

## Comments from Dansk Akvakultur to ASC Public hearing Criterie 2.6, 2.14 and Indicator 2.5.2, 2.8.2, 2.10.4 and 2.11.3

Please pay attention to the comment from the producer's organization Dansk Akvakultur. The same text is also in the attached spread sheet.

If there are any questions or comment this don't hesitate to contact Lisbeth Jess Plesner, Dans Akvakultur (lisbeth@danskakvakultur or 45 22828702)

### content

Criterion: 2.6 Benthic Impact .....	1
Indicator 2.14.a.....	5
Indicator 2.14 b.1: .....	10
Other Indicators.....	11
Indicator 2.5.2 .....	11
Indicator 2.8.2 .....	11
Indicator 2.10.4 .....	11
Indicator 2.11.3 .....	11

## Criterion: 2.6 Benthic Impact

### Introduction

One of the goals of Danish Aquaculture companies is to bring about the certification of all their trout production in marine net pens (e.g. ASC or organic farm standard by 2030). Under the proposed changes to the ASC scheme (as a part of the new core standard), this goal cannot be reached using the ASC standard, if criteria in 2.6 for brackish waters are maintained as described in the proposal.

It is also doubtful if the existing Danish ASC certified seafarms can comply with proposed criteria, and further it is likely that the expenditure for the proposed criteria far exceeds the benefit of being ASC certified. The Danish farmers feel that the described sampling is not an applicable tool to see the effect of the UOC (unit of certification) on the surrounding environment in the brackish Danish waters. The resulting data from the monitoring of these sites will be highly dependent on the influence of annual discharge from the Baltic basin, the ambient temperatures, precipitation, and dominant wind directions, etc. Hence the proposed criteria fail to reduce the burden for the Danish seafarmers, even when compared to the current criteria in the Salmon standard. Moreover, it is unlikely to fully represent, or add to understanding, of

benthic impact by farms located in brackish eutrophicated waters such as those found in the Baltic sea and Danish Straits.

### **Situation for Danish Sea cage farmers**

The overall ecological status of Danish brackish water areas (on those criteria that have been currently classified by the Danish EPA) are generally categorized as "moderate" to "poor" status. Moreover, only a minor percentage of the seafarms are located in areas classified with "moderate ecological status". This means that the background level for benthic fauna, sulfide and redox levels etc., will often indicate "poor" or "bad" status independent of the impact of aquaculture on the area.

However, the current and expected aquaculture production is included in the Danish Water Area Management Plan (part of the implementation of the EU Water Framework Directive), which has as its main goal the achievement of good ecological status in freshwater and marine areas in Denmark. Since future aquaculture emissions are included as an integral part of the baseline emission levels in these plans, it is estimated that the objectives of good ecological condition for the Danish water areas can be achieved without any changes to production on Danish seafarms. Furthermore, it is a prerequisite in the environmental permit/approval for the aquaculture that the operation must not be an obstacle to achieving a good ecological Status at the location where the farm is situated.

### **Economy**

The production volume (gross) for individual Danish aquaculture farms is between 160 – 3600 tons fish/year. In other words, Danish seafarms are relatively small production sites compared to other countries, e.g. Norway, Chile etc. Due to the very precise methods of Chemical evaluation of benthic sediments proposed for Tier 1 and 2 which are unattainable in Denmark, it will force the Danish farms to start at Tier 3, and the intensified sampling becomes extremely expensive for small plants/companies. The costs of sampling will erode the financial incentive for ASC certification for the Danish Sea cage farmers.

### **Rationale**

The Danish farmers feel that the described sampling is not an applicable tool to see the effect of the UOC (unit of certification) on the surrounding environment in the brackish Danish waters. The resulting data from the monitoring of these sites will be highly dependent on the influence of annual discharge from the Baltic basin, the ambient temperatures, precipitation, and dominant wind directions, etc.

### **Rationale – good management practice Danish monitoring**

Due to large fluctuations in salinity and temperature together with an ecosystem characterized by large nutrient inputs from land, the Danish authorities have chosen to monitor the impact of aquaculture based on sampling of chemical parameters in the sediment, including the content of C (volatile compounds directly linked to organic enrichment), N, P and Cu. These parameters are sampled 2 times per year (spring before stocking + autumn at highest biomasse and feeding) and the objective is that there must not be a significant increase in these parameters over time that could suggest significant organic deposition.

