions coming from agriculture – is particularly challenging. Ireland must also maximise the use of land as carbon stores, for example through grasslands, wetlands and forestry, to meet targets. These requirements	Text added to the Strategy to take on board the EPA SOER 2020 findings.

Com Ref.	Page of Letter	ER Report Ref.	Comment	Actions Carried out to Address Comment
			must be balanced in the Strategy with a need to ensure a sustainable food production system. Other chapters in the SOER2020 further address the pressures that agriculture places on the environment including air quality (Chapter 3), land and soil (Chapter 5), nature (Chapter 6), and water (Chapter 7). These chapters should be consulted along with the related Key Messages prior to finalising the Strategy and the SEA process.	

APPENDIX G: SUMMARY OF PUBLIC CONSULTATION SUBMISSIONS ON THE DRAFT AGRI-FOOD STRATEGY 2030

Comment Received:	Response:
Comments and suggested measures relating to overall vision	
<ul style="list-style-type: none"> Generally broad support for the food systems approach adopted in the Strategy 	
<ul style="list-style-type: none"> No major disagreement with the Missions or Goals proposed 	
<ul style="list-style-type: none"> A number of submissions suggested that Irish agriculture should reduce its dependence on livestock and instead, focus on organic / regenerative / agro-ecological approaches with larger horticulture and tillage systems. In addition, there were suggestions that there should be a move away from relying on exports to focus instead on local markets, farmers markets, short supply chains, the domestic market, import substitution 	<ul style="list-style-type: none"> Noted. The Strategy endorses the view that the horticulture and tillage sectors should be increased and also supports an increase in organic farming and more research on regenerative agriculture. The Strategy also contains measures to develop local markets and has highlighted potential for import substitution in sectors such as horticulture. Additional text has been added to Mission 3 Goal 4 to build on the existing text
<ul style="list-style-type: none"> The Executive Summary / introductory chapter would benefit from a schematic showing the hierarchy of agriculture and related environmental plans, and it would be useful to show the relationship between the Agri-Food 2030 Strategy and the Common Agricultural Policy Strategic Plan 	<ul style="list-style-type: none"> A schematic diagram has been added to the executive summary to show the excellent alignment that exists between the CAP objectives and the Missions of this Strategy. A schematic showing the relationship with environmental plans will be considered for inclusion in a context document that will be published separately to the Strategy
Comments and suggested measures relating to Mission 1	
<ul style="list-style-type: none"> The targets are under ambitious and too vague (climate mitigation, biodiversity, water quality referenced the most) 	<ul style="list-style-type: none"> The 2030 Strategy is a medium term framework that guides the economic, environmental and social sustainability of the sector – it is more appropriate that the high level targets are set rather than an extended series of sub-targets. In any event, specific targets have been set to reduce emissions, improve air quality, improve water quality, improve biodiversity, reduce food waste, increase organic farming area
<ul style="list-style-type: none"> The targets are overly ambitious and will impact on farm profitability by increasing costs. Government supports needed to counteract these 	<ul style="list-style-type: none"> A balance has to be struck – some consider the targets overly ambitious while others consider they lack ambition. The targets are a big step in the right direction and set a very clear tone and message

