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

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Re: Draft Agriculture, Forest and Seafood Climate Change Sectoral Adaptation Plan

An Taisce welcome the drafting of this climate change Adaptation Plan, given the rapid progression of climate breakdown. However, we would like to highlight what we view to be shortcomings in the draft plan, both in our written submission, and in the completed questionnaire, included in Appendix I. These documents should be read in tandem.

1. Overall Adaptation Goal

Adaptation is a necessary step to build resilience against climate breakdown, but without sufficient mitigation, adaptation is futile. Adaptation cannot offset the damage caused by
increased emissions due to lack of mitigation. This is particularly relevant to DAFM, given that agriculture is one of the most significant sources of carbon emissions in the state. Adaptation will have limited effectiveness in the absence of mitigation.

The overall adaptation goal listed in this Plan is to:

‘Build resilience to the effects of climate change and weather related events in the agriculture, forestry and seafood sector, reduce any negative impacts where possible, take advantage of any opportunities and to contribute to achievement of DAFM Statement of Strategy Goals.’ [An Taisce emphasis]

An Taisce would highlight that the reference to taking advantage of any opportunities presented due to climate breakdown is morally questionable, given the already widespread and serious impacts of climate breakdown on global communities, particularly in the developing world. In our opinion it is an insular view, looking only at climate impacts on Ireland. This is a global issue, and as a rich, high GHG emitting country we have an obligation to fully commit to emissions reductions, and should acknowledge and take responsibility for the global impacts our way of life is having on communities across the globe. We submit that this language should not be approved in government policy documents as it undermines the seriousness of the issues we, as a global community, are facing.

2. Specific objectives of the plan

While this document pertinently outlines the current impacts and consequences posed by climate change (Section 4.1), An Taisce submit that the proposed actions fail to address these risks, or to demonstrate how the proposed actions will provide sufficient adaptation responses to these threats. The plan lacks the necessary detail regarding specific objectives, and deals in generalities.

While four overarching objectives are outlined, and further expanded on in Appendix II, the measures are vague and there is a large reliance on the need to ‘engage’ and to ‘promote’ various measures. For example, in Adaptation Objective 2, action number 6 and 7 relate to engaging with third level education institutes to incorporate adaptation issues in to their syllabuses, and upskilling farmers, foresters and fishermen to ensure they have the knowledge
to implement climate adaptation practices. However, An Taisce note that at no point in this document are the specifics of these adaptation practices outlined. What is it that the Department would like the farmers, foresters and fishermen to implement? What specifically would they like the third level institutes to teach? Further, Action 7 and 10 also refer to climate adaptation information being included at relevant workshops and events. An Taisce would question what guise this information would take? What message will the Department be conveying, and what is the objective of circulating this information? Similarly, Action 15 relates to building internal capacity and networking with relevant agencies to build capacity. An Taisce would query what specifically they are building capacity to do? Once again the specifics are lacking, and the aim of these measures are unclear.

While Objective 3 ostensibly seeks to reduce vulnerability of the sector to climate impacts, half of the actions seek to raise awareness, and the other three seek to support broad measures. An Taisce would question how these, or indeed any of the other actions in this plan, will provide adequate adaptation measures for the risks outlined in Section 4.1.

3. Sectoral issues

3.1 Grassland

Although specific measures are absent from the implementation plan, there are some practical steps outlined in Case Study 2. However, these are not promoted in the rest of the plan, and are offered more as an example of measures which could be taken. An Taisce would question why the Plan does not clearly propose measures such as these for each sector, and make them mandatory.

Albeit that Case Study 2 is provided as an example, it is notable that some of, what we would consider to be, the most important steps for climate adaptation are not included in this list, which includes agricultural diversification and herd reduction.
Further, the practicalities of implementing some of the measures should be considered, in addition to the trade-offs. Building a fodder reserve would require both a surplus of fodder, which would be difficult with an ever increasing herd to feed, and the growth of sufficient perennial rye grass is dependent on fertiliser use, which itself has emission, water quality and biodiversity ramifications. Any future agricultural model should not be dependent on the current over-reliance on imports of synthetic fertiliser. The further geographical expansion of perennial rye grass would also likely encroach on marginal land knock on biodiversity impacts.

