Objection	
Objector:	Mr Ian Lumley
Organisation Name:	An Taisce - The National Trust for Ireland
Objector Address:	Tailors' Hall, Back Lane, Dublin, Co. Dublin.
Objection Title:	Objection #OS005983 - 3rd party objection for Reg No:[P1103-01]
Objection Reference No.:	OS005983
Objection Received:	06 March 2020
Objector Type:	3rd Party
Oral Hearing Requested?	No
Application	
Applicant:	Dairygold Co-Operative Society Ltd and TINE Ireland Ltd
Reg. No.:	P1103-01
See below for Objection details. Attachments are displayed on the following page(s).	

An Taisce
The National Trust for Ireland

EPA
Licensing Section
Johnstown Castle Estate
Co. Wexford

Sent by email to: licensing@epa.ie

6th March 2020

RE: Amendment to An Taisce submission, Objection Ref. OS005983 for industrial emissions license application P1103-01

To Whom It May Concern,

An Taisce submitted an objection (ref. OS005983) to industrial emissions license application ref. P1103-01 earlier today. There is an error in the final paragraph of the first page of our submission. The original text reads, "…which the existing operation by Glanbia has generated." This should instead read, "…which the existing operation by Dairygold has generated." The same error is repeated on page 12 in section 6.

We would appreciate if you could attach this letter as a corrigendum.

Yours sincerely,

Ian Lumley
Advocacy Officer
An Taisce – The National Trust for Ireland

An Taisce
The National Trust for Ireland

EPA
Johnstown Castle Estate
Co Wexford

Submitted online

6th March 2020

License Ref. P1103-01

Objection to proposed determination in respect of an industrial emissions licence application by Dairygold Co Operative Society Ltd and TINE Ireland Ltd for an instillation at Mogeely, Co. Cork

To Whom It May Concern,

We wish to object to this EPA Licence application on the following grounds.

The making of this determination under Section 83(5) of the Environmental Protection Agency Act 1992, has not been exercised in accordance with the provisions of the EIA Directive and Habitats Directive in that:

Section 11.1 of the Inspector's report on the assessment of the project with regard to *"use of resources"* and the EPA Board's endorsement in issuing its proposed determination has not considered and mitigated the direct, indirect and cumulative impacts of the project on greenhouse gas emissions, ammonia air pollution and water quality. This includes from the milk feed source for the proposed plant where the existing plant processes 120,000 tonnes per annum. The new plant is proposed to bring this to 365,411 tonnes per annum and cheese production form 12,000 tonnes to 37,000 tonnes per annum.

The cumulative and in combination impact of the discharge of effluent via a pipe from the proposed plant to Cork Harbour has not been assessed in accordance with the Environmental Impact Assessment Directive and Habitats Directive. Accordingly, the claim that the favourable conservation status of the Cork Harbour European Site designations would not be affected has not been justified.

The site suitability for intensified dairy processing activity has not been demonstrated in view of the proximity of a housing estate to the proposed new plant, and level of noise and odour complaints which the existing operation by Glanbia has generated

1 OVERARCHING CONSIDERATIONS

In order to inform this objection we wish to set out the following relevant considerations, which derive in large part from the EPA's own published data.

1.1 Prematurity pending CAP reform

This application is premature as the current Common Agricultural Policy (CAP) is to be renewed post-2020. The SWOT analysis of implications for Ireland after the CAP renewal is only now progressing.

The dairy processing and export targets of FoodWise 2025 will need to be reviewed, and the new CAP will need to address the global climate and biodiversity loss emergency as well as the targets set out in the UN Sustainable Development Goals. The continuation of the current CAP industrial bovine agricultural subsidy-generated export model on which the subject proposal is based, is incompatible with the action needed to address these issues.

The initiation of the CAP consultation process as set out by the EU in the carrying out of a SWOT analysis has been put in place by the Department of Agriculture Food and the Marine (DAFM). Attached is An Taisce's submission on the SWOT analysis in which we outline its failure to meet EU guidance (see Appendix 1).

DAFM is also carrying out a general consultation (the AgriFood 2030 strategy). We attach An Taisce's submission, which contains a wide range of considerations relevant to the subject planning application (see Appendix 2).

These issues are not only relevant to Ireland but to the future of food production in Europe and around the world, and particularly the situation that has now arisen from unsustainable expansion of the Dutch Dairy industry**.** The Netherlands is facing major climate and water pollution mitigation obligations as a result of legal action, which means that a significant reduction in its bovine industrial agricultural sector will be required.

The application has arisen through a joint venture between Dairygold and the Norwegian company TINE for a new cheese factory proposed beside the existing Dairygold plant at Moygeely. Norway, which is outside the EU and CAP, is justifiably withdrawing subsidy of dairy exports.

Relevant to this licence application is a current planning application under appeal with An Bord Pleanála for a joint Glanbia-Royal A-ware-JHOK (a Dutch cheese company) partnership for a new cheese pant near Slieverue, Co Kilkenny.

Since this application was lodged, major farmer protests have erupted in the Netherlands against the necessary reduction in bovine agriculture. This should be a warning against further expansion in Ireland and what will arise when the necessary corrective action against Ireland's unsustainable, export driven expansion of bovine agriculture is addressed.

The comparisons of scale are similar. The existing Dairygold Moygeely plant consumes 120 million litres of raw milk annually, averaging 224,647 litres per day to produce 12,000 tonnes of cheese products. This proposed Norwegian plant is to have a capacity throughput of 400,000 litres per day to produce 37,500 tonnes of cheese annually. This means a near trebling of the milk supply intake by Dairygold into Moygeely.

The location attraction of Ireland for both TINE and Royal A–ware is its direct and indirect subsidy regime, supporting expansion of milk production, processing and export of products.

It is submitted that the current impact of dairy processing in Ireland since the lifting of milk quotas as well as the current levels of nitrate fertiliser and fodder import input required, resulting in greenhouse gas generation, ammonia air pollution, nitrate impact on soil and water, and biodiversity losses makes current bovine stocking unsustainable. Any increase in these impacts with the licencing of a new cheese factory is therefore untenable.

The scale of the proposal is significant in relation to the existing Dairygold supply intake in the overall region and the existing cheese plant adjoining the site at Mogeely. Ireland is increasing bovine agriculture dependence at a time when the United Nations Environment Programme (UNEP) recommends that the world needs to move to a more plant based diet.

The UN Sustainable Development Goals should provide an overarching framework for assessing this. As Greta Thunberg has memorably said on her train trip to London in 2019, "you cannot be just a bit sustainable."

Ireland should be conscious to learn the lesson of the 1840s Irish potato famine and the risk of food dependence on single crop. This should exercise attention on the current risk to Irish agriculture through dependence on a single bovine animal species. Over a decade ago, the former Chief Scientist to the UK Government, Sir David King, outlined the major global risks for the century ahead. One of those identified was animal diseases, in particular flu crossovers., over a million sows in China have been lost through entry of a new strain of African Swine Flu[1]. In July 2019 the import of pig meat contaminated with swine flu was reported in Northern Ireland.

Ireland does not perform well on the application of the SDGs and the overlapping imperatives of action on climate change, biodiversity loss, global equity in food access, and healthy diets for the future. At the same time, Ireland is largely dependent on fruit and vegetable imports, undermining food security.

Earlier in 2019 the EAT Lancet Report sought to address global food inequity whereby nearly a billion of the world's poorest have inadequate nutrition while obesity and the diseases of unhealthy diet and lifestyle are rising in the developed world and the rising middle classes in other countries[2].

[1] https://www.nature.com/articles/d41586-019-01269-5

[2] https://eatforum.org/eat-lancet-commission/eat-lancet-commission-summary-report/

Combined with this is the need for an immediate and rapid change in global food and other crop production to stay within the climate, biodiversity loss, nitrate and phosphate use, fresh water use and other boundaries set by a finite and fragile planet[3].

Most relevant to food production both globally and in Ireland are the needs for the rapid reduction in bovine-generated greenhouse gases and to address the nutrition inequity among the world's poorest and the increasingly unhealthy and high carbon footprint diets among the world most affluent and the associated communicable diseases.

Irish export-driven bovine agriculture is conflicting with all of these objectives. Ireland is now increasing its greenhouse gas emissions to a level of nearly 3% annually in 2017 and 2018 the last reported year. There is major conflict in Ireland between agriculture and biodiversity, which, combined with the continued model of planting and felling of non-native conifer forestry, is major cause of accelerating nature loss in Ireland. The National Biodiversity Centre data also shows bird, bee and insect decline.

1.2 Article 17 Report 2019 on status of habitats and species

Since the parallel planning application for this project was application was lodged, the six yearly Article 17 report to the European Commission on the status of habitats and species in Ireland was published in August 2019.

85% of 59 listed habitats in Ireland have 'inadequate' or 'bad' status, and 43% of the 60 European protected species in Ireland have a 'favourable' conservation status. See Table 1 below.

	2013	2019
Favourable habitats	9	15
Inadequate	50	46
Bad	41	39
Total Unfavourable	91	85
Total Declining	31	46

Table 1: 2013 versus 2019- however note comment re improved knowledge driving the change[4].

While the actual status of habitats remained generally unchanged since the previous report, there are ongoing trends of decline in almost half of the habitats (46%). This overall trend is generally being driven by the assessment of the structure and functioning of the habitat, as opposed to reductions in the range and area. These declining trends are most notable in peatland, grassland, woodland and marine habitats.

[3] This has major implications not just for food production but also for the continued global growth of cotton for short life throw-away clothing which is accelerating unsustainable water use.
[4] The actual status between 2013 and 2019 has remained largely the same, and differences are due to improved knowledge, or changes in the thresholds for Structure and Functions.

Over 70% of habitats are impacted by agricultural pressures, and this pressure was ranked of high importance in more than 50% of habitats. Of the agricultural pressures, intensive grazing and overgrazing was the most prevalent pressure, recorded in 39% of habitats. However, the next most prevalent pressure is extensive grazing or under grazing in 15% of habitats. In summary, inappropriate grazing (either too much or too little) is recorded as a serious impact in 44% of habitats.

Land abandonment affects 14% of the habitats, as does diffuse pollution of either lake or groundwater-dependent habitats. In regard to air pollution caused by agriculture, the three most vulnerable habitats exposed to exceedance of the nitrogen deposition threshold were blanket bog, alpine heath and wet heath. Three marine habitats were also strongly affected by pollution from agricultural activities.

The NPWS outlines that there are conservation measures being undertaken in 36 of the 59 habitats. Despite this, the report clearly outlines that in many habitats there are inadequate conservation measures in place to improve the future conservation prospects. Of the 23 habitats categorised as bad status, there are no conservation measures in place for eight of them. For many of the others the measures listed are often quite generalised and most often relate to combating pressures associated with agriculture (promotion of extensive grazing, etc.) through agricultural schemes such as GLAS or EU LIFE projects. Given the ever-declining state of these threatened habitats, it is clear that these measures are not currently effective.

Lake and coastal marine habitats are predominantly affected by excessive nutrient loading from the surrounding catchment, and it is recognised that they can take a long time to fully recover. There was a declining trend for 15% of protected species, with freshwater species most at risk.

Volume 1 of the Article 17 report states:

> "*Grasslands, such as orchid-rich grasslands and hay meadows, have undergone significant losses over the last 10-15 years, with 31% and 28% of the area monitored respectively reported as being lost. These habitats are threatened either by intensification of farming or insufficient grazing and abandonment. There have been some improvements in specific areas, in particular through the Burren Programme and Aran LIFE, which encourage farmers to use their traditional knowledge to restore the native grassland flora and the limestone pavement habitat. The current Common Agricultural Policy provides opportunities within national rural development measures for beneficial agri-environment schemes but, other than in the Burren and Aran Islands, measures to date have not been successful in grassland restoration and need to be reviewed and refined*".

According to a study carried out by BirdWatch Ireland, the Irish population of wintering water birds has declined by almost 40% since the mid-1990s and the numbers of water birds wintering in Ireland has dropped by 15% over the past five years[5].

Figures from the National Biodiversity Data Centre reveal that Irish butterfly populations have plummeted by a rate of 12% over the past decade while bumblebee numbers are down 14% in the last six years[6].

The advertising images of the green fields of Ireland are dependent on increased nitrate fertilizer and animal feed import, some of it GMO soya from across the Atlantic. Peat is being widely used as animal bedding, causing loss of a key carbon store. Ireland is not meeting EU Water Framework Directive targets for enhancing water quality. Ammonia emissions, which are 99% caused by agriculture, have breached EU ceiling thresholds since 2016. Ammonia is an air pollutant and damaging to both human health and eco systems. The cumulative impact of fertilizers, herbicides, pesticides and animal pharmaceuticals into the ecosystem remain inadequately researched. Irish Water identified a number of counties throughout Ireland subject to pesticide exceedances affecting water supplies. In April 2019, affected public water supplies in Cork included Glanmire, Glengarriff and Macroom[7].

In April 2019 Teagasc was obliged to warn Bord Bia of the need to back up the claims made on the sustainability of Irish agriculture or face claims over greenwashing (see Appendix 3).

The export model of Irish beef and dairy requires critical evaluation of its contribution to global inequity in healthy nutrition. The markets being sought by Bord Bia are the rising middle classes in developing countries seeking similarities to the "western" diet in cheese and beef content as well as processed foods. Obesity is emerging as a growing issue in China and other developing countries.

Particularly problematic is the increased manufacture on bovine infant formula in Ireland, which is being marketed in conflict with World Health Organization (WHO) guidance, and where research indicated a higher incidence of obesity in infant formula use as opposed to breastfeeding. This has been extensively researched and cited by McCrory, C, Murray, A.,'The Effect of Breastfeeding on Neuro-Development in Infancy'. (2012); Layte, D.R, *et al,.* 'Social Class Variation in the Predictors of Rapid Growth in Infancy and Obesity at Age 3 Years' (2014) *International Journal of Obesity*, Vol. 38, No. 1, January, 2014, pp. 82-90; McCrory, M.C & Layte, D.R., '*The Effect of Breastfeeding on Children's Educational Test Scores at Nine Years of Age: Results of an Irish Cohort Study'*. (2011) *Social Science & Medicine*, Vol. 72 Issue 9, May 2011, pp. 1515-1521; Cathal, M.C., Layte, D.R.,

[5] https://www.irishtimes.com/news/social-affairs/ireland-s-wintering-waterbirds-down-40-since-mid-1990s-1.3842101

[6] http://www.biodiversityireland.ie/press-release-citizen-science-key-to-tracking-insect-declines-in-ireland/

[7] https://www.irishexaminer.com/breakingnews/ireland/farmers-told-to-follow-best-practice-as-pesticides-found-in-public-water-916094.html

'*Breastfeeding and risk of overweight and obesity at nine years of age*' (2012) Social Science & Medicine.

EAT Lancet has galvanized the need for global action on food access equity, healthy diets and the maintenance of planetary boundaries.

In 2019 the Joint Oireachtas Committee on Climate Action reported on the range of measures needed in Ireland including in the area of food where agriculture accounts for a third of Ireland's entire national emissions and whose emissions are continuing to rise. An Taisce welcomed the JOCCA statement that there "*is a need for a more diversified, resilient, sustainable and equitable model for Irish agriculture."* The Committee recognised that Irish agriculture has become over-reliant on emissions-intensive beef and dairy production.

The Committee observed that: "*Ireland cannot meet its international emissions targets without tackling agricultural sector emissions."* This, contrary to the views emanating from elsewhere, will not occur as a result of trivial savings made via 'smart farming' initiatives but will require a root-and-branch review of our agricultural system and focus.

2. BOVINE AGRICULTURE IMPACTS

2.1 Ireland is exceeding Ammonia threshold limits

The most recent data from the EPA stated that "*Ireland exceeded its emission limits for ammonia for the first time in 2016 and emissions of this gas are increasing. The agriculture sector accounts for virtually all (99 per cent) ammonia emissions in Ireland arising from the annual application 40 million tonnes of animal manures together with 300,000 tonnes of nitrogen in fertilisers."*

Ireland also faces a breach of commitment under the Gothenburg Protocol to reduce emissions by 1% from 2005 levels by 2020 while we have committed to reducing these emissions by 5% by 2030 compared to 2005 levels under the revised EU National Emission Ceilings Directive.

2.2 Irish Agriculture emissions are rising quickly, with a 2.7% increase in 2018 on previous year's level

Ireland committed to cut national emissions by 2020 by 20% relative to 2005. Instead, both agriculture and transport emissions are rising rapidly due to government and industry ignoring climate targets. Agriculture emissions are already higher in 2017 than in 2005, as more fertiliser-fed grass and imported feed are fed to more cattle producing ever more methane and nitrous oxide – both potent, climate-polluting greenhouse gases.

Section 15(1)(d) of the Climate Action and Low Carbon Development Act 2015 under 'Duties of Certain Bodies' (under which a Planning Authority would fall) states that a:

"Relevant body shall in the performance of its function have regard to a range of considerations including:

(d) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the state.

With one of the largest carbon footprints in Europe, Ireland must do to play its part in cutting emissions – every material emitter in the country must play its part in achieving ambitious national goals.

Ireland's agriculture sector has achieved nothing toward Ireland's EU 2020 targets. In fact, Irish agriculture emissions are going in the opposite direction, increasing rapidly due to dairy herd expansion. The industry-produced policies FoodHarvest 2020 and FoodWise 2025 failed to include targets to cut total emissions. Teagasc project emissions will be above 2005 levels to 2050 and beyond.

Conflating our inactions with the potential for increases elsewhere is not justifiable, as Ireland is a laggard in addressing climate change. We are among a small number of countries that will not achieve our 2020 target.

There is no basis to the Irish agricultural industry claims that the agricultural emission reductions can be achieved through yield enhancements and genetics or selective breeding. This is also the position of DAFM. In fact, the Department hosts the industry plans FoodHarvest 2020 and FoodWise 2025 on its website. FoodHarvest 2020 and FoodWise 2025 are official policy for the Irish Government, despite being compiled by industry and lobby representatives with very little input from the Oireachtas or civil society. Simply put, improved yields cannot achieve the level of emissions reductions needed if we are to meet the goals we have set for ourselves by endorsing the Paris Agreement

2.3 Alternative of plant based food production is not being supported

The amount of Irish land used for growing vegetables is the lowest in the EU. As for our "green" credentials, just 1.6% of our land is farmed organically, the second lowest in the EU. We are already behind the curve relative to our European neighbours but we will not catch up by continuing to focus on inefficient and environmentally damaging sectors.

The focus on meat and dairy in Ireland's agriculture means that our own emissions are too high. The Netherlands, a country barely the size of Munster, produces over 80 times more vegetables than Ireland. Ireland has annual horticulture production of €73 million each year compared to €6.1 billion in the Netherlands. Over 90% of our agricultural land is devoted to feeding animals even though animal agriculture is an inherently inefficient and wasteful way of producing.

The large increase in Europe's milk supply and continued beef production is unsustainable. In January 2018, Commissioner Phil Hogan said that the increase in milk supply in Europe was unsustainable and warned farmers in Ireland to heed market signals (see Appendix 4).

A milk powder mountain is already building, and processors make their profits while passing the costs onto farmers and taxpayers, while export to Africa is causing market distortion.

The January 2019, the Lancet Commission EAT report[8] recommended that international climate action as well as meeting planetary boundaries on nitrogen, phosphates, and freshwater protection requires moving to a more plant based diet and reducing red meat consumption. This is also necessary for reversing biodiversity loss and planning for more healthy and equitable global nutrition with a rising population. The report states:

> "*The Commission quantitatively describes a universal healthy reference diet, based on an increase in consumption of healthy foods (such as vegetables, fruits, whole grains, legumes, and nuts), and a decrease in consumption of unhealthy foods (such as red meat, sugar, and refined grains) that would provide major health benefits, and also increase the likelihood of attainment of the Sustainable Development Goals. This is set against the backdrop of defined scientific boundaries that would ensure a safe operating space within six Earth systems, towards sustaining a healthy planet."*

Ireland's animal agriculture is dependent on a combination of subsidies, low taxation and evasion of environmental damage costs. The greenhouse gas taxes that need to be introduced will hit beef and dairy hardest, so the same subsidies would better best go to developing mixed farming with far fewer livestock and more tillage, market gardening and organics production. A future for most Irish farmers requires redirecting subsidies away from beef and dairy into diversification and alternatives.

2.4 Ireland does not produce enough food for itself

The focus on meat and dairy in Ireland's agriculture means that Ireland is not even feeding itself. Research in 2016 showed that on a net calorie basis, Irish food exports feed 1.4 million fewer people than food imports, undercutting the suggestion that Ireland is helping 'feed the world.'

The world is supporting Ireland's cattle with imported fertilizer and feed, which negatively impacts emissions and land-use elsewhere. Over 90% of our agricultural land is devoted to feeding animals even though animal agriculture is an inherently inefficient and wasteful way of producing food. Beef and dairy in Ireland do NOT contribute to global food security. By importing feed and using large amounts of fertiliser, they take away land and resources that could be growing food for human consumption.

[8] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31788-4/fulltext?utm_campaign=tleat19&utm_source=hub_page

The commonly made industry claim made that Ireland is expanding dairy and promoting beef exports "*because that's what we're good at"* and *"someone else would do it instead* " is spurious

At a global level whether in North or South America, New Zealand or Europe, the impact of bovine agriculture needs to be reduced.

3 FAILURE OF PROPOSED DETERMINATION TO ASSESS USE OF RESOURCES AND DIRECT, INDIRECT AND CUMULATIVE IMPACT

Section 11.1 of the Inspector's report, "*EIA and Use of Resources,*" states:

> *"For the purposes of EIA, the environmental factors potentially affected by the use of resources at the activity include: Material assets, water, soil, land and flora and fauna. Based on the above assessment of the installation's use of resources, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.*
>
> *Direct and Indirect Effects: The likelihood of accidental releases of these substances to the environment, as a result of the licensable activity is low in light of the measures outlined below under 'Prevention of Accidents' and the conditions discussed above. I am satisfied that there will not be significant effects on the environment from the use of natural resources from the operation of the activity.*
>
> *Cumulative effects: The installation main processing site is located on the edge of Mogeely Village. Significant cumulative effects on the environment from the use of resources by this installation and other developments are not likely.*"

The Inspector's report and EPA determination has not considered the direct, indirect and cumulative effect in use of resources of the raw milk feed source required by the project increasing from 120,000 tonnes per annum to 356,411 tonnes per annum.

This requires:

1. Addressing the upstream impact of the additional bovine herd numbers and milking parlour capacity increases needed to produce the volume of milk per annum to serve the development;
2. Quantifying, assessing and mitigating the greenhouse gas, ammonia air pollution, nitrate water pollution, fertilizer and fodder import impacts, and transport impacts from the raw milk intake from the surrounding catchment;
3. Identifying and assessing cumulative impacts of the project with other proposed, existing and proposed expanded dairy product, infant formula and milk powder processing regionally and nationally. These includes the other current proposal by Glanbia Royal A-ware in Co Kilkenny

4. The impact of the discharge from the pipeline from Mogeely to Cork Harbour on European Sites;
5. The failure to address the issue of adverse agricultural impacts highlighted in the six yearly Article 17 report to the European Commission on the status of habitats and species in Ireland was published in August 2019.

This licence application therefore has (a) a site impact, (b) a regional milk supply catchment area impact, creating as greenhouse gas emissions, ammonia air pollution, water quality and soil impact, biodiversity impact and (c) a discharge impact.

4. INFORMATION DEFICIENCIES IN THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND NATURA IMPACT STATEMENT

It is submitted that in order to meet

A. The use of resources assessment requirement for Direct, Indirect and Cumulative assessment provisions of the EIA Directive, and
B. The requirement to carry out the Appropriate in accordance with the Habitats Directive, and to address the impact under the Nitrates Directive,

the following key information on the supply inputs for the project is required by the EPA:

.

1. Supply Catchment
    a. What catchment area is it projected that this supply would come from?\

2. Biodiversity Impact
    a. What is the biodiversity impact of the increased milk supply from the catchment required to serve the development?
    b. What relevant data from the National Biodiversity Data Centre is being assessed on the state of biodiversity in the supply catchment?

3. Water Impact
    a. What is the water quality impact of the increased milk supply from the catchment required to serve the development?
    b. What number and percentage of milk supply farms in the supply catchment have a Nitrates Derogation?
    c. What additional seeking or granting of Nitrates Derogations would arise from the servicing of demand created for raw milk by the project?
    d. NOTE: A large-scale map of Nitrates Derogation landholdings, landowner information and stocking information should be provided.

4. Air Pollution Impact
    a. What is the air pollution impact of the increased litres of milk production from 120,000 tonnes to 365,411 tonne PA when Ireland is already in breach of EU ammonia threshold limits since 2016?

5. Greenhouse Gas Emission Impact
    a. What is the annual greenhouse gas emission impact on the tonnage of producing the additional raw milk supply?
    b. What are the emissions from the proposed plant as the issue is left to be resolved to a future "*Energy Efficiency Plan* " in the proposed licence

6. Material Assets
    a. What is the operational life projected for the proposed cheese factory?
    b. What modelling is being carried out on the factory becoming a stranded asset in view of greenhouse gas constraints (see Appendix 5)?