In Denmark, there is no year-round production of trout at sea. There is generally a requirement that seafarms must be fallow for 3-4 months of the year, usually over the winter months. This is to ensure that the surrounding environment can regenerate before a new production cycle. This sampling has taken place for many years, and it has not been possible to demonstrate a significant effect from Danish aquaculture on

the underlying/surrounding sediment content of organic material, nitrogen, phosphorus and copper over time. According to these measurements, the deposition of organic matter does not occur at a rate that exceeds the area's capacity to assimilate it over time.

Therefore, the Danish sea farmers propose that the existing sampling strategy is optimal for describing the impact of sea farms on the surrounding environment. The authorities' current annual requirement for fallowing for 3-4 months is good management practice, and proves to be sufficient to keep the area's deposition rate within the rate of natural aerobic decomposition, thereby minimizing the impact on benthic animals.

### **Proposal**

We suggest: 1. That Tier 1 (and 2) of the proposed criteria should allow the use of alternative chemical analyses of benthic sediments, than REDOX and specific "on-board" Sulphide tests. In Addition, the method of showing a trend that shows that there is no organic accumulation on the seafloor should be adequate for ASC certification. If this is Acceptable, then there is no need for further sediment biota analysis.

2. In areas where classification is either lacking or at moderate to poor status, but there is a plan for improving the status to good ecological status (that includes aquaculture), and it is evaluated not to be a hindrance to achieving this status, then the farm should still be able to be considered for certification if the monitoring program is robust enough to show that the farms I not detrimental to the background levels.

<b>Criterion 2.6 Benthic Impact</b>	<b>Draft</b>	<b>Comments to specific text in the draft</b>
<b>Key considerations</b>	"The approach is designed to reduce the compliance burden on farms while enhancing a farms understanding of its benthic impact"	This is not the case for small and medium operating units such as those located in Denmark. The proposed forms of chemical analysis are not possible in Danish operations, where the economic costs are too great. // Many of the Sea farms situated in eutrophicated brackish waters in Denmark cannot at this time comply to the background minimum criteria of moderate ecological status, even though they are not implicit in the reason for this status. //The sampling will not truly represent the effect of aquaculture on the surrounding environment and therefore will not contribute to a farms knowledge and understanding of its benthic impact.
<b>Key considerations</b>	"Conversely, a farm that meets the limits in Tier 1 does not need to conduct additional analysis and by doing so, the standard rewards good farm management."	Tier 1 needs to be redesigned to include other methods of assessing chemical benthic status for this statement to hold true for seafarms located in Danish waters.
<b>Key considerations</b>	"Some international regulatory monitoring standards for benthic organic enrichment already meet or even exceed the goals of the revised ASC requirements. Flexibility is therefore provided to allow operators to submit user-defined specific benthic monitoring programs."	Alternative user defined specific benthic monitoring programs are acceptable.
<b>2.6.1</b>	2.6.1 The UoC shall monitor the benthos for organic enrichment following the monitoring programme outlined in Appendix I1 .	There should be a possibility for other methods of analysis of Chemical analysis in Tier 1 ( and 2) that can convey the status for organic enrichment . See earlier comments.
<b>2.6.2</b>	2.6.2 Indicator scope2 : marine/brackish cages and suspended marine mollusc systems The UoC shall meet the benthic status "acceptable" in the area surrounding the farm as outlined in Appendix I.	Does this mean that ASC will not accept Danish seafarms where the background ecological status referred to in the reference sites could be assessed as Poor or bad? // Also, will ASC not accept that same farm could be certified when there is a government approved plan for improvement of the area to good ecological status, where aquaculture is included?
<b>2.6.3</b>	2.6.3 The UoC shall annually report to ASC on EQS categories in the surrounding area, according to Annex 2 and using the template provided on the ASC website.	No comments

<b>Appendix 1:</b>	1.4 timing, Worst case	Sampling is moved to the "worst case" time of year. Here, the Danish waters are often also periodically affected by bottom reversals and oxygen depletion driven in from the Baltic sea. Parameters are controlled by fluctuations in salinity and elevated temperatures, but which in turn have a major impact on relevant long term physical and biological indicators in the Danish coastal waters. Moving the sampling to the "worst case" time of the year will make measuring any effect of the farm on the surrounding environment pointless.
<b>Appendix 1:</b>	survey wesel	The proposed Sampling for tier 1 (onboard sulphide measurements) must be carried out with an external vessel and trained crew. In Denmark, only the state/universities own sampling vessels that can potentially carry out the described task on site, and currently do not have this type of analysis available for industry to utilize. As the suggested analyses are not common place in Denmark, a small industry such as the Danish fishfarmers would not justify this type of analysis to become available publically or privately at a reasonably affordable price.

