



**MEDITERRANEAN MARINE
FISH FARMING SECTOR
CODE OF CONDUCT**





Table of Contents

INTRODUCTION	5
Nature and scope of Code	6
Objectives of the Code	6
Relationship with European and international bodies and other stakeholders	6
GENERAL PRINCIPLES	7
Creating value for society and the consumers	8
Creating value for the environment	11
Creating value for the employees	14
ACKNOWLEDGEMENTS	15



Introduction

The Mediterranean Marine Fish Farming (MMFF) sector and its significant development have resulted in remarkable results not only in the production of domestic, fresh, affordable and high-quality fish, but also the creation of a socio-economic structure that directly and indirectly involves thousands of employees, particularly in coastal and fisheries dependent areas.

In light of policy initiatives such as the European Green Deal and the European Commission Communication on a Farm to Fork Strategy, PerformFISH stakeholders are ready to play their role in further improving the environmental footprint of the MMFF and to support the transition to more sustainable food systems. This will help to safeguard food security while addressing the challenges posed by climate change, environmental degradation, biodiversity loss, animal health and welfare.

The Code of Conduct has been developed through collaboration between the PerformFISH project stakeholders.

The new Code acknowledges the elevated nutritional, economic, social, environmental, and cultural importance of MMFF. It embraces and promotes the interests of all those concerned with this industry and provides a common quality framework to strengthen MMFF. All MMFF stakeholders can benefit from applying the Code.

Nature and scope of the Code

1. The primary goal of this Code of Conduct is to promote the responsible development and management of a viable and sustainable MMFF. This will assure the highest standard of fish aquaculture and quality food production, while respecting environmental standards, social challenges, and consumers' demands.
2. Aquaculture is defined as 'the rearing or culture of aquatic organisms using techniques designed to increase the production of the organisms in question beyond the natural capacity of the environment, the organisms remaining the property of a natural or legal person throughout the rearing or culture stage, up to and including harvesting'. Within these frames, the distinctive line between aquaculture and fisheries is the ownership of the stock.
3. Aquaculture is a knowledge-based activity, requiring a strong scientific foundation for its technical success. As a Code of Conduct, this document provides consolidated optimised practices and harmonised standards to raise consumer awareness, to advocate for the animal welfare in production and the social and environmental responsibility of the MMFF industry.
4. This Code is voluntary, however certain parts are based on mandatory European regulations and commonly approved best aquaculture practices.
5. The Code is directed towards all MMFF, either members or not of the European Aquaculture Farmers Associations, and all persons concerned with the sustainable development of MMFF.
6. The Code is not definitive, but addresses those areas of the farming process that the MMFF considers to be the most important.

Objectives of the Code

1. The main objective of the Code is to address the social acceptability and environmental responsibility for the MMFF.
2. Additionally, the role of the Code is to motivate and assist the further development of the principles of best practices, and to become a model for other countries where MMFF is developing.

Relationship with European and international bodies and other stakeholders

Individuals, co-operatives and companies that engage in MMFF, singularly and collectively:

1. Shall consult and collaborate with European, national, and regional authorities for the development and implementation of policies, regulations and practices for a sustainable Mediterranean fish farming sector, assisting farmers in the achievement of animal and food production with environmental, economic and social sustainability.
2. Shall consult and co-operate with other aquaculture producers and sectoral suppliers for the development and agreement of common standards and objectives.
3. Should collaborate in the fulfillment and implementation of the objectives and principles contained in this Code.
4. The Code recognises that as stakeholders, whether private or public organisations, they can impact both the operational environment of the MMFF and the market.

GENERAL PRINCIPLES

Creating value for society and the consumer

Food supply - nutritional value

The main objective of the MMFF is to provide sustainable, affordable and healthy food year-round, to cover increasing demand and contribute to food security.

- MMFF should undertake initiatives that contribute to a sustainable food system.

Consumer health and safety

The primary goal of the MMFF is to produce fish intended to be nutritious, healthy and high-quality food for human consumption. Many aspects of food safety are addressed through existing legislation and regulation. This Code is designed to supplement this through the application of good practices, reflecting the highest standards in the rearing of fish for food production. MMFF is a process that allows the farmer to grow and harvest fish, which is consistently controlled and high quality, having the following characteristics:

- Safe, healthy and nutritious fish that has been reared in the best possible conditions.
- Source of high protein of premium nutritional value in aspects of Essential Amino Acids (EAA).
- Rich in long chain n-3 fatty acids (Highly Unsaturated Fatty Acids HUFA - EPA & DHA) meeting the demands of European Food Safety Authority instruction about the contribution of the consumed amount per serving.
- A highly nutritious source of food available continuously throughout the year.
- Essentially fresh and free of unwanted residues or contaminants and pathogens.
- Meeting the consumer demands for freshness, good taste, flavour and texture.

