



AAC Recommendation on laying the Foundations for Aquatic Animal Welfare in EU Legislation

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I. Background

The Aquaculture Advisory Council (AAC) welcomes the European Commission's initiative to modernise EU animal welfare legislation. This revision presents a crucial opportunity to align EU policy with evolving scientific understanding, societal expectations, and the economic realities of the aquaculture sector.

The AAC would like to take this opportunity to remind the Commission and Member States of its recent recommendations on a Vision for Aquaculture in 2040¹, the European Ocean Pact², Strategic Guidelines for EU Aquaculture³, and Fish Transport⁴, which all categorically call on the EU to include farmed seafood aquatic animals in the scope of the modernisation of the EU animal welfare legislation on the keeping and killing of farm animals, and to ensure that aquatic food imports meet the same environmental, social, and animal welfare requirements.

Aquaculture plays an increasingly vital role in securing a healthy, sustainable, and competitive blue economy, providing essential food for Europe, and contributing to wider ecosystem services. In the EU, while aquaculture production is less than 2% of global output⁵, Europe remains the largest aquatic food market, highlighting the significance of both domestic production and imports.

Based on scientific evidence, at least some species of fish have the neural components for sentience, which has been supported by studies concerning their sensory systems, brain structure and functionality, and their capacity to experience pain, fear, and distress⁶. EFSA also considers that decapod crustaceans and cephalopod molluscs have some indications of sentience, including the capability to experience pain and distress⁷. Aquaculture production in the EU yielded almost 1.1 million tonnes of aquatic organisms in 2023, with a value of €4.8

¹ AAC, *Recommendation for a Vision for Aquaculture in 2040*, 2025, <https://aac-europe.org/en/publication/aac-recommendation-for-a-vision-for-aquaculture-in-2040/>.

² AAC, *Recommendation on the Oceans Pact*, 2025, <https://aac-europe.org/en/publication/aac-recommendation-on-the-oceans-pact/>.

³ AAC, *Recommendation on the Second Draft Report on the Mid-Term Assessment of the Strategic Guidelines for EU Aquaculture and the Multiannual Strategic Plans*, 2025, <https://aac-europe.org/en/publication/aac-recommendation-on-the-second-draft-report-on-the-mid-term-assessment-of-the-strategic-guidelines-for-eu-aquaculture-and-the-multiannual-strategic-plans/>.

⁴ AAC, *Recommendation on Fish Welfare in Live Fish Transport*, 2022, <https://aac-europe.org/en/publication/aac-recommendation-on-fish-welfare-in-live-fish-transport/>.

⁵ European Court of Auditors, *EU Aquaculture Stagnating despite Substantial Support*, 2023, <http://www.eca.europa.eu/en/news/news-sr-2023-25>.

⁶ EFSA, *General Approach to Fish Welfare and to the Concept of Sentience in Fish*, Scientific Outputs, 2009, <https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2009.954>
<https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/j.efsa.2009.954>

⁷ European Food Safety Authority, 2005, Opinion of the Scientific Panel on Animal Health and Welfare (AHAW) on a request from the Commission related to the aspects of the biology and welfare of animals used for experimental and other scientific purposes, <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2005.292>



billion⁸, comprising midpoint estimates of approximately 870 million finfish⁹ and 58 million decapods¹⁰. As the magnitude of welfare impacts are dependent on severity, duration, and the number of individuals involved, the scale of this production highlights the sector's significant economic importance while raising important considerations for the welfare of farmed aquatic animals.

Animal welfare outcomes are delivered through a combination of husbandry, nutrition, health management and breeding/genetics (e.g., selection for robustness, disease resistance and temperament). These approaches apply across conventional and organic aquaculture systems and should be reflected in EU policy. The Code EFABAR demonstrates how welfare traits are embedded in breeding objectives across farmed species; this approach can inform aquaculture-specific practices, so genetics is recognised as part of the welfare solution.

Aquaculture is a very diverse activity that employs a wide variety of production systems, and in which the successive life stages of the animals have different welfare requirements. Moreover, whilst a few species have been farmed for many centuries, many other aquatic animals have only relatively recently started to be farmed. As a result, scientific research is ongoing and still needed to define best practices for each fish species, life stage and production system.