3.2 Forestry

Section 4.1 outlines priority impacts and consequences for forestry:

a. Windthrow-due to stormy weather, greater risk on water-logged soils

b. Reduced resilience and vitality of forests due to the impact of climate change

The actions proposed do not appear to address these risks, or to provide adaptation measures for these impacts. Action 7 refers to upskilling foresters to ensure they have the knowledge and tools required to implement climate adaptation plans, but the measures which will be necessary are not articulated in this plan. As such, it is unclear to An Taisce what the foresters should do to build the necessary resilience.

Furthermore, Action 9 is:

‘Engage with industry to support farmers and foresters in building resilience and ensure their own resilience to potential climate impacts’

However, once again the Plan fails to outline what this engagement would look like, or how specifically the industry should support foresters.

An Taisce has particular insight into the Irish forestry consent and management regime through being a consultee on the Forest Service application process. In our opinion, Ireland is continuing to pursue a policy of promoting non-native conifer plantations with negative
impacts on biodiversity, landscape, carbon emissions and water quality. It is noteworthy that the DAFM themselves have indicated that managed forest land has already become a net emitter of carbon due to the ratio of deforestation to reafforestation\textsuperscript{1}. Further to that, more recent EPA modelling data\textsuperscript{2} has indicated that forest land will become a net carbon emitter by 2030. As such, the current model of forestry is not providing for climate mitigation, as regularly espoused by the Department.

As it stands, only 2\% of the country is covered by native, or semi-natural woodland, and much of this is highly fragmented. A high percentage of the native trees which are planned for 2014-2020 come from the obligatory 10\% broadleaves which are planted in all coniferous plantations, and not from pure native woodlands. Native trees and woodlands have deeply penetrating heart roots, and can evapotranspire 40\% to 65\% of rainwater back into the atmosphere during the growing season. A single mature native tree on a hot day can transpire approximately 300 gallons of water/day. In addition, the roots ramify in all directions holding the soil together.

As such, areas prone to waterlogging can benefit greatly from native woodland, so as to reduce rapid runoff into streams etc. Woodland creation also offers a host of additional environmental benefits, such as climate change mitigation through carbon storage, improved water quality by intercepting pollution or excess nutrients, stabilising river banks, increased canopy and shade for river based flora and fauna, and providing extra wildlife habitat.

Ní Dhubháin and Farrelly\textsuperscript{3}, and references therein, outline that conifers are more vulnerable to storm damage than broadleaves, and of the conifers spruce are the most vulnerable. The stiffer foliage of conifers exerts a greater wind drag than broadleaves, particularly during the generally stormier winter months when broadleaves are denuded. Although there are management measures which can reduce the risk of windthrow to conifer plantations, An Taisce would highlight the multiple co-benefits of planting native broadleaves,

\textsuperscript{1} https://www.agriculture.gov.ie/media/migration/ruralenvironment/climatechange/NFAP191218.pdf
such as the reduction of flood risk, water quality improvements and greater biodiversity. All of these will help mitigate and adapt to a changing climate.

Further, monoculture coniferous plantations are also more susceptible to pests, such as the pine weevil, and disease, as the lack of species diversity leaves the whole plantation vulnerable to the same diseases. Given that forest pests and disease are outlined as risks under future climate scenarios, diversification of the national forest stock would provide greater resilience to these threats.

An Taisce submit that, given the increased risk of windthrow, and vulnerability to pests and disease of monoculture forests, and given the multiple co-benefits of native woodlands as a means of climate mitigation and adaptation, an obvious adaptation measure which should be promoted in this Plan is the establishment of native woodlands, and a move away for current forest policy which promotes the ongoing monopolisation of our tree stock by coniferous plantations, a model which is additionally failing to provide carbon sequestration.

3.3 Biodiversity concerns and Cross sectoral issues

The requirement for adaptation plans to adopt a cross sectoral approach is outlined in Section 5 of the Plan:

'As set out in the NAF, Departments preparing plans under the Framework are required to consult with other sectors through the National Adaptation Steering Committee to ensure cooperation on cross cutting issues'

And the Plan acknowledges the most obvious cross sectoral linkages:

'Sectors where there are more obvious cross sectoral interactions include, but are in no way limited to water, biodiversity and flooding'

Further, Section 5 outlines that:

'There is potential for co-benefits and trade-offs from actions identified in the various sectoral adaptation plans. In particular, as the agriculture and forest sector covers the majority of the land area in Ireland it has the potential to play a central role in the
potential development of green infrastructure initiatives and protecting biodiversity to support resilience in other sectors.’ [An Taisce emphasis]

Despite this, none of the actions in the Plan specifically promote the protection of biodiversity, and the DAFM indicated at the launch of this Plan that biodiversity considerations are the remit of the NPWS, and as such are not a consideration in this plan. While the Plan acknowledges that coordination of the various sectoral plans will be challenging, An Taisce submit that there are instances where there are easy wins for cross sectoral linkages which would be of benefit to multiple sectors.