Comment Received:	Response:
extra costs and fund necessary investment on farms such as slurry storage	for all stakeholders in the agri-food sector of the direction it needs to go in over the years to 2030. Without improving environmental metrics, key customers of Irish food and drink could look elsewhere which could impact on the price farmers receive. Many of the practices that will deliver improved environmental metrics don't actually add cost – they are win win in terms of economic and environmental sustainability. Extensive government support is made available through schemes such as TAMS to help farmers with the investments required such as slurry storage
<ul style="list-style-type: none"> Concerns about how environmental targets can be achieved alongside the target to increase exports 	<ul style="list-style-type: none"> In order to increase the value of exports while meeting environmental targets, this clearly has to be on the value side of the equation rather than volume (this is stated in the Strategy) and the key to driving the value element is innovation. It is for this reason that the Strategy has devoted one of its four Missions to this area and has proposed a new approach to innovation which is challenge oriented and output based. There are also proposals for a strategic approach to public R&D funding as well as commitments to increase private sector R&D spend. The export value projection is based on slow, steady, incremental growth in export value between now and 2030. Mission 3 Goals 3 and 4 highlight other actions that tie in with this, such as adding more value to existing output which in turn achieves higher prices in the markets we sell into. It is also about targeting more of the premium markets, those which pay a higher price for the food and drink we produce.
<ul style="list-style-type: none"> Carbon leakage will result from the strategy / is unlikely to be an issue 	<ul style="list-style-type: none"> There are a variety of views on the issue of carbon leakage. The Strategy focuses instead on actions that Irish agri-food can take to reduce its own emissions.
<ul style="list-style-type: none"> Focus should be on emissions per unit of output 	<ul style="list-style-type: none"> While emissions per unit of output are an important metric, it is the total emissions load that is counted in the IPCC inventory and which matters to the environment.
<ul style="list-style-type: none"> Suggestions to consider the Environmental Pillar/SWAN/Stop Climate Chaos 'Towards a New Agricultural and Food Policy for Ireland' paper 	<ul style="list-style-type: none"> This paper has been considered in the revisions to the Strategy and a number of them have been incorporated. A majority of the recommendations in the paper are incorporated into the revised Strategy (to a greater or lesser extent).
<ul style="list-style-type: none"> The Strategy under-plays the significance of the environmental impacts the agri-food sector imposes / Better recognition in the 	<ul style="list-style-type: none"> There are clearly a range of views on this. However, additional text has been added to the revised Strategy to set out the environmental

Comment Received:	Response:
document of how environmentally sustainable Irish agri-food actually is	impacts the sector imposes, including references to the EPA State of the Environment Report.
<ul style="list-style-type: none"> In relation to the national herd size the Strategy must be explicit on the environmental impact of the growing dairy herd and how this will be addressed to ensure a reversal of the negative environmental trends. Break link between animal numbers, fertiliser use and deteriorating water quality; 	<ul style="list-style-type: none"> Action 2 of Goal 1 in Mission 1 aims to produce a plan by end Q2 2022 on the sustainable environmental footprint of the dairy herd, which is in addition to the other multiplicity of Goals and actions in Mission 1 that will also contribute to reducing the environmental impact of the dairy herd; some text changes have also been made to remove the pace of change comment in relation to the herd size and highlight the contributing influence of the rising dairy herd on some environmental indicators in some regions.
<ul style="list-style-type: none"> Regulatory and voluntary measures should be included to reduce methane and nitrous oxide, reverse dairy expansion, cap on nitrogen 	<ul style="list-style-type: none"> The Strategy sets out clear targets and a range of well thought out actions for methane and nitrous oxide reductions, it sets a goal of transitioning to a lower chemical nitrogen use system, and it states the targets build on Ag-Climate which makes clear that any increase in biogenic methane emissions from continually increasing livestock numbers will put the achievement of a climate neutral sector in doubt. The Strategy is only one area for tackling these. Regulatory, private sector and voluntary measures are of course also open to government and other sectoral stakeholders.
<ul style="list-style-type: none"> The Strategy should be consistent with the Climate Action Plan 2019 and the forthcoming Climate Action Plan 2021. In particular, the base year to which the 10% reduction in biogenic methane applies needs to be specified and how this reduction links with the greenhouse gas emissions reduction committed to in the Climate Action Plan 2019. 	<ul style="list-style-type: none"> Base year is now stated; The 2019 Climate Action Plan doesn't set a methane target for agriculture. This 10% target is new. Furthermore, the Strategy acknowledges "the need to adjust this in line with emerging national and international targets for the sector and in line with the development of scientific solutions". New text has been added to the Strategy which states: "The target for biogenic methane will be set in the context of discussions on sectoral targets set out under the Climate Action and Low Carbon Development (Amendment) Bill 2021. The Committee acknowledges that in general, future environmental targets are likely to be set by legislation and commits to participating in the various target-setting processes with a view to the ultimate commitment to be climate neutral by 2050)".
<ul style="list-style-type: none"> Pathways and timelines to achieving targets need to be clearer; 	<ul style="list-style-type: none"> The pathways for achieving the targets are the actions. 61 actions across 7 Goals in Mission 1. Many more initiatives, policies, programmes and schemes will follow on from these – prescriptive

