ASC GLOBAL REVIEW: **CHILE SUMMARY**

Chilean farms contribute around a third of all ASC salmon (31 per cent or 218,188 mT),¹ and a similar percentage of the country's total production is certified (29 per cent).

ANALYSIS

MAJOR

FARM CONFORMANCE

Sixty-nine ASC certified Chilean salmon farms were reviewed. Eighty-one Chilean ASC audits were analysed (69 initial; 12 surveillance), with a total of 313 major and 756 minor non-conformities. Globally, Chilean farms had the highest average number of nonconformities per audit: 3.8 majors and 9.3 minors.

CHILE: MAJOR AND MINOR NON-CONFORMITIES BY PRINCIPLE





29[%]

certified

- Benthic sampling and monitoring not completed due to early auditing
- Fish feed indicators, such as fish meal and fish oil dependency ratios, fish source score and transgenic raw materials disclosure
- Smolt facilities indicators such as maximum phosphorus released and records of **GHG** emissions
- Socially responsible indicators such as incidences, violations or abuse of working hours and overtime laws



FARM PERFORMANCE

No farms had an area-based management agreement that fully complied with all Standard requirements. Farms remained certified despite breaching one of the following criteria limits: high antibiotic use or a large escape event. Parasiticide use was found to be low for certified farms – despite the fact that parasiticide use in the Chilean industry is generally high and frequent. Chilean farms successfully met the Standard's fish feed dependency ratios.

AREA-BASED MANAGEMENT (ABM)	Chilean farm audits typically refer to ABM agreements within established Aquaculture Management Areas (AMAs), but these were found to not meet all the required components of Salmon Standard Appendix II-1. The AMA's primary purpose is disease control within the neighbourhood. This includes biosecurity protocols and measures, no mixing of year-class restrictions and mandatory fallowing between year-classes, along with farm coordination of stocking, treatments, harvest and fallowing. ² However, synchronized parasiticide treatments are mandatory only when defined trigger limits are reached. ³ Most Chilean audit reports refer to the legal requirements of Chile's regulations as if they were equivalent to the Standard's definition of ABM. However, the AMAs' regulations fall short of meeting the required cumulative components of Appendix I-1: cumulative use of treatments (e.g. antibiotics classified as "highly important" by WHO) and tracking of cumulative use of parasiticides. This is particularly important given concerns that Chile's Authorized Areas for Aquaculture are not regulated to ensure cumulative impacts remain within carrying capacity ecological limits. ⁴ Treatment resistance monitoring and sharing within AMAs are also not mandatory for Chilean farms. Antimicrobial resistance is a "problematic" concern, ⁵ alongside sea louse resistance to parasiticide treatments in Chile. ⁶
	N (A
SEA LICE MONITORING ON WILD SALMON	N/A
SEA LICE LEVELS	N/A
MAXIMUM VIRAL DISEASE	No Chilean audits recorded a value over the metric limit.
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ESCAPES	Evidence suggests two Chilean farms experienced large escape events. Aracena 3 reported 10,000 escaped fish in July 2016. ⁷ Unfortunately, despite the requirement to do so, no audit reports have been posted on the ASC website for Aracena 3 in two years. ⁸ Consequently, it is unknown if or how this farm has been held to compliance with indicator 3.4.1. The farm remains certified. One auditor did take immediate action after being notified that the Chilean farm, Punta Redonda, experienced an escape event of around 900,000 (600,000 ~ after recapture efforts) ⁹ in July 2018. The farm was suspended ¹⁰ – thereby disallowing any remaining or recaptured fish the ability to enter the market with the ASC logo.
ANTIBIOTIC USE	37 audits reported antibiotic use for the grow-out stage, with a total of 92 treatments reported. Four farms recorded antibiotic use higher than allowed by the Standard and remained certified. Hatchery antibiotic use was also reported.
	Only 14 per cent of Children audits (11 out of 70) reported a PTI secre. This is superising given the Children
TREATMENTS (I.E. PTI SCORE)	industry's overall high parasiticide use. One reason may be the localities of some of the certified Chilean farms as sea lice outbreaks are reportedly uncommon for farms located in the Magallanes area (Region XXII). The average Chilean farm has a PTI score of 1.4 which is less than one sea lice treatment.
FISHMEAL FORAGE FISH DEPENDENCY RATIO (FFDRM)	The average Chilean farm had a 0.84 FFDRm.
FISH OIL FORAGE FISH DEPENDENCY RATIO (FFDRO)	The average Chilean farm had a 1.94 FFDRo.
MARINE MAMMAL DEATHS	No audits recorded lethal incidents above the limit.

Transparency: Farm Public Reporting

While Chilean company websites housed most of the required information, this information was typically piece-meal, inconsistently presented and not always up to date. The estimated unexplained loss (EUL) metric were often missing for Chilean farms.

ASC AMENDMENTS OF CONCERN

OPERATIONAL REVIEW

Parasiticide Treatment Index (PTI) Review

The ASC's proposed revision to the sea lice parasiticide treatment indicator would allow Chilean farms up to eleven treatments per cycle.¹¹ The current treatment frequency allowance is 2-3 treatments, thereby, **the amount of parasiticide use allowed under the Standard would increase by 266% - 450%**.¹² It would take a Chilean farm up to 15 years to reach the proposed 'global target' metric – defined at four treatments.

