

Section 1: Changes Proposed to the Pangasius Standard

Item 1: Add indicator limiting number of treatments of antibiotics

Reason for the change:

During the Operational Review commentary period one stakeholder proposed the inclusion of a limit on the number of treatments of antibiotics that can be delivered during a production cycle. This requirement was already included in the ASC Salmon Standard and now is also included in the Tilapia standard. The rationale within the ASC Salmon Standard is also applicable for Pangasius farming: *‘With regards to the use of antibiotics, there is a global effort led by the WHO to ensure that antibiotics important for human medicine are used in a way that doesn’t jeopardize their effectiveness in treating human diseases. These requirements seek to be in line with that effort.*

The requirements set a cap on a maximum allowable number of treatments of antibiotics on certified farms that is intended to set a reasonable limit on what may be needed on a well-managed farm and excludes any farms that fail to follow industry guidelines for prudent use of antibiotics.’

By including this indicator in the Pangasius standard, the ASC aims to continue in their aim of promoting best practice in the industry and limiting the impacts of aquaculture production.

However, feedback received from one stakeholder (a major Vietnamese producer) objected to the proposed antibiotic limits for the Pangasius standard. They asked for an implementation period of 5 years so that the industry could adjust to reducing the use of antibiotics. It was also noted that data available to ASC from Pangasius audit reports is insufficient to determine how much antibiotics are being used or how many treatments there are in a production cycle.

Further research was conducted and it was found that very little data was available on the number of treatments of antibiotics used in Pangasius farming. ASC certification reports were also unable to provide this information. The first change in the proposals was then decided to be to ensure that in future this data is collected by certification reports. It is therefore proposed to include an indicator requiring the recording of amount and treatment frequency of antibiotics so that we can monitor usage by farms.

Proposed additional indicator 1:

Current	Proposed	
N/AN/A	Indicator	Requirement
	6.2.8 Calculation and verification of the total amount of each antibiotic (active ingredient) used per mt fish produced per year and frequency of treatments.	Measured in kilograms of active ingredient of individual antibiotic/mt of fish produced/year and number of treatments per cycle

Regarding limiting treatments it is still believed that there is a need for reducing antibiotic use in aquaculture. There is a very rapidly growing body of literature on antimicrobial resistance (AMR), including aquaculture’s role. At the global level, there is an extreme level of concern with regard to AMR (e.g. annual deaths attributable to AMR are predicted to reach 10 million by 2050 and will outpace those from cancer, diabetes, diarrheal diseases, and automobile accidents (Boucher et al. 2016)). Secondly, aquaculture’s contributory role (amongst a range of causes) is clear (e.g. the paper by Watts et al. (2017) titled “The Rising Tide of Antimicrobial Resistance in Aquaculture: Sources, Sinks and Solutions”; or by Cabello et al. (2016) titled “Aquaculture as yet another environmental gateway to the development and globalisation of antimicrobial resistance”).

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Having said this, it is not acceptable for antibiotics to be withheld from animals if it impacts their health and welfare. If the ASC imposes limits of antibiotic use it should be accompanied by protection for fish.

Comment [U1]: How to avoid the animal health and welfare issues associated to antibiotic usage?

For example, Watts et al. (2017) state: “By their nature, aquaculture systems contain high numbers of diverse bacteria, which exist in combination with the current and past use of antibiotics, probiotics, prebiotics, and other treatment regimens—singularly or in combination. These systems have been designated as “genetic hotspots” for gene transfer.”

It’s important to note that this gene-transfer includes genes for resistance that can pass between different types of bacteria, trigger resistance to different types of antibiotic, and move from aquatic to terrestrial environments. The FloR gene (Florfenicol Resistance gene) is an example relating to a commonly used aquaculture antibiotic. Florfenicol is not used in humans, but is listed as “highly important to human medicine” by the WHO because of these mobile resistance genes. Done et al. (2015) showed resistant bacteria isolated from both aquaculture and agriculture share the same resistance mechanisms, indicating that aquaculture is contributing to the same resistance issues established by terrestrial agriculture.

Pham et al. (2015) reported over 70% of freshwater farms in Vietnam (several farmed species) used antibiotics and the use is probably higher in reality. Of the 23 different types of antibiotic reported, 12 were “critically important to human medicine (according to the WHO) and almost all the rest were “highly important”. Most of these are also highly and critically important to veterinary medicine (OIE), and their overuse risks the same loss of efficacy in aquaculture.

The ASC has consulted with fish vets about antibiotic use in Pangasius production; whether a maximum of three antibiotic treatments per production cycle for Pangasius is currently achievable and by what proportion of farms, and its auditability. In addition there are two publications relating to these issues, see references for more information.

