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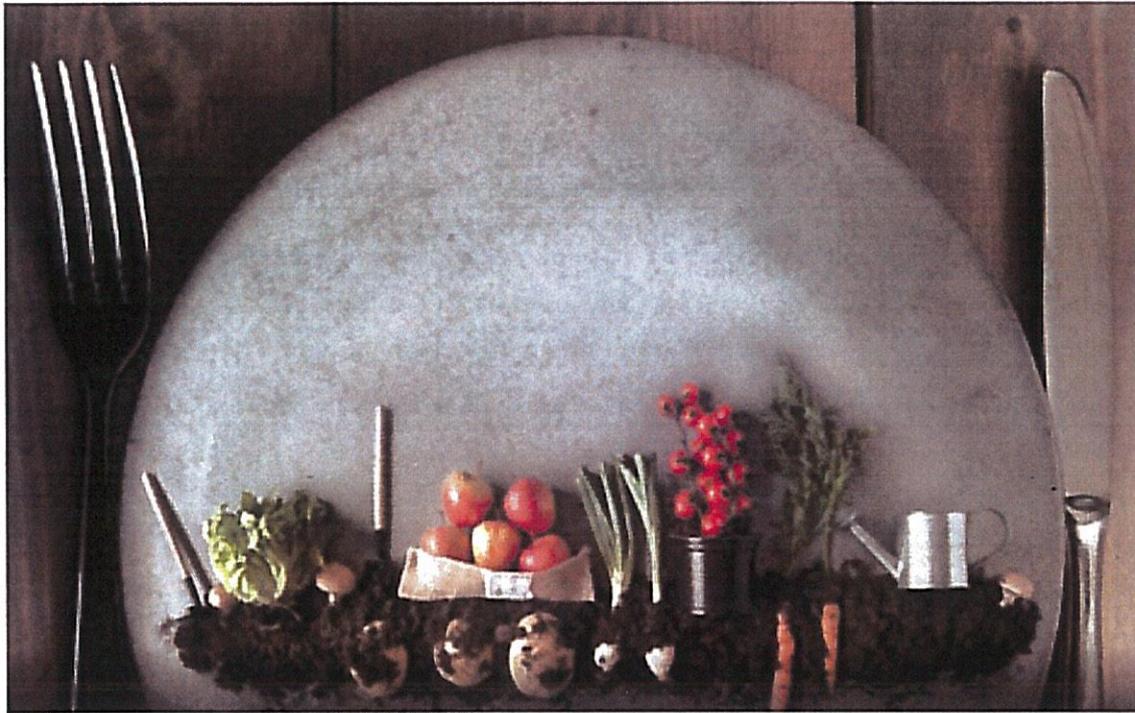
We are a group studying a Postgraduate course in Climate Entrepreneurship with Trinity's Tangent department.

As part of our studies we recently completed a group assignment on the Irish Food system and would like to submit our findings as a submission to the open consultation on Agrifood 2030.

In our assignment we outline the difficulties and issues surrounding the current food system model and propose some innovations.

Kind Regards

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# Innovating the Irish Food System

How Carbon Labelling illuminates the benefits of a food systems approach.

Group 3

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## **Glossary**

BER Building Energy Rating  
CSA Community Supported Agriculture  
DAFM Department of Agriculture, Food and the Marine  
DEAP Dwelling Energy Assessment Procedure  
FSAI Food Safety Authority of Ireland  
GHG GreenHouse Gas  
IFA Irish Farming Association  
REPS REPS  
SEAI Sustainable Energy Authority of Ireland  
UN United Nations  
WTO World Trade Organisation

## **1.0 Executive Summary**

The food system is complex and interconnected with all parts of society. It is the basis of life, feeding populations and shaping the environment. Modern agriculture has undermined important ecological systems and now adjustments have to be made in order to nourish people and restore ecological balance.

Ireland's food system today is based on large scale agriculture and processing of animal products. The industry depends on heavy use of fertilizers and chemicals. Agriculture contributes to 35% of Irish GHG emissions and also to the decline of water quality (EPA, 2020). A profound shift to more sustainable solutions is required for the sector to be climate neutral by 2050. At the same time that farmers struggle to make a living, the processing and retail sectors experience a boom of profit and sales (Teagasc, 2021).

The objective of this project is to analyse the food system and identify leverage points for intervention, with a view to bringing producer and consumer closer together, rewarding producers fairly which produce with positive environmental impact.

The research conducted demonstrated that the time is right for intervention. A carbon labelling system was identified as a core solution. It has the potential to drive climate positive consumer behavior. It also offers the opportunity to fairly reward the producers that are able to demonstrate positive impacts on the environment delivering healthy, nutritious and sustainable food. Projects such as Farming for Nature and Talamh Beo are representative of this shift that must happen in our food systems. Demand for clear, measurable indicators will likely grow (Bord Bia, 2019).

The limitations of a single solution for such a complex food system are recognized and therefore many other leverage points were identified to promote the shift into a more regenerative food system. Further recommendations include; To Promote Organic Production, GMO Free Ireland; Results based Agri-Environmental payments; Community Hubs; Awareness Campaigns; Land Mobility; Direct Market Access; Food Systems as part of education.

## 2.0 Sectors Overview - Ireland's Food Systems

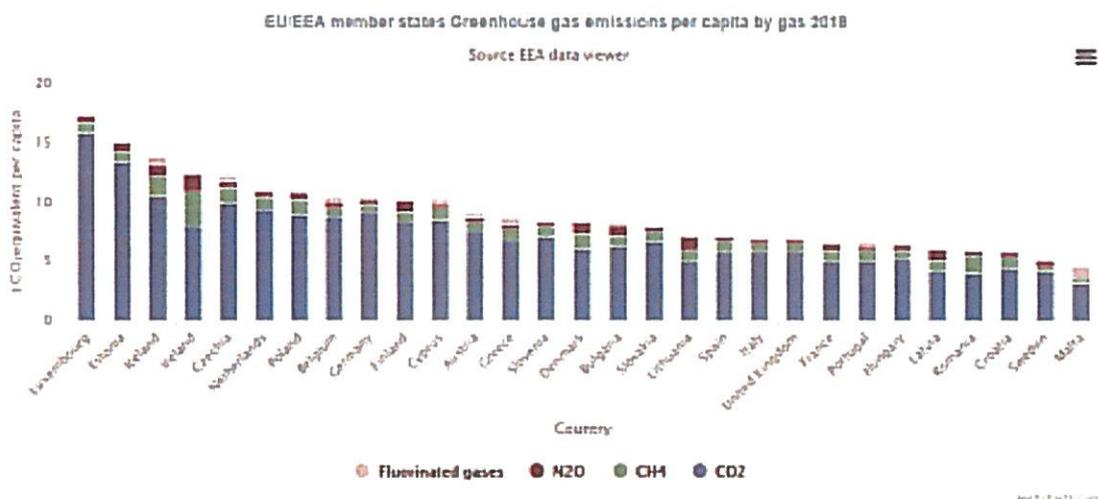
The Irish landscape is dominated by agriculture, approximately 70% of the country is used for food production. Today 91% of this agricultural land is under pasture and rough grazing, with 7.5% under cereal and 1% for horticulture use (Teagasc, 2019). The average farm size is 43.3 hectares and the average farm income is €23,500 per year. 44% of farmers earn less than €10,000 per year and only 4% have an income of €100,000 per year (Teagasc, 2019).

Ireland is the leading exporter of dairy, beef and lamb in the EU. Agri-food is the biggest indigenous sector in Ireland and employs over 7% of the population. It is a highly competitive and large-scale dominated market where more than 50% of companies have over 250 employees (Food Drink Ireland, 2020).

The retail sector is also dominated by large enterprises such as Tesco and Lidl, which controls over 90% of the fresh sales market. Consumers are used to accessing a global diet at a low cost, made possible by availability of subsidies and cheap fossil fuels which undermines local producers and prices (Teagasc, 2021).

Ireland has one of the highest rates of GHG emissions per capita in the EU (Figure 1 - EPA, 2020). While also driving emissions, agriculture is taking a toll on the health of the soil and water through the over utilization and mismanagement of fertilizers and other chemicals, presenting itself as one area which needs intervention to bring Ireland closer to achieve its Climate Plan goals (EPA, 2020).

**Figure 1: EU/EEA member states Greenhouse gas emissions per capita by gas 2018**



### 3.0 Defining the Problem

#### 3.1 The Challenge:

Ireland's current food system contributes significantly to greenhouse gas emissions, with agriculture responsible for 35.3% of Irish emissions in 2019 (Teagasc, 2018) which has detrimental impacts on climate change. Over reliance on beef and dairy sectors combined with rising food waste, means a profound shift to more sustainable solutions is required for the sector to be climate neutral by 2050.

'The ambition is to be a sustainable food system that is profitable throughout (economic sustainability), has broad based benefits for society (social sustainability) and has a positive or neutral effect on the natural environment (environment sustainability)', (Agri Food Strategy, 2030). By taking a systems thinking approach, the challenge of this project is to highlight, support and promote positive initiatives within the Irish food system that are committed to delivering healthy nutritious and sustainable food with a positive impact to the planet.

### 3.2 Problem Statement

The problem statement was used to focus and refine the challenge that was to be addressed. It was an iterative collective process that helped to hone, clarify and solidify the problem. It also provided a point of reference to judge proposed solutions against. A problem statement worksheet (Figure 1) was used to collaboratively create the statement and align group opinions.

Figure 2: Problem Statement Worksheet (Stratechi.com).

**PROBLEM STATEMENT WORKSHEET**

PROBLEM STATEMENT:

| KEY QUESTIONS  | Answers |
|--|---------|
| WHO?<br>Who does the problem impact and involve?                                 | ""      |
| WHAT?<br>What does the problem impact? What are the drivers of the problem?      | ""      |
| WHY?<br>Why is solving the problem important to stakeholders and the business?   | ""      |
| WHERE?<br>Where does the problem reside or have impact?                          | ""      |
| WHEN?<br>When did the problem begin? When does the problem need to be solved by? | ""      |
| HOW?<br>How was the problem created? How can the problem be solved?              | ""      |

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As part of the process, an initial problem statement was developed.

*Existing retail food system doesn't give the end-consumer transparent, trustworthy choices regarding environmental impact and health. Nature-friendly producers are not recognised and rewarded fairly for sustainable practices.*

However, after further review a final statement was established which gives a more holistic view of the various actors' roles within the system.

*Our existing current food system is unsustainable. It is causing increasing*

*ecological damage, the population is largely disconnected from food production and most food producers are struggling to make a living.*

### 3.3 The Objectives of the Project:

1. To adopt a systems mindset to innovate the current Irish food system.
2. To contextualize the current food sector.
3. To define a clear problem statement that states the challenge that needs to be addressed.
4. To map the current food system.
5. To identify which elements of the current system which should be kept or repurposed.
6. To identify potential leverage points for change.
7. To visualise a potential new system with proposed solutions and recommendations.
8. To identify and promote connections between different actors in the system so that they can share experiences and knowledge.

## 4.0 Ideation

Ideation was employed to transition from the identification of problems to the exploration of solutions, through design thinking, collaboration, discussions and brainstorming. Using platforms such as Miro, Blackboard, Google docs, Zoom and Whatsapp facilitated group interaction.

### 4.1 Iceberg Model Analysis:

Figure 4: Current Iceberg Model

## CURRENT (Productivist)

### OUTCOMES

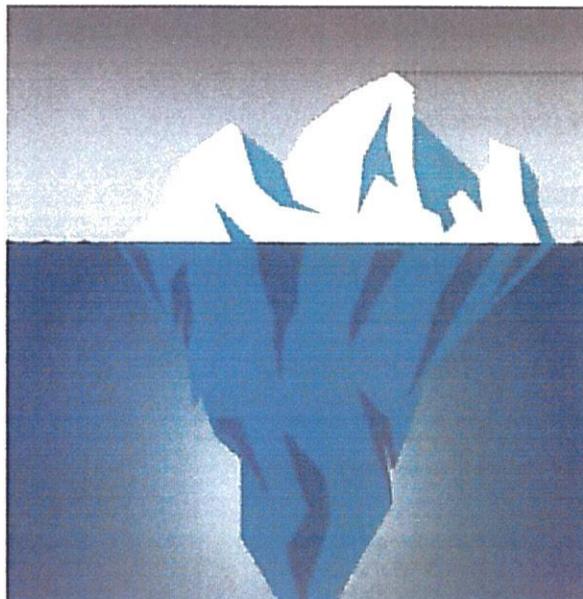
Producer poorly rewarded  
Food waste  
Ecological destruction  
Food as commodity  
Consumer disconnected to food production

### STRUCTURE

Producer subsidies - large scale  
International prices pressure - Low food cost  
Fossil fuels - chemical fertilizers  
Intensive farming methods/restrictive CAP  
Lack of clarity on labels

### BELIEFS

Access to non seasonal foods all year round  
Chemical over Biological  
Monocrop systems  
Intensification and



### 4.1.1 The Iceberg Model Current

The Iceberg Model was used as a systems tool to understand and identify patterns and behaviour in the current food system. The Irish food system was identified as productivist and driven by the market towards economic gain and growth (Ornua, 2025). Few ecological boundaries are respected, with overshoots in terms of food waste (DAFM RIDF, 2021), environmental degradation (EPA, 2020) and carbon footprint of imported foods. Consumers have little or no connection to the origin of the food they eat.

