

Mr Philip Farrelly
Philip Farrelly & Co
Unit 5A
Fingal Bay Business Park
Co. Dublin

30th January 2013

Our Ref: SCP121103.2

Re: Strategic Environmental Assessment Scoping Notification to Environmental Authorities Re Environmental Analysis of Scenarios Related to the Implementation of Recommendations in Food Harvest 2020

Dear Mr Farrelly,

The EPA acknowledges your correspondence, dated 20th November 2012, in relation to the above Scoping Notification for the Environmental Analysis of Scenarios Related to the Implementation of Recommendations in Food Harvest 2020 (FH2020).

The EPA recognises the important part that a sustainable food and agriculture industry will play in Ireland's economic recovery. This is dependent on Ireland achieving and maintaining a good quality environment. The food industry in Ireland has many natural advantage and we welcome the food industry's acknowledgement in the FH2020 related documents that, in order to establish Ireland as a leading producer of high quality sustainable and safe food, the industry is dependent on a clean environment. The objective of the environmental assessment of *Food Harvest 2020* should be to provide for a high level of protection of the environment and to promote environmentally sustainable development by fully integrating environmental considerations in the implementation of the strategy across all sectors.

Specific comments are set out in Attachment 1 to this correspondence. Please note the EPA has previously made a submission on 18th December 2012. This submission included an SEA Pack, SEA Scoping Guidance Document and Environmental Integration Checklist and should be taken into account in the assessment. The EPA's submission on the Environmental Analysis of FH2020, dated the 6th July 2012 should also be taken into account in the preparation of the SEA Environmental Report.

Should you have any queries or require further information in relation to the above please contact the undersigned. Please provide an acknowledgement of receipt of this submission could be sent electronically to the following address: sea@epa.ie.

Yours Sincerely



Tadhg O'Mahony
Senior Scientific Officer
SEA Section
Office of Environmental Assessment
Environmental Protection Agency
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Attachment 1 SEA Scoping Submission –Specific Comments Food Harvest 2020

This submission below is made in response to the SEA Scoping Notification issued to the EPA and the statutory SEA environmental authorities in relation to the “*Environmental Analysis of Scenarios related to the Implementation of Recommendations in Food Harvest 2020*”.

1. Food Harvest 2020 Implementation.

The approach taken by EIRGRID for the implementation of GRID 25 could be considered in the context of Food Harvest 2020. GRID 25 was not in the first instance subject to SEA and Appropriate Assessment. Subsequent to the publication of GRID 25, however, EIRGRID applied SEA and AA to their Grid 25 Implementation Programme which set out how the commitments in GRID 25 would be delivered. The findings of the SEA and AA informed the Implementation Programme (IP) and recommendations and mitigations measures arising out both assessments were reflected in the published IP,

See <http://www.eirgrid.com/media/GRID25%20Implementation%20Programme.pdf>

There also be merit in reviewing the approach by the Scottish Government to the retrospective application of SEA in relation to Scottish Executive Environment and Rural Affairs Department’s (SEERAD) *A Forward Strategy for Scottish Agriculture- Next Steps*. See link to SEA related documentation.

<http://www.scotland.gov.uk/Publications/2007/01/29131428/4>

The key challenges for sustainable development, including Conservation and Management of Natural Resources, Climate Change and Clean Energy, are outlined in *Our Sustainable Future a framework for Sustainable Development for Ireland (DECLG, 2012)*. A suite of Measures for different aspects and sectors are set out in this strategic document. Measure 31, in particular, under Sustainable Agriculture below relates to specific commitments in relation to agriculture:

Measure 31 Continued Support for Sustainable Agricultural and Forestry Development in Ireland

The Government will:

- *actively pursue the implementation of environmental policies as they relate to those envisaged under Food Harvest 2020 by: promoting sustainable pasture-based farming and soil management contributing to sustainable energy requirements; contributing to the protection of biodiversity and ensuring environmentally sustainable production practices for seafood and aquaculture;*

.....

- *continue to invest in the afforestation programme to support the sustainable development of the forestry and forest products sectors;*
- *implement recommendations arising from the national forest policy review;*
- *identify measures to reduce food waste, including associated consumer awareness measures.*

In implementing the relevant aspects of specific sector initiatives under FH2020, the commitments under the relevant Measures in “Our Sustainable Future” should be taken into account.