## Indicator 2.14.a

### General Comments:

The suggested monitoring frequency is far to detailed and comprehensive. It will maybe work in a very big fish farm company, but please have in mind that the ASC standard also covers small and medium sized farm.

Overall, though the purpose for some of the proposed points is understandable, it is far to detailed, labour- and time consuming and to theoretical. It will have the consequence that many small and medium sized farms, like Danish farms, would consider not to take part in the ASC programme, and make it almost impossible to attract new small and medium sized farmers. For the Danish production it will be extra challenging for landbased farms/RAS, because there are often several different farming systems and cohorts on one fam, different size of fish, different farming-systems and many smaller fish batch.

	<b>Draft</b>	<b>Comments from Dansk Akvakultur</b>
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<b>Indicator 2.14a.1</b>	The UoC shall ensure that all employees are informed and aware of the importance of fish health and welfare, and that employees involved in fish husbandry and handling operations are trained and maintain qualifications on fish health and welfare, according to Annex xyz – Fish Health and Welfare Training.	It is far too circumstantial for e.g. all staff to participate at "Advance" level. There are few employees at most Danish fish farms. "Basic" level will be ok. A suggestion could be that Basic level, need to be supplemented with documented access for new knowledge, e.g. information from industry organizations (newsletters and emails), learning from associated veterinarians, participation in conference- and training. Advanced level - must be sufficient for core veterinary employees in large facilities.
<b>Indicator 2.14a.2</b>	Indicator scope: finfish only The UoC shall vaccinate finfish for all regionally-relevant diseases for which an effective vaccine exists.	There should be an exemption option for closed RAS-systems. Closed RAS-systems are "closed systems", therefore the requirement for vaccinations against regional diseases is not relevant.
<b>Indicator 2.14a.4</b>	Indicator scope: all except bivalves The UoC shall regularly remove mortalities , daily for finfish and when spotted for shrimp and abalone, and dispose of mortalities responsibly; responsible disposal mechanisms are listed in 2.12 Material use, Waste and Pollution.	This is not possibly for sea cage farms off coast, because there are normally many days where it is not a possibility to sail out to the fish farm, and especially not work on the farm due to hard weather. Therefore there must be an exemption option.
<b>Indicator 2.14a.5</b>	Indicator scope: finfish and shrimp The UoC shall daily remove moribund2 finfish and stun and kill them responsibly; responsible methods are listed in 2.14c. Moribund shrimp shall be regularly removed when spotted.	Indicator 2.14a.5, It will require an unreasonable amount of extra time to remove moribund fish every day. Instead, it could be said that they should be removed regularly or when there is an increase in their number. Further for sea cage farms there are many days where it will not be a possibility due to hard weather - see remarks to 2.14.a4
<b>Indicator 2.14a.6</b>	The UoC shall adhere to species-specific metrics on mortality, survival and recovery rates as per Annex 1.	annex 1?
<b>Indicator 2.14a.7</b>	The UoC shall test3 100% of fish groups for selected diseases of regional concern prior to entering the grow-out phase on farm4 .	Indicator 2.14a.7 :In practice this is not realistic. Facilities are tested at intervals by FVST, which should be continued. Only notifiable diseases must be tested.
<b>Indicator 2.14a.8</b>	The UoC shall, if an OIE-notifiable disease is confirmed, immediately cull the batch of animals in which the disease was detected, using responsible stunning and killing methods (2.14c), unless the disease is classified as endemic.	This decision should be made by the local veterinary authorities. In Denmark, that means FVST.