The structures supporting this are large-scale intensive production dominated by a few stakeholders, (Power, IFA, 2020). (ICTU, 2021). In retail there is a lack of clarity on labels and origin.

The underlying mindsets of the current system are influenced by cognitive and social biases:

Unrealistic Optimism; that the food system is trustworthy and doing the best for all stakeholders without knowledge about how the food was produced or it's impact on the environment.

Temporal Bias; immediate needs outweigh the desire for a better future. Convenience and choice of food are desirable and available.

Social Norms; we do what we see others around us do, creating inertia to change.

Blunting; knowing there is a problem with the system, but nothing is done to change it (Hevey, D., 2021).

Figure 4: Iceberg Model 2

### **NEW (Regenerative)**

#### **OUTCOMES**

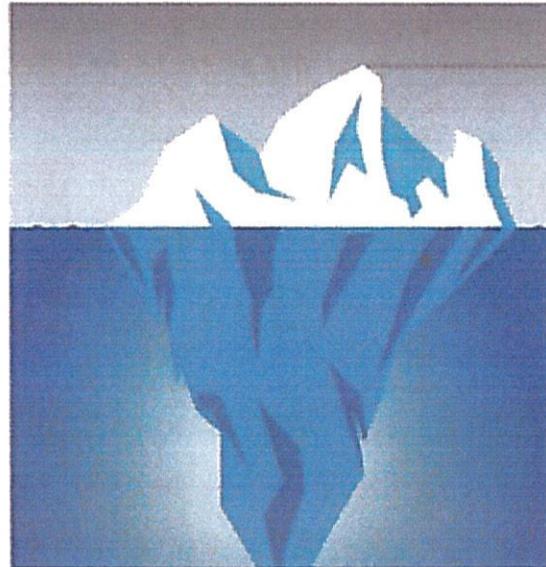
Localised Food Chain  
Access to nutritious food for all  
Food production which has a positive ecological impact

#### **STRUCTURE**

Transparency in food system, labelling  
Producers rewarded for regenerative practices  
Community Hubs, rural development  
Localised food processing  
Diversity of produce, farm type, producer

#### **BELIEFS**

Food is local and seasonal  
Food production is a rewarding lifestyle  
We are all part of the food web



#### 4.1.2 Iceberg Model New

The Iceberg Model of the new food system envisions a future which is regenerative and localised. Food production has a positive impact on the environment and the community.

This is supported by producers being rewarded for regenerative practices. Community hubs and rural development. Localised food processing and diversity. Transparency in food labelling. Education.

New social norms and beliefs support people connecting with the land and food production. Shopping with clarity and transparency. Zero waste, closed nutrient loop, building soil and "Cathedral thinking" (Krznaric, R., 2021).

Their motivation is approach-orientated. Connecting with nature and food is rewarding and pleasurable.

Positive coping mechanisms in the new system would use concrete behavioral steps to approach problems in the food system. Growing food domestically and acceptance of future uncertainties is an example of approach-coping.

(Hevey D., 2021)

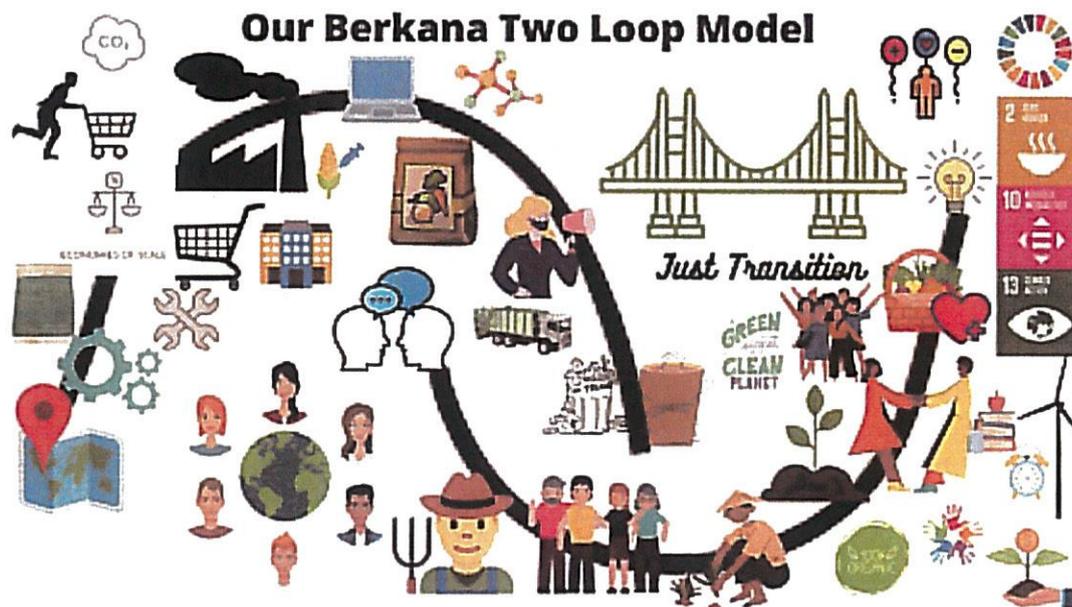
#### 4.2 The Berkana Two Loop Model

This model was utilised to stimulate the ideation process. The first loop exhibited the current dominant food system, elucidating the productivist model of food production with characteristics such as economies of scale and high-energy usage. Key aspects of this type of farming in Ireland include intensification, concentration, and specialisation (The

Environmental Pillar et al., 2021). This system of intensive farming is leading to high carbon emissions and excessive waste. Current policies lock Irish farmers into practices that are unsustainable in the long term, linked to global commodity markets (The Environmental Pillar et al., 2021).

The need for a food systems approach emerged and is mapped in the second Berkana Loop (Figure 5). Emergence explores how change happens as new systems become the norm (Berkana Institute, 2021). An integrated food systems approach is advised for Ireland with the organic farming target being at least 7.5% of farmland by 2030 (Agri-Food Strategy, 2030). This new system must be named and connected with ongoing education, training and financial support as new communities of practice are allowed time to flourish. Such networks and coalitions allow for real societal change (Wheatley, 2011). Furthermore, when considering the strength of weak ties principle, these small interactions may translate into large patterns (Granovetter, 1973). The emerging new system highlighted in the second loop involves forming systems that are more sustainable and diverse. Accordingly, the EAT-Lancet Commission Report 2019 demonstrates the need for sustainable food production (Willett et al., 2019).

Figure 5: The Berkana Two Loop Model



#### 4.3 Unintended consequences. Positive and Negative Feedback Loops.

Feedback loops in a dynamic system can have a dual effect on a change, either strengthening (positive feedback) or reducing (negative feedback) the system (Meadows, 2008).

"Whatever you initiate, expect unintended consequences. Every effort to change a system creates these, because all the interactions can't be seen ahead of time" (Wheatley, 2002).

#### 4.3.1 Unintended Consequences of Food System Change

Decentralisation of food production and processing could lead to reduction in economies of scale and fewer exports, which in turn would result in a) Decrease in tax revenue to the exchequer, decrease in GDP. This could however be balanced by increased local economy and the emergence of an informal economy.

- b) Increase in food prices.
- c) Temporal food shortages due to reliance on seasonal foods within Ireland and fewer imports.
- d) Regional specialization leading to unequal quality of food and offer in different areas of the country.

#### 4.3.2 Unintended Consequences of Carbon Labelling System

- a) A European Carbon labelling system could result in Irish products being substituted for locally produced foods.
- b) The World Trade Organisation could view Carbon Labelling negatively affecting developing nations who rely on their own food exports.
- c) Smaller producers may not be able to comply with data requirements which could push them out of the market.
- d) Labelling, without education, could lead to further confusion and consumer apathy.

#### 4.3.3 Positive Feedback Loops

"Local food production promotes a virtuous circle," (Pimbert, IIED, 2012).

- a) Shorter supply chains would use less fossil fuels in transportation. Food security on a local level would be enhanced.
- b) Local social and economic benefits which in turn would further enhance rural development. Self-reliant and climate resilient communities.
- c) Measuring carbon in the system will highlight inefficiencies and further areas for

positive change.

- d) Improved education in food and nature will result in improved choices and further positive innovation.

#### 4.3.4 Negative Feedback Loops

- a) Ireland could lose its Green-branding of grass fed low carbon dairy and beef production.
- b) Unless local food production can include urban production there could be a further division between Urban and Rural dwellers.
- c) Over reliance on local food could result in loss of climate resilience

#### 4.4 System Map and Mapping the Leverage Points

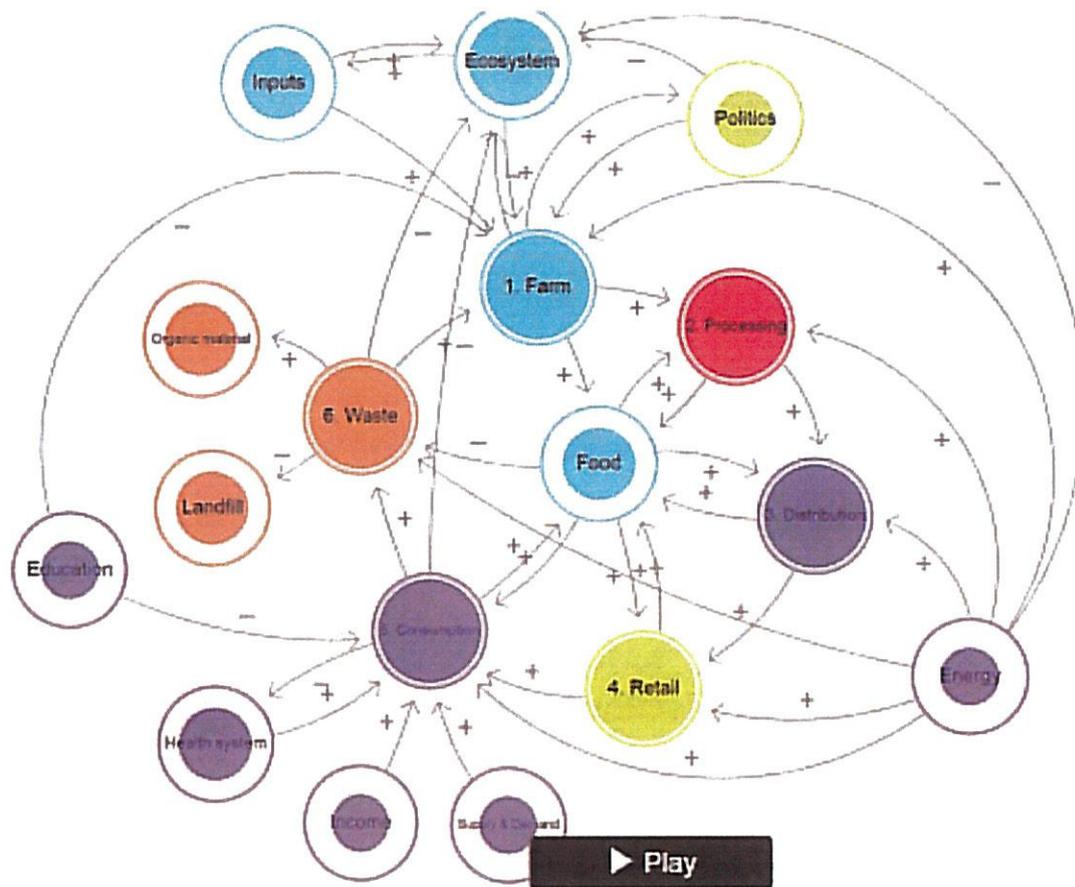
The next step of the ideation process, allowed for the creation of a systems map. Leverage points identified through group discussions included farming, processing, distribution, retail and consumption. These leverage points were mapped using the Loopy tool. This use of this tool illuminated the interconnectedness of the systems and allowed for a visual representation that demonstrated the aforementioned positive and negative feedback loops to be created that further stimulated the ideation process. Three questions were then asked:

- a) What should be kept?
- b) What should be left behind?
- c) What should be changed?

These questions led to the formation of a critical analysis and each group member ideated separately on and discussed one of these system elements.

Five key elements of the food system were mapped to identify key leverage points that provide opportunities to transition to a new sustainable food system. 'Leverage points are places within a complex system where a small shift in one thing can produce big changes in everything' (Meadows & Wright, 2018). By systems mapping interactions with other systems were also identified such as education, waste, health and energy, (Figure 6).

Figure 6: Systems Map



- The following leverage points were identified through the ideation process:
1. Farming:
    - a. To move to nature friendly farming methods but for the farmer to be rewarded fairly for these initiatives.
    - b. The opportunity to diversify away from traditional meat and dairy production.
    - c. Financial intervention that supports nature friendly farming methods.
  2. Processing:
    - a. The opportunity to drive waste out of the system but also to use it as an input for other production methods.
    - b. To provide consumers clarity on food sources.
  3. Distribution:
    - a. The ability to localise food supply based on seasonal produce and in turn shortening the supply chain.
    - b. Strive for greater efficiencies.
  4. Retail:
    - a. Enabling consumers to make sustainable health choices, for human and

planetary health.

b. To inform consumers on the carbon content of their product choices.

5. Consumers:

a. To influence dietary and purchase behaviour.

b. To empower consumers to make more sustainable purchase decisions by education on the environmental impacts of their choices.