Comment Received:	Response:
<ul style="list-style-type: none"> • Further measures to prevent habitat loss or destruction needed; Require environmental assessments to prevent habitat destruction; Need more clear actions to prevent biodiversity loss and enhance restoration, especially nature conservation and designated sites, natural habitats and species, conservation of legally protected species • Measures needed to reduce impact of modification to habitats and organic soils on water; Current enforcement regime around hedgerow removal and waste burning should be strengthened. • Ambitious programs needed to recover wildlife habitats 	<p>detail can't be provided on these at this stage. Timelines will be in the implementation plan which will be published separately.</p> <ul style="list-style-type: none"> • Mission 1 Goal 2 Action 8 states “Ensure that farms and forests do not contribute to habitat destruction and isolation, and also protect features of cultural heritage and traditional landscapes. This should include better enforcement of existing environmental rules, including strengthened implementation of the Environmental Impact Assessment (EIA) Agricultural Regulations in order to avoid habitat removal and loss of carbon pools”. Additional text has been added from the AA mitigation recommendations. Further, it should be noted that under the new CAP, new conditionality and Eco-scheme will aim to preserve existing habitats. Regarding consent to remove hedgerows, thresholds already exist for hedgerow removal under the EIA Agricultural Regulations. Consent is required once certain criteria is not met under those Regs.
<ul style="list-style-type: none"> • Update Ag-Climatise to reflect further commitments to reduce GHGs as per new climate budgets 	<ul style="list-style-type: none"> • It has always been stated that Ag-Climatise is a living document and action 3 of Goal 1 in Mission 1 commits to updating Ag Climatise, as required, to ensure consistency with new targets agreed nationally and internationally for the agri-food sector.
<ul style="list-style-type: none"> • The ambition to increase afforestation should specify a value that the agri-food sector could aim to achieve. Similarly, in relation to doubling the production of biomass, there is no definitive figure. Afforestation with native trees, no clear fell. Have specific target for agro-forestry 	<ul style="list-style-type: none"> • Targets have now been included. More emphasis on agro-forestry has been included. Much of the detail on forestry will be developed in the new Forestry Strategy (action 1 of Goal 4 Mission 1).
<ul style="list-style-type: none"> • Questions around the real extent of global warming and in any event, using the wrong metric to measure methane 	<ul style="list-style-type: none"> • Action 5 of Goal 1 Mission 1 addresses the point on methane: “Ireland will play a leading role in shaping how greenhouse gas emissions from livestock farming are understood and addressed. As research progresses on the different characteristics of various GHGs, especially short-lived emissions such as methane, these need to be recognised and reflected by the United Nations Framework Convention on Climate Change and the Intergovernmental Panel on Climate Change”.