2. Key Environmental Considerations

From the EPA’s perspective, the key environmental considerations to be assessed include: Water Quality, Climate Change, Air Emissions and Biodiversity. These topics are discussed in the following sections. This is based primarily on the response made by the EPA to consultation on the Environmental Analysis of Food Harvest 2020 dated 06 July 2012.

The tasks outlined in the proposed amendments/update to the Environmental Analysis should be consistent with the requirements of the SEA Directive, Water Framework Directive (WFD), Habitats Directive and Floods Directive. Specific recommendations of key influential Plans/Programmes including the National Climate Change Adaptation Strategy, River Basin Management Plans, Draft Freshwater Pearl Mussel Sub Basin Management Plans and, Pollution Reduction Programmes for Shellfish Waters should also be taken into account.

2.1 Water Quality

Intensification of production, increased usage of inorganic fertilisers, increased production and usage of organic fertiliser, change of farming practices, and land improvement may all have an impact on groundwater and surface water.

Water Framework Directive

The Water Framework Directive (WFD)¹ and the accompanying Groundwater Directive² set the legislative framework that encompasses the requirements for good quality water. Ireland must maintain current ‘high’ and ‘good’ status water bodies and it is of critical importance that this is achieved. All water bodies at less than good status must show no deterioration and must be restored to good status by 2015 (there are extended deadlines to 2021 and 2027 for some water bodies).

Substantial measures are required to meet these targets across many sectors, including urban waste water, septic tanks, forestry, and industry and water abstraction. However, high status water bodies may be at risk from changes in farming activity in their associated catchments. In addition, achievement of good status is a requirement of the WFD for all water bodies within specific timescales. Diffuse pollution is however an identified pressure in many catchments which needs to be addressed to ensure statutory obligations can be achieved. The Nitrates Directive³, implemented as the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2010, specifies maximum limits in relation to fertiliser application and stocking rates and represents a significant step towards achieving good water

¹ Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

² Directive 2006/118/EC of the European Parliament and of the Council on the protection of groundwater against pollution and deterioration.

³ Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources

quality. However, this alone may not be sufficient for the protection of sensitive water bodies (and high status water bodies) and further actions may also be necessary.

In the most recent report on water quality covering the period 2007 to 2009, the EPA reported that 48% of river water bodies monitored nationally were at less than good ecological status. This represents 30 % of river channel length. Approximately half of the polluted river sites monitored are polluted by diffuse pollution sources. In the same period monitoring of our groundwater bodies showed that 14% are classified as poor status due to chemical quality impacts and that 53% of our inland lakes are at less than good ecological status. Similarly, our transitional waters have 54% of water bodies at less than good status, generally due to nutrient loading. It should be noted however, that there can be significant regional variations in water quality across Ireland.

Agriculture has been identified as a significant pressure on Irish River Basin Districts (RBDs). An increase in the pressure(s) associated with agricultural activities arising from the implementation of FH2020 should be reflected in corresponding mitigation measures.

The on-going challenge for Ireland will be to maintain the condition of the water bodies that are in a satisfactory condition, while restoring the water bodies in poor condition. Future farming activities will have a critical role in achieving both objectives. Achieving these objectives in the context of *Food Harvest 2020* will be a major challenge. Intensification and expansion will increase the use of fertilising nutrients. It is therefore essential that the loss of nutrients to water is minimised. Regional variation in the ability of the environment to support expansion should be made explicit within the environmental assessment. Innovative and equitable solutions will be required from the sector to give preference to production in areas most suitable to accommodate environmentally sustainable increased agricultural productivity in key sectors.

Given that there is a potential to impact on biodiversity, chemical status and general ecology under WFD, FH2020 needs to take into account the key agricultural pressures on water quality and include a commitment to include adequate and appropriate mitigation measures are implemented.

Work on reducing pollution loading from small rural point sources (such as soiled water from farmyards and effluent from single house on-site waste water treatment systems) must continue so as to avoid preventable loadings reaching natural waters. Developing practical measures, and encouraging farming enterprises to implement these at a farming level, is dependent upon robust research.

