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## ISO/TC 234 Fisheries and Aquaculture

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Dear member,

Below you will find the first draft of ISO/TC 234 business plan. The business plan consists of drafting instructions in shaded boxes, standard template text (black) and specific text for this committee (at the moment in blue).

At this stage, before any TC meetings have been held, the blue text of the business plan has been worked out by the secretariat and has to a large degree focussed on description of the business environment. Naturally, the draft business plan is very premature and should be a task for the TC to complete. The text is of course only suggestions, but our thought with distributing the draft at this stage is that any start is better than no start. Please read through the draft. Any comments and suggestions for additional text are welcome. These should be sent me by email before 15 August so all comments can be compiled and distributed in due time before the first plenary meeting in Bergen.

Yours  
Erik Sterud  
Standards Norway  
ISO/TC 234 secretary

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**ISO/TC 234 Secretariat**

**Standards Norway**

Strandveien 18  
P.O. Box 242  
NO-1326 Lysaker, Norway

Telephone: + 47 67 83 86 92

Telefax: + 47 67 83 86 01

E-mail: [est@standard.no](mailto:est@standard.no)

**Drafting Instructions**

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**BUSINESS PLAN  
ISO/TC 234  
FISHERIES AND AQUACULTURE**

**Drafting Instructions**

Please do not change or delete any unshaded headings or text in the remainder of this document. This is intended to provide all ISO/TC BPs with consistent structure, headings and introductory text for readers and use

**1. INTRODUCTION**

**1.1. ISO technical committees and business planning**

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritise among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development. Your role in the implementation of the Business Planning concept will contribute significantly to the overall effectiveness of international standardization.

We express our sincere appreciation and thanks for your time in reviewing this Business Plan.

**1.2. International standardization and the role of ISO**

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: ISO (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of IEC (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of ITU (International Telecommunication Union).

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ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 130 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the International Standard.

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the Industry Technical Agreement (ITA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the ITA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

### **1.3. Proposed scope and initial priorities of ISO/TC234**

Standardization in the field of fisheries and aquaculture, including, but not limited to, terminology, technical specifications for equipment and for their operation, characterization of aquaculture sites and maintenance of appropriate physical, chemical and biological conditions, environmental monitoring, data reporting, traceability and waste disposal.

Excluded:

- methods of analysis of food products and traceability covered by ISO/TC 34,
- personal protective clothing covered by ISO/TC 94,
- environmental monitoring covered by ISO/TC 207.

## **2. BUSINESS ENVIRONMENT OF THE ISO/TC.**

This section establishes a sequential development of thoughts regarding the market for which the ISO/TC aims to fulfil the needs. Details in relation to the market analysis are given in the Guidance document on ISO Business Planning. The sequence of thoughts starts from a description of the current market situation relevant to the product or product grouping under consideration by the ISO/TC, continues on to an analysis of the different factors motivating/influencing the activities of the ISO/TC, to come to clear description of objectives and expected benefits resulting from the work of The ISO/TC, together with an accompanying strategy how to reach those objectives. Finally, a general "risk analysis" is included highlighting issues that may delay or stop the ISO/TC achieving its set objectives

### **2.1. Description of the Business Environment.**

The following political, economic, technical, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

#### 2.1.1 Industrial dynamics

The industries, businesses and trades connected to aquaculture and capture fisheries are all of an international nature. Approximately 40 % of the global fisheries and aquaculture production are traded on the international market. While the total capture fisheries are exploited to their limit (or beyond), the aquaculture industry continues to grow to cover the increasing demand for aquatic food organisms and products of these. Developing countries are responsible for the majority of the production, and fisheries are very important for the economy in many developing countries. Small scale activities within both aquaculture and fisheries are of large regional and local importance, with socio economic impacts down to family level.

#### 2.1.2 Economical dynamics

The seafood trade is one of the world's largest and fastest growing international commodity industries. Worth more than \$70 billion a year, it exceeds the world trade in all grains combined and represents more than twice the combined world trade in all tea, coffee and cocoa. Almost 200 countries supply fish and seafood products to the global marketplace, consisting of more than 800 commercially important species of fish, crustaceans and molluscs, including 30 species of shrimp alone (James Anderson)

#### 2.1.3 Technical dynamics

Aquaculture in industrialised countries has developed from small scale family driven businesses to large scale international industry. The aquaculture sites and units have grown concurrently and have developed into technically advanced constructions. Within marine aquaculture the trend is an increasing degree of offshore farming. Further developments in equipment and technology for offshore farming in cages will result in improved water quality and fish health. The use of offshore locations will necessitate improvements of net pens and cages, mooring systems, and feeding systems, require larger boats for servicing, and call for new techniques for installation and daily operation. There will be increased needs for automation and electronic monitoring. Challenging weather conditions make strict demands on offshore farming facilities. Breakdown may result in escape of farmed organisms. This means economic losses for the aqua farmers and often negative impacts on the environment. Parallel to the development of new equipment there will be an increasing need for international standards to ensure that the equipment are of satisfying quality and standard.