Climate change and biodiversity are inextricably linked. Terrestrial and marine ecosystems currently absorb roughly half of man-made carbon emissions. Biodiversity and healthy ecosystems are essential to mitigate against climate change, yet climate change is irrevocably damaging those same systems and species. The protection of our biodiversity is a cost effective and logical way to mitigate against, and adapt to, the impacts of climate change. Failure to protect this resource will inevitably lead to an ecological tipping point, whereby our natural systems will no longer function as a mitigant for climate change, and we will have lost our main means of combating our rising carbon levels.

Agriculture is the biggest threat to biodiversity in Ireland, and as such the linkages between the DAFM Plan and the protection of biodiversity are imperative. Healthy diverse ecosystems provide resilience, increased food security and carbon sequestration. The implementation of biodiversity measures should be paramount in this Plan, and one which could be promoted under a reformed CAP. This is an obvious means to aid cross sectoral adaptation, especially in achieving biodiversity objectives, and one which would appear straightforward to implement via a restructuring of the CAP environmental payments to ensure they are fit for purpose, and are results based.

Further, measures which can provide natural flood protection also provide additional habitat (e.g. riparian buffers, native woodlands, water retention features, reestablishment of flood plains), and these should be facilitated within this plan. One example of this cross sectoral approach is the UK recommendation for the provision of funds to farmers in the UK for allowing
their land to flood\textsuperscript{4}. This measure could be funded under a reformed CAP, and would provide climate adaptation with financial incentives for land owners. Action 14 of the Plan outlines that there should be engagement with OPW flood maps to identify the areas of land/floodplain that are expected to be inundated. However, there is no indication of what the DAFM propose to do once they ‘engage’ with this information. The above example of paying land owners to allow their land to flood is one concrete action which would address this.

An Taisce submit that for meaningful adaptation, which takes account of cross sectoral considerations, the recommendations of the JOCCA report (2019) be implemented, particularly the need for a more diversified, resilient, sustainable and equitable model for Irish agriculture. While closely integrated cross sectoral approaches may be challenging to realise, there are clear cross sectoral linkages which could easily be capitalised on, and these should not be delayed

\textbf{3.4 Aquaculture and Fisheries}

Case studies 3 and 7 relate to fisheries and aquaculture. An Taisce would highlight that the positive outcomes which are listed in regard to algal blooms in Case Study 3 are:

- ‘Increases in the phytoplankton abundance of non-harmful species may lead to increased shellfish growths.

- ‘\textit{Increases in biomass at the base of the food web may also present an opportunity to rear novel species such as abalone, sea bream/ sea bass, seahorses and urchins.}’

Phytoplankton are the base of the marine food chain, and provide a valuable carbon sink, and half of the ocean’s oxygen. However, many recent studies have indicated that phytoplankton populations are at risk from climate change, and are rapidly declining. As oceans warm they contains less oxygen, which is detrimental for phytoplankton. Rising sea temperatures have

reduced global phytoplankton by 40 percent since 1950⁵. Scientists predict that phytoplankton along the North Atlantic coast will migrate toward cooler waters off the coast of Greenland, thereby reducing food availability for fish and other marine life. As such, to list increases in phytoplankton abundance as a positive outcome of climate change is misinformed. Indeed quite the opposite will happen, with negative knock-on impacts on the food web.

In addition, Case Study 7 outlines that one step towards resilience in the fishing sector is to:

‘Continue to ensure the sustainable exploitation of commercial fish stocks as this will contribute to their adaptation to climate change.’

However, An Taisce would note that The European Commission has given Ireland three months to conduct an inquiry into its ability to apply EU fishing rules in light of the severe and significant weaknesses detected in the Irish control system during an audit carried out in March 2018 at Killybegs, Co Donegal⁶. As such, the DAFM should recognise that the system which is currently in place is not providing for sustainable fishing, and to rely on the continuation of this approach will do nothing to boost resilience for this sector. The EU has a poor record on overfishing, and the latest figures from the European Commission's Scientific, Technical, and Economic Committee for Fisheries confirms that overfishing continues. According to the most recent updated data, 41 % of fish stocks were still being overfished in 2015.