The current legislative landscape

Despite their sentience and vast numbers, farmed aquatic animals are largely uncovered by specific, binding EU welfare rules for their keeping and killing. While Council Directive 98/55¹¹ sets general minimum standards for farmed animals, the absence of species-specific provisions, partly due to the limited scientific knowledge on fish welfare when earlier regulations were drafted, hampers effective implementation and enforcement and allows outdated practices to persist. Additionally, while several Member States such as Austria, Denmark, Latvia, Czechia, Germany, Slovenia, Netherlands and Sweden have general animal welfare regulations that address farmed fish welfare¹², including species-specific provisions in some cases, and while general EU animal welfare requirements apply to all farmed fish in MS, others have only general or no specific requirements at all. This inconsistency in the application of animal welfare rules undermines a level playing field across the Union. This

⁸ https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Aquaculture_statistics

⁹ https://fishcount.org.uk/estimates/farmedfishes/data01/fishcount_global_farmed_fish_estimate.php?selyear=2022&selcountry=*+All+EU27+countries+*&sel-species=please-select&sel-sort=Number

¹⁰ https://fishcount.org.uk/estimates/farmedcrustaceans/data02/fishcount_global_farmed_crustacean_estimate.php?selyear=2022&selcountry=*+All+EU27+countries+*&sel-species=please-select&sel-sort=Number

¹¹ The Council of the European Union, "Council Directive 98/58/EC on the Protection of Animals Kept for Farming Purposes," 1998, <https://eur-lex.europa.eu/eli/dir/1998/58/oj/eng>.

¹² <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2025.EN-9821>



legislative gap was identified in the Commission's 2022 Fitness Check¹³ of the EU animal welfare legislation, which concluded that aquatic animals are not adequately covered.

International organisations, including the Council of Europe¹⁴ and the World Organisation for Animal Health¹⁵, have also issued recommendations and guidelines on fish welfare, providing a framework for developing EU standards. However, they are generalist in scope making further development necessary.

The AAC notes the significant step forward with the revised proposal on Animal Transport currently being negotiated¹⁶, which includes aquatic animals and sets out general requirements that could be made species-specific via delegated acts and be applied to imports. This proposal will help to provide greater legal clarity for fish farmers in the application of species-specific rules, as well as contribute to a stronger level playing field across the Union and with regards to third country imports of live aquatic animals.

II. Justification

Benefits of enhanced welfare standards for sustainability and competitiveness

Integrating aquatic animals into the EU animal welfare revision offers substantial benefits for the aquaculture sector, consumers, and the broader European market. The EU aquaculture sector strongly promotes high welfare standards, and many producers have proactively adopted quality certifications on a voluntary basis which include ethical standards. Producers have collaborated with NGOs to develop national fish welfare guidelines, such as in Spain with the recent sea bream¹⁷, sea bass¹⁸ and turbot¹⁹ guidelines produced by APROMAR, and are developing welfare strategies, demonstrating a commitment to responsible practices. EU producers, both conventional and organic, also must comply with existing regulations which are often more developed than those of third countries from which the EU imports,

¹³ European Commission, "Fitness Check of the EU Legislation on the Welfare of Farmed Animals," 2022, https://food.ec.europa.eu/animals/animal-welfare/evaluations-and-impact-assessment/evaluation-fitness-check-eu-legislation-welfare-farmed-animals_en.

¹⁴ Council of Europe, "Recommendation Concerning Farmed Fish," 2005, https://www.coe.int/t/e/legal_affairs/legal_co-operation/biological_safety_and_use_of_animals/Farming/Rec%20ofish%20E.asp.

¹⁵ WOA, "Aquatic Animal Health Code - Section: 7 Welfare of Farmed Fish," 2008, <https://sont.woah.org/portal/tool?tab=0&le=en>.

¹⁶ Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the Protection of Animals during Transport and Related Operations, Amending Council Regulation (EC) No 1255/97 and Repealing Council Regulation (EC) No 1/2005 (2023), <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2023:770:FIN>.

¹⁷ APROMAR, "A Guide on Fish Welfare in Spanish Aquaculture - Volume 3: Welfare of Gilthead Sea Bream," 2024, <https://aquaculture.ec.europa.eu/knowledge-base/guidelines/guide-fish-welfare-spanish-aquaculture-volume-3-welfare-gilthead-sea>.

¹⁸ APROMAR, "A Guide on Fish Welfare in Spanish Aquaculture - Volume 2: Welfare on European Sea Bass," 2024, <https://aquaculture.ec.europa.eu/knowledge-base/guidelines/guide-fish-welfare-spanish-aquaculture-volume-2-welfare-european-sea-bass>.