<b>Indicator 2.14a.11</b>	The UoC shall, for all antimicrobial prescriptions, maintain the following: – antimicrobial susceptibility test results, either prior or as post-treatment – alternative strategies explored to the prescribed antimicrobial treatment	2.14.a11: If no indication of drug resistance is seen, this is overkill, and an unreasonable time consuming and costly testing. This is normally handled according to risk by the appointed veterinarian. A plan for handling drug resistance with the appointed veterinarian, perhaps with pinpoint testing e.g. first outbreak in a batch of fish or yearly, and on indication would be more appropriate. / If there is a known risk or problem with drug resistance, testing should of course be more rigorous. But that should be part of the farm specific plan, developed together with the appointed veterinarian.
<b>Indicator 2.14a.14</b>	The UoC shall develop and implement a feeding plan, including at least the following parameters: - time and frequency of feeding - feed rations - feeding adaptation to fit different life stages - feeding adaptation to fit different ambient conditions	Only for fish farms with employees.
<b>Indicator 2.14a.16</b>	<u>General Comment:</u>	These criteria are completely unrealistic to comply with in Danish freshwater farming! It might be possible to do it on a sea farm with only one or two groups of fish. F - unrealistic - annex 1 G) not realistic for smaller farms. Fx could work, for example, for facilities with more than 10 employees. ...
<b>f</b>	health status and fitness assessment of animals within a reasonable period prior to handling; in the case of treatment or transport, the fitness for handling shall be approved by a veterinarian or a fish health manager,	F: The suggested is far to detailed and comprehensive. It will maybe work in a very big fish farm company, but please also have in mind that the ASC standard also covers small and medium sized farm.
<b>g</b>	measures to minimise the duration of crowding as far as possible and carry it out in steps (partial crowding) when possible,	G: This is far too ambitious and laborious. It might make sense on big farms with few batches of grow out fish. An acceptable level could be a farm specific plan on describing how to monitor fish health regarding the suggested parameters, to evaluate progress or developing problems.

i:	<p>l mortality reporting requirements:</p> <ul style="list-style-type: none"> <li>o Report to the veterinarian or fish health manager all mortality events with daily mortality above average/</li> <li>o Report to the veterinarian or fish health manager if a welfare problem is suspected during mortality classification e.g., observation of physical damage on the fish</li> <li>o if an OIE-notifiable disease is confirmed: <ul style="list-style-type: none"> <li>. increase disease-testing/monitoring in other batches of animals</li> <li>b. coordinate oversight by the veterinarian or animal health specialist</li> <li>c. report to authorities</li> </ul> </li> </ul>	<p>l: This should be simplified and more precise e.g.:  “Daily mortality should be recorded. In the event of increased mortality, the event should be investigated to determine the reason, by postmortem examination of an appropriate number of fish. In case of unexplained mortality, or findings that needs prescription, the relevant veterinary assistance should be acquired e.g. the appointed veterinarian and/or laboratory testing.”</p>
j-p		<p>J-P: This is not an acceptable level, it is far to big and ambitious and is written in an complex and unclear way! These points would acquire single farms to employ Ph.D. students just to performing these tasks, and still with an uncertain outcome./ These collected points should be simplified to two or three points, describing some overall requirements for farms to have a system in place of how to react to variation and development in welfare parameters defined together with the appointed veterinarian/fish health manager.</p>
<b>Indicator 2.14a.17</b>	<p>The UoC shall, if an OIE-notifiable disease is confirmed, publicly15 disclose findings within 14 days.</p>	<p>Add: Puplic disclosure can be replaced by a national puplic system with puplic disclosure link the danish system (CHR register)</p>
<b>Indicator 2.14a.18</b>	<p>The UoC shall, if an unidentifiable transmissible agent is suspected or if it experiences unexplained increased mortality, publicly16 disclose findings within 14 days</p>	<p>2.14.a18: This should be defined much more rigid and precise e.g.: .....suspected “by the competent veterinary authorities. Or if reported to the competent authorities by the appointed veterinarian/ fish health manger, as a case of unexplained mortality by a possible transmissible agent.”</p>
<b>Indicator 2.14.a 19</b>	<p>The UoC shall report to ASC the ranges of stocking densities used during production, according to Annex 2 and using the template provided on the ASC website</p>	<p>2.14.a.19: Why do ASC centrally need these numbers, as a general thing? What is the purpose of that? It is not acceptable that farmers as such, should deliver data of this character, for some central data handling, not related to farm operational concerns.</p>