We submit that for the EPA to assess this application in accordance with the EIA and Habitats Directives, these information deficiencies need to be subject to information requests and subsequently provided.

5. THE PIPELINE DISCHARGE ISSUE

Section 8.2 of the inspectors report states:

> *"To cater for expansion and additional volumes of wastewater, Dairygold/TINE propose to cease discharge to the River Womanagh/Kilta and discharge 4,000m3 /day of treated effluent to an Irish Water pipeline which runs for approximately 14km prior to discharging to the North Channel of Great Island in Cork Harbour via a tidal holding tank at Rathcoursey…….The final is effectively a gravity discharge in an existing IW sewer pipe to a tidal holding tank at Rathcoursey.* "

The cumulative impact with other projected discharge increases into this area of Cork Harbour is not properly assessed.

6. THE SITE SUITABILITY ISSUE

That the site suitability for intensified dairy processing activity has not been demonstrated in view of the proximity of a housing estate to the proposed plant, and the level of noise and odour complaints which the existing operation by Glanbia has generated.

Please acknowledge our submission and advise us of any decision made.

Yours sincerely,

Ian Lumley
Advocacy Officer
An Taisce – The National Trust for Ireland

LIST OF ATTACHED APPENDICES

Appendix 1: An Taisce's Submission on the Department of Agriculture, Food and the Marine Consultation on the CAP SWOT Analysis

Appendix 2: An Taisce's Submission on the Department of Agriculture, Food and the Marine's AgriFood 2030 Consultation

Appendix 3: Farming Independent Article: "'Greenwashing' could backfire on farming"

Appendix 4: Farming Independent Article: "Look what happened in the Netherlands – Hogan warns Irish dairy sector on environment"

Appendix 5: A Stranded Asset: The Future of Fossil Fuel and Animal Agriculture Infrastructure in Ireland

Appendix 1: An Taisce's Submission on the Department of Agriculture, Food and the Marine Consultation on the CAP SWOT Analysis

CAP Rural Development Division
Department of Agriculture, Food and the Marine
4C Agriculture House
Kildare Street
Dublin 2

Sent by email to: CAPStrategicPlan@agriculture.gov.ie

11th October 2019

RE. SWOT Analysis for the CAP Strategic Plan Post 2020

To Whom It May Concern,

An Taisce welcomes the opportunity to comment on the SWOT analysis for the CAP Strategic Plan Post 2020.

Please acknowledge our submission and inform of us any further consultations.

Yours faithfully,

Ian Lumley,
Advocacy Officer
An Taisce – The National Trust for Ireland

Introduction

A SWOT analysis for any individual sector in Ireland needs to take a global overview in addressing the global climate and biodiversity loss emergencies, and be informed by relevant UN Sustainable Development Goals.

The documentation submitted with this consultation is entirely inadequate in producing the assessment and guidance needed for a comprehensive and credible SWOT analysis for Irish agriculture and CAP post 2020.

An Taisce would call the Department's attention to Article 103(2) of the COM(2018) 392 final, Regulation of the European Parliament and of the Council[9]:

> "*The SWOT analysis shall be based on the current situation of the area covered by the CAP strategic plan and shall comprise, for each specific objective set out in Article 6(1), a comprehensive overall description of the current situation of the area covered by the CAP Strategic Plan, based on common context indicators and other quantitative and qualitative up-to-date information such as studies, past evaluation reports, sectoral analysis and lessons learned from previous experiences.*
>
> *In addition, that description shall notably highlight in relation to each general and specific objective set out in Articles 5 and 6(1):*
>
> *(a) strengths identified in the CAP Strategic Plan area;*
> *(b) weaknesses identified in the CAP Strategic Plan area;*
> *(c) opportunities identified in the CAP Strategic Plan area;*
> *(d) threats identified in the CAP Strategic Plan area;*
> *(e) where relevant, an analysis of territorial aspects, highlighting those territories specifically targeted by interventions;*
> *(f) where relevant an analysis of sectoral aspects, notably for those sectors subject to specific interventions and/or sectoral programs.*
>
> *For the specific objectives set out in points (d), (e) and (f) of Article 6(1), the SWOT analysis shall refer to the national plans emanating from the legislative instruments referred to in Annex XI.*
>
> *For the specific objective to attract young farmers set out in point (g) of Article 6(1), the SWOT shall include a short analysis of access to land, land mobility and land restructuring, access of finance and credits, and access to knowledge and advice.*
>
> *For the general cross-cutting objective related to fostering and sharing of knowledge, innovation and digitalisation and encouraging their uptake set out in the second*

[9] COM(2018) 392 final, Regulation of the European Parliament and of the Council : http://www.europarl.europa.eu/RegData/docs_autres_institutions/commission_europeenne/com/2018/0392/COM_COM(2018)0392_EN.pdf

subparagraph of Article 5, the SWOT analysis shall also provide relevant information about the functioning of the AKIS and related structures."

An Taisce submits that the SWOT analysis submitted by the Department is not in compliance Article 103(2).

Current CAP Subsidies

The consultation documentation fails to set out the overview needed to assess the sustainability of Ireland's current CAP-subsidised, beef and dairy-dominated agricultural sector along with the other direct and indirect subsidies and supports.

A 2016 CSO report (see Appendix A) revealed that just under €1.5 billion in potentially environmentally damaging subsidies was given out to the agriculture sector in 2016. According to the CSO, agricultural subsidies are included in the list as they can result in nutrient pollution and loss of biodiversity as well as increasing demands on water abstraction.

The total sum does not include the €506 million foregone on green diesel used in tractors and farm machinery but does take into account direct farm payments. The figure also includes revenues foregone through the likes of the zero rate of VAT for fertiliser (€27 million) and agricultural capital acquisitions tax relief (€118 million). Marketing and promotional expenditure from Bord Bia to promote Irish products to the tune of €33 million is also included in the figures for 2016.

The 2019 figures are not yet available but would represent a significant increase on 2016. Furthermore the direct costs to Government of supporting the Irish agricultural sector have not been factored in.

International Context of Current Threats

The consultation documentation systemically fails to address the need for global agriculture to take the lead in greenhouse gas mitigation and biodiversity loss reversal. It also does not address the threat to countries facing increased global heating and water stress, thereby increasing risk for many of the import chains for fruit, vegetables and animal feed upon which Ireland is dependent.

In a country that faced the devastating impact of dependence on single crop species with the potato in the 1840s, the increasing risk of creating an agriculture sector dependent on a single animal species should be recognised. While the draft makes reference to "new and emerging diseases" as a threat and the increased sale of antibiotics as a weakness, the systemic risk to a sector so dependent on a single species is not properly assessed as an overarching threat. Antibiotic resistance to currently containable human and animal diseases and the projection of new crossover bird and animal flu viruses are internationally recognised a major global risk for the century ahead. The UN Food and Agriculture

Organisation (FAO) is coordinating continued, updated, global research on antimicrobial resistance[10].

Tree and crop species equally face increased global risks from resistance to pests or diseases with milder winters from global heating and ecosystem disruption being among the contributory factors. This also creates a risk of impact on monocropped tree species, such as Sitka spruce, from a new pest or disease.

Our submission on the areas defined in the proposed SWOT analysis is as follows.

1. Support viable farm income and resilience across the EU territory to enhance food security

STRENGTHS

Ireland has the land area, soil quality, climate and rural enterprise potential for diversified plant based food production in vegetables, pulses, fruit, nuts, seeds and oils, to substitute for produce currently imported into the EU from Asia (eg. nuts and vegetable oils) and from the EU into Ireland (eg. fruits and vegetables).

WEAKNESSES

Ireland has exceptionally poor food security and is over 90% dependent on fruit and vegetable imports. The current level of direct and indirect subsidies of beef and dairy is unsustainably intensifying beef and dairy exports at a time when EU sustainable food policy requires supporting a rapid global transition to a lower carbon, more plant-based diet, in accordance with UNEP (United Nations Environment Programme) guidance[11].

Ireland's current direct and indirect subsidy of bovine agriculture is unsustainable. This includes the failure to assess and quantify the range of indirect subsidies, such as the cost to the State through the Department of Agriculture, Food and Marine, Teagasc and Bord Bia in supporting the current nitrate fertilizer import-based, bovine-dominated, high greenhouse gas model of agriculture that currently exists.

Claims that Ireland is only suitable for animal-based grassland agriculture are not justified and are undermining research on and support for diversification.

THREATS

Ireland is accumulating an investment and debt burden into increased milking parlour capacity, milk powder processing and beef processing. Current subsidy-driven beef and dairy, which is also evading real cost liability for greenhouse gas

[10] www.fao.org/antimicrobial-resistance/en
[11] Assessing the Environmental Impact of Production and Consumption: http://www.unep.fr/shared/publications/pdf/dtix1262xpa-priorityproductsandmaterials_report.pdf010

emissions and environmental pollution, is not capable of being continued for the following reasons:

- Effective climate action will require a shift to a more plant based diet nationally, within the EU and globally with effective carbon proofing of beef and dairy;
- Effective water quality and biodiversity protection will require reversal of the current Irish "green desert" model of nitrate fertilized rye grass;
- Effective air pollution action will require reduction of ammonia emissions, currently breaching EU threshold limits since 2016, through reduction in nitrate fertilizer application and animal slurry.

Increases in milking parlour investment and in milk and cheese plant processing capacity is creating storage scale debt risk and "stranded asset" exposure.

Threats also arise from dependence on fruit, vegetable, nut and pulse imports from other EU countries, in particular from the Mediterranean, which is exposed to increased global heating and water stress. Similar issues also threaten imports from outside the EU.

OPPORTUNITIES

There is an opportunity to shift direct and indirect subsidy support as well as wider food, nutrition and public policy to produce diversified plant-based foods (vegetables, pulses, fruit, nuts, seeds and oils) to meet national and global food needs for a low carbon future and to contribute to the reversal of biodiversity loss.

2. Enhance market orientation and increase competitiveness including greater focus on research, technology and digitalisation

STRENGTHS

Ireland has the capacity, because of its climate and soil conditions, to produce a range of lower carbon, plant-based foods to meet national, EU and international market needs to address the global climate and biodiversity loss emergency.

WEAKNESSES

The research funded by Teagasc has been unsustainably directed towards perpetuating and increasing subsidy-driven, fertilizer and feed import-dependent, export-driven beef and dairy, to the detriment of diversified plant-based food and other crop production. At the same time, Teagasc has been unable to provide the level of measures required to mitigate the resulting adverse greenhouse gas, water pollution, ammonia air pollution, and biodiversity loss impacts.

There is a risk of legal action against the veracity of Bord Bia's Origin Green or other sustainable marketing claims made for Irish agricultural exports under trade or advertising description law in the United State or other jurisdictions.

Low carbon and sustainably produced, plant-based alternatives to meat and dairy undermine future of beef and dairy market globally.

A threat also arises from allowing lobbying and the increasingly globalised meat and dairy processing sector to pursue low cost expansion, price squeeze producers, and place short-term financial gain over creating sustainable production chains and achieving climate mitigation.

THREATS

Meeting global greenhouse gas targets to stabilise the climate at less than two degrees over preindustrial levels is incompatible with Ireland's current and expanding bovine agriculture model. There is also a sustained failure to address the risk of dependence on single animal species in the face of global threat of bird or animal flu viruses, or antibiotic resistance.

OPPORTUNITIES

Ireland has the opportunity to achieve a significant shift to produce plant-based, lower carbon food, and organic food to meet the level of rapid transition needed in global food production.

3. Improve farmers' position in the value chain

STRENGTHS

Ireland has dispersed landownership and is therefore in a position to benefit from enhanced support for sustainable food and other crop protection and biodiversity enhancement.

WEAKNESSES

The current beef and dairy industry dominated price control regime is driving farmers to increase volumes, thereby increasing their debt burdens.

THREATS

Threats may be divided into those which are certain and those which are uncertain. It is certain that if effective climate action is to be achieved, it will require carbon pricing to steer us toward a more plant based diet, rendering beef and dairy production and processing facilities obsolete, a "stranded asset" much like fossil fuel.

There are major uncertainties over the level of transboundary threat to industrial beef and dairy production as well as the level of pig and poultry exposure to global animal disease risk. The current penetration of African swine flu into China and Southeast Asia is an example of the type of risk facing global animal agricultural. Antibiotic resistance alo poses an uncertain risk impact on animal much as human health in the century ahead. Trees and crops also face transboundary risks from fungus, diseases and pests.

OPPORTUNITIES

Farm based income and rural employment can be better supported by redirection of direct and indirect subsidy support and wider food, nutrition and public policy to produce diversified pant based food: vegetables, pulses, fruit, nuts, seeds and oils, subject to soil suitability and protection, water, and biodiversity.

4. Contribute to climate change mitigation and adaptation, as well as sustainable energy

STRENGTHS

Ireland has the opportunity to take international leadership in climate mitigation through diversified food production, reducing beef and dairy production.

WEAKNESSES

The current Irish agricultural model of increasing beef, and in particular dairy, exports, is incompatible with climate action. The measures being promoted by Teagasc for climate mitigation in carbon soil management, the beef genome scheme, offsetting from forestry and bioenergy, do not remotely the level of carbon neutrality needed for Ireland to play its part globally in stabilising climate at as near as possible to 1.5 degrees above preindustrial levels.

The limited capacity of bioenergy to substitute for fossil fuel-based energy is not properly recognised. There are unrealistic EU and national policy supports and assumptions for biofuel and biomass consumption which do not meet sustainable energy criteria, where used as a dilute with fossil fuel perpetuate inefficient combustion engine or boiler use, and delay transition to genuine renewable energy sources.

THREATS

Effective climate action including, carbon processing for greenhouse gases, renders the Irish beef and dairy dominated production model unviable. The Irish industrial animal agricultural sector is unsustainably dependent on fodder import, which increased to a level of four million tonnes in 2018. Climate variation poses the risk of increased variability of grassland growth, as occurred with the 2013 and 2018 fodder crises. Milking parlours and milk powder production plants face being unusable stranded assets, similar to fossil fuel energy and transport infrastructure.

The current sustainability model and production capacity of bio-methane has not been demonstrated as it is based on continuing and increasing bovine agriculture and nitrogen enriched grassland.

OPPORTUNITIES

Ireland has the opportunity to take global leadership in climate action and reversing biodiversity loss.

5. Foster sustainable development and efficient management of natural resources such as water, soil and air

STRENGTHS

The entire current model of agriculture is dependent on a range of direct and indirect subsidies, which can be redirected into supporting sustainable development.

WEAKNESSES

Irish current industrial animal agriculture model is incompatible with the level of action needed to enhance surface and ground water. Irish agriculture is 90% responsible for the breaching of the EU ammonia ceiling thresholds.

Ireland does not have a strategy in place to protect the organic soil carbon, particularly in the 20% of the national land area which has peat soils. These peat soils time store 75% of organic soil carbon. The extraction of peat for horticulture, control of land burning, land drainage and management, grazing management and current forestry policy and practice are incompatible with peat soil and peatland protection.

THREATS

Continued beef and dairy production levels, pig and poultry factory farming, and non-native short rotation conifer clear-felling are incompatible with achieving sustainable development including the UN Sustainable Development Goals in relation to water and life on land.

OPPORTUNITIES

Ireland has the opportunity to diversify agriculture to provide more crops cultivable on higher quality mineral soils particularly in south and east.

6. Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes

STRENGTHS

Ireland has major capacity to accommodate peatland restoration, riparian area restoration and native forest restoration.

WEAKNESSES

The current Irish beef and dairy expansion based on nitrate fertilised grassland, increasing ammonal levels from all sectors of animal agriculture, and the short rotation clear fell of non-native conifer plantation policy are incompatible with biodiversity protection.

Decades of successive environmental schemes and subsides have failed to reverse biodiversity loss in Ireland.

There is a lack of confidence in the current agricultural inspection and environmental protection enforcement regime in protecting water quality and biodiversity.

The interaction of animal veterinary products, herbicides, and pesticides on the terrestrial, aquatic and avian ecosystems is not being properly researched.

The vetting of sustainably sourcing of foodstuff imports, such as soya, palm oil based products, as well as animal feed, is entirely inadequate.

THREATS

The August 2017 Article 17 six-yearly report by Ireland to the European Commission on the status of EU protected habitats and species in Ireland is showing that agriculture is the major adverse threat to conservation status, with 70% of European designated habitats impacted[12].

Key farmland bird species are declining along with a number of bee species; the National Biodiversity Data Centre is showing an average 3% annual decline in insect species[13]. The extraction of kelp and marine life for animal feed supplements is increasing adverse impacts on marine ecosystems.

OPPORTUNITIES

Ireland has the potential for major biodiversity and landscape enhancement, though peatland protection, habit restoration including in riparian zones, and native woodland restoration.

7. Attract young farmers and facilitate business development in rural areas

STRENGTHS

The national and global need for more plant based food production and biodiversity loss reversal present major opportunities for young farmers and rural economies.

[12] NPWS 2019 Report on the Status of EU Protected Habitats and Species in Ireland (Overview): https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol1_Summary_Article17.pdf

[13] Coordinated by Dr Tomás Murray, Senior Ecologist at the National Biodiversity Data Centre, the Irish butterfly and bumblebee monitoring schemes have revealed rates of decline in these important insects in line with the worldwide decline. "Sadly yes, across the 120 sites in our butterfly monitoring scheme our recorders have detected an average annual decline of 2.6% over the past 10 years, slightly above the global average of 1.8%. Similarly, across the 100 sites in the bumblebee scheme, our recorders have observed average declines of 3.7% per annum over the past six years, markedly above the 1.0% global average." http://www.biodiversityireland.ie/press-release-citizen-science-key-to-tracking-insect-declines-in-ireland/

WEAKNESSES

The current increase in milking investment is targeting minimum age migrant employment, therefore not sustainable employment in rural areas.

THREATS

There is a serious risk of debt burdens created by current milking parlour investment supports.

OPPORTUNITIES

The national and global need for more plant based food production, and biodiversity loss reversal presents major opportunities for young farmers and rural economies. The 2019 EAT Lancet report provides the outline of a more plant-based healthy planet reference diet including a range of crops suitable for cultivation in Irish climatic and soil conditions.

8. Promote employment, growth, social inclusion and local development in rural areas, including bio-economy and sustainable forestry

STRENGTHS

Ireland has a dispersed rural population providing a basis for sustainable employment and diversified rural economy.

WEAKNESSES

The potential for sustainable sourcing of bioenergy in Ireland is limited.

The Irish non-native clear fell short rotation forestry model is not sustainable.

No sustainable fuel source is available or viably efficient for combustion for electricity generation.

There is inadequate research in the potential of biocrops which sequester carbon in building materials, for example, hemp lyme motar as a substitute for high carbon impact gypsum cement.

THREATS

The expansion of the current beef and dairy model faces major "stranded asset" risk if climate and other sustainability targets are to be met. In this regard, the threat is similar to the redundancy and wasted investment in fossil fuel energy and transport infrastructure.

OPPORTUNITIES

The national and global need for more plant based food production and biodiversity protection present major opportunities for young farmers and rural economies.

9. Improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, as well as animal welfare.

STRENGTHS

Ireland has the soil and climate to produce a diversified range of plant based foods.

WEAKNESSES

Ireland's industrial beef and dairy export model and factory pig and poultry sectors do not meet current societal demands for low carbon, sustainably produced food.

THREATS

Ireland's unsustainable beef and dairy expansion and current forestry model create the danger of delaying the transition to sustainable food and other crop production.

OPPORTUNITIES

Ireland has the land, soil, climate and rural enterprise potential to produce diversified plant based food: vegetables, pulses, fruits, nuts, seeds and oils.

Appendix 2: An Taisce's Submission on the Department of Agriculture, Food and the Marine's AgriFood 2030 Consultation

Agri-Food 2030 Strategy Public Consultation,
Department of Agriculture, Food and the Marine,
Economics & Planning Division,
Agriculture House,
Kildare Street,
Dublin,
D02 WK12

Sent by email to: 2030strategy@agriculture.gov.ie

17th October 2019

Re: Public Consultation on Ireland's Agri-Food Strategy to 2030

An Taisce welcome the opportunity to comment on the consultation for Ireland's Agri-Food Strategy to 2030. We would like to raise the following points.

Overview of Irish Agriculture

The current model of agriculture in Ireland is broken, farmers are involved in loss-making activities, with many farm incomes largely provided through CAP payments. The farming model is hugely dependent on unsustainable fertiliser and feed imports, with mechanisms such as the nitrates derogation accommodating unsustainable intensification, while facilitating increased environmental pollution. We are in a biodiversity and climate emergency. Almost 50% of our freshwaters are polluted. Farmland bird populations are collapsing, along with pollinator numbers. Rural depopulation and an aging farming cohort is increasingly undermining rural communities, with farming supports such as TAMS leading to increased investment in machinery which further promotes unsustainable intensification and farmer indebtedness. We are a net importer of food energy, and our import-export agricultural model is extremely vulnerable to international market aberrations. Monocultures are favoured, leaving us open to pests and disease and climate change impacts.

Despite this, given the locked-in regime that currently governs agri-strategy in Ireland, An Taisce has concerns that this consultation will fail to acknowledge the failure of its agri-strategies to date. Indeed, in a recent Farming Independent article Minister Creed outlined his ambition to further expand the intensive agriculture sector, thereby prejudicing this public consultation. If the Minister's comments were accurately reported, it is a clear indication that this consultation is nothing more than a tick box exercise. This is extremely concerning in a time when we are facing such serious ecological and climate breakdown.

Anything other than a radical shift in focus in the next agri-food strategy to domestic food security within a system of enforced limits on absolute annual and cumulative pollution will be environmentally unjustifiable. In an era of runaway climate and ecosystem breakdown, any anthropogenic practice at a large scale that cannot be justified on economic, environmental or ecological grounds must be questioned.

Question 1. How important has Food Wise 2025 and previous strategies been in providing strategic direction for the agri-food sector? How do you think it could be improved in the new strategy?

The introduction to this consultation outlines that:

> *'Food Wise 2025 set out a vision of ambitious but sustainable growth for the sector over the next decade, with key cross cutting themes of improving sustainability, developing human capital, and promoting innovation, competitiveness and market development'*

Food Wise 2025 (FW2025) has been instrumental in terms of driving the economic direction for the agri-food sector, and the resultant dramatic expansion in the dairy industry, much to the detriment of environmental protection. It has not been successful in achieving any form of sustainability.

Food Harvest 2020 (FH2020) and FW2025 were industry-developed strategies, largely driven by agri-food processors and large landowners, with what would appear to have been little input from DAFM and the Government at large. Further, the involvement of smaller farmers and civil society was minimal. The implementation of these industry-driven strategies has been overwhelmingly focused on delivering increased profits to processors and larger land owners, while transferring increased financial risks onto farmers with limited benefit to rural society. The resulting model has locked Ireland into an increasingly unsustainable pathway heavily reliant on increased inputs of imported fertiliser and feed. As such, the social outcomes of these policies should be critiqued in light of this. Who is ultimately benefiting from this approach?

In direct contrast to the economic successes of these programmes, the environmental damage as a result of this farming approach is beyond question. FH2020 and FW2025 have overseen the ongoing decrease in water quality, with the EPA highlighting in the 2016 State of the Environment report that there is a clear correlation between the areas with the highest nitrate and phosphorus concentrations in waters and areas with the most intensive agriculture (in addition to high human density). The data gathered by the EPA are beyond dispute, 53% of river pollution is attributable to agriculture.

Further, biodiversity continues to decline. And the recent Article 17 report authored by the NPWS on our European protected habitats highlighted over 70% of our protected habitats are impacted by agricultural pressures, and this pressure was ranked of high importance in more than 50% of habitats.

Nitrogen pollution in the form of ammonia (NH_3) is almost entirely attributable to agriculture, and poses a serious risk to global biodiversity, leading to species decline via eutrophication, acidification and direct toxicity to a range of habitat types (Kelleghan et al (2019) and references therein). Indeed, the most recent Article 17 report highlighted that agricultural generated air pollution is a particular threat for blanket bog, alpine heath and wet heath, all of which are currently in bad status.

Meanwhile Ireland's GHG emissions also continue to rise, with emissions from agriculture up 2.9% in 2017, and 8.9% since 2010 (when Harvest 2020 was published).

While FW2025 would appear to many to be an economic success, the very real costs, both social and environmental, have not been adequately enumerated, with inadequate enforcement of environmental regulation and disregard of climate action. Significant increases in inputs such as fodder and fertiliser have been allowed because the pollution costs of waste are minimal. The focus continues to be on efficiency measures and on monetising waste, both of which will have the consequence of increasing production and increasing total environmental pollution loading as market demand is currently the only effective limit imposed.

Environmentally sustainable farming is not an add-on to a strategy, the whole strategy should be framed by this. As outlined by multiple reports, the current current agricultural model, if unchecked, will ultimately lead to biodiversity collapse and climate breakdown within the foreseeable future. It is not so much that the next strategy needs to be improved, it is more that it needs to facilitate a radical overhaul in thinking and approach.

