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HELLENIC REPUBLIC
Ministry of Rural Development and Food

REGIONAL AQUACULTURE CONFERENCE

Shaping the future of sustainable aquaculture in the Mediterranean and the Black Sea

4–5 DECEMBER 2024 **HERAKLION, GREECE**

CONCLUSIONS

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1. Introduction

The Regional Aquaculture Conference "Shaping the future of aquaculture in the Mediterranean and Black Sea Region" was organized in Heraklion, Greece, by the GFCM and the Government of Greece, with the financial support of the European Union. The aim of this event was to take stock of advances and chart the future of aquaculture in the Mediterranean and Black Sea region, in pursuit of achieving the objectives of the GFCM 2030 Strategy and beyond.

Marking a decade since the first regional conference held in Bari, Italy, and building on the outcomes of the 2023 High-level Conference on MedFish4Ever Initiatives, the event convened high-level decision-makers and stakeholders, including aquaculture experts and representatives from research and academia, international, intergovernmental and non-governmental organizations, producers and aquaculture farmers' associations from across the region. The Regional Aquaculture Conference reviewed the progress made and discussed the ways and means to embracing innovation and sustainability, boost resilience and grow aquaculture to its full potential in the Mediterranean and Black Sea region.

While the 2014 Bari Conference gave directions for the development of sustainable aquaculture in the region, the 2024 Heraklion Conference took stock of the many national and regional advances towards achieving the sustainable aquaculture objectives consolidated in the GFCM 2030 Strategy and the FAO Blue Transformation Roadmap and spearheaded by the FAO Guidelines for Sustainable Aquaculture, while also critically reviewing existing and emerging challenges that may jeopardize the full achievement of current and upcoming national and regional goals.

The Regional Aquaculture Conference opened with a high-level segment where top representatives assessed progress and outlined emerging needs and priorities for sustainable aquaculture development in the region. Thematic sessions followed, addressing key topics such as food security, responsible investment, restorative aquaculture, aquaculture and climate change resilience and mitigation, environmental protection, innovation, social sustainability, animal health and welfare of farmed aquatic species.

This document presents the main conclusions of the Regional Aquaculture Conference. They are expected to inform the next MedFish4Ever Declaration and guide the GFCM and its Members in assessing progress and defining future national and regional strategic actions for the sustainable development of aquaculture.

2. Main advances, challenges and vision forward

2.1 Global context

World aquaculture production reached a new record of 130.9 million tonnes in 2022, valued at USD 312.8 billion and accounting for 59 percent of global fisheries and aquaculture production. This figure represents a considerable increase of 204 percent since 2000, equivalent to an average yearly growth rate of 5.2 percent. However, production patterns differed between regions, countries and territories worldwide, with Asia contributing 91.4 percent of the overall total in 2022, while each of the other regions produced less than 3.5 percent of this total. Inland aquaculture accounted for 62.6 percent of farmed aquatic animals, while marine and coastal aquaculture contributed 37.4 percent.

2.2 Advances in the Mediterranean and Black Sea

Along the journey from Bari 2014 to Heraklion 2024, aquaculture production has increased significantly in the Mediterranean and Black Sea region, reaching a total of 870 000 tonnes, valued at USD 4.9 billion in 2021. This rise represents a 91.3 percent increase in volume and a 74.5 percent increase in value from 2011 and the provision of more than 97 000 employment opportunities in 2021, 17.9 percent of which were held by women.

In pursuit of the objectives of the GFCM 2030 Strategy and the FAO Blue Transformation Roadmap, the GFCM, in close collaboration with partners and other stakeholders, has adopted guidelines to improve governance, social acceptability, ensure equitable and secure access to land and water resources, and facilitate investment in sustainable aquaculture development. Together, they pursued a wide range of initiatives and projects to scale up and transfer successful examples of aquaculture intensification and expansion throughout the region. They also provided training and technical assistance to disseminate aquaculture good practices and digital, technological and management innovations, aiming to improve aquaculture systems, aquafeeds and feeding, aquatic genetic resource management and biosecurity for healthier and more efficient, resilient, safe and sustainable aquaculture production in the Mediterranean and the Black Sea.

2.3 Challenges

Rising global food insecurity in the face of a growing population, exacerbated by climate change, pollution, biodiversity degradation and economic instability,

has placed immense pressure on food systems worldwide. Aquatic food systems are expected to increase their contribution in addressing the needs of a growing population but some challenges, such as climate change and pollution, may affect the ecosystems on which they depend.

The Mediterranean and Black Sea region experiences specific vulnerabilities, including a high reliance on aquatic food imports, which creates susceptibility to supply chain disruptions and price fluctuations. Additionally, the region must contend with environmental degradation, pollution and a changing climate that threatens local food production capacities, thereby undermining efforts to achieve food security and sustainable livelihoods for coastal communities. While aquaculture can significantly contribute to addressing food security and nutrition, these challenges need to be addressed, ensuring global guidelines and strategies are adapted and deployed in the region. By investing in responsible, sustainable and climate-resilient aquaculture practices and technologies, the Mediterranean and Black Sea region can improve local, national and regional production, reduce reliance on imports as well as contribute to long-term food security and economic growth and to achieving the Sustainable Development Agenda and its Sustainable Development Goals (SDGs), in particular SDG 1 (No Poverty), SDG 2 (Zero Hunger) and SDG 14 (Life Below Water).

2.4 Vision forward

World production of aquatic animals is projected to reach 206 million tonnes in 2033 and 221 million tonnes in 2050, representing an increase of12 percent and 19 percent, respectively, compared to 2023. Most of this increase will come from aquaculture, although at lower growth rates (less than 20 percent), compared with the impressive 52 percent growth over the decade between 2013 and 2022.

