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27th February 2020

IFA Aquaculture further comments RE: Submission for Public Consultation on Marine Strategy Framework Directive (2008/56/EC) - Article 17

IFA Aquaculture is a consolidated representative body comprised of representatives from all sectors of the Irish aquaculture industry, this includes all stakeholders that farm fish, shellfish, seaweeds and for other novel species that may be cultured around the coastline of Ireland.

The following is are additional comments by IFA Aquaculture Re: Marine Strategy Framework Directive (2008/56/EC) – Article 17:

Climate Change: In relation to Climate Change mentioned in the assessment report - Consideration must be given to the role of the aquaculture industry as a carbon efficient source of sustainable protein. Aquaculture provides for one of the most carbon efficient sources of protein, when there is an increasing demand globally for sustainable sources of protein. IFA Aquaculture has contributed to the consultation process for the Climate Action Plan and the Sectoral Adaptation plan for Seafood – these should also be taken into account in this context.

Socio-Economic assessment: IFA Aquaculture have noted concerns regarding the 'Identified Pressures from marine industrial activities in Irish waters' in the Draft Economic and Social Assessment on page 105 - Marine Aquaculture is listed as having an identified pressure 'input of nutrients and the input of organic material causing eutrophication'.

IFA Aquaculture regards this as inaccurate in the context of the Irish Aquaculture sector and the following should be taken into account:

- Aquaculture also contributes to the control of nitrogen/phosphorous removal as shellfish are filter feeders which aids to reduce and mitigate eutrophication effects of Irish coastal waters.
- Shellfish, as filter feeders, actually increase water quality and habitat quality in Irish coastal waters. Shellfish provide a nutrient removal service through feeding which enhances bacterial denitrification, sedimentation rates, reduces turbidity as well as contributing to nutrient sequestration.
- In relation to finfish aquaculture, current WFD classification of coastal waters classifies all coastal water bodies as being of 'High' status for water quality parameters - this includes water bodies which contain salmon farms and indeed all marine aquaculture activities.

- As part of finfish farming, excess nutrients are artificially introduced into the water column through salmon excretion, in the form of carbon, nitrogen and phosphorus. It is acknowledged that additional nutrients can disturb the natural ratios of nutrient elements in seawater and can increase the availability of nutrients for macro-algal and phytoplankton uptake, which, in turn, can lead to eutrophication. However, the loading rate of dissolved inorganic nitrogen (DIN) from salmon farms generally is relatively low when compared to the natural loading rate (Wang et al., 2012).
- Almost all salmon farms in Ireland are of organic status and the location of farms, which are located in exposed, well flushed offshore environments – fish farming sites located in these environments are considered to have reduced nutrient enrichment when compared to natural levels and thus mitigates the risk of eutrophication (SAMS & Napier University, 2002 ; Wilding & Hughes, 2010).

References:

SAMS and Napier University (2002) Review and synthesis of the environmental impacts of aquaculture. Scottish Executive Central Research Unit. Report published by the Scottish Executive.

Wang, X., Olsen, L.M., Reitan, K.I. and Olsen, Y. (2012) Discharge of nutrient wastes from salmon farms: environmental effects, and potential for integrated multi-trophic aquaculture. *Aquaculture Environmental Interactions*. Vol. 2, 267 -283.

Wilding, T. and Hughes, D. (2010) A review and assessment of the effects of marine fish farm discharges on Biodiversity Action Plan habitats. A Report Commissioned by the Scottish Aquaculture Research Forum (SARP).