Therefore, MMFF establishments enforce Good Production Practices and Hazard Analysis and Critical Control Point (HACCP) principles for handling fish feed and food and are certified with international GFSI approved standards. In addition, more specific and strict standards are enforced in fish packing and processing plants that are certified with relevant internationally approved standards. MMFF ensures the quality of their products by following principles of good practices which include:

- The use of certified and approved high-quality raw materials in fish feeds.

- The continuous control of management and a complete traceability system at all stages of the production process.
- Strict quality controls of broodstock, fish feed and finished fish products.
- Continuous environmental monitoring and remedial corrective actions through controls and measurements.
- Thorough xenobiotic (chemical substances that are foreign to animal life) monitoring of the product.

Consumer information and communication

MMFF producers must comply with strict standards regarding environmental sustainability, animal health, animal welfare, food safety and consumer protection. It is important that these high standards are communicated to the consumer through adequate and fair labelling, which fosters greater sustainability, social acceptance, and competitiveness of the MMFF.

- The MMFF should pursue correct and complete product information for the consumer, promoting informed and responsible purchasing and raising awareness about the quality of EU aquaculture products.
- The Code welcomes the inclusion of nutrient profiles in MMFF products.
- The Code encourages the MMFF to explore new ways to provide information to consumers including both personal and digital means, to improve the accessibility of food information.

Research and Innovation investment

Research and innovation (R&I) are driving forces in accelerating the transition to sustainable food production systems from primary production to consumption. The Code encourages MMFF to:

- Allocate resources to research and innovation development, to improve the environmental performance and efficiency of the industry.
- Engage and work with research institutes to increase credibility.
- Inform policy makers and regulatory bodies on a scientific basis.
- Promote and accelerate knowledge transfer from research project findings.
- Build a resilient and competitive sector.

Community engagement

MMFF aims for a positive relationship with the local communities where they operate to contribute to their social and economic development. The Code invites MMFF to:

- Pay attention to the views of local communities regarding MMFF and engage in positive and open dialogue to find mutually beneficial or acceptable solutions for concerns.
- Maintain an open attitude to diverse opinions and support cultural activities through donations and other support.
- Support social cohesion in the communities where MMFF operate and offer permanent employment and continuous training.
- Address consumer and environmental concerns at local level and improve recognition of aquaculture's positive contribution.

Economic performance

MMFF operates in competitive markets and compete to secure market shares, maintain profitability, and contribute to national economies. MMFF welcomes free and fair competition. However, volatile prices frequently affect the performance of companies in the industry. The MMFF must be profitable to make the investments required to operate. The Code encourages the MMFF to:

- Engage in collective activities contributing to necessary market intelligence, to ensure timely implementation of actions to ensure competitiveness.
- Explore long-lasting solutions to safeguard a level playing field with producers from third countries, to secure long-term viability, employee incomes, and return of investment.





Creating value for the environment

Sustainable aquaculture operations

MMFF follows a precautionary approach to environmental management based on preventive actions, and explores a wide range of alternatives throughout the production process to assist the transition to sustainable food production systems.

Site selection

Site selection should be based on the requirements of farming systems and species, environmental parameters, the legal framework, policies at national and European level, socioeconomic considerations, and the investors' objectives.

In principle a comprehensive and favorable legal framework should be in place to ensure and facilitate appropriate site selection for MMFF based on an Ecosystem Approach to Aquaculture, which contemplates appropriate planning, allocation of zones for aquaculture (AZAs), environmental monitoring, and regulation by competent authorities.

Site selection should be performed on the basis of preliminary surveys and environmental characterisation within the AZAs, and guided by the outcome of an Environmental Impact Assessment (EIA) performed according to local regulations.

Social acceptability should be considered as an objective of site selection and the site management process, to ensure the establishment and permanence of long-term aquaculture activities in AZA marine areas.

All fish farms should be designed, developed, and managed with a view to the equitable and efficient use of resources. For long-term sustainable operations, MMFF shall use only those sites where aquaculture activities have:

1. Acceptable ecological effects which are within the environmental carrying capacity.
2. Minimal impact on marine seabed quality, according to national standards.
3. Avoided conflicts with other marine sectors.