## 5.0 Research Methods/Findings/ Analysis:

The research was framed by systems thinking. It involved a move from traditional to linear thinking through the process of ideation, research methods and exploration of the interconnections within food systems. Systems thinking enables researchers to identify root causes as systems behave in similar ways and exhibit patterns of behavior over time (Meadows and Wright, 2008). The chosen research methods would enable the researchers to consider the functioning of the food system. It is acknowledged that researchers need to better communicate their findings outside the realm of academic publishing across the globe in a way that is easily understood by decision makers including at policy dialogues. (Fanzo et al., 2020)

### 5.1 Desk Based Research

Desk-based research involved contacting the Carbon Trust and the Food Safety Authority of Ireland in relation to food labelling. Other material related on this topic contained in reports along with newspaper and magazine articles and recent Government documentation were examined. The outcome of this research method provided us with relevant information and influenced the plan by enabling us to develop solutions. In the case of the absence of research regarding Ireland, this influenced the plan by further highlighting the need for carbon labels.

#### **The Carbon Trust Research**

The 2020 international YouGov survey of 10,000 consumers commissioned by the Carbon Trust shows two-thirds of consumers support carbon labelling on products.

As noted, 64 per cent of consumers in all countries surveyed said they are more likely to think positively about a brand that could demonstrate it had lowered the carbon footprint of its products. When contacted by email as part of the desk research process the Carbon Trust pointed out that there was no Irish specific carbon label research.

#### **The Food Safety Authority of Ireland**

Initial desk-based studies investigated a 2009 study from the Food Safety Authority of

Ireland, (FSAI) that noted one in four consumers always read food labels when shopping for food. In addition, country of origin labelling is important to Irish consumers as three quarters of those surveyed believe country of origin should be indicated on all foods - both pre-packaged and loose (FSAI, 2009).

## 5.2 Case Studies

Case studies are used to explore complex issues in real-life settings (Crowe et al., 2011)

### 5.2.1 Country - The Netherlands

The Netherlands is a world leader in production of many food types, including, tomatoes, onions, potatoes and seeds (Viviano, 2017).

High demand for land and labour in the Netherlands drives innovation within the Dutch food system. Using bioeconomy principles, high yields are attained using few resources (Whiting, 2019). -

A national commitment to sustainable agriculture was made and since 2000, resource use, including water, chemicals and antibiotics have drastically reduced, while production has increased, (Viviano, 2017).

The Dutch have developed and invested in the most efficient technologies and innovations. Science is used to determine nutritional requirements for growing and pest control with clever use of nature based solutions (Viviano, 2017).

This efficient food system is supported by a nature based education from primary school under the Naturewise programme. NatureWise participants were better positioned to establish direct contact with nature and gained more confidence and interest in nature, which helped them understand information about nature that comes to them through the media (Wals, 2012). At Wageningen University, the potential of nature is explored to improve the quality of life. The Dutch have a strong sense of global solidarity, recruiting students from over 100 nations at Wageningen University and implementing collaborative projects in Kenya, Peru and Guatemala. (Viviano, 2017)

Case study insights:

- A Government commitment to sustainable agriculture is important to drive the change.
- Technology and science are highly advanced and must be embraced. ● Education is vital to foster a connection with nature and the food system and to drive innovation.
- Think Global and act local, sharing of resources and learning from experiences.

### 5.2.2 Retailer - Tesco, Carbon Labelling

As an example of a solution, Tesco Carbon labeling initiative was researched in detail. In 2008, Tesco, in collaboration with the Carbon Trust, introduced carbon labelling on twenty products across four categories, further products were added. In 2012, the project was discontinued, citing the following:

The process was too costly and time-consuming, and too few other brands were doing the same to give it "critical mass" (Lucas and Clark, 2012).

#### Case study insights:

- A single solution adopted by a single retailer cannot be a solution to the complex food system.
- There is a lack of awareness and understanding of the food system and carbon labelling and a need to present information so it can be easily understood (Lucas and Clark, 2012)
- Collaboration between industry, government and society is required (Hornibrook et al, 2015).
- There is a need to "develop targeted information strategies to raise awareness, improve understanding and ultimately change behaviour". (Hornibrook et al, 2015).

### 5.3 Primary Research:

An interview was conducted with group member [REDACTED] from [REDACTED] and [REDACTED] Wicklow Farm:

[REDACTED] runs a Community Supported Agriculture (CSA) farm with his wife in [REDACTED] Co. Wicklow. They supply seasonal produce directly to the community, with a huge focus on nurturing soil biology and closing nutrient loops around the farm. The key learnings were the difficulties of producing on a small scale and competing with supermarket prices and range of products. However, a fundamental strength was the connection developed with the members and the landscape where their food is being produced. Every week customers go into the farm, it has not only developed a relationship between consumers and their food source but also created a hub where members connect, a much-needed space in the community.

Overall [REDACTED] talks about the longing he perceives within his community to this connection with the land and one another and would like to see more of these farms

coming up and being properly supported by their communities.

The main implications from this interview are how these kinds of initiatives need to be supported and nourished. These types of nature friendly farms are competing with a powerful and established market which more often than not, are impacting negatively on the environment and offering food at unrealistic costs.

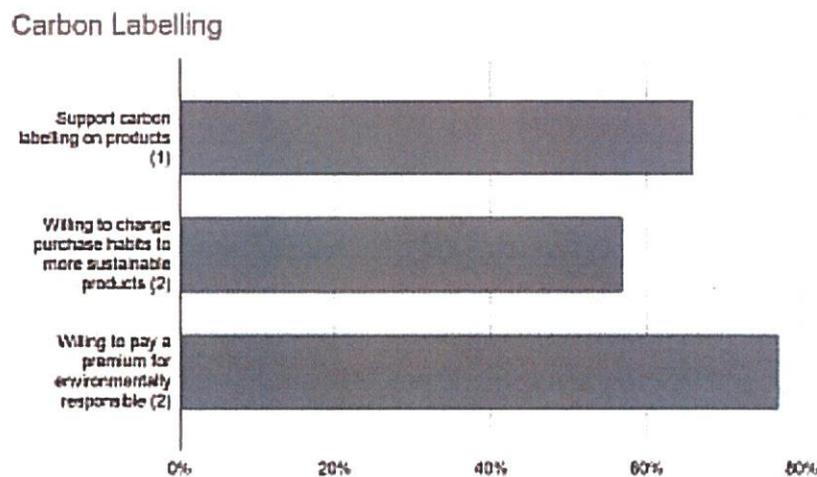
## 6.0 Proposed Solutions

Interventions were proposed based on the research and ideation in previous sections. One solution, carbon labelling was explored in detail with supporting solutions.

### 6.1 Carbon labeling

Carbon labelling is proposed as a core solution, supported by the system wide solutions identified in Figure 8. A carbon accounting and labelling system has the potential to influence or nudge consumer purchase behaviour and dietary habits, (Figure 7) while also providing an instrument to push change back through the system.

Figure 7: Consumer attitudes to sustainability purchasing behaviour.



Ref : (1) Carbon Trust Research 2020 (2) (IBM 2020)

The timing for a successful introduction of a carbon labelling system is apt as the needs of the various actors in the system are aligned.

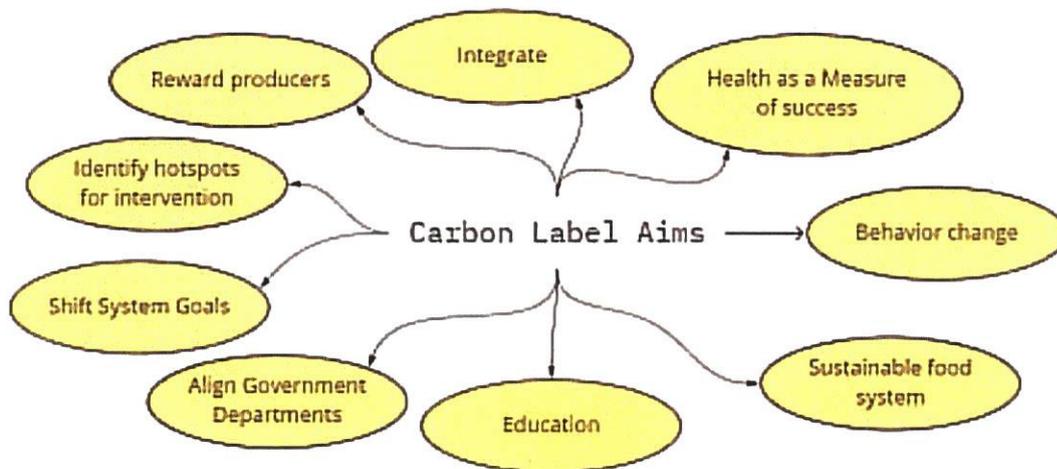
1. Consumers want to be empowered with clear and consistent information, (Figure 7).

2. Companies are already taking the initiative to label their products such as Quorn and Oatly. Others will want to follow this lead, Nestle and Unilever have already signalled their intention (Financial Times Nov, 2020).
3. Retailers want to be part of the climate solution - Supervalu has stated it wants to make a positive impact on their communities and planet (Supervalu.ie).
4. Producers want to be rewarded fairly for nature friendly farming practices, for example, Talamh Beo, CSA.

Technology has also matured to support the carbon label solution. Therefore, addressing the reasons why previous attempts have faltered. There is opportunity for a clear, concise and consistent carbon label. (Camilleri, A.R., Larrick, R.P., Hossain, S. et al. (2019). (Hornibrook, S., May, C and Fearn, A., 2015). A well designed product label will tell us not only what a product contains but what it costs the planet to make it.

The main aims of the labeling system are shown in the following diagram.

Figure 7: Aims of the Carbon Labelling System



To promote positive behavioral change, the label needs to use 'reliable, transparent and independent certification standards'. (BCW, 2020) As an example, the Carbon Trust label, is based on Publicly Available Specification (PAS) 2050, which uses ISO 14064 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals and World Business Council for Sustainable Development's GHG protocol. (Guenther, M., Saunders, CM. Tait, PR. (2012).

There are several methods of displaying the information. See Figure 8 for three

alternative approaches. The data needs to be presented concisely, the label must be clear and easily recognisable. Consistency is required to enable product comparison (BCW, 2020).

Figure 8: Carbon Label examples



Ecoscore Carbon Footprint Light bulb  
(Southey, 2021) (Carbon Trust, 2020) (Camilleri et al, 2019)

Data inputs from production, processing, distribution and retail will need to be gathered and managed. Collecting and analysing this data will be difficult. A simplified approach is required, using efficiency ranges and defaults where data is lacking, until accurate data is available. Using a method similar to the Dwelling Energy Assessment Procedure used by the Sustainable Energy Authority of Ireland (SEAI). Data can be input by system actors on a centralised platform. To create a label, the product, producer, distributor is selected by the user and a label is generated. (SEAI, 2020) Administration of the label and the data needs to be carried out by a body such as the Food Safety Authority of Ireland (FSAI), which is already responsible for nutrition labeling. Carbon accounting must be tackled in a manner similar to the Building Energy Rating, run by the SEAI and supported by the Government of Ireland. Carbon labeling can be placed on a defined range of products initially and further product ranges can be added on a phased basis. It is envisaged that carbon accounting will become mandatory after an initial lead in period.

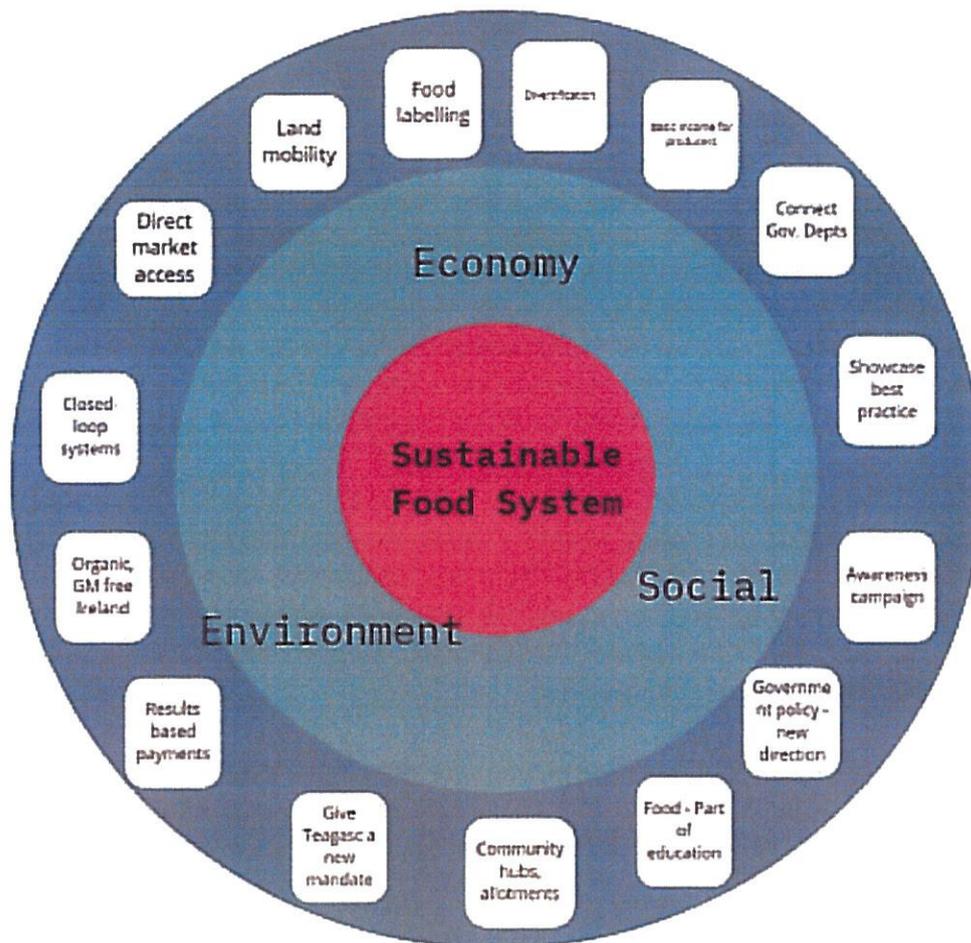
Measuring carbon footprint along the supply chain can identify areas with high potential for intervention bringing reduced ecological impacts (May & Fearne, 2017).