The response from the vets was that there does not seem to be accurate information available on the number of antibiotic treatments per cycle and a limit would be difficult to verify. This is due to the common availability (bought without a prescription) of antibiotics and ability to hide their use. If farms are likely to be exceeding three treatments per cycle and if we’re unlikely to find it happening during an audit, it does not seem appropriate to go ahead with the approach of simply setting a limit. But there is some insight into how and when treatments are used which could help us with setting effective standards and methodology for applying them.

Regarding auditing methodology, it would be necessary to physically test for the presence of antibiotics. For example the dairy industry now has a variety of rapid test kits for contaminants in milk, including antibiotics. Several are applicable in the field, and at least one is currently available in the form of a test strip. In general, there is a rapidly developing range of test kits for food that could be applied to testing feed, fish, equipment, water or pond sediment. Such kits include:

[https://www.charm.com/products/antibiotics/rosastriplinks?types\[0\]=1](https://www.charm.com/products/antibiotics/rosastriplinks?types[0]=1)

https://www.dsm.com/markets/foodandbeverages/en_US/products/tests/delvotest.html

<http://www.biooscientific.com/Antibiotic-Residues-Test-Kits>

Proposed additional indicator 2 (with 2 options):

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(Both options include the development of auditing guidance / methodology that will ensure the standards are effective)

Comment [U2]: How should the auditing method for antibiotics be?

Option 1: Setting a limit on antibiotic use but giving a period of 2 years before it becomes applicable

This proposal is to give a lead-in time of 2 years before the limit became applicable and in the meantime to gather data on antibiotic use from certified farms. This would state that the ASC wants a limit, that we recognise there are some uncertainties, and that we are still researching the use of antibiotics.

Current	Proposed	
N/A	Indicator	Requirement
	6.2.9 Number of treatments ⁵⁸ of antibiotics over the most recent production cycle	≤ 3, after two years from standard revision publication
	⁵⁸ A treatment is a single course medication given to address a specific disease issue and that may last a number of days	

Comment [U3]: What should the limit on antibiotic treatments be over the Pangasius production cycle?

Option 2: Setting an immediate limit of number of treatments

This proposal will require farms to meet the limit immediately after the new version of the standard becomes applicable. It is expected that this option would need to include chemical testing validation.

Current	Proposed	
N/A	Indicator	Requirement
	6.2.9 Number of treatments ⁵⁸ of antibiotics over the most recent production cycle	≤ 3
	⁵⁸ A treatment is a single course medication given to address a specific disease issue and that may last a number of days	

References

- 1) Occurrence and Dissipation of the Antibiotics Sulfamethoxazole, Sulfadiazine, Trimethoprim, and Enrofloxacin in the Mekong Delta, Vietnam
- 2) An evaluation of fish health-management practices and occupational health hazards associated with Pangasius catfish (Pangasianodon hypophthalmus) aquaculture in the Mekong Delta, Vietnam
- 3) Boucher et al. 2016. *The United Nations and the Urgent Need for Coordinated Global Action in the Fight Against Antimicrobial Resistance*. Ann Intern Med. doi:10.7326/M16-2079
- 4) Cabello et al. 2016. *Aquaculture as yet another environmental gateway to the development and globalisation of antimicrobial resistance*. Lancet Infect Dis 2016. doi./10.1016/S1473-3099(16)00100-6
- 5) Done et al. 2015. *Does the Recent Growth of Aquaculture Create Antibiotic Resistance Threats Different from those Associated with Land Animal Production in Agriculture?* The AAPS Journal, Vol. 17, No. 3, May 2015

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6) Pham et al. 2015. *Monitoring Antibiotic Use and Residue in Freshwater Aquaculture for Domestic Use in Vietnam*. EcoHealth. DOI: 10.1007/s10393-014-1006-z

7) Watts et al. 2017. *The Rising Tide of Antimicrobial Resistance in Aquaculture: Sources, Sinks and Solutions*. Mar. Drugs 2017, 15, 158; doi:10.3390/md15060158

Item 2: Update ‘What the ASC does’ section

Reason for the change:

Changed to match the updated text on the ASC website. Updated after internal consultation.

Current	Proposed
Working with partners, the ASC runs a programme to transform the world's aquaculture markets by promoting the best environmental and social aquaculture performance. The ASC seeks to increase the availability of aquaculture products certified as sustainable and responsibly produced. The ASC's credible consumer label provides third party assurance of conformity with production and chain of custody standards and makes it easy for everyone to choose ASC certified products.	The ASC programme promotes the best environmental and social aquaculture performance to minimise or eliminate the damaging environmental and social footprint of aquaculture. Through its consumer label the ASC promotes certified responsibly farmed products in the marketplace.