#### 2.1.4 Biological dynamics

##### Organisms

Aquaculture activity increases and new species are objected to domestication. New techniques and principles for breeding and husbandry are under development. New diseases emerge when new species are domesticated and this opens for research on vaccines, medication and preventive measures.

##### Feed

There is an extensive use of fish meal and fish oil in the production of fish feed. A continued growth or even maintenance of today's production of finfish presupposes that fish meal and oil is replaced with other protein and fat sources. This means large challenges for the feed industry, producing feed that also carnivorous fish can eat. An important issue for many regions and countries is also the use of oil from genetically modified sources (GMO)

#### 2.1.5 Societal dynamics

Among the general public and public interest groups, especially in the major industrialized countries, there is an increasing concern about animal welfare. Not only should the food be harmless and healthy, but the animals themselves should have lived a "natural" and "happy" life. Until recently this has mainly been a concern regarding mammals and poultry, but animal welfare is mentioned more often in connection with fish farming. At the moment there are few generally accepted criteria for fish welfare, but health are obviously one of those criteria that need to be included.

#### 2.1.6 Ecological/environmental dynamics

The environmental awareness is increasing and a maintained or increased production presupposes that the environmental compatibility of fisheries and aquaculture is focussed upon. Among the concerns related to aquaculture and fisheries are:

- overfishing of industrial fish populations used to produce fish meal and fish oil used by the animal feed industry in industrialised countries (salmon feed, pig feed, chicken feed);
- mangrove destruction caused by the need for new pond areas for the expanding shrimp industry in many Asian countries;
- coral reef destruction caused by bottom trawling for fish, molluscs and crustaceans;
- conflicts between aquaculture and capture fisheries;
- negative genetic impact from escapees;
- waste problems including effluents from aquaculture farms;
- use of antibiotics and antifouling agents in open aquaculture farms, with leakage to nature and possible development of antibiotic resistance in bacteria in close proximity to open aquaculture installations and the risk of genetic transfer of resistance to bacteria of human or veterinary medical interest.

#### **Drafting Instructions**

Provide an appropriate list as described above. Describe any dynamics that may be relevant to your specific ISO/TC, but do not feel compelled to describe dynamics in all of the categories in the series above if they are not relevant. This list may include descriptions of:

- The state of the art in the field addressed by the scope of the ISO committee;
- Recent or expected technological changes and major innovations related to the industry sector, products or materials addressed by the scope of the ISO committee;
- Recent or expected changes and major innovations in the disciplines or practices addressed by the scope of the ISO committee;
- Categories of relevant stakeholders (for example, industry, government, public interest groups, investors, lending institutions, employees, customers, suppliers, contractors, media, consumers, local communities);
- The concerns and perceptions of relevant stakeholders;
- Social, safety, health, environmental or cultural issues related to the industry sector, products, materials, disciplines or practices addressed by the scope of the ISO committee;
- Other relevant international, regional or national standards or voluntary initiatives;
- Real or potential technical barriers to trade related to the scope of the ISO committee, due to diverging national, regional or other standards and/or technical regulations. If possible, an estimation of their financial impact on trade should be provided.
- Other regulatory and legal issues, such as the existence of international, regional and national legislation/regulations, product bans, coverage by patents, etc.

## **2.2. Quantitative Indicators of the Business Environment**

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC.

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Table 1. Key figures of global fisheries and aquaculture. Comparison of 2002 and 2004. 2004 is the most recent year for which complete data are available.

Sources are the Food and Agriculture Organisation of the United Nations' reports:

"The state of world fisheries and aquaculture 2004"

"The state of world fisheries and aquaculture 2006"

"State of world aquaculture 2006"

Production data	2002		2004	
	tonnes (millions)	value US \$ (billions)	tonnes (millions)	Value US \$ (billions)
<b>Total international trade</b>		58.2		71.5
<b>Global capture</b>	93.2	78	95	84.9
<b>Global aquaculture</b> (including aquatic plants)	40.4 (51.4)	53.8 (60.0)	45.5 (59.4)	63.3 (70.3)
	Number (millions)		Number (millions)	
<b>Global employment within capture fisheries</b>	28.0		29.7	
<b>Global employment within aquaculture</b>	9.8		11.3	
<b>Global fishing fleet units</b>	4.1		4	
<b>Aquaculture Main Species. Fresh water and marine</b>	million tonnes		million tonnes	
Cyprinids	16.7		18.3	
Oysters	4.3		4.6	
Clams, cockles, ark shells	3.5		4.1	
Misc. freshwater fish	3.8		3.7	
Shrimps, prawns	1.5		2.5	
Salmonids	1.8		2.0	
Mussels	1.7		1.9	
Tilapias other cichlids	1.5		1.8	
Scallops	1.2		1.2	
Misc. marine molluscs	1.4		1.1	
<b>Marine Capture fisheries. Main species</b>	million tonnes		million tonnes	
Anchoveta	9.7		10.7	
Alaska pollock	2.7		2.7	
Blue whiting	2.0		2.4	
Skipjack tuna	2.0		2.1	
Atlanticherring	1.9		2.0	
Chub mackerel	1.9		2.0	
Japanese anchovy	1.8		1.8	
Chilean jack mackerel	1.6		1.8	
Largehead hairtail	1.5		1.6	
Yellowfin tuna	1.5		1.4	
<b>Freshwater capture fisheries. Main species</b>				
Misc. freshwater fish	5.49		6.51	
Tilapias other cichlids	0.68		0.72	
Cyprinids, barbells	0.58		0.63	
Freshwater molluscs	0.63		0.43	
Freshwater crustaceans	0.82		0.36	
Shads	0.20		0.18	
Salmonids	0.13		0.13	

