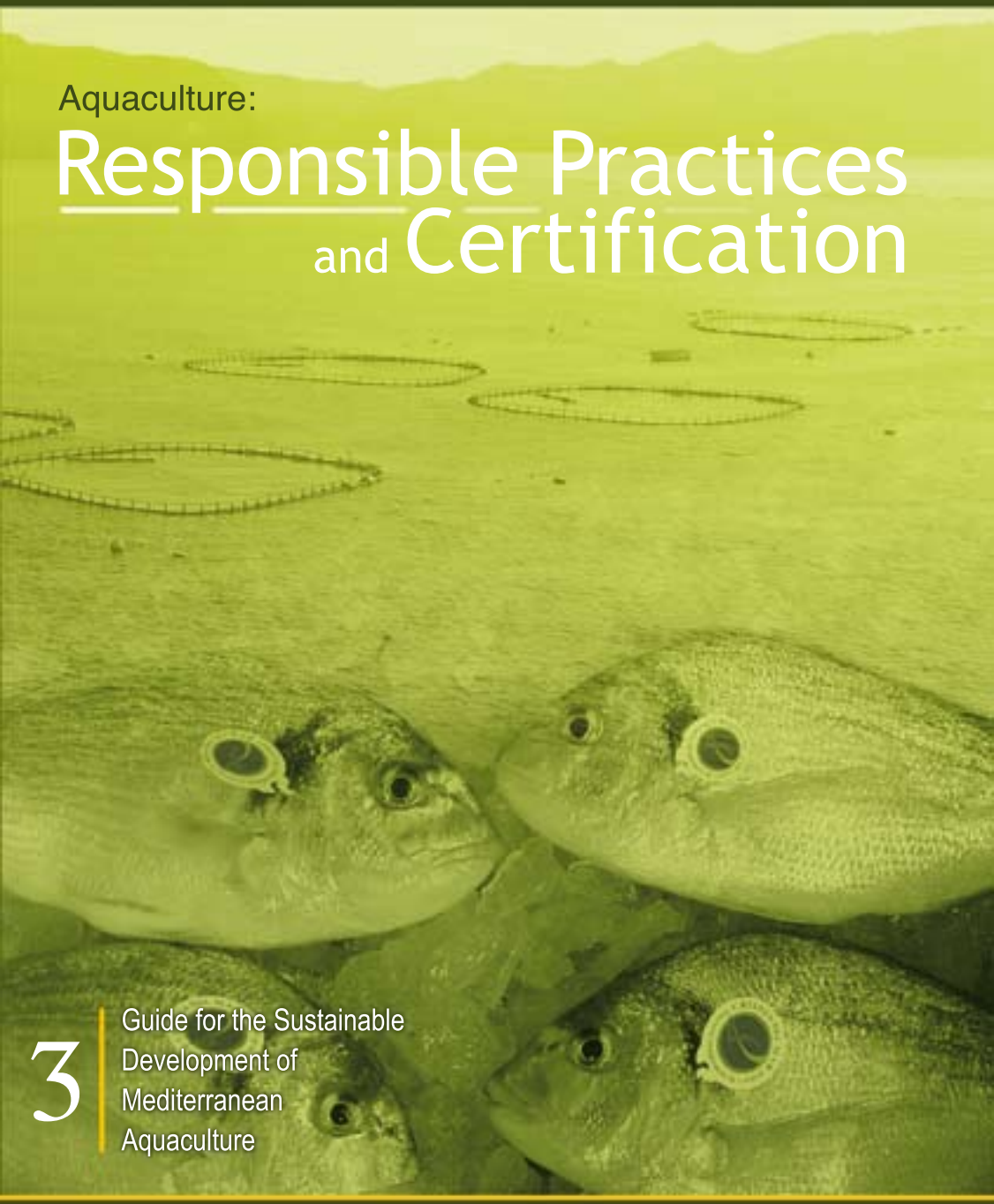
Aquaculture:

Responsible Practices and Certification



3 Guide for the Sustainable Development of Mediterranean Aquaculture

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IUCN

Aquaculture:

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Guide for the Sustainable Development of Mediterranean Aquaculture

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Foreword

Aquaculture currently faces a significant worldwide challenge to meet the increasing demand for high-quality sea products in local and international markets while trying to avoid environmental problems. In particular, aquaculture is expected to develop widely in the near future in the European, North African and Middle Eastern countries bordering the Mediterranean. In order to avoid any potential environmental disruption and to respond to worldwide competition, it is important for the Mediterranean aquaculture sector to develop in a sustainable manner.

The Marine Programme of the International Union for Conservation of Nature (IUCN) promotes best practice in the aquaculture sector. In 2005 IUCN and the Federation of European Aquaculture Producers (FEAP) signed an agreement to cooperate in the development of sustainable aquaculture. Within this framework, IUCN and the General Secretariat for Fisheries of the Spanish Ministry of Agriculture, Fisheries and Food (MAPA)[1] signed an agreement to cooperate and develop Guides for the Sustainable Development of Mediterranean Aquaculture.

The objective of these Guides is to make recommendations for responsible and sustainable aquaculture of all kinds, as an aid to decision makers, aquaculture producers and other stakeholders in the Mediterranean region.

This book belongs to this collection of Guides for the Sustainable Development of Mediterranean Aquaculture. The first volume in the series dealt with "Interactions between Aquaculture and the Environment" and the second with "Aquaculture Site Selection and Site Management". This third volume is devoted to "Aquaculture Responsible Practices and Certification" with a view to sustainability within the Mediterranean region.

[1] Actually, Spanish Ministry of the Environment and Rural and Marine Affairs (MARM)

This book is the result of a two-day workshop held in Hammamet, Tunisia (16–17 June 2008), organized by IUCN. This workshop gathered 30 participants from most Mediterranean countries, including scientists and aquaculture producers as well as representatives of government agencies and non-governmental organizations (a list of participants can be found in the Annex section). A second workshop was held in Rome (1–3 September 2008) to consolidate the debate and discussions.

Data were compiled and this document was drafted by Stamatis Sivitos, Konstantinos Kalamantis and Nathalie Gamain (EBCD, European Bureau for Conservation and Development), with the participation of all workshop participants, under the coordination of Javier Ojeda González-Posada (APROMAR/FEAP) and François Simard (IUCN). The English version has been edited by Christopher Tribe.

Executive Summary

Aquaculture is the farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants, and embraces all kinds of aquaculture (inland and marine, and capture based or not). Farming implies some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding and protection from predators. Farming also implies individual or corporate ownership of the stock being cultivated.

Over the past decade, there has been growing concern among international stakeholders, particularly in Mediterranean countries, about aquaculture product quality, knowledge management, interaction with the environment, technology and systems, fish health and welfare, management of biological lifecycles and sustainable feed production within the aquaculture sector. This has driven a constructive debate among stakeholders, resulting in the drafting of this Guide "Aquaculture Responsible Practices and Certification". This volume includes:

Guide A: Codes of conduct and better aquaculture practices

Guide B: Bases for certification schemes

Guide C: Types of certification schemes

Guide D: Certifying sustainability

Guide A Codes of conduct and better aquaculture practices

Principle

Appropriate codes of conduct and better aquaculture practices should be developed and implemented by aquaculture producers with a view to sustainability.

Guidelines

- Codes of conduct and better aquaculture practices should address the environmental, social and economic pillars of sustainability. This broad approach will enhance fully responsible aquaculture management practices.
- Codes of conduct and better aquaculture practices should be based on the best available scientific knowledge. This solid foundation is essential to make them credible, robust and up-to-date guides to responsible aquaculture practice.
- Codes of conduct and better aquaculture practices should be built on consensus among aquaculture producers and other stakeholders. A participatory approach, including consultation with producers at all levels (from large companies to small-scale producers) and a wide range of other stakeholder

representatives from government, private and non-governmental organizations, universities and research centres, will result in more comprehensive content that will be more easily understood and more broadly acceptable.

- Codes of conduct and better aquaculture practices should be reviewed and adjusted on a regular basis. Within fast-evolving activities such as aquaculture, the content of these documents needs to be periodically adapted to reflect the latest developments, new scientific research, new and traditional knowledge, and current issues faced by the sector.
- Codes of conduct and better aquaculture practices should be adapted to local conditions in order to make them applicable in different social, economic and environmental contexts. Codes of conduct are more theoretical and are therefore more easily adopted anywhere, but special care should be taken to adapt better aquaculture practices to local conditions.

Guide B Bases for certification schemes

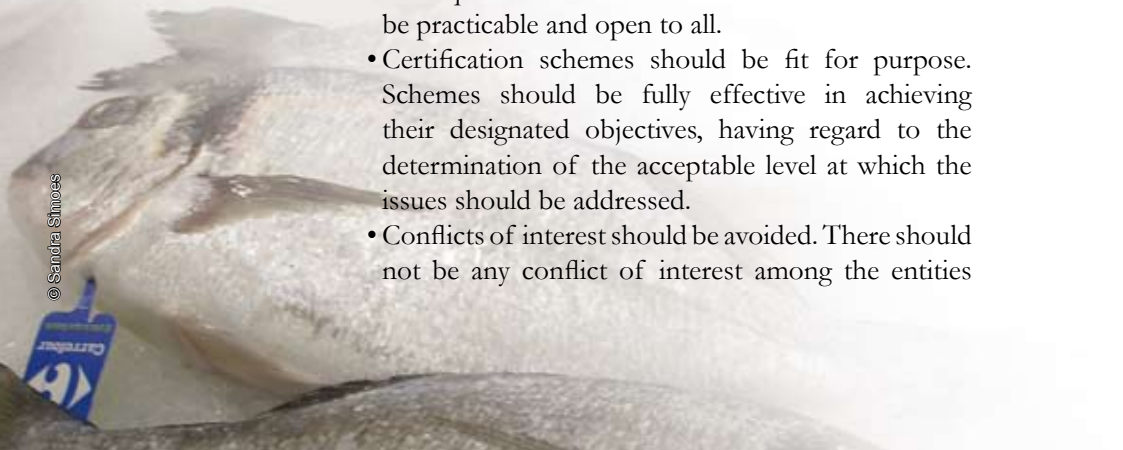
Principle

The development and implementation of certification schemes should promote consumer confidence in the products and lead to improved production practices.

