

Decision IG.26/7

Regional Plan on Aquaculture Management in the framework of Article 15 of the Land-Based Sources and Activities Protocol (LBS Protocol)

The Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 23rd Meeting,

Recalling United Nations General Assembly resolution 70/1 of 25 September 2015, entitled “Transforming our world: the 2030 Agenda for Sustainable Development,”

Recalling the United Nations General Assembly resolution 76/296 of 21 July 2022, entitled “Our ocean, our future, our responsibility,”

Recalling also the United Nations Environment Assembly resolution of 15 March 2019, UNEP/EA.4/Res. 21, entitled “Towards a pollution-free planet,”

Recalling further the United Nations Environment Assembly resolutions of 6 December 2017, UNEP/EA.3/Res.10 “Addressing water pollution to protect and restore water-related ecosystems;” of 15 March 2019, UNEP/EA.4/L.12 “Protection of the marine environment from land-based activities;” and of 2 March 2022, UNEP/EA.5/Res.2 “Sustainable nitrogen management;” UNEP/EA.5/Res.7, “Sound management of chemicals and waste;” as well as UNEP/EA.5/Res.11 “Enhancing circular economy as a contribution to achieving sustainable consumption and production,”

Having regard to the Barcelona Convention and its Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources and Activities (LBS Protocol), specifically Article 5 thereof, providing for the elaboration of national and regional action plans and programmes, containing measures and timetables for their implementation; and Article 15 (paragraph 3) thereof, stipulating the legally binding nature of measures and timetables,

Recalling Decision IG.24/10 on the Main Elements of the Six Regional Plans to Reduce/Prevent Marine Pollution from Land-Based Sources adopted by the Contracting Parties at their 21st Meeting (COP 21) (Naples, Italy, 2-5 December 2019),

Noting with concern the excessive levels of nutrients and pollutants originating from aquaculture significantly impacting species composition in freshwater and coastal ecosystems, with cascading effects on biodiversity, quality of soil, water and air, and on ecosystem functioning,

Conscious of the urgent need to enhance action in synergy with relevant regional and global initiatives, such as the UNEP’s Global Partnership for Nutrient Management (GPNM), the European Green Deal (2019), and UfM Water Agenda,

Recalling Decision IG.19/5 on Mandates of the Components of MAP (COP 16) (Marrakesh, Morocco, 3-5 November 2009), and in particular the mandate of the Mediterranean Pollution Assessment and Control Programme (MED POL),

Having considered the report of the MED POL Focal Points Meeting (Athens, 24-26 May 2023), as well as the reports of the First and Second Meetings of the Working Groups of Designated Experts for Developing the Regional Plans on Agriculture, Aquaculture and Urban Stormwater Management in the Mediterranean (Athens, October 2022 and May 2023),

1. *Adopt* the Regional Plan on Aquaculture Management in the framework of Article 15 of the LBS Protocol, set out in Appendix I to this decision;
2. *Take note of* the workplan with timetable for implementation of articles of the Regional Plan on Aquaculture Management, set out in Appendix II to this decision;
3. *Call upon* the Contracting Parties to effectively implement the Regional Plan on Aquaculture Management and to report to the Secretariat, accordingly, as provided for in its Article 8;
4. *Request* the Secretariat (MED POL) to provide, upon request and subject to availability of funds, the necessary assistance to the Contracting Parties for the implementation of the measures provided for in the Regional Plan on Aquaculture Management;
5. *Urge* the Contracting Parties, intergovernmental organizations and donor agencies to contribute to the implementation of the Regional Plan on Aquaculture Management based on their specific mandates.