Item 3: Update ‘What the ASC will achieve’ section

Reason for the change:

Changed to match the updated text on the ASC website. Updated after internal consultation.

Current	Proposed
<p>The ASC is transforming aquaculture practices globally through:</p> <p>Credibility: Standards developed according to ISEAL guidelines, multi-stakeholder, open and transparent, science-based performance metrics.</p> <p>Effectiveness: Minimising the environmental and social footprint of commercial aquaculture by addressing key impacts.</p> <p>Added value: Connecting the farm to the marketplace by promoting responsible practices through a consumer label.</p>	<p>The ASC programme aims to transform the global aquaculture market by promoting the best environmental and social performance:</p> <p>Credible ASC standards are developed and implemented according to ISEAL guidelines being therefore multi-stakeholder, transparent, incorporating science-based performance metrics.</p> <p>Meaningful By including science-based performance metrics, the requirements in the standards are realistic, measurable and auditable.</p> <p>Effective A globally recognised, market-oriented programme that aims to promote meaningful improvements in aquaculture production in a</p>

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	credible and cost efficient way that adds real value to producers and buyers of certified products.
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Item 4: Change ‘criteria’ to ‘criterion’ in section headings

Reason for the change:

Corrected throughout document as incorrect word used.

Item 5: Change ‘ecolabel’ to ‘eco-label’

Reason for the change:

Corrected throughout document as incorrect word used.

Item 6: Update external references

Reason for the change:

Below link updated. Email addresses to be confirmed to ensure accurate.

Current	Proposed
www.ascworldwide.org	www.asc-aqua.org

Item 7: Indicators: Rationale for 2.1.1

Reason for the change:

Based on stakeholder feedback and review by the ASC TAG, reviewed phrasing to ensure that they reflect that Pangasius is not only farmed in Vietnam.

Proposed change for Rationale for 2.1.1 (p.16):

Clarification is provided in the standard that in countries that operate without a zoning system or requirement to approve an "aquaculture development area".

Current	Proposed
N/A	Rationale: the unit of certification cannot be located in an area where aquaculture is specifically prohibited.

Item 8: Indicator: 2.2.3 and 2.2.4

Reason for the change:

Consider revising language, based on stakeholder feedback:

“Comment on indicator of no negative impact and no discharging of earth, difficulty in providing evidence for an absence of something..”

The indicators have been clarified and reference to evidence of no impact removed from the standard document. The audit manual is to be used to explain the evidence expected to demonstrate compliance with these indicators.

Item 9: Improve consistency of feed requirements and remove ambiguity: 5.1.5 and 5.1.6.

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Reason for the change:

The Feed Interim Solution was published in December 2016 for ASC Marine Feed Ingredients, which replaces indicators 5.1.5 and 5.1.6 of this standard. This solution applies to all (8) ASC’s standards, which have indicators for marine raw materials, including these proposed changes to the ASC Pangasius Standard. This interim solution will apply until the ASC Feed Standard will be available or until further official and public notice by ASC.

Current		Proposed	
Indicator	Requirement	Indicator	Requirement
5.1.5 ISEAL-certified fishmeal and fish oil products must be used in feed.	Within 3 years of becoming available in a region	5.1.5 ISEAL-certified fishmeal and fish oil products must be used in feed.	Not Required.

Current		Proposed	
Indicator	Requirement	Indicator	Requirement
5.1.6 ISEAL certified fishmeal and fish oil products must be used in feed.	Within 5 years from the publication date of the ASC Pangasius Standard	5.1.6 ISEAL certified fishmeal and fish oil products must be used in feed.	Not required

Item 10: Remove ambiguity around prohibition to site or expand farms in natural wetland or areas of ecological importance: 2.2.1 and Rationale.

Reason for the change:

There was a need to ensure a static benchmark for farm expansion rather than a rolling date. This is consistent with the Ramsar guidance. Changes based on stakeholder feedback.

Current		Proposed	
Indicator	Requirement	Indicator	Requirement
2.2.1 For ponds, evidence that only land that has been allocated to agriculture or aquaculture for 10 years prior is used for new pond development or for farm expansion	Yes	2.2.1 For ponds, evidence farm has not been sited or expanded in natural wetland (as defined by Ramsar)	After May 1999

Proposed change for Rationale for Criterion 2.2 (page 17 of the standard):

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There was also a stakeholder comment around the status of the restoration fund. Although there has been no change in the status since the standard has been set, the fund is still relevant for damage to sensitive habitats. There will be harmonisation of these requirements and the impact assessment as part of the alignment project. Until that time the requirement will remain in the standard and the following text is proposed to be added to clarify this in the standard.

