

# Draft Terms of Reference (ToR)

## for the development of indicators on Fish Health and Welfare

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### Document history

Version	Effective date	Description of amendment	Affected section/page
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### Acronyms

- **ASC** – Aquaculture Stewardship Council
- **CABs** – Conformity Assessment Bodies
- **FCR** - Feed Conversion Ratio
- **IDH** – The Dutch Sustainable Trade Initiative
- **OIE** - *Office International des Epizooties* (World Organisation for Animal Health)
- **RAS** - Recirculating Aquaculture System
- **SB** - ASC's Supervisory Board
- **TAG** – Technical Advisory Group
- **TBT** – Technical Barriers to Trade
- **ToR** – Terms of Reference
- **TWG** – Technical Working Group
- **WWF** - World Wildlife Fund

## 1. Introduction

The Aquaculture Stewardship Council (ASC) was founded in 2010 by the World Wildlife Fund (WWF) and the Dutch Sustainable Trade Initiative (IDH) to host the standards developed by the WWF Aquaculture Dialogues. The ASC farm standards became operational in 2012 after a system of accreditation and certification was established. Since then the ASC has made great strides with steady growth in the number of certified farms and certified products available around the world. There are currently over one thousand ASC certified farms globally and more than 300 farms under assessment.

The ASC has established a reputation within the seafood sector and beyond as a credible certification programme for farmed seafood. The ASC farm standards are performance-based, scientifically robust and were developed through a transparent multi-stakeholder standard-setting process. ASC currently manages eleven standards covering different species groups. These include standards for farmed salmon, trout, tilapia, pangasius, shrimp, bivalve shellfish, abalone, seriola and cobia, seabass and seabream, tropical marine finfish and flatfish.

### ASC vision and mission

**The vision** of the Aquaculture Stewardship Council (ASC) is a world where aquaculture plays a major role in supplying food and social benefits for mankind whilst minimising or eliminating negative impacts on the environment.

**The mission** of ASC is to transform aquaculture towards environmental sustainability and social responsibility using efficient market mechanisms that create value across the chain.

### About this ToR document

This document gives an overview of and guidance for both ASC and interested parties to develop indicators on fish health & welfare. It explains (i) *why* the indicators are needed, (ii) *the objectives* of ASC in developing these indicators, (iii) to stakeholder groups *how they can engage* in the standard development process, (iv) *detailed process steps* as well as (v) *presumed risks of implementing the developed indicators*, measures to mitigate and/or avoid those risks.

This standard developing process adheres to the ASC standard-setting protocol, which means amongst others that the ToR, the first and second draft of the proposed indicators will be put up for public consultation. The exact steps are described in the protocol which can be found on the ASC website ([https://www.asc-aqua.org/wp-content/uploads/2017/07/ASC-Standard-Setting-Procedure\\_v.1.0\\_including-forms.pdf](https://www.asc-aqua.org/wp-content/uploads/2017/07/ASC-Standard-Setting-Procedure_v.1.0_including-forms.pdf)).

## 2. Scope

The scope for the development of fish health and welfare indicators will be across all species currently in the portfolio of ASC. It is intended to have general requirements that apply to all species/culture systems, and where available, measurable performance levels for species for which adequate scientific information is available.

ASC is currently running a process (i.e. ASC Alignment Project) to align the content of the existing species-specific standards into a single ASC Farm Standard. This is done with the aim to improve implementation efficiency, simplify accreditation and auditor training, promote further programme uptake and to facilitate the expansion of the farm standards to cover new species and production systems. It is foreseen that the indicators developed within the remit of this ToR document will be embedded within the aligned Farm Standard.

Several fish health indicators already exist within the current ASC standards. These will be subject to the outlined Alignment Project (as per above). In addition to the already present fish health indicators, several ASC standards partly address 'fish welfare'. The current coverage of topics, as well as the approach chosen, for these welfare indicators is subject to revision. Therefore, this ToR will primarily focus on improving the current fish welfare indicators.

### 3. Justification for developing fish health and welfare indicators

As aquaculture continues to be an increasingly important source of global protein supply, its impacts are considered and addressed through legislation and certification programmes in varying degrees. However, some issues remain underexposed in global legislation, while their impacts are being addressed in scientific research and even industry initiatives already.

Animal welfare has been widely investigated in the livestock sector, where it is also one of the main consumer concerns for animal protein products in Western markets. Therefore, certification schemes sometimes respond to these concerns by differentiating animal welfare-friendly products, resulting in various labels and certification schemes aimed at animal welfare.