Guidelines

On the structure of certification schemes

- Certification schemes should be consistent with relevant international rules, agreements and codes of practice. The creation of a certification scheme should rely on the main existing international conventions in order to be credible.
- The principles and standards in certification schemes should be based on the best scientific evidence available. The development of these schemes should be based on science and on the use of methods widely accepted by scientific and technical communities. Nevertheless, traditional knowledge should also be taken into account as long as its validity can be objectively verified.
- Certification schemes should not create obstacles to trade. For the market economy to operate properly, schemes should avoid creating artificial barriers to trade and misleading consumers.
- Certification schemes should be cost efficient. There is a requirement of cost effectiveness for schemes to be practicable and open to all.
- Certification schemes should be fit for purpose. Schemes should be fully effective in achieving their designated objectives, having regard to the determination of the acceptable level at which the issues should be addressed.
- Conflicts of interest should be avoided. There should not be any conflict of interest among the entities

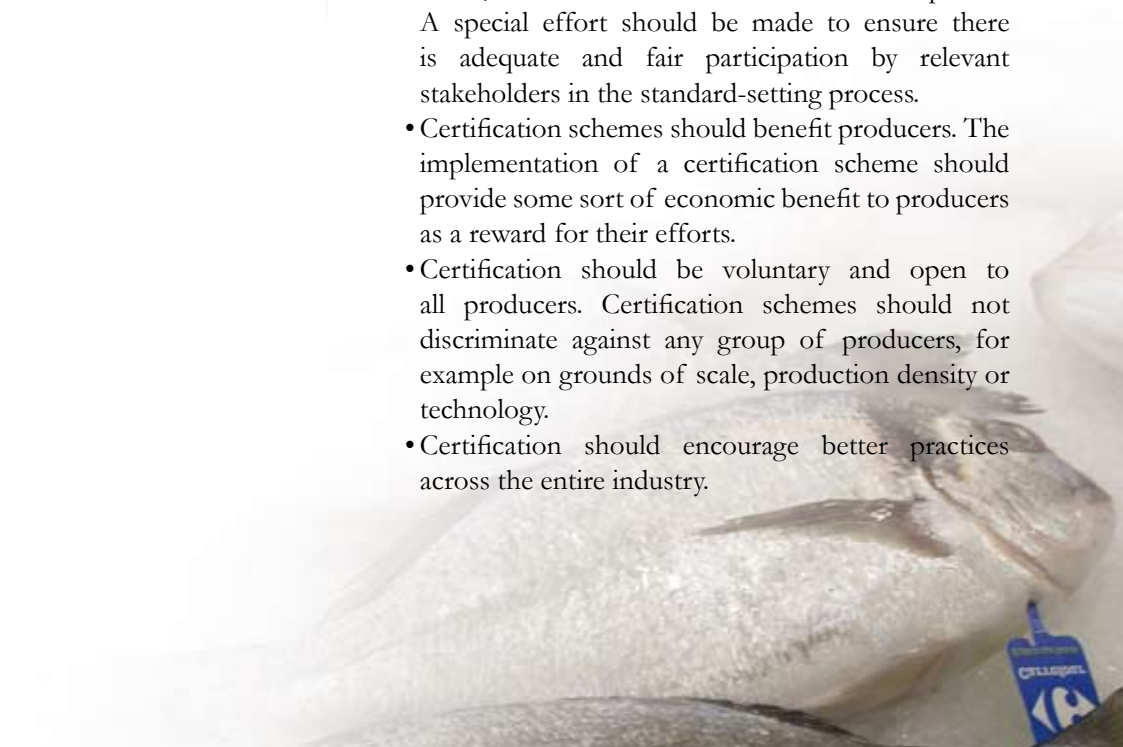


involved in the certification process. This means that the entities responsible for standard setting, accreditation and certification must be independent of each other to make the scheme fully credible.

- Certification schemes should be periodically revised. The principles and standards behind the schemes should be reviewed at regular intervals in consultation with stakeholders and, if appropriate, revised following such reviews.

On the objectives of certification schemes

- The whole process of certification should be transparent. Transparency should apply to all aspects of developing and implementing a certification scheme, such as its organizational structure, access to information and participation of all interested parties.
- Certification schemes should involve a multi-stakeholder process. Certification schemes should implement a multi-participatory approach embracing social, economic and environmental acceptance. A special effort should be made to ensure there is adequate and fair participation by relevant stakeholders in the standard-setting process.
- Certification schemes should benefit producers. The implementation of a certification scheme should provide some sort of economic benefit to producers as a reward for their efforts.
- Certification should be voluntary and open to all producers. Certification schemes should not discriminate against any group of producers, for example on grounds of scale, production density or technology.
- Certification should encourage better practices across the entire industry.



Guide C Types of certification schemes

Principle

Existing categories and types of certification schemes should be examined in order to address some aspects of the sustainable development of aquaculture.

Guidelines

- Certification schemes should be accessible to participants, by being affordable, applicable and comprehensible.
- Existing types of certification should contribute to the sustainable development of aquaculture. Their limitations may lead to the creation of a new type of certification in the future to better embrace sustainability.
- Certification should allow and encourage fair trade, avoid creating unnecessary obstacles to trade and not be more trade-restrictive than necessary to fulfil the legitimate objective of the standards. They should provide an opportunity to penetrate domestic and international markets.

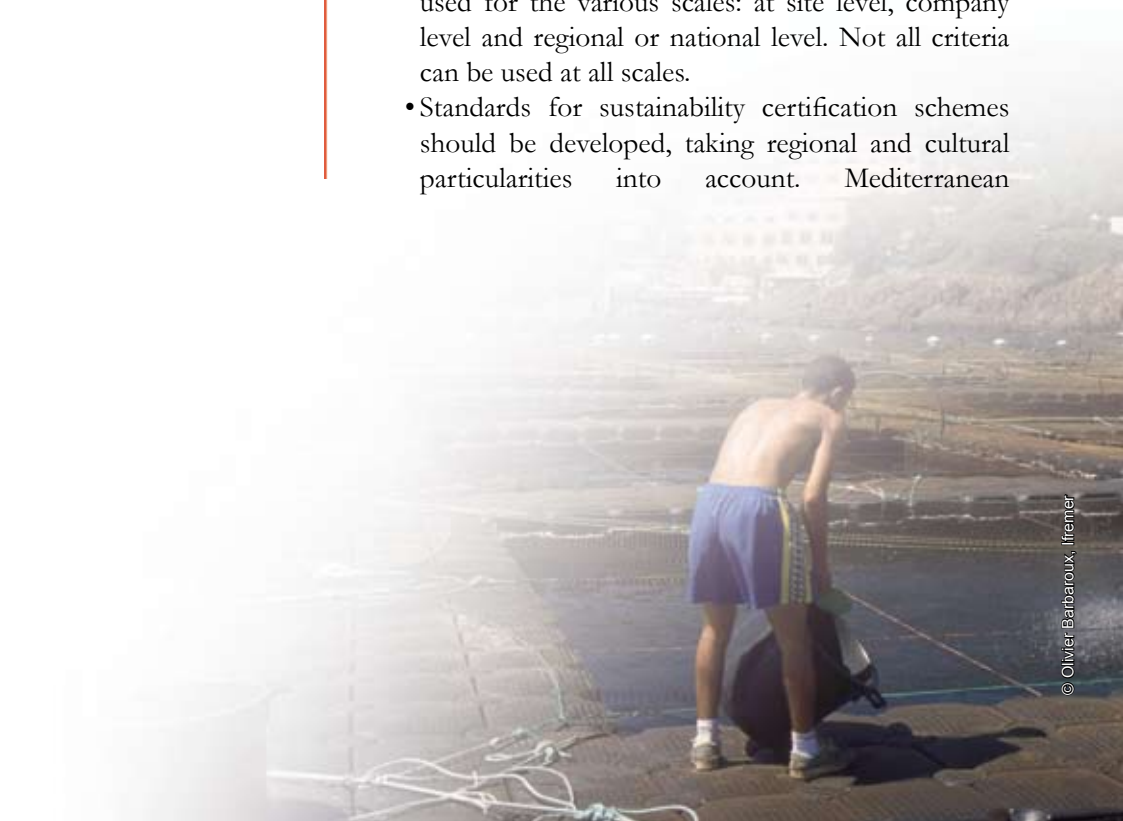
Guide D Certifying sustainability

Principle

Certification of sustainability, covering its three pillars (environmental, social, and economic), should be developed in order to support the sustainable development of the aquaculture industry.

Guidelines

- Certification methods and processes should be developed for each of the pillars of sustainable development separately and for all three together. The three elements of sustainable development (environmental, social, and economic) are equally important.
- The sustainability of aquaculture should be certified at appropriate scales. Different criteria should be used for the various scales: at site level, company level and regional or national level. Not all criteria can be used at all scales.
- Standards for sustainability certification schemes should be developed, taking regional and cultural particularities into account. Mediterranean



Guide D

aquaculture has local features and traditions that require the development of specific standards.

- Social acceptability should be covered by sustainability certification. Appropriate site selection should be a key criterion aimed at safeguarding employment and minimizing conflicts. Environmental impact assessments, proper monitoring of the environment and continuous dialogue on all these issues are needed, as well as a risk assessment of the activity. Social acceptability will be successful only by relying on effective communication among stakeholders.
- Sustainability certification schemes should be periodically revised. Because sustainability is a dynamic state that changes over time, sustainability certification schemes need to be frequently updated.
- Certifying sustainability should be positive for producers. The certification process should benefit producers at various levels. Their marketing, communications, internal management and procedures should improve, and they may also receive government incentives, since sustainable development is a commitment made by states.

Guide D

With respect to economic sustainability

- The economic aspect of sustainability certification should be developed at the sector level. Indicators and standards for the sector (relating to economic structures, markets and diversification) should be developed at Mediterranean and national levels.
- The assessment of the economic sustainability status of a fish farm should address the company's attitude and commitment towards sustainability. As it is recognised that economically certifying a fish farm at the financial level is not possible, some other economic criteria (such as the annual balance sheet) should be defined, while taking into consideration the farm's commitment to sustainable development and responsible management practices.
- Producers should be given financial and other incentives to improve their standards and to put in place sustainability certification procedures. Special care should be taken to avoid giving financial incentives that may increase pressure on the ecosystem. On the contrary, incentives should be developed to support the certification of sustainability.

Introduction to the Guides

The aquaculture industry is rapidly growing in importance as a result of falling catches of wild fish and increasing global demands for seafood. Most of the future demand for seafood can only be met through aquaculture. The Mediterranean countries have a strong market for seafood, a long tradition of freshwater and marine fish and shellfish cultivation and husbandry, dynamic research, use of technology, qualified and trained entrepreneurs and fish farmers, suitable climatic conditions and appropriate sites for the species currently farmed.

The aquaculture sector also faces a number of challenges, which have an impact on its sustainability. These include constraints of space and good-quality water, and measures to protect public health and the environment. Moreover, society and policy makers are more demanding with aquaculture activities than with fisheries and agriculture. Mediterranean aquaculture must also compete with imports from Asia and South America, where aquaculture production growth is the highest in the world. It is therefore important to improve aquaculture management practice in the Mediterranean area and to certify it for consumers.

In response to the worldwide growth of best practices and certification schemes in the aquaculture sector, the Mediterranean countries realized that consensus was needed on how best to organize the sector. The IUCN/FEAP working group on aquaculture brought together representatives of the Mediterranean industry, conservation organizations and scientists to develop a common vision for the industry in the Mediterranean region by analysing the economic, social and environmental aspects of aquaculture practice and certification. This multi-stakeholder participatory approach was designed to ensure that consensus could be reached within the sector throughout the Mediterranean region, so as to enhance its ability to compete in a global industry. This transparent process also aimed at reinforcing consumers' confidence in the aquaculture industry.

This Guide to sustainable development in Mediterranean aquaculture presents the results of this innovative multi-stakeholder approach to responsible aquaculture practice and certification, and should become a discussion paper for the industry. It provides insights and arguments about how sustainability can be covered by a certification scheme, which will involve measurement and indicators. Importantly, the Guide also examines what sustainability stands for in environmental, social and economic terms.