¹⁹ https://apromar.es/wp-content/uploads/2025/11/APROMAR-2025_Fish-Welfare-TURBOT-eng_web.pdf



particularly in the case of organic regulations. In parallel, many operators improve welfare by investing in genetics and selective breeding (e.g., disease-resistant or more robust strains), reducing injuries, treatments and mortality. However, they lack a general framework for implementing species-specific animal welfare protections for farmed aquatic animals.

Nevertheless, aquaculture takes place in the water, often in an environment that farmers cannot fully control, particularly in challenging conditions such as exposed or open-sea sites. As such, the practical implementation of procedures that seem feasible in laboratory settings may not be practical or may even be counterproductive from a welfare standpoint.

Improving welfare via genetic progress is a cost-effective, cumulative and verifiable pathway that complements husbandry measures. EU support for recording welfare traits and using them in breeding objectives (including genomic selection) can lower mortality and medicine use while improving product quality, across species such as sea bass, bream, trout, and salmon. The outcome-based approach should also link farm records to breeding goals so that welfare indicators (e.g., fin damage scores, survival, treatment frequency, growth interruptions) feed into selection for more resilient strains. This avoids prescriptive inputs and encourages continuous genetic and management improvement across farming systems.

It is essential that selective breeding for productivity does not impair health and welfare. For example, some faster-growing salmon may suffer from impaired hearing, and in such cases, breeding programmes should test for these effects²⁰. Conversely, selective breeding has the potential to deliver cumulative, verifiable welfare and health gains—fewer treatments, lower mortality, and fewer injury/handling events—complementing husbandry measures. Where welfare-positive strains are available, producers should be encouraged—and in the case of public support, expected—to consider them as part of standard good practice.

Economic case for welfare-oriented aquaculture

Adequate financial support from the European Commission, provided through the EMFAF and through the next MFF, would enable farmers to adopt higher welfare practices. Furthermore, keeping fish under good welfare conditions offers direct economic benefits for the industry through reduced costs and better-quality products. Better welfare practices reduce injury, disease, and mortality, such as lowering parasite burdens that cost industries hundreds of millions annually, while improving product quality through reduced stress and humane handling. Providing enriched, low-stress environments supports healthier growth and efficiency, with productivity gains often offsetting initial investment costs²¹. Moreover, farms adopting higher welfare standards gain access to certification schemes and premium markets, where products such as ASC- or organic-certified fish command notable price

²⁰ Reimer, T. et al. (2017) 'Rapid growth causes abnormal vaterite formation in farmed fish otoliths', *Journal of Experimental Biology*. The Company of Biologists, 220(16), pp. 2965–2969. doi: 10.1242/JEB.148056.

²¹ Ryba, R. 2025. "The economics of fish farming and fish welfare in Europe" <https://www.animalask.org/post/the-economics-of-fish-farming-and-fish-welfare-in-europe>



premiums and strengthen brand value. Higher standards boost consumer trust and open new market opportunities. Economic analyses demonstrate that implementing welfare improvements, including humane stunning, incurs relatively low costs and has minimal impact on overall profitability, confirming that higher welfare standards are both feasible and compatible with economically viable production²².

Welfare standards for the keeping of farmed aquatic animals

The specific needs of aquatic animals differ significantly from terrestrial animals and must be considered when establishing welfare rules. These welfare standards can be established by building on existing Commission work such as the Good Husbandry Practices (GHPs) for Aquaculture²³, the EU Reference Centre on Aquatic Animal Welfare (EURCAW-AQUA) indicator factsheets²⁴, and the Code of Good Practice for Fish Welfare²⁵. In 2008 and 2009, EFSA released eight scientific opinions addressing the welfare of specific fish species and the most suitable slaughter methods for them²⁶. The EU legislator did not incorporate these recommendations into legislation, partly due to lack of knowledge at the time; however, certain elements were later reflected in the EU's organic production standards. In parallel with husbandry guidance, frameworks for responsible breeding such as the Code EFABAR illustrate how welfare traits can be defined, recorded and used in selection. Developing an aquaculture-specific application would help convert animal-based indicators (fin damage, survival, treatment frequency, growth interruptions) into breeding goals for more resilient strains.

