

Investing in **troubled waters**



The material risks of fish mortality
and the use of wild-caught fish in feed
for the aquaculture sector

This report was written and researched by the Changing Markets Foundation.

This report was published in July 2021 by the Changing Markets Foundation, Coalition for Fair Fisheries Arrangements, Feedback and Western Sahara Resource Watch.

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Executive summary

Soaring consumer demand for seafood,¹ coupled with the depletion of wild-fish stocks from overfishing, is often perceived as creating opportunities for the aquaculture sector, making it an attractive target for investment. The value of the global aquaculture market is projected to reach US\$376 billion by 2025.²

Between now and 2030, it is forecast that investment in aquaculture could range anywhere from \$150 billion to \$300 billion, according to a study by Encourage Capital and The Nature Conservancy.³ DNB, Nordea Bank and Rabobank are the top three lenders to aquaculture companies, with a total loan exposure of around €8 billion.

However, analysis shows the aquaculture industry is exposed to numerous risks relating to the use of wild-caught fish in feed and the high level of mortalities in aquaculture, which stem from poor fish welfare.⁴ Together, these issues present significant environmental, social and animal-welfare concerns. Investors should be at the forefront of addressing these risks with companies; such environmental, social and corporate governance (ESG) issues are likely to affect returns on investments.

Our research shows that, overall, very few investors are taking these material issues of fish mortality and wild-caught fish in aquaculture into account in their engagement with investees in the aquaculture supply chain. We sent a questionnaire to 23 investors and financial institutions, and the responses show they could be doing much more to require companies to rapidly address these two critical material challenges. The risks can be mitigated by investment in better farming practices that place fish welfare front and centre, and by eliminating the use of wild-caught fish for feed in aquaculture supply chains.

Key findings

1. High mortality rates are a financial risk

- **None** of the investors or financial institutions **require** investees to **report on fish mortalities** in their supply chain.
- **None** have robust policies in place that ensure investees **are working to reduce farmed-fish mortality rates**, either directly or in their supply chain.

Farm profitability and fish welfare are inextricably linked. A 2018 study by a Norwegian seafood analyst showed that good fish-welfare standards provide more stable earnings and lower costs, and reduce the risk of reputational damage.⁵ Good fish health and welfare not only reduces risk for the company and its investors but also affects the valuation of a company. It has been shown that good vs poor fish health can make a difference of 20% of the market value of a company. For example, SalMar has low production costs and stability of biology compared to other salmon farmers, and, as a result, is valued highly on the stock exchange.⁶

Analysis by Just Economics, commissioned by the Changing Markets Foundation and published in 2021, calculated the unaccounted economic, environmental and social costs of salmon farming. The report shows that fish mortalities cost \$15.5 billion over seven years to the four main salmon-producing countries (Canada, Chile, Norway and Scotland) – a third of the overall cost. Overall, it is estimated that salmon aquaculture has produced private and external costs of \$47 billion since 2013, with around 60% falling to producers and 40% to wider society.⁷

Mortality rates on salmon farms are high; in Norway in 2019, they stood at 15%.⁸ Compassion in World Farming has estimated that mortality rates on Scottish salmon farms are even higher: In the years between 2012 and 2017, an average of 24.2% of fish reared on Scottish salmon farms died prematurely every year.⁹ This far outweighs mortalities found in other forms of intensive farming.

It is possible to achieve high welfare and low mortality rates on farms. In OneKind’s 2018 report on the welfare status of salmon farms in Scotland, Wester Ross Fisheries stood out from the others in terms of good animal welfare. Across the company’s three sites, there were no incidents of escapes, low sea-lice levels, and monthly mortality rates did not exceed 10%. Of the larger companies, Cooke Aquaculture stood out as having, on average, sites that were better for fish welfare.¹⁰ There are opportunities for companies that prioritise higher-welfare seafood; in Europe, consumers are willing to pay 14% more for salmon produced with higher welfare standards.¹¹

Since fish-welfare standards and mortality rates are directly linked to the financial performance of aquaculture companies, investors should be much more attuned to poor farming practices that threaten to reduce profits and undermine the long-term financial viability of the industry.

2. Reliance on wild-caught fish threatens diminishing returns

- **No** investors or financial institutions have criteria in place that require a **reduction or phase-out of the use of wild-caught fish as feed** in investees’ products or practices.
- **65%** (15 out of 23) of investors and financial institutions **fail** to put in place criteria to ensure **no illegal, unreported and unregulated fishing, or other compliance failures, occur** in their portfolio of investments and lending to the aquaculture sector.

