



**GENERAL FISHERIES COMMISSION FOR
THE MEDITERRANEAN**

**COMMISSION GÉNÉRALE DES PÊCHES
POUR LA MÉDITERRANÉE**



Thirty-eighth session of the Commission

FAO HQ, Rome, Italy, 19-24 May 2014

**Guidelines for the sustainable management of coastal lagoons in the
Mediterranean and the Black Sea**

BACKGROUND

1. During the sixth and seventh sessions of the Committee on Aquaculture (CAQ), it was recognized that environmental degradation negatively affected several coastal lagoons in the Mediterranean and the Black Sea. The CAQ thus stressed the importance to address the issue of interactions between aquaculture and capture fisheries as well as the relevance of these two sectors in consideration of the fragile lagoons' ecosystems, and motioned for their sustainable management consistent with an integrated coastal zone management (ICZM) approach.
2. Subsequent to a request by the Commission at its thirty-second session, the GFCM Secretariat has developed the LaMed project on Mediterranean coastal lagoons management: interactions between aquaculture and capture fisheries, funded by the Italian Ministry of Agriculture and Forestry Policies. The main issues related to the role of traditional extensive aquaculture and capture fisheries and the lagoons management were addressed during a meeting held in Cagliari, Italy, June 2011.
3. Furthermore, at its thirty-sixth session, the Commission, acting upon the CAQ advice on aquaculture management, gave mandate to the Secretariat and to the CAQ to proceed with the preparation of specific guidelines for the management of coastal lagoons aiming at: *i*) addressing the conservation of traditional aquaculture and artisanal capture fisheries activities; *ii*) preventing any further degradation of coastal lagoon environment; and *iii*) preserving their unique ecological features.
4. At its eighth session, the CAQ identified the main key elements for the preparation of specific *Guidelines for the sustainable management of coastal lagoons in the Mediterranean and the Black Sea* (hereinafter referred to as "the Guidelines").
5. The Guidelines were presented to the Commission at its thirty-seventh session. The Commission acknowledged the important contribution of these guidelines in light of the need to preserve lagoons' vulnerable environment and their related economic activities within a multi-stakeholder approach.
6. Consequently, the Commission requested the Secretariat to finalize the Guidelines so that they could be presented and possibly adopted at the thirty-eighth session of the Commission.
7. As a follow-up, the Guidelines were finalized during the Regional workshop on the identification of reference points for economic, environmental, social and governance indicators on

aquaculture (Izmir, December 2013) and key elements to build upon indicators to measure progress towards the sustainable management of coastal lagoons – under the four dimensions of sustainability – were discussed and defined by a group of regional experts.

SUGGESTED ACTION BY THE COMMISSION

8. The Commission is invited to review the Guidelines document and to provide further advice, as appropriate, before their adoption.

Guidelines for the sustainable management of coastal lagoons in the Mediterranean and the Black Sea

Definitions

“Coastal lagoons”: *coastal lagoons are shallow water bodies separated from the ocean by a barrier, connected at least intermittently to the ocean by one or more restricted inlets, and usually oriented shore-parallel¹.*

Objective

The overall objective of the *Guidelines for the sustainable management of coastal lagoons in the Mediterranean and the Black Sea* is to provide general guidance in the development and implementation of actions for the sustainable management of coastal lagoons, including the prevention of further environmental degradation, the restoration of ecological conditions, and the conservation of traditional aquaculture and artisanal capture fisheries as a strategic components of the common traditional knowledge of local communities. Ultimately, the Guidelines also aim at providing key elements to inform the development of plans of actions for the sustainable management of coastal lagoons in the GFCM area.

Principles

For the management of coastal lagoons the following principles and instruments are relevant:

FAO Code of Conduct for Responsible Fisheries: the approach to coastal lagoons management in the Mediterranean and the Black Sea should be in line with the main principles enshrined in the 1995 FAO Code of Conduct for Responsible Fisheries and in particular with its Article 6 paragraph 8 which calls upon the States, *inter alia*, to protect and rehabilitate, as far as possible and where necessary, critical fisheries habitats in marine and fresh water ecosystems such as wetlands, lagoons, nursery and spawning areas from destruction, degradation, pollution and other significant impacts resulting from human activities that threaten the health and viability of the fishery resources.

