

The Business Case for Pre-Competitive Collaboration

The Global Salmon Initiative (GSI)

The number of companies throughout various industries making commitments to sustainability has risen exponentially over the last few years. However, many companies are struggling to meet their commitments, often reinventing the wheel or pursuing parallel, but often unequal, strategies. There is a growing realization that individual supply chain actors lack the power to fix large-scale environmental degradation such as deforestation, depletion of wild fish stocks, and plastic pollution on their own, yet these problems pose real risks to entire industries and also to individual company reputations, as well as long-term profitability.

Pre-competitive platforms... offer a diversified strategy and a faster path to innovation and progress

For pre-competitive platforms to be successful, having NGOs, government or other actors to hold industry accountable, as well as to help set expectations, is essential to maintain credibility and ensure industry alone is not responsible for setting sustainability standards. Pre-competitive platforms won't alleviate all the potential economic impacts related to increasing environmental pressure for businesses, and businesses must still make individual efforts, but they can offer a diversified strategy and a faster path to innovation and progress towards addressing the most important issues. This is particularly relevant for supply chains in which many actors use shared resources but can be valuable for myriad industries. Certainly, this is easier said than done; it can be nearly impossible to set aside rivalries and differing approaches, but with shared reputational risk, scarce input resources (e.g. fishmeal and oil), and collective use of the commons, such as oceans, collaboration can be more than a 'nice to do.' It can be a necessity to ensure the longevity of business interests in the face of increased environmental and social pressure.

One such collaboration that has demonstrated clear value for businesses is the Global Salmon Initiative (GSI), a pre-competitive platform launched by 17 salmon aquaculture companies representing nearly 70% of global production. Each company committed both financial resources and time to advance the GSI's goals. Today there are 14 members representing 50% of global salmon farming production.

Established in 2013, the GSI drove rapid uptake of Aquaculture Stewardship Council certified salmon throughout the industry, resulting in around 40% of the industry being certified today, including 60% of GSI member production. WWF recognizes ASC as the leading certification program for seafood that is farmed in socially and environmentally responsible ways. Furthermore, the GSI has enabled information-sharing relating to better environmental practices, increased trust and produced clear results among members, and shared them publicly, demonstrating that pre-competitive collaboration is not only possible but can prove beneficial to companies' bottom lines. Other industries can learn from this example how to make progress on sustainability goals collectively, while also improving reputation and saving money.

Aquaculture, a relatively young industry in terms of global commercial growth, has received a great deal of scrutiny regarding its negative environmental impacts, and salmon in particular has been in the limelight. With mounting negative press, pressure from buyers, and limitations to social license to expand operations (or even just to operate in some cases), salmon farming companies looked for alternative ways to address these challenges. In fact, WWF was asked to negotiate a dispute between NGOs and the salmon aquaculture industry in British Columbia in 2002. WWF suggested instead the launch of the Salmon Aquaculture Dialogue—composed of producers, retailers and brands, researchers, regulators and NGOs—to agree on the key environmental and social impacts of the industry, appropriate metrics for each and performance

GSI by the numbers

gsi GLOBAL SALMON INITIATIVE
14 members

50%
of global farmed salmon industry by volume

60%
GSI member production ASC certified
(goal of 100% by 2020)

In 6 years of GSI, members have seen, on average:

17%
decrease in fish meal use

9%
decrease in fish oil use

50%
decrease in the use of medicinal sea lice treatments

120%
increase in non-medicinal approaches to treat sea lice and other diseases

levels to reduce them to more acceptable levels. These recommended standards formed the basis for the Aquaculture Stewardship Council (ASC) salmon certification program.