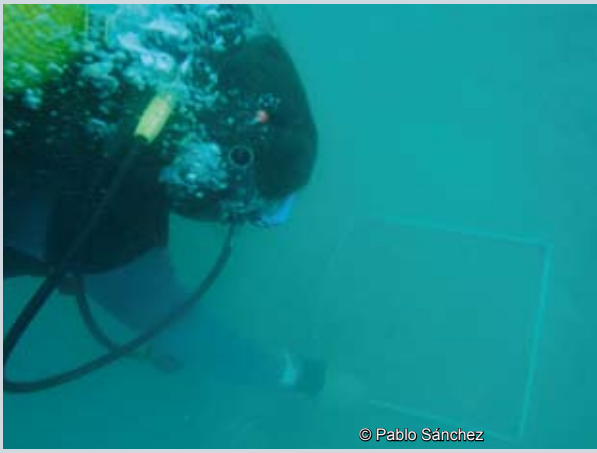
Another facet of the Guide emphasises the role of certification in the aquaculture industry. Codes of conduct and better aquaculture practices are the primary tools that Mediterranean aquaculture should use to distinguish its production from that of other regions of the world. With a view to achieving the best possible performance, the Mediterranean aquaculture sector is examining the bases for certification, together with the types of schemes available. Certification schemes could become great incentives for the sector to reach out to the end consumer. In fact, the principles behind certification should allow the Mediterranean aquaculture industry to study the alternatives for rewarding responsible practice, as well as examine the existing types of certification. This analytical process should encourage the sector to reinforce responsible practices and try to achieve sustainability in social, environmental and social terms.

This Guide also brings into focus several interesting issues for discussion, such as marketing or management support for certification, and the voluntary versus mandatory approach to sustainability certification.

Codes of conduct and better aquaculture practices

This guide shows how codes of conduct and better aquaculture practices can support the sustainable development of aquaculture by defining responsible attitudes, guiding principles and suitable practices in aquaculture.

Current situation



Codes of conduct and better aquaculture practices can address a variety of issues or concerns, but in general they tend to focus on environmental impact reduction and improvement of farm productivity, product quality, animal health, animal welfare, food safety and socio-economic aspects. More recent ones adopt positions on sustainability in the general sense.

Both types of document aim at enhancing the industry and improving its performance, although each at a different level. Codes of conduct are more theoretical, while better aquaculture practices are more practical.

Codes of conduct are sets of written principles and expectations that, although based on voluntary compliance, are considered binding on anyone belonging to a particular group that adopts the code. Two important codes of conduct may be presented as examples. The FAO *Code of Conduct for Responsible Fisheries* (FAO, 1995) sets out 'principles and international standards of behaviour for responsible practices

with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity'. Its Article 9 deals with aquaculture. Secondly, the FEAP *Code of Conduct for European Aquaculture* (FEAP, 2006) has as its primary goal 'the responsible development and management of a viable and sustainable European aquaculture sector to assure the highest standard of quality food production while respecting environmental considerations and consumers' demands'.

On the other hand, better aquaculture practices, also known as codes of practice or best aquaculture practices, are practical and detailed written guidelines to help producers comply with appropriate management practices. Better aquaculture practices are sometimes developed in the context of a certain code of conduct, but not always. A professional association normally issues them for its members. The term 'better' is preferred to 'best' because aquaculture practices are continuously improving and today's 'best' can become tomorrow's norm. As an example, the *Code of Good Practice for Scottish Finfish Aquaculture* prepared by the Scottish Salmon Producers' Organisation has been a collaborative process involving industry, regulators, government and other stakeholders. *The Best Aquaculture Practices of the Global Aquaculture Alliance* (GAA, 2009) promotes responsible practice across the aquaculture industry through certification standards for the evaluation of management practices from production to processing.

Due to the growing importance of shrimp production, the FAO Network of Aquaculture Centres in Asia-Pacific (NACA), the United Nations Environment Programme (UNEP), the World Bank Group (WB) and the World Wildlife Fund (WWF) have published *International Principles for Responsible Shrimp Farming* (FAO et al., 2006). This document's purpose is to lay down principles for the management of shrimp farming and provide guidance for the implementation of the FAO *Code of Conduct for Responsible Fisheries in the shrimp aquaculture sector*; consequently it is a form of better aquaculture practice. These International Principles address technical, environmental, social and economic issues associated with shrimp farming and provide a basis for industry and government management to improve the overall sustainability of shrimp farming at national, regional and global levels.

Although the implementation of codes of conduct and better aquaculture practices is voluntary, after a period of time some of them have been used as a source of basic guidance for government policy, administration and legal frameworks, and so have evolved into binding regulations.

Professional associations most often develop codes of conduct and better aquaculture practices, but environmental non-governmental organizations (NGOs) or bodies such as FAO, UNEP or NACA are sometimes involved.

Because codes of conduct and better aquaculture practices clearly define the basic principles and standards for aquaculture, they have sometimes been taken as baselines for the development of certification schemes.

Justification

The creation and implementation of codes of conduct and better aquaculture practices is a first step towards responsible management. When the principles and standards included in them embrace environmental, social and economic aspects, their acceptance and application form a good basis for sustainability.

Codes of conduct and better aquaculture practices are efficient educational and training tools. Aquaculture farmers should from the outset of their work have a clear idea of what responsible management entails. Besides, these documents provide easy guidance that is not imposed by any government but offered by peers.

At the same time, codes of conduct and better aquaculture practices make it easier to communicate about aquaculture principles with anyone concerned or interested in the activity.

Principle

Appropriate codes of conduct and better aquaculture practices should be developed and implemented by aquaculture producers with a view to sustainability.

Guidelines

- **Codes of conduct and better aquaculture practices should address the environmental, social and economic pillars of sustainability.** This broad approach will enhance fully responsible aquaculture management practices.

- **Codes of conduct and better aquaculture practices should be based on the best available scientific knowledge.** This solid foundation is essential to make them credible, robust and up-to-date guidelines to responsible aquaculture practice.

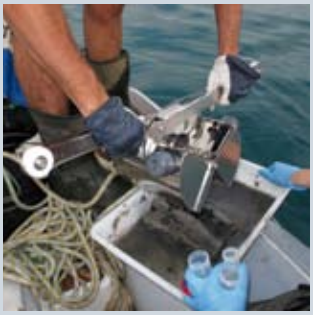
- **Codes of conduct and better aquaculture practices should be built on consensus among aquaculture producers and other stakeholders.** A participatory approach, including consultation with producers at all levels (from large companies to small-scale producers) and a wide range of other stakeholder representatives from government, private and non-governmental organizations, universities and research centres, will result in more comprehensive content that will be more easily understood and more broadly acceptable.

- **Codes of conduct and better aquaculture practices should be reviewed and adjusted on a regular basis.** Within fast-evolving activities such as aquaculture, the content of these documents needs to be periodically adapted to reflect the latest developments, new scientific research, new and traditional knowledge, and current issues faced by the sector.

- **Codes of conduct and better aquaculture practices should be adapted to local conditions in order to make them applicable in different social, economic and environmental contexts.** Codes of conduct are more theoretical and are therefore more easily adopted anywhere, but special care should be taken to adapt better aquaculture practices to local conditions.

Examples of codes of conduct

Code of Conduct for European Aquaculture, 2006; FEAP: http://www.feap.info/FileLibrary%5C6%5CFEAP%20Code%20of%20Conduct.pdf



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Within the European aquaculture sector, FEAP developed a code of conduct in 2000 to promote best practice among its producer members, as described above. It establishes and recommends guiding principles for those in Europe who are producing live species through aquaculture. The code does not seek to distinguish between species or the types or scales of farms found within the European aquaculture sector. Its purpose is to establish common ground, through effective self-regulation, for sectoral responsibility within society and to demonstrate the consideration to be shown by the production sector towards the species it rears, the environment and the consumer.

It is assumed that European and national legislation will provide minimum standards for aquaculture. The code then serves as the basis for the development of individual national codes of practice in order to interpret and apply existing standards and to develop, refine or improve them, as required. The FEAP *Code of Conduct* focuses on production process quality rather than food safety, labelling or traceability issues. No mandatory independent third-party verification, certification or surveillance are included.

Other examples of codes of conduct are:

- *Code of Conduct for Responsible Fisheries*, 1995; FAO: http://www.fao.org/fishery/ccrf/en

- *Australian Aquaculture Code of Conduct*, 1999; Australian Aquaculture Forum: http://www.pir.sa.gov.au/__data/assets/pdf_file/0007/42955/code_of_conduct.pdf

- *Code of Conduct for Shrimp Farming; Department of Fisheries, Thailand*: http://www.thaiqualityshrimp.com/coc/home.asp [in Thai]

- *Code of Conduct: Saltwater Salmon Net-Pen Operations*, 2002; Washington Fish Growers Association: http://www.wfga.net/conduct.php

- *Code of Good Practice for Scottish Finfish Aquaculture*, 2006; Scottish Salmon Producers' Organisation (SSPO): http://www.scottishsalmon.co.uk/aboutus/codes.asp

- *Best Aquaculture Practices; Global Aquaculture Alliance* (GAA): http://www.gaalliance.org/bap.html

- *International Principles for Responsible Shrimp Farming*, 2006; FAO, NACA, UNEP, WB and WWF: http://www.enaca.org/modules/shrimp/index.php?content_id=1

Bases for certification schemes

This guide analyses the basic structure and contents on which a credible certification scheme should be based, including institutional and organizational arrangements.

Current situation

Consumers are increasingly concerned about how food is produced and about its intrinsic qualities. The main issues of concern are food quality, food safety, environmental impact, social responsibility and animal welfare, amongst others.


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In former times, when produce was sold locally, consumers could easily obtain information directly from the farmer, including details about how the food had been produced and its characteristics. Today, however, food is often produced far from its consumers, who require some sort of proof that the product they have bought has been produced in a certain way or has certain expected qualities.

In this context, certification means demonstrating that a product, or process, meets certain clear, commonly understood and accepted standards or characteristics. This confirmation is in addition to the general information supplied by the producer on product labels and is usually, although not always, provided by means of an external assessment. A certification scheme is a collection of processes, procedures and activities leading to certification. A credible certification scheme is built on three steps: standard setting, accreditation and certification. The standard setting

process develops and reviews the certification standards; the accreditation process grants formal recognition to certification bodies; and, finally, the certification process verifies compliance with the certification standards. The certification scheme usually ends with the physical marking of the product with a certification mark or seal. More details are provided at the end of this chapter.

Certification schemes are often designed as marketing tools, to differentiate certain products in the marketplace from the rest and to convince consumers that they will meet their expectations. At the same time, certification schemes can encourage better management practices on the producer's side by providing an economic advantage based on feedback from the consumers' choice of products.

Certification schemes are usually established by private-sector businesses, industry associations, NGOs or public bodies, or through agreements reached between them.

There are several ways in which certification schemes are developed and applied:

- *First-party certification schemes* are those in which an individual company sets its own standards, analyses its own performance and reports on its own compliance in the form of a self-declaration. This type of claim is generally of limited value as most consumers do not trust self-declaration.

- *Second-party certification schemes* are those in which industry associations or NGOs set the standards and also conduct the certification process on individual companies that wish to be certified.