Kilkenny County Council is co-ordinating the preparation of a study entitled '*Study of the Interaction between the on Farm Dairy Sector, Food Harvest 2020 Dairy Targets and Water Quality Objectives in County Kilkenny*'. Kilkenny County Council, Department of Environment, Community and Local Government, Department of Agriculture, Food and the Marine, Teagasc, EPA, and South Eastern River Basin District (SERBD) are involved in the study. The outcome of this project and parallel research projects such as the Agricultural Catchments Programme and the EPA-funded Pathways Project will yield a greater understanding of the pressures from farming activities. Apart from the benefits that clean water bestows on human health, farming, industry and tourism, Ireland's progress in achieving the WFD objectives will be monitored by the EPA and reported to the EC.

The series of WFD related Water Matters documents, RBMPs and associated SEA Environmental Reports and Habitats Directive Appropriate Assessments should be referred to in the context of potential agricultural related pressures and measures. Relevant issues

identified should be included within the scope of the environmental assessment. Appendix I contains links to EPA reports containing further background information on water quality.

Milk Production & Water Quality

Increased processing capacity at existing and new food industries will increase effluent emissions to natural waters. Of most significance is the anticipated increase in milk output which is likely to result in an increase by 50% in the quantity of milk produced and subsequent processing. The anticipated increase in milk production, following the abolition of milk quotas in 2015, is likely to be concentrated during the spring and summer as farmers optimise the use of grass as the main feed to produce milk.

It has been reported that some dairy processors anticipate an increase in primary milk production from the farmers of up to 60% (in the period 2011-2020) and consequently some have identified additional plans for processing capacity. This may require EPA consent and the limiting factor for some locations will be the capacity of receiving waters to accept discharges while not causing any deterioration in the water status. One of the key criteria to the granting of a licence (or revised licence) is that emissions from the activity will not result in the contravention of any relevant environmental protection standard or cause significant environmental pollution.

Pig Rearing & Water Quality

Food Harvest 2020 projects that there will be an increase in pigmeat and a corresponding increase in stock by approximately 35% (2007-2009 as baseline) based on Teagasc projections for the EPA in 2012. The increase in production will result in increased production of organic fertiliser, which will require management on third party farms in accordance with the European Communities (Good Agricultural Practices for Protection of Waters) Regulations. The use of increased quantities of organic fertiliser has the potential to impact on water quality, particularly if the application of organic fertiliser is onto lands that were previously extensively farmed, or if the recipient farms are within a drinking water catchment. Measures should include innovation in the use of manures, for instance putting in place economic supports for technologies like anaerobic digestion. Increased production will result in increased processing throughput (slaughtering and processing). It appears, however, that there is adequate capacity within the existing slaughtering installations and there is also capacity in Northern Ireland.

The increase in stock is likely to result in a number of farm enterprises increasing in scale. While the majority of these will already have an IPPC licence from the EPA, it is likely that some smaller installations will expand or some new facilities will be established above the threshold⁴ for an IPPC licence. Planning permission, and in many cases Environmental Impact Assessment (EIA), will be necessary for these developments. Existing licensed installations that wish to expand their numbers will be required to get planning permission and will also require a technical amendment or review of their licence prior to expansion. To grant a licence, the EPA must be satisfied that an activity will not result in significant environmental pollution.

Beef/Sheep/Poultry & Water Quality

While the strategy anticipates increases in primary meat production much of the increased value of exports is from higher value products (i.e., increased processing). The scale of

⁴ See First Schedule of EPA Act, 1992 as amended by Section 18, Protection of the Environment Act, 2003 for a full list of activities and applicable thresholds.

increase in primary production is predicted as being less significant compared with the dairy and pig sectors. While the target for beef is an increase in output value of 20% rather than in animal numbers, an evaluation of the role of an expansion of the beef herd is needed.

2.2 Climate Change and Air Emissions

Increased emissions, particularly methane and ammonia (NH₃), will be associated with the increase in animal numbers necessary to grow primary output. In addition the increased animal numbers will result in increased organic fertiliser production and associated air emissions. It is predicted that there will be no increase in inorganic fertiliser usage. The sectors of most importance in relation to greenhouse gas and ammonia emissions are the dairy and beef sectors.

Achievement of the *Food Harvest 2020* targets for dairy and beef is likely to result in some change in the composition and size of the Irish cattle herd as well as in the intensity of production. The dairy cow population was 1.1 million in 2010 and it is projected to increase to 1.3 million in 2020. The beef and suckler herd is projected to reduce by 3% between 2010 and 2020⁵. The sheep flock is forecasted to grow by 18%. In the pig meat sector, pork consumption is expected to grow steadily worldwide up to the year 2020. The pig herd is forecasted to grow by 35% to meet this target.