As the DCHG recently outlined:

> '*It is unclear if the greater consideration being given to sustainability and biodiversity in sectoral policy is sufficient to turn around the continuing degradation of habitat and species populations, and the threats to key ecosystem services'*

And in specific reference to FW2025

> *'Although in principle, the strategy contains safeguards for biodiversity, water quality and carbon emissions, it is often unclear what how these will be applied at producer level'*

A useful starting point would be enforcing limits on absolute annual and cumulative pollution drivers and pollution, decreasing each over time, in order to make any progress towards achieving sustainability.

Question 2. Do you think that the five cross-cutting themes (environmental sustainability, human capital, competitiveness, innovation and market development) should continue to feature in the next strategy? Are there alternative approaches or themes that you would suggest?

We strongly advise that these "themes" be treated as a hierarchy with environmental sustainability as the critical foundation for social and economic development. As clearly outlined by the DCHG:

> *'biodiversity is central to soil productivity, pollination, pest predation, water retention, clean water provision and the maintenance of commercial fisheries. In each of these areas there is an opportunity to realise market premia and transfer greater value added to those who manage their production using methods that protect natural capital.'*

Any future agri-food strategy must make environmental sustainability its central tenet, in order to ensure the achievement of the reversal of biodiversity loss, climate action aligned with the Paris Agreement, and the safeguarding of air, water and soil quality. The fundamental survival of our agricultural and food production system depends on these functioning as they should, and the restructuring of our agri-food system to reward sustainable production should be a key feature in any new strategy. In that regard FH2020 and FW2025 should be viewed as case studies in how not to design an environmentally sustainable agri-food strategy.

Question 3. What do you think should be the absolute priority for the agri-food sector strategy to 2030?

The immediate priority for Ireland's agri-food sector strategy to 2030 should be imposing strict limits on the import and usage of nitrogen fertiliser and feed. At a minimum, since 2011 represented a major turning point from declining to increasing N use in Ireland, and from decreasing to increasing agri emissions, the import of N-fertiliser and animal feed should be urgently reduced to the 2011 level, with a future plan for a slow, sustained further reduction from those levels.

These inputs are the primary drivers of the recent growth of Ireland's intensive agricultural model. Ireland's increasing dairy herd requires large amounts of grass, fodder and imported feed to sustain itself. This is generally provided by growing perennial rye grass, and the large volume of grass produced largely depends on the use of synthetic fertiliser, generally applied twice per year. Without this fertiliser the same number of cattle could not be sustained on the land. As such, the increased use of synthetic fertiliser underpins the recent rapid and unsustainable expansion of the dairy herd, in addition to imported feed.

Limiting nitrogen fertiliser and feed would ensure that the kind of efficiencies detailed by Teagasc's 2012 and 2019 GHG abatement studies would actually result in real reductions in absolute climate and environmental impact. Agricultural carbon emissions have risen by 9% (1.7Mt CO2 eq) since 2010 (when FH2020 was published). These emission increases are a consequence of the unsustainable agri-food outputs targets under previous agri-food policies, which failed to consider the damaging impact of increased inputs, namely artificial chemical fertiliser and feed.

Synthetic chemical nitrogen fertiliser is a key driver of methane, ammonia and nitrate pollution with knock on climate change, air quality and water pollution impacts, and biodiversity loss. Reducing the inputs of synthetic fertiliser would be a valid starting point from which to redress the ecological and environmental damage which resulted from previous agri-food strategies.

Question 4. Do you agree that these are the most important challenges and emerging trends for Irish agri-food in the period to 2030? Are there others that should be considered?

Above all else, biodiversity loss and climate breakdown are the biggest challenges, not just for Irish agriculture, but for every country, every industry, and the global community. It is the challenge of our generation, and the compromised inheritance of the next. As outlined in our answer to question 2, agriculture depends entirely upon a healthy ecosystem, and a predictable climate, both of which are being undermined by current intensive agricultural practices.

Ecosystem collapse is a real and tangible threat, with identified specific threats for agriculture in regard to increased pest infestations and loss of pollinators, among many others. If the next agri-food strategy does not acknowledge the biological and climatic constraints within which it functions, and adjust its approach accordingly, it will fail on all fronts: economic, environmental and social. The next agri-food strategy must address these issues in the first instance, all the others which are listed are secondary. The current unsustainable agricultural system is proving to be an exercise in diminishing returns for smaller farmers, and this should be rectified at a fundamental ecological level, with the necessary market supports.

Climate targets and environmental sustainability (reversing biodiversity losses and reducing pollution loads) need to be the primary focus for Irish agriculture. The uninterrupted degradation of Irish soils and water bodies, together with the diminution of native biodiversity, must be stopped.

Question 5. What do you think could be done to improve resilience to risks across the sector, from 'farm to fork'?

Reversing the meat and dairy focus of FH2020 and FW2025 is now critical to reviving farm incomes in poorer rural areas, improving resilience to risks for farmers and increasing domestic food security. Climate impacts to food, fodder and feed supplies can be expected to increasingly affect farm and food supply resilience in Ireland, and around the world, in addition to the serious complications posed by pollinator and biodiversity loss. Animal agriculture is an inherently inefficient use of agricultural land, and any new strategy needs to set out how Ireland is to grow food, not grass.

A focus on supporting a sustained transition for farmers to diversify into food crop production, agroforestry and establishing biodiverse and food productive woodland is

necessary. This would reduce the usage of imported feed and synthetic fertiliser, while protecting biodiversity and preventing water pollution. Supports and subsidies need to enable farmers to focus on soil improvement for the best fields, thereby providing for highly productive horticultural and arable production for human food. Sward diversity should be increased, particularly with natural nitrogen fixing species such as legumes and clovers. If these remain in pasture they increase net nourishment per hectare, reducing the need for costly and polluting synthetic fertilisers.

Question 6. What do you think the vision for the sector to 2030 should be?

The vision should be of a resilient and self-sustaining system, which provides food security and promotes rural livelihoods, in addition to climate mitigation, biodiversity protection and improved water quality. This is in keeping with the recommendations of the Joint Oireachtas Committee on Climate Action (JOCCA) report which recommended in its March report:

> *'a need for a more diversified, resilient, sustainable and equitable model for Irish agriculture'*

The current vision of Ireland's food system is one which is predicated on our 'green' image, heavily promoted via Origin Green. However, even state agencies recognise the weaknesses in this approach. A recent quote by Teagasc in the Farming Independent (April 4th 2019) set out a stark warning on the sustainability claims made for Irish food export promotion, warning that greenwashing could backfire:

> *'In (Bord Bia's) Origin Green we are making very strong claims about sustainable performance and environmental performance that is creating a need for credible demonstration of sustainability - the industry needs credible evidence rather than glamour stories.*
>
> *If we are to continue with the sustainability claims that we are a clean, green food producing nation, we need to prove it. Other organisations outside of Ireland will be very quick to pounce on claims that we make.'*

The JOCCA report also recognised that Irish agriculture has become over-reliant on emissions-intensive beef and dairy production. In the new vision Ireland needs to move away from an import based system, and recognise that we are not 'feeding the world'. This is blatantly unsubstantiated given that Ireland is a net importer of food energy (FAO Food Balance data, 2013, Figure 1). As shown in this chart, Ireland is a net importer of food energy in order to produce our exports of meat and dairy, Ireland is subtracting from global food security in a way that is clearly not sustainable.

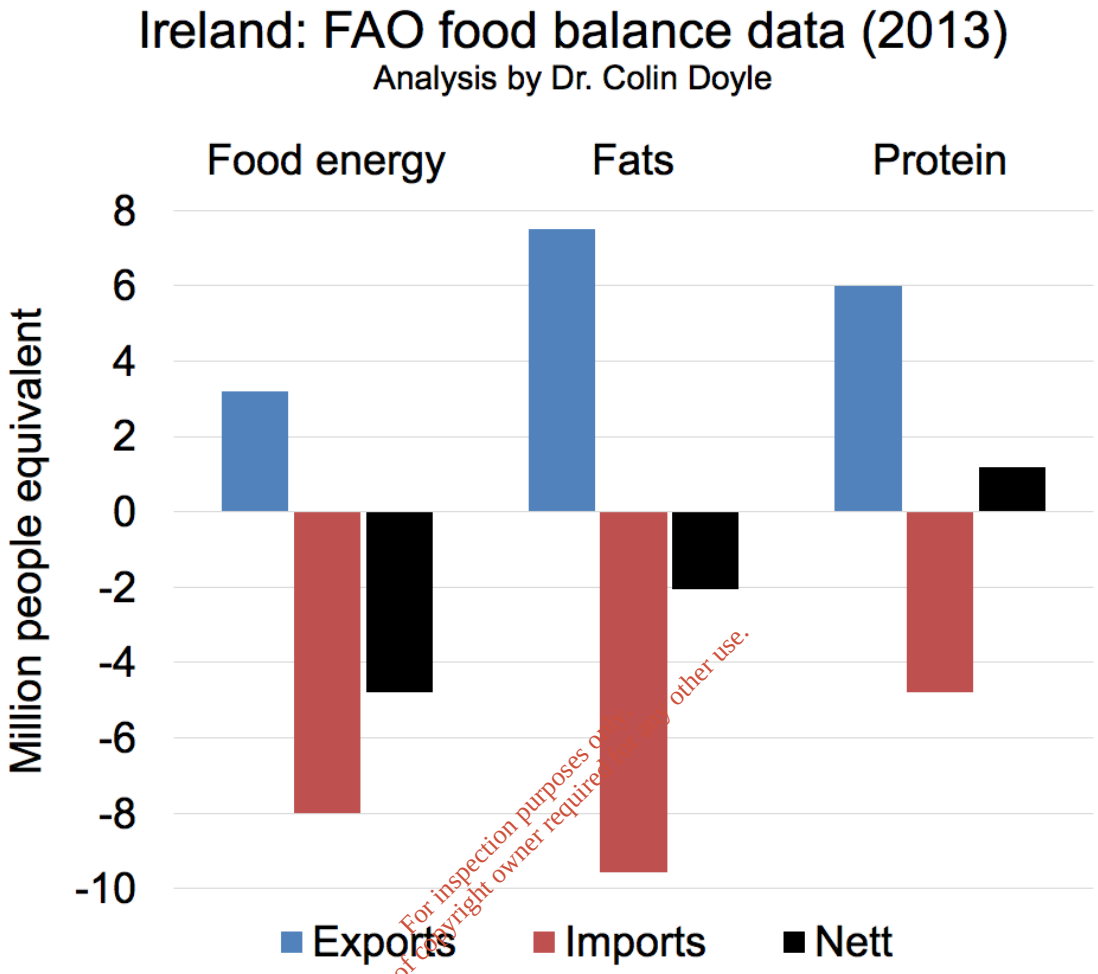

Figure 1: Ireland's FAO food balance data from 2013, from data collated by Doyle (unpublished) The net protein export is facilitated by large imports of synthetic N fertiliser)

There is a widely accepted misrepresentation of the food needs of the world, which are predicated on the perceived requirement for ever increasing volumes of milk and meat, for example in an EPA report by O'Brien and Shalloo (2019):

> *'world population is growing rapidly and is projected to require 58% more milk and 73% more meat by 2050 compared with 2010 consumption levels (FAO, 2011).'*

Many authors disagree with this assessment, as outlined in Billen, Garnier and Lassaletta 2013:

> *'The idea that solving the problems of our hungry planet by further intensifying agriculture in the most productive regions of the world together with developing commercial trade of agricultural products should be considered with great caution. On the contrary, the scenarios we have presented here suggest that reorganizing agro-food systems in order to better match the local food and feed demand by local*

agricultural production, and better use the potential of N2 -fixing crops, would not only 'feed the world', but also considerably reduce, at the source, the dissipation of reactive nitrogen into the environment.'

Ireland's vision should be on creating a localised, diverse and secure food production system, with the focus moving away from ever-growing international expansion for short term economic gain, towards maximising the potential of Ireland's agriculture to provide a vibrant, biodiverse and secure system system for the foreseeable future. This system would provide environmental dividends, and equity to farmers.

Question 7. What do you think will be the most important contribution(s) of farmers/fishermen and the food industry to Irish society in the period 2020 to 2030?

With properly targeted top-down, results-based supports, Irish farmers and fishers can contribute to establishing a localised diverse and secure food production system, with a concomitant regeneration of rural societies and livelihoods.

Question 8. What do you think would be the key words that you would wish to associate with the agriculture, fishing, forestry and food sector in 2030?

Resilience, diversity, equity, carbon-neutrality and self-sustainability. This sustainability must be true sustainability, in line with the highest environmental standards with a view to the whole life cycle analysis of agricultural impacts.

Question 9. What can be done to improve the extent and rate of uptake of practices that improve water and air quality, mitigate greenhouse gas emissions and protect biodiversity? What are the barriers to uptake of those practices?

A key barrier to change is the high level of taxpayer subvention for large-scale animal agriculture and commercial forestry. There is a clear need for rebasing CAP payments (both at European and domestic level) away from a singular focus on dairy and beef and towards growing food which will provide multiple benefits, as outlined above.

Agricultural subsidies must represent money for public goods, with results based payments. Farmers should be financially rewarded for providing spaces for nature, protection for water quality, and reductions in emissions. The current framework does not reward positive environmental action, with environmentally destructive behaviours, such as land drainage and scrub removal, being financially incentivised. One size does not fit all when it comes to viable or sustainable farming practices on different land types, and this should be reflected in any future strategy, with a far greater focus on supporting extensive, lower impact agricultural practices in high nature value farmland and marginal lands, and support for agro-forestry schemes.

Question 10. How can circular agriculture, the blue economy and the bioeconomy be integrated into the next strategy to build new value chain opportunities?

This is a leading question, incorrectly suggesting that these ideas are necessarily good by definition. The ill-defined use of all of these buzzword terms in is emblematic of the poor policy communication by the Department of Agriculture, Food and the Marine (DAFM) in this and previous public consultations. Academic analysis indicates 'bioeconomy', and associated terms, have been misappropriated by "powerful lobbies", the existing economic stakeholders, in a way that "can be seen as a semantic and conceptual hijacking", assuming rather than requiring environmental compatibility.

The only way in which these buzzwords can become meaningful in an agri-strategy is if chemical inputs and feed imports are strictly limited within strongly enforced and reducing pathways. Only in this way can less wasteful, 'circular' flows, within Irish agriculture and land use, become incentivised to use limited resources more efficiently. The primary focus required to give a credible basis for "value chain opportunities" will be if the Irish agricultural sector can show evidence of reduced pollution to climate, air and water, and increased biodiversity (as shown by rigorous and independently verified monitoring).

Question 11. What do you think the drivers and barriers will be for improving the economic viability and performance of farms, fishing businesses and agri-food businesses in the period to 2030?

The major barrier to redirecting Irish agriculture toward sustainable food production is the continued Government supported industrial regime favouring the short-term profits of large agri-food businesses over the long-term well-being of Ireland's rural society and environment. Ensuring sustainable, long-term economic viability and performance will require wholesale changes to the regime on the lines strongly endorsed by the Citizens' Assembly: limiting and taxing environmental pollution from agriculture (ultimately paid for by consumers) and using the revenues raised and redirecting any subsidies toward supporting diversification.

As described in recent research examining the outcome of Ireland's previous agri-food strategies, the biggest barrier to achieving sustainable food production in Ireland is the existing 'iron triangle' of powerful regime actors comprising agri-food processors, the farming organisations (which preferentially represent the interests of large landowners), and government, including the DAFM and Teagasc, which could be argued support industry priorities rather than the long-term welfare of farmers or the public good. The research found that:

> *'Overall, it is apparent that FH2020 is aligned with productivist norms and beliefs of the regime, despite the mantra of sustainable food production and a newly formed collaboration between public and private actors, cannot be classified as a regime change.'*

It highlighted that the "productivist regime" of Irish agriculture has remained stable, and has focused on the major dairy industry expansion:

> *'the Irish dairy sector has failed to make a sustainable transition due to a dominant coalition of powerful actors who have failed to apply radical sustainability action within the dairy industry and have continued to pursue the productivist paradigm.'*

and:

> *'The beliefs of the regime actors are largely in accordance with the productivist paradigm of the regime in that they follow the principles of increasing production and applying input efficiency as a method for mitigating the environmental impacts of such production. Regime stability has resulted as these actors have repeatedly been able to keep rules and norms aligned with their own beliefs. Examples have been the IFA's ability to put pressure on the Government to seek a derogation of the Nitrates Directive, the industry's control over the development of FH2020, and the implementation of sustainability measures since then (OG, SDAS, ASSAP). By enforcing such stable and dominant beliefs throughout the regime, the rules and norms remain entirely 'taken for granted'. This leads to the implications that no regime actor openly acknowledges the problems of rising GHG emissions or diminishing ecosystems. This research thus accepts the third hypothesis because ultimately, regime change has not occurred because beliefs have remained entirely aligned with the regime rules.'*

Question 12. Innovation is now widely recognised as a key driver of long-term growth and sustainable development. What type of approaches and processes could assist the Irish agri-food innovation system to address economic and societal challenges and facilitate increased networking, collaboration and investment in sustainable growth areas?

The question is predicated on the assumption that long-term growth and sustainable development are viable policies, and can co-exist. Innovation within the current intensive framework cannot, and will not provide for sustainability, nor can it address the current challenges facing the agriculture sector on all fronts. Sustainable growth is an oxymoron, as eloquently elucidated by senior economists at the World Bank, Daly and Townsend (1993):

> *'In its physical dimensions the economy is an open subsystem of the earth ecosystem, which is finite, nongrowing, and materially closed. As the economic subsystem grows it incorporates an ever greater proportion of the total ecosystem into itself and must reach a limit at 100 percent, if not before. Therefore its growth is not sustainable. The term "sustainable growth" when applied to the economy is a bad oxymoron'*

Ireland's "Irish agri-food innovation system" is fundamentally focused on scaling up animal food production, yet there is overwhelming evidence that the trajectory of global growth of animal food demand is environmentally unsustainable, inherently inefficient, produces net negative food calorie conversion, and negative health outcomes. All major research reviews

(IPCC, the Lancet, the FAO), conclude that dietary change, particularly reducing beef and dairy consumption, is essential to reverse these trends and to support the SDGs.

As outlined previously, Ireland's net effect on global food security is negative owing to imported feed calories. Moreover, the fertiliser and land which are used to produce local fodder are being diverted from far more efficient uses, such as direct-to-human food crops or native forestry. These indirect impacts on emissions and global food security are uncosted by economic analyses of Irish agriculture, including the economic analysis included by the DAFM with this consultation.

Long term growth in animal agriculture is simply not a realistic or sustainable objective.

Question 13. What actions need to be taken to ensure that Irish agri-food captures more value in both our domestic and export markets?

Any economic evaluation needs to fully cost negative externalities, including those due to the current endemic overuse of synthetic chemicals (fertilisers, pesticides and antibiotics) in Irish agriculture, and the damaging effects of ongoing and cumulative pollution and waste disposal. Without enumerating the current full costs of the agricultural system, any such economic valuation will be both flawed and invalid within guidelines of the Public Spending Code.

Question 14. Are there any other learnings or best-practice examples in other economic sectors or other countries that could be applied to improve the competitiveness and innovation of the Irish agri-food sector?

This consultation question incorrectly implies that competitiveness and innovation are positive for the common good of Ireland's people and environment. On the contrary, a major problem for Ireland is that highly unsustainable outcomes (herd expansion, N-fertiliser overuse, slaughter waste, increases in live animal exports) from agricultural expansion have been unhelpfully driven by efficiency-focused competitiveness and innovation of the livestock-dominated Irish agricultural sector, focused on increasing profits for existing vested interests in this sector.

Other countries are showing far more learning than in Ireland. In France and Denmark, effective limits on nitrogen fertiliser use have driven innovation and increased the competitiveness of diversification and organic farming, boosted by strong marketing to support this transition. The failure to reduce nitrogen pollution in the Netherlands has resulted in a cull of cattle due to insufficient regard for livestock emissions and impacts.

New Zealand have acknowledged the urgent need to cut nitrogen fertiliser use and steadily reduce methane emissions. In addition, their in-depth scientific and policy consideration and media analysis of climate action and pollution provides a stark contrast to the rhetoric of Ireland's Minister of Agriculture, supported by the Department of Agriculture and Teagasc agronomists.

The reports from the Oireachtas Committee on Agriculture have been similarly biased toward maintaining the status quo. It is only recently that Teagasc scientists and the Climate Change Advisory Council have begun to question and critique the evident failure of this rhetoric to deliver sustainable outcomes for climate, nature or farmers. There is clear room for improvement, and this can be modelled on proven European and International best practice examples.

Question 15. What measures need to be taken in the period to 2030 to improve the social sustainability of Irish farms?

As outlined in our answers to previous questions, social sustainability should be an integral consideration in any future agri-food strategy. Irish farmers and fishers can play a key role in establishing an equitable, localised, diverse and secure food production system, with a concomitant regeneration of rural societies and livelihoods. This type of food production system, which would need to be well supported by top down measures and incentives, would breathe new life into rural societies, which are now largely being failed by an ever more industrialised agricultural system which favours large land-owners.

There are tangible examples of where this has been proven to work, and where citizens have been reconnected with farming, land and food, such as in Liege in Belgium, Totnes in Devon and Cloughjordan Ecovillage in Tipperary. These models have been proven to work, and the Irish agri-food sector could adopt such an approach.

Question 16. Given the relatively slow progress being made in generational renewal on farms, what type of policies could be implemented to speed this up?

Supports for mixed farming, especially organic agriculture and horticulture, which offer higher employment rates than cattle farming. The Irish farming sector is also disproportionately dominated by male farmers. The involvement of women in the farming sector could hugely boost the numbers, and incentivisation of mixed and organic farming is a clear path to achieving that. Targeted recruitment of female farmers should be a serious consideration in the drive to recruit the next generation of farmers.
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Question 17. Businesses are increasingly being measured by society not only on their economic performance but also on their corporate and social performance. What should the Irish agri-food industry be doing to address this? What key words would you wish to associate with a socially responsible agri-food sector?

They keywords outlined in our response to question 8 are also valid here: Resilience, diversity, equity, carbon-neutrality and self-sustainability.

Any failure to address the water pollution, biodiversity loss and increases in ammonia and GHG emissions which are largely driven by the current agricultural system should be viewed as a failure to society at large. The current system is putting our collective welfare and future at risk. The current and past agri-food strategies (FH2020 and FW2025) are utterly

failing in regard to social and environmental responsibility, and the agricultural sector is increasingly, and justifiably going to be held to account by society at large. Unless there is a dramatic change of direction in the next agri-food strategy it will be found wanting in this regard.

This may have legal implications for the agri-food sector. A recent high court ruling by Justice Barrett outlined the constitutional right to environmental protection "*that is consistent with the human dignity and well-being of citizens at large*". As such, with an ongoing, environmentally damaging business as usual approach the agricultural sector may find itself on the wrong side of the law.

Question 18. Societal concerns around ethical and sustainable practices, including animal welfare and the use of medicines and other inputs, as well as broader food and feed safety and authenticity concerns, have been growing in prominence and some have connected this with a social licence to farm/fish. How do you think the next strategy should address this to further enhance our credentials in these areas?

The bodies and agencies central to the preparation of FH 2020 and FW2025 clearly did not consider the importance of wider societal concerns when preparing previous industry plans. Animal welfare and ethics were not a key concern in previous agri-food strategies, with economics being the principle driver.

Changing social norms, such as moves towards organic, plant-based diets, should be embraced and supported. The new strategy should seek to meet the demands for lower emissions, less consumption and healthier diets. Rather than see this as a threat to Irish agriculture, and attempt to counter this with 'enhanced environmental credentials', the new strategy should be tailored to accommodate changing consumer demands.

Our credentials do not hold up to scrutiny, and a new approach is necessary, not unfounded 'glamour stories'. Origin Green, the marketing programme from Bord Bia, is rapidly becoming a byword for greenwash advertising rather than sustainability. The backlash has already begun, with the american legal action taken against Kerry Group in regard to the inaccurate 'grass-fed' claim for Kerrygold butter. The next agri-food strategy should focus on providing genuinely sustainable and ethical products, as opposed to an Origin Green type marketing campaign which attempts to justify and greenwash the current failing model. This should be a supporting pillar of a new, societal-based, vision for agriculture in Ireland.

