



GENERAL FISHERIES COMMISSION FOR
THE MEDITERRANEAN
COMMISSION GÉNÉRALE DES PÊCHES
POUR LA MÉDITERRANÉE



Committee on Aquaculture (CAQ)

Eighth Session

Paris, France, 13–15 March 2013

Key issues towards guidelines for the use of indicators to monitor sustainable development of aquaculture in the Mediterranean and the Black Sea

BACKGROUND

1. The importance of monitoring the development of sustainable aquaculture through the use of indicators was addressed during the twenty-ninth session and reiterated at the thirty-fifth and thirty-sixth sessions of the GFCM. At its thirty-first session (Rome, 9–12 January 2007) the GFCM developed and approved the project “Indicators for Sustainable Development of Aquaculture and Guidelines for their use in the Mediterranean (InDAM)”, funded by the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE). InDAM addresses the need to defining sustainability in aquaculture and identifying sustainability indicators within the framework of an ecosystem approach to aquaculture.
2. The Regional workshop on sustainable indicators in aquaculture (Malaga, Spain, 14–16 November 2011) refined the selection of minimum number of indicators for each pillar of sustainability to be applied at regional level and discussed the relevance and definition of reference points. Subsequently, the GFCM published the document “Indicators for sustainable aquaculture in Mediterranean and Black Sea countries. Guide for the use of indicators to monitor sustainable development of aquaculture” (GFCM Studies and Reviews n. 93).
3. At the thirty-sixth session of the Commission (Marrakech, Morocco, 14–19 May 2012), the CAQ advised that regional indicators for sustainable aquaculture for the governance and for different dimensions of sustainability should be adopted at regional level and should be considered as a tool at the disposal of GFCM Members to plan and monitor the progress of the development of sustainable aquaculture.
4. The Commission, acting on the advice made on aquaculture management, gave mandate to the Secretariat and to the CAQ to proceed with the preparation of specific guidelines on sustainable indicators to be presented during the next session.

5. This document proposes a follow-up on the activities of the GFCM Secretariat on this issue as reported, *inter alia*, in documents GFCM:CAQ/VIII/2013/2, GFCM:CAQ/VIII/2013/Inf.3, GFCM:CAQ/VIII/2013/Inf.4, GFCM:CAQ/VIII/2013/Inf.5, GFCM:CAQ/VIII/2013/Inf.6, GFCM:CAQ/VIII/2013/Inf.19, GFCM:CAQ/VIII/2013/Inf.20 and GFCM:CAQ/VIII/2013/Dma.1.

DEFINING AQUACULTURE SUSTAINABILITY

6. Sustainability, which is the capacity to persist in the long term, to endure, is sometimes used as a synonym of sustainable development which was simply and briefly defined by the 1987 Brundtland Report as “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”.

7. In a more articulated manner, and following the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992, FAO¹ has defined sustainable development as the “management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable”.

8. However, it is worth recalling that UNCED, which revolved around sustainable development, has resulted *inter alia* in the adoption of Agenda 21, a document which stood for an unprecedented global plan of action for sustainable development. Suffices to recall that Agenda 21 introduced the concepts of “pillars or dimensions of sustainability”, by integrating environmental, economic and social concerns into a single policy framework. Subsequently, the 2002 World Summit on Sustainable Development in Johannesburg reaffirmed that sustainable development was built on three interdependent and mutually reinforcing pillars which must be established at local, national, regional and global levels. The summit also introduced the importance of governance as an overarching dimension of sustainability.

9. Ultimately, the need to promote, enhance and support more sustainable aquaculture that ensure food security, nutrition and provide for the livelihoods of millions of people and is economically viable, while conserving land, water, plant and animal genetic resources, biodiversity and ecosystems and enhancing resilience to climate change and natural disasters, was strongly reaffirmed at the 2012 United Nations Conference on Sustainable Development (UNCSO or Rio +20).

10. Ensuring that aquaculture is undertaken sustainably lies at the heart of the 1995 FAO Code of Conduct for Responsible Fisheries (CCRF). Consequently, the sustainability of Mediterranean and Black Sea aquaculture has been one of the main items on the agenda of GFCM Members since the technical consultations held in FAO (Rome, 1999), where the application of the principles set forth in article 9 of the CCRF was discussed and pertinent priorities for the development of sustainable aquaculture in the GFCM Area were agreed upon.

11. Nowadays, Mediterranean and Black Sea aquaculture plays an important social and economic role in the GFCM area. The sustainability of the sector requires, first of all, a common understanding of sustainability concepts by all relevant stakeholders that would improve communication and make the process towards the sustainability of aquaculture itself more effective. Awareness-raising and ownership by stakeholders are instrumental in creating and facilitating conditions for the implementation of an efficient decision-making process and of regulatory systems where the management and conservation of natural resources and human well-being would be considered as a reference framework towards effective governance.

¹ FAO. 1997. Aquaculture development. FAO Technical Guidelines for Responsible Fisheries. No. 5. Rome, FAO. 40 pp.

INDICATORS TO MONITOR SUSTAINABLE DEVELOPMENT OF AQUACULTURE

12. Since UNCED, monitoring and measuring sustainability has been a compelling task aimed at informing policy-makers throughout the process of sustainability governance. The most common way of measuring sustainability through its dimensions is the use of indicators, which can provide information on any aspect linked to the interplay between the economic, social and environment facets of a sector or activity.

13. The three basic functions of an indicator are: simplification, quantification, and communication, and good characteristics include being measurable and achievable. Indicators quantify information by aggregating different and multiple data, the resulting information being therefore synthesized. Indicators thus simplify information that can help describe complex phenomena.