Forecasted animal numbers, produced by Teagasc for the EPA, show the change in animal numbers under (i) a no policy change scenario (Scenario 1), where the value of output from the agri-food sectors is projected to increase but not to the magnitude required under *Food Harvest 2020* and (ii) full achievement of *Food Harvest 2020* (Scenario 2). Appendix II includes the list of the assumptions included in each scenario. Table 1 summarises projected greenhouse gas emissions from agriculture for 2020 for Scenarios 1 and 2.

Greenhouse gas emissions under *Food Harvest 2020* will result in a 7% increase in total agricultural emissions on current levels. This increase is driven by a projected increase in the national herd as set out above. In addition, higher fertiliser use, with increased intensity of dairy production, under Scenario 2 results in 4% higher emissions from agricultural soils on current levels. Scenario 1 (without *Food Harvest*) shows total emissions from the sector increasing by 3.3% on 2010 levels.

Table 1: Agricultural greenhouse gas emissions projections under Scenario 1 and Scenario 2

Mt CO ₂ e eq		Scenario 1	Scenario 2
	2010	2020	2020
Enteric Fermentation (CH ₄)	8.50	8.89	9.18
Manure management (CH ₄)	2.13	2.19	2.36
Manure management (N ₂ O)	0.44	0.44	0.45
Agricultural soils (N ₂ O)	6.84	6.90	7.11
Total	17.91	18.42	19.10
Fuel Combustion	0.77	0.87	0.87
Total (including fuel)	18.68	19.29	19.97

⁵ This excludes expansion aspirations of individual farms reported in Ulster Bank/ Broadmore Research survey of June 2012.

Under the EU's *Climate and Energy Package*, Ireland is required to deliver a 20% reduction in greenhouse gas emissions from sources outside the Emission Trading Scheme (ETS) by 2020 (relative to 2005 levels). This is governed by the Effort Sharing Decision (406/2009/EC). In addition, Ireland also has binding annual emission limits over the period 2013-2020 to ensure a gradual move towards this 2020 target. These non-ETS sectors include agriculture, transport, residential and waste. The agriculture and transport sectors are forecast to account for 48% and 27% respectively of non-ETS sector emissions in 2020 (Figure 1). Therefore, mitigation strategies must be focused on the agriculture and transport sectors. While no single mitigation option is available for agriculture, there are a suite of measures which should allow agriculture to play a role in maintaining production targets while mitigating greenhouse gas emissions. Such measures have been recently highlighted by Teagasc using Marginal Abatement Cost Curve analysis which shows a range of cost-beneficial mitigation measures that have potential to deliver the 1.1 Mt CO₂eq of emission reductions. These include improvements in the Economic Breeding Index, extended grazing time and nitrogen efficiency. According to the Teagasc publication these measures will require associated incentives in order to realise their environmental and economic potential, mainly through knowledge transfer facilitated by large-scale advisory programmes. Targeted measures to deliver on this significant potential within the agriculture sector should be developed and progressed. However, behavioural barriers will need to be overcome and educational tools established to encourage the adoption of measures at farm level. Examples of greenhouse gas mitigation options include improvements in nitrogen use efficiency, accelerated gains in genetic merit, higher daily weight gain and extended grazing season.