Comment Received:	Response:
<ul style="list-style-type: none"> Animal health should be leveraged more for climate mitigation 	<ul style="list-style-type: none"> Reference added in Mission 1.
<ul style="list-style-type: none"> Too much emphasis is placed on technological solutions which will not be enough to address the loss of biodiversity or damage to water quality. 	<ul style="list-style-type: none"> The Strategy outlines 15 actions to restore and enhance biodiversity and improve water quality, some of which are technological solutions but others are not.
<ul style="list-style-type: none"> There should be more focus on composting and anaerobic digestion / anaerobic digestion has limited potential 	<ul style="list-style-type: none"> There are a range of views on the potential of anaerobic digestion. Some amendments have been made to action 7 Goal 1 Mission 1.
<ul style="list-style-type: none"> Direct payments should be linked to land use activities that focus on co-benefits and ecosystem services; Results based agri-environmental schemes; Mainstream pilot results-based programs - co-create systems with farmers; Carry out biodiversity studies, and increased targeted agri-environment schemes; Results-based, High Nature Value farming initiatives need to be mainstreamed across all land-use types. Payment supports for ecosystem services rather than carbon farming 	<ul style="list-style-type: none"> Text added to Exec Summary which highlights direction of new CAP, especially eco-schemes and conditionality; action 2 in Goal 2 of Mission 1 states “ Put in place more targeted agri-environmental schemes under the next Rural Development Programme (RDP) to protect and enhance Ireland’s habitats and species. These schemes should include results-based actions, including payments for delivery of specific measures”; the strategy promotes the concept of co-creating initiatives with farmers – see Goal 3 of Mission 4.
<ul style="list-style-type: none"> More research into regenerative agriculture. 	<ul style="list-style-type: none"> See action 6 Goal 1 Mission 1.
<ul style="list-style-type: none"> Food Waste Hierarchy recommends feeding people with this food as a circular economy solution over bioenergy, animal feed, or compost. Impact of reducing food waste and adopting zero waste approaches is underestimated. 	<ul style="list-style-type: none"> Text amendment to action 6 Goal 6 Mission 1.
<ul style="list-style-type: none"> Major EU policies such as Farm to Fork, Biodiversity need more impact analysis / the strategy doesn’t reflect adequately the measures in Farm to Fork and EU Biodiversity Strategy 	<ul style="list-style-type: none"> There are a range of views on these EU Strategies. They are considered in the Strategy and have influenced its contents. However, it also has to be recognised that detailed discussions on their implementation remain ongoing and the Strategy has highlighted the need for impact assessments.
<ul style="list-style-type: none"> The significant number of fisheries being harvested above Maximum Sustainable Yields should be addressed / sustainable Total Allowable Catches(TACs) need to be set in line with the Common Fisheries Policy (CFP) legal obligations 	<ul style="list-style-type: none"> Goal 5 of Mission 1, to enhance the environmental sustainability of the seafood sector, contains ten actions, several of which address these very issues.
<ul style="list-style-type: none"> Origin Green: - should be discontinued / metrics should be improved to include more environmental criteria / more clarity needed on how data sharing and improved metrics will happen 	<ul style="list-style-type: none"> Origin Green is well established and recognized both at home and abroad as the world’s only national food and drink sustainability programme. It serves a dual function in terms of driving sustainability improvements on Irish farms and food businesses, while providing evidence of this to customers of Irish food and drink in domestic and

Comment Received:	Response:
	international markets. The Programme has been independently accredited. It is operated by Bord Bia, who recently came first in a ranking of the most reputable companies and organizations in the State. Notwithstanding, there is a recognition that it needs to improve and this is why an entire Goal has been dedicated to Strengthening and investing in Origin Green and other sustainability supports to reflect the higher level of ambition for the agri-food sector (Mission 1, Goal 7). In addition, text changes have been made to action 3 in this Goal to address the point on metrics.
<ul style="list-style-type: none"> The title of the Mission 1, Goal 3 should be changed to include the restoration of all waterbodies impacted by agriculture and classified as at risk from agriculture by the EPA 	<ul style="list-style-type: none"> Title changed in re-draft.
Comments and suggested measures relating to Mission 2	
<ul style="list-style-type: none"> Strategy can't make more farmers unviable - priority must be to increase incomes 	<ul style="list-style-type: none"> The 2030 Strategy has brought farmers centre stage in the ten-year Strategy and has put much more emphasis on their economic and social viability than predecessor strategies. A structured series of goals and actions which are realistic and practical for improving the economic viability and well-being of farmers is laid out. Farm incomes will be part of the monitoring and reporting will take place on them as key performance indicators. There is a high ambition for primary producers in mission 2, focusing on the premiumisation of output, increased integration of certain sectors, and diversification of activity and income streams. There is an ambition for a more equitable distribution of value along the value chain, with recognition that higher environmental sustainability has a cost, which cannot be fully borne by the primary producer. The question of who pays, and appropriate prices for food, is an important one and it is a debate that needs to be started.
<ul style="list-style-type: none"> Growth should be value not volume 	<ul style="list-style-type: none"> The target for export growth is explicit in stating it is value, not volume.
<ul style="list-style-type: none"> More support needed for tillage and horticulture sectors which are more environmentally friendly and should form a new more diversified agriculture sector. Horticulture deserves more than one action 	<ul style="list-style-type: none"> The Strategy supports the intention to grow these sectors. While there may only be 1 action for horticulture, it has a good level of detail which sets out five key areas to be addressed in a new dedicated horticulture strategy. Other new text has been added too in order to bolster this important sector, and it has also now been highlighted in Goal 3 of Mission 2.