The aquaculture sector’s continued dependence on wild-caught fish for use in aquafeed represents a systemic and economic threat for companies. Feed is the single largest input cost for fish farmers – 50-70% of business expenditure – and higher prices will put more pressure on fish farmers’ margins.¹² Aquaculture is the biggest driver of demand for fishmeal and fish oil (FMFO). With soaring growth of the aquaculture industry, and fed aquaculture outpacing growth of non-fed aquaculture,¹³ demand for FMFO is likely to outstrip supply. Over the period 2010–30, the World Bank projects that fishmeal prices will rise by 90%, and fish oil prices by 70%, due to limits on the supply of wild-caught fish.¹⁴ Unless the sector’s dependence on wild-caught fish can be abated, this represents a resource risk, which limits the further growth and profitability of the industry.

3. Green bonds can be used for greenwashing

- **Mowi** has issued a **green bond** for nothing more than conducting **business as usual** – this should be challenged by investors.

Mowi, Grieg Seafood and SalMar are the only three companies to have issued a green bond in the aquaculture sector, bringing the current total amount invested into the sector in green bonds to €689 million.^A All three bonds were oversubscribed – demand for Mowi’s €200 million issuance was over €700 million¹⁵ – which reveals the appetite for issuance of debt to scale sustainable practices in seafood.

Mowi’s green-bond framework states that a key use of the €200 million proceeds will go towards developing environmentally sustainable aquaculture, which encompasses both sustainable feed and fish welfare.¹⁶ However, the framework relies heavily on certification schemes for both sustainable feed and fish welfare – Aquaculture Stewardship Council (ASC), Marine Stewardship Council (MSC) and MarinTrust – rather than focusing on a measurable reduction in farmed-fish mortalities or the elimination of wild-caught fish in feed.¹⁷ It appears that Mowi has issued a green bond for nothing more than conducting business as usual – on the other hand, Grieg Seafood has recognised the need to develop novel feed ingredients.

4. Unsustainable aquaculture is hindering the Sustainable Development Goals

- Unsustainable aquaculture is **threatening food security** (SDG 2) and **adding pressure to wild-fish stocks** (SDG 14).
- Investors that have committed to **supporting the SDGs** need to act to **align their aquaculture investments** with these commitments.

Despite the aquaculture sector’s aspirations to improve global food security and relieve pressure on wild-fish stocks, it is failing to deliver on this promise. Marketing images might tout farmed fish as a sustainable food with the ability to meet the world’s protein needs – but, in reality, industrial aquaculture removes high-quality protein and micronutrients from the food chain in one part of the world and transfers the nutrients to different – often more affluent – markets.¹⁸

A 2021 report by Greenpeace Africa and Changing Markets showed how, each year, over half a million tonnes of fish are extracted from the ocean around the coast of West Africa to produce FMFO. This quantity of fish could feed over 33 million people in the food-insecure region, but is instead used to feed farmed fish and animals, mostly in Europe and Asia. Not only are the fish species the FMFO industry uses in West Africa already overexploited,

A Mowi green bond: €200 million EUR (<https://mowi.com/investors/share-and-bond/bonds/>); Grieg Seafood green bond: €142 million EUR (<https://salmonbusiness.com/grieg-seafood-to-expand-green-bond-by-e47-million/>); SalMar green bond: €347 million EUR (<https://www.seafoodsource.com/news/business-finance/salmar-far-exceeds-green-bond-fundraising-goal-of-nok-2-5-billion>).



A dead salmon floating in a sea cage
Credit: Compassion in World Farming

according to the Food and Agriculture Organization, but industrial extraction from West African fisheries also undermines food security in the region and deprives people of their livelihoods.¹⁹

Rather than providing a solution to food-security issues, the aquaculture sector is significantly undermining the achievement of Sustainable Development Goal (SDG) 2 (to end hunger and achieve food security) and SDG 14 (to conserve and sustainably use the oceans). Since many investors have committed to supporting the SDGs, they need to recognise that investment in unsustainable aquaculture is at odds with this commitment.

Recommendations for investors

The combination of high mortalities on farms, resulting from poor fish husbandry, and growing ecological impacts from the use of wild-caught fish in feed - juxtaposed with consumer demand for ethical, environmentally friendly and high-welfare products - are creating financial and reputational risks to the aquaculture industry.

Investors in the aquaculture supply chain should develop robust policies and engagement practices that require investee companies to:

1. **Publicly disclose full aquaculture supply chains and report on key indicators.**
2. **Reduce mortality rates on fish farms.** This should include the requirement for monthly reporting on mortality and escape rates from all aquaculture suppliers, and early engagement if these numbers seem to be increasing.
3. **Adopt good fish-welfare standards.** We recommend using Compassion in World Farming's species-specific toolkit to set fish-welfare standards and reporting indicators: <https://www.compassioninfoodbusiness.com/resources/fish/>
4. **Eliminate the use of wild-caught fish in feed for aquaculture by 2025.** This should include the requirement for companies to publicly report - or require public reporting - from their suppliers on the composition and origin of feed, and investment in sustainable alternatives.

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