Aquaculture, or fish farming, is a sector that produces a larger number of animals than all livestock systems combined. Welfare issues, of which mainly health related issues, are already part of legislation or certification schemes to a limited extent. However, over the last decade the amount of scientific literature on the topic of fish welfare has increased considerably giving the sector the opportunity to apply new knowledge under practical conditions.

Up until now, most ASC indicators within the standards fell under either environmental or social principles. Some fish health and welfare issues have been addressed in previous versions of ASC standards, but from an almost exclusively environmental perspective. Obviously, health and welfare comprise more than just an environmental impact.

Although animal welfare science is driven by ethical concerns; it is a multidimensional concept which requires multidisciplinary expertise from fields including ethics, law, ethology, physiology, immunology, aquaculture research, veterinary medicine and many others<sup>1</sup>.

Animal welfare is more and more considered as a key factor of responsible production because impacts on animal health and welfare determine the social acceptability of an animal production system and the quality of products coming from these systems are judged on this aspect<sup>2</sup>. This gives producers the opportunity to differentiate products with higher welfare, resulting in improved market access and reputation, or a price premium for niche markets<sup>3</sup>.

Improved animal welfare does not only affect product quality through differentiation. Food safety issues are closely linked to animal welfare issues as well, as stress factors and welfare conditions influence disease susceptibility and in its turn consumer risk to food-borne infections<sup>4</sup>. In case of aquaculture, where the animals are in direct contact with their environment, the health and welfare status of the animals has a direct potential effect on that environment, except for production in recirculating aquaculture systems (RAS). Diseases can be a risk to wild stocks and medicine residues may have harmful effects to the environment as well. This requires strict management practices and improved health and welfare status can support minimising these impacts.

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<sup>1</sup> Huntingford, F.A., Kadri, S. 2008. Welfare and fish, In Branson, E.J (Ed.). *Fish Welfare* (pp. 7-18). Oxford: Blackwell Publishing Ltd.

<sup>2</sup> Broom, D.M. 2010. Animal welfare: an aspect of care, sustainability and food quality required by the public. *Animal Welfare in Education and Research* 37 (1): 83-88.

<sup>3</sup> Verbeke, W. 2009. Stakeholder, citizen and consumer interest in farm animal welfare. *Animal Welfare* 18: 325-333.

<sup>4</sup> European Food Safety Authority 2019, <https://www.efsa.europa.eu/en/topics/topic/animal-welfare>.

Another benefit is the potential for improved productivity when aspects of fish welfare are optimised. For instance, feed conversion ratio (FCR) was lowered in Atlantic salmon smolts with improved welfare status<sup>5</sup>, with as a result leading to a reduced need for feed, the input with one of the highest costs and environmental impacts. There are several examples of where animal welfare can benefit production efficiency which can be a motivating factor for producers to focus on these aspects.

Many of the benefits of improved animal welfare status are indirect, but a main direct result will obviously be an improved quality of life for the many individuals that are involved in aquaculture practices. Species that are not being produced for food, but for associated 'supporting' roles such as cleaner fish should be considered in this regard as well.

#### 4. Objectives

The main objective of this work is to expand the current indicators on fish welfare in the existing ASC standards to a more complete and comprehensive set of indicators, implementing the vast amount of research that recently has been carried out on this topic.

Within this objective ASC seeks to select measures that meet the aims of ISEAL and ASC standard setting codes, as well as taking into considerations the complexities that come with the topic of animal welfare. All set indicators should either directly or indirectly contribute to improving fish welfare in aquaculture and represent performance-based best practices in this field.

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<sup>5</sup> Noble, C., Kankainen, M., Setälä, J., Berrill, I.K., Ruohonen, K., Damsgård, B., and Toften, H. 2012. The bio-economic costs and benefits of improving productivity and fish welfare in aquaculture: utilizing CO<sub>2</sub> stripping technology in Norwegian Atlantic salmon smolt production. *Aquaculture Economics & Management* 16: 414–428.

## 5. Risk assessment

The following factors should be considered as they could result in unwanted side-effects in the process of creating fish health and welfare indicators.

### ***Effects on environmental impact***

It is known that some interventions seemingly beneficial in terms of animal welfare can have adverse effects in terms of environmental impact. The best-known example of this are stocking densities, as lowered stocking densities tend to lead to less efficient production, requiring more recourses and therefore increasing environmental impact.

It is crucial to consider this possible side-effect for every health and welfare being considered, as minimising environmental impact is one of the core objectives of ASC certification.

### ***Producer effects***

Producers will potentially experience a range of direct consequences when new indicators are implemented within the standards.

Investments – Indicators on animal welfare could require certain investments, having direct impact on production costs.