The Food and Agriculture Organisation of the United Nations (FAO) has analysed the trends in fisheries and aquaculture. The following paragraph has been taken from their report State of World Fisheries and Aquaculture 2004:

*World total demand for fish and fishery products is projected to expand by almost 50 million tonnes, from 133 million tonnes in 1999/2001 to 183 million tonnes by 2015. This represents an annual growth rate of 2.1 percent compared with 3.1 percent during the previous 20 years. Demand for food would account for 137 million tonnes. The world average per capita demand for all seafood could amount to 18.4 kg in 2010 and 19.1 kg in 2015, compared with 16.1 kg in 1999/2001. This increase in demand implies an 18 percent increase over the next 15 years compared with a 40 percent increase over the previous 20 years. Per capita demand for finfish would account for 13.7 kg in 2010 and 14.3 kg in 2015, respectively, while demand for shellfish and other aquatic animals would be 4.7 kg and 4.8 kg, respectively.*

*Of the total increase in demand for food (some 40 million tonnes) about 46 percent would result from population growth, while the remaining 54 percent would be caused by economic development and other factors.*

*World fishmeal and oil demand is projected to grow by only 1.1 percent (from 2000 to 2010) and 0.5 percent (from 2010 to 2015) annually.<sup>92</sup> While the demand for fishmeal in developed countries is projected to decrease annually by 1.6 percent, the yearly growth of demand for fishmeal in developing countries would be 2.6 percent until 2010 and 1.4 percent thereafter. The amount of fish required to meet the global demand for fish for reduction to meal and for other non-food uses would total some 45 million tonnes in 2015.*

*Total world fish production would increase from 129 million tonnes in 1999/2001 to 159 million tonnes by the year 2010 and to 172 million tonnes by the year 2015.<sup>93</sup> This means that growth in global world fish production is projected to decline from the annual rate of 2.7 percent of the past decade to 2.1 percent per year between 1999/2001 and 2010 and to 1.6 percent per year between 2010 and 2015. World capture production is projected to stagnate, while world aquaculture production is projected to increase substantially, albeit at a slower rate than in the past.*

*Out of the expected increase of 43 million tonnes in global fish production from 1999/2001 to 2015, 73 percent would come from aquaculture, which is projected to account for 39 percent of global fish production in 2015 (up from 27.5 percent in 1999/2001).*

As a consequence of the expected increase in aquaculture, FAO predicts that:

*“Aquaculture producers worldwide will have to adjust to an increasing number of standards. These will have two principal aims: to ensure that products are good for the health of the consumer and to minimize the environmental impacts of the production technologies used. The rules, or guidelines, will be harmonized in order to facilitate international trade. In return, the aquaculture sector will obtain stronger legal recognition.”*

#### **Drafting Instructions**

Provide a list of relevant quantitative indicators. The intent of these indicators is to:

- understand trends in the industry sector, products, materials, disciplines or practices addressed by the scope of the ISO committee (such trends may be only indirectly influenced by the ISO committee's International Standards, and are usually influenced by a variety of other factors);
- provide quantitative information that directly demonstrates the possible use and acceptance of the ISO committee's International Standards by the effected business community.

ISO/TCs with scopes related to specific industry sectors, products or materials may wish to consider indicators such as:

- Total international trade in the industry sector/products/materials (in US\$) over the last 3 years;
- Imports and exports in the industry sector/products/materials (in US\$) by major geographical regions and/or by countries over the last 3 years;
- Total international trade in new industry sector/product/material growth areas (in US\$) over the past three years;
- Estimated number of companies (world-wide) operating in the industry sector or producing the products/materials over the past three years;
- Estimated employment (world-wide) in the industry sector over the last 3 years;

- Estimated percentage of products in the marketplace self-declared or certified to the ISO committee's International Standards over the past 3 years;
- Real examples of increased income and/or cost savings achieved through implementation of the ISO committee's International Standards;
- Estimated number of organizations (world-wide) requiring compliance with the ISO committee's International Standards by suppliers, contractors and other service providers;
- Estimated number of cases of governmental adoption of the ISO committee's International Standards into legislation, regulations or procurement requirements;
- Total number of the ISO committee's International Standards cited as normative references in International Standards of other ISO committees;
- Total number of copies of the ISO committee's International Standards sold per year;
- Total number of national adoptions of the ISO committee's International Standards.