An Taisce would request that you take these comments into account

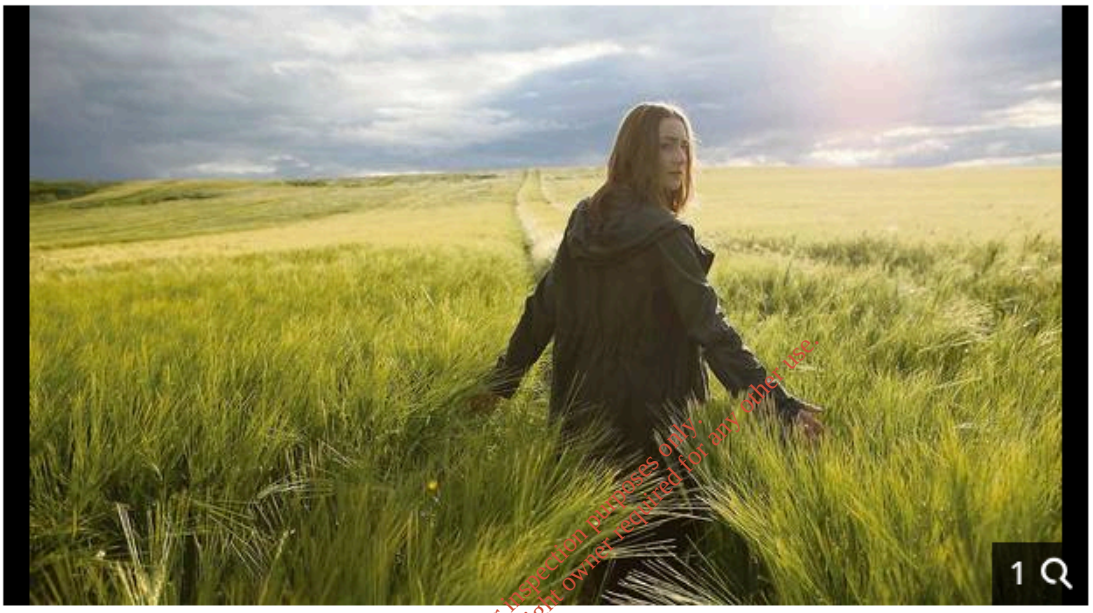
Is mise le meas,

Elaine McGoff, PhD

Natural Environment Officer, An Taisce- The National Trust for Ireland.

Appendix 3: Farming Independent Article: "'Greenwashing' could backfire on farming"

'Greenwashing' could backfire on farming



1 The Origin Green scheme rolled out by Bord Bia

Claire Fox

April 2 2019 6:00 AM

Irish agriculture needs to back up its 'green' image with credible evidence rather than "glamour stories", Teagasc has warned.

"We've seen problems in other countries where they resort to glamour stories and greenwashing on biodiversity performance - that has major repercussions and backfires very quickly," Teagasc researcher and ecologist John Finn told the Farming Independent.

"In (Bord Bia's) Origin Green we are making very strong claims about sustainable performance and environmental performance that is creating a need for credible demonstration of sustainability - the industry needs credible evidence rather than glamour stories.

"If we are to continue with the sustainability claims that we are a clean, green food producing nation, we need to prove it. Other organisations outside of Ireland will be very quick to pounce on claims that we make."

Bord Bia defended the Origin Green programme, saying its ambition was to drive sustainability in food production at every point on the supply chain.

"Since the introduction of carbon footprint assessments on farms in 2013, over 212,000 individual carbon footprint calculations have taken place on over 37,000 dairy farms and 175,000 beef farms," stated Bord Bia.

"The carbon footprint calculations to date show a continued decline in the carbon footprint intensity related to the production of beef and dairy."

A new report on farm sustainability published by Teagasc last week has found that dairy farms are producing up to three times more greenhouse gas and ammonia emissions than other farming sectors.

Teagasc researcher Trevor Donnellan said that while Irish farms have been improving their carbon efficiency, "emissions have been increasing, the dogs on the street know that".

"Emissions will continue to increase until efficiency catches up with growth in activity or until growth in activity comes down to reach the efficiency improvement," he said.

Dairy Industry Ireland spokesman Conor Mulvihill said the dairy model was not only sustainable but "absolutely vital" in delivering proper livelihoods and strong farming enterprises.

He pointed out that the report showed the emissions intensity for the production of a litre of dairy has dropped.

Mr Mulvihill said the dairy industry was committed to improving its carbon efficiency and adhering to water and soil quality targets to ensure the standards and reputation of the industry is maintained.

However, he added that dairy processors were aware that if they could not "deliver measurable improvements", the "regulatory system hammer will drop" and they will also "lose public support for the industry".

The Irish Cattle and Sheep Farmers' Association (ICSA) said the Teagasc sustainability report has blown apart the narrative that suckler and beef farmers are the problem on climate change.

"The suckler herd is clearly not the problem when cattle farming systems produce less than half the emissions of intensive dairy systems per hectare," said ICSA president Patrick Kent.

"Where a hectare of land is switched from sucklers to intensive dairy, GHG emissions double. ICSA has been arguing for a long time that cattle and sheep farmers should not be the scapegoats for our climate change challenges.

"While there is no doubt that all sectors have to do their bit in being more efficient in terms of emissions, it is time for all to recognise that cattle, sheep and tillage systems give rise to between 2 and 4.2 tonnes CO2/ha compared with 8.5 tonnes for intensive dairy.

"This has serious implications for policy. It calls into question the long-standing advice to cattle and sheep farmers to intensify and expand output."

Appendix 4: Farming Independent Article: "Look what happened in the Netherlands – Hogan warns Irish dairy sector on environment"

Look what happened in the Netherlands – Hogan warns Irish dairy sector on environment

1 EU Agriculture and Rural Development Commissioner Phil Hogan

Ciaran Moran

September 11 2018 3:04 PM

Agriculture and Rural Development Commissioner, Phil Hogan has warned the Irish dairy sector that it must maintain its reputation for producing products of the highest standards of safety and sustainability.

Speaking INTL FCStone dairy conference recently, he said that broadly speaking, the European dairy sector has a good story to tell, and good prospects for the future.

But went on to say that "we have to be honest about the potential pitfalls that lie ahead".

Hogan said the appealing image of dairy cows eating grass in wide open fields is a very successful selling point for Irish products.

However, he said if that reputation for quality and sustainability is compromised in any way, there is a clear and present danger of a negative market impact.

"I have used the Netherlands as a cautionary example in Ireland before, and for good reason.

"The Dutch dairy industry has been dealing with an ongoing phosphate problem which has resulted in the reduction of the Dutch dairy herd by around 122,000 cows over nine months, with a consequent reduction in phosphate and nitrates production.

"Currently, Dutch milk supply has fallen by 1.5pc," he said.

Hogan warned that building a more sustainable foundation in relation to inputs "is not a choice: it is a must".

Ireland and all other EU MS need to get the balance right under the Nitrates Directive and the Water Framework Directive, he said and added that failure to act now will lead to negative consequences in the near future – "potentially very negative consequences," he warned.

Read also: The Dutch dairy dilemma - How dairy farmers in the Netherlands are coping with new phosphates regulations

CAP payments

Hogan also spoke on reform of the Common Agricultural Policy (CAP) and said that despite the difficult budgetary context of Brexit and other new EU challenges such as security and migration, the Commission has proposed a strong budget for agriculture.

"Direct payments to farmers are cut moderately by no more than 4%.

"This reduction is complemented with a proposal to achieve greater equity in direct payments per hectare, by means of continued convergence, degressivity and capping," he said.

Hogan highlighted that the direct payments envelope for Ireland in the next budget is €8.15 billion, a reduction of 3.9pc compared to the 2020 baseline allocation.

For rural development, he said the Commission proposes to rebalance EU and national support, so that public support to European rural areas remains largely unchanged.

Appendix 5: A Stranded Asset: The Future of Fossil Fuel and Animal Agriculture Infrastructure in Ireland

A STRANDED ASSET:

THE FUTURE OF INVESTMENT IN FOSSIL FUEL AND ANIMAL AGRICULTURE INFRASTRUCTURE IN IRELAND

Ian Lumley
Advocacy Officer, An Taisce

Sheikh Yamani, the former Saudi Oil minister in the 1970s, memorably said that the Stone Age would not come to an end because people ran out of stone, in considering the future of oil.

The history of transport and energy over the last two centuries is one of progressive redundancy of technologies and infrastructural systems. Examples include the collapse of horse drawn transport in favour of steam or motor engines, or of gas lighting systems in favour of electric.

The same has applied to crop growing and food productions systems, including those in Ireland. Both the Irish flax growing linen industry and the export of grain declined from the mid-19th Century with increasing cheap cotton imports from the US (and later India) and grain imports from North America. In the late 20th Century, the abandonment of sugar beet growing in Ireland in favour of South American sugar cane import left four derelict Irish factories.

Current and future investment in both fossil fuel and animal agriculture infrastructure in Ireland needs to address the limit on future fossil fuel and bovine agricultural emissions set by meeting Paris Agreement targets to stabilise the global climate to as near as possible to 1.5 degrees over preindustrial levels, as well as other planetary boundaries.

Globally this requires most known existing oil and gas to be left in the ground known as "unburnable carbon," and a transition to a more plant based diet.

An increasingly accepted concept is that fossil infrastructure investment will become a "stranded asset." This also applies to animal agriculture investment such as beef processing and milk powder plants in which Ireland has intensively invested. These face redundancy as much as fossil fuel exploration, processing, transmission and combustion infrastructure.

Impact of continued exploration for oil and gas

Globally fossil infrastructure companies whether privately owned, PLCs or State owned like Gas Networks Ireland (GNI) are promoting a continued level of fossil fuel extraction and consumption, which if burned is incompatible with the level of decarbonisation required to

stabilise global climate at as near as possible to 1.5 degrees as required by the Paris Agreement.

In particular, the current policies pursued by GNI, including the token introduction of problematically sourced biogas into the fossil gas pipeline system, are undermining the investment needed in the level of energy conservation and renewables development needed to supersede fossil fuel.

The extension of oil and gas exploration into new areas, and using problematic new technologies, extends from the Arctic wilderness to Central Africa. The 2010 Deepwater Horizon spill clearly highlights the risks involved in deep sea drilling. Oil and gas extraction in the Niger delta has a high carbon impact and is the cause of major local pollution. The increased level of extraction from Canadian Tar Sands is devastating in environmental impact and generates a much higher level of emissions than conventional wells. The Keystone XL pipeline proposal to link Alberta to the southern United States highlights the mounting conflict between the fossil fuel lobby and climate science. Fracking in the US has created new environmental risks and has significant additional climate impact through methane leakage during the extraction process. While Ireland has banned land-based fracking, the proposed development of an LNG terminal in the Shannon Estuary would allow US fracked gas to be injected into the GNI network

Ireland needs to terminate State and general investment resources into fossil fuel exploration and infrastructure and instead invest in efficiency and renewability in energy generation, heating and transport.

Impact of animal agriculture and processing infrastructure

The non-profit organisation, the Institute for Agriculture and Trade Policy, and GRAIN have conducted an analysis of the planet's 35 largest meat and dairy companies. They found that, broadly speaking, the companies were being secretive about their emissions data and few had set hard targets intended to deal with their pollution.

If these industries continue down their current path, the authors of the report warned that the livestock sector could be responsible for 80% of the allowable greenhouse gas budget by 2050.

"There's no other choice. Meat and dairy production in the countries where the top 35 companies dominate must be significantly reduced," said Devlin Kuyek, a researcher at GRAIN. "*These corporations are pushing for trade agreements that will increase exports and emissions, and they are undermining real climate solutions like agro-ecology that benefit farmers, workers and consumers*."

When taken together, the world's top five meat and dairy corporations are already responsible for more emissions than ExxonMobil, Shell or BP[14].

[14] https://www.independent.co.uk/environment/meat-dairy-industry-greenhouse-gas-emissions-fossil-fuels-oil-pollution-iatp-grain-a8451871.html

The January 2019 EAT Lancet report[15] recommends *"doubling in the consumption of healthy foods such as fruits, vegetables, legumes and nuts, and a greater than 50% reduction in global consumption of less healthy foods such as added sugars and red meat."*

The rise of climate litigation

There is growing litigation across the world against fossil fuel exploration and extraction companies and State regulatory bodies, as with the current Friends of the Irish Environment Climate Case against the adequacy of the Irish National Mitigation Plan. The case covers all areas of the Plan including agriculture as much as energy. Similarity the Urgenda case in the Netherlands covered all Dutch Government action on all area of climate emission including agriculture.

Governments, directors of oil and gas exploration and animal agriculture companies, their professional advisors and consultants, and regulatory bodies licensing increased fossil fuel exploration and exploitation or supporting high emission animal agriculture are facing increased transboundary climate litigation.

Oil and gas exploration and extraction companies and regulatory bodies, which could include the Commission for Regulation of Utilities in Ireland in the future, are facing an increasing number of lawsuits that aim to hold them responsible for the impacts of climate change[16]. What the companies or regulators knew about their contributions to global heating will answer some key legal questions, including whether they have continued or issued licenses or consents for exploration, extraction, increased consumption and use of fossil fuel or beef and dairy production while knowing they would cause public harm. Liability also extends to State and public bodies granting licenses for oil and gas exploration, extraction, and continuing or increased consumption of bovine agricultural produce.

These issues now face all oil and gas exploration and extraction companies as well as regulatory bodies in Ireland and also potentially meat and dairy processing companies.

There is a growing momentum for institutional and pension fund divestment from fossil fuels, as fund managers may also be joined to legal action. The same case is also being applied to the damaging impact of animal agriculture and feed crop production in Brazil.

New York joins a growing chorus of institutional investors that have committed to divest in full or part. Cities like Paris, Capetown, and San Francisco; pension funds like the California Public Employees' Retirement System; faith-based groups like the Church of England; philanthropies like the Rockefeller Family Fund; and universities like Oxford, Stanford, and

[15] https://ec.europa.eu/knowledge4policy/sites/know4pol/files/eat-lancet_commission_summary_report.pdf

[16] https://www.climateliabilitynews.org/2018/04/05/climate-change-oil-companies-knew-shell-exxon/

Georgetown have mobilized to divest over $6 trillion in total assets from the fossil fuel industry.

New York City is also suing five major oil companies — BP, Chevron, Conoco Phillips, Exxon, and Royal Dutch Shell—for their contributions to climate change and efforts to cover up scientific evidence of its reality[17].

The global carbon budget

Rapid global warming and the resulting climate change now taking place has a simple cause: Every addition of carbon dioxide (CO_2) due to human causes traps a corresponding additional amount of solar energy in the Earth's atmosphere and ocean. This warming due to the accumulation of CO_2 is irreversible on human timescales – once emitted the CO_2 levels remain raised. Therefore, limiting climate change will require substantial and sustained reductions of greenhouse gas emissions from now on. At some point net emissions will need to be zero to stop further warming. The agreed 2°C limit to global warming (above pre-industrial temperatures) therefore requires an absolute limit on the net carbon emissions that can ever be emitted globally. This remaining total amount of future CO_2 emissions to limit warming to 2°C is called the 'global carbon budget.'

Even such a small change in the Earth's average surface temperature can have profound impacts on the planet's climate, geography, and biosphere that are the basis for all life, and for modern society, including the supply of crops for food. During the last ice age the average global temperature was only about 5°C colder than today, yet sea level was 120m (400ft) lower and many areas populated today were deep under ice. In the last 10,000 years, a very stable climate, due to very steady natural CO_2 levels, enabled agricultural civilisation to emerge and to thrive.

The problem for modern human civilisation which depends on large scale burning of fossil fuels for energy, thereby releasing CO_2, and the particular greenhouse gas impact of bovine agriculture is that at current, increasing rates of annual emissions, the remaining less than 2°C global carbon budget will be entirely exhausted within as little as 15 to 30 years. Moreover, there is enough carbon stored in proven reserves of peat, coal, oil and gas to result in extremely dangerous global warming of 6°C or more.

Due to greenhouse gases from fossil fuel burning, livestock agriculture and deforestation, about 0.8°C of warming has occurred since industrialisation. Now though, due to rapidly rising CO_2 – and also due to other greenhouse gases, especially methane inclusion from bovines – oceans and atmosphere are warming rapidly by accumulating very large amounts of additional solar energy. Continuing the current pathway of ever increasing emissions would mean that a rise of 4°C is entirely possible by 2100. This is a very dangerous rate of warming, faster than any known rise, even faster than during geological extinction events. On this dangerous track, it is quite certain that within ninety years every part of the world

[17] https://phys.org/news/2018-01-nyc-fossil-fuel-investmentshere.html

will be entirely changed and will continue to change, with very serious negative consequences for human civilisation and for all ecosystems. The only certain way for humanity to limit dangerous climate risk is to limit emissions within the available carbon budget. This means rapid and major changes in consumption patterns and energy production are needed. To do this at least cost means starting very soon and proceeding very quickly. The biggest question for humanity is how to divide the less than 2°C carbon budget equitably between nations and future generations. There is no doubt though, that the greatest responsibility to act for change, and act fast, lies with wealthy nations and institutions.

Arguments justifying the continued exploration for fossil gas as a "transition" are also unjustified. In 2018 Oil Change International, alongside 20 partners from around the world, released a new briefing on gas production in G20 countries and why fossil gas is NOT a bridge fuel[18].

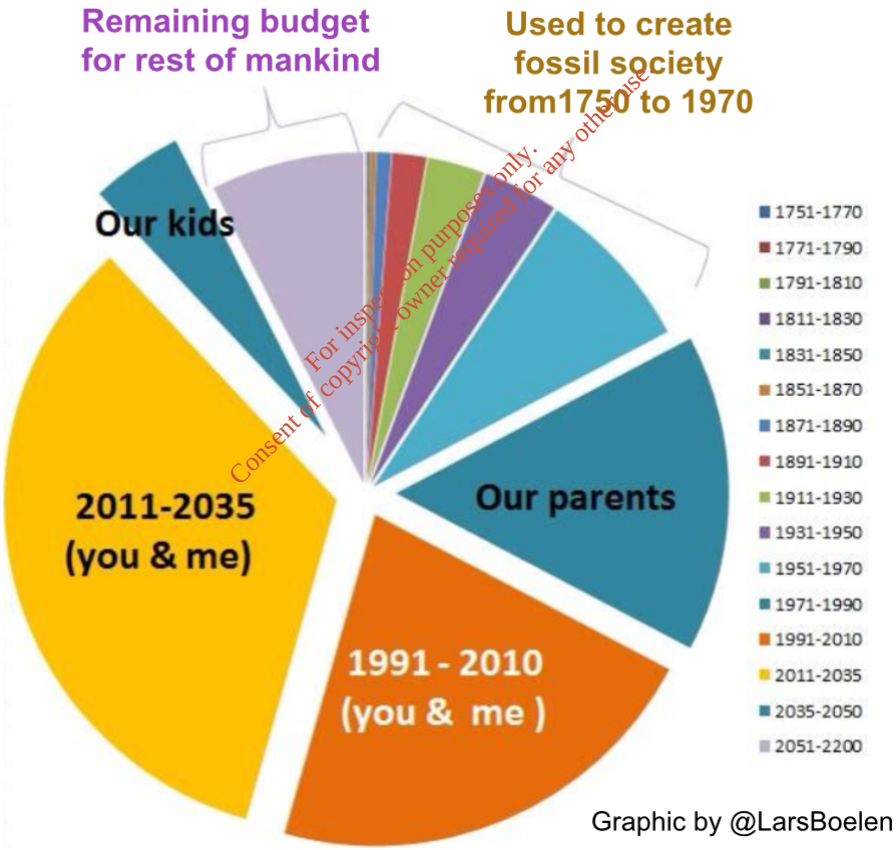


Figure 1 - Carbon Budget per Generation for 2°C: more than a third of emissions have been since 1970. The available remaining budget to limit warming to 2°C is being exhausted rapidly

[18] http://priceofoil.org/debunked-g20-clean-gas-myth

The scientific case for ceasing fossil fuel exploration

There is a convergence of research and reports by leading scientific authorities on the implication of allowing warming to exceed 2°C and the action needed in limiting burning of fossil fuel other climate impacts.

There is an extensive body of peer reviewed literature on unburnable carbon by recognised independent scientists. A good overview is provided in the paper in NATURE-International Journal of Science on 17 Jan 2015 " *The geographical distribution of fossil fuels unused when limiting global warming to 2 °C* Christophe McGlade & Paul Ekins[19]

> *"Policy makers have generally agreed that the average global temperature rise caused by greenhouse gas emissions should not exceed 2 °C above the average global temperature of pre-industrial times1. It has been estimated that to have at least a 50 per cent chance of keeping warming below 2 °C throughout the twenty-first century, the cumulative carbon emissions between 2011 and 2050 need to be limited to around 1,100 gigatonnes of carbon dioxide (Gt CO_2). However, the greenhouse gas emissions contained in present estimates of global fossil fuel reserves are around three times higher than this, and so the unabated use of all current fossil fuel reserves is incompatible with a warming limit of 2 °C. Here we use a single integrated assessment model that contains estimates of the quantities, locations and nature of the world's oil, gas and coal reserves and resources, and which is shown to be consistent with a wide variety of modelling approaches with different assumptions, to explore the implications of this emissions limit for fossil fuel production in different regions. Our results suggest that, globally, a third of oil reserves, half of gas reserves and over 80 per cent of current coal reserves should remain unused from 2010 to 2050 in order to meet the target of 2 °C.*
>
> *We show that development of resources in the Arctic and any increase in unconventional oil production are incommensurate with efforts to limit average global warming to 2 °C. Our results show that policy makers' instincts to exploit rapidly and completely their territorial fossil fuels are, in aggregate, inconsistent with their commitments to this temperature limit. Implementation of this policy commitment would also render unnecessary continued substantial expenditure on fossil fuel exploration, because any new discoveries could not lead to increased aggregate production."*

Among the other most significant reports are the following:

Overexposed by **Global Witness**
This has examined the 2018 Intergovernmental Panel On Climate Change (IPCC) report on 1.5°C and the risks of overinvestment in oil and gas. The report states that:

[19] https://www.nature.com/articles/nature14016

"Overinvestment in oil and gas creates risks for investors, regardless of whether the world is effective in tackling climate change. Either investors face assets being stranded as demand for fossil fuels falls in a transition to a low carbon economy, or the overinvestment contributes to excess emissions from fossil fuels, the failure to transition and the financial costs of a dramatically changed climate."

Read the blog, *Big oil is set to spend $5 trillion on fossil fuels we can't afford to burn.*

Carbon Tracker Initiative and the Grantham Research Institute on Climate Change and the Environment (2013). *Unburnable Carbon 2013: Wasted capital and stranded assets*. London: Carbon Tracker & The Grantham Research Institute.[20]

This assessed the consequence of burning the existing total fossil fuel reserves against the global atmosphere capacity to absorb the emissions generated if temperatures are not to exceed 2 degrees above preindustrial levels.

It concluded that between 60-80% of coal oil and gas reserves of publically listed companies are unburnable if the world is to have any realistic chance of not exceeding global warming of two degrees Celsius. Conversely, if there is effective societal action to limit the extent of climate change, then this will raise the spectre of fossil fuel installations and distribution networks collapsing in value, with the global economy already facing 'the prospect of assets becoming stranded, with the problem only likely to get worse if current investment trends continue - in effect, a 'carbon bubble.'

The World Bank & Potsdam Institute for Climate Impact Research and Climate Analytics (2012). *Turn Down the Heat: Why a 4°C Warmer World Must be Avoided, The World Bank 2012*. Washington: The World Bank.[21]

This report assesses the scientific data on the implications of allowing emissions to exceed a two degree threshold. The abstract for the report states:

"This report focuses on the risks of climate change to development in Sub-Saharan Africa, South East Asia and South Asia. Building on the 2012 report, Turn Down the Heat: Why a 4°C Warmer World Must be Avoided, this new scientific analysis examines the likely impacts of present day, 2°C and 4°C warming on agricultural production, water resources, and coastal vulnerability for affected populations. It finds many significant climate and development impacts are already being felt in some regions, and in some cases multiple threats of increasing extreme heat waves, sea level rise, more severe storms, droughts and floods are expected to have further severe negative implications for the poorest. Climate related extreme events could push households below the poverty trap threshold. High temperature extremes appear likely to affect

[20] http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-2-Web-Version.pdf
[21] http://documents.worldbank.org/curated/en/2012/11/17097815/turn-down-heat-4%C2%B0c-warmer-world-must-avoided

yields of rice, wheat, maize and other important crops, adversely affecting food security. Promoting economic growth and the eradication of poverty and inequality will thus be an increasingly challenging task under future climate change. Immediate steps are needed to help countries adapt to the risks already locked in at current levels of 0.8°C warming, but with ambitious global action to drastically reduce greenhouse gas emissions, many of the worst projected climate impacts could still be avoided by holding warming below 2°."

Price Waterhouse Cooper (2014). *Two degrees of separation: ambition and reality Low Carbon Economy Index 2014*. London: Price Waterhouse Cooper.[22]

The 6th Annual index published by PWC shows the mounting failure in global action on decarbonisation to meet the two degree target:

"The 2014 Low Carbon Economy Index (LCEI) shows an unmistakeable trend. For the sixth year running, the global economy has missed the decarbonisation target needed to limit global warming to 2˚C. Confronted with the challenge in 2013 of decarbonising at 6% a year, we managed only 1.2%. To avoid two degrees of warming, the global economy now needs to decarbonise at 6.2% a year, more than five times faster than the current rate, every year from now till 2100. On our current burn rate we blow our carbon budget by 2034, sixty six years ahead of schedule. This trajectory, based on IPCC data, takes us to four degrees of warming by the end of the century."

