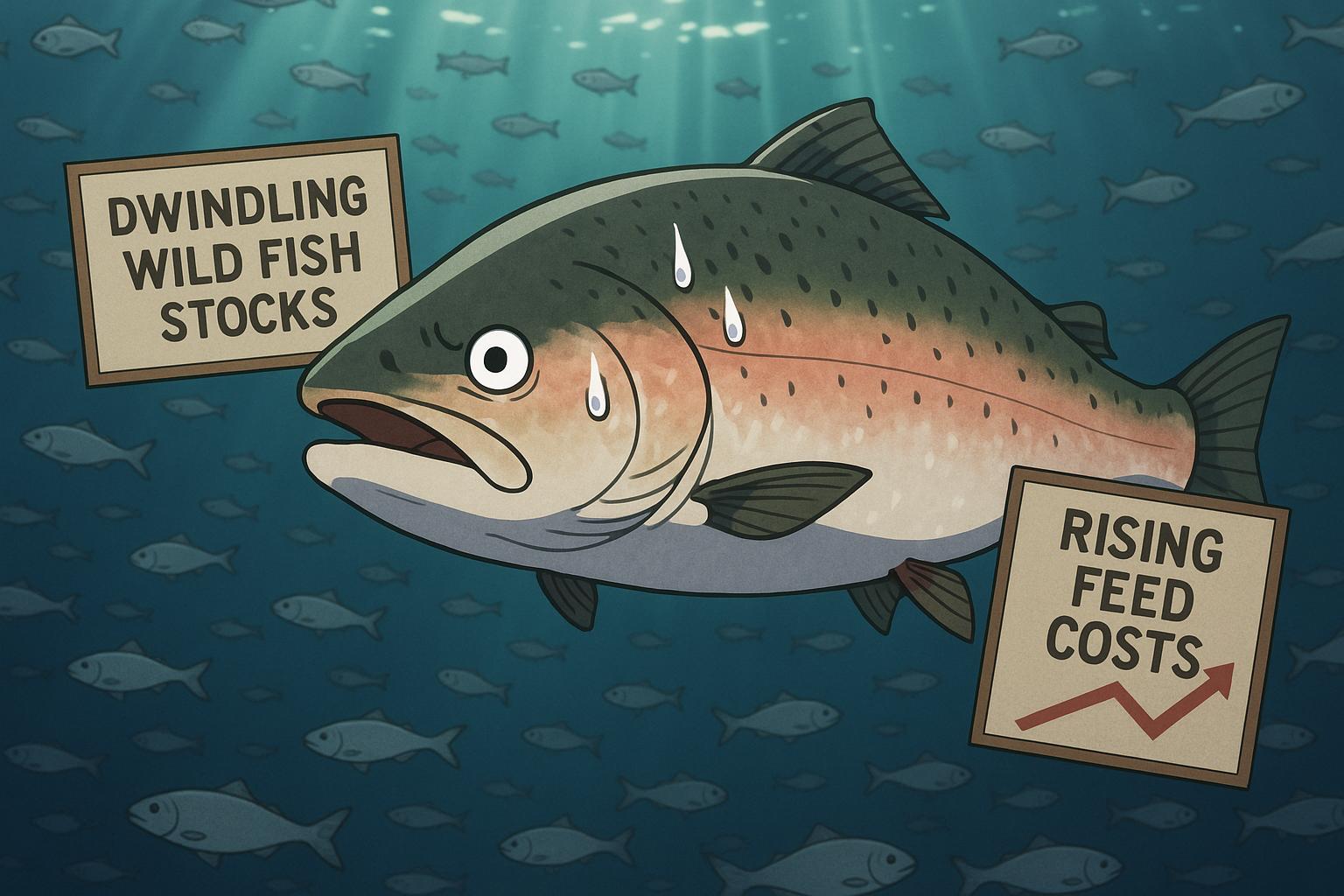
# Salmon industry risks growth amid rising reliance on overexploited wild fish stocks



The global salmon industry faces critical challenges ahead of the 2025 UN Ocean Conference, as highlighted by a comprehensive analysis from the FAIRR Initiative, supported by investors managing USD 80 trillion. This report underscores the industry's precarious position due to its continued dependency on dwindling wild fish stocks for feed, coupled with a lack of viable and scalable alternatives. The analysis, following a four-year engagement with seven leading salmon producers—Bakkafrost, Grieg Seafood, Lerøy Seafood, Mowi, Multi X, SalMar, and Salmones Camanchaca—reveals that despite a projected 40% growth in salmon production by 2033, nearly 90% of wild fish stocks are already overexploited or fully exploited, raising alarms over long-term sustainability and profitability.

