Public Consultation on the Draft Climate Change Adaptation Sectoral Plan for Agriculture, Forest and Seafood Sector

Consultation Questionnaire

1. Details:

Full Name: Stiofán Nutty (Coordinator)
Organisation where applicable: Horticulture Industry Forum (HIF)

or
Member of the public: 

Subsector:
- Dairy
- Beef
- Sheep
- Mixed
- Arable
- Horticulture
- Fisheries
- Industry
- Prepared Consumer Foods

Other: _________________________________

2. What do you think are the changes in climate that are having the most impact on those working in the agriculture, forest and seafood sector?

Extreme Rain ✓ Storminess ✓
Drought ✓ Flooding ✓
Extreme heat ✓ Seasonal stability ✓

Other: _________________________________
Please Explain: HIF currently has representation from seven sectors of the Horticulture Industry; Amenity, Field Vegetables, Mushrooms, Soft Fruit, Top Fruit, Potatoes and Protected Crops. All the adverse weather conditions cited above have been impacting the industry as the cultivation of plant crops are sensitive to all extreme weather conditions.

All sectors have reported increasing impacts from recent changes in climate. Mushrooms, Soft Fruit and Protected Crops, although they are mainly grown under glass or within protected structures are adversely affected by the rising temperatures. The extreme heat of Summer 2018 caused major difficulties with managing the harvesting of crops. It led to a greater demand for energy to cool crops and a significant rise in labour costs. Growers had to increase the planned rate of harvesting, as crops matured and ripened more quickly than normal. This also led to issues of over supply to market. An additional contrasting example of the impact of climate change, on these sectors, was the severe winds and heavy snow brought by Storm Ophelia 2017 and Storm Emma 2018. Both events caused significant damage to glasshouses and protected structures.

Amenity, Field Vegetables, Top Fruit and Potatoes are mainly grown without protection and are exposed to all the extreme weather examples cited above. Storm Ophelia caused major damage to young trees in the Amenity sector as well as to some orchards. The 2018 summer drought particularly affected Field Vegetable and Potato sectors, as many producers did not possess the required irrigation equipment and systems to cope with the conditions. The July 2018 Teagasc “Drought Impact in the Vegetable Sector” Report and associated press release capture the impact and cost to the sector of last year’s drought. Producers incurred significant increases in cost three main areas:

- Irrigation
- Pest and weed control
- Harvesting

The report details the reasons for and extent of these losses. For example, “A 16 acre of fleeced early crop broccoli was lost. The grower had irrigation, but the field had no water source – it was chosen because it was a dry field in a wet spring. The crop cost €50,000 to establish and another €30-35,000 would have been spent to get the crop to market. It was hoped that it would yield 4.5 tonnes per acre around mid-June. The grower estimated it was worth €90-100,000. It came to nothing”.

During the past decade there have been many instances of extreme rainfall that have either delayed or prevented sowing of crops. In addition, there were many examples of where seasonal stability has impacted on crops. For example, in the very mild and very wet winter of 2015/16, over 30% of the Brussel Sprout crop was lost as a result of water logging and bacterial breakdown caused by the consistently high temperatures and persistent rain which is totally unseasonal for this time of year. There are also examples of unseasonal insect and fungal damage across all these predominantly outdoor sectors.
3. What do you think the main impacts from climate change will be on the agriculture, forest and seafood sectors?

Please Explain: HIF anticipates that the main impacts from Climate Change on the seven Horticulture Industry sectors (Amenity, Field Vegetables, Mushrooms, Soft Fruit, Top Fruit, Potatoes and Protected Crops) will be:

1. Increasing incidence of extreme weather and seasonal volatility will likely increase the risk of issues with crop production meeting standards and cause rising production costs, which given the tight margins currently being experienced by producers, could lead to many enterprises becoming unprofitable and make it less likely for new entrants to enter the industry.