Christophe McGlade & Paul Ekins. (2015). The geographical distribution of fossil fuels unused when limiting global warming to 2°C. *Nature*. 517 (187–190).[23]

In January 2015 the international scientific journal Nature published a major paper the level of fossil fuel burring compatible with maintaining a stable climate:

"*If global warming is to be limited in this century to the much-publicized 2 °C rise compared to pre-industrial levels, fossil fuel use and the associated release of greenhouse gases will need to be severely limited. This raises questions regarding the specific quantities and locations of oil, gas and coal that can be safely exploited. Christophe McGlade and Paul Ekins use an integrated assessment model to explore the implications of the 2 °C warming limit for different regions' fossil fuel production. They find that, globally, a third of oil reserves, half of gas reserves and over 80% of current coal reserves should remain unused during the next 40 years in order to meet the 2 °C target and that the development of resources in the Arctic and any increase in unconventional oil production are incompatible with efforts to limit climate change."*

[22] http://www.pwc.co.uk/assets/pdf/low-carbon-economy-index-2014.pdf
[23] http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html

An Taisce
The National Trust for Ireland

EPA
Johnstown Castle Estate
Co Wexford

Submitted online

6th March 2020

License Ref. P1103-01

Objection to proposed determination in respect of an industrial emissions licence application by Dairygold Co Operative Society Ltd and TINE Ireland Ltd for an instillation at Mogeely, Co. Cork

To Whom It May Concern,

We wish to object to this EPA Licence application on the following grounds.

The making of this determination under Section 83(5) of the Environmental Protection Agency Act 1992, has not been exercised in accordance with the provisions of the EIA Directive and Habitats Directive in that:

Section 11.1 of the Inspector's report on the assessment of the project with regard to *"use of resources"* and the EPA Board's endorsement in issuing its proposed determination has not considered and mitigated the direct, indirect and cumulative impacts of the project on greenhouse gas emissions, ammonia air pollution and water quality. This includes from the milk feed source for the proposed plant where the existing plant processes 120,000 tonnes per annum. The new plant is proposed to bring this to 365,411 tonnes per annum and cheese production form 12,000 tonnes to 37,000 tonnes per annum.

The cumulative and in combination impact of the discharge of effluent via a pipe from the proposed plant to Cork Harbour has not been assessed in accordance with the Environmental Impact Assessment Directive and Habitats Directive. Accordingly, the claim that the favourable conservation status of the Cork Harbour European Site designations would not be affected has not been justified.

The site suitability for intensified dairy processing activity has not been demonstrated in view of the proximity of a housing estate to the proposed new plant, and level of noise and odour complaints which the existing operation by Glanbia has generated

1 OVERARCHING CONSIDERATIONS

In order to inform this objection we wish to set out the following relevant considerations, which derive in large part from the EPA's own published data.

1.1 Prematurity pending CAP reform

This application is premature as the current Common Agricultural Policy (CAP) is to be renewed post-2020. The SWOT analysis of implications for Ireland after the CAP renewal is only now progressing.

The dairy processing and export targets of FoodWise 2025 will need to be reviewed, and the new CAP will need to address the global climate and biodiversity loss emergency as well as the targets set out in the UN Sustainable Development Goals. The continuation of the current CAP industrial bovine agricultural subsidy-generated export model on which the subject proposal is based, is incompatible with the action needed to address these issues.

The initiation of the CAP consultation process as set out by the EU in the carrying out of a SWOT analysis has been put in place by the Department of Agriculture Food and the Marine (DAFM). Attached is An Taisce's submission on the SWOT analysis in which we outline its failure to meet EU guidance (see Appendix 1).

DAFM is also carrying out a general consultation (the AgriFood 2030 strategy). We attach An Taisce's submission, which contains a wide range of considerations relevant to the subject planning application (see Appendix 2).

These issues are not only relevant to Ireland but to the future of food production in Europe and around the world, and particularly the situation that has now arisen from unsustainable expansion of the Dutch Dairy industry**.** The Netherlands is facing major climate and water pollution mitigation obligations as a result of legal action, which means that a significant reduction in its bovine industrial agricultural sector will be required.

The application has arisen through a joint venture between Dairygold and the Norwegian company TINE for a new cheese factory proposed beside the existing Dairygold plant at Moygeely. Norway, which is outside the EU and CAP, is justifiably withdrawing subsidy of dairy exports.

Relevant to this licence application is a current planning application under appeal with An Bord Pleanála for a joint Glanbia-Royal A-ware-JHOK (a Dutch cheese company) partnership for a new cheese pant near Slieverue, Co Kilkenny.

Since this application was lodged, major farmer protests have erupted in the Netherlands against the necessary reduction in bovine agriculture. This should be a warning against further expansion in Ireland and what will arise when the necessary corrective action against Ireland's unsustainable, export driven expansion of bovine agriculture is addressed.

The comparisons of scale are similar. The existing Dairygold Moygeely plant consumes 120 million litres of raw milk annually, averaging 224,647 litres per day to produce 12,000 tonnes of cheese products. This proposed Norwegian plant is to have a capacity throughput of 400,000 litres per day to produce 37,500 tonnes of cheese annually. This means a near trebling of the milk supply intake by Dairygold into Moygeely.

The location attraction of Ireland for both TINE and Royal A–ware is its direct and indirect subsidy regime, supporting expansion of milk production, processing and export of products.

It is submitted that the current impact of dairy processing in Ireland since the lifting of milk quotas as well as the current levels of nitrate fertiliser and fodder import input required, resulting in greenhouse gas generation, ammonia air pollution, nitrate impact on soil and water, and biodiversity losses makes current bovine stocking unsustainable. Any increase in these impacts with the licencing of a new cheese factory is therefore untenable.

The scale of the proposal is significant in relation to the existing Dairygold supply intake in the overall region and the existing cheese plant adjoining the site at Mogeely. Ireland is increasing bovine agriculture dependence at a time when the United Nations Environment Programme (UNEP) recommends that the world needs to move to a more plant based diet.

The UN Sustainable Development Goals should provide an overarching framework for assessing this. As Greta Thunberg has memorably said on her train trip to London in 2019, "you cannot be just a bit sustainable."

Ireland should be conscious to learn the lesson of the 1840s Irish potato famine and the risk of food dependence on single crop. This should exercise attention on the current risk to Irish agriculture through dependence on a single bovine animal species. Over a decade ago, the former Chief Scientist to the UK Government, Sir David King, outlined the major global risks for the century ahead. One of those identified was animal diseases, in particular flu crossovers., over a million sows in China have been lost through entry of a new strain of African Swine Flu[1]. In July 2019 the import of pig meat contaminated with swine flu was reported in Northern Ireland.

Ireland does not perform well on the application of the SDGs and the overlapping imperatives of action on climate change, biodiversity loss, global equity in food access, and healthy diets for the future. At the same time, Ireland is largely dependent on fruit and vegetable imports, undermining food security.

Earlier in 2019 the EAT Lancet Report sought to address global food inequity whereby nearly a billion of the world's poorest have inadequate nutrition while obesity and the diseases of unhealthy diet and lifestyle are rising in the developed world and the rising middle classes in other countries[2].

[1] https://www.nature.com/articles/d41586-019-01269-5

[2] https://eatforum.org/eat-lancet-commission/eat-lancet-commission-summary-report/

Combined with this is the need for an immediate and rapid change in global food and other crop production to stay within the climate, biodiversity loss, nitrate and phosphate use, fresh water use and other boundaries set by a finite and fragile planet[3].

Most relevant to food production both globally and in Ireland are the needs for the rapid reduction in bovine-generated greenhouse gases and to address the nutrition inequity among the world's poorest and the increasingly unhealthy and high carbon footprint diets among the world most affluent and the associated communicable diseases.

Irish export-driven bovine agriculture is conflicting with all of these objectives. Ireland is now increasing its greenhouse gas emissions to a level of nearly 3% annually in 2017 and 2018 the last reported year. There is major conflict in Ireland between agriculture and biodiversity, which, combined with the continued model of planting and felling of non-native conifer forestry, is major cause of accelerating nature loss in Ireland. The National Biodiversity Centre data also shows bird, bee and insect decline.

1.2 Article 17 Report 2019 on status of habitats and species

Since the parallel planning application for this project was application was lodged, the six yearly Article 17 report to the European Commission on the status of habitats and species in Ireland was published in August 2019.

85% of 59 listed habitats in Ireland have 'inadequate' or 'bad' status, and 43% of the 60 European protected species in Ireland have a 'favourable' conservation status. See Table 1 below.

	2013	2019
Favourable habitats	9	15
Inadequate	50	46
Bad	41	39
Total Unfavourable	91	85
Total Declining	31	46

Table 1: 2013 versus 2019- however note comment re improved knowledge driving the change[4].

While the actual status of habitats remained generally unchanged since the previous report, there are ongoing trends of decline in almost half of the habitats (46%). This overall trend is generally being driven by the assessment of the structure and functioning of the habitat, as opposed to reductions in the range and area. These declining trends are most notable in peatland, grassland, woodland and marine habitats.

[3] This has major implications not just for food production but also for the continued global growth of cotton for short life throw-away clothing which is accelerating unsustainable water use.
[4] The actual status between 2013 and 2019 has remained largely the same, and differences are due to improved knowledge, or changes in the thresholds for Structure and Functions.

Over 70% of habitats are impacted by agricultural pressures, and this pressure was ranked of high importance in more than 50% of habitats. Of the agricultural pressures, intensive grazing and overgrazing was the most prevalent pressure, recorded in 39% of habitats. However, the next most prevalent pressure is extensive grazing or under grazing in 15% of habitats. In summary, inappropriate grazing (either too much or too little) is recorded as a serious impact in 44% of habitats.

Land abandonment affects 14% of the habitats, as does diffuse pollution of either lake or groundwater-dependent habitats. In regard to air pollution caused by agriculture, the three most vulnerable habitats exposed to exceedance of the nitrogen deposition threshold were blanket bog, alpine heath and wet heath. Three marine habitats were also strongly affected by pollution from agricultural activities.

The NPWS outlines that there are conservation measures being undertaken in 36 of the 59 habitats. Despite this, the report clearly outlines that in many habitats there are inadequate conservation measures in place to improve the future conservation prospects. Of the 23 habitats categorised as bad status, there are no conservation measures in place for eight of them. For many of the others the measures listed are often quite generalised and most often relate to combating pressures associated with agriculture (promotion of extensive grazing, etc.) through agricultural schemes such as GLAS or EU LIFE projects. Given the ever-declining state of these threatened habitats, it is clear that these measures are not currently effective.

Lake and coastal marine habitats are predominantly affected by excessive nutrient loading from the surrounding catchment, and it is recognised that they can take a long time to fully recover. There was a declining trend for 15% of protected species, with freshwater species most at risk.

Volume 1 of the Article 17 report states:

> "*Grasslands, such as orchid-rich grasslands and hay meadows, have undergone significant losses over the last 10-15 years, with 31% and 28% of the area monitored respectively reported as being lost. These habitats are threatened either by intensification of farming or insufficient grazing and abandonment. There have been some improvements in specific areas, in particular through the Burren Programme and Aran LIFE, which encourage farmers to use their traditional knowledge to restore the native grassland flora and the limestone pavement habitat. The current Common Agricultural Policy provides opportunities within national rural development measures for beneficial agri-environment schemes but, other than in the Burren and Aran Islands, measures to date have not been successful in grassland restoration and need to be reviewed and refined*".

According to a study carried out by BirdWatch Ireland, the Irish population of wintering water birds has declined by almost 40% since the mid-1990s and the numbers of water birds wintering in Ireland has dropped by 15% over the past five years[5].

Figures from the National Biodiversity Data Centre reveal that Irish butterfly populations have plummeted by a rate of 12% over the past decade while bumblebee numbers are down 14% in the last six years[6].

The advertising images of the green fields of Ireland are dependent on increased nitrate fertilizer and animal feed import, some of it GMO soya from across the Atlantic. Peat is being widely used as animal bedding, causing loss of a key carbon store. Ireland is not meeting EU Water Framework Directive targets for enhancing water quality. Ammonia emissions, which are 99% caused by agriculture, have breached EU ceiling thresholds since 2016. Ammonia is an air pollutant and damaging to both human health and eco systems. The cumulative impact of fertilizers, herbicides, pesticides and animal pharmaceuticals into the ecosystem remain inadequately researched. Irish Water identified a number of counties throughout Ireland subject to pesticide exceedances affecting water supplies. In April 2019, affected public water supplies in Cork included Glanmire, Glengarriff and Macroom[7].

In April 2019 Teagasc was obliged to warn Bord Bia of the need to back up the claims made on the sustainability of Irish agriculture or face claims over greenwashing (see Appendix 3).

The export model of Irish beef and dairy requires critical evaluation of its contribution to global inequity in healthy nutrition. The markets being sought by Bord Bia are the rising middle classes in developing countries seeking similarities to the "western" diet in cheese and beef content as well as processed foods. Obesity is emerging as a growing issue in China and other developing countries.

Particularly problematic is the increased manufacture on bovine infant formula in Ireland, which is being marketed in conflict with World Health Organization (WHO) guidance, and where research indicated a higher incidence of obesity in infant formula use as opposed to breastfeeding. This has been extensively researched and cited by McCrory, C, Murray, A.,'The Effect of Breastfeeding on Neuro-Development in Infancy'. (2012); Layte, D.R, *et al,.* 'Social Class Variation in the Predictors of Rapid Growth in Infancy and Obesity at Age 3 Years' (2014) *International Journal of Obesity*, Vol. 38, No. 1, January, 2014, pp. 82-90; McCrory, M.C & Layte, D.R., '*The Effect of Breastfeeding on Children's Educational Test Scores at Nine Years of Age: Results of an Irish Cohort Study'*. (2011) *Social Science & Medicine*, Vol. 72 Issue 9, May 2011, pp. 1515-1521; Cathal, M.C., Layte, D.R.,

[5] https://www.irishtimes.com/news/social-affairs/ireland-s-wintering-waterbirds-down-40-since-mid-1990s-1.3842101

[6] http://www.biodiversityireland.ie/press-release-citizen-science-key-to-tracking-insect-declines-in-ireland/

[7] https://www.irishexaminer.com/breakingnews/ireland/farmers-told-to-follow-best-practice-as-pesticides-found-in-public-water-916094.html

'*Breastfeeding and risk of overweight and obesity at nine years of age*' (2012) Social Science & Medicine.

EAT Lancet has galvanized the need for global action on food access equity, healthy diets and the maintenance of planetary boundaries.

In 2019 the Joint Oireachtas Committee on Climate Action reported on the range of measures needed in Ireland including in the area of food where agriculture accounts for a third of Ireland's entire national emissions and whose emissions are continuing to rise. An Taisce welcomed the JOCCA statement that there "*is a need for a more diversified, resilient, sustainable and equitable model for Irish agriculture."* The Committee recognised that Irish agriculture has become over-reliant on emissions-intensive beef and dairy production.

The Committee observed that: "*Ireland cannot meet its international emissions targets without tackling agricultural sector emissions."* This, contrary to the views emanating from elsewhere, will not occur as a result of trivial savings made via 'smart farming' initiatives but will require a root-and-branch review of our agricultural system and focus.

2. BOVINE AGRICULTURE IMPACTS

2.1 Ireland is exceeding Ammonia threshold limits

The most recent data from the EPA stated that "*Ireland exceeded its emission limits for ammonia for the first time in 2016 and emissions of this gas are increasing. The agriculture sector accounts for virtually all (99 per cent) ammonia emissions in Ireland arising from the annual application 40 million tonnes of animal manures together with 300,000 tonnes of nitrogen in fertilisers."*

Ireland also faces a breach of commitment under the Gothenburg Protocol to reduce emissions by 1% from 2005 levels by 2020 while we have committed to reducing these emissions by 5% by 2030 compared to 2005 levels under the revised EU National Emission Ceilings Directive.

2.2 Irish Agriculture emissions are rising quickly, with a 2.7% increase in 2018 on previous year's level

Ireland committed to cut national emissions by 2020 by 20% relative to 2005. Instead, both agriculture and transport emissions are rising rapidly due to government and industry ignoring climate targets. Agriculture emissions are already higher in 2017 than in 2005, as more fertiliser-fed grass and imported feed are fed to more cattle producing ever more methane and nitrous oxide – both potent, climate-polluting greenhouse gases.

Section 15(1)(d) of the Climate Action and Low Carbon Development Act 2015 under 'Duties of Certain Bodies' (under which a Planning Authority would fall) states that a:

"Relevant body shall in the performance of its function have regard to a range of considerations including:

(d) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the state.

With one of the largest carbon footprints in Europe, Ireland must do to play its part in cutting emissions – every material emitter in the country must play its part in achieving ambitious national goals.

Ireland's agriculture sector has achieved nothing toward Ireland's EU 2020 targets. In fact, Irish agriculture emissions are going in the opposite direction, increasing rapidly due to dairy herd expansion. The industry-produced policies FoodHarvest 2020 and FoodWise 2025 failed to include targets to cut total emissions. Teagasc project emissions will be above 2005 levels to 2050 and beyond.

Conflating our inactions with the potential for increases elsewhere is not justifiable, as Ireland is a laggard in addressing climate change. We are among a small number of countries that will not achieve our 2020 target.

There is no basis to the Irish agricultural industry claims that the agricultural emission reductions can be achieved through yield enhancements and genetics or selective breeding. This is also the position of DAFM. In fact, the Department hosts the industry plans FoodHarvest 2020 and FoodWise 2025 on its website. FoodHarvest 2020 and FoodWise 2025 are official policy for the Irish Government, despite being compiled by industry and lobby representatives with very little input from the Oireachtas or civil society. Simply put, improved yields cannot achieve the level of emissions reductions needed if we are to meet the goals we have set for ourselves by endorsing the Paris Agreement

2.3 Alternative of plant based food production is not being supported

The amount of Irish land used for growing vegetables is the lowest in the EU. As for our "green" credentials, just 1.6% of our land is farmed organically, the second lowest in the EU. We are already behind the curve relative to our European neighbours but we will not catch up by continuing to focus on inefficient and environmentally damaging sectors.

The focus on meat and dairy in Ireland's agriculture means that our own emissions are too high. The Netherlands, a country barely the size of Munster, produces over 80 times more vegetables than Ireland. Ireland has annual horticulture production of €73 million each year compared to €6.1 billion in the Netherlands. Over 90% of our agricultural land is devoted to feeding animals even though animal agriculture is an inherently inefficient and wasteful way of producing.

The large increase in Europe's milk supply and continued beef production is unsustainable. In January 2018, Commissioner Phil Hogan said that the increase in milk supply in Europe was unsustainable and warned farmers in Ireland to heed market signals (see Appendix 4).

A milk powder mountain is already building, and processors make their profits while passing the costs onto farmers and taxpayers, while export to Africa is causing market distortion.

The January 2019, the Lancet Commission EAT report[8] recommended that international climate action as well as meeting planetary boundaries on nitrogen, phosphates, and freshwater protection requires moving to a more plant based diet and reducing red meat consumption. This is also necessary for reversing biodiversity loss and planning for more healthy and equitable global nutrition with a rising population. The report states:

> "*The Commission quantitatively describes a universal healthy reference diet, based on an increase in consumption of healthy foods (such as vegetables, fruits, whole grains, legumes, and nuts), and a decrease in consumption of unhealthy foods (such as red meat, sugar, and refined grains) that would provide major health benefits, and also increase the likelihood of attainment of the Sustainable Development Goals. This is set against the backdrop of defined scientific boundaries that would ensure a safe operating space within six Earth systems, towards sustaining a healthy planet."*

Ireland's animal agriculture is dependent on a combination of subsidies, low taxation and evasion of environmental damage costs. The greenhouse gas taxes that need to be introduced will hit beef and dairy hardest, so the same subsidies would better best go to developing mixed farming with far fewer livestock and more tillage, market gardening and organics production. A future for most Irish farmers requires redirecting subsidies away from beef and dairy into diversification and alternatives.

2.4 Ireland does not produce enough food for itself

The focus on meat and dairy in Ireland's agriculture means that Ireland is not even feeding itself. Research in 2016 showed that on a net calorie basis, Irish food exports feed 1.4 million fewer people than food imports, undercutting the suggestion that Ireland is helping 'feed the world.'

The world is supporting Ireland's cattle with imported fertilizer and feed, which negatively impacts emissions and land-use elsewhere. Over 90% of our agricultural land is devoted to feeding animals even though animal agriculture is an inherently inefficient and wasteful way of producing food. Beef and dairy in Ireland do NOT contribute to global food security. By importing feed and using large amounts of fertiliser, they take away land and resources that could be growing food for human consumption.

[8] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31788-4/fulltext?utm_campaign=tleat19&utm_source=hub_page

The commonly made industry claim made that Ireland is expanding dairy and promoting beef exports "*because that's what we're good at"* and *"someone else would do it instead* " is spurious

At a global level whether in North or South America, New Zealand or Europe, the impact of bovine agriculture needs to be reduced.

3 FAILURE OF PROPOSED DETERMINATION TO ASSESS USE OF RESOURCES AND DIRECT, INDIRECT AND CUMULATIVE IMPACT

Section 11.1 of the Inspector's report, "*EIA and Use of Resources,*" states:

> *"For the purposes of EIA, the environmental factors potentially affected by the use of resources at the activity include: Material assets, water, soil, land and flora and fauna. Based on the above assessment of the installation's use of resources, the direct, indirect and cumulative effects have been identified, described and assessed, and are detailed below.*
>
> *Direct and Indirect Effects: The likelihood of accidental releases of these substances to the environment, as a result of the licensable activity is low in light of the measures outlined below under 'Prevention of Accidents' and the conditions discussed above. I am satisfied that there will not be significant effects on the environment from the use of natural resources from the operation of the activity.*
>
> *Cumulative effects: The installation main processing site is located on the edge of Mogeely Village. Significant cumulative effects on the environment from the use of resources by this installation and other developments are not likely.*"

The Inspector's report and EPA determination has not considered the direct, indirect and cumulative effect in use of resources of the raw milk feed source required by the project increasing from 120,000 tonnes per annum to 356,411 tonnes per annum.

This requires:

1. Addressing the upstream impact of the additional bovine herd numbers and milking parlour capacity increases needed to produce the volume of milk per annum to serve the development;
2. Quantifying, assessing and mitigating the greenhouse gas, ammonia air pollution, nitrate water pollution, fertilizer and fodder import impacts, and transport impacts from the raw milk intake from the surrounding catchment;
3. Identifying and assessing cumulative impacts of the project with other proposed, existing and proposed expanded dairy product, infant formula and milk powder processing regionally and nationally. These includes the other current proposal by Glanbia Royal A-ware in Co Kilkenny

4. The impact of the discharge from the pipeline from Mogeely to Cork Harbour on European Sites;
5. The failure to address the issue of adverse agricultural impacts highlighted in the six yearly Article 17 report to the European Commission on the status of habitats and species in Ireland was published in August 2019.

This licence application therefore has (a) a site impact, (b) a regional milk supply catchment area impact, creating as greenhouse gas emissions, ammonia air pollution, water quality and soil impact, biodiversity impact and (c) a discharge impact.

4. INFORMATION DEFICIENCIES IN THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND NATURA IMPACT STATEMENT

It is submitted that in order to meet

A. The use of resources assessment requirement for Direct, Indirect and Cumulative assessment provisions of the EIA Directive, and
B. The requirement to carry out the Appropriate in accordance with the Habitats Directive, and to address the impact under the Nitrates Directive,

the following key information on the supply inputs for the project is required by the EPA:

.

1. Supply Catchment
    a. What catchment area is it projected that this supply would come from?\

2. Biodiversity Impact
    a. What is the biodiversity impact of the increased milk supply from the catchment required to serve the development?
    b. What relevant data from the National Biodiversity Data Centre is being assessed on the state of biodiversity in the supply catchment?

3. Water Impact
    a. What is the water quality impact of the increased milk supply from the catchment required to serve the development?
    b. What number and percentage of milk supply farms in the supply catchment have a Nitrates Derogation?
    c. What additional seeking or granting of Nitrates Derogations would arise from the servicing of demand created for raw milk by the project?
    d. NOTE: A large-scale map of Nitrates Derogation landholdings, landowner information and stocking information should be provided.

4. Air Pollution Impact
    a. What is the air pollution impact of the increased litres of milk production from 120,000 tonnes to 365,411 tonne PA when Ireland is already in breach of EU ammonia threshold limits since 2016?

5. Greenhouse Gas Emission Impact
    a. What is the annual greenhouse gas emission impact on the tonnage of producing the additional raw milk supply?
    b. What are the emissions from the proposed plant as the issue is left to be resolved to a future "*Energy Efficiency Plan* " in the proposed licence

6. Material Assets
    a. What is the operational life projected for the proposed cheese factory?
    b. What modelling is being carried out on the factory becoming a stranded asset in view of greenhouse gas constraints (see Appendix 5)?

We submit that for the EPA to assess this application in accordance with the EIA and Habitats Directives, these information deficiencies need to be subject to information requests and subsequently provided.

5. THE PIPELINE DISCHARGE ISSUE

Section 8.2 of the inspectors report states:

> *"To cater for expansion and additional volumes of wastewater, Dairygold/TINE propose to cease discharge to the River Womanagh/Kilta and discharge 4,000m3 /day of treated effluent to an Irish Water pipeline which runs for approximately 14km prior to discharging to the North Channel of Great Island in Cork Harbour via a tidal holding tank at Rathcoursey…….The final is effectively a gravity discharge in an existing IW sewer pipe to a tidal holding tank at Rathcoursey.* "

The cumulative impact with other projected discharge increases into this area of Cork Harbour is not properly assessed.