ISO/TCs with scopes related to specific disciplines or practices (for example, units of measure, technical drawings, terminology, banking, statistics, biological evaluation, sterilization, clinical laboratory practices, management systems standards, etc.) may wish to consider indicators such as:

- Estimated number of organizations (world-wide) implementing or certified to the ISO committee's International Standards over the past 3 years;
- Estimated employment (world-wide) related to the disciplines/practices addressed by the scope of the ISO committee over the past 3 years;
- Real examples of increased income and/or cost savings achieved through implementation of the ISO committee's International Standards;
- Estimated number of organizations (world-wide) requiring compliance with the ISO committee's International Standards by suppliers, contractors and other service providers;

- Estimated number of cases of governmental adoption of the ISO committee's International Standards into legislation, regulations or procurement requirements;
- Total number of the ISO committee's International Standards cited as normative references in International Standards of other ISO committees;
- Total number of copies of the ISO committee's International Standards sold per year;
- Total number of national adoptions of the ISO committee's International Standards.

### **3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC**

#### **3.1. International trade**

FAO describes in its SOFIA 2006 report, the impact of market-based standards and labels on international fish trade. The increased development of market standards may have negative impacts on international trade. This applies to

- the possibilities for developing countries to gain market access
- the risk of anti-competitive behaviour of powerful stakeholders
- the boundary between public regulations and private market standards.

It is expected that international harmonisation will aid in addressing these negative impacts. FAO suggests further development of standards under the auspices of WHO, CAC, FAO and ISO and points out that this will benefit developing countries and small enterprises.

International standards for terminology and definitions used in aquaculture and fisheries will greatly reduce the risk for misunderstandings between parts in international trades.

### **3.2. Environment**

Today, escapees from aquaculture farms constitute a potential biological threat against the environment. Escapees can both be alien species and/or genetically modified races (through selective breeding or bio-manipulation). Current experiences show that full control with aqua cultured species is so difficult that species allowed for aquaculture should be regarded as feral species in natural waters. Possible threats from escaped organisms include the establishment of alien and possibly invasive species, dissemination of diseases or infectious organisms, and genetic pollution. Genetic pollution means introduction of new genotypes or loss/reduction of wild genotypes through cross-breeding between genetically modified escapees (through selective breeding or bio-manipulation) and wild specimens.

A major cause for escape from floating aquaculture installations is technical failure, often induced by unfavourable weather conditions, boat traffic or collision with other floating objects. International standards for aquaculture installations including requirements for design, dimensioning, production and installation will reduce the risk for such incidents.

There are also needs for detecting small scale escapes which typically happens at occasions when farmed organisms are handled such as transportation, vaccination, sorting, harvesting etc. Current biomass monitoring systems are not designed for an accurate control of the numbers of individuals inside farming units (ponds, net pens, cages). It is therefore impossible to register the escape of single or individuals. Standards for stock monitoring will ensure harmonization of methods used today and improve the possibilities for precise stock monitoring.

There are potential conflicts of interest between aqua culturists and other users of land and/or water resources. A precise characterization of potential sites for aquaculture will elucidate potential conflicts and determine whether a planned site is suitability for aquaculture. Such characterisation should include prevailing currents, waves and winds, the risk of ice covering, sea bottom topography and substrate.

At established farms, a standardised and proper environmental monitoring will prevent overloading of sites and accumulation of organic material in the form of fertilizers, waste feed pellets and excrements. This can else severely reduce the water quality causing stress, poor growth and disease in farmed organisms, and may also have unacceptable environmental impact on the surroundings.

Aquaculture plants have the potential for producing considerable amounts of waste. International standards for handling and disposal of waste, e.g used/scraped equipment/components, dead fish, guts and trimmings from harvesting plants etc. will prevent unwanted and potentially hazardous build-up of such waste.

Bycatch is a considerable problem in commercial fisheries. The establishment of international standards describing the installation and use of equipment intended to reduce bycatch would be a considerable achievement.

### **3.3. Technical/economical**

Over the last years, aquaculture in developed countries has shifted from being dominated by small and medium sized family business to being highly industrialised with international owners. Modern industrialised aquaculture farms for fish experience total losses from stocking to harvesting at approximately 20%, even if there are no specific negative incidents. This shows that there are considerable rooms for improvements. This can be achieved by establishing standards for efficient operation of aquaculture farms and standards for monitoring the production e.g. methods for quantifying biomass, number of individuals, average weight, distribution of weight, batch origin, daily weight gain/growth, loss, mortality and escaping.