- *Third-party certification schemes* are those in which the standard-setting organization is different from and independent of the certification body that conducts the certification process, and both are different from and independent of the companies to be certified. This type of scheme provides the highest order of proof of compliance.

The geographical scope of certification schemes may be regional, national or international. Because certification schemes are often used as marketing tools aimed at consumers, their design and application are determined by the requirements and conditions applicable in the country of residence of the consumers, and not of the producers. In the case of Mediterranean aquaculture, however, production and market may be located in the same country, creating a single basis for a certification scheme. The same consideration applies to laws and regulations: compliance is required with the local laws that govern the production process, with international regulations on trade, and with the national laws in the country where the product is to be sold.

The standards to be met by certified products must not be lower than the established legal obligations, especially on food safety issues. Therefore certification requirements are generally more stringent than legal obligations in all respects.

Certification schemes have been accused of causing disruption to free trade; as a result, international organizations such as the World Trade Organization (WTO) have worked to create rules to ensure fair practice in international trade and to facilitate market access. In particular, WTO has promoted the Agreement on Technical Barriers to Trade and the Agreement on the Application of Sanitary and Phytosanitary Measures to prevent the deliberate creation of trade barriers.

Because of the increasing movement of products around the world and the need for certification schemes to be internationally accepted, a certain degree of standardization has been developed in the design and structure of schemes. The main organizations involved in setting common standards for certification are the International Organization for Standardization (ISO, 2009) and the International Social and Environmental Accreditation and Labelling Alliance (ISEAL). ISO has several documents in this field: ISO/IEC Guide 59 (*Code of good practice for standardization*), ISO Guide 62 (*General requirements for bodies operating assessment and certification/registration of quality systems*) and ISO/IEC Guide 65 (*General requirements for bodies operating product certification systems*). ISEAL offers a *Code of good practice for setting social and environmental standards* (ISEAL, 2006). Additional information on both organizations is provided in Guide C.

One of the basic structural elements of any certification scheme is traceability, often regarded as the backbone of the certification system. Traceability is the ability to track a product through all stages of production, processing and distribution. It is based on appropriate data collection. Traceability makes it possible to target market withdrawals, by enabling authorities to trace a food-related risk back to the source of the problem, isolate it and prevent it from reaching consumers. It minimizes trade disruptions to a whole family of food products in the event of safety problems with just a single product. Traceability does not by itself make food safe, but is rather a risk management tool.

Traceability of food products is compulsory in many countries around the world. In the European Union, Regulation (EC) No 178/2002 of the European Parliament and of the Council (EU, 2002) lays down the general principles and requirements of food law in the European Union. Its Article 18 is dedicated to traceability.

Certification schemes assure the traceability of their products and processes. This traceability favours continuous and measurable improvements in the performance of the system, and establishes clear accountability for all the parties involved, including the owners of the certification schemes, the auditors and the certification bodies. Modern information technologies allow for the collection and analysis of huge quantities of data.

The most recent food paradigm is often described as 'from farm to plate'. This means that the certification of aquaculture products does not end with the conformity assessment of the products themselves, but includes measures to track the certified products through the stages of processing, distribution and marketing. This second step is known as chain of custody. Not all certification schemes include the chain of custody because of the added complexity, but for full traceability some control over it is required.

Justification

In order for certification schemes to be effective, they must provide credible information on product characteristics and quality, enjoy widespread acceptance and ensure traceability. One barrier to this

objective is that certification schemes are often seen as mere marketing tools, and this has led to a proliferation of them. Although the abundance of certification schemes is positive because it provides consumers with more information, on the other hand it is confusing to consumers and producers, not only because of their overwhelming profusion, but also because of the use of misleading names and the lack of clear boundaries between them. Some certification schemes even offer no special added value to products. This confusing situation demands that additional efforts be made to harmonize equivalent certification schemes.

In short, the implementation of certification schemes should provide added value for food producers, but many of them find it is now evolving into an obligation that offers them little direct benefit in return.

Principle

The development and implementation of certification schemes should promote consumer confidence in the products and lead to improved production practices.

Guidelines

On the structure of certification schemes

- **Certification schemes should be consistent with relevant international rules, agreements and codes of practice.** The creation of a certification scheme should rely on the main existing international conventions in order to be credible.

- **The principles and standards in certification schemes should be based on the best scientific evidence available.** The development of these schemes should be based on science and on the use of methods widely accepted by scientific and technical communities. Nevertheless, traditional knowledge should also be taken into account as long as its validity can be objectively verified.

- **Certification schemes should not create obstacles to trade.** For the market economy to operate properly, schemes should avoid creating artificial barriers to trade and misleading consumers.

- **Certification schemes should be cost efficient.** There is a requirement of cost effectiveness for schemes to be practicable and open to all.

- **Certification schemes should be fit for purpose.** Schemes should be fully effective in achieving their designated objectives, having regard to the determination of the acceptable level at which the issues should be addressed.

- **Conflicts of interest should be avoided.** There should not be any conflict of interest among the entities involved in the certification process. This means that the entities responsible for standard setting, accreditation and certification must be independent of each other to make the scheme fully credible.

- **Certification schemes should be periodically revised.** The principles and standards behind the schemes should be reviewed at regular intervals in consultation with stakeholders and, if appropriate, revised following such reviews.

On the objectives of certification schemes

- **The whole process of certification should be transparent.** Transparency should apply to all aspects of developing and implementing a certification scheme, such as its organizational structure, access to information and participation of all interested parties.

- **Certification schemes should involve a multi-stakeholder process.** Certification schemes should implement a multi-participatory approach embracing social, economic and environmental acceptance. A special effort should be made to ensure there is adequate and fair participation by relevant stakeholders in the standard-setting process.

- **Certification schemes should benefit producers.** The implementation of a certification scheme should provide some sort of economic benefit to producers as a reward for their efforts.

- **Certification should be voluntary and open to all producers.** Certification schemes should not discriminate against any group of producers, for example on grounds of scale, production density or technology.

- **Certification should encourage better practices across the entire industry.**

Proof of certification: labels and marks

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A label is a piece of paper or other material which provides consumers with information about the object to which it is fixed. In the case of food products, a label is usually attached to them or displayed nearby, in order to promote sales and also to comply with legal obligations, such as giving the producer's name, address and food-safety approval details. Where products have gone through a voluntary certification process, and especially where they are being marketed to the final consumer, producers also want their customers to easily recognise such compliance. A special logo or symbol is therefore designed, registered and attached to the certified product as direct, recognisable proof of compliance.

In English, the word 'label' is commonly used for both purposes (to give information from the producer and to show proof of certification). This creates confusion between the two types and about what is meant in each case. The situation is different in other languages such as Spanish

or French, where the producer's information is given on an etiqueta (Spanish) or étiquette (French), and the proof of certification is a marchamo (Spanish) or label (French). Complications arise when, for example, a French certification scheme such as Label Rouge is translated into English. Furthermore, the frequently used term 'eco-label' is especially confusing because, although it is a catchy term, it neither means 'eco' in the sense of 'organic' (as organic products are described in many European countries), nor is it an ordinary 'label' since it refers to a certification mark.

For that reason, in English the term 'certification mark' or 'certification seal' perhaps should be preferred to 'certification label'.

Traceability and labelling

Traceability and labelling are issues associated with certification that are considered by the industry to ensure responsible practices.

Some suggested guidelines are as follows:

- **Both issues should be integrated with certification to promote the production and consumption of responsibly produced aquaculture products.** The Traceability, Certification, Labelling (TCL) principle should include the following objectives:

  - Correct identification of aquaculture products.

  - Enhanced communication: a strategy to improve communication regarding producers' activities, product origins, and production methods should be implemented to inform consumers of the benefits of aquaculture. Consumers should realize that aquaculture can contribute to the conservation of resources and, in turn, sustainability. Factors such as geographical location (distance from the sea)

and social status, which influence consumers' perceptions, have to be taken into account when designing these strategies.

- Competition/harmonization of legislation: an operational level of harmonization should be established to allow for fairer competition. Developing countries should not be excluded. Similar standards should apply to all stakeholders. Legislation on TCL and related schemes currently vary from one region to another. This leads companies (especially from developing countries) to select different schemes and target different regions.

- **Standards and definitions for TCL should be harmonized.** This will enable companies to target larger markets. How can harmonization and integration of TCL be achieved? There is confusion regarding the various terms used, but the existing definitions given by bodies at global and EU level (FAO/WHO Codex Alimentarius, OECD, EU regulations, etc.) should not be questioned but used as a basis. The link between traceability, labelling and certification should be identified. Furthermore, harmonization of these definitions might be useful.

- **Awareness should be raised of the value of TCL for local producers, especially small-scale producers.** TCL is advantageous not only for export producers but also for local producers and consumers.

- **Producers, processors, retailers and, in general, all stakeholders associated with the aquaculture product food chain should collaborate in order to further develop the basic standards for TCL.**

- **TCL should be guaranteed by public/governmental bodies**, since in principle the consumer has more faith in these official

structures. It should not be imposed by specific interest groups (such as marketing, environmental or animal welfare groups) but should come from society and consumers as a whole. In recent years environmental NGOs have put pressure on retailers to certify products that do not harm the environment. This might sometimes mislead consumers and influence their choices.

- **Control and enforcement of TCL practices is essential, in particular for traceability**. This safeguards public health.

- **Capacity building in developing countries is needed to improve the TCL model and make it operational.**

- **Transparency and independence should be assured in order to avoid dubious examples.** Rating agencies need a mechanism that will involve the state, since they are not as strong in the Mediterranean region as they are in other countries, such as the USA, where they have huge powers to influence the market. Rating agencies could be used to complement certification bodies, which are in principle public.

Types of certification schemes

Current situation

The main trends in aquaculture certification are that there are increasing numbers of schemes, increasing numbers of commodities covered by schemes and an increasing scope of standards (covering social factors, environment, food safety, animal health and welfare, and trade). All these are driven by a standing demand for certified products.

As mentioned above in Guide B, most types of certification try to comply with standardized schemes made available by bodies such as ISO and the ISEAL Alliance:

- ISO (International Organization for Standardization) is the world's largest developer and publisher of international standards. Through its network of national standards institutes (in 157 countries), ISO is a non-governmental organization linking the public and private sectors. Consensus can thus be reached on solutions meeting both the requirements of business and the broader needs of society. Good examples are ISO/IEC Guide 65 on general requirements for bodies operating product certification systems, and ISO Guide 62 providing general requirements for bodies operating assessment and certification/registration of quality systems.

- The ISEAL Alliance defines and codifies best practice at the international level for the design and implementation of social and environmental standards. It has launched its *Code of Good Practice for Setting Social and Environmental Standards*, which enables certification schemes to gain credibility and recognition.

Certain types of certification created by NGOs and civil society tend to focus on environmental and social issues to a greater extent than the types of scheme created by industry, which usually address issues such as food safety and quality, demonstrating compliance by the industry and market partners.

Most certification work within the aquaculture sector so far has involved salmon and shrimp farming, though the increasing importance and volume of aquaculture production has led to a growing interest in applying these types of certification to a wider range of aquaculture commodities. The proliferation of different types of certification worldwide, however, which often leads to duplication, has resulted in a considerable risk of confusion among consumers, producers and other stakeholders. As described below, confusion already exists over eco-certification and organic certification, for instance, as consumers tend to confuse these certification types and the objectives behind them, often because the terminology itself is unclear.