The proposal does not address adequately address cumulative impacts which is a concern in Chile, particularly regarding the benthic environment and parasiticide resistance.¹³

VARIANCES

28 variances have been approved, with two that defer to government regulation instead of the Standard criteria. Reuse of approved variances is common; 99 citations of variances were found in audits. The average Chilean audit cites 2 variances (global mean 2.4).

Common and Problematic Variances

Two Chilean farms did not meet the required score for that sulphide concentration and highly abundant taxa use variances based on other environmental surveys that suggested salinity fluctuations and abiotic conditions are normal for the area.¹⁴ These variances have been applied 33 times in Chilean audits. The application of the variance has since benefited other farms, yet it is unclear whether the other farms are equally justified for not meeting the Standard's requirements. This highlights the need for ASC to identify the scope for which approved variances should apply (i.e. which farms, region, etc).

The Chilean authorities-mandated sea lice treatments has led to two variances where farms have exceeded the Standard's PTI required level.¹⁵ The ASC approved the variances based on the rationale that high sea lice loads were due to "unusual environmental conditions" and treatments are set by the Chilean regime. These variances are yet to be reused by other farms. Given that the ASC allows approved variances to set precedents, it is possible that other Chilean farms that exceed the PTI threshold could easily apply the variances. Such practice would undermine the intent of the PTI indicator to limit the use of sea lice chemicals entering the environment and to prevent chemical resistance.

1 ASC (2018). Direct communication.

2 The International Bank for Reconstruction and Development/The World Bank (2014). Reducing Disease Risk in Aquaculture. World Bank Report Number 88257-GLB. Available at: http://documents.worldbank.org/curated/en/110681468054563438/pdf/882570REPLACEM00NAME0Reantaso0Melba.pdf [Accessed June 2018].

3 Arriagada, G, Stryhn, H, Sanchez, J, Vanderstichel, R, Campisto, J.L, Rees, E.E, Ibarra, R & StHilaire, S (2017). Evaluating the effect of synchronized sea lice treatments in Chile, *Preventative Veterinary Medicine*, vol. 136, pp. 1-10.

4 The International Bank for Reconstruction and Development/The World Bank (2014). Reducing Disease Risk in Aquaculture. World Bank Report Number 88257-GLB. Available at: http://documents.worldbank.org/curated/en/110681468054563438/pdf/882570REPLACEM00NAME0Reantaso0Melba.pdf [Accessed June 2018].

5 Grace, D (2015). Review of evidence on antimicrobial resistance and animal agriculture in developing countries. UK: Evidence on Demand. Available at: https://cgspace.cgiar. org/handle/10568/67092 [Accessed May 2018].

6 Bravo, S, Nunez, M & Silva, M.T (2013). Efficacy of the treatments used for the control of *Caligus rogercresseyi* infecting Atlantic salmon, *Salmo salar* L., in a new fish-farming location in Region XI, Chile, *Journal of Fish Diseases*, vol. 34, pp. 221-228.

7 Intrafish (2016). Update: Nova Austral puts total salmon escapes at 10,000. http://www.intrafish.com/aquaculture/769546/update-nova-austral-puts-total-salmon-escapesat-10000 [Accessed April 2018]. 8 ASC (2017). Nova Austral ASC-DNV-197854 http://asc.force.com/Certificates/ASCCertDetails2?id=a012400000KG2umAAD [Accessed June 2018].

9 Bloomberg (2018). Great Salmon Escape Threatens to Taint Chile's Fish Farms. https://www.bloomberg.com/news/articles/2018-07-09/great-salmon-escape-threatens-totaint-chile-fish-farm-industry [Accessed August 2018].

10 Control Union Peru (2018). Form 5-Report of Cancellation of an Audit for a New Applicant or Suspention, or Withdrawal of an Existing Certificate. http://asc.force.com/ Certificates/servlet/servlet.FileDownload?retURL=%2FCertificates%2Fapex%2FASCCertDetails2%3Fid%3Da012400000MMEgpAAH&file=00P10000019DwXdEAK [Accessed August 2018].

11 ASC (2017). ASC Salmon PTI Standard Operational Review – Consultation Paper September 2017. Public Consultation. Proposals to replace ASC Salmon PTI indicators 5.2.5 and 5.2.6. Available at: https://www.asc-aqua.org/wp-content/uploads/2017/07/Salmon-2-PTI-Operational-Review-Consultation-Paper-19-Sept-17.pdf [Accessed May 2018].

12 SeaChoice (2017). Re: ASC Salmon Standard Operational Review – 2nd PTI consultation. Available at: https://www.asc-aqua.org/wp-content/uploads/2017/11/ASC-PTI-2nd-consultation-SeaChoice-stakeholder-submission.pdf

13 Bravo, S, Nunez, M & Silva, M.T (2013). Efficacy of the treatments used for the control of *Caligus rogercresseyi* infecting Atlantic salmon, *Salmo salar* L., in a new fish-farming location in Region XI, Chile, *Journal of Fish Diseases*, vol. 34, pp. 221-228.

14 ASC (2018). VR 93: Shannon Wiener score of sediments. http://variance-requests.asc-aqua.org/questions/vr-93-shannon-wiener-score-of-sediments/ [Accessed April 2018].

15 ASC (2018). VR 192: Parasiticide treatment index. http://variance-requests.asc-aqua.org/questions/vr-182-parasiticide-treatment-index/ [Accessed April 2018].



This regional report is supported by technical and summary reports. For the complete analysis and ASC's response, refer to the technical report. Visit: www.seachoice.org/asc-global-review

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