## 6.2 Food systems approach

The food system is complex therefore a singular solution implemented in isolation will have limited success.

To effect complete system change, a range of potential levers were identified through research and ideation to promote a sustainable food system, as shown in Figure 9.

Figure 9: Potential levers for change of total system.



A carbon label can be viewed as a catalyst to promote change through the wider system. The following solutions were identified as wider system interventions:

1. The Irish commodity-based food system has intensification as the core goal. It needs a new purpose. Ireland can be ambitious and implement a sustainable food system, valuing ecological services which includes carbon accounting. Ireland has many advantages, such as access to technology and resources and is recognised internationally for quality food production. Make food sovereignty a national priority and diversify production. Align government departments under this common goal. Review Government Departments and remove conflicting policies (Environmental Pillar, 2021 & Talamh Beo, 2020). Carbon accounting can support these changes through promotion of full transparency.
2. Existing successful elements in the system need to be repurposed and integrated together. For example, Farming For Nature acknowledges and supports high

nature value farming in Ireland. Give Teagasc a new mandate of a sustainable agro-ecological model, research and advice (The Environmental Pillar, 2021). An information campaign can highlight best practice and promote role models for future generations to follow.

3. Integration of food and nature into our education curriculum along with a wider public awareness campaign are needed. Practical food production and cooking skills along with subjects such as planetary health and food systems need to be brought to mainstream learning. Education will change the system values and beliefs. Education in critical thinking together with a greater environmental awareness will drive innovation in a positive direction. Education is fundamental to the success of the carbon label, similarly the carbon label is an educational tool.
4. A change in what is measured, what is subsidised, rewarded and therefore valued is required. Producer payments must change from single farm payment/REPS to agri-environmental reward-based subsidies. Producers are following the rules of the system. Through carbon accounting, diversification and ecosystem services can be rewarded.
5. Agri-environmental producer schemes require data input to calculate payment, as it is results-based. This data is input to carbon accounting. A positive feedback of reduced ecological impacts will result in higher payments and an improved market price.
6. It will not be enough to expect consumers to make the correct choices in-stores. Further feedback and system improvements will be required to stimulate improved performances and lower impacts.
7. Improved access to capital and resources for actors in the system with reduced or positive ecological impacts.

The success of the system must be based on health; planetary, human and animal health (Sage, 2021). By measuring carbon within the food chain, we can identify further interventions and solutions.

## 7.0 Conclusion

In conclusion, by taking a food systems approach it has been identified that to effect change as many system elements must be linked together. If these changes are implemented, our food system will operate sustainably with reduced impact on the planet. Our population will have transparency and a closer connection to food

production and food producers will be rewarded fairly for their nature friendly practices.

The complexity of the food system demands a wide range of actions and interventions in order to bring the changes identified through the systems approach of this project. Many elements and sectors are involved and need to be aligned and committed with the change for a more sustainable and fair food system.

In order for Ireland to meet its targets of the Climate Action Plan 2021, a food systems approach should be adopted.

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## Appendix

### Appendix 1 - Email from the FSAI on 2018 Labelling Research

Hi X,

Please see the attached which has information on research done in 2018.

Kind regards,

[REDACTED]

[REDACTED]

### Appendix 2 Additional Research

#### The UN Food Systems Dialogues

Qualitative research took place through group attendance and participation in the UN Food Systems dialogue. Each group member either attended these online sessions live as they happened or watched the recordings at a later point. The outcome of attending these dialogues inspired the researchers further.

#### Additional Reports

Several reports informed this research including those from Teagasc, the Environmental Pillar, Bord Bia and the Irish Government. Ireland can become a global leader if an "Integrated food systems approach" is adopted (Agri-Food Strategy, 2030). There are global issues with food security and resource use (IPCC, 2019).

The importance of the organic food sector has been acknowledged which is pertinent to this research (Department of Agriculture, Food and Marine, 2018). Regarding sustainability, the Bord Bia Irish Food Service Market and Consumer Insights 2019 revealed demand for clear, measurable indicators will likely grow (Bord Bia, 2019). There is a requirement to decarbonise in Ireland and to develop a sustainable food system (Government of Ireland, 2019). The Reports identified that there was a need for a food systems approach.

### Appendix 3 Secondary Data Analysis

#### Secondary Data Analysis

1. Organic production in Ireland at a current rate of 1.6% is far below the EU

average of 8.5%. (Eurostat 2020). The EU goal of 25% by 2030 shadows the modest ambition of 7.5% in Ireland. (European Green Deal 2019) (Farm to Fork 2018)

2. Ireland showed a 32% increase in mineral fertiliser consumption by agriculture, EU-27, 2008-2018, (million tonnes) *Source*: Eurostat (aei\_fm\_usefert).
3. Above optimal use of Nitrogen and Phosphorus leads to a greater risk of polluted watercourses. Overall surface water quality in Ireland has declined by 4.4% since 2015. (EPA 2020).
4. FSAI, A Research Study into Consumers' Attitudes to Food Labelling Quantitative and qualitative research across a balanced demographic of over 1000 and 50 people respectively showed that 25% of respondents always check labels. An increase of 17% since 2004. FSAI, (Dec 2019)

Desk based research also revealed a study from the University of Copenhagen and the Swedish University of Agricultural Sciences in a journal called Food Policy. It showed Carbon footprint labels cause people to choose meat products with 25% lower climate impact (DeWeerd, 2021). Meanwhile the first full scientific review demonstrates the need for sustainable food production (EAT-Lancet Commission Report 2019).



## ANIMAL HEALTH IRELAND

Contributing to a profitable and sustainable farming and agri-food sector through improved animal health

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31<sup>st</sup> May 2021

### Animal Health Ireland (AHI) response to public consultation on the Draft Agrifood Strategy 2030.

AHI was established in 2009 with the mission of contributing to a profitable and sustainable farming and agri-food sector through improved animal health. In this context, our remit is to pursue effective control strategies for economically important diseases of livestock which are not subject to international regulation. Currently these activities focus on: completion of the national BVD eradication programme; CellCheck (CCK)- the national mastitis control programme; the Irish Johne's Control Programme (IJCP); the Beef HealthCheck (BHC) programme, capturing and reporting abattoir data and using these to inform farmers and contribute to breeding indices incorporating resistance to liver fluke; Pig HealthCheck (PHC), addressing a range of prioritised issues including Salmonella, anti-microbial usage, tail docking, biosecurity and capture and feedback of ante- and post-mortem (AM/PM) data; development of options for a national IBR eradication programme and activities on biosecurity, calf care and parasite control. Through a recent survey of farmers and stakeholders<sup>1</sup>, AHI identified several key additional priorities, alongside our existing programmes, for livestock farming over the coming decade. These included antimicrobial resistance (AMR), anti-parasitic resistance (APR), greenhouse gas (GHG) mitigation and calf welfare, with these being well aligned with the priorities of DAFM, wider government and the Agri-Food Strategy to 2030.

In this context, the focus of the comments below relate to these programmes, associated issues, additional priorities and animal health and welfare more generally.

AHI welcomes the strategy and supports the focus on sustainability- environmental, economic and social- and addressing these through a food systems approach. The arrangement of the strategy under 4 high level missions, with associated goals and under-pinning actions for each, is clear. At the same time, we believe that greater focus could be given to measures related to animal health and welfare and the associated sustainability outcomes. In relation to greenhouse gases, improved animal health will contribute to greater efficiency of production, and, in the context of stable cattle numbers, to overall mitigation. Additional benefits will be obtained through reduced antimicrobial usage (AMU), addressing the societal concerns regarding AMR, and by addressing the emerging issue of antiparasitic resistance. Both issues should be given greater prominence in the strategy.

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<sup>1</sup> Meunier, N. V., McKenzie, K., Graham, D.A., More, S.J., 2020. Stakeholder perceptions of non-regulatory bovine health issues in Ireland: past and future perspectives. *Ir. Vet. J.* 73, 1–13. <https://doi.org/10.1186/s13620-020-00178-8>

Specific comments on the Strategic Vision and Structure are as follows:

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

Goal 1- Develop a climate neutral agri-food system so that by 2050, the climate impact of methane is reduced to zero and remaining agricultural emissions are balanced by removals; and improve air quality

The various actions in support of this goal focus on implementation and ongoing review of the AgClimatise Roadmap. The roadmap contains a series of measures on animal health, but these appear to be largely overlooked within the actions described, which focus on nutrition, breeding and management. The one health-related measure mentioned (increased uptake of milk recording) reflects the AgClimatise target of having 90% of herds engaged in recording by 2030. Given the challenges of implementing the Veterinary Medicinal Products Regulations in relation to selective dry cow therapy (SDCT), this target is not sufficiently ambitious, with recording the only practical means of generating the information required to introduce SDCT. Several of the animal health measures referenced in the Roadmap are available for immediate implementation (e.g., a national programme to eradicate IBR, participation in the Irish Johnne's Control Programme), while further roll out of other AHI-led activities on capture of abattoir data through wider implementation of the cattle AM/PM system will yield benefits in terms of both fluke control and also breeding for resistance.

The recent launch of the Signpost Farm Programme is welcomed, with this providing an opportunity to demonstrate and communicate best practice in relation to animal health and welfare.

Under Action 5b, AHI support the application of desk top studies to quantify the GHG efficiency/mitigation achieved through the progress made with the national BVD eradication programme (greater than 20-fold reduction in prevalence since 2013) and the CellCheck programme (reduction in national somatic cell count of approximately 100,000), and to predict the mitigation achievable through IBR eradication.

While animal health is not specifically referenced in the ammonia MACC, increased efficiencies achieved through this route will also contribute to mitigation of ammonia outputs.

GOAL 7: Strengthen and invest in Origin Green and other sustainability supports to reflect the higher level of ambition for the agri-food sector

Under Actions 3 and 4, AHI welcomes the recognition of that the inclusion of metrics on animal health and welfare can improve the evidence base for Origin Green in relation to sustainability and associated quality assurance programmes at farm level and of the role that on-farm assessments can play. AHI is already actively engaged in this area, particularly in the pig sector through our Pig HealthCheck programme, with funded on-farm assessments for biosecurity (also for poultry units) and identification and management of risk factors for tail biting in place and a further assessment in relation to the development and review of Salmonella Control Plans under development. Proposals have also been made to Bord Bia for the identification and recognition of on-farm actions on animal health and welfare that can contribute to Farm Sustainability Plans in dairy and beef production.

### **Mission 2: Viable & Resilient Primary Producers with Enhanced Wellbeing**

Goal 1: Improve Competitiveness and Productivity of Primary Producers

AHI welcomes the multiple references to continued (measurable) improvements in animal health and welfare across all sectors- dairy, beef, sheep, pigmeat and poultry (Actions 5, 17) and the associated benefits in terms of reputation and economic and climate efficiency. The actions to address societal concerns in these sectors, including measurable commitments to animal welfare, anti-microbial stewardship and food safety risks (Actions 2, 23) are also welcomed. AHI is already contributing

through its cattle and pig programmes to the delivery of a number of these actions. In addition, our activities mentioned under Mission 1, Goal 7 also specifically contribute to Action 24 in the pig sector (measures to improve biosecurity, verify animal health and welfare standards and best practice, including through Bord Bia QA Scheme). These activities are currently mandated within the Pig QAS, being funded through the Targeted Advisory Service on Animal Health (TASAH) under the Rural Development Programme. It is critical that a mechanism to continue funding these activities is maintained following the expiry of the current contract in November 2021.

In addition to the listed actions, AHI also wish to see rapid roll out of ante mortem/post mortem (AM/PM) data capture systems across all species as a tool to enhance animal health. Elements of this are in place within AHI's Beef HealthCheck programme, which captures liver and lung lesions and reports these back to primary producers and also has enabled the development of breeding indices for resistance to liver fluke. AM data are expected to be provided to our Pig HealthCheck programme shortly, with PM data to follow by the end of 2021. Full roll out across all species, with sharing of findings with the veterinary practitioner of the herd/flock through dashboards developed for this purpose for AHI on the ICBF database would contribute significantly to these actions and the achievement of the associated goals. The advent of the National Farmed Animal Biosecurity Strategy provides an opportunity to align and integrate a variety of activities relating to biosecurity to provide a holistic solution.

In addition to antimicrobial stewardship and the challenge of AMR, actionable reference should also be made to the importance of addressing the challenge of anti-parasitic resistance (APR), including the national action plan being developed by an APR Stakeholder Group which is due to be released shortly.