6. THE SITE SUITABILITY ISSUE

That the site suitability for intensified dairy processing activity has not been demonstrated in view of the proximity of a housing estate to the proposed plant, and the level of noise and odour complaints which the existing operation by Glanbia has generated.

Please acknowledge our submission and advise us of any decision made.

Yours sincerely,

Ian Lumley
Advocacy Officer
An Taisce – The National Trust for Ireland

LIST OF ATTACHED APPENDICES

Appendix 1: An Taisce's Submission on the Department of Agriculture, Food and the Marine Consultation on the CAP SWOT Analysis

Appendix 2: An Taisce's Submission on the Department of Agriculture, Food and the Marine's AgriFood 2030 Consultation

Appendix 3: Farming Independent Article: "'Greenwashing' could backfire on farming"

Appendix 4: Farming Independent Article: "Look what happened in the Netherlands – Hogan warns Irish dairy sector on environment"

Appendix 5: A Stranded Asset: The Future of Fossil Fuel and Animal Agriculture Infrastructure in Ireland

Appendix 1: An Taisce's Submission on the Department of Agriculture, Food and the Marine Consultation on the CAP SWOT Analysis

CAP Rural Development Division
Department of Agriculture, Food and the Marine
4C Agriculture House
Kildare Street
Dublin 2

Sent by email to: CAPStrategicPlan@agriculture.gov.ie

11th October 2019

RE. SWOT Analysis for the CAP Strategic Plan Post 2020

To Whom It May Concern,

An Taisce welcomes the opportunity to comment on the SWOT analysis for the CAP Strategic Plan Post 2020.

Please acknowledge our submission and inform of us any further consultations.

Yours faithfully,

Ian Lumley,
Advocacy Officer
An Taisce – The National Trust for Ireland

Introduction

A SWOT analysis for any individual sector in Ireland needs to take a global overview in addressing the global climate and biodiversity loss emergencies, and be informed by relevant UN Sustainable Development Goals.

The documentation submitted with this consultation is entirely inadequate in producing the assessment and guidance needed for a comprehensive and credible SWOT analysis for Irish agriculture and CAP post 2020.

An Taisce would call the Department's attention to Article 103(2) of the COM(2018) 392 final, Regulation of the European Parliament and of the Council[9]:

> "*The SWOT analysis shall be based on the current situation of the area covered by the CAP strategic plan and shall comprise, for each specific objective set out in Article 6(1), a comprehensive overall description of the current situation of the area covered by the CAP Strategic Plan, based on common context indicators and other quantitative and qualitative up-to-date information such as studies, past evaluation reports, sectoral analysis and lessons learned from previous experiences.*
>
> *In addition, that description shall notably highlight in relation to each general and specific objective set out in Articles 5 and 6(1):*
>
> *(a) strengths identified in the CAP Strategic Plan area;*
> *(b) weaknesses identified in the CAP Strategic Plan area;*
> *(c) opportunities identified in the CAP Strategic Plan area;*
> *(d) threats identified in the CAP Strategic Plan area;*
> *(e) where relevant, an analysis of territorial aspects, highlighting those territories specifically targeted by interventions;*
> *(f) where relevant an analysis of sectoral aspects, notably for those sectors subject to specific interventions and/or sectoral programs.*
>
> *For the specific objectives set out in points (d), (e) and (f) of Article 6(1), the SWOT analysis shall refer to the national plans emanating from the legislative instruments referred to in Annex XI.*
>
> *For the specific objective to attract young farmers set out in point (g) of Article 6(1), the SWOT shall include a short analysis of access to land, land mobility and land restructuring, access of finance and credits, and access to knowledge and advice.*
>
> *For the general cross-cutting objective related to fostering and sharing of knowledge, innovation and digitalisation and encouraging their uptake set out in the second*

[9] COM(2018) 392 final, Regulation of the European Parliament and of the Council : http://www.europarl.europa.eu/RegData/docs_autres_institutions/commission_europeenne/com/2018/0392/COM_COM(2018)0392_EN.pdf

subparagraph of Article 5, the SWOT analysis shall also provide relevant information about the functioning of the AKIS and related structures."

An Taisce submits that the SWOT analysis submitted by the Department is not in compliance Article 103(2).

Current CAP Subsidies

The consultation documentation fails to set out the overview needed to assess the sustainability of Ireland's current CAP-subsidised, beef and dairy-dominated agricultural sector along with the other direct and indirect subsidies and supports.

A 2016 CSO report (see Appendix A) revealed that just under €1.5 billion in potentially environmentally damaging subsidies was given out to the agriculture sector in 2016. According to the CSO, agricultural subsidies are included in the list as they can result in nutrient pollution and loss of biodiversity as well as increasing demands on water abstraction.

The total sum does not include the €506 million foregone on green diesel used in tractors and farm machinery but does take into account direct farm payments. The figure also includes revenues foregone through the likes of the zero rate of VAT for fertiliser (€27 million) and agricultural capital acquisitions tax relief (€118 million). Marketing and promotional expenditure from Bord Bia to promote Irish products to the tune of €33 million is also included in the figures for 2016.

The 2019 figures are not yet available but would represent a significant increase on 2016. Furthermore the direct costs to Government of supporting the Irish agricultural sector have not been factored in.

International Context of Current Threats

The consultation documentation systemically fails to address the need for global agriculture to take the lead in greenhouse gas mitigation and biodiversity loss reversal. It also does not address the threat to countries facing increased global heating and water stress, thereby increasing risk for many of the import chains for fruit, vegetables and animal feed upon which Ireland is dependent.

In a country that faced the devastating impact of dependence on single crop species with the potato in the 1840s, the increasing risk of creating an agriculture sector dependent on a single animal species should be recognised. While the draft makes reference to "new and emerging diseases" as a threat and the increased sale of antibiotics as a weakness, the systemic risk to a sector so dependent on a single species is not properly assessed as an overarching threat. Antibiotic resistance to currently containable human and animal diseases and the projection of new crossover bird and animal flu viruses are internationally recognised a major global risk for the century ahead. The UN Food and Agriculture

Organisation (FAO) is coordinating continued, updated, global research on antimicrobial resistance[10].

Tree and crop species equally face increased global risks from resistance to pests or diseases with milder winters from global heating and ecosystem disruption being among the contributory factors. This also creates a risk of impact on monocropped tree species, such as Sitka spruce, from a new pest or disease.

Our submission on the areas defined in the proposed SWOT analysis is as follows.

1. Support viable farm income and resilience across the EU territory to enhance food security

STRENGTHS

Ireland has the land area, soil quality, climate and rural enterprise potential for diversified plant based food production in vegetables, pulses, fruit, nuts, seeds and oils, to substitute for produce currently imported into the EU from Asia (eg. nuts and vegetable oils) and from the EU into Ireland (eg. fruits and vegetables).

WEAKNESSES

Ireland has exceptionally poor food security and is over 90% dependent on fruit and vegetable imports. The current level of direct and indirect subsidies of beef and dairy is unsustainably intensifying beef and dairy exports at a time when EU sustainable food policy requires supporting a rapid global transition to a lower carbon, more plant-based diet, in accordance with UNEP (United Nations Environment Programme) guidance[11].

Ireland's current direct and indirect subsidy of bovine agriculture is unsustainable. This includes the failure to assess and quantify the range of indirect subsidies, such as the cost to the State through the Department of Agriculture, Food and Marine, Teagasc and Bord Bia in supporting the current nitrate fertilizer import-based, bovine-dominated, high greenhouse gas model of agriculture that currently exists.

Claims that Ireland is only suitable for animal-based grassland agriculture are not justified and are undermining research on and support for diversification.

THREATS

Ireland is accumulating an investment and debt burden into increased milking parlour capacity, milk powder processing and beef processing. Current subsidy-driven beef and dairy, which is also evading real cost liability for greenhouse gas

[10] www.fao.org/antimicrobial-resistance/en
[11] Assessing the Environmental Impact of Production and Consumption: http://www.unep.fr/shared/publications/pdf/dtix1262xpa-priorityproductsandmaterials_report.pdf010

emissions and environmental pollution, is not capable of being continued for the following reasons:

- Effective climate action will require a shift to a more plant based diet nationally, within the EU and globally with effective carbon proofing of beef and dairy;
- Effective water quality and biodiversity protection will require reversal of the current Irish "green desert" model of nitrate fertilized rye grass;
- Effective air pollution action will require reduction of ammonia emissions, currently breaching EU threshold limits since 2016, through reduction in nitrate fertilizer application and animal slurry.

Increases in milking parlour investment and in milk and cheese plant processing capacity is creating storage scale debt risk and "stranded asset" exposure.

Threats also arise from dependence on fruit, vegetable, nut and pulse imports from other EU countries, in particular from the Mediterranean, which is exposed to increased global heating and water stress. Similar issues also threaten imports from outside the EU.

OPPORTUNITIES

There is an opportunity to shift direct and indirect subsidy support as well as wider food, nutrition and public policy to produce diversified plant-based foods (vegetables, pulses, fruit, nuts, seeds and oils) to meet national and global food needs for a low carbon future and to contribute to the reversal of biodiversity loss.

2. Enhance market orientation and increase competitiveness including greater focus on research, technology and digitalisation

STRENGTHS

Ireland has the capacity, because of its climate and soil conditions, to produce a range of lower carbon, plant-based foods to meet national, EU and international market needs to address the global climate and biodiversity loss emergency.

WEAKNESSES

The research funded by Teagasc has been unsustainably directed towards perpetuating and increasing subsidy-driven, fertilizer and feed import-dependent, export-driven beef and dairy, to the detriment of diversified plant-based food and other crop production. At the same time, Teagasc has been unable to provide the level of measures required to mitigate the resulting adverse greenhouse gas, water pollution, ammonia air pollution, and biodiversity loss impacts.

There is a risk of legal action against the veracity of Bord Bia's Origin Green or other sustainable marketing claims made for Irish agricultural exports under trade or advertising description law in the United State or other jurisdictions.

Low carbon and sustainably produced, plant-based alternatives to meat and dairy undermine future of beef and dairy market globally.

A threat also arises from allowing lobbying and the increasingly globalised meat and dairy processing sector to pursue low cost expansion, price squeeze producers, and place short-term financial gain over creating sustainable production chains and achieving climate mitigation.

THREATS

Meeting global greenhouse gas targets to stabilise the climate at less than two degrees over preindustrial levels is incompatible with Ireland's current and expanding bovine agriculture model. There is also a sustained failure to address the risk of dependence on single animal species in the face of global threat of bird or animal flu viruses, or antibiotic resistance.

OPPORTUNITIES

Ireland has the opportunity to achieve a significant shift to produce plant-based, lower carbon food, and organic food to meet the level of rapid transition needed in global food production.

3. Improve farmers' position in the value chain

STRENGTHS

Ireland has dispersed landownership and is therefore in a position to benefit from enhanced support for sustainable food and other crop protection and biodiversity enhancement.

WEAKNESSES

The current beef and dairy industry dominated price control regime is driving farmers to increase volumes, thereby increasing their debt burdens.

THREATS

Threats may be divided into those which are certain and those which are uncertain. It is certain that if effective climate action is to be achieved, it will require carbon pricing to steer us toward a more plant based diet, rendering beef and dairy production and processing facilities obsolete, a "stranded asset" much like fossil fuel.

There are major uncertainties over the level of transboundary threat to industrial beef and dairy production as well as the level of pig and poultry exposure to global animal disease risk. The current penetration of African swine flu into China and Southeast Asia is an example of the type of risk facing global animal agricultural. Antibiotic resistance alo poses an uncertain risk impact on animal much as human health in the century ahead. Trees and crops also face transboundary risks from fungus, diseases and pests.

OPPORTUNITIES

Farm based income and rural employment can be better supported by redirection of direct and indirect subsidy support and wider food, nutrition and public policy to produce diversified pant based food: vegetables, pulses, fruit, nuts, seeds and oils, subject to soil suitability and protection, water, and biodiversity.

4. Contribute to climate change mitigation and adaptation, as well as sustainable energy

STRENGTHS

Ireland has the opportunity to take international leadership in climate mitigation through diversified food production, reducing beef and dairy production.

WEAKNESSES

The current Irish agricultural model of increasing beef, and in particular dairy, exports, is incompatible with climate action. The measures being promoted by Teagasc for climate mitigation in carbon soil management, the beef genome scheme, offsetting from forestry and bioenergy, do not remotely the level of carbon neutrality needed for Ireland to play its part globally in stabilising climate at as near as possible to 1.5 degrees above preindustrial levels.

The limited capacity of bioenergy to substitute for fossil fuel-based energy is not properly recognised. There are unrealistic EU and national policy supports and assumptions for biofuel and biomass consumption which do not meet sustainable energy criteria, where used as a dilute with fossil fuel perpetuate inefficient combustion engine or boiler use, and delay transition to genuine renewable energy sources.

THREATS

Effective climate action including, carbon processing for greenhouse gases, renders the Irish beef and dairy dominated production model unviable. The Irish industrial animal agricultural sector is unsustainably dependent on fodder import, which increased to a level of four million tonnes in 2018. Climate variation poses the risk of increased variability of grassland growth, as occurred with the 2013 and 2018 fodder crises. Milking parlours and milk powder production plants face being unusable stranded assets, similar to fossil fuel energy and transport infrastructure.

The current sustainability model and production capacity of bio-methane has not been demonstrated as it is based on continuing and increasing bovine agriculture and nitrogen enriched grassland.

OPPORTUNITIES

Ireland has the opportunity to take global leadership in climate action and reversing biodiversity loss.

5. Foster sustainable development and efficient management of natural resources such as water, soil and air

STRENGTHS

The entire current model of agriculture is dependent on a range of direct and indirect subsidies, which can be redirected into supporting sustainable development.

WEAKNESSES

Irish current industrial animal agriculture model is incompatible with the level of action needed to enhance surface and ground water. Irish agriculture is 90% responsible for the breaching of the EU ammonia ceiling thresholds.

Ireland does not have a strategy in place to protect the organic soil carbon, particularly in the 20% of the national land area which has peat soils. These peat soils time store 75% of organic soil carbon. The extraction of peat for horticulture, control of land burning, land drainage and management, grazing management and current forestry policy and practice are incompatible with peat soil and peatland protection.

THREATS

Continued beef and dairy production levels, pig and poultry factory farming, and non-native short rotation conifer clear-felling are incompatible with achieving sustainable development including the UN Sustainable Development Goals in relation to water and life on land.

OPPORTUNITIES

Ireland has the opportunity to diversify agriculture to provide more crops cultivable on higher quality mineral soils particularly in south and east.

6. Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitats and landscapes

STRENGTHS

Ireland has major capacity to accommodate peatland restoration, riparian area restoration and native forest restoration.

WEAKNESSES

The current Irish beef and dairy expansion based on nitrate fertilised grassland, increasing ammonal levels from all sectors of animal agriculture, and the short rotation clear fell of non-native conifer plantation policy are incompatible with biodiversity protection.

Decades of successive environmental schemes and subsides have failed to reverse biodiversity loss in Ireland.

There is a lack of confidence in the current agricultural inspection and environmental protection enforcement regime in protecting water quality and biodiversity.

The interaction of animal veterinary products, herbicides, and pesticides on the terrestrial, aquatic and avian ecosystems is not being properly researched.

The vetting of sustainably sourcing of foodstuff imports, such as soya, palm oil based products, as well as animal feed, is entirely inadequate.

THREATS

The August 2017 Article 17 six-yearly report by Ireland to the European Commission on the status of EU protected habitats and species in Ireland is showing that agriculture is the major adverse threat to conservation status, with 70% of European designated habitats impacted[12].

Key farmland bird species are declining along with a number of bee species; the National Biodiversity Data Centre is showing an average 3% annual decline in insect species[13]. The extraction of kelp and marine life for animal feed supplements is increasing adverse impacts on marine ecosystems.

OPPORTUNITIES

Ireland has the potential for major biodiversity and landscape enhancement, though peatland protection, habit restoration including in riparian zones, and native woodland restoration.

7. Attract young farmers and facilitate business development in rural areas

STRENGTHS

The national and global need for more plant based food production and biodiversity loss reversal present major opportunities for young farmers and rural economies.

[12] NPWS 2019 Report on the Status of EU Protected Habitats and Species in Ireland (Overview): https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol1_Summary_Article17.pdf

[13] Coordinated by Dr Tomás Murray, Senior Ecologist at the National Biodiversity Data Centre, the Irish butterfly and bumblebee monitoring schemes have revealed rates of decline in these important insects in line with the worldwide decline. "Sadly yes, across the 120 sites in our butterfly monitoring scheme our recorders have detected an average annual decline of 2.6% over the past 10 years, slightly above the global average of 1.8%. Similarly, across the 100 sites in the bumblebee scheme, our recorders have observed average declines of 3.7% per annum over the past six years, markedly above the 1.0% global average." http://www.biodiversityireland.ie/press-release-citizen-science-key-to-tracking-insect-declines-in-ireland/

WEAKNESSES

The current increase in milking investment is targeting minimum age migrant employment, therefore not sustainable employment in rural areas.

THREATS

There is a serious risk of debt burdens created by current milking parlour investment supports.

OPPORTUNITIES

The national and global need for more plant based food production, and biodiversity loss reversal presents major opportunities for young farmers and rural economies. The 2019 EAT Lancet report provides the outline of a more plant-based healthy planet reference diet including a range of crops suitable for cultivation in Irish climatic and soil conditions.

8. Promote employment, growth, social inclusion and local development in rural areas, including bio-economy and sustainable forestry

STRENGTHS

Ireland has a dispersed rural population providing a basis for sustainable employment and diversified rural economy.

WEAKNESSES

The potential for sustainable sourcing of bioenergy in Ireland is limited.

The Irish non-native clear fell short rotation forestry model is not sustainable.

No sustainable fuel source is available or viably efficient for combustion for electricity generation.

There is inadequate research in the potential of biocrops which sequester carbon in building materials, for example, hemp lyme motar as a substitute for high carbon impact gypsum cement.

THREATS

The expansion of the current beef and dairy model faces major "stranded asset" risk if climate and other sustainability targets are to be met. In this regard, the threat is similar to the redundancy and wasted investment in fossil fuel energy and transport infrastructure.

OPPORTUNITIES

The national and global need for more plant based food production and biodiversity protection present major opportunities for young farmers and rural economies.

9. Improve the response of EU agriculture to societal demands on food and health, including safe, nutritious and sustainable food, as well as animal welfare.

STRENGTHS

Ireland has the soil and climate to produce a diversified range of plant based foods.

WEAKNESSES

Ireland's industrial beef and dairy export model and factory pig and poultry sectors do not meet current societal demands for low carbon, sustainably produced food.

THREATS

Ireland's unsustainable beef and dairy expansion and current forestry model create the danger of delaying the transition to sustainable food and other crop production.

OPPORTUNITIES

Ireland has the land, soil, climate and rural enterprise potential to produce diversified plant based food: vegetables, pulses, fruits, nuts, seeds and oils.

Appendix 2: An Taisce's Submission on the Department of Agriculture, Food and the Marine's AgriFood 2030 Consultation

Agri-Food 2030 Strategy Public Consultation,
Department of Agriculture, Food and the Marine,
Economics & Planning Division,
Agriculture House,
Kildare Street,
Dublin,
D02 WK12

Sent by email to: 2030strategy@agriculture.gov.ie

17th October 2019

Re: Public Consultation on Ireland's Agri-Food Strategy to 2030

An Taisce welcome the opportunity to comment on the consultation for Ireland's Agri-Food Strategy to 2030. We would like to raise the following points.

Overview of Irish Agriculture

The current model of agriculture in Ireland is broken, farmers are involved in loss-making activities, with many farm incomes largely provided through CAP payments. The farming model is hugely dependent on unsustainable fertiliser and feed imports, with mechanisms such as the nitrates derogation accommodating unsustainable intensification, while facilitating increased environmental pollution. We are in a biodiversity and climate emergency. Almost 50% of our freshwaters are polluted. Farmland bird populations are collapsing, along with pollinator numbers. Rural depopulation and an aging farming cohort is increasingly undermining rural communities, with farming supports such as TAMS leading to increased investment in machinery which further promotes unsustainable intensification and farmer indebtedness. We are a net importer of food energy, and our import-export agricultural model is extremely vulnerable to international market aberrations. Monocultures are favoured, leaving us open to pests and disease and climate change impacts.

Despite this, given the locked-in regime that currently governs agri-strategy in Ireland, An Taisce has concerns that this consultation will fail to acknowledge the failure of its agri-strategies to date. Indeed, in a recent Farming Independent article Minister Creed outlined his ambition to further expand the intensive agriculture sector, thereby prejudicing this public consultation. If the Minister's comments were accurately reported, it is a clear indication that this consultation is nothing more than a tick box exercise. This is extremely concerning in a time when we are facing such serious ecological and climate breakdown.

Anything other than a radical shift in focus in the next agri-food strategy to domestic food security within a system of enforced limits on absolute annual and cumulative pollution will be environmentally unjustifiable. In an era of runaway climate and ecosystem breakdown, any anthropogenic practice at a large scale that cannot be justified on economic, environmental or ecological grounds must be questioned.

Question 1. How important has Food Wise 2025 and previous strategies been in providing strategic direction for the agri-food sector? How do you think it could be improved in the new strategy?

The introduction to this consultation outlines that:

> *'Food Wise 2025 set out a vision of ambitious but sustainable growth for the sector over the next decade, with key cross cutting themes of improving sustainability, developing human capital, and promoting innovation, competitiveness and market development'*

Food Wise 2025 (FW2025) has been instrumental in terms of driving the economic direction for the agri-food sector, and the resultant dramatic expansion in the dairy industry, much to the detriment of environmental protection. It has not been successful in achieving any form of sustainability.

Food Harvest 2020 (FH2020) and FW2025 were industry-developed strategies, largely driven by agri-food processors and large landowners, with what would appear to have been little input from DAFM and the Government at large. Further, the involvement of smaller farmers and civil society was minimal. The implementation of these industry-driven strategies has been overwhelmingly focused on delivering increased profits to processors and larger land owners, while transferring increased financial risks onto farmers with limited benefit to rural society. The resulting model has locked Ireland into an increasingly unsustainable pathway heavily reliant on increased inputs of imported fertiliser and feed. As such, the social outcomes of these policies should be critiqued in light of this. Who is ultimately benefiting from this approach?

In direct contrast to the economic successes of these programmes, the environmental damage as a result of this farming approach is beyond question. FH2020 and FW2025 have overseen the ongoing decrease in water quality, with the EPA highlighting in the 2016 State of the Environment report that there is a clear correlation between the areas with the highest nitrate and phosphorus concentrations in waters and areas with the most intensive agriculture (in addition to high human density). The data gathered by the EPA are beyond dispute, 53% of river pollution is attributable to agriculture.

Further, biodiversity continues to decline. And the recent Article 17 report authored by the NPWS on our European protected habitats highlighted over 70% of our protected habitats are impacted by agricultural pressures, and this pressure was ranked of high importance in more than 50% of habitats.

Nitrogen pollution in the form of ammonia (NH_3) is almost entirely attributable to agriculture, and poses a serious risk to global biodiversity, leading to species decline via eutrophication, acidification and direct toxicity to a range of habitat types (Kelleghan et al (2019) and references therein). Indeed, the most recent Article 17 report highlighted that agricultural generated air pollution is a particular threat for blanket bog, alpine heath and wet heath, all of which are currently in bad status.

Meanwhile Ireland's GHG emissions also continue to rise, with emissions from agriculture up 2.9% in 2017, and 8.9% since 2010 (when Harvest 2020 was published).

While FW2025 would appear to many to be an economic success, the very real costs, both social and environmental, have not been adequately enumerated, with inadequate enforcement of environmental regulation and disregard of climate action. Significant increases in inputs such as fodder and fertiliser have been allowed because the pollution costs of waste are minimal. The focus continues to be on efficiency measures and on monetising waste, both of which will have the consequence of increasing production and increasing total environmental pollution loading as market demand is currently the only effective limit imposed.

Environmentally sustainable farming is not an add-on to a strategy, the whole strategy should be framed by this. As outlined by multiple reports, the current current agricultural model, if unchecked, will ultimately lead to biodiversity collapse and climate breakdown within the foreseeable future. It is not so much that the next strategy needs to be improved, it is more that it needs to facilitate a radical overhaul in thinking and approach.

As the DCHG recently outlined:

> '*It is unclear if the greater consideration being given to sustainability and biodiversity in sectoral policy is sufficient to turn around the continuing degradation of habitat and species populations, and the threats to key ecosystem services'*

And in specific reference to FW2025

> *'Although in principle, the strategy contains safeguards for biodiversity, water quality and carbon emissions, it is often unclear what how these will be applied at producer level'*

A useful starting point would be enforcing limits on absolute annual and cumulative pollution drivers and pollution, decreasing each over time, in order to make any progress towards achieving sustainability.

Question 2. Do you think that the five cross-cutting themes (environmental sustainability, human capital, competitiveness, innovation and market development) should continue to feature in the next strategy? Are there alternative approaches or themes that you would suggest?

