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## ISO/TC 234, Fisheries and Aquaculture

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**Abstract.** The largest standard developing organization, ISO, works these days at International Standards for Fisheries and Aquaculture. They created a technical committee divided in six work groups that will have to establish cage technology, aquaculture environmental management, aquaculture technology, food safety for aquaculture farms, traceability of fishery products and environmental monitoring on the seabed's impact from marine finfish farms. These standards will promote the sustainable development of the fisheries and aquaculture sectors, will develop specifications for technical equipment adapted to the local environment, will improve surveillance and management of marine resources, will enable international agreement on sampling methods, will improve the safety of employees and will establish a common terminology.

**Key words:** fishery, aquaculture, development, international standard and environment.

**Rezumat.** Cea mai mare organizație care se ocupă cu dezvoltarea de standarde pentru toate domeniile de activitate, ISO, lucrează în prezent la standarde internaționale pentru pescuit și acvacultură. Ei au creat un comitet tehnic divizat în șase departamente, fiecare departament cu un rol bine definit. Astfel, ele vor stabili standardele necesare să fie respectate de tehnologia de realizare a cuștilor, de managementul mediului acvaculturii, tehnologia utilizată în acvacultură, siguranța în alimentație, urmărirea produselor din pește, monitorizarea mediului și impactul pescuitului asupra mediului acvatic. Aceste standarde vor promova dezvoltarea durabilă a pescuitului și a acvaculturii și vor dezvolta specificații pentru echipamentul tehnic adaptat pentru fiecare regiune, vor îmbunătății supravegherea și managementul resurselor marine, vor crea acorduri internaționale legat de metodele de recoltare, vor crește siguranța la locul de muncă a angajaților și vor stabili o terminologie comună.

**Cuvinte cheie:** pescuit, acvacultură, dezvoltare durabilă, standarde internaționale, mediu.

**Resumé.** L'ISO (Organisation internationale de normalisation) est le plus grand producteur et éditeur mondial de Normes internationales. Dans nos jours, il a été créé un comité technique qui s'occupe de la normalisation dans le domaine de la pêche et de l'aquaculture, mais n'étant pas limité à la terminologie, aux spécifications techniques relatives à l'équipement et à leur sites d'opération, de caractérisation d'aquaculture et l'entretien de conditions physiques, chimiques et biologiques appropriées, surveillance environnementale, rapport d'essais, traçabilité et le rejet des déchets. Ce comité est divisé en six groupes de travail et chacun a un rôle très bien défini: Technologie d'élevage en cages, Management environnemental de l'aquaculture, Technologie de l'aquaculture, Sécurité des denrées alimentaires des fermes d'aquaculture, Traçabilité des produits de la pêche, Surveillance environnementale de l'impact sur le fond marin des fermes marines.

**Mots clés:** pêches, aquiculture, développement, norme internationale et environnement.

**ISO history.** ISO, the largest standard developing organization, has started its activity in 1947. Since then, it has published 17500 International Standards for agriculture, construction, mechanical engineering, medical devices and information technology developments. ISO was born from the union of the ISA (International Federation of the National Standardizing Associations), established in 1926, and the UNSCC (United Nations Standards Coordinating Committee), established in 1944. ISO officially began operations on 23 February 1947 and its objectives were to facilitate the international coordination and unification of industrial standards ([www.iso.org](http://www.iso.org)).

In April 1947, in Paris, a list of 67 ISO technical committees (TC) were established. Some years later, those TC started to produce "Recommendations". The basic idea of international standardization was to derive International Standards from those already developed by members and not only, in their country.