The extensive reliance on fishmeal and fish oil (FMFO)—derived from wild-caught fish—poses significant risks. FAIRR has noted that while some improvements in feed efficiency have occurred, they have not kept pace with the rapid growth in salmon production. Alarmingly, only three of the seven companies assessed have managed to reduce their proportion of FMFO in feed since 2020, and overall, five firms have increased their reliance on wild-caught fish. For instance, Grieg Seafood reported a staggering 39% increase in fishmeal usage, raising concerns about the sustainability of these practices as marine ecosystems face increasing pressure from fishing activities.

Looking forward, the production of fishmeal and fish oil is expected to increase modestly by 9% and 12% respectively between 2022 and 2032—figures that appear inadequate when juxtaposed with the aggressive growth aspirations of the salmon industry. Notably, recent fluctuations in feed markets, particularly following the cancellation of Peru's anchovy season, have resulted in dramatic spikes in feed costs. Mowi, the world’s largest salmon producer, reported a staggering 70% rise in feed costs since 2021, attributed largely to supply chain instabilities.

The discussion around improving feed strategies reveals two main approaches currently being employed by producers: utilising more fish trimmings and exploring novel alternative ingredients to replace FMFO. The commitment to increase the use of fish trimmings has been welcomed, with most companies reporting a positive shift since the start of the engagement. However, the availability of fish trimmings remains constrained, raising doubts about their potential to serve as a long-term solution.

Investigations into alternative feed ingredients, such as algal oil, single-cell proteins, and insect meals, are ongoing, yet these options have struggled to obtain a significant market share. Concerns surrounding their scalability, cost-effectiveness, and overall acceptability seem to hinder their widespread adoption. Recent dialogues have indicated that while algal oil is seen as promising, insect meal has been regarded less favourably due to various trade-offs.

The outlook remains bleak without urgent investments directed toward more sustainable feed alternatives. Laure Boissat, Oceans Program Manager at FAIRR, articulated that the salmon industry's current reliance on wild fish will perpetuate cost volatility unless comprehensive strategies are developed. The call for diversification in feed sources has also been echoed by Thekla Swart, Manager for Ethics & Sustainability at Steyler Ethik Bank, who emphasised that transitioning to sustainable feed solutions is not only environmentally essential but also a strategic necessity.

Beyond mere feed strategy adjustments, the FAIRR Initiative calls for greater investor engagement and collaboration within the salmon industry as a means to enhance transparency and responsibility. To navigate the complex landscape of aquaculture, stakeholders are encouraged to consider the implications of feed availability in their reporting and risk assessments. Furthermore, formal targets for declining absolute use of wild-caught fish and prioritising research into alternative feed ingredients are recommended.

As the salmon industry grapples with impending sustainability pressures, it must adapt to a rapidly changing environment. Failing to innovate in feed sourcing not only jeopardises the industry's growth potential but also compromises the well-being of marine ecosystems, effectively making the call for urgent action a critical one. Only through a concerted effort to diversify feed ingredients and adopt sustainable practices will the salmon farming sector be able to ensure both its long-term resilience and a secure food future.