To boost aquatic food consumption in the Mediterranean and the Black Sea in the coming decades while reducing reliance on imports, aquaculture production will need to be sustainably intensified and significantly expanded, especially in view of a stagnation in capture fisheries landings. This shift will require a comprehensive transformational change to consolidate collaborative efforts, initiatives and projects involving the GFCM and its Members, partners and key stakeholders, in order to accelerate the implementation of the GFCM 2030 Strategy and the Blue Transformation Roadmap.

3. Conclusions

3.1 Sustainable aquaculture growth

Aquaculture intensification and expansion has the potential to provide healthy aquatic food, create jobs, and support economic and social development. However, for this growth to be sustainable, it must integrate an ecosystem approach to promote social and environmental resilience, secure animal health and food safety, and achieve the efficient use of inputs and resources. Restorative practices, such as the farming of low-trophic species (e.g. seaweed, bivalves), not only provide food but also contribute to ecosystem restoration, thereby improving marine biodiversity and environmental performance of aquaculture in the Mediterranean and Black Sea region.

The GFCM plays a crucial role in supporting the sustainable growth of the sector at the regional level by establishing common regulatory frameworks, enhancing capacity development and fostering cooperation to ensure a fair and competitive environment for aquaculture across the Mediterranean and the Black Sea. Through its Aquaculture Demonstration Centres, it facilitates training, knowledge exchange and technology transfer to promote sustainability and innovation. By harmonizing regulations and supporting best practices, the GFCM enables all its Members to have access to the necessary tools to facilitate responsible aquaculture development, thereby strengthening environmental sustainability and regional cooperation.

3.2 Coordinated governance and participatory approaches

Effective governance and participatory approaches are essential for sustainable aquaculture development. Harmonizing national and regional regulatory frameworks with global standards such as the FAO Guidelines for Sustainable Aquaculture is key to driving the sustainable growth of the sector. This requires active involvement from stakeholders, including small-scale producers, local communities and private sector actors, to ensure fair decision-making processes while enhancing cross-border collaboration and knowledge sharing. Equally important to achieving these goals is the continued provision of technical assistance to countries in the identification and establishment of allocated zones for aquaculture (AZA) in marine and inland areas to develop the necessary capacities of relevant stakeholders.

3.3 Environmental protection and climate resilience

Minimizing the environmental footprint of aquaculture and building resilience to climate change are essential to ensuring the sustainability of the sector. Aquaculture must adopt practices that align production efficiency with environmental management. Robust environmental monitoring systems are needed to ensure that aquaculture's footprint remains sustainable and within natural capacity. Aquaculture must proactively address challenges such as temperature increase, extreme weather events, habitats degradation and disease outbreaks driven by climate change. Integrating aquaculture into marine spatial planning through AZA is a key strategy for its sustainable development. Additionally, adopting innovative solutions such as recirculating aquaculture systems, climate-adapted species, efficient water management and integrated multitrophic aquaculture can significantly mitigate environmental impacts while ensuring that the sector continues to contribute to food security and economic growth. These measures can support long-term sustainability in the face of a changing climate. Additionally, low trophic level species aquaculture such as bivalve farming and seaweed cultivation can improve marine ecosystem resilience and water quality and contribute to the economic stability of coastal communities.

3.4 Data collection, market orientation and economic resilience

Robust data collection, analytical tools and methodologies, and market intelligence are key to evidence-based policymaking that aims to align sustainable production with market demand and improve competitiveness. Disseminating data and analyses among stakeholders can improve aquaculture management, help producers adapt to consumer preferences and optimize production strategies. It can also help reduce reliance on imports, strengthen domestic economy by boosting resilience to economic pressure, and support the social acceptability of aquaculture.

3.5 Research, innovation and technology transfer

Continued research and innovation are key to advancing sustainable aquaculture production. Priority areas include sustainable feed, biosecurity and disease management, digital innovation and climate-adapted farming methods. Knowledge-sharing initiatives and technology transfer mechanisms can ensure equitable access to advances in these areas, benefiting small-scale producers and developing regions alike.

3.6 Social responsibility, inclusivity and worker welfare

Aquaculture development should be socially responsible and inclusive, with a strong focus on empowering local communities, particularly small-scale producers. Special emphasis should be placed on gender equality, ensuring women's participation in decision-making and leadership roles within the sector. Inclusivity and fairness should also extend to youth in terms of employment opportunities in the sector.

Equally important is ensuring the welfare and safety of aquaculture workers. Decent working conditions, adherence to health and safety standards and access to social protection must be prioritized. Training and safety protocols should be implemented to create secure and ethical work environments. Together, these efforts can foster a more inclusive, equitable and socially responsible aquaculture industry.

3.7 Biosecurity and animal welfare

Effective biosecurity and animal welfare protocols are essential for maintaining healthy aquaculture systems. Implementing standardized biosecurity and disease prevention measures, responsible farming practices and welfare protocols can help ensure ethical and safe production, while minimizing potential environmental impacts.

3.8 Facilitating responsible investment and market integration

Scaling up sustainable aquaculture production requires responsible investments that integrate environmental, social and economic goals. Public–private partnerships can drive innovation, particularly in supporting small-scale producers. Capacity development in financial management, food safety and product diversification can help small-scale producers better integrate into modern supply chains and capitalize on emerging market opportunities. Furthermore, investments in aquaculture product diversification and culture-based fisheries provide opportunities for small-scale fishers to diversify their income while enhancing resource sustainability.

3.9 Enhancing public perception and social acceptability

Improving the public perception and social acceptability of aquaculture is essential for the sector's growth. Consumer awareness initiatives and marketing and communication strategies should promote aquaculture sustainability, highlighting the environmental and nutritional benefits, and employment opportunities for aquaculture products, thereby building consumer trust and engagement.

#Aquaculture4Sustainability