The adaptive approach to aquaculture site selection and management should be implemented to allow aquaculture activities to develop in a sustainable manner in a changing marine environment.

Safeguarding fish health and wellbeing

The focus for MMFF is on disease prevention and advanced welfare. Use of good farming practices and associate biosecurity measures at all production stages of the production cycle are a priority for fish farmers to ensure high levels of fish health and welfare.

In light of the EU legal framework for animal health and welfare, and the recommendations and guidelines of other stakeholders (OIE, EFSA, DG SANTE, AAC), this Code aims to improve the health and wellbeing of farmed fish based on their species-specific needs by:

- a. Ensuring optimal environmental conditions to grow the fish.
- b. Adoption of a veterinary health plan based on prevention and vaccination to minimise the incidence and spread of diseases.
- c. Adoption and sharing among farmers, and staff training on good husbandry and management practices, including quarantining, vaccination, handling, feeding, transport, confinement, and harvesting.
- d. Responsible use of therapeutic agents – always administered under veterinary control – only where essential for disease treatment to avoid the risk of antimicrobial resistance and to improve animal welfare.
- e. Implementation and application of Operational Welfare Indicators (OWIs) and tools to measure and report on fish welfare.
- f. Inspection of behavioral and physical changes and mortalities, with prompt action if alterations are detected.
- g. Implementation of science-based, effective, humane and safe stunning and slaughtering procedures, to minimise stress and suffering.
- h. Encouraging the application of smart solutions and digital tools to enhance innovation and improve farm monitoring and production management.

Fish stocks – genetically modified organisms

The intake of live fish stocks into an aquaculture system must be of good health and known origin. MMFF does not endorse the use of genetically modified fish in aquaculture since it is concerned about the maintenance of the natural characteristics of the products, in addition to safeguarding environmental quality and biodiversity.

Sustainable fish feed and responsible feeding

Correct feeding practices reduce waste, assure better water quality, good health, and effective farm management and performance. The Code strongly encourages the MMFF the following:

- Use of species-specific fish feed.
- Adequate quantities of feed for all fish, using the correct pellet size and nutritional on-growing model per age and species farmed.
- Feed distribution methods which ensure individuals have sufficient access to the feeds supplied.
- Fish feed must be manufactured and packaged with a detailed label on the packaging in accordance with EU and national legislation, allowing thorough traceability and use-by dates.
- Daily rations should be appropriate for the species and growing conditions available in the site facilities.
- Excessive feeding should be avoided since it negatively impacts the environment and leads to water quality deterioration due to feed detritus.
- Endangered species and products from illegal unreported and unregulated (IUU) fisheries are not used to produce fish meal and fish oil used in MMFF feeds.
- Commercial diets with alternative sources of protein (novel ingredients) should be explored.

Biodiversity and wildlife interactions

In light of important international policy initiatives such as the European Green Deal and the European Commission Communication on a Farm to Fork Strategy to address the challenges posed by climate change, environmental degradation, and biodiversity loss, MMFF is committed to:

- Ensure the sustainable use of marine ecosystem by continuously monitoring the impact of farming operations on sediment through nutrient accumulation and benthos biodiversity.
- Put measures in place to reduce inputs into the marine environment by improving the feeding rate and reducing unconsumed feeds entering the environment. This will be possible by implementing more active monitoring of feeding practice and the continuous training of employees.

- Minimise the potential risks that are presented by farmed fish escapees to wild fisheries.
- Co-operate in the event of fish escapes and inform the respective authorities to ensure that appropriate actions are taken.
- The MMFF will continue to apply best practice to minimise the impact of escapees through technical and management solutions.
- Safeguarding marine biodiversity, at local level through responsible management of sea farming areas, and globally through responsible procurement of fishmeal and fish oil.
- Promote the use of biodegradable materials to reduce waste in support of the circular economy.
- Put measures in place to reduce medicine inputs into the marine environment by improving the health status of farmed fish and promoting vaccinations and alternative treatments.

Climate change adaptation and mitigation

While aquaculture has the lowest greenhouse gas (GHG) emissions of all farmed animal sectors, the Code encourages the MMFF to support measures which contribute to Green Deal objectives and improve energy efficiency in their farms, and proposes to:

- Monitor, and take measures to improve, farm carbon footprint.
- Explore new forms of energy efficiency and energy production.
- Contribute to Europe's action plan for circular economy and reduce pressure on natural resources.
- Encourage further development of aquaculture systems with low emissions of GHG.
- Welcome voluntary food labeling initiatives related to carbon footprint.
- Assess the effect of climate change on disease evolution and biomass loss.
- Explore measures to build resilience to climate-related extreme events.