Given the importance of the ocean as a carbon sink and its imperilled and overfished state, it is essential that any climate adaptation plan puts measures in place which will ensure its ongoing protection. To date Ireland has failed to designate Marine Protected Areas, beyond those areas which are already covered by the Natura 2000 network. The designation of Marine Protected Areas, as required under the Marine Strategy Framework Directive would provide a certain amount of resilience. The use of MPAs to restrict fishing have been internationally


⁶ https://www.thetimes.co.uk/edition/ireland/ireland-given-three-months-to-hold-eu-fishing-inquiry-m0zbnhkp
demonstrated to be of major benefit for population regeneration with a positive impact on areas within and outside of the MPA. An Taisce would recommend that the Department implement stringent regulatory measures to end overfishing, and designate no-take Marine Protected Areas to protect our fragile ocean ecosystems, which, when functioning, provide significant carbon sequestration.

4. CAP

Action 11 refers to supporting the sector to enhance sustainable agricultural production and for 40% of the CAP budget to contribute environmental or climate action. An Taisce would note that to date the farming sector has been far from sustainable. It is the largest polluter of freshwater in the state, leading to eutrophication of our lakes and rivers, with roughly 50% of these being less than good status. Further, there are serious challenges ahead in regard to ammonia emissions, given that Ireland have breached our NEC ceiling for the last two years, and there is no indication that we will be in a position to comply with this Directive before 2030. Further, the NPWS and National Biodiversity Records Centre have catalogued an ever dwindling biodiversity in Ireland.

The environmental measures which have been in place under the current CAP are not achieving their aims, and there is no monitoring to assess their efficacy. Given our water quality, climate and ammonia emissions and ever declining biodiversity An Taisce submit that for the sector to be truly sustainable a thorough overhaul of the system is required. In this regard An Taisce would refer the Department to the findings of the JOCCA report.

Action 3 of the plan outlines that the DAFM will input in to the CAP strategic plan development, and An Taisce would hope that the failure of current environmental safeguards would inform that input.

Furthermore, the Department do not appear to be accounting for the import and export of farming exports under future climate scenarios. Irish agriculture depends largely on the

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7 http://www.antaisce.org/articles/2019-nitrates-derogation-review
export of dairy and beef to European and International markets, in addition to their
dependence on the import of cattle feed and synthetic fertiliser to sustain the national herd.
This is not a sustainable system, nor does it provide for food security under future climate
scenarios. This departmental plan should focus on future proofing the sector, and an
ongoing dependence on international import and export does not provide that.

5. Monitoring
Section 7 of the Plan outlines that it will adopt an iterative approach to monitoring, reporting
and evaluating the actions identified in the Plan, and that:

‘The monitoring system will also help to support communication and learning and to
indicate progress towards achieving our adaptation goal.’

However, An Taisce would highlight that the plan lacks specific goals, and given the broad
nature of the adaptation objectives, it is equally unclear how specific progress can be
monitored.

6. Summary
Overall, An Taisce submit that the plan lacks clear objectives, and it is unclear what specific
outcomes this plan aims to achieve. There is no sense of urgency, and given the extreme
weather events in 2018, which led to a fodder crisis and serious complications and economic
ramifications for farmers, it is entirely unclear how this plan would better equip the sector to
combat these risks.

This adaptation plan does not take account of the challenge facing us, or the unsustainable
nature of a business as usual approach to agriculture. Climate emissions, water quality and
biodiversity are all being sacrificed to support agricultural intensification and the substantial
increases in the dairy herd. There would appear to be a failure to acknowledge that ongoing
agriculture depends on these very factors to support it. Focusing on adaptation while failing
to implement meaningful mitigation is an exercise in futility. Further, to exacerbate this lack
of mitigation, the adaptation measures put forward in this Plan fail to address the very risks which were outlined.