Together, these initiatives provide a strong, science-based and farmer-friendly foundation for developing clear and practical welfare indicators across key European aquaculture species. The GHPs document already sets out species-specific recommendations covering critical areas such as feeding, handling, stocking density, water quality, enrichment, and mortality management. For example, in rainbow trout farming, it highlights the importance of minimising handling stress by limiting time out of water and using passive grading methods to reduce injury, alongside maintaining optimal oxygen and water quality parameters and recording mortalities routinely. For sea bass and sea bream, the guidance emphasises monitoring fin condition as a welfare indicator, managing stocking densities to reduce competition, providing structural enrichment, and ensuring regular net cleaning to maintain water quality.

²² Eurogroup for Animals, 2024. "Stunning results in EU aquaculture" <https://www.eurogroupforanimals.org/library/stunning-results-eu-aquaculture>

²³ EU Aquaculture Assistance Mechanism, *Good Husbandry Practices*, 2024, <https://doi.org/10.2926/1713439>.

²⁴ EURCAW-Aqua, *Indicator Factsheets*, 2025, <https://www.eurcaw-aqua.eu/english/>.

²⁵ AAM, "Code of Good Practices on Fish Welfare and Fish Welfare Indicators," 2025, <https://aquaculture.ec.europa.eu/key-documents/code-good-practices-fish-welfare-and-fish-welfare-indicators>.

²⁶ EFSA, "Fish Welfare," 2009, <https://www.efsa.europa.eu/en/topics/topic/fish-welfare>.



The revision offers an opportunity to introduce an outcome-based approach, integrating clear Animal-Based welfare indicators, where possible to accommodate a variety of farming systems, and utilising digital technologies for monitoring and enforcement.

III. Recommendations

AAC recommendation:

To the European Commission

- Mandate that all aquatic food products imported into the EU meet equivalent social, environmental, health, and animal welfare requirements to those demanded for EU-produced aquaculture products.
- Support and invest in further research and innovation to define appropriate best practices for fish welfare across the main farmed species, life stages and production systems.
- Collate clear, scientifically-sound, and species-specific binding welfare indicators for the entire aquaculture production chain. These indicators should cover keeping conditions, gentle handling practices, water quality, health management, nutrition, stunning, and slaughter methods, drawing on existing EFSA guidance, international recommendations, and the work of EURCAW-AQUA.
- Reinstate the mandate for EFSA to provide scientific opinions on farmed aquatic animals, as outlined in the 2021 roadmap²⁷, covering other aspects of welfare than killing, to help support the development and implementation of EU legislation
- Once best practices at the farm level have been defined, validated, and transferred to the industry, farmed aquatic animals should be explicitly included within the scope of the modernised EU animal welfare legislation. This is essential to ensure consistency with the forthcoming Animal Transport Regulation and to provide a coherent framework for animal welfare across all farmed species in the EU. Assess the economic impact of the implementation of welfare standards for the different aquatic animal species and production systems.
- Focus on an outcome-based approach by integrating clear animal-based welfare indicators, when possible, and exploring digital tools for monitoring and enforcement to simplify compliance and reduce administrative burdens for operators.
- Transform relevant Commission Staff Working Documents into formal recommendations to provide clarity and facilitate uptake by Member States.
- Explicitly acknowledge breeding and genetics as health and welfare levers in the revised framework, ensuring rules remain technology-neutral and outcome-based so all systems can use welfare-positive, robust, and disease-resistant strains without compromising health or genetic diversity.
- Use EU R&I funding to support welfare-oriented breeding programmes and shared health and welfare data systems, linking harmonised animal-based indicators to

²⁷ https://food.ec.europa.eu/system/files/2021-10/aw_eval_revision_roadmap_efsa.pdf



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breeding objectives and prioritising traits that improve survival, resilience, and reduce treatment needs. Build on Code EFABAR for trait definitions, recording and reporting, and support wider uptake and refinement.

To Member States

- Allocate sufficient and easily accessible financial and technical support, particularly for SMEs and microenterprises, through the EMFAF and the new MFF, to support aquaculture operators in investing in effective animal welfare technologies, upgrading facilities, and adopting higher welfare practices.
- Encourage public procurement policies that prioritise EU-farmed aquatic animals, promoting strong animal welfare, social, and environmental standards.

By taking these steps, the EU can demonstrate global leadership in animal welfare, contribute to foster a competitive and sustainable aquaculture sector, and meet the growing ethical expectations of its citizens.



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