Standards in this field will serve as benchmarking tools enabling technical and economical production improvements.

**Drafting Instructions**

Provide a list of specific benefits, in quantitative terms where possible, that have been realised or are expected from the work of this ISO/TC. This list could include descriptions of how the ISO committee's standards have:

- Responded to or are expected to respond to recent changes and major innovations in the field addressed by the scope of the ISO committee;
- Led to or are expected to support cost savings through implementation of them;
- Removed or are expected to remove technical barriers to trade and open markets in various regions of the world,
- Responded to or are expected to address relevant social, safety, health or environmental concerns;
- Harmonised or are expected to harmonise national and regional standards;
- Support or are expected to support the implementation of other International Standards;
- Are cited or are expected to be cited as normative references in other International Standards.

**4. REPRESENTATION AND PARTICIPATION IN THE ISO/TC.**

**4.1. Members of ISO/TC 234**

Chair: appointed by Standards Norway  
 Secretariat: Norway

P members: Canada, Fiji, France, Iceland, India, Malaysia, South Africa, Thailand, United Kingdom, USA, Viet Nam

O members: Argentina, Brazil, Denmark, Finland, Germany, Israel, Italy, Japan, Malta, Netherlands, Poland, Spain, Sweden, Switzerland

**4.2. Balance of participation**

Developing countries and countries with economies in transition are underrepresented in the committee.

**4.3. Regional balance of participation**

South America and Oceania are not represented in the committee.

**4.4. Lack of participation**

Table 1 lists selected countries not present in the ISO/TC. Numbers refer to their position on the list of worlds leading fisheries and/or aquaculture countries (numbers found in reports from FAO: SOFIA 2004, 2006)

Country	Capture fisheries Number on top ten list	Aquaculture production. Number on top ten list
Bangladesh		5
Chile	4	
China	1	1
Indonesia	5	3
Peru	2	
Russia	8	
Japan	6	

Apart from showing the lack of participation by specific countries the table also illustrates an imbalance between aquaculture countries and countries mainly active in capture fisheries. Several important countries in capture fisheries are not represented in the committee.

#### 4.5. Liaison organization

None at present

#### 4.6. Lack of participation – important stakeholders

#### 4.7. Efforts to improve participation

##### Drafting Instructions

Provide text that addresses the following issues:

- The number of ISO member bodies that are P and O members of the ISO committee;
- The balance of participation among developed countries, developing countries and countries with economies in transition, and the possible reasons for any imbalance;
- The balance of participation based on regions of the world, and the possible reasons for any imbalance;
- The lack of participation by specific countries or regions known to have significant business, trade or experience in the field addressed by the scope of the ISO committee, and the possible reasons for this lack of participation;
- The types of international organizations in liaison with the ISO committee;
- Specific ISO member bodies, international organizations or regions of the world that the ISO committee would like to contribute to its work.
- Any identified lack of participation or representation of the concerns of significant companies or other stakeholders via ISO member bodies, and the possible reasons for this lack of participation;
- Any efforts to improve representation and participation in the ISO committee, including actions to encourage participating ISO member bodies to better incorporate the concerns of specific stakeholders in their positions and delegations.

## 5. OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT.

### 5.1. Defined objectives of the ISO/TC

ISO/TC 234 has a primary purpose to design standards within its agreed scope that are in accordance with the ISO directives and the ISO/TMB Global relevance. The standards should be market driven.

ISO/TC 234 should

- ensure that ISO/TC 234 is aware of relevant international policy developments and trends within its scope,
- ensure cooperation with other standardisation groups dealing with the fisheries and aquaculture industries of products of these,
- ensure that as many as possible of relevant stakeholders are aware of and participates in the work of the technical committee,
- ensure that the work is in line with ISO/TMB Global Relevance
- ensure that the work is conducted according to the ISO directives

Suggested areas of standardisation can be:

- technical specifications for equipment used in aquaculture in order to reduce environmental impacts and increase profitability, e.g:
  1. Prevent fish from escaping
  2. Reduce genetic pollution