Comment Received:	Response:
<ul style="list-style-type: none"> A policy that has tillage farmers producing food grade products rather than animal feed and straw 	<ul style="list-style-type: none"> The actions for the tillage sector actually make specific reference to the significant contribution it can make to the food and drinks sectors in the form of malting barley, milling wheat and oats for the breakfast cereals industry.
<ul style="list-style-type: none"> Emphasise potential of forestry as an additional income stream for farmers 	<ul style="list-style-type: none"> This is already highlighted in the Strategy, but new text has also been added to this section in goal 1 of mission 2.
<ul style="list-style-type: none"> Increase organic target to 25%, clearer targets and supports for horticulture; reference the EU Organic Action Plan; emphasise its role in reaching climate neutral sector by 2050 	<ul style="list-style-type: none"> Promotion of organic farming is referenced frequently in the draft Strategy, with an ambition to reach 7.5% of the UAA in organic farming by 2030. The 25% target would be extraordinarily ambitious in an Irish context and it could lead to the loss of any market bonus for organic produce; new text added to address other points here in the actions relating to organic farming in Goal 3 of Mission 2.
<ul style="list-style-type: none"> Support local food initiatives 	<ul style="list-style-type: none"> There are five actions on domestic and local markets in Goal 4 of Mission 3 and new text has been added to build on these, particularly around local and community initiatives.
<ul style="list-style-type: none"> Establish national GI framework and Centre of Excellence for Geographical Indicators (GIs). Enhance Marketing and Promotion of PDO/PGI 	<ul style="list-style-type: none"> Action 6 of Goal 2 addresses this.
<ul style="list-style-type: none"> Need to improve gender balance 	<ul style="list-style-type: none"> Gender is included in the Strategy at various points. At primary producer level, actions 8-11 in Goal 4 are aimed at this and have been added to (especially on the point of capturing data).
<ul style="list-style-type: none"> Siloing the topic of generational renewal as solely a social element rather than recognising that all aspects of sustainability are impacted by the current low numbers of young farmers present in the industry. 	<ul style="list-style-type: none"> Generational renewal is a cross-cutting area in the Strategy. The main focus on generational renewal is in Mission 2, improving social sustainability of primary producers. The Committee is agreed that young farmers have an important role to play in driving environmental improvements and adopting new technologies and innovation, but equally all farmers have to participate, not just young farmers. Additional text has been added to the generational renewal section in Goal 4 of Mission 2.
<ul style="list-style-type: none"> Not all farmers should be in a quality assurance scheme as this removes distinction/value of participation. 	<ul style="list-style-type: none"> The text on this (action 4 Goal 2 Mission 2) has been amended.
<ul style="list-style-type: none"> 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. Assess the emissions reductions and environmental benefit of diversification options 	<ul style="list-style-type: none"> A new action has been added to Goal 3 Mission 2 to address this.