National and international legal instruments: coastal lagoons management should also be consistent with the principles enclosed in international legal instruments such as the 1971 Ramsar Convention on wetlands, the 1979 Bonn Convention on the conservation of migratory species of wild animals, the Barcelona Convention and its Protocols (“Barcelona System”), the 1992 Convention on biodiversity, and the Johannesburg Declaration on Sustainable Development of 2002, which all highlight the role of the management of natural resources, biodiversity conservation as well as of the traditional activities of communities in coastal lagoons.

Role of aquaculture and artisanal fisheries: actions should pursue the preservation of traditional extensive aquaculture and artisanal fisheries in coastal lagoons considering their contribution to maintain the ecological services provided by these ecosystems and the economic goods and services provided by these traditional activities and their cultural heritage.

Participatory approach and traditional knowledge: actions should ensure the wide participation of stakeholders, and in particular local communities, in any decision-making consultative process in relation to the management of coastal lagoons, so to foster ownership and the use of traditional knowledge and practices. Most coastal lagoons as can be seen today are the result of a long interaction of natural dynamics and human management, and would not have survived without the continuous management carried out by local communities for economic purposes, which enabled the conservation of these environments through centuries.

¹ Kjerfve, B. (1994). Coastal Lagoons, chapter 1. In: Kjerfve, B. (ed.) Coastal lagoon processes. pp 1-8. Elsevier Oceanography Series, Amsterdam.

Prevention of degradation and restoration: actions should ensure the prevention of any further degradation of coastal lagoons and the restoration of ecosystems associated to these environments and the preservation of biodiversity.

Conservation: actions should include measures for the conservation of coastal lagoons, including their correct hydraulic management, thus contributing to maintain the ecological characteristics of these systems and to enhance production.

Ecological and productive ecosystems: coastal lagoons are highly ecological resilient and productive ecosystems and there is an impressive environmental heterogeneity among the different lagoons and even various portions of the same lagoon. Actions should endeavour to maintain their resiliency and productivity within the context of sustainable development as well as the ecological services provided by these ecosystems.

Impacts of climate change and ocean acidification: the risks posed by a changing climate including, *inter alia*, sea temperature increase, sea level rise and salinity intrusion, sea water acidification, and intensification and unpredictability of extreme weather events, should be taken into consideration for coastal lagoons management and conservation.

Sustainability dimensions: the main issues connected to interactions between aquaculture and capture fisheries in coastal lagoons in their sustainability dimensions (environmental, economic, social and overarching governance) should be taken into account, as reaffirmed by the 2012 United Nations Conference on Sustainable Development (Rio+20).

Indicators for the sustainable management of coastal lagoons: actions should support the use of a system of indicators to measure progress towards the sustainable management of coastal lagoons.

Complementarity, coherence and consistency: actions should be complementary, coherent and consistent with current activities and international commitments, including the ecosystem approach to fisheries and aquaculture (EAF/EAA).

Flexibility, adaptability, transparency and accountability: the principles of flexibility, adaptability, transparency and accountability are fundamental elements for the sustainable management of coastal lagoons.

Human resources development: communication, education and awareness programmes related to the sustainable management of coastal lagoons should be established amongst stakeholders and the general public to provide adequate information on these sensitive ecosystems.

Proposed actions

GFCM Members are encouraged to seek assistance in monitoring progress towards the achievement of sustainable management of coastal lagoons and the development and implementation of national action plans for the management of coastal lagoons. GFCM Members should consider the following actions, based on CAQ advice and related to the sustainable management of coastal lagoons (without prejudice to additional or stricter measures taken or envisaged for the sustainable management of coastal lagoons)::

1. Undertake appropriate measures in order to prevent any further environmental degradation, pollution, and contraction of the overall coastal lagoons surface by land reclamation;
2. Avoid the intensification of activities in coastal lagoons and surroundings and consider undertaking mitigation measures as appropriate to reduce the impacts on lagoon ecological dynamics;
3. Consider undertaking restoration and conservation measures for coastal lagoons and surroundings based on a multifunctional approach so as to restore and preserve the level of productivity,