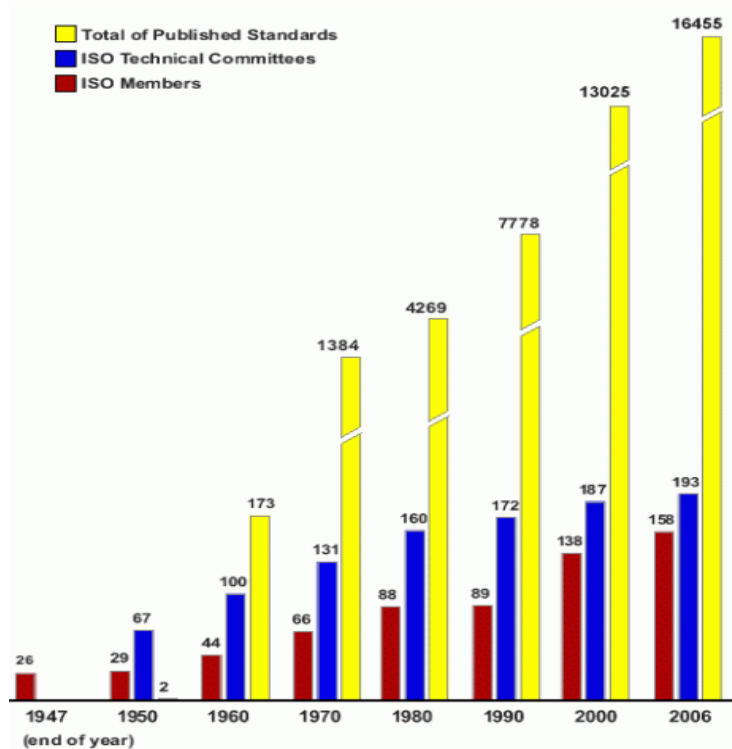


Figure 1. ISO evolution

Between 1950 and 1970, a large number of members joined the organization. Since 1979, ISO implemented all the necessary measures to ensure that ISO's International Standards are fully compliant with the requirements set by the Agreement on Technical Barriers to Trade of the WTO (World Trade Organisation). The vast majority of ISO's International Standards was highly specific to a particular product, material or process. During the 1980s, ISO entered into new areas of work, destined to have enormous impact on organizational practices and trade. ISO's portfolio of generic management systems standards was extended beyond quality during the 1990s. Between 1994 and 2003 the number of total members increased from 100 to 147 (see Figure 1) and the number of full members increased from 76 to 96 - contributing to make ISO a global organization. In the last decade, ISO has reached different categories of stakeholders through the network of national standards bodies and has extended the cooperation with international organizations, including governmental and non-governmental entities.

In November 2008 ISO committee has issued the 4th edition of ISO 9001 standard - ISO 9001:2008. The new edition brings only some elucidation regarding the standard content (Edbal Consult SRL & Gp Proiect 2008).

**ISO objectives.** Even though ISO management system standards are made for everyone, for every organization, all over the world, we will refer next to Romania's case. Often, in the organizations we can find no "system", as there is just "our way of doing things", and "our way" most often is not written down; this system exists just in the head of the manager or owner. Nevertheless, things start to change if we refer to larger organization. There are more chances to find written procedures, instructions, forms or records. Those documents are of real help in the evolution and efficient administration of the organization. It is important for every organization to manage his business in an orderly and structured way. On a global market this means that time, money and other resources are efficiently used. ISO standards help organization to be efficient, effective, to manage its way of doing things by systemizing it, and to ensure

that nothing important is left out and that everyone is clear about who is responsible for doing what, when, how, why and where. In large organizations, there are complicated processes that could not function well without management systems. ISO's management system standards are available to organizations of all sizes, in all sectors, everywhere in the world.

**ISO standards.** The best-known standards are The ISO 9000 and ISO 14000 families. ISO 9001:2000 and ISO 14001:2004 are implemented by over a million organizations in 175 countries.

*The ISO 9000 family*

It is known as "Quality management" and illustrates how the organization does to fulfill requirements regarding:

- customer's quality requirements,
- what are the applicable regulatory requirements,
- how to raise customer satisfaction,
- how to achieve continual improvement of its performance in pursuit of these objectives.

*The ISO 14000 family*

It is known as "Environmental management" and illustrate how the organization does to:

- minimize harmful effects on the environment caused by its activities,
- achieve continual improvement of its environmental performance.

**ISO/TC 234.** Seafood is the number one traded food in the world and one of five people depends on fish as their primary source of protein. With growing populations and with the extinction of some wild fish stocks, sustainable solutions are necessary to meet world demand. Aquaculture has become an important part of the food supply chain (Ludvigsen & Aarefjord 2009)

The industries, businesses and trades connected to fisheries and aquaculture are of fundamental importance nowadays. When we talk about fisheries and aquaculture, we also think at fish products, production of equipment used.

Many of the processes involved in fisheries and aquaculture have potentially far-reaching environmental impacts and consumer interests need to be taken into account when we develop such businesses.

Sustainability in the seafood sector depends on transnational agreements and practices, but to date, there are no recognized international standards specifically for the sector. Things will change soon because, in order to develop International Standards for the sector, ISO established a new technical committee - ISO/TC 234, *Fisheries and aquaculture*.

It is important to know that ISO system allows member countries to propose their national standards as drafts for international standards, but it is important to ISO/TC 234's success that the leading fishing and aquaculture nations are among its members, so we all can take part at the sustainable development of this sector.

As we have already mentioned, ISO standards bases are national standards. For this sector, the technical committee uses Norway Standards as the start point. They have two standards: NS 9410 and NS 9415.

The NS 9410 *Environmental monitoring of marine fish farms* standards requires all fish farmers to monitor marine fish farms and describes methods for determining and monitoring bottom conditions, based on the assumption that environmental conditions in the surrounding areas of fish farms are directly related to fish farm waste.