In our opinion, to facilitate meaningful climate adaptation a fundamental systemic overhaul will be required. In the case of agriculture many of the adaptation measures which could be implemented are also mitigation measures, for example by implementing the JOCCA recommendations to provide for a diversified, resilient, sustainable and equitable model for Irish agriculture. We require a move away from an import/export driven model of agriculture, and the heavy reliance on synthetic fertiliser. Our agricultural model favours monocultures such as rye grass, and those are often non-native species such as Sitka Spruce and pacific oysters. To fail to address these issues in this adaptation Plan leaves Ireland open to a multitude of risks, including the threat posed by pests and disease, in addition to biodiversity loss and water quality impacts.

An Taisce submit that this plan does not provide the means to adapt the agricultural sector to ongoing climate change, and in light of an additional failure to provide meaningful mitigation for agriculture related GHG emissions, it would lead us to question how seriously the Department is treating the enormous challenge ahead.

7. Recommendations

1. This Adaptation Plan should have specific and timetabled targets, which are measurable. It should also indicate what key performance indicators will be used to review the implementation of this plan.

2. This plan is sorely lacking specific recommendations. There are no clear or mandatory requirements included.

3. The plan should draw on the findings of the Joint Oireachtas Committee report on climate action, where specific recommendations were made in relation to facilitating a sustainable and equitable agricultural model. In this regard, serious consideration should be given to herd reduction and a move away from intensive agriculture. As outlined above, this could provide both mitigation and adaptation.
4. Cross sectoral collaboration is given mention in this plan, but there is no indication that this was given the necessary focus. As outlined above, while this is essential across the board, it is particularly pertinent when it comes to biodiversity and flood relief. There are some easy wins, and again some of these are laid out in the JOCCA report, such as promoting the carbon sequestration potential of land through native broadleaf woodlands, and maintaining hedgerows and rewetting bogs. The potential to facilitate and fund this should be given serious consideration under a reformed CAP.

5. The Department should prioritise the designation of no-take MPAs to protect our marine biodiversity.

6. Most of all this plan needs to more holistic, and to facilitate immediate and decisive action. Climate breakdown and biodiversity loss are the biggest challenges ever facing us, it’s time for policy which is commensurate with that threat.

An Taisce would request that you take these recommendations in to account

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Elaine McGoff, PhD

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

1. 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:
   All of the above, with the addition of an over-reliance on an import/export model which relies on other countries to both produce our import and to buy our exports in an ever more volatile world.

2. What do you think the main impacts from climate change will be on the agriculture, forest and seafood sectors?

   Please Explain:
   - Ecosystem collapse
   - Food insecurity
   - Issues with grass/crop growth due to extreme temperatures/drought
   - Biodiversity loss and water quality impacts, which will negatively impact on crops, livestock and cattle
   - Biosecurity issues, disease, pests, invasive species
   - Flooding

3. How are those working in the sector currently adapting to climate change?

   Please Explain:
   - There is no sufficient adaptation measures currently in place
4. Where do you get climate related information?

Please Explain:
- Scientific publications

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

Please Explain:
- See submission text above. Those working in the sector should be provided with detailed guidance and specific recommendations, driven by agricultural policy which draws on recent research and the findings of the JOCCA report. This information is currently not provided to the sector.

6. How do you perceive and use weather and climate information to inform management decisions?

Please Explain:
NA

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

Please Explain:
- The nation’s food supply is threatened by climate change. As such there is no one who is not threatened by this. Ireland is a net importer of food, often from countries which are, and will be, severely impacted by climate breakdown.
- The import of products such as cattle feed and synthetic fertiliser, to produce export products such as beef and dairy powder is not a sustainable model, and cannot possibly continue under future climate scenarios. As such the majority of agri-business is threatened.
8. When making investments and management decisions how far ahead do you plan?

- 0 - 1 year
- 1-5 years
- 5 - 10 years
- 10 years +
- NA

9. 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:
It outlines some of the most relevant ones

10. 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)?

- No

Please Explain:
See text in submission above. This plan will be ineffectual for adapting to climate change regardless of timeframe, as it is lacking any specific recommendations or actions, and those presented fail to address the risks outlined in Section 4.
11. What three things could the Department do to help you be better prepared to adapt to future climate change?

1. Fully acknowledge the scale of the problem, and the role of agriculture has, and is, playing in driving increasing emissions, biodiversity loss and water pollution
2. Implement mitigation measures immediately. Adaptation cannot happen in isolation to mitigation
3. Recognise the need, and commit to overhauling the agricultural model

12. Any other comments?

Please see written submission above