Recognizing the critical importance of improvements in industry sustainability, a number of industry CEOs decided to take proactive action and create the GSI. By forming the GSI, members committed to voluntarily reporting on the key indicators of sustainability performance, including metrics on fish escapes, antibiotic use, and marine ingredients in feed, among others. While sustainability reporting is becoming mainstream and many companies are now voluntarily reporting on a variety of sustainability metrics, it is not common for an industry to agree upon which metrics to use and how to measure them, and to then provide data on a public platform side-by-side with the competition. This has allowed members to demonstrate a commitment to transparency and continuous improvement in managing common resources in an environmentally responsible way, enabling the mitigation of reputational risk, as well as helping to secure the future of their businesses. Though difficult to quantify, there is a significant perceived improvement in reputation amongst members of the GSI as a result of these efforts.

ASC Certification

Among their commitments, GSI members pledged to certify all their farms with the Aquaculture Stewardship Council (ASC) certification, which is considered the gold standard for aquaculture, by 2020. By professing such a bold goal, the GSI firmly planted a stake in the ground, signaling their level of commitment to improving environmental stewardship and advancing the sustainability agenda. The certification requires compliance with or demonstration of progress toward more

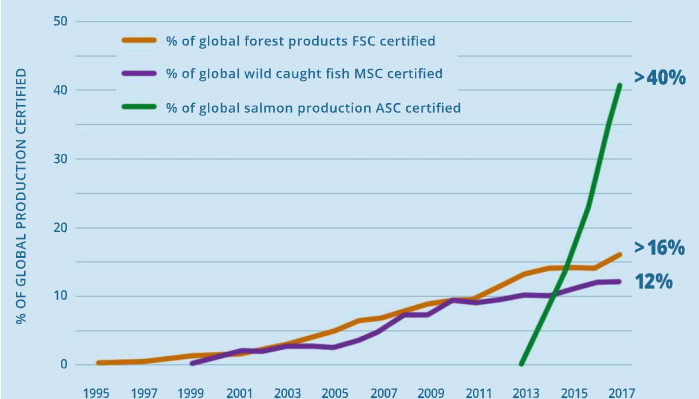
than 150 different indicators (requirements vary by indicator), a considerable barrier to overcome.

"The final standards represent an extraordinary accomplishment and set a new and unprecedented standard for responsible farmed salmon production."

— Petter Arnesen, Marine Harvest

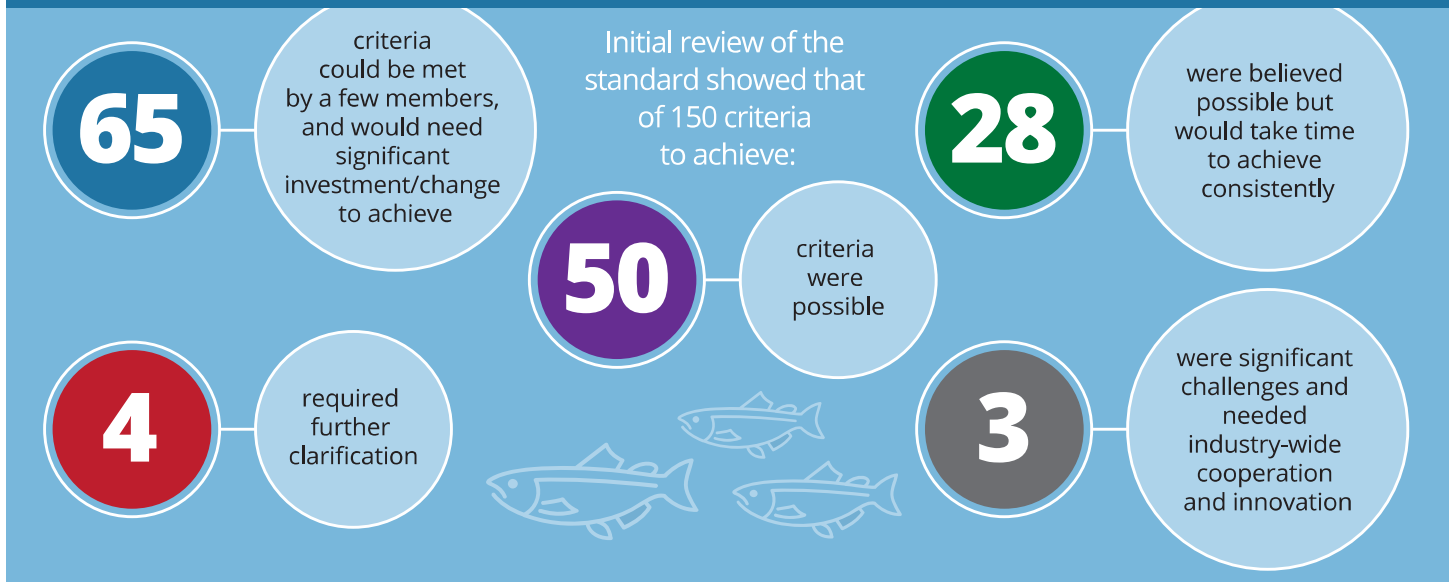
Fortunately, the pre-competitive nature of the Global Salmon Initiative facilitated the kind of problem-solving that greatly lessened the hurdle of meeting the various certification requirements. The result? Since the certification standard was established in 2012, 40% of the global salmon market has become ASC certified, including 60% of GSI member