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

#### **GOAL 2: Enhance Customer and Consumer trust in our food system, providing evidence of a safe, ethical food supply**

Under actions in support of Safe and Authentic Food, AHI support a number of the actions listed. We look forward to contributing to the stakeholder consultation on the revision to the National Farmed Animal Health Strategy (Action 2); to the new National Action Plan for AMR (iNAP; Action 4) and the implementation of the National Farmed Animal Biosecurity Strategy (Action 5). As noted under Action 4, the contribution of several of our programmes underpins the delivery of a range of iNAP objectives, and we have contributed a wide range of actions to the plan. In addition, activities in support of our CellCheck programme will contribute to increased levels of milk recording and improving both capacity and quality of antimicrobial susceptibility testing. AHI is also well placed to contribute to delivery of the Biosecurity Strategy, having a Technical Working Group addressing this area, experience through delivery of on-farm assessments for Johne's disease in cattle and overall assessments of internal and external biosecurity in the pig and poultry sectors, and experience in the development of dashboards to report benchmarked outcomes to farmers and their veterinary practitioners.

Under Transparency and Trust, AHI also look forward to contributing to Action 3- implementation of the new National Animal Welfare Strategy (2021-2025), recognising significant overlap between our own values and the guiding principles of the strategy in terms of working in partnership; science and evidence-led policy making; improving education and knowledge; consistent evaluation and assessment. Several of our activities, particularly in the pig sector, are already contributing to assessing and improving welfare.

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

### **GOAL 3: Develop a Dynamic Knowledge Exchange Environment**

AHI recognise the importance and value of a strong Agricultural Knowledge and Innovation System (AKIS) and fully support Action 1, to develop an AKIS in line with the CAP Strategic Plan. AHI has extensive experience in delivery of knowledge transfer to primary producers, advisors and veterinary practitioners, e.g., service provider training for farmer CellCheck workshops, delivery of these farmer workshops, on-farm events with dairy and beef producers (including CalfCare and Beef HealthCheck events), veterinary training for TASAH activities and, more recently, through on-line digital events. In the context of the "current" CAP (2014-2020), the delivery by AHI of the TASAH programme funded through the RDP, providing farm-specific advice across a range of programmes in the cattle, pig and poultry sectors has played an important role in progressing related health and welfare goals, and we see it as vital that provision for similar supports is made into the future. Action 3, which will include aspects of animal health and welfare to strengthen primary producer advisory and extension services is also welcomed, and something to which AHI can contribute.

### **GOAL 4: Enhance the Use of Technology and Data**

AHI has made extensive use of data to support our programmes with development for AHI of a series of dashboards for farmers and vets on ICBF to present and manage programmes, including the national BVD eradication programme and the Irish Johnes Control programme. Other dashboards (CellCheck, Beef HealthCheck) present detailed analysis of SCC and liver and lung lesions recorded at post mortem. Ongoing work to develop the database for the Pig HealthCheck data will deliver these outcomes across Salmonella, biosecurity, abattoir findings, risks for tail biting and levels of antimicrobial usage. In common with the Strategy, AHI see opportunities for further integration and enhancement of data usage, and have recently submitted a paper to DAFM on this. As such, we support Action 1- Develop the digital transition of the agri-food sector, including the opportunity TO make greater use of public data sources, while recognising the importance of good data governance practices (Action 4). The e-prescribing system that will be introduced by DAFM shortly is a good example of this type of initiative.

### **GOAL 6: Attract and Nurture Diverse and Inclusive Talent**

AHI supports the Actions in support of this goal, but suggests that specific mention be made under Action 2 to ensuring that there is an adequate supply of veterinary surgeons, both working in private practice and in other roles (e.g., DAFM, research) to meet future needs.



An Roinn Comhshaoil,  
Aeráide agus Cumarsáide  
Department of the Environment,  
Climate and Communications



**Geological Survey**  
Suirbhéireacht Gheolaíochta  
Ireland | Éireann

Department of Agriculture, Food and the Marine (DAFM)  
Climate Change and Bioenergy Policy Division  
Dublin Road  
Portlaoise  
Co. Laois R32 K857

09 June 2021

**Re: Draft Agri-Food Strategy to 2030 Environmental Consultation**

Your Ref: n/a  
Our Ref: 21/160 [cf.20/121]

Dear Sir/Madam,

Geological Survey Ireland is the national earth science agency and is a division of the Department of the Environment, Climate and Communications. We provide independent geological information and advice and gather various data for that purpose. Please see our [website](#) for data availability. We recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes. Use of our data or maps should be attributed correctly to 'Geological Survey Ireland'.

With reference to your letter received on the 19 April 2021, concerning the Draft Agri-Food Strategy to 2030 Environmental Consultation, Geological Survey Ireland welcome the opportunity to be included in the draft Agri-Food Strategy to 2030 and Environmental reports stage.

#### Geoheritage

We are pleased to see areas of natural heritage importance, including geological heritage sites taken into consideration in Table 3.2 of the Environmental Report.

We would like to draw your attention to the series of county geological heritage audits now completed for 23 of the 26 counties. Geological heritage highlights the importance of geodiversity (which typically underpins the biodiversity of many ecosystems) at local and national level. Our geological Heritage data sets can be viewed online under the Geological Heritage tab on the online [Map Viewer](#).

In Table 3.2: SEA Objectives of the Environmental Report, SEA Objective 10, 'Landscape –Protect, enhance and manage the character and quality of Ireland's Distinctive landscape and seascape', we note the sub-objectives b. 'Maintain and enhance designated sites, including Ireland's six National Parks and two World Heritage Sites' and c. 'Maintain and enhance cross border landscapes". We would like to highlight the three UNESCO Global Geopark Programmes (Copper Coast, Burren and Cliffs of Moher, and the cross-border Marble Arch Caves), and aspiring geopark project (Joyce Country and Western Lakes). We would welcome consideration of the inclusion of UNESCO global geoparks, and IUCN Guidelines for geoconservation in protected and conserved areas; This best practice guideline, number 31 in the series, is the first to address a fundamental part of nature - geodiversity and geoheritage and its protection and conservation following the broadening of the IUCN definition of a protected area to embrace all of nature.

#### Groundwater

We welcome the inclusion of specific references to our groundwater comments and datasets within Section 3.6 of the Scoping Report and Section 4.3 of the Environmental Report.

In Table 3.2: SEA Objectives of the Environmental Report, we note within the SEA Objective 5. 'Water', the sub-objective 5a, to "Protect drinking water and other water resources from pollution, particulate nitrate and phosphorous pollution with no further deterioration of water quality status" and sub-objective 5b, to "Support the Water Framework Directive objectives of preventing deterioration, achievement of good ecological status by 2027 and achieving compliance with the requirements of designated protected areas". The SEA should consider any potential impact on specific groundwater abstractions and on groundwater resources in general.



We recommend using the groundwater maps on our [Map viewer](#) which should include: wells; drinking water source protection areas; the national map suite - aquifer, groundwater vulnerability, groundwater recharge and subsoil permeability maps. For areas underlain by limestone, please refer to the karst specific data layers (karst features, tracer test database; turlough water levels ([gwlevel.ie](http://gwlevel.ie)). Background information is also provided in the Groundwater Body Descriptions. Please read all disclaimers carefully when using Geological Survey Ireland data.

#### Geochemistry of soils, surface waters and sediments

In Table 3.2: SEA Objectives of the Environmental Report, we note SEA Objective 4. 'Soil and Land Use – Protect and enhance soil quality'. We would like to draw your attention to the activities and datasets of the Tellus Programme.

Geological Survey Ireland provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality. Tellus is a national-scale mapping programme which provides multi-element data for shallow soil, stream sediment and stream water in Ireland, at an average sample density of 1 sample per 4km<sup>2</sup> on a regular sampling grid across all land uses.. At present, mapping consists of the border, western and midland regions. Data is available at <https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx>. This page also hosts urban geochemistry mapping (Dublin SURGE project), Geochemical Mapping of Agricultural and Grazing Land Soil of Europe (GEMAS) and litho-geochemistry (rock geochemistry) from southeast Ireland datasets. Geological Survey Ireland and partners are undertaking applied geochemistry projects to provide data for agriculture ([Terra Soil](#)), waste soil characterisation ([Geochemically Appropriate Levels for Soil Recovery Facilities](#)) and mineral exploration ([Mineral Prospectivity Mapping](#)). The objective of Terra Soil is to produce a suite of mapped products on nutrient and trace element availability (Morgan's and Mehlich's tests) and soil properties such as drainage characteristics and carbon content. The research will be disseminated through the relevant Teagasc Advisory services from 2024 and will cover the northern 50% of the country in this initial phase.

#### Geophysical data

Geological Survey Ireland produces high-resolution geophysical data (Magnetic field, electrical conductivity, natural gamma-ray radiation) of soils & rocks as part of the [Tellus programme](#). These data currently cover approximately 75% of the country and provide supporting geological information on a regional scale useful for assessing environmental impact and risk.

#### Geohazards

In Table 3.2: SEA Objectives of the Environmental Report, in SEA Objective 4. 'Soil and Land Use – Protect and enhance soil quality', to consider the inclusion of geohazards such as landslides. Geological Survey Ireland has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map both of which are available for viewing on our dedicated [Map Viewer](#).

Coastal Vulnerability while seen as a potential geohazard, is discussed in more detail under our Marine and Coastal Unit information below.

#### Marine and Coastal Unit

In Table 3.2: SEA Objectives of the Environmental Report, we note within the SEA Objective 5. 'Water', the sub-objective 5d, to "Support the Marine Strategy Framework Directive achievement of good environmental status by protecting and improving the quality of marine waters, particularly those involved in seafood growing and fishing". We would like to highlight the projects and datasets of our Marine and Coastal Unit which will be of benefit to the SEA.

Our marine environment is hugely important to our bio-economy, transport, tourism and recreational sectors. It is also an important indicator of the health of our planet. Geological Survey Ireland's Marine and Coastal Unit in partnership with the Marine Institute, jointly manages [INFOMAR](#), Ireland's national marine mapping programme; providing key baseline data for Ireland's marine sector. The programme delivers a wide range of benefits to multi-sectoral end-users across the national blue economy with an emphasis on enabling our stakeholders.



An Roinn Comhshaoil,  
Aeráide agus Cumarsáide  
Department of the Environment,  
Climate and Communications



**Geological Survey**  
Suirbhéireacht Gheolaíochta  
Ireland | Éireann

Demonstrated applications for the use of INFOMAR's suite of mapping products include Shipping & Navigation, Fisheries Management, Aquaculture, Off-shore Renewable Energies, Marine Leisure & Tourism and Coastal Behaviour.

INFOMAR also produces a wide variety of seabed mapping products that enable public and stakeholders to visualize Ireland's seafloor environment <https://www.infomar.ie/maps/downloadable-maps/maps>. Story maps have also been developed providing a different perspective of some of the bays and harbors of the Irish coastline <https://www.infomar.ie/maps/story-maps/exploring-dingle-bay-different-perspective>. We would therefore recommend use of our Marine and Coastal Unit datasets available on our [website](#) and [Map Viewer](#).

The Marine and Coastal Unit also participate in coastal change projects such as [CHERISH](#) (Climate, Heritage and Environments of Reefs, Islands, and Headlands) and are undertaking mapping in areas such as coastal vulnerability and coastal erosion. Further information on these projects can be found at [here](#).

### Coastal Vulnerability Index

Geological Survey Ireland is undertaking a new coastal vulnerability mapping initiative. Maps produced by this project will provide an insight into the relative susceptibility of the Irish coast to adverse impacts of sea-level rise through the use of a Coastal Vulnerability Index (CVI). Currently the project is being carried out on the east coast and will be rolled out nationally, detailed information and maps are available [here](#). These index-based maps will offer a simple, easy visual representation of sensitive areas based on robust methods and conceptualised metrics from latest research, adapted to the Irish context.

I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to contact me [REDACTED] or my colleague [REDACTED] at [GSIPlanning@gsi.ie](mailto:GSIPlanning@gsi.ie).

Yours sincerely,

[REDACTED]  
[REDACTED]

[REDACTED]  
[REDACTED]

Geological Survey Ireland

Enc: Table - Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes.



**Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes**  
following European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018  
(S.I. No. 296 of 2018)

| Geological Survey Ireland Programme | Dataset  | Relevant EIA Topic             | Coverage | Description / Notes   | Link to Geological Survey Ireland map viewer  |
|-------------------------------------|--|--------------------------------|----------|---|---|
| Geohazards                          | Landslide: National landslide database and landslide susceptibility map                                | Land & Soil/Climate/Landscape  | National | Associated guidance documentation relating to the National Landslide Susceptibility Map is also available.  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b68cf1e4a90445981f950e9b9c5625c">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b68cf1e4a90445981f950e9b9c5625c</a>   |
| Geohazards                          | Groundwater Flooding (Historic)  | Water                          | Regional | Provide information of historic flooding, both surface water and groundwater. [A lack of flooding presented in any specific location of the map only indicates that a flood has not been detected. It does not indicate that a flood cannot occur in that location at present or in the future] | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc</a>   |
| Geohazards                          | Groundwater Flooding (Predictive)  | Water                          | Regional | Provides information on the probability of future karst groundwater flooding (where available). [The maps do not, and are not intended to, constitute advice. Professional or specialist advice should be sought before taking, or refraining from, any action on the basis of the flood maps]  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc</a>   |
| Geohazards                          | Radon Map  | Land & Soils/Air               | National |   | <a href="http://www.epa.ie/radiation/radonmap/">http://www.epa.ie/radiation/radonmap/</a>   |
| Geoheritage                         | County Geological Sites as adopted by National Heritage Plan and listed in County Development Plans    | Land & Soils/Landscape         | Regional | All geological heritage sites identified by Geological Survey Ireland are categorised as CGS pending any further NHA designation by NPWS.   | <a href="https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e874c0ab27bde2aaac3c228">https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e874c0ab27bde2aaac3c228</a>   |
| Geological Mapping                  | Bedrock geology:   | Land & Soils                   | National | 1:100,000 scale and associated memoirs.   | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0</a>   |
| Geological Mapping                  | Bedrock geology:   | Land & Soils                   | Regional | 1:50,000 scale  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0</a>   |
| Geological Mapping                  | Quaternary geology: Sediments  | Land & Soils                   | National | 1:50,000 scale  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0</a>   |
| Geological Mapping                  | Quaternary geology: Geomorphology  | Land & Soils                   | National | 1:50,000 scale  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7012a99d2748ea9106e7ee1b6ab8d5&amp;scale=0</a>   |
| Geological Mapping                  | Physiographic units:   | Land & Soils                   | National | Broad-scale physical landscape units mapped at 1:100,000 scale in order to be represented as a cartographic digital map at 1:250,000 scale  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=afa76420fc54877843ac91bc075c62b">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=afa76420fc54877843ac91bc075c62b</a>   |
| Geological Mapping                  | GeoUrban: Spatial geological data for the greater Dublin and Cork areas                                | Land & Soils                   | Regional | Includes 3D models  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9768f4818b79416093b6b2712a850ce6&amp;scale=0">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9768f4818b79416093b6b2712a850ce6&amp;scale=0</a>   |
| Geological Mapping                  | Geotechnical database  | Land & Soils                   | National | Digitised geotechnical and Site Investigation Reports and boreholes which can be accessed through online downloads  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=a2718be1873d47a585a3f0415b4a724c">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=a2718be1873d47a585a3f0415b4a724c</a>   |
| Goldmine                            | Historical data sets including geological memoirs and 6" to 1 mile geological mapping records          | Land & Soils/Water             | National | available online  | <a href="https://secure.dcae.gov.ie/goldmine/index.html">https://secure.dcae.gov.ie/goldmine/index.html</a>   |
| Groundwater & Geothermal            | Groundwater resources (aquifers)   | Water                          | National | Data limited to 1:100,000 scale; sites should be investigated at local scale  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Groundwater recharge.  | Water                          | National | Data limited to 1:40,000 scale; sites should be investigated at local scale; long term annual average recharge  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Groundwater vulnerability.   | Water                          | National | Data limited to 1:40,000 scale; sites should be investigated at local scale   | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Group scheme and public supply source protection areas.  | Water                          | National | Not all PWS / GWS have SPZ / ZOC. Check with IW / coco / NFGWS for private supplies.  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Groundwater Protection Schemes   | Water                          | National | Data is limited to scale of 1:40,000. Data does not include all of the source protection areas  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Catchment and WFD management units.  | Water                          | National |   | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Karst specific data layers   | water                          | National | For areas underlain by limestone, includes karst features, tracer test database; turlough water levels (glevel.ie).   | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Wells and Springs  | Water                          | National | Not comprehensive, there may be unrecorded wells and springs  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef</a>   |
| Groundwater & Geothermal            | Groundwater body Descriptions  | Water                          | National | Not exhaustive; only those in designated SACs; could be other GWDTES; for more information contact NPWS / EPA / site investigations   | <a href="https://www.gsi.ie/en-ie/programmes-and-projects/groundwater-and-geothermal-unit/activities/understanding-ireland-groundwater/Pages/Groundwater-bodies.aspx">https://www.gsi.ie/en-ie/programmes-and-projects/groundwater-and-geothermal-unit/activities/understanding-ireland-groundwater/Pages/Groundwater-bodies.aspx</a> |
| Groundwater & Geothermal            | Geothermal Suitability maps  | land & Soils/Water             | National | Also, Roadmap for a Policy and Regulatory Framework for Geothermal Energy, November 2020  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9ee46bee08de41278b90a991d60c0b9e">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9ee46bee08de41278b90a991d60c0b9e</a>   |
| Marine & Coastal Unit               | INFOMAR - Ireland's national marine mapping programme; providing key baseline data for Ireland's       | Water                          | National |   | <a href="https://secure.dcae.gov.ie/GSI/INFOMAR_VIEWER/">https://secure.dcae.gov.ie/GSI/INFOMAR_VIEWER/</a>   |
| Marine & Coastal Unit               | CHERISH - Coastal change project (Climate, Heritage and Environments of Reefs, Islands, and Headlands) | Water                          | Regional |   | <a href="http://www.cherishproject.eu/en/">http://www.cherishproject.eu/en/</a>   |
| Marine & Coastal Unit               | Coastal Vulnerability Index (CVI).   | water /Land & Soils            | Regional | Currently the project is being carried out on the east coast and will be rolled out nationally  | <a href="https://www.gsi.ie/en-ie/programmes-and-projects/marine-and-coastal-unit/projects/Pages/Coastal-Vulnerability-Index.aspx">https://www.gsi.ie/en-ie/programmes-and-projects/marine-and-coastal-unit/projects/Pages/Coastal-Vulnerability-Index.aspx</a>   |
| Minerals                            | Aggregate potential  | Land & Soils/Material Assets   | National | Consideration of mineral resources and potential resources as a material asset which should be explicitly recognised within the environmental assessment process  | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c28549413aa6f1344416dc9956">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c28549413aa6f1344416dc9956</a>   |
| Minerals                            | Active quarries  | Land & Soils                   | National |   | <a href="https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c28549413aa6f1344416dc9956">https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c28549413aa6f1344416dc9956</a>   |
| Minerals                            | Historic mines   | Land & Soils/Cultural Heritage | National | Inventory and Risk Classification 2009. Environmental Protection Agency, Economic Minerals Division and Geological Survey Ireland (DECC).   | <a href="https://gis.epa.ie/EPAMaps/default?eastings=7&amp;northings=7&amp;lid=EPAL:EMA_Facilities_Extractive_Facilities">https://gis.epa.ie/EPAMaps/default?eastings=7&amp;northings=7&amp;lid=EPAL:EMA_Facilities_Extractive_Facilities</a>   |
| Tellus                              | Geochemical data: multi-element data for shallow soil, stream sediment and stream water                | Land & Soils                   | Regional | A national mapping programme  | <a href="https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f172f54">https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f172f54</a>   |
| Tellus                              | Airborne geophysical data including radiometrics, electromagnetics and magnetics                       | Land & Soils                   | Regional | A national mapping programme  | <a href="https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f172f54">https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f172f54</a>   |
| Tellus                              | urban geochemistry mapping (Dublin SURGE project).   | Land & Soils                   | Regional |   | <a href="https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f172f54">https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f172f54</a>   |

Notes:

- The maps and data listed above are available on the Geological Survey Ireland map viewer <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>
- Please read all disclaimers carefully when using Geological Survey Ireland data
- Geological Survey Ireland and Irish Concrete Federation published guidelines for the treatment of geological heritage in the extractive industry in 2008.



**Submission from Seafood Policy & Management Division, Department of  
Agriculture, Food & the Marine**

on the

**Draft Agri-Food Strategy to 2030 and associated Environmental Analysis,  
incorporating an Appropriate Assessment and a Strategic Environmental  
Assessment**

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Please see below comments relating to offshore commercial fisheries on the DAFM Agri-Food Strategy.

Pg 34: On the wording around the fisheries element of TCA, suggest text in red could be added

“The agreement sets out a phased period where the transition to a new quota share will take place for certain stocks involving significant reductions, with an overall quota reduction for the **EU Fleet** of 25%, with 60% of this reduction applying in 2021.”

Pg 41: We suggest the following amendment to the third sentence: “Designed to manage a common resource, it gives all European fishing fleets equal access to EU waters and fishing grounds, **subject to allocated fish quotas**, and allows fishermen to compete fairly.”

Pg 65: Under Mission 1, Goal 5:

Action 1: Develop a successor to “Harnessing our Ocean Wealth”. This wording could give the impression that DAFM is the lead on this. However, the Department of an Taoiseach is the lead Department for the development of the new integrated marine sustainable development plan. Suggesting re-phrasing to “**Contribute to the development of** a successor....”

Action 2: Typo in second last sentence: “This includes **for** the setting of annual TACs for most commercial fish stocks from which national quotas are derived.”

Action 4: Typo in the second last sentence: “While the UK is now an independent Third Country, the **TFA TCA** commits to...”

Pg 88: There are now 5 fisheries Producer Organisations.



An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine

## Public Consultation on the environmental assessment of the Draft Agri-Food Strategy to 2030

Fields marked with \* are mandatory.

### Introduction

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#### Background

Ireland's agri-food sector has benefited from an approach to strategic policy planning whereby sector-led strategies are developed every 5 years. The Minister for Agriculture, Food and the Marine convened a Committee representative of the sector to develop an agri-food strategy to 2030, with their terms of reference being to outline the vision and key objectives, with associated actions, required to ensure the economic, environmental and social sustainability of the agri-food sector in the decade ahead. To ensure that environmental considerations are fully integrated into the preparation of the Strategy, a Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) has been conducted in parallel with the work of the Committee.

The Department has procured RSK Ireland Limited to carry out a Strategic Environmental Assessment of the likely significant effects on the environment of implementing the 2030 Agri-Food Strategy.

The environmental assessment has been carried out in accordance with EU Directive 2001/42/EC and the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI 435 of 2004), as amended.

In addition, the consultants have been asked to undertake an associated Appropriate Assessment (AA) Natura Impact Statement pursuant to Article 6 of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora as transposed into Irish law by S.I. 477/2011 the European Communities (Birds and Natural Habitats) Regulations 2011.

#### Terms and Conditions

The Department of Agriculture, Food and the Marine is collecting this data to inform the Environmental Assessment process as part of the development of the Agri-Food Strategy to 2030. All submissions, including the name of the person or organisation making the submission, will be shared with our external consultants who are conducting the Strategic Environmental Assessment and Appropriate Assessment on our behalf. All submissions, including the name of the person or organisation making the submission, will

be published on the Department's website, however, if you wish to make a submission but not be identified publicly this can be accommodated provided it is clearly indicated when the submission is made.

### **Freedom of Information**

All submissions and comments submitted to the Department for this purpose are subject to release under the Freedom of Information (FOI) Act 2014 and the European Communities (Access to Information on the Environment) Regulations 2007- 2014. Submissions are also subject to Data Protection legislation. Personal, confidential or commercially sensitive information should not be included in your submission and it will be presumed that all information contained in your submission is releasable under the Freedom of Information Act 2014.

### **Data Protection**

The Department of Agriculture, Food and the Marine is collecting this data to inform the Environmental Assessment process as part of the development of Agri-Food Strategy to 2030. All submissions, including the name of the person or organisation making the submission, will be shared with our external consultants who are conducting the Strategic Environmental Assessment and Appropriate Assessment on our behalf. This data will be processed in accordance with the EU General Data Protection Regulation (GDPR EU 2016 /679), the Data Protection Acts 1988-2018, the Freedom of Information Act 2014 and the DPER Consultation Principles and Guidance. Any additional personal data received as part of your submission will not be processed, shared, or retained and will be destroyed upon receipt. Further information on Data Protection can be found on our website <https://www.gov.ie/en/organisation-information/ef9f6-data-protection>

The Department of Agriculture, Food and the Marine is committed to protecting and respecting your privacy and employs appropriate technical and organisational measures to protect your information from unauthorised access. The Department will not process your personal data for any purpose other than that for which they were collected. Personal data may be exchanged with other Government Departments, local authorities, agencies under the aegis of the Department, or other public bodies, in certain circumstances where this is provided for by law. The Department will only retain your personal data for as long as it is necessary for the purposes for which they were collected and subsequently processed. When the business need to retain this information has expired, it will be examined with a view to destroying the personal data as soon as possible, and in line with Department policy.

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## *Your Details*

---

\* Forename:

\* Surname

\* Country

\* How would you best describe yourself?

- Farmer
- Fisher
- Forest Owner/Manager
- Engaged in employment in the food and drink industry
- Engaged in employment in other business/industry
- Representative of a farm/seafood/forestry organisation
- Representative of a civil society/NGO
- Representative of an employer organisation or trade union
- Advisor/Consultant
- Researcher/Academic
- Representative or working in a Public Body
- Member of the Public
- Other (please specify in box below)

Please specify here

\* Please indicate if you are submitting your proposal on behalf of;

- an organisation
- as an individual

Name of Organisation

\* Please choose from options below to indicate whether you wish to have your name published on the Departments website alongside your submission

- My name can be published
- I do not wish to have my name published

Questions

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Q1. Do you have any observations on the conclusions in the Environmental Report and Natura Impact Assessment?

*5000 character(s) maximum*

The IOA considers that the high-level assessment of the potential impacts of the agri-food strategy to 2030 set out in the environmental report does not sufficiently take into account the benefits of organic farming. On the contrary, the assessment suggests that other proposed actions such as research and promote the concept of 'Regenerative Agriculture' and increasing participation in quality assurance scheme are or could be more beneficial for environmental/climate than increasing the share of organic farming to 7.5% of UAA. The IOA points the evaluators to a recent review of the overwhelming research on the contribution of organic farming across productivity, environmental impact, economic viability and social well-being [1]. In addition, the most recent review of the EU organic regulation clearly highlights the intended contribution of EU organic standards to environmental delivery across several areas including biodiversity, water, soil, air and climate [2].