Comment Received:	Response:
Comments and suggested measures relating to Mission 3	
<ul style="list-style-type: none"> Definitions on sustainability and health as they relate to diets are unclear 	<ul style="list-style-type: none"> New text added to the 'Food, Nutrition and Health' section of the Introduction chapter.
<ul style="list-style-type: none"> Welcome action to improve policy coherence and Dept. Health/DAFM committee and this should include public health nutrition expertise 	<ul style="list-style-type: none"> This action states "These various initiatives should be advanced through effective citizen engagement and informed by scientific evidence and expert advice and input from stakeholders representing all aspects of the food and health systems".
<ul style="list-style-type: none"> Labelling cannot be biased against meat and dairy / varying views expressed about Nutri-Score 	<ul style="list-style-type: none"> Amendment to the text to say the labelling initiatives should be evidence-based.
<ul style="list-style-type: none"> Restriction of marketing and promotion of foods which have both large carbon footprints and negative health impacts 	<ul style="list-style-type: none"> The Strategy already contains a number of actions in this area, such as action 2 in Goal 1 which aims to make healthy and sustainable food choices available to consumers as easily as possible.
<ul style="list-style-type: none"> Voluntary re-formulation likely to be ineffective 	<ul style="list-style-type: none"> Research has shown significant reductions in sodium from reformulation, with lesser reductions in sugar and saturated fat
<ul style="list-style-type: none"> Move away from industrial farming, stop pursuing exports and focus instead on shorter supply chains, local markets, farmers markets, urban gardening and urban farming, domestic market, import substitution 	<ul style="list-style-type: none"> While short supply chains certainly have merit and an important role in the global food system, it must also be remembered that this is a complex and diverse system. OECD research in the aftermath of COVID has shown that short supply chains are in fact more susceptible to shocks and that participating in global value chains is a more robust and resilient approach. In any event, additional text has been added to the existing 5 actions on local and domestic markets in Goal 4 to address some of these points.
<ul style="list-style-type: none"> Over use of animal based agriculture, there is clear consumer move towards plant based diets 	<ul style="list-style-type: none"> The Strategy actually acknowledges dietary changes, including increasing demand for plant based diets in some countries.
Comments and suggested measures relating to Mission 4	
<ul style="list-style-type: none"> Research needed to prove health benefits of functional foods / naive to pursue functional food research. 	<ul style="list-style-type: none"> There are a range of views here. In a document such as this we cannot cover the complexity of the regulatory environment. The Strategy actions in this area are not in any case proposing functional ingredients as the end game for nutrition.
<ul style="list-style-type: none"> Integrate data sources in ag-tech. 	<ul style="list-style-type: none"> The actions contained in Goal 4 of Mission 4 on enhancing the use of technology and data are considered to go some way to addressing this point.

Comment Received:	Response:
<ul style="list-style-type: none"> More public-private research collaboration building on recent examples such as Vistamilk 	<ul style="list-style-type: none"> It is considered, Goals 1 and 2 of Mission 4 address this while it is also called out in Goal 1 of Mission 1.
<ul style="list-style-type: none"> Ensure efforts for global leadership extend beyond high level events such as the UN Food Systems Summit. 	<ul style="list-style-type: none"> Text added to Goal 7 to address this.
<ul style="list-style-type: none"> Increase the quantity and focus of development cooperation flows for agricultural research, extension and education in low-income countries. 	<ul style="list-style-type: none"> Text added to Goal 7 on research element.
<ul style="list-style-type: none"> Include a reference to Ireland's climate diplomacy, linking food diplomacy to climate diplomacy. 	<ul style="list-style-type: none"> Text added to Goal 7 to address this.
<ul style="list-style-type: none"> Strengthen the 'food system approach' credentials of the Strategy by: Broadening the stakeholder base for the strategy; Seek to be explicit about potential synergies and trade-offs in the strategy. 	<ul style="list-style-type: none"> The 2030 Stakeholder Committee was large, had broad representation, particularly of the stakeholders most directly involved in the sector and likely to have to implement the actions contained in the Strategy. Notwithstanding this, a special section on 'working in partnership' was included in the monitoring and implementation framework which will broaden engagement with other groups – additional text has been added to the dialogue and partnership section (actions 7-9). In addition, the consultation exercises conducted during development of the Strategy meant that all stakeholders could have their say and this was typified in the running of a series of Food System dialogues in 2021 during the public consultation; it is correct to say there are synergies and trade-offs in food systems – these will be elaborated on in other fora in the run up to the UN Food Systems Summit in 2021 and beyond.
<ul style="list-style-type: none"> Promote and support women's return to work programmes; collect and publish gender disaggregated data on take up of all schemes/measures/participation; promote and report on women in leadership roles in the agri-food sector 	<ul style="list-style-type: none"> Women's return to work programme is highlighted in action 4c, Goal 6; additional text added to gender sections in goal 6 of Mission 4 and Goal 4 of Mission 2 to address other gender balance points.
<ul style="list-style-type: none"> Innovation not only about pursuing lowest cost. Needs to account for generating value along the supply chain. More R&D. 	<ul style="list-style-type: none"> Goal 2 in Mission 2 aims to improve the creation and equitable distribution of value in the supply chain and Goal 2 of Mission 4 aims to increase R&D.
<ul style="list-style-type: none"> Concerns around protections for agri-food workers; promoting decent work and conditions of employment 	<ul style="list-style-type: none"> Amendments made to action 2 Goal 6 of Mission 4 as well as additional text to the COVID section in the Introduction chapter.