The type of certification depends on the approach used. The quality, business-to-business, environmental, social and consumer approaches are described below, although some of them may be applicable to more than one type.

The quality approach

Products can gain a distinct advantage by being certified under a quality-based type of certification scheme. One of the best known and most widely recognised and accepted is the French *Label Rouge* ('Red Label') (Ministère de l'alimentation, de l'agriculture et de la pêche, 2007). This is a quality type of certification scheme (redefined in France's Agricultural Framework Act of 5 January 2006) certifying that a product possesses a set of specific characteristics that result in a level of quality superior to that of similar products. It was developed in the 1960s to promote production methods respectful of animal welfare and the environment. The first product covered by this scheme was poultry raised by traditional, free-range production methods, based on an official Label Rouge specification approved by the French authorities. Today this quality certification scheme covers both food (including seafood) and non-food products and unprocessed farm products such as flowers.

Only a 'quality group' (QG), comprising all the partners with a stake in the product (hatcheries, producers, feed manufacturers, etc.), is authorized to apply for the Label Rouge. To obtain this certification, the QG must set out specifications precisely defining the characteristics of the product, stating how it has been produced and the type of inspection methods it has undergone. Organoleptic tests must necessarily be performed to demonstrate the gustatory quality of the product for which certification is sought.

The information provided on the Label Rouge is regulated. For each Label Rouge product, the certification mark must state the characteristics certified. The certification mark also carries an individual identification number, which is the key used for tracing the product's history from its origins to the point of sale. Inspections address production methods and end products. In France, quality certification of this type covers about 500 products, representing production worth €1.4 billion.

The business-to-business approach

Certain products and practices are also certified under the business-to-business (B2B) approach. This term is commonly used to describe commercial transactions between businesses, like that between a producer and a wholesaler or a wholesaler and a retailer, in other words where both the buyer and the seller are business entities.

GLOBALGAP (formerly known as EUREP-GAP) has taken this approach. Established by the Euro-Retailer Produce Working Group (EUREP), GLOBALGAP is a B2B system set up by worldwide leading food retailers. They have developed a mechanism for setting production standards for commodities entering the retail trade. This initiative is a reaction to consumers' growing concerns regarding product safety, environmental issues and labour standards and the need to harmonize previous, often very different standards. This is a particularly important type of certification as even if legal rules are fulfilled by a product it will not enter the retail trade unless the producer company adheres to this system and meets the retailers' standards. The programme focuses on production process quality, labelling, traceability and food safety. Third party verification by an accredited certification body is required.

Apart from the guides developed by ISO covering the aquaculture sector (see Guide B above), ISO has adopted a B2B approach with its two

standards tackling quality management (ISO 9000) and environmental issues (ISO 14000). Both standards exist to help organizations to prove to their customers that they minimize the environmental effects of their operations (adverse changes to air, water or soil) and comply with applicable laws and regulations. An international specification for environmental management systems (EMS) also exists within ISO 14000, which specifies requirements for establishing an environmental policy, determining the environmental aspects and impacts of the products, activities and services, planning environmental objectives and measurable targets, implementing and operating programmes to meet these objectives and targets, running checks and adopting corrective action, and managing reviews.

ISO 14000 is similar to ISO 9000 on quality management in that both pertain to the process (evaluating the comprehensive outcome of how a product is produced) rather than to the product itself. The overall aim is to establish an organized approach to systematically reducing those environmental impacts that an organization can control. Effective tools for analysis of an organization's environmental aspects and for generation of improvement options are provided by the concept of 'cleaner production'.

This type of certification is still voluntary and thus its level of implementation still poses a number of problems. That is why some countries have developed economic incentives to encourage the industry to adhere to it. Spain, for example, encourages aquaculture farms to adopt better environmental practices by significantly reducing the charge for concessions in public domain waters for aquaculture companies that implement officially recognised environmental management certification schemes, such as the Eco-Management and Audit Scheme (EMAS) or ISO 14000. This law was passed in 2007 and provides discounts of up to 40% on this expensive levy for aquaculture farms that improve their environmental performance in this way.

The environmental approach

Several types of certification based on an environmental approach exist. Eco-certification (also called green marketing or green labelling; European Commission, 2005) is a type of certification assuring consumers that the product has been produced according to a given set

of environmental standards. These address issues such as the sustainability of the resources used, the environmental impact of the production method, or the recyclability of the product. The underlying idea is that if consumers are properly informed, their choices could possibly stimulate the production and consumption of environmentally friendly products. Consumers could thus influence the behaviour of producers and policy makers.

The industry's growing interest has created momentum in the fisheries sector with the development of private eco-labelling types of certification. Some of these have found their place on the markets, such as dolphin-safe labelling, the Marine Stewardship Council programme, the newly launched initiative of the Aquaculture Stewardship Council, and the Global Aquaculture Alliance scheme. These also suggest that eco-certification shows clear potential, but only if not used solely as a marketing tool.

- *Dolphin-safe/dolphin-friendly* certification developed out of both the Agreement on the International Dolphin Conservation Programme (AIDCP) and a programme promoted by the Earth Island Institute. AIDCP certification provides for the voluntary use of a dolphin-safe certificate for tuna caught without any mortality or serious injury to dolphins in the course of the fishing operations. The Earth Island Institute system sets even stricter criteria. It is based on the 1990 US Dolphin Protection Consumer Information Act, which prevents tuna sold in the US from being labelled 'dolphin-safe' if it is caught with purse seine nets. These nets are used with the intention of chasing and encircling dolphins which tend to congregate above schools of tuna in the Eastern Tropical Pacific Ocean. A first attempt to weaken the US law in 1999 was challenged in court by the Earth Island Institute. In December 2002, the attempt to amend the US law to meet the AIDCP requirements was again challenged in the US courts by some NGOs, which consider the AIDCP measures not to be stringent enough. Although dolphin-safe/dolphin-friendly certification started out as a technical regulation, it has changed the market profoundly. Today there are several certification schemes of this type covering tuna. This has important consequences for the international tuna market, as tuna which is not marked 'dolphin-safe' is no longer accepted in some countries and therefore has to find other trade outlets.

- *The Marine Stewardship Council* (MSC), jointly created in 1997 by Unilever and WWF, has launched a large private eco-labelling initiative assessing the environmental impact of fishing. The MSC has established general principles and criteria which are used to assess individual stocks eligible for certification. In future they could also be extended to the aquaculture sector. The principles upon which this certification is based are as follows (MSC Executive, 2002):

  - A fishery must be conducted in a manner preventing overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

  - Fishing operations should not damage the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

  - The fishery is subject to an effective management system complying with local, national and international laws and standards and incorporating institutional and operational frameworks that require use of the resource to be responsible and sustainable.

MSC certification has been greeted with reservations by developing countries, which fear that their products may be excluded from developed countries' markets if this type of certification becomes a regulatory tool.

- *The Aquaculture Stewardship Council* (ASC) was announced in 2009 on the initiative of WWF, which also launched the Forest Stewardship Council (FSC) and MSC. ASC will be responsible for managing the global standards currently developed by the multi-stakeholder, transparent, ISEAL associate member Aquaculture Dialogues (WWF, 2009), which are aimed at minimizing the key environmental and social impacts associated with aquaculture. ASC will be responsible for hiring independent, third-party auditors to certify farms that are in compliance with the standards. These standards should cover 12 aquaculture species

that have the greatest impact on the environment, highest market value and/or heaviest trading in the global market. These species are: salmon, shrimp, trout, tilapia, pangasius, abalone, mussels, clams, oysters, scallops, cobia and seriola.

- *The Global Aquaculture Alliance* (GAA), which is an international, non-profit, industry association dedicated to advancing environmentally responsible aquaculture, is looking to develop a set of standards covering responsible aquaculture activities (GAA, 2009). This certification type focuses mainly on the management of shrimp farming and processing operations, through the Aquaculture Certification Council (ACC), its verification body.

- A new initiative to promote sustainability within the canned tuna industry will be unveiled in the near future. Susan Jackson, President of the International *Seafood Sustainability Foundation* (ISSF), has been discussing plans for a global partnership between canned tuna suppliers, scientists and conservation organizations such as WWF. The goal of the project is to have tuna fisheries become capable of being certified in compliance with the FAO.

The growing importance of eco-certification is illustrated by the increasing interest of European retail chains, which use this type of certification as a marketing tool. These initiatives include:

- The Unilever Fish *Sustainability Initiative* (Unilever, n.d.) aimed to guide consumers through the company's internal selection of sources of whitefish supply. Fisheries were classified from 'sustainable' to 'not sustainable' according to five criteria based on the FAO *Code of Conduct for Responsible Fisheries*. Each criterion was rated on a green/orange/red light system. This initiative was an initial step towards encouraging well-managed fisheries to consider the endorsement and certification benefits of MSC certification. It enabled consumers to make purchasing choices according to the sustainability of the fish supply.

- The Carrefour Pêche Responsable ('Responsible Fishing') logo provides a tool for customers at Carrefour's hypermarkets in France and Belgium to identify and purchase sustainably caught products. It now covers frozen line-caught Icelandic cod fillets. Carrefour has

also shown interest in the Friend of the Sea certification mark through its Italian hypermarket chain. Friend of the Sea is part of the Earth Island Project Network and is distinct from MSC in covering both cultured and wild-caught fish and shellfish products. Carrefour's use of the Friend of the Sea logo in Italy is confined to farmed seabass and seabream. Friend of the Sea certification has also been adopted in Italy by the country's largest retail chain, Coop Italia. This chain is currently using it for several own-brand canned seafood products, including anchovies, mackerel, salmon and clams. This initiative shows Carrefour's corporate strategy of 'acting to respect the environment' by tackling the issues of climate change, biodiversity and natural resources, environmentally friendly production and marketing, and fair and sustainable consumption.

In Europe, there exists an emerging debate around the *EU 'flower' Eco-label*, which is a voluntary system for environmentally friendly products in areas such as shoes, detergents, etc. The discussion is about whether to extend the system to processed food, fisheries and more particularly aquaculture products. Among the issues to be settled are the criteria for awarding this eco-label to product groups, which could include environmental factors such as their climate change impact, energy and resource consumption and waste generation. Another issue being discussed is the importance of integrating sustainable production criteria within this eco-label scheme.

A different European approach is taken by the European Commission (2005) in its Communication on *Eco-Labelling Schemes for Fisheries Products*. After evaluating the current state of eco-labelling of fisheries products, the Commission considers that eco-labelling stimulates consumer awareness of the environmental dimension of fishing and thereby gives managers in the sector the financial incentive to go beyond the requirements of existing environmental rules. The European Community's policy could lay down minimum requirements for voluntary private and/or public eco-labelling, and address the following issues: sustainable fisheries and an adequate level of protection of the ecosystem; a harmonized approach throughout the Community; transparent and objective information for consumers; fair competition; and ensuring that labelling schemes are not prohibitively expensive for small and medium-sized enterprises or developing countries. Additional criteria could also be studied, such as developing an eco-

labelling scheme offering real added environmental value, preventing confusion with other food labels, and taking the entire life cycle of the product into consideration.