We strongly advise that these "themes" be treated as a hierarchy with environmental sustainability as the critical foundation for social and economic development. As clearly outlined by the DCHG:

> *'biodiversity is central to soil productivity, pollination, pest predation, water retention, clean water provision and the maintenance of commercial fisheries. In each of these areas there is an opportunity to realise market premia and transfer greater value added to those who manage their production using methods that protect natural capital.'*

Any future agri-food strategy must make environmental sustainability its central tenet, in order to ensure the achievement of the reversal of biodiversity loss, climate action aligned with the Paris Agreement, and the safeguarding of air, water and soil quality. The fundamental survival of our agricultural and food production system depends on these functioning as they should, and the restructuring of our agri-food system to reward sustainable production should be a key feature in any new strategy. In that regard FH2020 and FW2025 should be viewed as case studies in how not to design an environmentally sustainable agri-food strategy.

Question 3. What do you think should be the absolute priority for the agri-food sector strategy to 2030?

The immediate priority for Ireland's agri-food sector strategy to 2030 should be imposing strict limits on the import and usage of nitrogen fertiliser and feed. At a minimum, since 2011 represented a major turning point from declining to increasing N use in Ireland, and from decreasing to increasing agri emissions, the import of N-fertiliser and animal feed should be urgently reduced to the 2011 level, with a future plan for a slow, sustained further reduction from those levels.

These inputs are the primary drivers of the recent growth of Ireland's intensive agricultural model. Ireland's increasing dairy herd requires large amounts of grass, fodder and imported feed to sustain itself. This is generally provided by growing perennial rye grass, and the large volume of grass produced largely depends on the use of synthetic fertiliser, generally applied twice per year. Without this fertiliser the same number of cattle could not be sustained on the land. As such, the increased use of synthetic fertiliser underpins the recent rapid and unsustainable expansion of the dairy herd, in addition to imported feed.

Limiting nitrogen fertiliser and feed would ensure that the kind of efficiencies detailed by Teagasc's 2012 and 2019 GHG abatement studies would actually result in real reductions in absolute climate and environmental impact. Agricultural carbon emissions have risen by 9% (1.7Mt CO2 eq) since 2010 (when FH2020 was published). These emission increases are a consequence of the unsustainable agri-food outputs targets under previous agri-food policies, which failed to consider the damaging impact of increased inputs, namely artificial chemical fertiliser and feed.

Synthetic chemical nitrogen fertiliser is a key driver of methane, ammonia and nitrate pollution with knock on climate change, air quality and water pollution impacts, and biodiversity loss. Reducing the inputs of synthetic fertiliser would be a valid starting point from which to redress the ecological and environmental damage which resulted from previous agri-food strategies.

Question 4. Do you agree that these are the most important challenges and emerging trends for Irish agri-food in the period to 2030? Are there others that should be considered?

Above all else, biodiversity loss and climate breakdown are the biggest challenges, not just for Irish agriculture, but for every country, every industry, and the global community. It is the challenge of our generation, and the compromised inheritance of the next. As outlined in our answer to question 2, agriculture depends entirely upon a healthy ecosystem, and a predictable climate, both of which are being undermined by current intensive agricultural practices.

Ecosystem collapse is a real and tangible threat, with identified specific threats for agriculture in regard to increased pest infestations and loss of pollinators, among many others. If the next agri-food strategy does not acknowledge the biological and climatic constraints within which it functions, and adjust its approach accordingly, it will fail on all fronts: economic, environmental and social. The next agri-food strategy must address these issues in the first instance, all the others which are listed are secondary. The current unsustainable agricultural system is proving to be an exercise in diminishing returns for smaller farmers, and this should be rectified at a fundamental ecological level, with the necessary market supports.

Climate targets and environmental sustainability (reversing biodiversity losses and reducing pollution loads) need to be the primary focus for Irish agriculture. The uninterrupted degradation of Irish soils and water bodies, together with the diminution of native biodiversity, must be stopped.

Question 5. What do you think could be done to improve resilience to risks across the sector, from 'farm to fork'?

Reversing the meat and dairy focus of FH2020 and FW2025 is now critical to reviving farm incomes in poorer rural areas, improving resilience to risks for farmers and increasing domestic food security. Climate impacts to food, fodder and feed supplies can be expected to increasingly affect farm and food supply resilience in Ireland, and around the world, in addition to the serious complications posed by pollinator and biodiversity loss. Animal agriculture is an inherently inefficient use of agricultural land, and any new strategy needs to set out how Ireland is to grow food, not grass.

A focus on supporting a sustained transition for farmers to diversify into food crop production, agroforestry and establishing biodiverse and food productive woodland is

necessary. This would reduce the usage of imported feed and synthetic fertiliser, while protecting biodiversity and preventing water pollution. Supports and subsidies need to enable farmers to focus on soil improvement for the best fields, thereby providing for highly productive horticultural and arable production for human food. Sward diversity should be increased, particularly with natural nitrogen fixing species such as legumes and clovers. If these remain in pasture they increase net nourishment per hectare, reducing the need for costly and polluting synthetic fertilisers.

Question 6. What do you think the vision for the sector to 2030 should be?

The vision should be of a resilient and self-sustaining system, which provides food security and promotes rural livelihoods, in addition to climate mitigation, biodiversity protection and improved water quality. This is in keeping with the recommendations of the Joint Oireachtas Committee on Climate Action (JOCCA) report which recommended in its March report:

> *'a need for a more diversified, resilient, sustainable and equitable model for Irish agriculture'*

The current vision of Ireland's food system is one which is predicated on our 'green' image, heavily promoted via Origin Green. However, even state agencies recognise the weaknesses in this approach. A recent quote by Teagasc in the Farming Independent (April 4th 2019) set out a stark warning on the sustainability claims made for Irish food export promotion, warning that greenwashing could backfire:

> *'In (Bord Bia's) Origin Green we are making very strong claims about sustainable performance and environmental performance that is creating a need for credible demonstration of sustainability - the industry needs credible evidence rather than glamour stories.*
>
> *If we are to continue with the sustainability claims that we are a clean, green food producing nation, we need to prove it. Other organisations outside of Ireland will be very quick to pounce on claims that we make.'*

The JOCCA report also recognised that Irish agriculture has become over-reliant on emissions-intensive beef and dairy production. In the new vision Ireland needs to move away from an import based system, and recognise that we are not 'feeding the world'. This is blatantly unsubstantiated given that Ireland is a net importer of food energy (FAO Food Balance data, 2013, Figure 1). As shown in this chart, Ireland is a net importer of food energy in order to produce our exports of meat and dairy, Ireland is subtracting from global food security in a way that is clearly not sustainable.

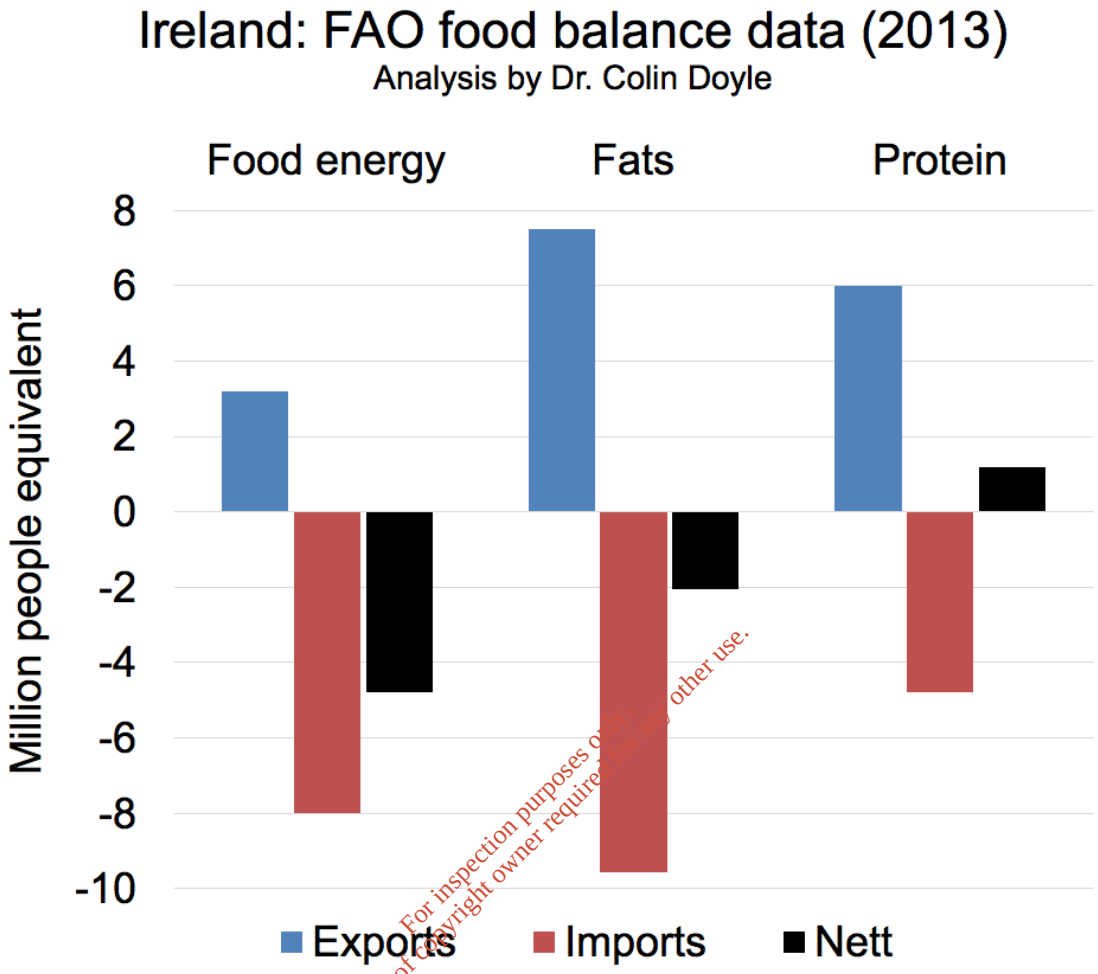


Figure 1: Ireland's FAO food balance data from 2013, from data collated by Doyle (unpublished) The net protein export is facilitated by large imports of synthetic N fertiliser)

There is a widely accepted misrepresentation of the food needs of the world, which are predicated on the perceived requirement for ever increasing volumes of milk and meat, for example in an EPA report by O'Brien and Shalloo (2019):

> *'world population is growing rapidly and is projected to require 58% more milk and 73% more meat by 2050 compared with 2010 consumption levels (FAO, 2011).'*

Many authors disagree with this assessment, as outlined in Billen, Garnier and Lassaletta 2013:

> *'The idea that solving the problems of our hungry planet by further intensifying agriculture in the most productive regions of the world together with developing commercial trade of agricultural products should be considered with great caution. On the contrary, the scenarios we have presented here suggest that reorganizing agro-food systems in order to better match the local food and feed demand by local*

agricultural production, and better use the potential of N2 -fixing crops, would not only 'feed the world', but also considerably reduce, at the source, the dissipation of reactive nitrogen into the environment.'

Ireland's vision should be on creating a localised, diverse and secure food production system, with the focus moving away from ever-growing international expansion for short term economic gain, towards maximising the potential of Ireland's agriculture to provide a vibrant, biodiverse and secure system system for the foreseeable future. This system would provide environmental dividends, and equity to farmers.

Question 7. What do you think will be the most important contribution(s) of farmers/fishermen and the food industry to Irish society in the period 2020 to 2030?

With properly targeted top-down, results-based supports, Irish farmers and fishers can contribute to establishing a localised diverse and secure food production system, with a concomitant regeneration of rural societies and livelihoods.

Question 8. What do you think would be the key words that you would wish to associate with the agriculture, fishing, forestry and food sector in 2030?

Resilience, diversity, equity, carbon-neutrality and self-sustainability. This sustainability must be true sustainability, in line with the highest environmental standards with a view to the whole life cycle analysis of agricultural impacts.

Question 9. What can be done to improve the extent and rate of uptake of practices that improve water and air quality, mitigate greenhouse gas emissions and protect biodiversity? What are the barriers to uptake of those practices?

A key barrier to change is the high level of taxpayer subvention for large-scale animal agriculture and commercial forestry. There is a clear need for rebasing CAP payments (both at European and domestic level) away from a singular focus on dairy and beef and towards growing food which will provide multiple benefits, as outlined above.

Agricultural subsidies must represent money for public goods, with results based payments. Farmers should be financially rewarded for providing spaces for nature, protection for water quality, and reductions in emissions. The current framework does not reward positive environmental action, with environmentally destructive behaviours, such as land drainage and scrub removal, being financially incentivised. One size does not fit all when it comes to viable or sustainable farming practices on different land types, and this should be reflected in any future strategy, with a far greater focus on supporting extensive, lower impact agricultural practices in high nature value farmland and marginal lands, and support for agro-forestry schemes.

Question 10. How can circular agriculture, the blue economy and the bioeconomy be integrated into the next strategy to build new value chain opportunities?

This is a leading question, incorrectly suggesting that these ideas are necessarily good by definition. The ill-defined use of all of these buzzword terms in is emblematic of the poor policy communication by the Department of Agriculture, Food and the Marine (DAFM) in this and previous public consultations. Academic analysis indicates 'bioeconomy', and associated terms, have been misappropriated by "powerful lobbies", the existing economic stakeholders, in a way that "can be seen as a semantic and conceptual hijacking", assuming rather than requiring environmental compatibility.

The only way in which these buzzwords can become meaningful in an agri-strategy is if chemical inputs and feed imports are strictly limited within strongly enforced and reducing pathways. Only in this way can less wasteful, 'circular' flows, within Irish agriculture and land use, become incentivised to use limited resources more efficiently. The primary focus required to give a credible basis for "value chain opportunities" will be if the Irish agricultural sector can show evidence of reduced pollution to climate, air and water, and increased biodiversity (as shown by rigorous and independently verified monitoring).

Question 11. What do you think the drivers and barriers will be for improving the economic viability and performance of farms, fishing businesses and agri-food businesses in the period to 2030?

The major barrier to redirecting Irish agriculture toward sustainable food production is the continued Government supported industrial regime favouring the short-term profits of large agri-food businesses over the long-term well-being of Ireland's rural society and environment. Ensuring sustainable, long-term economic viability and performance will require wholesale changes to the regime on the lines strongly endorsed by the Citizens' Assembly: limiting and taxing environmental pollution from agriculture (ultimately paid for by consumers) and using the revenues raised and redirecting any subsidies toward supporting diversification.

As described in recent research examining the outcome of Ireland's previous agri-food strategies, the biggest barrier to achieving sustainable food production in Ireland is the existing 'iron triangle' of powerful regime actors comprising agri-food processors, the farming organisations (which preferentially represent the interests of large landowners), and government, including the DAFM and Teagasc, which could be argued support industry priorities rather than the long-term welfare of farmers or the public good. The research found that:

> *'Overall, it is apparent that FH2020 is aligned with productivist norms and beliefs of the regime, despite the mantra of sustainable food production and a newly formed collaboration between public and private actors, cannot be classified as a regime change.'*

It highlighted that the "productivist regime" of Irish agriculture has remained stable, and has focused on the major dairy industry expansion:

> *'the Irish dairy sector has failed to make a sustainable transition due to a dominant coalition of powerful actors who have failed to apply radical sustainability action within the dairy industry and have continued to pursue the productivist paradigm.'*

and:

> *'The beliefs of the regime actors are largely in accordance with the productivist paradigm of the regime in that they follow the principles of increasing production and applying input efficiency as a method for mitigating the environmental impacts of such production. Regime stability has resulted as these actors have repeatedly been able to keep rules and norms aligned with their own beliefs. Examples have been the IFA's ability to put pressure on the Government to seek a derogation of the Nitrates Directive, the industry's control over the development of FH2020, and the implementation of sustainability measures since then (OG, SDAS, ASSAP). By enforcing such stable and dominant beliefs throughout the regime, the rules and norms remain entirely 'taken for granted'. This leads to the implications that no regime actor openly acknowledges the problems of rising GHG emissions or diminishing ecosystems. This research thus accepts the third hypothesis because ultimately, regime change has not occurred because beliefs have remained entirely aligned with the regime rules.'*

Question 12. Innovation is now widely recognised as a key driver of long-term growth and sustainable development. What type of approaches and processes could assist the Irish agri-food innovation system to address economic and societal challenges and facilitate increased networking, collaboration and investment in sustainable growth areas?

The question is predicated on the assumption that long-term growth and sustainable development are viable policies, and can co-exist. Innovation within the current intensive framework cannot, and will not provide for sustainability, nor can it address the current challenges facing the agriculture sector on all fronts. Sustainable growth is an oxymoron, as eloquently elucidated by senior economists at the World Bank, Daly and Townsend (1993):

> *'In its physical dimensions the economy is an open subsystem of the earth ecosystem, which is finite, nongrowing, and materially closed. As the economic subsystem grows it incorporates an ever greater proportion of the total ecosystem into itself and must reach a limit at 100 percent, if not before. Therefore its growth is not sustainable. The term "sustainable growth" when applied to the economy is a bad oxymoron'*

Ireland's "Irish agri-food innovation system" is fundamentally focused on scaling up animal food production, yet there is overwhelming evidence that the trajectory of global growth of animal food demand is environmentally unsustainable, inherently inefficient, produces net negative food calorie conversion, and negative health outcomes. All major research reviews

(IPCC, the Lancet, the FAO), conclude that dietary change, particularly reducing beef and dairy consumption, is essential to reverse these trends and to support the SDGs.

As outlined previously, Ireland's net effect on global food security is negative owing to imported feed calories. Moreover, the fertiliser and land which are used to produce local fodder are being diverted from far more efficient uses, such as direct-to-human food crops or native forestry. These indirect impacts on emissions and global food security are uncosted by economic analyses of Irish agriculture, including the economic analysis included by the DAFM with this consultation.

Long term growth in animal agriculture is simply not a realistic or sustainable objective.

Question 13. What actions need to be taken to ensure that Irish agri-food captures more value in both our domestic and export markets?

Any economic evaluation needs to fully cost negative externalities, including those due to the current endemic overuse of synthetic chemicals (fertilisers, pesticides and antibiotics) in Irish agriculture, and the damaging effects of ongoing and cumulative pollution and waste disposal. Without enumerating the current full costs of the agricultural system, any such economic valuation will be both flawed and invalid within guidelines of the Public Spending Code.

Question 14. Are there any other learnings or best-practice examples in other economic sectors or other countries that could be applied to improve the competitiveness and innovation of the Irish agri-food sector?

This consultation question incorrectly implies that competitiveness and innovation are positive for the common good of Ireland's people and environment. On the contrary, a major problem for Ireland is that highly unsustainable outcomes (herd expansion, N-fertiliser overuse, slaughter waste, increases in live animal exports) from agricultural expansion have been unhelpfully driven by efficiency-focused competitiveness and innovation of the livestock-dominated Irish agricultural sector, focused on increasing profits for existing vested interests in this sector.

Other countries are showing far more learning than in Ireland. In France and Denmark, effective limits on nitrogen fertiliser use have driven innovation and increased the competitiveness of diversification and organic farming, boosted by strong marketing to support this transition. The failure to reduce nitrogen pollution in the Netherlands has resulted in a cull of cattle due to insufficient regard for livestock emissions and impacts.

New Zealand have acknowledged the urgent need to cut nitrogen fertiliser use and steadily reduce methane emissions. In addition, their in-depth scientific and policy consideration and media analysis of climate action and pollution provides a stark contrast to the rhetoric of Ireland's Minister of Agriculture, supported by the Department of Agriculture and Teagasc agronomists.

The reports from the Oireachtas Committee on Agriculture have been similarly biased toward maintaining the status quo. It is only recently that Teagasc scientists and the Climate Change Advisory Council have begun to question and critique the evident failure of this rhetoric to deliver sustainable outcomes for climate, nature or farmers. There is clear room for improvement, and this can be modelled on proven European and International best practice examples.

Question 15. What measures need to be taken in the period to 2030 to improve the social sustainability of Irish farms?

As outlined in our answers to previous questions, social sustainability should be an integral consideration in any future agri-food strategy. Irish farmers and fishers can play a key role in establishing an equitable, localised, diverse and secure food production system, with a concomitant regeneration of rural societies and livelihoods. This type of food production system, which would need to be well supported by top down measures and incentives, would breathe new life into rural societies, which are now largely being failed by an ever more industrialised agricultural system which favours large land-owners.

There are tangible examples of where this has been proven to work, and where citizens have been reconnected with farming, land and food, such as in Liege in Belgium, Totnes in Devon and Cloughjordan Ecovillage in Tipperary. These models have been proven to work, and the Irish agri-food sector could adopt such an approach.

Question 16. Given the relatively slow progress being made in generational renewal on farms, what type of policies could be implemented to speed this up?

Supports for mixed farming, especially organic agriculture and horticulture, which offer higher employment rates than cattle farming. The Irish farming sector is also disproportionately dominated by male farmers. The involvement of women in the farming sector could hugely boost the numbers, and incentivisation of mixed and organic farming is a clear path to achieving that. Targeted recruitment of female farmers should be a serious consideration in the drive to recruit the next generation of farmers.
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Question 17. Businesses are increasingly being measured by society not only on their economic performance but also on their corporate and social performance. What should the Irish agri-food industry be doing to address this? What key words would you wish to associate with a socially responsible agri-food sector?

They keywords outlined in our response to question 8 are also valid here: Resilience, diversity, equity, carbon-neutrality and self-sustainability.

Any failure to address the water pollution, biodiversity loss and increases in ammonia and GHG emissions which are largely driven by the current agricultural system should be viewed as a failure to society at large. The current system is putting our collective welfare and future at risk. The current and past agri-food strategies (FH2020 and FW2025) are utterly

failing in regard to social and environmental responsibility, and the agricultural sector is increasingly, and justifiably going to be held to account by society at large. Unless there is a dramatic change of direction in the next agri-food strategy it will be found wanting in this regard.

This may have legal implications for the agri-food sector. A recent high court ruling by Justice Barrett outlined the constitutional right to environmental protection "*that is consistent with the human dignity and well-being of citizens at large*". As such, with an ongoing, environmentally damaging business as usual approach the agricultural sector may find itself on the wrong side of the law.

Question 18. Societal concerns around ethical and sustainable practices, including animal welfare and the use of medicines and other inputs, as well as broader food and feed safety and authenticity concerns, have been growing in prominence and some have connected this with a social licence to farm/fish. How do you think the next strategy should address this to further enhance our credentials in these areas?

The bodies and agencies central to the preparation of FH 2020 and FW2025 clearly did not consider the importance of wider societal concerns when preparing previous industry plans. Animal welfare and ethics were not a key concern in previous agri-food strategies, with economics being the principle driver.

Changing social norms, such as moves towards organic, plant-based diets, should be embraced and supported. The new strategy should seek to meet the demands for lower emissions, less consumption and healthier diets. Rather than see this as a threat to Irish agriculture, and attempt to counter this with 'enhanced environmental credentials', the new strategy should be tailored to accommodate changing consumer demands.

Our credentials do not hold up to scrutiny, and a new approach is necessary, not unfounded 'glamour stories'. Origin Green, the marketing programme from Bord Bia, is rapidly becoming a byword for greenwash advertising rather than sustainability. The backlash has already begun, with the american legal action taken against Kerry Group in regard to the inaccurate 'grass-fed' claim for Kerrygold butter. The next agri-food strategy should focus on providing genuinely sustainable and ethical products, as opposed to an Origin Green type marketing campaign which attempts to justify and greenwash the current failing model. This should be a supporting pillar of a new, societal-based, vision for agriculture in Ireland.

An Taisce would request that you take these comments into account

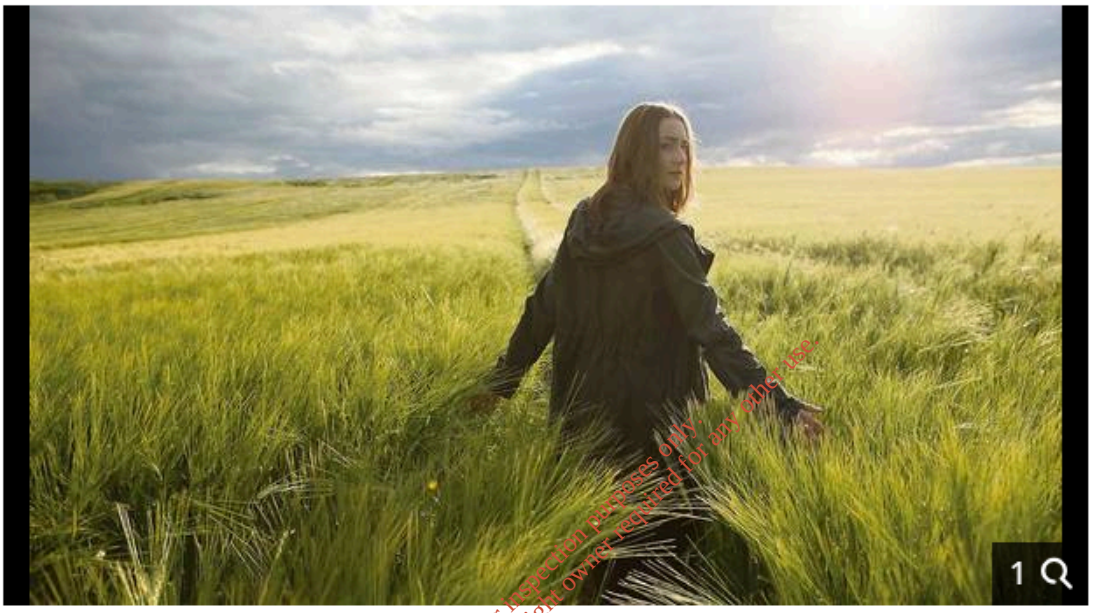
Is mise le meas,

Elaine McGoff, PhD

Natural Environment Officer, An Taisce- The National Trust for Ireland.