Comment Received:	Response:
Comments and suggested measures relating to Monitoring and Implementation	
<ul style="list-style-type: none"> • Include clear mechanisms for accountability and enforcement of targets 	<ul style="list-style-type: none"> • Extensive additional text has been added to sections III and IV of the Monitoring and Implementation Framework to address these comments.
<ul style="list-style-type: none"> • In relation to monitoring the environmental performance of the Strategy, outcome-focused and activity-based metrics are required 	
<ul style="list-style-type: none"> • Develop appropriate agri-food metrics that measures beyond production – nourishment, biodiversity, healthy habitats 	
<ul style="list-style-type: none"> • The Strategy Implementation Plan should clearly set out the actions, targets, timeframes and the appropriate body or bodies responsible for implementation of the actions supporting the objectives/commitments in the Strategy 	
<ul style="list-style-type: none"> • Address lack of robust monitoring mechanisms in previous strategies 	
<ul style="list-style-type: none"> • A separate environmental monitoring group should be established, which includes independent scientists and academic experts. 	
<ul style="list-style-type: none"> • Include provisions for annual reporting and thresholds for when remedial action needed 	
<ul style="list-style-type: none"> • Metrics to go beyond the normal measures of agricultural productivity 	
<ul style="list-style-type: none"> • It would be useful for the implementation plan to refer to monitoring and implementation from Foodwise 2025, (e.g. learnings and information gaps) to address how this information can be applied to improve the new Strategy 	
Other comments	
<ul style="list-style-type: none"> • Under representation of environmental groups and civil society on the committee • Over representation of ‘agri-food industry’ on committee 	<ul style="list-style-type: none"> • Comments noted; the Stakeholder Committee was large, had broad representation, particularly of the stakeholders most directly involved in the sector and most likely to have to implement the actions contained in the Strategy; there was also more consultation on this Strategy than had ever taken place previously.

Comment Received:	Response:
<ul style="list-style-type: none"> Challenges in the engagement between Agriculture and Environmental Stakeholders / more emphasis needed on communication and collaboration 	<ul style="list-style-type: none"> Noted, this is why there is a dedicated section in the monitoring and implementation framework for 'acting in partnership', including actions around dialogue and communications.
<ul style="list-style-type: none"> Strategy should be withdrawn and re-formulated to account for carbon budgets and new CAP 	<ul style="list-style-type: none"> Noted, but the Strategy has been cognisant of the main changes to the new CAP, and new text has been added to show how they both align, with very good alignment between the 9 CAP objectives and the 4 Missions of the Strategy. In relation to the carbon budgets, Mission 1 actually states "The target for biogenic methane will be set in the context of discussions on sectoral targets set out under the Climate Action and Low Carbon Development (Amendment) Bill 2021. The Committee acknowledges that in general, future environmental targets are likely to be set by legislation and commits to participating in the various target-setting processes with a view to the ultimate commitment to be climate neutral by 2050".
<ul style="list-style-type: none"> Re-draft the Strategy and adopt Environmental Pillar's points in their document submission 	<ul style="list-style-type: none"> Careful consideration was given to the Environmental Pillar/SWAN/Stop Climate Chaos paper (Towards a New Agricultural and Food Policy for Ireland Recommendations for Government) and a majority of its recommendations are contained in the Strategy; it must also be recognised that the process for developing the Strategy is participative and requires compromise from all sides.