APPENDIX I

Regional Plan on Aquaculture Management

Regional Plan on Aquaculture Management

ARTICLE I

Definition of Terms

For the purpose of this Regional Plan on Aquaculture Management; hereinafter referred to as the “Regional Plan”:

- a. "Alien Species" are (a) species or subspecies of aquatic organism occurring outside its known natural range and the area of its natural dispersal potential and (b) polyploid organisms, and fertile artificially hybridized species irrespective of their natural range or dispersal potential.
- b. "Allocated Zones for Aquaculture (AZA)" are specific areas dedicated to aquaculture activities, that have priority over other uses, where any future development thereof and their identification shall be based on the best social, economic and environmental information available in order to prevent conflicts among different users for increased competitiveness, sharing costs and services and to protect and assure investments done. AZA shall be established within the framework of ICZM and marine spatial planning following a participatory approach.
- c. "Allowable zone of effect (AZE) " is the area of seabed or volume of the receiving water body in which a competent authority allows the use of specific EQSs for aquaculture, while ensuring a healthy functioning of the ecosystem and the basic environmental services it provides, and respecting the ICZM decisions/ programmes already under implementation.
- d. "Aquaculture" is the farming of aquatic organisms including fish, mollusks, crustaceans, and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. Farming also implies individual or corporate ownership of the stock being cultivated.
- e. "Best Available Techniques (BAT)" as defined in Annex IV for the Land-Based Sources and Activities (LBS) Protocol.
- f. "Biofloc Technology" is a technique using a variety of micro-organisms to enhance water quality in aquaculture through balancing carbon and nitrogen in the system with the added value of producing proteinaceous feed in situ.
- g. "Ecosystem Approach to Aquaculture" strategy for the integration of the activity within the wider ecosystem such that it promotes sustainable development, equity, and resilience of interlinked social-ecological systems.
- h. "EQS" is a concentration of a particular pollutant or group of pollutants in water, in sediments and biota which should not be exceeded in order to protect human and animal health and the environment.
- i. "Escapes" are accidental events where cultured organisms or fertilized eggs are released from aquaculture facilities into the natural environment.
- j. "Extractive species" are aquatic organisms from the lower levels of the food web that do not need to be fed, including a large variety of species such as filter feeders, deposit feeders, dissolved nutrient absorbers.
- k. "Framework conditions" entail to creation of knowledge, market conditions, access to finance, regulations and support mechanisms.
- l. "Harmful species" are species causing or tending to cause harm to human activities/health or local ecosystems and biodiversity.

- m. "Integrated multi-trophic aquaculture" is a type of aquaculture that combines in a single farm area different aquatic species from various trophic levels, such as fish and extractive species.
- n. "Intensive aquaculture" where there is a full dependency for production on the use of external feed or fertilizers.
- o. "Invasive Alien Species" mean an alien species whose introduction or spread has been found to threaten or adversely impact upon biodiversity and related ecosystem services.
- p. "Land-Based Aquaculture" is a practice of farming aquatic organisms in terrestrial areas, both in open and closed water systems, with effects on coastal waters.
- q. "Marine Spatial Planning" is the process by which countries analyze and organize human activities in marine areas to achieve ecological, economic and social objectives.
- r. "Mixing zones" are defined as geographical areas or volume of water in the receiving environment of a discharge where initial dilution of the effluent occurs and where exceedance of water quality criteria may be permitted.
- s. "Pollutants" are substances present in concentration that may be harmful to the quality of aquatic or terrestrial ecosystems and human health.
- t. "Recirculating aquaculture systems" are land-based aquaculture facilities – either open air or indoors – that minimize water consumption achieving high rates of water re-use by mechanical, biological and chemical filtration, allowing the control of culture conditions and discharges.
- u. "Sea-Based Aquaculture" is a practice of farming aquatic organisms in transitional, coastal and marine waters.

ARTICLE II

Scope and Objective

1. The area to which the Regional Plan applies is the area defined in accordance with Article 3 of the LBS Protocol, consisting of the Mediterranean Sea Area as defined in Article 1 of the Convention; the hydrologic basin of the Mediterranean Sea Area; waters on the landward side of the baselines from which the breadth of the territorial sea is measured and extending, in the case of watercourses, up to the freshwater limit; brackish waters, coastal salt waters including marshes and coastal lagoons; and ground waters communicating with the Mediterranean Sea.
2. The Regional Plan shall apply to the aquaculture sector activities in the coastal regions or hydrologic basins discharging pollutants into the Mediterranean Sea.
3. The objective of the Regional Plan is to ensure that aquaculture sector activities are sustainable and are managed in a way such as to minimize pollution and potential negative ecological effects.