14. Indicators are only useful if the objectives for measuring them are clear and should be able to answer basic questions: descriptive indicators would provide answers to queries such as “what is happening in the aquaculture sector?”; on the other hand, performance indicators would clarify whether set targets are being achieved, while efficiency indicators would show if there has been any improvement over time.

15. Indicators should also be considered as tools for the communication among farmers and the society at large. They should respond to the public and consumers concerns about aquaculture and serve to communicate the positive aspects of a responsible sector managed in a sustainable way.

16. Linking indicators to the principles related to each dimension of sustainable aquaculture could be done by adopting the principles–criteria–indicators (PCI) framework. The PCI approach establishes a cascading relationship between principles (which express the values and issues of sustainability), criteria (variables that are most appropriate to express these principles), and indicators (variables to be measured).

17. For each selected indicator, a minimum set of information should be outlined including the geographical level of applicability (i.e. regional, national, local and farm), definition, the methodology to measure the indicator (formula and measurement frequency), the reference values/baselines/standards, and the sources of data and information. This information could be compiled in a “methodology sheet”.

18. The construction of a system of indicators for the sustainable development of aquaculture in the GFCM area needs to take into account the geographical extension of the area, the variety of the contexts and the diversity of aquaculture farms. Therefore, the Mediterranean and Black Sea would require the construction of a common regional set of indicators, on the one hand, and of country-specific indicators, on the other hand.

19. A common regional set of indicators, defined as a minimum common number of indicators that could be applicable in each country within the GFCM area, was identified by InDAM and includes a total of 21 indicators distributed as follows: economic dimension (5), environmental dimension (5), social dimension (5) and overarching governance (6).

20. At national level, the process for the implementation of indicators of sustainability could be carried out according to the following main steps based on InDAM experience: (i) the first step would serve for an appraisal in order to identify the priorities and attributes with the involvement of the different stakeholders; (ii) the second step would be necessary to assess the performance of the selected indicators and should be done with the different actors according to the disciplines and dimensions considered; and (iii) the third step would serve in particular for a deeper involvement of administrations towards a direct application of the selected indicators.

ACTION SUGGESTED BY THE CAQ

21. In promoting sustainability in all its dimensions (i.e. economic, social, environmental and overarching governance), the GFCM has already acknowledged the importance of the instruments which underpin the sustainable development concept. In the process of developing guidelines for the use of indicators to monitor sustainable development of aquaculture, key instruments such as the 1987 Brundtland Report by the United Nations World Commission on Environment and Development (WCED), Agenda 21, the 1995 FAO CCRF, the 2002 Johannesburg Declaration and the “Future We Want” report of the Rio +20 meeting were all taken into consideration. All the above instruments embody the principles of sustainability and confirm the renewed political commitment for sustainable development globally.

22. Within this context, it is envisaged that a set of guidelines for the use of indicators will be a much needed tool to monitor progress towards sustainability of aquaculture and the implementation of development policies in the GFCM area. Specifically, the guidelines should be applicable for the sustainable development of aquaculture in coastal lagoons, coastal land-based farms and mariculture.

23. In this framework, the CAQ is invited to elaborate key elements to develop a set of guidelines for the use of indicators to monitor sustainable development of aquaculture in the Mediterranean and the Black Sea. In doing so, CAQ should consider the above international instruments as well as lessons learnt, best practices, conclusions and recommendations drawn from the experience of implementing InDAM project. In addition, CAQ should also consider the GFCM Guide for the use of indicators, where the key traits of sustainability and its monitoring are outlined (see GFCM:CAQ/VIII/2013/Dma.1).

24. In particular it is suggested that a set of guidelines on sustainable indicators to be recommended by CAQ address the following aspects:

- The sustainability of the aquaculture sector as a potential means to strengthen the public perception of aquaculture, market competitiveness and social acceptability;
- The reinforcement and dissemination of the concept of sustainability on aquaculture and the use of indicators, including through specific trainings, outreach sessions and awareness campaigns;
- The establishment of a system of indicators at national level together with procedures for its application according to national legislation and agreements among different stakeholders;
- The common principles, criteria and related indicators (PCI approach) to describe and monitor the level of aquaculture sustainability in the GFCM area;
- The establishment of a regional reference system of aquaculture sustainability by integrating the economic, social, environmental dimensions of sustainable development;
- The use of the ecosystem approach to aquaculture (EAA) in the selection of indicators;
- The objective for the use of indicators within a regional sustainable reference system;
- The objective for which each indicator is identified as adapted to the Mediterranean and Black Sea aquaculture specificities in terms of species reared, technologies and production systems applied;
- At national level, multi-stakeholder and consensus-based approach (co-construction) to be mustered during a consultative process to select indicators;
- The set of principles, criteria and indicators identified within the framework of the InDAM project that could represent a starting point for further selection processes;

- The methodology for the selection of indicators based on qualitative and quantitative tools to assess their applicability and stakeholders consultation for final validation;
- The number of selected indicators for each pillar of sustainability balanced among dimensions;
- Methodology sheets outlining the geographical level of applicability (i.e. regional, national, local and farm), definitions, methodology to measure the indicator (formula and measurement frequency), the reference values/baselines/standards, and the sources of data and information;
- A protocol for the use of indicators, data display (e.g. traffic-light, radar charts), regular revisions of the indicators and associated reference values/baselines/standards;
- The adoption and use of a system of indicators at the appropriate level and according to end-users;
- Capacity-building measures on the use of indicators targeting the main end-users.