Current	Proposed
N/A	Rationale: Where damage of sensitive habitats has been caused by the farm (as defined in the impact assessment) previously and where restoration is possible and effective; restoration efforts will or have resulted in a meaningful amount of restored habitat; either through direct on farm restoration or by an off farm offsetting approach. Grandfathering of historical losses is allowed.

Item 11: Change in species scope definition: clarify that the ASC Pangasius Standard is applicable to the family Pangasiidae

Reason for the change:

The change was triggered by feedback from audit reports which asked for clarification of the scope. The proposals simplify and clarify the application of the standard.

Current	Proposed
The ASC Pangasius Standard applies to the production of two pangasius species: Pangasianodon hypophthalmus and Pangasius bocourti . The ASC Pangasius Standard applies globally to all locations and any scale of pangasius aquaculture production system.	The ASC Pangasius Standard is applicable to species belonging to the family Pangasiidae, and can be applied to all locations and scales of pangasius aquaculture production systems.

Item 12: Clarify energy requirements in Indicator: 3.6.1

Reason for the change:

The ASC would like to remove the current ambiguity on energy consumptive data collection. It is proposed that it is updated to require that all energy consumption on the farm (including electric power and fuels) must be considered. This would mean that the indicator becomes “evidence of an energy use assessment of on-farm energy consumption, measured in kilojoule/mt fish/year”

Current	Proposed
Information available on the following variables (per year per farm in the certification unit): – Fuel Used – Quantity of electricity – Amount of	Evidence of an energy use assessment of on-farm energy consumption, measured in kilojoule/mt fish/year. Requirement: Yes.

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dead fish for each disposal method adopted	
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In addition, the ASC would like to initiate consultation on a **limit being set around energy consumption**. This would involve assessing energy consumption data collected from audited farms to determine if there is sufficient data to set energy use performance requirements.

Comment [U4]: What should the energy consumption limit be for pangasius?

It is hoped that energy use limits can be set in the aligned standard. The research carried out will contribute towards setting an appropriate limit.

Item 13: Clarify Total Nitrogen (TN) testing methodologies: Annex D for 3.1.3 and 3.1.4

Reason for the change:

Regarding indicators 3.1.3 & 3.1.4, it was brought to the ASC’s attention that the current requirements for TN test method (Kjeldalh and Indo-phenol blue) and TP (Kjeldalh and Ascorbic Acid) are not appropriate in Vietnam. This is because the main ISO 17025 certified laboratories in Vietnam do not apply these methods. The methods used are ISO 6638 TN: 2000 and TP analysis method by: 8190 method of its machines HACH DR5000 (this is accredited by the US Environmental Departments /and TCVN 6202: 2008).

It is therefore proposed that that ASC standard allows for equivalent analysis methods in Annex D.

Current	Proposed
TN shall be measured using the following method	TN shall be measured using the following method or equivalent

Item 14: Additional indicator to require GMO feed ingredients disclosure: 5.1.8

Reason for the change:

To improve transparency and consistency with other ASC standards it is proposed that producers should disclose when GMO raw material is used in feed. Pangasius producers would then be required to obtain disclosure of the feed supplier and for the farm to disclose to the direct purchaser if more than 1 percent transgenic plant material is being used in feed.

Current	Proposed
N/A	5.1.8 Evidence of disclosure to the buyer of the pangasius of inclusion of transgenic plant raw material, or raw materials derived from transgenic plants, in the feed. Requirement: Yes, for each individual raw material containing > 1% transgenic content.

Item 15: Additional indicator to clarify ASC standards around social impact assessment: 7.13.3

Reason for the change:

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Regarding Principle 7 and the social impact assessment, it is the intent of the ASC standard to ensure that community impacts are avoided or mitigated by the farm. To clarify this and to ensure consistency with other ASC standards it is proposed that clarity is added that the farm must mitigate impacts identified and as a minimum is not permitted to limit the right of access to natural resources such as freshwater, land or other natural resources that communities rely on for their livelihood).

Current	Proposed
N/A	7.13.3 The impact assessment is being implemented by the farm. Requirement - Yes.

Proposed change for Rationale for 7.13 (p.53):

Current	Proposed
N/A	Rationale: The impact assessment must as a minimum include community access to resources such as freshwater, land and other natural resources relied on by the community. The farm is not permitted to restrict community access to these resources without their express approval.