Finally, some European regions have developed their own forms of certification to identify and reward sustainable fisheries. This is the case of the Nordic Council, which drew up an *Arrangement for the Voluntary Certification of Products of Sustainable Fishing* in 2000. Based upon an assessment of fisheries sustainability in the North-East Atlantic region, the criteria for this environmental certification focus on the process of fisheries management by the public authorities. No fisheries have been certified to date. At the international level, the Nordic Council has initiated a debate on establishing international eco-labelling guidelines within FAO.

FAO has indeed started to look at the benefits of certification and labelling schemes as well. These schemes could be seen as a tool for securing sustainable small fisheries (FAO, 2009), if measures are taken to identify socially and ecologically sustainable fisheries. At the same time, FAO also highlights the challenges to be overcome to achieve certification, aside from complying with the standards; they include certification costs, organizing the fishery to achieve market penetration and reach economies of scale, at the same time as ensuring sustainable fishing practices. Finally, it seems that FAO is studying ways to link and coordinate its initiatives more effectively, regarding the guidelines for aquaculture and capture fisheries and the guidelines on certification in aquaculture.

The social approach

Other types of certification take a social approach, such as fair trade or ethical certification. This type of certification is designed for practices and/or products that comply with the more social and economic (rather than environmental) principles of fair and ethical trade. Fair trade, referring to trading partnerships based on dialogue, transparency and respect, and seeking greater equity in international trade, is also linked to environmental aspects of resource management and some of the social issues associated with environmental certification. By promoting sustainability and a market-based approach to empowering developing-country producers, this type of certification advocates the payment of a fair price. It focuses in particular on exports from developing countries to developed countries, and so far covers mainly agricultural products.

Fair trade's strategic aim is to deliberately work with marginalized producers and workers in order to help them move from a position of vulnerability to one of security and economic self-sufficiency. It also aims at empowering them to become stakeholders in their own organizations and actively play a wider role in the global arena to achieve greater equity in international trade. Most fair trade import organizations are certified by one or more national or international federations. These federations coordinate, promote, and facilitate the work of fair trade organizations, as in the case of *Fairtrade Labelling Organizations International* (FLO) (2009). Created in 1997, it is now the largest and most widely recognised association, with three producer networks and 20 national labelling initiatives that promote and market the International Fairtrade Certification Mark in their countries. It regularly inspects and certifies producer organizations in more than 50 countries in Africa, Asia, and Latin America. For a product to carry either the International Fairtrade Certification Mark or the Fairtrade Certified Mark, it must come from FLO-CERT inspected and certified producer organizations. The crops must be grown and harvested in accordance with FLO standards. The supply chain must also have been monitored by FLO-CERT, to ensure the integrity of the products.

Fair trade certification guarantees not only fair prices, but also the principles of ethical purchasing. These principles include adherence to the International Labour Organisation (ILO) agreements and the United Nations Universal Declaration of Human Rights. In 2007, fair trade certified sales amounted to approximately €2.3 billion worldwide, a 47% year-on-year increase. While this represents a tiny fraction of world trade in physical merchandise, fair trade products generally account for 1–20% of all sales in their product categories in Europe and North America. In June 2008, it was estimated that over 7.5 million disadvantaged producers and their families were benefiting from fair trade funded infrastructure, technical assistance and community development projects.

The consumer-oriented approach

Another approach taken is certification oriented towards consumers, such as organic certification and labels of origin.

Organic certification is a type of certification covering the activities of producers of organic food and other products, food processing

enterprises, retailers and restaurants. Requirements vary from country to country, and generally involve a set of production standards for growing, storage, processing, packaging and shipping that include:

- avoidance of most synthetic chemical inputs (fertilizers, pesticides, antibiotics, food additives, etc), genetically modified organisms, irradiation, and the use of sewage sludge;
- use of farmland that has been free from chemicals for a number of years (often three or more);
- detailed written record keeping of production and sales (audit trail);
- strict physical separation of organic products from non-certified products;
- periodic on-site inspections.

In some countries this type of certification is overseen by the government, and commercial use of the term 'organic' is legally restricted. Certified organic producers are also subject to the same agricultural, food safety and other government regulations that apply to non-certified producers.

Up to now organic aquaculture has been considered a niche market, because of its philosophical approach. It could take off in the future due to the increasing demand for farmed seafood. Organic aquaculture is not a panacea. Through time, it has lost its very attractive principles and holistic approach. It has become a marketing tool, as certification has started to replace consumer education by promoting the added value of what stands behind the product: locality, traditional production, low carbon footprint, animal welfare, fish feed from sustainable fisheries, etc. For consumers, 'certified organic' is seen as a product assurance, similar to 'low fat', '100% whole wheat', or 'no artificial preservatives'. This has also led to growing criticism towards this type of certification even from the opponents of chemical-based and factory-farming practices. They see it as a way to drive independent organic producers out of business, and to undermine the quality of organic food.

In Europe most organic agriculture activities, including some fish production, are certified under the umbrella of the International *Federation of Organic*

Agriculture Movements (IFOAM). This organization includes more than 750 member organizations in 108 countries, such as the Soil Association in the UK, Bioland (Bioland, 2007) and Naturland in Germany, Bio (FiBL, 2009) in Austria, and Krav (Krav, 2008) in Sweden and Norway.

Aside from these private labels, France has developed a state one, Label AB (*Agriculture Biologique*, or 'organic agriculture') (Agence Bio, n.d.), which was created in 1985 by the French Ministry of Agriculture and promoted through the French Agency for Development and the Promotion of Organic Agriculture. All such labels provide certification for organic methods, covering all aspects of environmental agriculture from animal husbandry to food processing.

Of the other Mediterranean countries, Turkey encourages organic certification through its Law Nº 5,262 on Organic Agriculture and related regulations, which include organic aquaculture. The Ministry of Agriculture and Rural Affairs has also released guidelines for organic aquaculture.

Labels of origin are another consumer-oriented type of certification, which guarantees both the country/region of origin of the product and its originality. They are widely used in international trade to confer a distinct advantage on the product. Usually the certification mark carries all the necessary information on the product for the consumer.

An example is the French system of *appellation d'origine contrôlée* (AOC: 'registered designation of origin'). It is certification granted to certain wines, cheeses, butters, and other agricultural produce from delimited geographical areas, under the auspices of the government bureau *Institut national de l'origine et de la qualité* (INAO). AOC means that the products are produced in a consistent, traditional manner with ingredients from specifically classified producers in designated geographical areas. Many other countries have based their controlled place name systems on the French AOC classification. Italy, for example, grants *Denominazione di Origine Controllata and Denominazione di Origine Controllata e Garantita* ('registered and guaranteed designation of origin'). This AOC type of certification may have also led to the development of the European Union's protected designation of origin (PDO) system.

Beyond the types of certification described above, the industry may want to take a further step to comply with responsible and sustainable practices by becoming certified for its entire chain of custody. Some types of certification provide for this approach by covering all activities within the chain of custody, certifying that all stages from production to sale comply with their set of standards. This type of certification ensures traceability throughout the entire chain, and requires that all stages of production, distribution and sale of the product must be independently evaluated.

For instance, the MSC certification scheme has a *Chain of Custody certificate*. Each member of the supply chain, including processors, retailers and restaurants, must be certified up to the point of applying the label to the product. Products with a certified supply chain will be eligible to carry the MSC logo, whereas products with a non-certified supply chain will not. Certification of the supply chain is carried out by an MSC accredited certifier. This certifier must consider all parts of the supply chain (from fishing vessel to end consumer) when assessing the supply chain against the MSC Chain of Custody standard. The supply chain will often involve a number of different companies. It is up to the certifier to determine how thoroughly to assess the Chain of Custody applicant. The certifier will pay particular attention to any steps in the supply chain where products from a fishery certified to the MSC standard could be mixed with products from non-certified fisheries. This approach is very challenging, however, as every step has to be monitored.

Misrepresentation of the term 'organic'

The word 'organic' is central to organic certification (and organic food marketing), but it may also be open to question. Where organic laws exist, producers cannot use the term legally without certification. To bypass this legal requirement for certification, various alternative certification approaches, using currently undefined terms like 'authentic' and 'natural' instead of 'organic', are emerging. In the UK, the interests of smaller-scale growers who use 'natural' growing methods are represented by the Wholesome Food Association, which issues a symbol based largely on trust and peer-to-peer inspection. By reducing complex issues and regulations to a simple, convenient 'certified organic' label, consumers may more easily ignore the principles and practices behind organics, leaving the definition of organic production and organic food open to manipulation.

Justification

Both industry and end consumers are showing increasing interest in the various types of certification in order to better identify and acknowledge responsible and sustainable practices.

Mediterranean aquaculture producers should look for opportunities related to sustainability and quality schemes, thus taking the lead in this field.

Principle

Existing categories and types of certification schemes should be examined in order to address some aspects of the sustainable development of aquaculture.

Guidelines

- **Certification schemes should be accessible to participants, by being affordable, applicable and comprehensible.**

- **Existing types of certification should contribute to the sustainable development of aquaculture.** Their limitations may lead to the creation of a new type of certification in the future to better embrace sustainability.

- **Certification should allow and encourage fair trade, avoid creating unnecessary obstacles to trade and not be more trade-restrictive than necessary to fulfil the legitimate objective of the standards.** They should also facilitate market access and provide an opportunity to penetrate domestic and international markets.

Certifying sustainability

This guide looks at the possible ways to certify sustainability and the obstacles to doing so. Sustainability is quite complex to achieve. It involves many parameters at various levels: economic, social and environmental. It can be addressed at various scales in space as well as time. This guide provides insights and arguments to examine how sustainability might be covered by a certification scheme, involving measurement and indicators.


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Current situation

Bases of sustainable development

The bases of sustainability are often discussed. In this guide, as well as in all the work carried out by the IUCN/FEAP working group on aquaculture, sustainability includes three levels, or rests on three pillars, which are the economy, society and the environment.

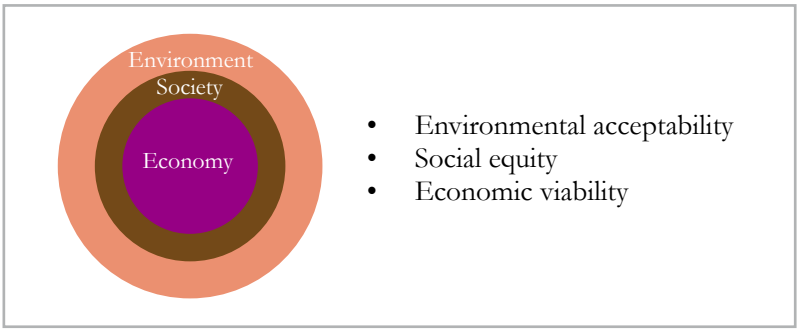

Figure 1. The bases of the sustainable development

Figure 1 explains quite well the interactions between the three levels. The whole circle cannot grow; its size is fixed as it is an image of the Earth. Each of the inner circles can grow, but then they push against the other circles. At the centre of development lies the economy. It is understood that there is no development outside the economy, which is therefore the engine of development. The economy operates within society, which is the organization of human beings living together. Society and its economy lie within the environment. In unsustainable growth, the economy will put pressure on society and the environment and lead to societal and environmental problems.