## Reference Map:

* Paragraph 1 – [[1]](https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/), [[3]](https://www.fairr.org/engagements/sustainable-aquaculture/outcomes)
* Paragraph 2 – [[1]](https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/), [[2]](https://thefishsite.com/articles/the-alternative-aquafeed-ingredients-impasse-fairr-initiative), [[5]](https://www.foodnavigator.com/Article/2019/06/05/Investors-eye-game-changing-innovations-as-climate-change-and-antibiotics-threaten-aquaculture-sector)
* Paragraph 3 – [[4]](https://www.theguardian.com/environment/2022/mar/02/wild-fish-stocks-squandered-to-feed-farmed-salmon-study-finds), [[6]](https://globalsalmoninitiative.org/en/our-progress/blog/tackling-global-challenges-through-innovation), [[7]](https://www.globalseafood.org/advocate/alternative-feeds-sea-lice-solutions-and-animal-welfare-innovations-for-aquaculture-addressed-in-bergen/)
* Paragraph 4 – [[3]](https://www.fairr.org/engagements/sustainable-aquaculture/outcomes), [[6]](https://globalsalmoninitiative.org/en/our-progress/blog/tackling-global-challenges-through-innovation)
* Paragraph 5 – [[1]](https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/), [[2]](https://thefishsite.com/articles/the-alternative-aquafeed-ingredients-impasse-fairr-initiative)
* Paragraph 6 – [[1]](https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/), [[5]](https://www.foodnavigator.com/Article/2019/06/05/Investors-eye-game-changing-innovations-as-climate-change-and-antibiotics-threaten-aquaculture-sector)
* Paragraph 7 – [[1]](https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/), [[2]](https://thefishsite.com/articles/the-alternative-aquafeed-ingredients-impasse-fairr-initiative)
* Paragraph 8 – [[1]](https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/), [[2]](https://thefishsite.com/articles/the-alternative-aquafeed-ingredients-impasse-fairr-initiative), [[3]](https://www.fairr.org/engagements/sustainable-aquaculture/outcomes)

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## Bibliography

1. <https://www.aquafeed.com/newsroom/reports/urgent-investment-in-alternative-feed-ingredients-needed-to-reduce-risk-in-salmon-industry-fairr-says/> - Please view link - unable to able to access data
2. <https://thefishsite.com/articles/the-alternative-aquafeed-ingredients-impasse-fairr-initiative> - This article discusses the FAIRR Initiative's engagement with aquaculture stakeholders to diversify feed ingredients, reducing reliance on fishmeal and fish oil (FMFO). It highlights challenges such as scale, cost, and industry consensus in adopting alternatives like insect meal, algal oil, and processed animal proteins. The piece emphasizes the need for innovation and investment to achieve sustainable growth in the salmon sector.
3. <https://www.fairr.org/engagements/sustainable-aquaculture/outcomes> - FAIRR's report outlines the outcomes of its engagement with seven major salmon producers, revealing that future growth may be constrained if the industry continues to rely solely on fish-based ingredients and soy protein. The report highlights the lack of focus on biodiversity and the need for alternative feed ingredients to ensure sustainable aquaculture practices.
4. <https://www.theguardian.com/environment/2022/mar/02/wild-fish-stocks-squandered-to-feed-farmed-salmon-study-finds> - A study reported by The Guardian reveals that the demand for farmed salmon leads to the waste of millions of tonnes of nutritious wild fish, such as mackerel, sardines, and anchovies, used as feed. The research suggests that diverting these fish to human consumption and increasing carp farming could boost global seafood production and reduce pressure on wild fish stocks.
5. <https://www.foodnavigator.com/Article/2019/06/05/Investors-eye-game-changing-innovations-as-climate-change-and-antibiotics-threaten-aquaculture-sector> - This article highlights how investors are focusing on innovative solutions to address challenges in the aquaculture sector, including climate change and antibiotic resistance. It discusses the exploration of alternative feed ingredients, such as algae and insects, to reduce dependence on wild fish stocks and improve sustainability in fish farming.
6. <https://globalsalmoninitiative.org/en/our-progress/blog/tackling-global-challenges-through-innovation> - The Global Salmon Initiative's blog post discusses the industry's efforts to support research and development into alternative sources of fish feed rich in omega-3 fatty acids, such as algae, plants, and insects. It highlights collaborations with companies like Skretting and Veramaris to incorporate omega-3s from marine algae into fish feed, aiming to reduce reliance on wild fish.
7. <https://www.globalseafood.org/advocate/alternative-feeds-sea-lice-solutions-and-animal-welfare-innovations-for-aquaculture-addressed-in-bergen/> - This article covers discussions at a conference in Bergen addressing innovations in aquaculture, including alternative feeds, sea lice solutions, and animal welfare. It emphasizes the need for the salmon farming sector to diversify its feed ingredients to reduce reliance on forage fish and to address challenges related to omega-3 availability and market volatility.