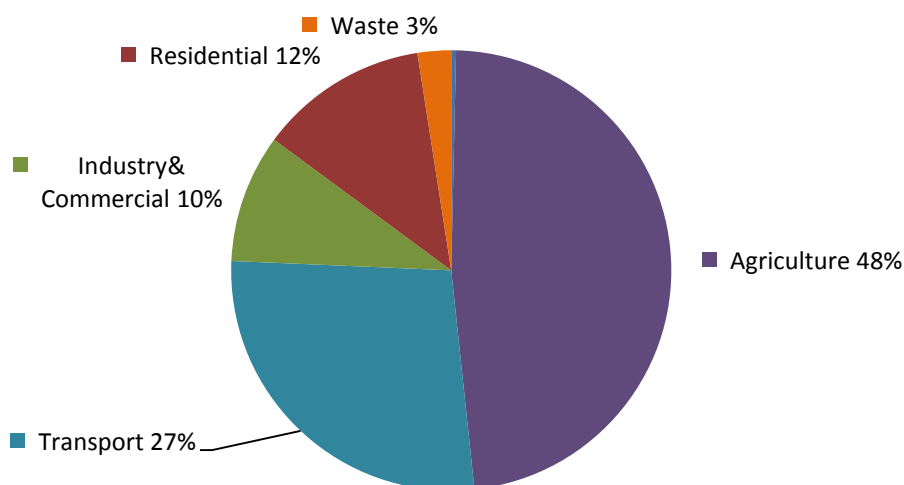


Figure 1: Source of GHG emissions in the non-ETS sectors in 2020

Ammonia

Agriculture is responsible for 98.6% of total national ammonia emissions, with the remainder coming from the transport sector. The Gothenburg Protocol is a multi-pollutant protocol designed to reduce acidification, eutrophication and ground level ozone by setting targets for sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia (NH₃). The Protocol is part of the Convention on Long-Range Transboundary Air Pollution which is an international agreement to protect human health and the natural environment. The

implementation of targets at a European level is met by the National Emissions Ceilings Directive (2001/81/EC).

Ireland's target under the revised Gothenburg Protocol for ammonia emissions is a 0.5% reduction on 2005 levels by 2020 which equates to a value of 108.6 kilotonnes (kt) of ammonia in 2020. It is envisaged that the Gothenburg Protocol will be ratified by Ireland during Ireland's Presidency of the EU in the first half of 2013 and Ireland will be bound by these 2020 targets. In addition, a revised National Emissions Ceilings Directive will be developed during 2013 which will establish these targets in EU legislation.

Projections of ammonia emissions are available for two scenarios; (i) Scenario 1 (i.e. no policy change) foresees an increase in the value of output from the agri-food sectors but not to the magnitude required under *Food Harvest 2020* and (ii) Scenario 2 assumes full achievement of the *Food Harvest 2020* targets.

Table 2 summarises projected ammonia emissions from agriculture for 2020 for Scenario 1 and 2. Ammonia emissions are projected to be 5% (5.5 ktonnes of ammonia) higher when *Food Harvest 2020* targets are assumed to be achieved.

Ammonia emissions are projected to be higher across all sub-sectors under *Food Harvest 2020* (Scenario 2) relative to current levels (except for fertiliser nitrogen application) which will result in a 10% increase in total agricultural ammonia emissions on current levels. This increase is driven by projected higher numbers of dairy, beef and suckler populations which underpin achievement of *Food Harvest 2020* targets.

Table 2: Agricultural ammonia emission projections under Scenario 1 and Scenario 2

kt ammonia	Scenario 1		Scenario 2
	2011	2020	2020
Cattle	77.0	81.1	84.1
Pigs	8.0	8.4	10.4
Sheep	2.4	2.6	2.6
Other livestock	4.8	4.8	4.8
Fertiliser application	15.0	12.3	12.8
Total	107.2	109.3	114.7

Ireland is currently projected to be 6.1 ktonnes of ammonia over the revised Gothenburg Protocol target for 2020 assuming full implementation of *Food Harvest 2020*. While there is no single mitigation measure available, there are a range of possible options which could be pursued. Options available include improvements in nitrogen use efficiency, the use of low emission manure spreading techniques, extended grazing season and anaerobic digestion (See Anaerobic Digestion reference:

http://www.epa.ie/downloads/consultation/epa_discussion_paper_anaerobic_digestion.pdf

Increasing emissions of greenhouse gases and ammonia from agriculture will present challenges for Ireland to meet targets under the EU Effort Sharing Decision (No 409/2009) and the revised Gothenburg Protocol.

Clearly sustainable carbon policies and managing climate impacts are becoming ever more important in many multi-national food companies' supply chain decisions and marketing, and it is to Ireland's benefit to establish a sustainable, low carbon industry. Apart from the market benefit, should Ireland not meet our emission ceilings or climate change effort sharing decision objectives it is likely to lead to European Court action against Ireland. A commitment to seek to meet these targets should be considered in the Plan.

Targeted measures to deliver on the mitigation potential within the agriculture sector should be developed and progressed. In addition, recognition of the linkages between ammonia mitigation on the one hand and greenhouse gas mitigation on the other should also be explored. In progressing towards 2020, it should be noted that the EPA updates annually its projections of both greenhouse gases emissions and ammonia emissions from the agriculture sector using the most up-to-date projections of livestock numbers, crop areas and nitrogen fertiliser applications produced by Teagasc.