Auditing costs – Any addition to the existing standards will presumably lead to increased auditing time on farm, and therefore may affect the cost of the auditing process and production costs.

Producer training – Emphasising a novel topic within the standards might require some on-site training to enhance understanding of the processes and the motivations behind it.

Workload – Checking health and welfare status on a regular basis may increase the on-site workload.

All producer-related effects may thus also have a potential effect on production costs. These effects should be carefully weighed, and it should be investigated if there is any potential on return of investment for these increased costs.

### ***Exclusion of producers/system types***

Some production systems are more technically advanced and usually have higher profit margins than less technically advanced production systems. It is not the aim of the implementation of health and welfare indicators to exclude certain production systems so these indicators should set an ambitious, yet achievable, baseline for producers to achieve. This objective will be carefully considered when determining the assessment methodology for health and welfare.

### ***Actual animal welfare impacts***

Assessment of animal welfare typically is done through indirect measurements, linked to various research fields. Indicators on animal health and welfare tend to be interrelated and have very little meaning in isolation. For example, feed intake, stress levels, health status, and activity are highly linked to each other and often used in welfare assessment. It is very

important to take this interrelatedness of indicators into account within the methodology, in order to be able to make an overall judgement on animal welfare status. Also, health and welfare indicators must cover the lifespan of the animals on farm. Indicators checked by auditors in person are however no more than a snapshot of the conditions during this lifespan. Indicator selection and possible data collection should aim at indicators being representative of production processes.

### ***Consumer awareness and perception***

Consumers may have a different perception of fish welfare and related key factors than actual key factors that are supported by scientific research. These potential conflicting perceptions cause a challenge for communication on choices made on indicators and a clear and proactive communication strategy may reduce this risk.

### ***Processes outside of ASC scope***

Some key issues in fish welfare lie currently outside the ASC scope of on-farm practices, but are a main concern for consumers, retailers and NGO's as they have large effects on welfare. Examples of this are slaughtering methods, which often take place at the processing stage, and mortality levels in hatcheries.

### ***Internal processes***

There are several workflows within ASC which have a direct link to the development of fish health and welfare indicators and whose timelines are parallel to each other. These projects currently include the review of indicator 3.1.7 of the Salmon standard, the work on antibiotics that is part of the shrimp standard review, and the alignment process.

Overlap of issues being addressed should be avoided, as well as conflicting outcomes on topics that are linked to each other. This requires pro-active collaboration between projects, clear boundaries between issues and 'in which' working group they are addressed.

## 6. Stakeholder mapping and engagement

Table 1 presents an overview of identified stakeholder groups and how engagement with each group is expected.

**Table 1: Stakeholders mapping and engagement strategies**

Main stakeholder group	Relevance (Why should they participate in the process)	Interest in the process and standards	Outreach strategies for participation in revision	Communication means	Participation goals
Aquaculture farms in the programme	Directly affected. Requirements must be accessible and achievable to be effective.	Attainable standards that create added value when farms get certified.	- direct contact with farms - where necessary, translation of necessary documents (e.g. this ToR, draft standards, synopsis, final standards) - via Conformity assessment bodies (CABs) - local/regional workshops, where and when necessary - participation in pilot	- Website (if possible) - Webinars (if possible) - In person to the extent possible (e.g. workshops) - Through trade associations	Farms in all active countries and regions.
Industry (retail, processing, hatcheries, trading)	Indirectly affected. Credible standards that do not challenge their continued and consistent supply, and yet help strengthen their reputation.	Attainability of standards that do not create high costs for certified products. Facing end consumers, retail likes to make sure relevant issues will be covered in standards.	Direct contact with these companies (e.g. through ASC Outreach colleagues) - Face-to-face meetings	-website - webinars - In person to the extent possible (e.g. workshops) - Trade press	Companies in all active countries and regions. Companies trading related species. Retailers addressing welfare through own initiatives.
Non Governmental Organisations (NGOs)	Experience/knowledge of and insight in issues to be addressed.	Key health and welfare concerns are addressed.	-Direct contact with these organisations - Face-to-face meetings at or around conferences/trade fairs	-website - webinars - In person to the extent possible (e.g. workshops)	
Governments/ intergovernmental organisations	Alignment with national and international legislation or requirements.	No impose of technical barriers to trade (TBT) in standards. International guidelines are met.	- Direct contact with government officials (or through consultants)	-website - webinars - In person to the extent needed (e.g. workshops)	Representatives of governments where related species are widely farmed. OIE input.
Scientists/academics	Specific knowledge on issues, species and approach.	Standards are science-based.	- direct contact with scientists - where necessary, organise discussions with them - Where necessary, have them	-website - webinars - In person to the extent possible (e.g. workshops)	Scientist/researchers on related species, key issues and assessment methodologies.