2. Crop portfolio is likely to change as:
   a) Field crops will not suit milder winters and others become possible.
   b) Potatoes will become challenging due to drier summer conditions in East Leinster (John Sweeney 2008) which is the area of greatest cultivation.
   c) Other crops such as Soya could become viable in Ireland.
   d) New Greenhouse and protected crop varieties will be required to cope with increasing temperature and to facilitate more even cropping.

3. Climate change will impact on the circular economy because of the increasing unpredictability of seasonal weather conditions. For example, as documented in a Teagasc Report “The Impact of Straw Shortages in the Irish Mushroom Sector 2018” the summer drought of 2018 led to the doubling of the price of straw. As straw is a major component of Mushroom compost this caused a sudden spike in the input costs to Mushroom producers who were already reeling from the Sterling “shock” caused by Brexit. As the circular economy will become increasingly important in the years ahead, the “straw” experience of 2018 demonstrates the potential negative ripple effects that can be caused to the supply chain by the sudden impact of climate change.

4. The 2018 Summer drought also provided examples of how Climate Change can have unforeseen impacts on consumer behaviour and the Horticulture Industry:
   A. The hose pipe ban had a major negative impact on the retail sales of plants, trees and flowers, which brought the “busy spring/summer season” for amenity horticulture producers to an early and sudden end.
   B. In relation to retail sales of food crops the Teagasc “Drought Impact in the Vegetable Sector” 2018 Report highlighted that the hot weather had encouraged sales in salads and strawberries but had reduced demand for the more traditional lines like cabbage, broccoli and cauliflower.

New weather patterns will have unforeseen impacts on consumer behaviour and the retail sector.

5. Increasing challenges to crop management are likely to be posed by new invasive plants, fungi and plant diseases that are likely to arrive due to higher temperatures. When coupled with diminishing access to plant production products, this will result in higher costs and lower yields.
4. How are those working in the sector currently adapting to climate change?

Please Explain: Over the past couple of years, producers have begun to make significant strides in adapting their enterprises to meet the Climate Change challenge. Examples include;

A. In the tomato and soft fruit sectors growers are achieving significant decarbonisation through the capture of CO2 emissions from heating systems and re-use of this CO2 back into the production system to optimise plant growth.

B. Producers with support from the DAFM Scheme for Investment Aid have been investing in irrigation equipment and water saving systems.

C. Producers in all sectors using the DAFM Scheme for Investment Aid or through the Producer Organisation scheme have been investing in the use of renewable energy sources such as biomass and photovoltaics to meet heating requirements with many producers and growers within the protected crop sector now using biomass. Within the mushroom industry over 50% of national output is using biomass as an energy source with some producers achieving over 50% of their total energy requirements from renewable sources in the form of biomass and photovoltaics.

D. Producers within the protected crop sector are harnessing greater energy efficiency through the adoption of energy efficiency technologies such as thermal screens and environmental control systems. Thermal screens are an effective method of reducing the heat loss from a greenhouse by up to 30%.

5. Where do you get climate related information?

Please Explain: Given the critical influence of weather on crop growing, most producers would engage with Met Éireann for forecasts and occasional climate information. Teagasc advisers and industry printed/online platforms would also act as ready sources for climate related information.

6. What additional information do those working in the sector need to adapt to a changing climate?

Please Explain: Producers across the horticulture industry sectors would value:

1. Longer range forecasts than the current 7 – 10-day range. (We understand from Met Éireann that they are planning to introduce a one-month forecast in the near future. This would enhance growers' ability to reduce cultivation risks and time sowing, crop management and harvesting management.

2. An updated scientific assessment of the most likely climatic change conditions that can be expected over the next 10 years. This would enable the industry to review and explore which crops, including new crops and varieties of existing crops that could be more suited to the new conditions.
7. How do you perceive and use weather and climate information to inform management decisions?