The Norwegian standard NS 9415 – *Marine fish farms – Requirements for design, dimensioning, production, installation and operation* is designed to reduce the risk of escape, due to technical failure and incorrect operation of fish farming installations. It describes requirements for the physical design of cage nets, moorings, floaters, barges and auxiliary equipment, as well as for functionality after assembling the main components into a complete fish farming installation. Also describes how a complete installation should be placed in relation to the natural conditions in a given locality.

The technical committee ISO/TC 234 was set up in 2007 and contains standards that:

- Promote the sustainable development of the fisheries and aquaculture sectors,
- Develop specifications for technical equipment adapted to the local environment,
- Improve surveillance and management of marine resources,
- Enable international agreement on sampling methods,
- Improve the safety of employees,
- Establish a common terminology.

In the field of fisheries and aquaculture, ISO/TC 234 has proposed that initial priorities should include:

- terminology,
- technical specifications for aquaculture farms and equipment,
- characterization and monitoring of aquaculture sites,
- resource monitoring,
- data reporting,
- traceability,
- waste disposal,
- maintenance of appropriate physical, chemical and biological conditions.

The ISO/TC work will exclude:

- methods of analysis of food products which are covered by ISO/TC 34,
- personal protective clothing which are covered by ISO/TC 94,
- environmental monitoring which are covered by ISO/TC 207 (Ludvigsen & Aarefjord 2009)

The ISO/TC 234 will cooperate with the International Council for the Exploration of the Sea (ICES), the World Organization for Animal Health (OIE) and the U.N.'s World Health Organization (WHO), Codex Alimentarius Commission (CAC) and Food and Agriculture Organization (FAO) ([www.iso.org](http://www.iso.org)).

The new committee provides private and governmental stakeholders. The aim is to participate in the development of fisheries and aquaculture, to respect sustainable development and to find the way to avoid technical barriers that may appear to trades during the implementation of international standards.

So far, 16 ISO member countries have registered to participate in the works, including Norway, Canada, France, Iceland, India, Malaysia, South Africa, Thailand, U.K., U.S.A, and Vietnam. Another 16 countries have observer status including Croatia, Germany, Italy, Poland, Ukraine, Japan.

The ISO/TC is divided in six working groups consisting of fishery and aquaculture experts nominated by the participating ISO members. Table 1 shows the work area for each committee.

Table 1

ISO/TC 234 Subcommittee

<i>Subcommittee/Working Group</i>	<i>Title</i>
TC 234/AHG 1	Cage technology
TC 234/AG 1	Aquaculture environmental management
TC 234/AG 2	Aquaculture technology
TC 234/AHG 2	Food safety for aquaculture farms
TC 234/WG 1	Traceability of fishery products
TC 234/WG 2	Environmental monitoring on the seabed's impact from marine finfish farms

Source [http://www.iso.org/iso/iso\\_technical\\_committee?commid=541071](http://www.iso.org/iso/iso_technical_committee?commid=541071)

**ISO/TC 234 evolution.** The ISO/TC 234 held its first meeting in October 2007 in Bergen, Norway. After that, they met in November 2008, in Spain. The meeting was hosted by the *Asociación Española de Normalización y Certificación* (AENOR) in Madrid. They discussed about sustainable fishing and specifications of good practice for fishing vessels.

So far, they have in plan to issue ISO/WD 12875 standard which will contain: traceability of fishery products and specification on the information that must be recorded in captured fish distribution chains and ISO/WD 12878 standard which will contain: Environmental monitoring of marine fish farms ([www.iso.org](http://www.iso.org)).

**ISO Standards in Romania.** In Romania, the government had issued laws that establish quality standards. We can mention here *Law 245/09/06/2004 regarding the general security of products*, *Law 608/31/10/2001 regarding the evaluation of products concordance*, *Government Decision/71/2001 regarding the procedures used in the evaluation of products concordance*, *Law 150/2004 regarding food safety etc* (Web Cert Consult SRL 2009). ISO standards are brought to Romania by ASRO Romanian standards association a Romanian private legal entity of public interest, (ASRO 2009). "ASRO is a participating member of 150 of the technical committees (TCs) or subcommittees (SCs) that develop ISO standards and an observer on another 382, which means that it has a presence on more than 77% of all active TCs and SC" (ISO Secretary-General Alan Bryden – Standardization, Dec. 2008).

**Conclusion.** ISO standards have changed the way business are managed. They help us to understand how important the quality is and how we can improve it. Also, they show how we can produce safe products, how we can improve the competitiveness. In the near future ISO standards are expected in Fisheries and Aquaculture: ISO/TC 234.

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