3. Prevent dissemination of diseases

- Technical specifications for equipment used in aquaculture in order to ensure safety for workers (excluded: personal protective equipment, PPE)
- Operation of equipment used in aquaculture in order to reduce environmental impacts and increase profitability
  1. Avoid excess feeding
  2. Improve inspections and maintenance of equipment
  3. Implement efficient routines for surveillance of aquaculture
- Making the equipment used in aquaculture fit for the biological circumstances and conditions, e.g:
  1. Prevent fish from being stressed, injured or killed as a result of physical contact with the equipment,
  2. Prevent intruding biological organisms, e.g. predators, to get into a marine fish farm,
  3. Prevent intruding organisms from being injured or killed by equipment used in aquaculture,
  4. Prevent fouling of equipment used in aquaculture,
- Maintaining appropriate physical, chemical and biological conditions for the breeding fish, e.g appropriate current, oxygen and hydrogen sulphide level as well as a low level of parasites
- Characterization of marine sites for aquaculture, among other things current, waves, wind, risk of ice covering, sea bottom topography and substrate
- Environmental monitoring of fish farms, e.g
  1. Monitoring of sediments as a result of aquaculture, with regard to thickness, chemical conditions and impacts on biological systems,
  2. Monitoring of biological (and chemical/physical) impacts within the recipient
- Establishment of basic parameters for monitoring of and traceability and efficient operation within aquaculture with accompanying reporting, e.g. measure and method for quantifying biomass, number of individuals, average weight, distribution of weight, batch origin, daily weight gain/growth, loss, mortality and escaping
- Establishing methods, formats and content matter and form for traceability, e.g. connected to equipment and components, environmental data, catching data, production and processing data
- Specifying parameters/information for the characterization of captured fish, e.g time and place, species, size, accidental capture, equipment, vessel etc.
- Specifying physical parameters and methods for fish feed, e.g. breakage, solubility, rate of sinking in (marine) water (excluded: chemical content/composition, ISO/TC 34)
- Monitoring of (marine) resources, connected to captured fish, e.g. monitoring of (marine) stocks, damages to certain biotopes/habitats, effects on certain levels/parts in the food chain etc
- Handling and disposal of waste, e.g used/scraped equipment/components, dead fish, guts and trimmings from harvesting plants etc.
- Biological/chemical analysis outside the scope of ISO/TC 34 and Codex Alimentarius
- Terms and definitions

#### **Drafting Instructions**

Provide text describing the objectives of the ISO committee. In developing these objectives it is helpful to keep in mind the following key criteria, otherwise known as "SMART targets": Try to make your objectives Specific, Measurable, Achievable, Results-oriented, and Time-bound.

Example of a possible objective:

The TC will elaborate a package of International Standards in the XXXXX sector including aspects 1, 2 and 3, but excluding aspects A, B and C (as aspects A, B, and C are not sufficiently developed yet for standardization purposes), which will be available by 2003-05-31. International Standards concerning aspects A, B and C will be developed once the state of the art is better defined.

#### **5.2. Identified strategies to achieve the ISO/TC's defined objectives.**

Standards developed by ISO/TC 234 should be market driven. Any prioritisation of projects cannot be given until the TC has established (after the first plenary meeting).

National standards which have proved their existence through use and demand should be used as basis for international standards within the same field.

The ISO committee will connect with nations, international organisations, companies and experts in orders to best identify standardisation projects and to accomplish them.

The structure of the committee and its programme of work will be discussed at the first plenary meeting. The main body of work by technical experts will be conducted as necessary in working groups between the TC-meetings.

Ad hoc groups will be established at TC meetings to take care of specific tasks identified by the TC as important to solve for the progress within the working groups. Such tasks can be

- Finalizing the present business plan
- Establishing liaisons with important stakeholders

#### **Drafting Instructions**

Provide text that addresses how the ISO committee has used or intends to use specific strategies to achieve its objectives. Such strategies may include:

- Prioritisation of projects (for example, developing terminology standards first, then test methods, etc.);
- Use of available national or regional standards (such as CEN standards via the Vienna Agreement) as source documents on which to base International Standards;
- The way in which the ISO committee work will be conducted (for example, correspondence, physical meetings, teleconferences, e-mail, Internet, need for translation in meetings, etc.);
- Necessary co-operation and liaisons with other ISO ISO committees;
- Use of the various ISO deliverables (International Standards, Technical Specifications, Publicly Available Specifications, Technical Reports, Industry Technical Agreements);
- Specific needs for pre/co-normative research to support the ISO committee's work program should be indicated so that an analysis can be made to detect any timing or funding difficulties.
- The specific structure of the ISO committee (TC, SCs, WGs) and why the ISO committee chose this particular structure should be explained.

#### **6. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME.**

#### **Drafting Instructions**

Describe any factors that could negatively impact the completion or business community acceptance and use of the ISO committee's standards. Examples of such factors could include:

- ISO committee chairperson, secretary, convenor or project leader/editor positions are vacant;
- Specific expertise for a project is lacking, which could affect the project's development as well as the credibility of the resulting standard in the business community;
- Validation of a test method is dependent upon funding being available to undertake the necessary pre/co-normative research;
- Legal/regulatory issues such as uncertainties regarding a possible EC Directive, which in turn may necessitate modifications of the content and target dates for projects in the work program.

## 7. STRUCTURE, SCOPES AND WORK PROGRAMME OF THE ISO/TC.

This section gives an overview of ISO/TC's structure, scopes of the ISO/TCs and any existing subcommittees and information on existing and planned standardization projects, including resources needed for their completion. The aim of this section is to demonstrate the adequacy of the proposed programme of work in relation to the business environment and/or stakeholders' needs. Only structures directly responsible for standardization projects are listed. Therefore, no co-ordination or advisory groups are included.