Please Explain: As weather and climate are critical to crop growing salient information would inform decisions such as:

A. Site location for new horticulture growing enterprises
B. Assessments as to whether new crops could be viable
C. Investments such as irrigation equipment, solar and wind energy systems etc
D. Reduction of cultivation risks by using salient weather forecast information to facilitate sowing, crop management and harvest management

8. Is the source of inputs to your farm or business affected by climate change; if so what supply chains?

Please Explain: Yes. Fertilizer and nutrient application management is highly influenced by climatic conditions. Organic fertilizer is sourced from other agriculture sectors and artificial fertilizers from corporate suppliers. Some sectors source seed and young plants from other jurisdictions and these sources could be affected over time by climate change.

9. When making investments and management decisions how far ahead do you plan?

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<th>Planning Period</th>
<th>Selection</th>
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<tr>
<td>0 -1 year</td>
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<td>1-5 years</td>
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Please Explain: Producers across the 7 horticulture industry sectors have different needs. Some investments such as Glasshouses would need to deliver production for periods greater than 10 years to make the investment viable. Other equipment such as harvesting equipment would require a 5 to 10-year useful life and other aids such as irrigation equipment could pay back the investment in less than 5 years.
10. Does the Draft Climate Change Adaptation Sectoral Plan adequately demonstrate the potential impact climate change may have on Agriculture, Forestry and Seafood in Ireland (see section 4 of Draft Plan)?

☐ Yes

☐ No ✓

☐ Need more information

Please Explain: Although Section 4 does have some references to impacts that will affect the horticulture industry such as “Changing pest and disease behaviour”, “Soil Quality” and “Changes to Plant Growth Patterns”, the consequences mostly refer to forestry and pasture sectors. In addition, to the specific impacts that these topics will have on horticulture, other impacts such as “Cropping management”, “Seasonal Volatility” and “Changing Plant Health Product requirements” are not addressed.

11. The Adaptation Plan’s focus is on actions that can be undertaken over the next five years. Therefore, do you think the Adaptation Objectives are appropriate for the duration of this plan (see section 2 of Draft Plan)?

☐ Yes

☐ No ✓

☐ Unsure

Please Explain: HIF suggests that an extra objective be added “Ensure that Ireland’s Food Security capacity is kept under review and measures taken to resolve emergent gaps or weaknesses”
12. What three things could the Department do to help you be better prepared to adapt to future climate change?

1. The 2018 Farmgate Value of Horticulture was €437m with only Dairy, Beef and Pigs having a higher output. Greater resources that those currently available through DAFM, Bord Bia and Teagasc are required to support the industry to meet the Climate Action challenge, to exploit the potential development of horticulture to contribute to agriculture diversification and to take advantage of the opportunities now emerging through the national and international trend to more plant based diets.

2. A specific resource to R & D the potential of the Horticulture industry to exploit potential opportunities that will emerge due to Climate Change.

3. Support the horticulture industry’s capacity to gain access to all available technologies that would enable producers adapt to the new challenges posed by Climate Change and manage crop production as effectively as possible. An example of such technology is that provided by CRISPR-Cas9 that is a genome editing tool that enables geneticists and medical researchers to edit parts of the genome by removing, adding or altering sections of the DNA sequence. This facilitates development of improved plant strains and varieties that can better cope with the changing cultivation conditions caused by Climate Change.

13. Any other comments?

A. In the context of climate change the horticulture industry is playing its part in responding to our climate change transition. Over the past five years the sector has made significant investment in both infrastructure and equipment that supports more sustainable and environmental production systems.

B. The Irish horticultural industry makes a very significant contribution to the Irish gross agricultural output with a farmgate value of €437 million in 2018. The sector generates an important economic contribution where an estimated 6,600 are employed full time in primary production activity and a further 11,000 employed in value added and downstream businesses. The industry continues to be very dynamic, where growers and producers are constantly striving to harness innovation to maintain competitiveness and improve sustainability through the adoption of lean technologies, integrated pest management, use of renewable and energy efficient technologies and development of value-added products.

C. By making more resources available to horticulture the department would empower the industry to develop the range and output of Irish grown fresh produce to make Ireland more resilient to the international threat to food supplies posed by Climate Change and increase the country’s food security capacity as a result.

Stiofán Nutty
Co-ordinator of the Horticulture Industry Forum

Date of submission: 15th August 2019