'Sustainable aquaculture is a system that can evolve indefinitely toward greater human utility, greater efficiency of resource use and a balance with the environment which is favourable to humans and most other species' (Hough, 2008, adapted from Harwood, 1990). It also refers, according to FAO, to the 'management and siting of aquaculture farms and the use of natural resources—with their social implications and institutional orientations—that ensures economic viability, societal equity and acceptable environmental impacts' (FAO, 1995).

Based on this definition, three principles of sustainable aquaculture are clear: it must be:

- Economically viable,
- Socially equitable, and
- Environmentally acceptable.

Their application is not so straightforward, however. Economic viability is the most obvious of the principles, but this concept is closely tied to the economic system of the country where the development takes place. For example, the concept of economic viability is not the same in European countries as in North African countries, due to their different systems and stages of economic development.

Another problem is that economic development is commonly misunderstood and confused with economic growth. The former is the

process by which an economic activity obtains all the tools and knowledge necessary to operate successfully and reach an adequate level of maturity; the latter is the process of growth associated with capitalist economies, which by definition is not sustainable as no growth can be infinite in a finite world, as is clearly illustrated by figure 1.

Social equity or fairness is the most variable aspect of the definition. It depends greatly on the social and cultural parameters and trends of the society where the activity takes place. It is very difficult to achieve because of its intrinsic variability.

Environmental acceptability is the most difficult component of the definition for aquaculture due to the broadness of the term 'acceptability' and the secondary position of aquaculture in the region's economies. The main question is 'acceptable to whom?' From the very beginning, aquaculture as a human activity has to take into consideration other human activities occurring in the same area. In other words, acceptability is linked to the participation of all stakeholders. Furthermore, in order to understand what is environmentally acceptable, the ecosystem where the activity takes place has to be identified and understood to the greatest extent possible. Once that has been done, however, certifying the environmental level of the development is only a technical problem.

A number of tools are available for the implementation of sustainable development:

The ecosystem approach

The ecosystem approach is a management approach taking into account the broader ecosystem, including the human activities that take place in it. According to the Convention on Biological Diversity (CBD Secretariat, 2003): 'The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.'

The existing planning processes for aquaculture in Andalucía for example, are close to the ecosystem approach since they take account of all human activities. Integrated coastal zone management is also relevant to the ecosystem approach, especially in the way it takes all stakeholders

into consideration. However, what is lacking in these strategies is the conservation objectives that underlie the ecosystem approach. Applying the ecosystem approach in aquaculture means looking at the ecosystem goods and services that aquaculture uses, how they are linked to the functioning of the ecosystem and finally what ecosystem components need to be conserved while the activity is developed. This has to be done in the framework of the stakeholders' forum and at different time scales (adaptive management) and spatial scales (local, regional, national, etc.).

The precautionary principle

The precautionary principle is a basic principle that allows the decision-making process to happen even though not all scientific data are available: 'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation' (Principle 15 of the Rio Declaration on Environment and Development, 1992). It is a strong principle that can be useful when used within the framework of the ecosystem approach, during participatory and adaptive processes, and within the framework of good governance.

Good governance

The principles of good governance were established during the 1990s and promoted in more recent years. They are applicable to all activities. Governance looks at how decisions are made, who decides, who has influence and who the players are. Governance does not look at objectives, which is the role of management, but rather at the way decisions are taken.

The principles of good governance are basically those of democracy. In the words of Dahal et al. (2002, quoted in Upadhyay, 2006), 'Good governance is a process of executing a coherent governing plan for the nation based on the interests and priorities of people. It purports to create a just society based on the principles of human essence, such as inclusiveness, liberty, equality and cooperation.' According to IUCN, good governance relies on five principles, which are mutually inclusive and reinforcing: (i) legitimacy and voice (participation and consensus orientation); (ii) direction (strategic vision, including human development and historical, cultural and social

complexities); (iii) performance (responsiveness of institutions and processes to stakeholders, effectiveness and efficiency); (iv) accountability (to the public and to the institutional stakeholders, transparency); and (v) fairness (equity and rule of law) (Graham et al., 2003).

The 'governance' concept opens up a new intellectual space for discussion on the role of government in coping with public issues and the contribution that other players can make. It provides for the possibility that groups in society other than government (e.g. 'communities' or the 'voluntary sector') may have to play a stronger role in addressing problems. Good governance supplies the framework and the tools for decision making to all components of society.

These definitions and background provide the basis for discussions about certification, including the debate about voluntary and/or compulsory certification schemes.

Certification standards

Certification processes need clear standards in order to guarantee to buyers that a product has been through a certain sequence of processing actions, including the growing/rearing of the organisms. The most efficient way to establish standards is by reaching agreements based on a broad consultation process involving all stakeholders according to their competences and abilities.

Standards setting is the outcome of a chain of discussions and agreements that take place as follows:

- Identifying the Impact, the problem to be minimized;
- Identifying the Principle, the basis for addressing the impact;
- Identifying the Criterion, the area to focus on to address the impact;
- Identifying the Indicator, the factor to be measured to determine the extent of the impact;
- Identifying the Standard, the numerical value that must be attained to show that the impact has been minimized.

Standards setting is basic for the establishment of a certification process. Many principles already exist. For environmental issues, the IUCN/FEAP "Interactions between Aquaculture and the Environment: Guide 1 for the Sustainable Development of Mediterranean Aquaculture" already provides a comprehensive set of principles that can serve as a basis for the development of indicators and standards. The EU-financed Consensus (no date) project brought together a wide range of stakeholders under the coordination of the European Aquaculture Society and resulted in suggestions on indicators that can be used for best practice and also as benchmarks, and hence as the basis for certification or standards. Several other projects (e.g. IDAQUA, EVAD, ECASA and WWF Aquaculture Dialogues) also provide indicators, methods for defining indicators or guidelines for defining standards for the environmental as well as the economic and societal sides of sustainable development. In most cases environmental concerns are well covered, but social concerns are less so and there is scant coverage of economic issues. In addition, as explained in detail in Guides B and C above, existing certification schemes such as ISO include many standards relevant to sustainability, although none of them covers the whole field of sustainability.

Within a market-driven sector like Mediterranean aquaculture, certification for sustainability could provide a competitive advantage, and the certification of aquaculture should contribute to the sustainable development of the sector. Systems to certify the environmental aspects already exist. However, no scheme certifies all three pillars of sustainable development: its economic, social and environmental aspects. The three pillars form nested concentric circles and sustainability is achieved when there is a balance between their relative sizes.

The economic dimension of sustainability relates to the impacts both on the economic conditions of the activity's stakeholders and on economic systems at local, national, and global levels. According to the Global Report Initiative (no date), economic indicators illustrate:

- The flow of capital among different stakeholders;
- The main economic impacts of the organization throughout society.

Financial performance is fundamental for understanding the aquaculture sector and its sustainability. This information is usually reported in financial accounts. What is often reported less and yet is frequently desired by users of sustainability reports is the organization's contribution to the sustainability of a larger economic system.

It would appear difficult to certify economic elements at farm or company level, although some guarantees regarding the financial situation of an enterprise might be an indicator for certification. This level of certification is, however, difficult to put in practice due to the uncertainties of the market. A company that is certified 'economically sustainable' might suddenly go bankrupt due to external factors.

Certification of economic sustainability might take place at other scales: for the sector at the regional or national scale for example, or for the level of economic diversification at the regional scale. In any case, certifying the economic sustainability of aquaculture should not be abandoned and levels of certification are yet to be defined clearly.

The social dimension of sustainability covers the impacts on the social systems within which the enterprise operates. For instance, the GRI social performance indicators identify key performance criteria in the areas of labour practices, human rights, society, and product responsibility.
Specifics about labour practices should be based on internationally recognised universal standards, including among others:

- The United Nations Universal Declaration of Human Rights and its Protocols;
- The United Nations International Covenant on Civil and Political Rights;
- The United Nations International Covenant on Economic, Social, and Cultural Rights;
- The International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, 1998 (in particular the eight core conventions of the ILO);

- The Vienna Declaration and Programme of Action.

Labour practice indicators should also cover the social responsibilities of business enterprises, including compliance with the ILO Tripartite Declaration Concerning Multinational Enterprises and Social Policy, and the Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises.

Human rights should also be included in the social dimension of sustainability. Employees and security forces should be trained in human rights as well as non-discrimination, freedom of association, child labour, indigenous rights, and forced and compulsory labour.

Finally, product responsibility performance should also be embraced in the social dimension of sustainability. It represents the aspects of the aquaculture product and activities that relate directly to customers, health and safety, information and labelling, branding, marketing and privacy.

The environmental dimension of sustainability covers the aquaculture sector's impacts on living and non-living natural systems, including ecosystems, soil, air and water. Environmental indicators cover performance related to inputs (e.g. materials, energy and water) and outputs (e.g. emissions, effluents and waste). In addition, they cover performance concerning biodiversity, environmental compliance, and other relevant information such as environmental expenditure and the impacts of products and services.

Certification: a tool for marketing or for management?

Certification and the labelling associated with the certification process are often seen primarily as a marketing tool. Certifying is costly and therefore it is understood that it should bring added value to the certified product, at least to cover the cost of the certification process. This added value is seen as a marketing tool for niche products. This concept might be enough for a company to engage in certification. This is particularly true for certification processes that directly address the consumer at the end of the custody chain. In the case of business-to-business certification schemes or certification of some part of the production chain, the process may provide other benefits. To obtain certification under ISO 9000, ISO 14000

or ISO 23000, for example, a company needs to work on a number of internal processes, depending on the purpose of the certification, and certification may prove very important as a tool for establishing internal rules at various levels. In this case the objective of certification is mostly to support the setting-up and implementation of internal processes and production quality control. The certification mark itself, as a sign that production complies with standards, may not even be necessary.

Since the objective is to achieve best performance, implementing a certification scheme should be a great incentive for the Mediterranean aquaculture sector to reach out to the end consumer. In fact, the principles of certification (including traceability and labelling) would help Mediterranean aquaculture to become an independent, trustworthy, credible and transparent activity and, along with the existing types of certification, would provide guarantees regarding its sustainability. This process would encourage the sector to reinforce responsible practices and seek to become socially, environmentally and economically sustainable.

Voluntary or mandatory?

Basically, certification processes are seen as voluntary processes, as stated by FAO. This is true for the niche certification model endorsing quality, origin, fair trade or organic production, for example. This is the pattern that the Marine Stewardship Council (MSC) follows, and certification of sustainability could adopt the same pattern.

This model, however, is based on the differentiation between a certified (value-added) product and a non-certified (normal) product. Sustainability may need more than this, and even the fact that certain products are sustainable and others are not is basically questionable. Is it not a goal of sustainable development that it should cover all production? Is it acceptable that some products are sustainable while others are not? Is it not the whole aquaculture industry or sector that we want to be sustainable in the end? Being sustainable is a commitment adopted by most countries; it comes from the conclusion that without sustainability the planet will not survive (or human beings will not survive on Earth).