			do specific research on identified topics -conference visits		
Conformity Assessment Bodies (CABs)	Have practical insight on implementation and audibility of indicators.	Auditability of the standards and reasonable auditing costs .	Direct contact with these organisations - Face-to-face meetings at or around conferences/trade fairs	-website - webinars - In person (e.g. workshops)	-Both ASC accredited and non-accredited CABs - CABs familiar with the related species
Veterinarians/fish health professionals	Directly affected if indicators impact their on-site tasks. As well as expertise on topic.	Practical implementation of indicators and key issues being addressed.	Direct contact with these organisations - Face-to-face meetings at or around conferences/trade fairs	- website - webinars - In person (e.g. workshops)	- Veterinarians and fish health professionals active in the aquaculture sector
Funders	Will be informed on the progress.			-website - webinars - In person (e.g. workshops)	- To fund the project - To fund the project-related pilots
Welfare and other aquaculture certification schemes	Experience and knowledge on improving welfare through certification.	Minimal overlap between standards.	- Direct contact - Workshops/ meetings	-website - webinars - In person to the extent possible (e.g. workshops) - As observers in relevant meetings.	- Representatives of GlobalG.A.P. and BAP and prominent welfare certifiers

## 7. Standard-setting process

#	Activity	Output	Timeline	By...
1	Mandate for project start	Concept ToR & project proposal approved by SB	September 2019	Project Lead
2	Development of detailed ToR	Draft ToR open for consultation	September 20 – October 20, 2019 ( <b>consultation for 1 month</b> )	Project Lead & Technical Advisory Group (TAG)
3	Finalisation ToR	ToR v1.0	November 2019	Project Lead & TAG
4	TWG Formation	TWG formed	November 2019	Project Lead & TAG
5	Development Draft 1	<ul style="list-style-type: none"> <li>○ Draft 1 health &amp; welfare indicators</li> <li>○ Background document &amp; used data</li> </ul>	September - October 2020 ( <b>consultation for 2 months</b> )	Project Lead & TAG
6	Development Draft 2	<ul style="list-style-type: none"> <li>○ Draft 2 health &amp; welfare indicators</li> <li>○ Background document &amp; used data</li> </ul>	April – June 2021 ( <b>consultation for 2 months</b> )	Project Lead & TAG
7	Presentation of final draft to TAG for endorsement	Final draft – Health & welfare indicators	November 2021 (TAG meeting)	Project Lead & TAG
8	Presentation of final draft to SB for endorsement and sign-off	Final draft – Health & welfare indicators	End 2021 (SB-meeting)	Project Lead & SB

## **8. Technical Working Group (TWG) formation**

A Technical Working Group (TWG) will be formed; it will be coordinated by the ASC Secretariat.

### **Technical Working Group responsibilities**

The TWG has the task to:

- Provide technical expertise and insight on the development of the indicators;
- Report to the Technical Advisory Group (TAG) of ASC.

### **Technical Working Group membership**

- Members of this TWG are expected to be available and willing to share relevant knowledge and expertise on related fish welfare issues, and actively participate in contributing solutions;
- Members must demonstrate affinity with the ASC's objectives;
- The membership of the TWG will reflect a balanced representation of areas of relevant expertise and background.

### **Reporting requirements**

- The Secretariat shall ensure minutes of all proceedings at meetings of the TWG are kept, including the names of those members of the TWG present at each such meeting, and all views, advice, recommendations and opinions of the TWG;
- Chatham House Rules will be applied for all public documents related to this project.

### **Decision-making procedure**

The TWG strives for consensus on their recommendations regarding proposed indicators. If TWG is unable to reach consensus, it will apply the principle of 'majority voting' and will report the different options, the number of votes for each option and a summary of each of the points of view. The TAG will advise ASC's Supervisory Board (SB) for the SB to take a final decision.

### **Expenses**

Upon request and at the explicit discretion of the Secretariat, members of the Working Group may be paid all reasonable travelling, hotel and other expenses properly incurred by them in connection with their attendance at meetings of the Working Group or otherwise in connection with the discharge of their duties.

### **Meetings**

The ASC strives to work in a cost and time efficient manner and has a strong preference to work primarily via teleconference and e-mail. If attendants come from different time zones the participants will determine meeting times in such a way that all participants can attend at convenient times. In person meetings are part of this project.

## 9. Contact information

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**‘Fish Welfare Project’ webpage:** <https://www.asc-aqua.org/what-we-do/our-standards/new-standards-and-reviews/fish-welfare-project/>