### Drafting Instructions

In the box below:

- Spell out the full name and provide the acronym for the ISO member body holding the ISO committee secretariat.
- Provide the names of the chairperson and secretary of the ISO committee.
- Indicate the combined amount of time allocated per year by the chairperson and the secretary to support the work of the ISO committee as a percentage of a full-time person or persons.
- Indicate any actions that the ISO committee may need to take regarding either its structure or work program to better respond to the needs and trends of the business environment described above.

### ISO/TC 234 (Fisheries and Aquaculture)

**Responsible ISO Member: Standards Norway**

**Chairperson: Open**

**Secretary: Mr. Erik Sterud**

**Chairperson & Secretary Time Allocation Per Year = 50% FTE**

**Scope: Standardization in the field of fisheries and aquaculture, including but not limited to terminology, technical specifications for equipment and for their operation, characterization of aquaculture sites and maintenance of appropriate physical, chemical and biological conditions, environmental monitoring, data reporting, traceability and waste disposal**

**Excluded: methods of analysis of food products and traceability covered by ISO/TC 34  
Personal protective clothing covered by ISO/TC 94  
Environmental monitoring covered by ISO/TC 207**

**Actions for alignment with the business environment:**

### Drafting Instructions

For each published and active work item, please create a matrix as presented below and complete it as follows:

**ISO/TC 234 Business Plan**

**Date: 08/06/2007**

**Version: Draft #1**

**Page: 14**

Provide the designation of the published or active work item. For a published standard, enter "ISO XXXXX:199X". For an active work item, enter the ISO-assigned number for the project, followed by the words "Active Work Item", followed by an indication of the current stage of the project (for example, WD, CD, DIS or FDIS).

Provide the complete title of the document.

For approved and published ISO standards, indicate the year in which the document was published. For active work items, provide the target dates for issuance of the DIS, issuance of the FDIS, and final publication of the document. Please indicate the quarter of the year for each target date if more specific information is unavailable.

In the "Comments" box provide the following types of information:

- The priority assigned to the project, if your ISO committee prioritises its projects, and also provide as an additional annex a description of the process by which the ISO committee determines priorities;
- Any relationship the project has to CEN (for example, ISO/CEN parallel processing, VA - ISO lead, VA - CEN lead);
- Whether the document contains normative references or if it is listed as a normative reference in another ISO document;
- Explanations for any missed target dates;
- The combined amount of time allocated per year by a working group convenor and project leader/editor (if one is assigned) to support the development of this project as a percentage of a full-time person or persons;
- The amount of time allocated per year to provide for translation of the project as a percentage of a full-time person or persons, or describe any arrangements made to provide for translation;
- The scope statement of the project (this information is optional); and
- Any other special information that the ISO committee may wish to share with stakeholders regarding the project.

Provide text relating each document to the business environment described above.

Indicate any actions that the ISO committee may need to take regarding this specific project to better respond to the needs and trends of the business environment described above.

For ISO/TCs with larger work programs (that is, more than 20 projects), it may be more practical to provide an "executive" summary and provide the actual listing of individual projects in an annex. The executive summary shall give an overview of the work program, highlighting aspects or projects that are most relevant in view of the business environment, objectives and strategies described above paragraphs. If this approach is applied, at minimum the designation, title, and target dates must be provided for each document listed in the annex.

**Projects directly under this technical committee:**

None at present

<b>Designation</b>	ISO XXXXX:1999
<b>Title</b>	
<b>Target dates</b>	ISO Stage 60 (Publication): 1998
<b>Comments</b>	
<b>Relationship of this project to the business environment</b>	
<b>Actions for alignment with the business environment</b>	

<b>Designation</b>	XXXXX - Active Work Item - WD, CD, DIS, or FDIS
<b>Title</b>	
<b>Target dates</b>	ISO Stage 40 (Issuance of DIS): ISO Stage 50 (Issuance of FDIS): ISO Stage 60 (Publication):
<b>Comments</b>	
<b>Relationship of this project to the business environment</b>	
<b>Actions for alignment with the business environment</b>	

**Drafting Instructions**

For subcommittees, complete the box below following the same instructions provided above for parent ISO/TCs.

ISO/TC XXX/SC XX (Title)

**Responsible ISO Member:**

**Chairperson:**

**Secretary:**

**Chairperson & Secretary Time Allocation Per Year = XX% FTE**

**Scope:**

**Actions for alignment with the business environment:**

**Drafting Instructions**

For projects assigned to subcommittees, please follow the same instructions provided above for projects under parent ISO/TCs.