Although certifying sustainability can start off on a market segmentation basis, it seems important to bear in mind that there is a fundamental difference

between a voluntary certification scheme, such as those endorsing quality, origin, fair trade or organic production, and certification for sustainability, which, in view of the states' commitment to the World Summit on Sustainable Development (Johannesburg, 2002), is a compulsory goal. In this framework, certifying sustainability is similar to certifying the public health aspects of production.

It is therefore important to look at certification in the long term as well. In a perfect world, all products should be sustainable. As with safeguarding public health and food safety in food production, sustainability will become an obligation. Polluting is already punishable by law and, over the longer term, being sustainable will be mandatory as well; it is a matter of agreed criteria and time.

Site selection and site management and certification in the Mediterranean

In the Mediterranean, as in many other parts of the world, site selection and site management is a major issue in the sustainable development of aquaculture. Certification is relevant to site selection and management. By complying with sustainability standards on site management, aquaculture will play a role in the sustainable development of the local economy. In this context, some authorities have already shown their support for sustainability by waiving certain charges or granting rights to ISO-certified enterprises, as is the case in Spain (see Guide C above).

Justification

The sustainable development of the aquaculture industry depends on securing the environmental, social and economic pillars of the activity. Certification in general is a suitable tool for improving management practices. For the moment, certification schemes for aquaculture do not address sustainability in an holistic way, but tend to concentrate on its environmental aspects. Work needs to be done, therefore, to create a certification scheme that not only guarantees the sustainability of a farm, group of farms or region, but at the same time actively contributes to the sustainable development of the aquaculture industry as a whole. By engaging in certification processes, aquaculture will demonstrate its sustainability, strengthen its markets, improve its internal management, and participate in sustainable development at all scales.

Principle

Existing categories and types of certification schemes should be examined in order to address at least one aspect of the sustainable development of aquaculture.

Guidelines

- **Certification methods and processes should be developed for each of the pillars of sustainable development separately and for all three together.** The three elements of sustainable development (environmental, social, and economic) are equally important.

- **The sustainability of aquaculture should be certified at appropriate scales.** Different criteria should be used for the various scales: at site level, company level and regional or national level. Not all criteria can be used at all scales.

- **Standards for sustainability certification schemes should be developed, taking regional and cultural particularities into account.** Mediterranean aquaculture has local features and traditions that require the development of specific standards.

- **Social acceptability should be covered by sustainability certification.** Appropriate site selection should be a key criterion aimed at safeguarding employment and minimizing conflicts. Environmental impact assessments, proper monitoring of the environment and continuous dialogue on all these issues are needed, as well as a risk assessment of the activity. Social acceptability will be successful only by relying on effective communication among stakeholders.

- **Sustainability certification schemes should be periodically revised.** Because sustainability is a dynamic state that changes over time, sustainability certification schemes need to be frequently updated.

- **Certifying sustainability should be positive for producers.** The certification process should benefit producers at various levels. Their marketing, communications, internal management and procedures should improve, and they may also receive government incentives, since sustainable development is a commitment made by states.

With respect to economic sustainability

- **The economic aspect of sustainability certification should be developed at the sector level.** Indicators and standards for the sector (relating to economic structures, markets and diversification) should be developed at Mediterranean and national levels.

- **The assessment of the economic sustainability status of a fish farm should address the company's attitude and commitment towards sustainability.** As it is recognised that economically certifying a fish farm at the financial level is not possible, some other economic criteria (such as the annual balance sheet) should be defined, while taking into consideration the farm's commitment to sustainable development and responsible management practices.

- **Producers should be given financial and other incentives to improve their standards and to put in place sustainability certification procedures.** Special care should be taken to avoid giving financial incentives that may increase pressure on the ecosystem. On the contrary, incentives should be developed to support the certification of sustainability.

With respect to the child labour and the gender issues

In some Mediterranean countries child labour is part of reality and should be taken into account with caution. In some areas people learn aquaculture skills from early childhood, in parallel with their regular schooling. This situation cannot change from one day to another. Therefore the sector should encourage structured training, which provides opportunities for children to learn about fishery activities, with a chance to join the general programme by the end of middle school. This approach presents some real advantages, in view of the unemployment situation in Mediterranean countries and the way small farms are passed down from one generation to another, particularly in southern countries. On another hand the use of female labour in the Mediterranean should also be recognized. Most family-based structures and companies run their activities with the participation of the female members of the family. Women have also gained a growing interest in the aquaculture sector, which has gradually been modernized as an activity.

Annexes

Glossary

Accreditation
Accreditation is the procedure by which a competent authority gives formal recognition that a qualified body or person is competent to carry out a specific task.

Biodiversity
Aquaculture is the farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. Farming implies some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding, and protection from predators. Farming also implies individual or corporate ownership of the stock being cultivated, as well as the planning, development and operation of aquaculture systems, sites, facilities and practices, and of production and transport.

Best practice
Best practice is a superior or innovative method that contributes to the improved performance of an organization, and is usually recognised as 'best' by other peer organizations. It implies accumulating and applying knowledge about what works and what does not work in different situations and contexts, including learning from experience, in a continuing process of learning, feedback, reflection and analysis (on what works, how and why).

Certification
Certification means demonstrating that a product or process meets certain standards. This confirmation is in addition to the producer's general information provided on ordinary labels and is usually, although not always, provided by means of an external assessment.

Certification body or entity

This refers to a competent and recognised body that conducts certification and audit activities. A certification body may oversee certification activities carried out on its behalf by other bodies.

Certification scheme

A certification scheme is a collection of processes, procedures and activities leading to certification. A credible certification scheme is built on three steps: standards setting, accreditation and certification.

Chain of custody

This refers to all activities taken into consideration by the sector from the production stage to the selling point of a product (processing, distribution, etc.)

Code of conduct

Codes of conduct are sets of written principles and expectations that, although voluntary, are considered binding on any person or organization that belongs to a particular group that adopts the code.

Group certification

Such certification may be granted to a group of farmers, normally small-scale aquaculture farmers, for whom individual certification is cost prohibitive. The group must have key characteristics in common, e.g. shared marketing of produce, and homogeneity of members in terms of location, production, system and products. The group must have an internal control system to ensure compliance with the standards by all members. The facilities or operations that are certified collectively may be in close proximity to each other, share resources or infrastructure (e.g. water sources, or effluent discharge systems), share a landscape unit (e.g. watershed), have the same production system, involve the same farmed species, or display other common characteristics as appropriate.

Labelling

Labelling involves attaching a piece of paper or other material to a product to provide consumers with information about the object to which it is attached.

Standard

A standard is a document, approved by a recognised organization or entity, which lays down rules, guidelines or characteristics for products or related processes and production methods, for use by a number of people and/or on multiple occasions. It may also include or deal exclusively with terminology, symbols, and packaging, marking or labelling requirements as they apply to a product, process or production method. Compliance with a standard is not mandatory under international trade rules.

Sustainability

Sustainability covers threes pillars, which represent environmental acceptability, social equity, and economic viability. 'Sustainable aquaculture is a system that can evolve indefinitely toward greater human utility, greater efficiency of resource use and a balance with the environment which is favourable to humans and most other species' (Hough, 2008, adapted from Harwood, 1990).

Traceability

This is the ability to track the movement of an aquaculture product or inputs such as feed and seed through specified stage(s) of production, processing and distribution. It is based on documentation and other evidence by which a certified product can be traced from a specific buyer all the way back through the chain of custody to the certified production area from which it originated.

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List of Participants

Aquaculture workshops

The workshop in Hammamet (Tunisia) took place from 16 to 17 June 2008. It was organized by Chedly Rais. It gathered more than 30 participants from most Mediterranean countries. The objectives of the workshop were to analyze and develop the themes of traceability, labeling and certification of aquaculture products.

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The workshop in Roma (Italy) took place from 1 to 3 September 2008. It was organized by Fabio Massa (GFCM secretariat) and it aimed at consolidating the debate and discussions regarding the traceability, labeling and certification of aquaculture products.

List of Acronyms

ACC:	Aquaculture Certification Council
AIDCP	Agreement on the International Dolphin Conservation Programme
AOC:	Appellation d'origine contrôlée (registered designation of origin)
ASC:	Aquaculture Stewardship Council
B2B:	Business-to-business
EBCD:	European Bureau for Conservation and Development
EFF:	European Fishery Fund
EIA:	Environmental Impact Assessment
EMAS:	Eco Management and Audit Scheme
EUREP:	Retailer Produce Working Group
EU:	European Union
FAO:	Food and Agriculture Organization of the United Nations
FEAP:	Federation of European Aquaculture Producers
FLO:	Fairtrade Labelling Organizations International
FSC:	Forest Stewardship Council
GAA:	Global Aquaculture Alliance
GRI:	Global Report Initiative
IFOAM:	International Federation of Organic Agriculture Movements
ILO:	International Labour Organization
INAO:	Institut National des Appellations d'Origine
ISEAL:	International Social and Environmental Accreditation and Labelling Alliance

ISO:	International Organization for Standardization
ISSF:	International Seafood Sustainability Foundation
IUCN:	International Union for Conservation of Nature (IUCN)
MAPA:	Ministry of Agriculture, Fisheries and Food of Spain
MEA:	Algerian Ecological Movement
MSC:	Marine Stewardship Council
NACA:	FAO's Network of Aquaculture Centres in Asia-Pacific
NGO:	Non-governmental organization
OECD :	Organisation for Economic Cooperation and Development
SSPO:	Scottish Salmon Producers' Organisation
TCL:	Traceability, Certification and Labelling
UNEP:	United Nations Environmental Programme
WB:	World Bank Group
WHO:	World Health Organization
WTO:	World Trade Organization
WWF:	World Wildlife Fund

Ministry of the Environment and Rural and Marine Affairs

The Spanish Ministry of the Environment and Rural and Marine Affairs (MARM) is the ministerial department that draws together all State competencies linked to the natural environment in the joint aim of protecting the land and biodiversity, as well as promoting and protecting the agricultural, livestock, forestry, fishing and food production factors. The General Secretariat of the Sea is dedicated to the task of protecting and conserving the sea and the public maritime and terrestrial domain.

http://www.marm.es

European Bureau for Conservation and Development

The European Bureau for Conservation and Development (EBCD) is an international non-profit, non-governmental organization (NGO) based in Brussels, since 1989, and dedicated to the sustainable use of natural renewable resources with main focus on fisheries and marine issues. EBCD works closely with the EU institutions, particularly the European Parliament as well as FAO and other UN bodies.

http://www.ebcd.org/

Federation of European Aquaculture Producers

The Federation of European Aquaculture Producers (FEAP), founded in 1968, currently represents 28 national aquaculture associations in 23 European countries, with a finfish annual production of over 1.3 million tones. FEAP is a Member Organisation of the Advisory Committee on Fisheries and Aquaculture of the Commission of the European Union and carries out numerous European and international activities for the aquaculture sector.

http://www.feap.info

IUCN – Centre for Mediterranean Cooperation

The Centre was opened in October 2001 and is located in the offices of the Parque Tecnológico de Andalucía near Malaga. IUCN has over 170 members in the Mediterranean region, including 15 governments. Its mission is to influence, encourage and assist Mediterranean societies to conserve and use sustainably the natural resources of the region, work with IUCN members and cooperate with all other agencies that share the objectives of IUCN.

http://www.iucn.org/mediterranean

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