2.3 Biodiversity

Farmers, and farm enterprises, are custodians of a large area of Ireland's terrain and so have the potential to significantly contribute to the conservation of biodiversity, with measures such as hedgerow expansion, field margin enhancement, native tree planting, and water protection, grassland management, providing riparian margins and keeping Natura 2000 sites intact.

Food production relies on rich biodiversity for essential ecosystem functions (e.g. carbon cycling, nutrient cycling and soil fertility). Damage and degradation of biodiversity is difficult to reverse once it is allowed to occur. Farm intensification and specialisation may have a detrimental effect on biodiversity through land drainage, nutrient enrichment, overgrazing and under-grazing and in the use of organic chemicals⁶.

The impact of increasing production under this strategy must be clearly identified and county-wide sensitive areas noted. Measures must interweave biodiversity protection into day-to-day agricultural practice. Policy and schemes – AEOS/REPS, cross-compliance and CAP reform – could be used to educate, encourage, compensate or, when necessary, enforce farmers to protect Ireland's biodiversity.

The European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011, S.I. No. 456 of 2011 apply to certain changes in use or work on rural land holdings. The Regulations provide for an assessment of the environmental impact of certain projects before they can proceed. Planning applications and IPPC licence applications are required to be supported at least by an Appropriate Assessment screening and in many cases a Natura Impact Statement (NIS), within which the impact of new/expanded developments on Natura 2000 sites must be assessed.

Reference should be made, as appropriate, to the relevant commitments in the National Biodiversity Plan. "*Objective 4 –To conserve and restore biodiversity and ecosystem services in the wider countryside*" and the associated "*Target 5 - Optimise use of opportunities under agricultural, rural development and forest policy to benefit biodiversity*". The relevant

⁶ The EPA will be publishing Ireland's *National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants*.

Actions under Target 5 and the associated Indicators and Outcomes should be taken into account.

In relation to the Section on Biodiversity / Flora and Fauna in the Assessment Results – Integrated Scenario A in the Environmental Analysis, consideration should be given to assessing the potential effects of overgrazing, soil trampling, land spreading etc. and recommendations be proposed to address / mitigate these.

Ireland has a need for strong datasets on our terrestrial biodiversity and any measures to maintain or enhance farmland biodiversity should include monitoring activities so as to determine the success of measures employed.

A key issue in protecting biodiversity is the need to carry out a detailed policy analysis linked to a technical assessment of land use suitability. In terms of the transition to a lower carbon economy, this would be an important resource. This analysis should consider pressures on land and the impact of future changes - including those associated with increasing biomass production, and other crops for production of biofuels - to support greenhouse gas mitigation in the wider economy. This was identified in the recent NESC Secretariat report to DECLG. See:

<http://www.environ.ie/en/Publications/Environment/ClimateChange/FileDownload,31202,en.pdf>

Environmental Liability Directive and Biodiversity

Where agricultural land expands into or is adjacent to protected areas, the EPA also has a role under the European Communities (Environmental Liability) Regulations which transpose aspects of the Environmental Liability Directive (2004/35/EC). Here operators causing 'damage' (or risk of damage) to protected species and habitats may be liable for appropriate protective or restorative measures.

3. Additional Comments

3.1 Scope of Assessment

The full range of relevant aspects of the key Specific Sector Recommendations in FH2020 should be screened in the context of the potential for likely significant environmental effects. For example the potential for likely significant environmental effects associated with the implementation of recommendations associated with the Seafood, Forestry and BioEnergy Crops, Cereals etc. should be considered.

Range of Environmental Topics

Consideration should be given to the potential for likely significant effects on a range of environmental topics. These topics include: biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationships between the above factors. Where environmental topics are scoped out, these should be identified and justification be provided.

Assessment of Likely Significant Effects

In assessing the likely significant effects, the full range of relevant likely significant environmental effects should be assessed. These should include- secondary, cumulative,

synergistic, short, medium and long term, permanent, temporary, positive and negative effects, as appropriate

Particular reference should be made to the potential for cumulative effects associated with the implementation of FH2020 in association with other relevant Plans / Programmes and projects. This is of particular relevance in the context combined cumulative effects of the different levels of intensification likely to be proposed for the specific sectors covered by FH2020. The WFD RBMPs are of particular relevance in this context. The implementation of FH2020 should also be set in the context of the proposed Rural Development Programme (2014-2020) which is due to commence preparation and which will be subject to SEA and Appropriate Assessment.

