Quality and environmental standards: Pollution, drugs, etc. Bases, procedures and economic implications

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SUMMARY – Like any other human activity, all forms of food production, including aquaculture, affect the environment in one way or another. Some of these may be considered beneficial, while others are not consistent with long-term preservation of natural ecosystems. The only way to deal with a sustainable development is to adopt preventive actions rather than corrective ones, just to be sure that our activity can progress without compromising the future resources. An environmental management system is the tool that can serve us for this purpose and for integrating the environment concept into the business field.

Key words: Environment, standards, environmental management systems, impacts.

RESUME – *"Normes de qualité et environnementales : Pollution, produits médicamenteux, etc. Bases, procédures et enjeux économiques". Comme les autres activités humaines, toutes les formes de production alimentaire, même l'aquaculture, influencent l'environnement d'une façon ou d'une autre. Certaines peuvent être considérées bonnes, mais d'autres peuvent ne pas être consistantes avec la préservation d'écosystèmes naturels. L'unique manière d'assurer le développement durable est d'adopter des actions préventives plutôt que correctrices, seulement pour s'assurer que notre activité peut progresser sans porter préjudice aux ressources du futur. Un système de gestion environnementale est l'outil qui peut nous servir pour ce propos et pour intégrer le concept environnemental dans le domaine de l'industrie.*

Mots-clés : *Environnement, norme, système de gestion environnementale, impact.*

Introduction

To provide an operational perspective, sustainable development has been defined by FAO (http://www.fao.org/fi/glossary/) as follows:

"Sustainable development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in agriculture, forestry and fisheries sectors) conserves land, water, plant and animal resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable".

This definition seems to apply very closely to sustainable aquaculture development as well.

There is no gainsaying that adverse environmental impacts of aquaculture in the global context are not very significant, although there may be local and temporary perturbations caused by improper practices. With some notable exceptions, the majority of the changes are not irreversible and are capable of being remedied or ameliorate by appropriate management measures. It is in the long-term interests of aquaculture to follow technologies and procedures that do not degrade the environment.

Water quality requirements for productive aquaculture can seldom be maintained economically in commercial farms if the natural water resources are polluted, and the environmental integrity of the area disregarded.

Appropriate technologies have to be developed and applied to reduce adverse impacts, and effective public information systems established to educate the general public and regulatory agencies. Conflicts with other users of the environment have to be reconciled, and sound and practical legislative measures enacted, based on the results of adequate investigations and research.

Environmental management systems

An environmental management system (EMS) is the systematic application of business management to environmental issues that provides substantial benefits including: (i) significant cost reductions; (ii) help with Federal and State Regulations; (iii) improved access to permits and authorisations; (iv) increase in process yields; (v) enhanced corporate image; and (vi) improved global position.

In common with all business systems it contains the PDCA concept – plan, do, check and act.

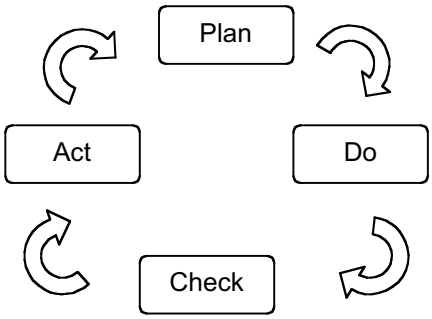

Fig. 1. PDCA concept.

There are two mainly standard system specifications to guide an organisation in implementing an EMS: (i) ISO 14001; and (ii) the Eco-Management and Audit Scheme (EMAS).

ISO 14001

ISO 14001: Guide to Environmental Management Systems – Specification with Guidance for Use is a voluntary consensus standards defining various aspects of an effective environmental management systems (EMS).

ISO 14001 defines a model to follow in establishing an EMS that incorporates features that experts in the field have agreed represent essential elements to an effective environmental management system. An EMS that "conforms to the standard" is built upon a firm foundation that will support your environmental claims. An EMS that conforms to ISO 14001 is suitable for supplier self-declaration of conformance, assessment of conformity by an external stakeholder (e.g. a customer), or for certification of conformity by an independent certification body or registrar.

The concepts of an ISO 14001 are as follows:

(i) Environmental policy. Initially, the organisation's top management should have commitment and define the policy on EMS which is used for the direction of implementing and improving its EMS.

(ii) Planning. In order to achieve environmental policy, at least, the organisation should:

Identify the environmental aspects of its activities and specify those which have significant impacts on the environment.
Identify legal and other requirements to which the organisation involved.
Establish objectives and targets of its activities having impacts to environment.
Establish environmental programmes for achieving its objectives and targets.

(iii) Implementation. In order to achieve environmental planning, at least, the organisation should:

Define roles, responsibilities and authorities for facilitating EMS effectively.
Communicate to the staffs at each level for the importance of conformance to the

environmental policy; provide appropriate training to personnel performing the tasks to gain their knowledge and competence.

Establish and control documentation relating to EMS.

Control operations and activities to meet the specified objectives and targets.

Identify potential accidents and emergency situations for preventing and mitigating the environmental impacts that may be associated with them and periodically test such procedures where practicable.

(iv) Checking and corrective action. To ensure that the organisation is performing in accordance with the stated EMS programmes, at least, the organisation should:

Monitor and measure its operations and activities against the organisation's plans.

Identify non-conformance and take action to mitigate any impact caused.

Record the on-going activities of the EMS.

Conduct periodic EMS audits.

(v) Management review. The organisation's top management should review and continually improve its EMS, with the objective of improving its overall environmental performance.

The Eco-Management and Audit Scheme (EMAS)

It is a voluntary scheme introduced to European Union Member States by Council Regulation (EEC) No. 1836/93 (EMS).

EMAS requires for more elements than ISO 14001, it is necessary to add: (i) initial review; (ii) environmental statement; and (iii) verification.

The general scope of this EMS is broader and deeply addressed to environmental performance than to the management.