**Projects directly under this subcommittee:**

<b>Designation</b>	ISO XXXXX:1999
<b>Title</b>	
<b>Target dates</b>	ISO Stage 60 (Publication): 1998
<b>Comments</b>	
<b>Relationship of this project to the business environment</b>	
<b>Actions for alignment with the business environment</b>	

<b>Designation</b>	XXXXX - Active Work Item - WD, CD, DIS, or FDIS
<b>Title</b>	
<b>Target dates</b>	ISO Stage 40 (Issuance of DIS): ISO Stage 50 (Issuance of FDIS): ISO Stage 60 (Publication):
<b>Comments</b>	
<b>Relationship of this project to the business environment</b>	
<b>Actions for alignment with the business environment</b>	

**Drafting Instructions**

Please delete all shaded "Drafting Instructions" boxes throughout this document when you have completed developing the BP.

**8. ANNEX - GLOSSARY OF TERMS AND ABBREVIATIONS USED IN ISO/TC BUSINESS PLANS.**

NB: This glossary gives the full name and status of terms used, in abbreviated form or in full, in the above "Business Plan for ISO/TCs". The glossary also gives the source of the information provided. Glossary intends to help with the understanding of the terms used. Whenever any of these terms are used by contributors to this Business Plan, they are requested to use them coherently as foreseen in the glossary.

<b>Term</b>	<b>Abbrev.</b>	<b>Definition</b>
Standardization		Activity of establishing, with regard to actual or potential problems, provisions for common and repeated use, aimed at the achievement of the optimum degree of order in a given context.  NOTES 1 In particular, the activity consists of the processes of formulating, issuing and implementing standards. 2 Important benefits of standardization are improvement of the suitability of products, processes and services for their intended purposes, prevention of barriers to trade and facilitation of technological co-operation.
Standard		Document, established by consensus and approved by a

Term	Abbrev.	Definition
		<p>recognised body, that provides, for common and repeated use, rules guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.</p> <p>NOTE Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.</p>
package of standards		A group, as small as possible, of inter-related standards in the scope of one or more ISO/TCs which are usually developed simultaneously to one another as parts of one standard, or standards that must be developed simultaneously.
Consensus		<p>General agreement, characterised by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments.</p> <p>NOTE Consensus need not imply unanimity.</p>
ISO/TC International Standardization Deliverables:		
International Standard	IS	A normative document, developed according to consensus procedures, which has been approved by the ISO membership and P-members of the responsible committee in accordance with Part 1 of the ISO/IEC Directives as a draft International Standard and/or as a final draft International Standard and which has been published by the ISO Central Secretariat.
ISO Technical Specification	ISO/TS	A normative document representing the technical consensus within an ISO committee, approved by 2/3 of the P-members of the ISO/TC or SC.
ISO Public Available Specification	ISO/PAS	A normative document representing the consensus within a working group, approved by a simple majority of the P-members of the TC/SC under which the working group operates.
ISO Technical Report	ISO/TR	An informative document containing information of a different form from that of normally published in a normative document.
Amendment	Amd	An amendment alters and/or adds to previously agreed technical provisions in an existing standard.
Technical Committee	ISO/TC	A technical body responsible for the programming and planning of technical work and the monitoring and execution of this technical work. The ISO/TC is also responsible for the consensus building process among its members for individual work items.
Subcommittee	SC	A technical body reporting to an ISO/TC which, within its scope which is covered by the scope of its parent ISO/TC, is responsible for the monitoring and execution of the technical work. The SC is also responsible for the approval and consensus building process among its members for individual work items.

Term	Abbrev.	Definition
ISO/TC Working group And ISO/SC Working group	WG	A technical body, appointed by the ISO/TC or ISO/SC and composed of experts, responsible for the drafting of standards, in accordance to the ISO rules and the clear specifications set by the ISO/TC or ISO/SC.
Editing Committee		A committee set up by a technical body (ISO/TC or SC) at the beginning of its work, which represents the three official languages of ISO. It is responsible for the correct formulation and presentation of the standard(s) prepared by the technical body (ISO/TC or SC) and the equivalence of the texts in the three official languages.
Participating member	P-member	A member body participating actively in the work of a TC or SC, with an obligation to vote on all questions formally submitted for voting within the TC or SC on enquiry drafts and final draft International Standards and, wherever possible, to participate in meetings.
Work Item number	WI	The identification number given to a standards project in a standards work programme. It is intended that the standards project leads to the issue of a new, amended or revised standard, an ISO/PAS, ISO/TS or other ISO product.
Vienna Agreement	VA	Agreement on technical co-operation between ISO and CEN.
VA ISO lead (5.1)		Technical co-operation between ISO and CEN under the VA, where the work is done by the ISO/TC, where a formal notification of interest was received by ISO from CEN, and where parallel synchronised procedures are applied in ISO and CEN for the approval processes.
VA CEN lead (5.2)		Technical co-operation between ISO and CEN under the VA, where the work is done by the CEN/TC or SC, where a formal notification of interest was received by CEN from ISO, and where parallel synchronised procedures are applied in ISO and CEN for the approval processes.
ISO stakeholders		Individuals, institutions, organizations or enterprises who have a direct or indirect interest in the ISO System, its activities and products and who have a specific interest in the effective programming of ISO work items and their adequate resourcing.