ARTICLE III

Preservation of Rights

4. The provisions of this Regional Plan shall be without prejudice to stricter provisions respecting the management of aquaculture activities contained in other existing or future national, regional or international instruments or programs.

ARTICLE IV

Guiding Principles

5. The Regional Plan measures are formulated in line with the following principles as stipulated in Article V:
 - a) Aquaculture development and management should take into account the full range of ecosystem functions and services; reduce the likelihood of local biodiversity loss and pollution of the environment; and should not threaten their sustained delivery to society.
 - b) Aquaculture should improve human well-being and equity for all relevant stakeholders and takers.
 - c) Aquaculture should be developed in the context of other sectors, policies and goals, with special attention to the protection of biodiversity, ecosystems and natural heritage in the Mediterranean region.

ARTICLE V

Measures

- I. Regulatory and Institutional Frameworks for Operating Aquaculture Facilities
 6. By 2027, the Contracting Parties shall establish a regulatory framework that sets the operational requirements to be met by aquaculture facilities as a precondition to operate. The requirements shall be updated, as appropriate, to reflect changes in local environmental conditions, as well as BAT in aquaculture operations.
 7. By 2028, the Contracting Parties shall establish institutional structures and take measures to:
 - a) Enforce, as appropriate, the adopted operational requirements addressing the pollution control aspects of paragraph 6.
 - b) Provide the framework conditions to encourage aquaculture facilities to adapt their operations further to BAT in aquaculture.
- II. Implementation of Measures in line with Good Environmental Management Practices of Aquaculture
 8. By 2030, the Contracting Parties shall take measures to verify that aquaculture facilities have established operational processes in order to:
 - a) Control and reduce the release of potentially detrimental substances to the marine environment further to the list of relevant substances under Annex I.C of the LBS Protocol, where applicable.
 - b) Implement measures to minimize pollution originating from aquaculture activities in the water column and sediments in accordance with the guiding elements provided in Annex I.A for land-based aquaculture and Annex I.B for sea-based aquaculture.
- III. Implementation of Measures Contributing to Sustainable Aquaculture
 9. By 2027, the Contracting Parties shall, as appropriate, adopt regulations for measures that promote the sustainability of aquaculture in terms of fostering responsible, economically viable, environmentally sustainable aquaculture which does not create significant pollution impact causing disruption to the ecosystem and loss of biodiversity at local scale, i.e. in the influence areas of operations. To this aim, the guiding elements included in Annex II.A for land-based aquaculture and Annex II.B for sea-based aquaculture shall be applied for inclusion in the aforesaid regulatory framework, as appropriate.

10. By 2030, the Contracting Parties shall implement measures promoting responsible, economically viable, environmentally sustainable aquaculture as per the regulated aspects of Paragraph 9.

IV. Implementation of Measures Contributing to Reduction of Plastics from Aquaculture

11. By 2028, the Contracting Parties shall regulate key aspects contributing to the generation of plastic waste from aquaculture activities in the context of sustainable production, as well as processing along the value chain and circular economy. To this aim, guiding elements to be considered for Environmentally Sustainable Management of Plastic Waste from Aquaculture Activities are presented in Annex III.

ARTICLE VI

Technical Assistance, Transfer of Technology and Capacity Building

12. For the purpose of facilitating the effective implementation of Article V of this Regional Plan, the Contracting Parties collaborate to implement, exchange and share best practices on management of land-based and sea-based aquaculture, directly or with the support of the Secretariat. To this aim, the Contracting Parties also collaborate in preparing and implementing common technical guidelines.

ARTICLE VII

Timetable for Implementation

13. The Contracting Parties shall implement the measures included in this Regional Plan as per the timelines associated with these measures.

ARTICLE VIII

Reporting

14. The Contracting Parties shall report on implementation of measures stipulated in this Regional Plan in line with the reporting requirement and timelines provided in Article 26 of the Convention and Article 13, paragraph 2(d) of the LBS Protocol.