The nature and extent of the assessment should reflect the level at which FH2020 will be set. Opportunities for applying more spatially relevant (possibly RBD catchment level) plans should be explored. Where appropriate a time bound commitment should be considered for the preparation of such plans for each of the sectors. Such timescale could be aligned with the review of the WFD RBMPs due to be completed in 2015.

Transboundary Consultation

Consideration should be given to the requirement for transboundary consultation with the relevant Northern Ireland authorities. This should be considered at both the scoping stage and at the Environmental Report stage. Where relevant, transboundary consultation should be considered in the context of Appropriate Assessment in consultation with the DAHG –NPWS.

3.2 Executive Summary

It is noted that the environmental appraisal as carried out has identified “slight” environmental deterioration across many sectors and for a number of topics such as biodiversity/ flora & fauna, ground and surface water, air quality and climatic factors. The definition of significance criteria for the different topics being considered should be clearly defined for the purposes of the assessment. Significance criteria should be should take into account the comparison with appropriate baseline data for each individual environmental aspect. They should be examined in the context of relevant national and international environmental commitments, standards and targets.

Data Sources

In Subsection *Data Sources and Related Studies*, it should be ensured that the guidance of the National Parks and Wildlife Service is integrated as appropriate. Other sources of information include Inland Fisheries Ireland who should also be consulted in this regard.

The use of GIS to inform the analysis of the alternatives scenarios should be applied and highlighted where relevant and appropriate. Relevant GIS based representation of environmental sensitivities and vulnerabilities should be included in the environmental report.

Developing Scenarios

The modelling system FAPRI referred to should be described in more detail and the key assumptions and weightings made should also be provided, to ensure that particular environmental sensitivities/vulnerabilities are not overlooked or not weighted appropriately. The catchment level, Nitrates Directive Action Plan related work of Teagasc, which applies a

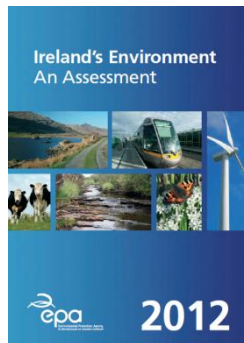
model based on intensive catchment level monitoring, is an approach which could be considered.

It is noted that “*Teagasc published its Marginal Abatement Cost Curve for Irish Agriculture analysis*”. However, given that water quality is one of the main issues in Ireland, clarification should be provided on the use a model relating to GHG analysis. There would be merits, if not already applied, in adopting a model(s) which would also look at potential impacts on water quality.

Conclusions & Recommendations

The key recommendations should reflect how the FH2020 will maintain or improve on existing practices in seeking to increase agricultural productivity while effectively incorporating and addressing key relevant environmental considerations and priorities.

Appendix I Links to Environmental Data and EPA Reports;



www.epa.ie/ebooks/soe2012/

Ireland's Environment – An Assessment 2012

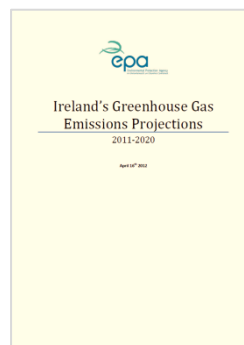
www.epa.ie/irelandsenvironment/

Access the latest information about Ireland's environment under eight separate themes or visit our dashboard of key environmental indicators.



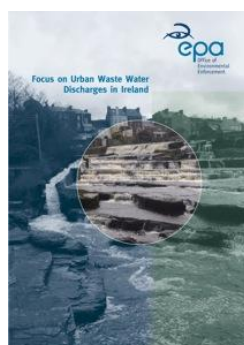
www.epa.ie/downloads/pubs/water/waterqua/name.30640.en.html

This report presents a review of water quality in Ireland for the years 2007-2009.



http://www.epa.ie/downloads/pubs/air/airemissions/EPA_GHG_%20Emission_%20Proj_publication_2012_final_v1.pdf

The EPA produces greenhouse gas emission projections annually taking into account the most recent environmental and other policy developments as well as updates to key assumptions (such as revisions to anticipated economic growth and future fuel prices).



www.epa.ie/downloads/pubs/water/wastewater/uww/

This report, the eighth in the series, includes for the first time a review of the operation of waste water treatment plants at 529 urban areas that are the subject of an EPA waste water discharge licence application.