References:

[1] Reganold, J.P., Wachter, J.M. (2016). Organic agriculture in the twenty-first century. Nature Plants 2

[2] Sanders (2013). eds. Evaluation of the EU legislation on organic farming. Braunschweig: Thünen Institute of Farm Economics

Q2. Having reviewed the Environmental Report, please provide comments on individual sections in more detail. Please ensure to state clearly the section of the Environmental Report and page number (if relevant) that your comment or submission relates to.

*5000 character(s) maximum*

Q3. Having reviewed the Natura Impact Assessment, please provide comments on individual sections in more detail. Please ensure to state clearly the section of the Natura Impact Assessment and page number (if relevant) that your comment or submission relates to.

*5000 character(s) maximum*

Q4. Is there any additional information which in your view should be considered in the Environmental Report and/or the Natura Impact Assessment? Please specify.

*5000 character(s) maximum*

See references above

Q5. Are there additional mitigation/monitoring measures that you would like to propose? Please specify.

*5000 character(s) maximum*

Q6. If you wish to make comments on the draft 2030 Agri-Food strategy, please ensure to state clearly the section of the draft Strategy and page number (if relevant) that your comment or submission relates to.

*5000 character(s) maximum*

The framing of the Agri-Food Strategy according to a 'food system approach' represents an important starting point to address key sustainability challenges facing the Irish agri-food sector. That being said, the success of the Strategy will be highly dependent on the agri-food sector embracing "systems change".

Moreover, all efforts must be made to ensure any potentially harmful and adverse effects of agri-food sector development are avoided.

While the IOA acknowledges the inclusion of the organic sector in the Strategy, to achieve genuine “systems change” and align to the ambitions and targets of the European Green Deal, the organic sector must be considered more broadly. Taking account of the draft Strategy and its accompanying supporting documentation, the IOA sets out 6 recommendations.

Recommendation #1: Given the growing market opportunities for organics, the IOA proposes that:

- a target of 12% share of UAA, backed by a package of supply-push and demand-pull measures, would be both ambitious and realistic for the sector overall
- At a minimum, any target should start from the current EU-27 average with the target reviewed and modified upwards accordingly on an annual or bi-annual basis

Recommendation #2: To ensure an attractive and reliable organic farming scheme is in place it is crucial that:

- the OFS is backed by a budget corresponding to Ireland's organic farmland target and
- that it is opened annually for a considerable period in order for farmers and food business to have certainty as they assess their options.

Recommendation #3: To ensure the dynamic development of the Irish organic sector in line with the ambitions of the European Green Deal it is necessary for:

- the 2030 Strategy to consider the actions in the new EU Organic Action Plan to support sector development

Ensure that the review and implementation of the Irish Organic Strategy is aligned and adapted to the actions of the new EU Organic Action Plan in consultation with the sector.

Recommendation #4: The needs of the organic sector must be mainstreamed across Ireland's Agricultural Knowledge and Innovation System (AKIS). This includes:

- A target to increase the number of accredited Farm Advisory Service (FAS) advisors with a minimum understanding of organic conversion planning in farm and land management
- Advisory and extension services and research programme/findings being better tailored and targeted to the organic sector relevant to different land types and enterprises
- Prioritisation of knowledge transfer groups and other demonstration activities for organic farmers, including clarity on the organic sector's involvement in the Teagasc Signpost network

Recommendation #5: To enable organic farmers to make an active contribution to wider environmental and climate objectives, beyond the organic regulations and standards it is necessary to:

- Ensure that organic farmers have priority access to agri-environment schemes, eco-schemes and other relevant schemes alongside the OFS
- Clarity is needed on the reasons why certain environmental/climate and organic farming payment combinations are classified as double funding
- Ensure that data from the National Soil Sampling and Analysis Programme and farm biodiversity study is used to fairly remunerate farms for existing environmental/climate as well as incentive improvements.
- Give equal access to organic farms as whole-farm system approaches to participate in these pilot schemes and the development of relevant monitoring systems and indicators

Recommendation #6: Invest in the sustainable development of organic supply chains drawing on the recommendations of the EU Organic Action Plan (March 2021)

- Making full use of EU promotional programme funding and national funding to promote organic consumption domestically and abroad
- Setting targets to boost the organic procurement in public canteens and school schemes and consider taxation and other policy incentives which can encourage the purchasing of organic food in the private food

service

- Review the policy framework and current incentives to foster local and small-scale processing and shorter organic supply chains to support trade for organic products within the EU single market

Direct references to the draft 2030 Agri-Food strategy e.g. specific goals and action under each Mission is the supporting information document attached.

## Additional Supporting Information

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If you have supporting documents, please upload here.

where possible, please limit supporting document to under 5000 words

[38e7f0ba-67f5-402d-8fbd-65339148f165/IOA\\_Input\\_to\\_the\\_Draft\\_Agri-Food\\_Strategy\\_2030\\_\\_SEA\\_-\\_June\\_2021.pdf](#)

### Contact

2030StrategyEnvironmentalConsultation@agriculture.gov.ie



An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine

## Public Consultation on the environmental assessment of the Draft Agri-Food Strategy to 2030

Fields marked with \* are mandatory.

### Introduction

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#### Background

Ireland's agri-food sector has benefited from an approach to strategic policy planning whereby sector-led strategies are developed every 5 years. The Minister for Agriculture, Food and the Marine convened a Committee representative of the sector to develop an agri-food strategy to 2030, with their terms of reference being to outline the vision and key objectives, with associated actions, required to ensure the economic, environmental and social sustainability of the agri-food sector in the decade ahead. To ensure that environmental considerations are fully integrated into the preparation of the Strategy, a Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) has been conducted in parallel with the work of the Committee.

The Department has procured RSK Ireland Limited to carry out a Strategic Environmental Assessment of the likely significant effects on the environment of implementing the 2030 Agri-Food Strategy.

The environmental assessment has been carried out in accordance with EU Directive 2001/42/EC and the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (SI 435 of 2004), as amended.

In addition, the consultants have been asked to undertake an associated Appropriate Assessment (AA) Natura Impact Statement pursuant to Article 6 of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora as transposed into Irish law by S.I. 477/2011 the European Communities (Birds and Natural Habitats) Regulations 2011.

#### Terms and Conditions

The Department of Agriculture, Food and the Marine is collecting this data to inform the Environmental Assessment process as part of the development of the Agri-Food Strategy to 2030. All submissions, including the name of the person or organisation making the submission, will be shared with our external consultants who are conducting the Strategic Environmental Assessment and Appropriate Assessment on our behalf. All submissions, including the name of the person or organisation making the submission, will

be published on the Department's website, however, if you wish to make a submission but not be identified publicly this can be accommodated provided it is clearly indicated when the submission is made.

**Freedom of Information**

All submissions and comments submitted to the Department for this purpose are subject to release under the Freedom of Information (FOI) Act 2014 and the European Communities (Access to Information on the Environment) Regulations 2007- 2014. Submissions are also subject to Data Protection legislation. Personal, confidential or commercially sensitive information should not be included in your submission and it will be presumed that all information contained in your submission is releasable under the Freedom of Information Act 2014.

**Data Protection**

The Department of Agriculture, Food and the Marine is collecting this data to inform the Environmental Assessment process as part of the development of Agri-Food Strategy to 2030. All submissions, including the name of the person or organisation making the submission, will be shared with our external consultants who are conducting the Strategic Environmental Assessment and Appropriate Assessment on our behalf. This data will be processed in accordance with the EU General Data Protection Regulation (GDPR EU 2016 /679), the Data Protection Acts 1988-2018, the Freedom of Information Act 2014 and the DPER Consultation Principles and Guidance. Any additional personal data received as part of your submission will not be processed, shared, or retained and will be destroyed upon receipt. Further information on Data Protection can be found on our website <https://www.gov.ie/en/organisation-information/ef9f6-data-protection>

The Department of Agriculture, Food and the Marine is committed to protecting and respecting your privacy and employs appropriate technical and organisational measures to protect your information from unauthorised access. The Department will not process your personal data for any purpose other than that for which they were collected. Personal data may be exchanged with other Government Departments, local authorities, agencies under the aegis of the Department, or other public bodies, in certain circumstances where this is provided for by law. The Department will only retain your personal data for as long as it is necessary for the purposes for which they were collected and subsequently processed. When the business need to retain this information has expired, it will be examined with a view to destroying the personal data as soon as possible, and in line with Department policy.

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*Your Details*

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\* Forename:

\* Surname

\* Country

\* How would you best describe yourself?

- Farmer
- Fisher
- Forest Owner/Manager
- Engaged in employment in the food and drink industry
- Engaged in employment in other business/industry
- Representative of a farm/seafood/forestry organisation
- Representative of a civil society/NGO
- Representative of an employer organisation or trade union
- Advisor/Consultant
- Researcher/Academic
- Representative or working in a Public Body
- Member of the Public
- Other (please specify in box below)

Please specify here

\* Please indicate if you are submitting your proposal on behalf of;

- an organisation
- as an individual

Name of Organisation

\* Please choose from options below to indicate whether you wish to have your name published on the Departments website alongside your submission

- My name can be published
- I do not wish to have my name published

Questions

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Q1. Do you have any observations on the conclusions in the Environmental Report and Natura Impact Assessment?

*5000 character(s) maximum*

We must protect our environment and biodiversity from the polluting and damaging effects of intensive farming. Ireland needs more agriculture and less agri business

Q2. Having reviewed the Environmental Report, please provide comments on individual sections in more detail. Please ensure to state clearly the section of the Environmental Report and page number (if relevant) that your comment or submission relates to.

*5000 character(s) maximum*

Do not reward damaging agricultural practices.  
Support farms that dont damage, dont use chemicals, have high welfare and biodiversity standards.  
Prioritise local market provision and short supply chains

Q3. Having reviewed the Natura Impact Assessment, please provide comments on individual sections in more detail. Please ensure to state clearly the section of the Natura Impact Assessment and page number (if relevant) that your comment or submission relates to.

*5000 character(s) maximum*

Increase farming diversity and agro forestry.  
Protect bogs  
Protect water. Protecting water is vital.

Q4. Is there any additional information which in your view should be considered in the Environmental Report and/or the Natura Impact Assessment? Please specify.

*5000 character(s) maximum*

**Q5. Are there additional mitigation/monitoring measures that you would like to propose?  
Please specify.**

*5000 character(s) maximum*

Results based payments for environmental improvements.

**Q6. If you wish to make comments on the draft 2030 Agri-Food strategy, please ensure to state clearly the section of the draft Strategy and page number (if relevant) that your comment or submission relates to.**

*5000 character(s) maximum*

Quality not quantity is the important driver for food.  
Focus on fair payment for farmers before companies, industries or middlemen.  
Ensure quality and viability of diverse family farms

## Additional Supporting Information

**If you have supporting documents, please upload here.**

where possible, please limit supporting document to under 5000 words

Dear Sir Madam,

I am pleased to make the attached submission under the heading Public Consultation on the Environmental Assessment of the Draft Agri-Food Strategy to 2030. It deals with the effect of climate change on Ireland relating to the occurrence of extreme weather.

Kindly confirm receipt.

Yours faithfully,



# Public Consultation on the Environmental Assessment of the Draft Agri-Food Strategy to 2030

## A BRIEF ANALYSIS OF "EXTREME WEATHER" TRENDS IN IRELAND IN RECENT TIMES



Mount Leinster Snow Ice TV Mast – Dec 2020

### Introduction

The Environmental Protection Agency (EPA) tells us in their Factsheet ([https://www.epa.ie/pubs/reports/indicators/epa\\_factsheet\\_greenhouse\\_v2.pdf](https://www.epa.ie/pubs/reports/indicators/epa_factsheet_greenhouse_v2.pdf)) that: *resulting from Climate Change, we will have more extreme weather conditions including rainfall events.* I have studied this aspect of the document and my observations follow.

The information on Irish Extreme Weather can be found on the Met Eireann Website: <https://www.met.ie/climate/weather-extreme-records>

## Temperature “Extremes”

Some facts:

Highest air temperature: 33.3°C at Kilkenny Castle on 26th June 1887. Highest air temperature recorded during the 20th Century was 32.5°C at Boora, Co. Offaly on 29th June 1976. Highest in 21<sup>st</sup> Century so far was 32.3°C Roscommon (Elphin 19th 2006).

Lowest air temperature: -19.1°C at Markree Castle, Co. Sligo on 16th January 1881. Lowest air temperature recorded 20th century air temperature was -18.8°C at Lullymore, Co. Kildare on 2nd January 1979. Lowest in 21<sup>st</sup> Century so far: -11.5°C Wexford (Clonroche) 29th 2010.