ARTICLE IX

Entry into Force

15. The present Regional Plan shall enter into force and become binding on the 180th day following the day of notification by the Secretariat in accordance with Article 15, paragraphs 3 and 4, of the LBS Protocol.

ANNEX I.A**Guiding Elements for Control and Reduction of Pollution from Land-Based Aquaculture Facilities for implementing Article V on Measures**

With the view to implementing Article V.8(b) on control and reduction of release of substances from intensive aquaculture facilities, the following guiding elements shall be applied by the Contracting Parties in the development of the regulatory frameworks, as appropriate, with the provision of justifications, as applicable:

- a) Based on the findings of an environmental assessment and level of compliance in line with national standards, installation, as appropriate, of wastewater filtration and treatment systems based on mechanical filtration (e.g. settlement ponds, drum filters) and biofiltration technologies to control release pollutants (both of dissolved and solid matter origin) into the recipient waters by reducing the amount per cube meter discharged of pollutants and to improve abatement measures to reduce solid residues.
- b) Recycling/reuse of water from aquaculture activities, as appropriate, based on BAT that minimize water and energy consumption and support the integration of aquaculture and vegetable production.
- c) Establishing effluent water quality monitoring programme at appropriate temporal scale to determine water quality parameters, taking into account acceptable thresholds of pollutants.
- d) Optimizing effluent discharge systems which may include:
 - i. Installment of pipeline systems.
 - ii. Installment of diffusers and/or effective artificial aeration systems at the end of the pipelines.

ANNEX I.B**Guiding Elements for Control and Reduction of Pollution from Sea-Based Aquaculture Facilities for implementing Article V on Measures**

With the view to implementing Article V.8(b) on the measures to minimize levels of pollutants in the water column and sediments from intensive aquaculture facilities, the following guiding elements shall be applied by the Contracting Parties in the development of the regulatory frameworks, as appropriate, with the provision of justifications, as applicable:

- a) Adopt and implement the concepts of mixing zone and AZE where possible based on a dispersion model and established Environmental Quality Standards (EQSs), Water Quality Standards (WQS) and Sediment Quality Standards (SQS).
- b) Employ, where possible, monitoring devices and remote sensing (e.g. satellite imagery).
- c) Ensure regular fallowing of cages in aquaculture sites to avoid development of anoxic zones, if needed.
- d) Establish a no activity zone around cages, where possible, to protect the wildlife, and reduce pollution release in the area adjacent to the cages.
- e) Use new environmentally friendly antifouling agents (TBT-free, preferably also copper free).
- f) Adopt site-specific environmental monitoring programmes taking into consideration the carrying capacity of the site addressing, as applicable:
 - i. Sediments: total phosphorus, total nitrogen, total organic carbon, grain size structure, redox potential, and/or sulfides.
 - ii. Water column: temperature, salinity, pH, dissolved oxygen, total phosphorus, total nitrogen, ammonia, nitrites and nitrates, orthophosphates, turbidity, suspended solids particulate organic matter and chlorophyll-*a*.
 - iii. Biological: benthic and/or pelagic biodiversity composition and structure, (species richness, and other biological and ecological indices currently in use in the environmental monitoring of local conditions at sea), escape events, and lethal incidents of endangered species.

ANNEX II.A

Guiding Elements for Environmentally Sustainable Land-Based Aquaculture for implementing Article V on Measures

With the view to implementing Article V.9 on responsible, economically viable, environmentally sustainable, land-based aquaculture processes, the following guiding elements shall be applied by the Contracting Parties in the development of the regulatory frameworks, as appropriate, with the provision of justifications, as applicable:

- a) Promotion, where appropriate, of aquaculture systems and technologies with lower environmental impact, including farming of low trophic species, energy-efficient recirculating aquaculture systems, biofloc technologies, or integrated multi trophic aquaculture systems.
- b) Adoption of sustainable feed management practices that can improve feed efficiency and the overall environmental sustainability of the farming operations.
- c) Utilization of good quality and highly assimilable feed, in order to maximize growth, animal health and welfare, and reduce feed waste and related negative impacts on water quality.
- d) Enforcement of control rules on use of pharmaceuticals in order to minimize the risk of antimicrobial resistance and potential impacts on ecosystems and to curb the spread of pathogens to farmed organisms and wild fauna.
- e) Implementation of measures to avoid fish escapes (e.g. site survey, equipment, technical assessment, staff training, etc.)
- f) Promotion and adoption of animal welfare practices.
- g) Establishment of Environmental Monitoring Programmes (EMP).
- h) Reporting by aquaculture facilities/ primary producers/ operators to competent environmental authorities on the following issues, as applicable:
 - i. Lethal incidents of endangered species ¹ occurred related to the farming activity.
 - ii. Severe cases of fish escape events manifested by, or with a potential of, significant impacts on the ecosystem (e.g. disease transmission, genetic pollution, competition for resources, habitat modifications).
 - iii. Use of energy and green/renewable energy and the use of natural resources (water and space) in relation to the carbon footprint of the aquaculture facility.
 - iv. Use of antibiotic/antiparasitic treatments and fish losses related to the farming activity.

¹ Reference to IUCN list of endangered species

ANNEX II.B**Guiding Elements for Environmentally Sustainable Sea-Based Aquaculture
for implementing Article V on Measures**

With the view to implementing Article V.9 on responsible, economically viable, environmentally sustainable sea-based aquaculture processes, the following guiding elements shall be applied by the Contracting Parties in the development of the regulatory frameworks, as appropriate, with the provision of justifications, as applicable:

- a) Identification of Allocated Zones for Aquaculture (AZA) and selection of aquaculture sites on the basis of the Ecosystem Approach to Aquaculture (EAA), and identification of an Allowable Zone of Effect (AZE) in the close vicinity of each farm, as appropriate.
- b) Promoting farming of aquatic organisms belonging to lower trophic levels such as extractive species, plants/low protein consuming species and promoting the adoption of Integrated multi-trophic Aquaculture.
- c) Enforcement of control rules on use of pharmaceuticals in order to minimize the risk of antimicrobial resistance and potential impacts on ecosystems and to curb the spread of pathogens to farmed organisms and wild fauna.
- d) Implementation of measures to avoid fish escapes (e.g. site survey, equipment, technical assessment, staff training, etc.)
- e) Promotion and adoption of animal welfare practices.
- f) Reporting by aquaculture facilities/ primary producers/ operators to competent environmental authorities on the following issues, as applicable:
 - i. Lethal incidents of endangered species¹ occurred related to the farming activity.
 - ii. Severe cases of fish escape events manifested by significant impacts on the ecosystem (e.g. disease transmission, genetic pollution, competition for resources, habitat modifications).
 - iii. Use of energy and green/renewable energy and the use of natural resources (water and space) in relation to the carbon footprint of the aquaculture facility
 - iv. Use of antibiotic/antiparasitic treatments and fish losses related to the farming activity.

ANNEX III**Guiding Elements for Environmentally Sustainable Management of Plastic Waste from Aquaculture Activities for implementing Article V on Measures**

With the view to implementing Article V.11 on the reduction of generated plastic waste from aquaculture activities, the following guiding elements to be considered by the Contracting Parties, as appropriate:

- a) To the extent possible, replace plastic infrastructure components with alternative durable and sustainable components.
- b) To the extent possible, promote circular design of aquaculture gear, as well as the use of biodegradable materials in aquaculture operations, including farming, processing and packaging.
- c) Reduce single-use plastic with the introduction of relevant alternatives and invest in developing recovery, cleaning and re-distribution schemes.
- d) Minimize the use of plastic types with low levels of recyclability.
- e) Reduce to the extent possible the use of equipment consisting of different types of plastic (i.e., different lifespan and different approach for collection and recycling).
- f) Use to the extent possible, packaging that is reusable or recyclable.
- g) Reduce to the extent possible packaging and over-packaging to minimize packaging waste.

Appendix II

Workplan with timetable for implementation of Articles of the Regional Plan on Aquaculture Management