Certifications and Environmental Regulatory Compliance

The Code supports the commitment to sustainability and encourages farm certification through globally recognised, international sustainability standards.



Creating value for the employees

MMFF employs thousands of workers, and aims to provide a safe and professional workplace in which employees thrive. It shares a common set of core values that promote fair treatment and safe working conditions for all employees across all their operations. The Code encourages MMFF to make continuous improvements with a focus on occupational health and safety, human rights at work, and vocational training and education

Occupational health and safety

- All sites shall establish annual safety action plans (what, who, when) including safety walks and inspections (Walk – Observe – Communicate) and provisions of personal protective equipment including life jackets for employees, contractors and visitors.
- A risk assessment with respect to potential risk and safety hazards shall be made for all jobs, equipment, and hazardous materials, with an annual review made of those considered most critical.
- A work permit system shall be in place, to include lock-out and tag-out procedures, and to safeguard work in confined spaces.
- All accidents and near-misses shall be reported and investigated, to include root-cause analysis, and with the subsequent implementation of corrective actions within the planned time.
- An emergency response plan shall be in place and tested at least once a year.
- A programme for systematic and regular safety training for all employees shall be in place.
- Human safety is priority when looking for technical solutions affecting the production process.

Human rights at work

- MMFF supports and observes the Universal Declaration of Human Rights in their operations. The industry requires a similar commitment from suppliers and participants in the supply chain.
- MMFF recognizes the right of all workers and employees to freely form and join groups for the promotion and defense of their occupational interests and seek structured debate with these groups.
- All MMFF activities shall be conducted without discrimination on the basis of race, ethnicity, national or other origin, disability, age, gender, sexual orientation, language, religion, or any other characteristic where a person is not treated as an individual.
- Fish farmers are committed to respecting the privacy of individuals and will handle personal data responsibly and in compliance with applicable privacy laws.
- MMFF provide the same rights level both to permanent and seasonal employees based on current legislative regulations and their adequate accommodation conditions.

Vocational training and education

MMFF provide training programs to encourage employees, scientific staff, and technicians to pursue postgraduate studies and diplomas, and national and international workshops related to the production process, such as feed production, fish health and welfare, and safety at work.

- MMFF aims to be a professional and positive workplace and attract new workers.



ACKNOWLEDGEMENTS

The EU-funded PerformFISH project works to ensure sustainable growth of the Mediterranean aquaculture industry, based on consumer perceptions and real market requirements. It aims to support fish farms that operate not only in ideal economic and environmental conditions but also in a socially and culturally responsible manner.

PerformFISH stakeholders have developed this Code of Conduct with specific reference to:

- 1.** FAO 1995: Code of Conduct for Responsible Fisheries Rome
- 2.** IUCN 2007: Guide for the Sustainable Development of Mediterranean Aquaculture
- 3.** FEAP 2008: A CODE OF CONDUCT FOR EUROPEAN AQUACULTURE
- 4.** EFSA 2008; 2009: Scientific Opinions for sea bass and sea bream welfare
- 5.** IUCN: Alien species in aquaculture, considerations for responsible use
- 6.** AAC 2019: Recommendation of fish welfare at slaughter
- 7.** AAC 2019: Recommendation on promotion of the use of fish vaccines replacing the use of antimicrobials
- 8.** OIE Aquatic code 2019
- 9.** EU PAW 2020: Own Initiative Group on Fish, Guidelines on Water Quality and Handling for the Welfare of Farmed Vertebrate Fish
- 10.** AAC 2021: Consumer Information March 2021
- 11.** AAC 2021: Climate footprint of the EU food system
- 12.** COM(2021)236 final. Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030
- 13.** EU PAW 2020: Own Initiative Group on Fish, Guidelines on Water Quality and Handling for the Welfare of Farmed Vertebrate Fish
- 14.** Scottish Salmon Farming Code of Good Practice Growing a sustainable industry
- 15.** Code of Good Practice for Scottish Finfish Aquaculture
- 16.** Mowi CoC
- 17.** FAO 2018: Sustainable food systems Concept and framework
- 18.** EU 2021: EU code of conduct on responsible food business and marketing standards



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