Section 2: Ongoing consultations on the Pangasius operational review

Item 16: Diurnal oxygen demand metrics: 3.2.1

Based on stakeholder feedback, there was proposal to review standards around diurnal oxygen demand. Reassess to ensure that sufficient evidence exists to support that the indicator and performance metric are effective means of achieving the desired objective of limiting eutrophication.

ASC Comment: More research is needed to collect the data necessary to determine the impact.

Comment [U5]: What should the diurnal oxygen demand metrics be revised to?

Item 17: Pangasius escapes: 4.1.3

A comment was received on indicator 4.1.3 suggesting basing this evidence on whether the same or similar species have become ecologically established in similar ecosystems elsewhere. The stakeholder commented additionally that it is well understood that this is imperfect, and is a risk-based (potentially difficult to audit) option!

The proposal was to review the requirement around necessary evidence for species establishment in the river basin. This is based on a stakeholder comment that it is difficult, if not impossible, to provide conclusive evidence that a species cannot become established.

ASC comment: This needs more research to base the requirement on most recent scientific information and to reword this requirement accordingly so that it can be credibly assessed.

Comment [U6]: Does new evidence exist of species establishment?

A further comment was received on criterion 4.5 asking to consider adding a limit on the number of escapes to help reduce the risk of catastrophic escapes and to provide consistency with other standards.

Another stakeholder commented that it must be noted that there is a degree of inaccuracy associated with counting of escapees. With error margins too big, large numbers of escapees can go unaccounted for.

ASC comment: There are limits to escapes in some ASC standards such as Salmon. This issue could be addressed during harmonisation but research is needed to understand at what level the limit should be set and if it is possible to have accurate data for escape numbers.

Item 18. Align social requirements between ASC standards

A comment was raised by one stakeholder around the social labour requirements of Principle 7. The proposal was to improve consistency (with salmon and trout standard) on social welfare standards. Social requirements do not ask for evidence and documentation of compliance. No training procedures available, only awareness. For example, 'Evidence of a policy to ensure social compliance of its suppliers and contractors [100%]' and 'Percentage of workers trained in health and safety practices, procedures and policies on a yearly basis [100%]'.

ASC comment: ASC agrees that requirements should focus on outputs and it is the intention to coordinate this point among all ASC standards during the alignment project.

Item 19: Hatchery Practices

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A stakeholder proposed to add requirements related to effective hatchery practices (i.e., escapes, chemical use, broodstock collection and management).

ASC Comment: Given the fact that hatcheries are dealt with differently across the ASC's species' standards, this should be harmonised to the extent possible and included as part of the alignment project.

Item 20: Mortality and growth metrics: 6.1.1, 6.5.1 and 6.5.2

There was interest from stakeholders in removing duplication in criterion 6.5 around mortality and growth as well as updating metrics to reflect new practices. One stakeholder asked if indicator 6.5.1 is necessary given criterion 6.1.1 (maximum average real percentage mortality) or do they constitute "double accounting"? Assess whether these indicators are appropriate.

Comment [U7]: Proposed growth rates. What should the ASC be setting its growth rates at for Pangasius now?

Another stakeholder commented on indicators 6.1.1 & 6.5.1 and whether the fact that these rates depend on the stocking size and market fish size. "If we stock smaller fingerling size, we can't achieve these parameters. ASC standard focus on the environment and the standard already mentioned the dead fish management. So, we suggest that ASC don't require exactly rate in ASC standard." And regarding indicator 6.5.2 the "Vietnamese Government actually they permit to stock more than 40 fish/m²; this parameter was suitable for 10 years ago. In the past, farmer stocked bigger fingerling size than now. In addition, feed quality and farming technique was improved and constantly improved. We suggest that we don't require exactly number in ASC standard. "

ASC Comment: The ASC would like to maintain the rigour of its standards but can review metric requirements based on new scientific information. References are needed for the proposed growth rates.

Item 21: Adding basic provisions for fish welfare to the Pangasius standard

A stakeholder suggested that there is very limited consideration of fish welfare, no measures for suitable culture environment, and no slaughter technique defined. The proposal was for the standard to:

1. Include provisions that require the farmer to maintain a suitable culture environment; including specific metrics (water temperature and sufficient water quality criteria).
2. Foresee husbandry systems allowing expression of natural behaviour and minimizing stress. Physical disfigurement of cultured species shall not be allowed.
3. Foresee upon harvesting appropriate and instant killing procedures resulting in no further harm and suffering of the animals safeguarding ethical and animal welfare values.

ASC Comment: The ASC does not currently include animal welfare specifically in its mission. There are however a number of indicators that contribute to better husbandry and so will assure fish welfare.

[end]