Figure 1 below shows the ranking order of the warmest years (max temperatures) since 1949 to 2020 at Dublin Airport. It can be seen that the year 2018 was only the 8th warmest over that period.

| Year | Month  | Order | T °C |
|------|--------|-------|------|
| 1990 | Aug    | 1     | 28.7 |
| 1983 | July   | 2     | 27.6 |
| 1989 | July   | 3     | 27.5 |
| 1995 | Aug    | 4     | 27.1 |
| 2001 | July   | 5     | 26.9 |
| 1983 | August | 6     | 26.8 |
| 1995 | July   | 7     | 26.8 |
| 2018 | July   | 8     | 26.7 |
| 1987 | Aug    | 9     | 26.6 |
| 2006 | July   | 10    | 26.5 |
| 1975 | Aug    | 11    | 26.4 |
| 2016 | July   | 12    | 26.3 |
| 2017 | June   | 12    | 26.3 |
| 1949 | June   | 13    | 26.2 |
| 2013 | July   | 14    | 26.2 |
| 1984 | July   | 15    | 26.0 |

Figure 1: Max Temperatures Dublin Airport 1949 - 2020

There is no detectable trend in temperatures that could be attributed to climate change, if anything, these are becoming more benign since the Little Ice Age (~1850).

## Heatwave “Extremes”

A heatwave refers to a prolonged period of hot weather, which may be accompanied by high humidity. While there is no generally accepted definition of a heatwave, in Ireland, it's classified as five consecutive days with a maximum temperature in excess of 25°C.

In August 1976, Birr recorded heatwave conditions lasting 14 days which is the longest duration recorded. More recently, heatwave conditions occurred in the summers of 2018, 2013, 2006, 2003, 1995, 1989, 1983 and 1976. The average duration of Irish heat waves is about 7 days. Contrary to

media reports, there was no heatwave at Dublin Airport during 2018, and only 2 consecutive days had temperatures over 25°C, namely, 22-23 July.

There is no detectable trend in heatwaves that could be attributed to climate change, if anything these are becoming more benign since the Little Ice Age (~1850).

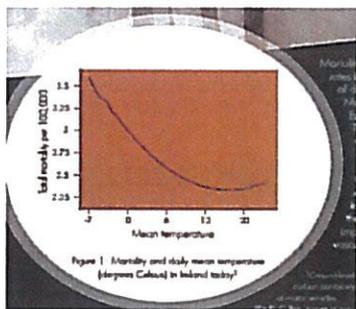
## Snow “Extremes”

Back some 20 years ago, Dr David Viner, one of the University of East Anglia’s climatologists made the following statements: within a few years winter snowfall will become “a very rare and exciting event”. “Children just aren’t going to know what snow is.” Similar statements issued from Maynooth University.

However, we now know better. The severe “status red” snow from Beast from the East in March 2018 lasted a few days, was just one of 17 such snowstorms recorded, starting from 1933. As red alerts were only commenced in 2012 it could be stated “this was the first Status Red Warning for snow on record” but this is misleading, more correct to say severest snow in 6 years. The snow of 1947 lasted from late January to mid-March, and probably is the severest on record, again demonstrating no link to climate change.

## Health Aspects of Temperature Variations

According to the EPA milder winters will, on average, reduce the cold-related mortality rates among the elderly and frail but this may be offset by increases due to heat stress during summer.



However, not much stress is experienced in Ireland from heat extremes. I have checked some statistics and the mortality rate for exposure to cold in Ireland is roughly seven times higher than that from exposure to heat.

Fig 2 at left shows the relationship between average temperature and mortality rate, and it can be seen that when the temperature falls below about 13°C, the mortality rate increases rapidly. It follows that any moderate increase in temperature would have a positive effect on reducing deaths.

This conclusion is also borne out in the following link:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1060696/?page=3>.

The heat waves seem to be more or less evenly distributed. Regarding health, any moderate increase in temperature would have a very positive effect in reducing death rates. There is not much evidence so far to support the hypothesis that there will be increasing episodes of extreme heat.

## Longer Term Trends in Temperature

The average temperature in Ireland has increased by 0.8°C in the last 110 years. However, a paper by Connollys, using Valentia in Kerry as a baseline over that timescale, suggests that if only rural stations are used to measure temperature, thereby eliminating the Urban Heat Island bias, the temperature change over the last century would be more like 0.4°C, see: <http://opri.net/articles/climate-science/34>.

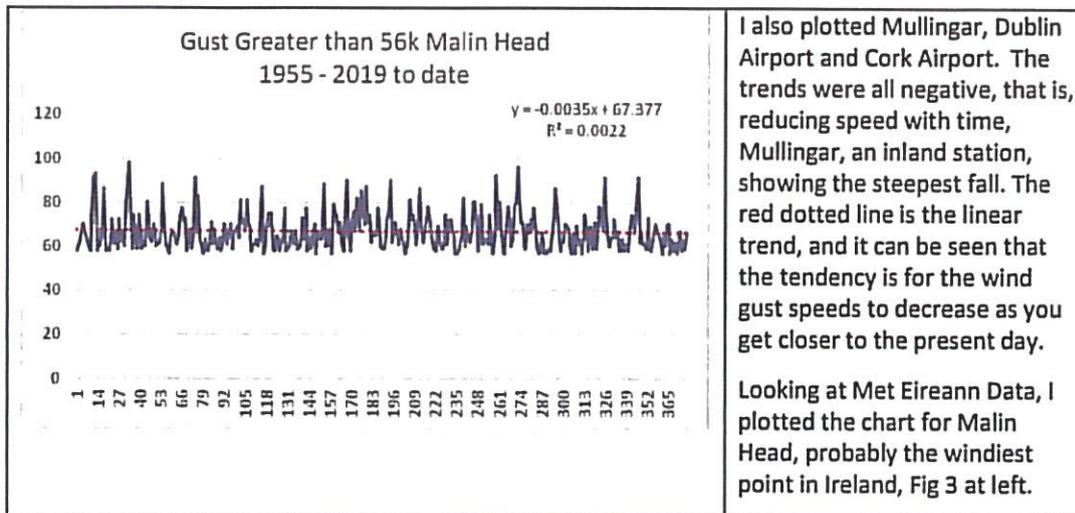
As further evidence, over the period January 1942 to December 2018, the measured maximum daily temperature increase at Valentia was only 0.28°C, while that at Dublin Airport was 0.84°C, three times higher.

An analysis of cold days at Dublin Airport with temperatures of less than or equal to 0°C over the same time period indicated slightly more frost days in 1980-2018 than in 1942-1980, though the opposite was true of Valentia. On the contrary, the highest ten temperatures recorded at Dublin Airport were all more than eight years ago.

Note: According to Met Eireann, April 2021 was the coldest April since records began at Dublin Airport, 78 years ago. According to Copernicus, April 2021 was the coldest in Europe since 2003. <https://climate.copernicus.eu/climate-bulletins>.

## Wind Speed “Extremes”

According to Met Eireann, the highest wind speed in a gust was 98 knots (kts) at Foynes Co Limerick 18 January 1945. The highest 10-minute mean wind speed was 71kts at Foynes, Co. Limerick on 18th January 1945.



Over the years covered and the locations selected, the tendency is for the gust speeds to reduce.

Therefore, the oft-cited hypothesis that the gusts will get a lot stronger due to climate change is not supported by this data.

Physics theory will tell you, the reducing temperature difference between the arctic and our latitude due to climate change is causing the wind speeds to lessen. Met Eireann tells us: "*Studies have shown significant projected decreases in the energy content of the wind for the spring, summer and autumn seasons, with the projected decreases largest for summer and no significant trend in winter.*"

A recent (May 2017) study for the Royal Irish Academy by two Met Eireann scientists states: *A more recent review of storminess over the North Atlantic by Feser et al. (2015) suggests that most long-term studies show merely decadal variability for the last 100–150 years, and that there is no evidence of a sustained long-term trend. In summary, much uncertainty still remains regarding future changes in the frequency and wind severity of storms affecting Ireland. See: [https://www.ria.ie/sites/default/files/climate-change-storminess\\_0.pdf](https://www.ria.ie/sites/default/files/climate-change-storminess_0.pdf).*

## Rainfall "Extremes"

According to Met Eireann:

Highest annual total: 3964.9mm at Ballaghbeama Gap in 1960.

Highest monthly total: 943mm at Cork December 2015.

Highest daily total: 243.5mm at Cloone Lake, Co. Kerry on 18 September 1993.

Highest hourly total: 52.2mm at Clonroche, Co. Wexford on 27th June 1986.

Lowest annual total was in 1887 with 356.6mm of rain recorded at Glasnevin, Dublin.

Longest absolute drought was in Limerick from 3rd April to 10th May 1938.

Using the data provided by Met Eireann, one can deduce that rainfall rates either increased or decreased over the duration, depending on the choice of start and end years. For example, for Malin

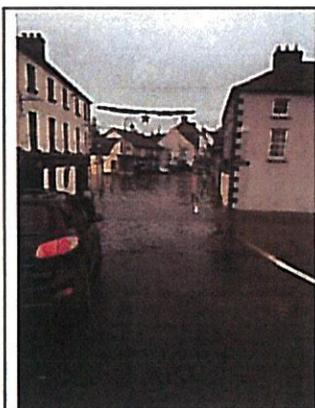
Head, the trend 1991 to 2010 decreases but the trend from 1981 to 2010 is increasing, the opposite to what you would expect!

## Flooding “Extremes”

Reliable historical flooding data is very difficult to find. It depends on so many variables such as drainage, land use, new buildings and previous heavy rains saturating the ground. Even correlating rainfall rate with flooding is difficult for the same reasons. The same rain rate will cause different levels of flooding depending on many variables, including frost.

A recent UK paper states: *“The apparent increase in flooding witnessed over the last decade appears in consideration to the long-term flood record not to be unprecedented; whilst the period since 2000 has been considered as flood-rich, the period 1970–2000 is “flood poor”, which may partly explain why recent floods are often perceived as extreme events. The much-publicised (popular media) apparent change in flood frequency since 2000 may reflect natural variability, as there appears to be no shift in long-term flood frequency.”* See:

<https://www.thegwpf.com/new-study-scientists-find-recent-uk-flooding-not-unprecedented/>.



One often hears statements like this from a Minister in Graigueenamanagh on December 30th, 2015: *“We have had flooding in the past but nothing ever like this.”* However, in 1947 I lived in Graigueenamanagh and remember very clearly levels of flooding way higher than those shown in Figure 4 at left.

## Storm “Extremes”

Hurricane Ophelia, for example, is often described as extreme in the media, eg. *“Met Éireann issued a Status Red warning 48 hours in advance of the storm’s arrival: an unprecedented move at the time.”* The colour-coded warnings system was first introduced in Met Éireann in April 2012, so it was unprecedented only in the previous five years.

An environmental journalist called Ophelia *“the worst storm ever to hit Ireland in over half a century.”* Ophelia was not even in the top 10 storms since records began. In fact, the most severe storm was back in 1945, when there was much less carbon dioxide in the atmosphere. See Figures below from Met Éireann.

<https://www.met.ie/cms/assets/uploads/2018/10/OpheliaReport.pdf>

| Date              | km/h  | County   |
|-------------------|-------|----------|
| Thu, 18-Jan-1945  | 131.5 | Limerick |
| Wed, 24-Dec-1997  | 125.9 | Cork     |
| Tue, 3-Jan-2012   | 125.9 | Donegal  |
| Sat, 26-Dec-1998  | 124.1 | Donegal  |
| Tue, 2-Mar-1982   | 124.1 | Donegal  |
| Sat, 16-Sep-1961  | 122.2 | Donegal  |
| Thu, 31-Jan-1957  | 122.2 | Mayo     |
| Wed, 12-Feb-2014  | 120.4 | Galway   |
| Wed, 9-Jan-2008   | 120.4 | Donegal  |
| Mon, 15-Jan-1968  | 118.5 | Donegal  |
| *Sun, 16-Oct-2017 | 114.8 | Cork     |

Figure 4 Hurricane Force 10-minute mean winds, including \*Ophelia for reference.

| Date             | km/h  | County  |
|------------------|-------|---------|
| Sat, 16-Sep-1961 | 181.5 | Donegal |
| Sun, 27-Jan-1974 | 177.8 | Mayo    |
| Tue, 24-Oct-1995 | 177.8 | Wexford |
| Sat, 26-Dec-1998 | 177.8 | Donegal |
| Thu, 31-Jan-1957 | 174.1 | Mayo    |
| Sat, 12-Jan-1974 | 174.1 | Cork    |
| Sat, 17-Jan-2009 | 174.1 | Mayo    |
| Tue, 9-Feb-1988  | 172.2 | Mayo    |
| Tue, 5-Feb-1957  | 172.2 | Donegal |
| Sat, 26-Dec-1998 | 172.2 | Mayo    |

Figure 5 Top gusts in Ireland since 1942

### Colour Coded Alarm System

The colour coding alarm system used by Met Éireann was introduced in April 2012 and is fully aligned with international best practice and the European Meteocalarm system ([www.meteocalarm.eu](http://www.meteocalarm.eu)). I have read an article by an environmentalist telling us that he never remembered any color coded alarm being issued when he was growing up, suggesting that such weather was not experienced then!

Below are the numbers of days since 1945 that these various levels were experienced for wind gusts at Shannon Airport:

Yellow: 1069 days, 875 before the year 2000.

Orange: 146 days, 128 before the year 2000

Red: 29 days, all but one before the year 2000.

### Overall Conclusion:

From my analysis of the Met Éireann data, it is evident that weather in Ireland, contrary to what is often cited in the media (recalling that IPCC does not predict more extremes in its climate models) is actually getting less extreme and more benign.

**Acknowledgement**

Many thanks to Met Eireann for the use of historical data, freely available on their website.