<b>Table 1:</b>		<p>Monitoring systems are often expensive, and it is often time consuming to do the monitoring and the recording.</p> <p>It will be difficult to monitor so many parameters so frequently on farms with many units. It also does not make sense to measure many of the parameters so frequently. The farmer must measure when there are fluctuations and changes in the operation of the facilities. With such extensive monitoring, you risk losing focus and the critical sense. It must be measured where it makes sense with respect to cost and time.</p>
	Dissolved oxygen	<p>We agree that temperature and dissolved oxygen is important to monitor and are often required on a daily basis (as suggested). But you must understand that it is very individual on each farm. As an example, in a flow through system during wintertime there is often sufficient oxygen and here it unnecessary to monitor temperature and oxygen daily.</p>
	Carbon dioxide	<p>Measuring carbon dioxide is expensive and a demand of daily/biweekly monitoring is far from realistic in smaller farms. At the same time, it is in many situations/farms not at all relevant. For many species you do not have a scientifically based threshold and even for many salmonid species there are still not clear scientifically guidelines.</p>
	Turbidity	<p>Turbidity can in some farms be important to follow but is in other farms completely irrelevant (example if you have a lot of oxidated iron in the water).</p>
	pH	<p>pH is often important in RAS and should here often be follow continuously because shifts can happen within hours, but it depends on the system, feed intensity and others factors. In many other systems pH is very constant and daily monitoring is far from needed.</p>
	Salinity	<p>Salinity is seldom relevant to follow in freshwater system. Also, if you add small amount in RAS.</p>
	Ammonia/nitrite/nitrate	<p>Ammonia/nitrite/nitrate can be relevant in many RAS systems, but again it depends on the species, feed intensity and other factors. Biweekly monitoring in flow-through is often not relevant.</p>
<b>Table 1:</b>	Conclusion to table 1:	<p>The conclusion is that the need for monitoring water quality parameters is very farm and species dependent. We do not want a situation where the fish farmers use a lot of time and money to measure irrelevant</p>

		<p>parameters. We suggest: 1) The farmers will be obliged to measure temperature and oxygen. The frequency shall be need based and follow a monitoring plan which is farm specific and developed in cooperation with a designated veterinarian or a fish health manager. 2) For all other parameters monitoring should be need based and the frequency shall follow a monitoring plan which is farm specific and developed in cooperation with a designated veterinarian or a fish health manager.</p>
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Indicator 2.14 b:

**General Comments**

The suggested requirements for a site-specific Fish Handling Management System are far too detailed and comprehensive. It will maybe work in a very big fish farm company, but please also have in mind that the ASC standard also covers small and medium sized finfish farm. Drawing up the suggested FHMS (description of systems/processes/ contingency plans) will take weeks/months and implementing the suggested fitness assessments, analysis, inspections, corrective actions and handling logs is unrealistic in most fish farming companies, especially the small and medium sized. Even in larger companies this will be extremely challenging.

We fully agree that fish welfare and health issues related to handling is important, but it must be started on another level.

We suggest instead that it, as a start will be more risk based. It could be a demand to set up a Fish Handling Management Plan where the farmers in cooperation with a designated veterinarian or a fish health manager identify and evaluate the most critically handling processes at the specific farm. This plan should be revised annually. Other Indicators

Other  
Indicators

	<b>Draft Standard</b>	<b>Specific comments to the ASC Farm Standard</b>
Indicator 2.5.2	(Indicator scope: finfish only) The UoC shall reduce the number of unaccounted loss over time, by reducing the number of escapes and increasing counting accuracy, so that actual harvest counts result in a maximum of 1% unaccounted stock calculated over a 9-year period.	The claim is unrealistic as commercial equipment on the market has a meter accuracy of 97%
Indicator 2.8.2	The UoC shall only discharge water of a salinity level equal to or lower than the salinity level of the receiving water body (or land), unless this is a waterbody with natural periodic varying salinity levels; in this case the salinity level of the discharge water shall be within range of the natural variation of the waterbody.	The requirement that a higher concentration of salt may not be discharged is unrealistic when salt is used therapeutically in freshwater farming. The demand for desalination is overambitious when the salt concentration is within the limit value for fresh
Indicator 2.10.4	The UoC shall not increase the salinity of freshwater to a higher salinity level, unless effluent water is desalinated to the same salinity level of the intake water.	The requirement that a higher concentration of salt may not be discharged is unrealistic when salt is used therapeutically in freshwater farming. The demand for desalination is overambitious when the salt concentration is within the limit value for fresh water.
Indicator 2.11.3	a) The UoC shall, where 2.11.1 and 2.11.2 indicate energy related values higher than the thresholds below in i. and ii., develop and implement an Energy Efficiency Management Plan (EEMP), including the improvement measures in b), c) and d): i. 1,300 MJ/t energy consumed per tonne of live weight <sup>111</sup> , farm-gate production, and ii. 100 kg CO <sub>2</sub> -eq per tonne of live weight <sup>112</sup> , farm-gate production from on-farm energy use.	The requirement is not realistic when it comes to land-based fish farming.