Appendix 3: Farming Independent Article: "'Greenwashing' could backfire on farming"

'Greenwashing' could backfire on farming



1 The Origin Green scheme rolled out by Bord Bia

Claire Fox

April 2 2019 6:00 AM

Irish agriculture needs to back up its 'green' image with credible evidence rather than "glamour stories", Teagasc has warned.

"We've seen problems in other countries where they resort to glamour stories and greenwashing on biodiversity performance - that has major repercussions and backfires very quickly," Teagasc researcher and ecologist John Finn told the Farming Independent.

"In (Bord Bia's) Origin Green we are making very strong claims about sustainable performance and environmental performance that is creating a need for credible demonstration of sustainability - the industry needs credible evidence rather than glamour stories.

"If we are to continue with the sustainability claims that we are a clean, green food producing nation, we need to prove it. Other organisations outside of Ireland will be very quick to pounce on claims that we make."

Bord Bia defended the Origin Green programme, saying its ambition was to drive sustainability in food production at every point on the supply chain.

"Since the introduction of carbon footprint assessments on farms in 2013, over 212,000 individual carbon footprint calculations have taken place on over 37,000 dairy farms and 175,000 beef farms," stated Bord Bia.

"The carbon footprint calculations to date show a continued decline in the carbon footprint intensity related to the production of beef and dairy."

A new report on farm sustainability published by Teagasc last week has found that dairy farms are producing up to three times more greenhouse gas and ammonia emissions than other farming sectors.

Teagasc researcher Trevor Donnellan said that while Irish farms have been improving their carbon efficiency, "emissions have been increasing, the dogs on the street know that".

"Emissions will continue to increase until efficiency catches up with growth in activity or until growth in activity comes down to reach the efficiency improvement," he said.

Dairy Industry Ireland spokesman Conor Mulvihill said the dairy model was not only sustainable but "absolutely vital" in delivering proper livelihoods and strong farming enterprises.

He pointed out that the report showed the emissions intensity for the production of a litre of dairy has dropped.

Mr Mulvihill said the dairy industry was committed to improving its carbon efficiency and adhering to water and soil quality targets to ensure the standards and reputation of the industry is maintained.

However, he added that dairy processors were aware that if they could not "deliver measurable improvements", the "regulatory system hammer will drop" and they will also "lose public support for the industry".

The Irish Cattle and Sheep Farmers' Association (ICSA) said the Teagasc sustainability report has blown apart the narrative that suckler and beef farmers are the problem on climate change.

"The suckler herd is clearly not the problem when cattle farming systems produce less than half the emissions of intensive dairy systems per hectare," said ICSA president Patrick Kent.

"Where a hectare of land is switched from sucklers to intensive dairy, GHG emissions double. ICSA has been arguing for a long time that cattle and sheep farmers should not be the scapegoats for our climate change challenges.

"While there is no doubt that all sectors have to do their bit in being more efficient in terms of emissions, it is time for all to recognise that cattle, sheep and tillage systems give rise to between 2 and 4.2 tonnes CO2/ha compared with 8.5 tonnes for intensive dairy.

"This has serious implications for policy. It calls into question the long-standing advice to cattle and sheep farmers to intensify and expand output."

Appendix 4: Farming Independent Article: "Look what happened in the Netherlands – Hogan warns Irish dairy sector on environment"

Look what happened in the Netherlands – Hogan warns Irish dairy sector on environment

1 EU Agriculture and Rural Development Commissioner Phil Hogan

Ciaran Moran

September 11 2018 3:04 PM

Agriculture and Rural Development Commissioner, Phil Hogan has warned the Irish dairy sector that it must maintain its reputation for producing products of the highest standards of safety and sustainability.

Speaking INTL FCStone dairy conference recently, he said that broadly speaking, the European dairy sector has a good story to tell, and good prospects for the future.

But went on to say that "we have to be honest about the potential pitfalls that lie ahead".

Hogan said the appealing image of dairy cows eating grass in wide open fields is a very successful selling point for Irish products.

However, he said if that reputation for quality and sustainability is compromised in any way, there is a clear and present danger of a negative market impact.

"I have used the Netherlands as a cautionary example in Ireland before, and for good reason.

"The Dutch dairy industry has been dealing with an ongoing phosphate problem which has resulted in the reduction of the Dutch dairy herd by around 122,000 cows over nine months, with a consequent reduction in phosphate and nitrates production.

"Currently, Dutch milk supply has fallen by 1.5pc," he said.

Hogan warned that building a more sustainable foundation in relation to inputs "is not a choice: it is a must".

Ireland and all other EU MS need to get the balance right under the Nitrates Directive and the Water Framework Directive, he said and added that failure to act now will lead to negative consequences in the near future – "potentially very negative consequences," he warned.

Read also: The Dutch dairy dilemma - How dairy farmers in the Netherlands are coping with new phosphates regulations

CAP payments

Hogan also spoke on reform of the Common Agricultural Policy (CAP) and said that despite the difficult budgetary context of Brexit and other new EU challenges such as security and migration, the Commission has proposed a strong budget for agriculture.

"Direct payments to farmers are cut moderately by no more than 4%.

"This reduction is complemented with a proposal to achieve greater equity in direct payments per hectare, by means of continued convergence, degressivity and capping," he said.

Hogan highlighted that the direct payments envelope for Ireland in the next budget is €8.15 billion, a reduction of 3.9pc compared to the 2020 baseline allocation.

For rural development, he said the Commission proposes to rebalance EU and national support, so that public support to European rural areas remains largely unchanged.

Appendix 5: A Stranded Asset: The Future of Fossil Fuel and Animal Agriculture Infrastructure in Ireland

A STRANDED ASSET:

THE FUTURE OF INVESTMENT IN FOSSIL FUEL AND ANIMAL AGRICULTURE INFRASTRUCTURE IN IRELAND

Ian Lumley
Advocacy Officer, An Taisce

Sheikh Yamani, the former Saudi Oil minister in the 1970s, memorably said that the Stone Age would not come to an end because people ran out of stone, in considering the future of oil.

The history of transport and energy over the last two centuries is one of progressive redundancy of technologies and infrastructural systems. Examples include the collapse of horse drawn transport in favour of steam or motor engines, or of gas lighting systems in favour of electric.

The same has applied to crop growing and food productions systems, including those in Ireland. Both the Irish flax growing linen industry and the export of grain declined from the mid-19th Century with increasing cheap cotton imports from the US (and later India) and grain imports from North America. In the late 20th Century, the abandonment of sugar beet growing in Ireland in favour of South America sugar cane import left four derelict Irish factories.

Current and future investment in both fossil fuel and animal agriculture infrastructure in Ireland needs to address the limit on future fossil fuel and bovine agricultural emissions set by meeting Paris Agreement targets to stabilise the global climate to as near as possible to 1.5 degrees over preindustrial levels, as well as other planetary boundaries.

Globally this requires most known existing oil and gas to be left in the ground known as "unburnable carbon," and a transition to a more plant based diet.

An increasingly accepted concept is that fossil infrastructure investment will become a "stranded asset." This also applies to animal agriculture investment such as beef processing and milk powder plants in which Ireland has intensively invested. These face redundancy as much as fossil fuel exploration, processing, transmission and combustion infrastructure.

Impact of continued exploration for oil and gas

Globally fossil infrastructure companies whether privately owned, PLCs or State owned like Gas Networks Ireland (GNI) are promoting a continued level of fossil fuel extraction and consumption, which if burned is incompatible with the level of decarbonisation required to

stabilise global climate at as near as possible to 1.5 degrees as required by the Paris Agreement.

In particular, the current policies pursued by GNI, including the token introduction of problematically sourced biogas into the fossil gas pipeline system, are undermining the investment needed in the level of energy conservation and renewables development needed to supersede fossil fuel.

The extension of oil and gas exploration into new areas, and using problematic new technologies, extends from the Arctic wilderness to Central Africa. The 2010 Deepwater Horizon spill clearly highlights the risks involved in deep sea drilling. Oil and gas extraction in the Niger delta has a high carbon impact and is the cause of major local pollution. The increased level of extraction from Canadian Tar Sands is devastating in environmental impact and generates a much higher level of emissions than conventional wells. The Keystone XL pipeline proposal to link Alberta to the southern United States highlights the mounting conflict between the fossil fuel lobby and climate science. Fracking in the US has created new environmental risks and has significant additional climate impact through methane leakage during the extraction process. While Ireland has banned land-based fracking, the proposed development of an LNG terminal in the Shannon Estuary would allow US fracked gas to be injected into the GNI network

Ireland needs to terminate State and general investment resources into fossil fuel exploration and infrastructure and instead invest in efficiency and renewability in energy generation, heating and transport.

Impact of animal agriculture and processing infrastructure

The non-profit organisation, the Institute for Agriculture and Trade Policy, and GRAIN have conducted an analysis of the planet's 35 largest meat and dairy companies. They found that, broadly speaking, the companies were being secretive about their emissions data and few had set hard targets intended to deal with their pollution.

If these industries continue down their current path, the authors of the report warned that the livestock sector could be responsible for 80% of the allowable greenhouse gas budget by 2050.

"There's no other choice. Meat and dairy production in the countries where the top 35 companies dominate must be significantly reduced," said Devlin Kuyek, a researcher at GRAIN. "*These corporations are pushing for trade agreements that will increase exports and emissions, and they are undermining real climate solutions like agro-ecology that benefit farmers, workers and consumers*."

When taken together, the world's top five meat and dairy corporations are already responsible for more emissions than ExxonMobil, Shell or BP[14].

[14] https://www.independent.co.uk/environment/meat-dairy-industry-greenhouse-gas-emissions-fossil-fuels-oil-pollution-iatp-grain-a8451871.html

The January 2019 EAT Lancet report[15] recommends *"doubling in the consumption of healthy foods such as fruits, vegetables, legumes and nuts, and a greater than 50% reduction in global consumption of less healthy foods such as added sugars and red meat."*

The rise of climate litigation

There is growing litigation across the world against fossil fuel exploration and extraction companies and State regulatory bodies, as with the current Friends of the Irish Environment Climate Case against the adequacy of the Irish National Mitigation Plan. The case covers all areas of the Plan including agriculture as much as energy. Similarity the Urgenda case in the Netherlands covered all Dutch Government action on all area of climate emission including agriculture.

Governments, directors of oil and gas exploration and animal agriculture companies, their professional advisors and consultants, and regulatory bodies licensing increased fossil fuel exploration and exploitation or supporting high emission animal agriculture are facing increased transboundary climate litigation.

Oil and gas exploration and extraction companies and regulatory bodies, which could include the Commission for Regulation of Utilities in Ireland in the future, are facing an increasing number of lawsuits that aim to hold them responsible for the impacts of climate change[16]. What the companies or regulators knew about their contributions to global heating will answer some key legal questions, including whether they have continued or issued licenses or consents for exploration, extraction, increased consumption and use of fossil fuel or beef and dairy production while knowing they would cause public harm. Liability also extends to State and public bodies granting licenses for oil and gas exploration, extraction, and continuing or increased consumption of bovine agricultural produce.

These issues now face all oil and gas exploration and extraction companies as well as regulatory bodies in Ireland and also potentially meat and dairy processing companies.

There is a growing momentum for institutional and pension fund divestment from fossil fuels, as fund managers may also be joined to legal action. The same case is also being applied to the damaging impact of animal agriculture and feed crop production in Brazil.

New York joins a growing chorus of institutional investors that have committed to divest in full or part. Cities like Paris, Capetown, and San Francisco; pension funds like the California Public Employees' Retirement System; faith-based groups like the Church of England; philanthropies like the Rockefeller Family Fund; and universities like Oxford, Stanford, and

[15] https://ec.europa.eu/knowledge4policy/sites/know4pol/files/eat-lancet_commission_summary_report.pdf

[16] https://www.climateliabilitynews.org/2018/04/05/climate-change-oil-companies-knew-shell-exxon/

Georgetown have mobilized to divest over $6 trillion in total assets from the fossil fuel industry.

New York City is also suing five major oil companies — BP, Chevron, Conoco Phillips, Exxon, and Royal Dutch Shell—for their contributions to climate change and efforts to cover up scientific evidence of its reality[17].

The global carbon budget

Rapid global warming and the resulting climate change now taking place has a simple cause: Every addition of carbon dioxide (CO_2) due to human causes traps a corresponding additional amount of solar energy in the Earth's atmosphere and ocean. This warming due to the accumulation of CO_2 is irreversible on human timescales – once emitted the CO_2 levels remain raised. Therefore, limiting climate change will require substantial and sustained reductions of greenhouse gas emissions from now on. At some point net emissions will need to be zero to stop further warming. The agreed 2°C limit to global warming (above pre-industrial temperatures) therefore requires an absolute limit on the net carbon emissions that can ever be emitted globally. This remaining total amount of future CO_2 emissions to limit warming to 2°C is called the 'global carbon budget.'

Even such a small change in the Earth's average surface temperature can have profound impacts on the planet's climate, geography, and biosphere that are the basis for all life, and for modern society, including the supply of crops for food. During the last ice age the average global temperature was only about 5°C colder than today, yet sea level was 120m (400ft) lower and many areas populated today were deep under ice. In the last 10,000 years, a very stable climate, due to very steady natural CO_2 levels, enabled agricultural civilisation to emerge and to thrive.

The problem for modern human civilisation which depends on large scale burning of fossil fuels for energy, thereby releasing CO_2, and the particular greenhouse gas impact of bovine agriculture is that at current, increasing rates of annual emissions, the remaining less than 2°C global carbon budget will be entirely exhausted within as little as 15 to 30 years. Moreover, there is enough carbon stored in proven reserves of peat, coal, oil and gas to result in extremely dangerous global warming of 6°C or more.

Due to greenhouse gases from fossil fuel burning, livestock agriculture and deforestation, about 0.8°C of warming has occurred since industrialisation. Now though, due to rapidly rising CO_2 – and also due to other greenhouse gases, especially methane inclusion from bovines – oceans and atmosphere are warming rapidly by accumulating very large amounts of additional solar energy. Continuing the current pathway of ever increasing emissions would mean that a rise of 4°C is entirely possible by 2100. This is a very dangerous rate of warming, faster than any known rise, even faster than during geological extinction events. On this dangerous track, it is quite certain that within ninety years every part of the world

[17] https://phys.org/news/2018-01-nyc-fossil-fuel-investmentshere.html

will be entirely changed and will continue to change, with very serious negative consequences for human civilisation and for all ecosystems. The only certain way for humanity to limit dangerous climate risk is to limit emissions within the available carbon budget. This means rapid and major changes in consumption patterns and energy production are needed. To do this at least cost means starting very soon and proceeding very quickly. The biggest question for humanity is how to divide the less than 2°C carbon budget equitably between nations and future generations. There is no doubt though, that the greatest responsibility to act for change, and act fast, lies with wealthy nations and institutions.

Arguments justifying the continued exploration for fossil gas as a "transition" are also unjustified. In 2018 Oil Change International, alongside 20 partners from around the world, released a new briefing on gas production in G20 countries and why fossil gas is NOT a bridge fuel[18].

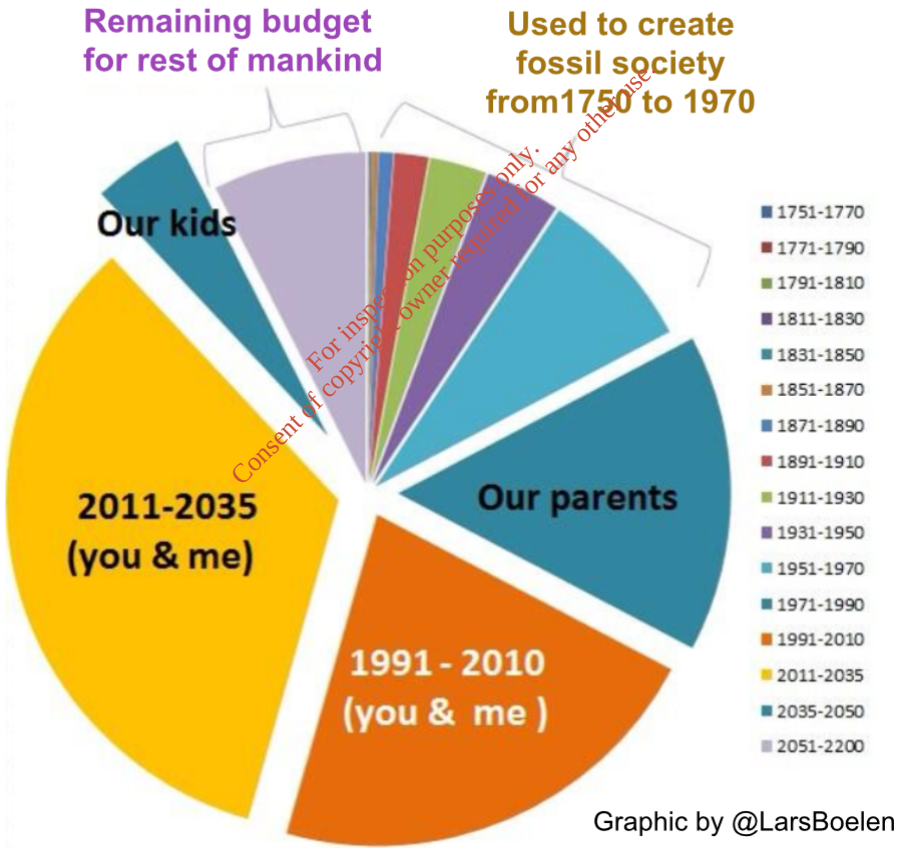


Figure 1 - Carbon Budget per Generation for 2°C: more than a third of emissions have been since 1970. The available remaining budget to limit warming to 2°C is being exhausted rapidly

[18] http://priceofoil.org/debunked-g20-clean-gas-myth

The scientific case for ceasing fossil fuel exploration

There is a convergence of research and reports by leading scientific authorities on the implication of allowing warming to exceed 2°C and the action needed in limiting burning of fossil fuel other climate impacts.

There is an extensive body of peer reviewed literature on unburnable carbon by recognised independent scientists. A good overview is provided in the paper in NATURE-International Journal of Science on 17 Jan 2015 " *The geographical distribution of fossil fuels unused when limiting global warming to 2 °C* Christophe McGlade & Paul Ekins[19]

> *"Policy makers have generally agreed that the average global temperature rise caused by greenhouse gas emissions should not exceed 2 °C above the average global temperature of pre-industrial times1. It has been estimated that to have at least a 50 per cent chance of keeping warming below 2 °C throughout the twenty-first century, the cumulative carbon emissions between 2011 and 2050 need to be limited to around 1,100 gigatonnes of carbon dioxide (Gt CO_2). However, the greenhouse gas emissions contained in present estimates of global fossil fuel reserves are around three times higher than this, and so the unabated use of all current fossil fuel reserves is incompatible with a warming limit of 2 °C. Here we use a single integrated assessment model that contains estimates of the quantities, locations and nature of the world's oil, gas and coal reserves and resources, and which is shown to be consistent with a wide variety of modelling approaches with different assumptions, to explore the implications of this emissions limit for fossil fuel production in different regions. Our results suggest that, globally, a third of oil reserves, half of gas reserves and over 80 per cent of current coal reserves should remain unused from 2010 to 2050 in order to meet the target of 2 °C.*
>
> *We show that development of resources in the Arctic and any increase in unconventional oil production are incommensurate with efforts to limit average global warming to 2 °C. Our results show that policy makers' instincts to exploit rapidly and completely their territorial fossil fuels are, in aggregate, inconsistent with their commitments to this temperature limit. Implementation of this policy commitment would also render unnecessary continued substantial expenditure on fossil fuel exploration, because any new discoveries could not lead to increased aggregate production."*

Among the other most significant reports are the following:

Overexposed by **Global Witness**
This has examined the 2018 Intergovernmental Panel On Climate Change (IPCC) report on 1.5°C and the risks of overinvestment in oil and gas. The report states that:

[19] https://www.nature.com/articles/nature14016

"Overinvestment in oil and gas creates risks for investors, regardless of whether the world is effective in tackling climate change. Either investors face assets being stranded as demand for fossil fuels falls in a transition to a low carbon economy, or the overinvestment contributes to excess emissions from fossil fuels, the failure to transition and the financial costs of a dramatically changed climate."

Read the blog, *Big oil is set to spend $5 trillion on fossil fuels we can't afford to burn.*

Carbon Tracker Initiative and the Grantham Research Institute on Climate Change and the Environment (2013). *Unburnable Carbon 2013: Wasted capital and stranded assets*. London: Carbon Tracker & The Grantham Research Institute.[20]

This assessed the consequence of burning the existing total fossil fuel reserves against the global atmosphere capacity to absorb the emissions generated if temperatures are not to exceed 2 degrees above preindustrial levels.

It concluded that between 60-80% of coal oil and gas reserves of publically listed companies are unburnable if the world is to have any realistic chance of not exceeding global warming of two degrees Celsius. Conversely, if there is effective societal action to limit the extent of climate change, then this will raise the spectre of fossil fuel installations and distribution networks collapsing in value, with the global economy already facing 'the prospect of assets becoming stranded, with the problem only likely to get worse if current investment trends continue - in effect, a 'carbon bubble.'

The World Bank & Potsdam Institute for Climate Impact Research and Climate Analytics (2012). *Turn Down the Heat: Why a 4°C Warmer World Must be Avoided, The World Bank 2012*. Washington: The World Bank.[21]

This report assesses the scientific data on the implications of allowing emissions to exceed a two degree threshold. The abstract for the report states:

"This report focuses on the risks of climate change to development in Sub-Saharan Africa, South East Asia and South Asia. Building on the 2012 report, Turn Down the Heat: Why a 4°C Warmer World Must be Avoided, this new scientific analysis examines the likely impacts of present day, 2°C and 4°C warming on agricultural production, water resources, and coastal vulnerability for affected populations. It finds many significant climate and development impacts are already being felt in some regions, and in some cases multiple threats of increasing extreme heat waves, sea level rise, more severe storms, droughts and floods are expected to have further severe negative implications for the poorest. Climate related extreme events could push households below the poverty trap threshold. High temperature extremes appear likely to affect

[20] http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-2-Web-Version.pdf
[21] http://documents.worldbank.org/curated/en/2012/11/17097815/turn-down-heat-4%C2%B0c-warmer-world-must-avoided

yields of rice, wheat, maize and other important crops, adversely affecting food security. Promoting economic growth and the eradication of poverty and inequality will thus be an increasingly challenging task under future climate change. Immediate steps are needed to help countries adapt to the risks already locked in at current levels of 0.8°C warming, but with ambitious global action to drastically reduce greenhouse gas emissions, many of the worst projected climate impacts could still be avoided by holding warming below 2°."

Price Waterhouse Cooper (2014). *Two degrees of separation: ambition and reality Low Carbon Economy Index 2014*. London: Price Waterhouse Cooper.[22]

The 6th Annual index published by PWC shows the mounting failure in global action on decarbonisation to meet the two degree target:

"The 2014 Low Carbon Economy Index (LCEI) shows an unmistakeable trend. For the sixth year running, the global economy has missed the decarbonisation target needed to limit global warming to 2˚C. Confronted with the challenge in 2013 of decarbonising at 6% a year, we managed only 1.2%. To avoid two degrees of warming, the global economy now needs to decarbonise at 6.2% a year, more than five times faster than the current rate, every year from now till 2100. On our current burn rate we blow our carbon budget by 2034, sixty six years ahead of schedule. This trajectory, based on IPCC data, takes us to four degrees of warming by the end of the century."

Christophe McGlade & Paul Ekins. (2015). The geographical distribution of fossil fuels unused when limiting global warming to 2°C. *Nature*. 517 (187–190).[23]

In January 2015 the international scientific journal Nature published a major paper the level of fossil fuel burring compatible with maintaining a stable climate:

"*If global warming is to be limited in this century to the much-publicized 2 °C rise compared to pre-industrial levels, fossil fuel use and the associated release of greenhouse gases will need to be severely limited. This raises questions regarding the specific quantities and locations of oil, gas and coal that can be safely exploited. Christophe McGlade and Paul Ekins use an integrated assessment model to explore the implications of the 2 °C warming limit for different regions' fossil fuel production. They find that, globally, a third of oil reserves, half of gas reserves and over 80% of current coal reserves should remain unused during the next 40 years in order to meet the 2 °C target and that the development of resources in the Arctic and any increase in unconventional oil production are incompatible with efforts to limit climate change."*

[22] http://www.pwc.co.uk/assets/pdf/low-carbon-economy-index-2014.pdf
[23] http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html