- biodiversity, diversity of habitats and ecotones, ecological complexity, ecological resilience and stability, and ecosystem services provided by these environments;
4. Consider the effects and impacts caused by climate change and ocean acidification on coastal lagoons and envisage adaptation and mitigation measures to cope with emerging challenges;
 5. Avoid the introduction of alien species in coastal lagoons and consider the use of a system to monitor stocking and/or restocking enhancing initiatives;
 6. Undertake appropriate interventions to ensure a correct hydraulic management of coastal lagoons and related communication channels to the sea. These would result, *inter alia*, in reduced sedimentation, improved water circulation between the lagoons and the sea and inside the lagoons, better distribution of trophic resources in the lagoons, and fostered seasonal migration of euryhaline species inwards and outwards the lagoons;
 7. Put in place adequate and effective measures to address the impact on fish communities of ichthyophagous seabirds and other non-marine species causing social, economic and environmental disturbances;
 8. Evaluate interactions between traditional aquaculture and artisanal capture fisheries in coastal lagoons as well as their key role in enabling the physical conservation of these environments while supporting social wellbeing and sustainable livelihoods;
 9. Consider an integrated management approach and planning of traditional aquaculture and artisanal capture fisheries within an EAF/EAA and ICZM perspective taking into account other different uses which may occur in coastal lagoons and surrounding territories including, *inter alia*, agriculture, urbanization, industrialization and ecotourism;
 10. Ensure a wider participation of stakeholders, and in particular local communities, in decision-making consultative processes inherent to aquaculture, artisanal capture fisheries and to the general management of coastal lagoons to take advantage of traditional local knowledge, innovations and practices.
 11. Contemplate the adoption of a minimum pool of indicators which should be understandable, applicable, and linked to sustainability. These are expected to be a tool for supporting the decision-making process of relevant stakeholders to achieve sustainable coastal lagoon management. Key elements to develop an initial set of indicators have been identified and are listed below.

Key elements to develop indicators to measure progress towards the sustainable management of coastal lagoons²

Environmental dimension: the development and application of environmental indicators should aim at assessing the status of the main physical and biological features which contribute to the sustainable exploitation of lagoon resources:

- hydraulic/sediment management of lagoon openings
- trophic conditions of lagoon waters
- sources of pollution deriving from human activities contaminating lagoon waters
- sediment composition and water quality
- records of algal blooms
- stock status of migratory fish species exploited in lagoons
- climate change stressors and ocean acidification
- restocking practices
- population of ichthyophagous seabirds

² These key elements are considered as a basis to develop a minimum pool of indicators which, applied at the lagoon level, should take into consideration the local context and specificities (e.g. lagoon's ownership, managing authority/institution/NGO, etc.).

Economic dimension: the development and application of economic indicators for lagoon areas should enable to assess the overall value of lagoon's products, the adequacy of fishers' income as a source of revenue, and the market segment of lagoon products:

- lagoon annual fish³ production
- lagoon annual fish production value
- producer's organizations or cooperatives
- lagoon products' diversification and labelling

Social dimension: the development and application of social indicators should enable to identify among others the wellbeing of fishing communities, their level of participation in the conservation of the lagoon area, and the willingness to transmit the activity, tradition and value to future generations:

- fishing community income from lagoon production
- cultural heritage of fishing communities under risk of disappearance within the next generation
- unions and cooperatives of lagoons' fishers
- conflicts among lagoon's end-users
- fishing communities involved in the conservation and protection of the lagoon area
- fishers' involvement in other economic activities sustained by the lagoon environment (e.g. linking fisheries to tourism, bird-watching)

Governance dimension: the development and application of governance indicators should help achieve optimal lagoon management considering the whole ecosystem services provided by lagoon environment as well as by its end-users and the management measures needed (e.g. fisheries management, aquaculture development, environmental protection and creation of protected areas, prevention of anoxic events and harmful algal blooms, etc.):

- lagoon management plan: conservation vs. restoration
- multi-stakeholder approach to decision-making related to lagoon activities and environment
- legal status of lagoon areas (i.e. local legal framework)
- ecofriendly and green policies applied in lagoon areas

³ Including fish, crustaceans and molluscs.