Certification success: FSC, MSC, ASC



Sources: WWF; Biodiversity Indicators Partnership; MSC; GSI

GSI working together on ASC



production, the fastest uptake at scale of any certification (see graph below). While the 40% figure represents the total salmon market (including non-GSI members), and uptake across regions varies, this result would not have been possible without collaboration and commitment of the GSI members. Though it is unlikely the GSI will meet the target of full certification by 2020 (current estimate is approximately 75%), the progress towards certification is still considerable and significant. Several members have pointed to certification progress and collective problem-solving on sustainability issues as one of the main drivers for considering the GSI as a successful collaboration and optimal use of resources. By sharing how various metrics were best achieved, what worked and what didn't, trust was built among members, enhancing relationships for continued collaboration on other challenges facing the sector's sustainable development.

"We are already seeing practical, measurable progress."

— Sady Delgado, CEO of Aquachile

Though difficult to quantify, this equates to real savings in terms of staff time and expertise. Furthermore, such trust among competitors represents a unique intangible benefit that will stack over time, enabling companies who work in the same waters and share the same challenges the opportunity for more agile cooperation which will drive sustainability at speed and scale, rather than one company at a time.

Disease Management

Disease and sea lice management are among the areas in which information sharing has been most beneficial. Sea lice represent a considerable challenge for salmon farmers,

as they are a persistent pest affecting farms in most areas of the world. Five to ten years ago, antibiotics and chemical treatments were commonly applied to prevent lice attachment and to treat the SRS disease for which there has been no effective vaccine. However, ASC certification requires extremely limited antibiotic use and encourages non-chemical and non-medical solutions for the treatment of sea lice, and only allows them under very strict conditions. As a result, companies needed to look to alternatives for treatment, presenting a challenge as many alternative treatments are not proven, potentially costly, and vary in their efficacy based on factors ranging from siting to availability of freshwater, among others. For individual companies, the prospect of finding the right non-pharmacological solutions would seem insurmountable, but with the GSI, a working group was formed to share experiences of treatments with data on their efficacy, ecological soundness and other factors, as well as accelerate the identification and development of innovative non-medicinal approaches.

This has...accelerated progress towards finding scalable solutions to sea lice and disease management

In Chile, the GSI members, outside of the GSI itself, hired Aquabench, a consulting company working with the Chilean salmon industry, to help companies test a variety of solutions and document the results. This has encouraged innovation, information sharing, a greater number of technological trials, and accelerated progress towards finding scalable solutions to sea lice and disease management, saving money and building a solid knowledge base for future innovation. Furthermore, some companies beyond the GSI have joined in this initiative,

demonstrating the impact of the GSI's collaboration across the salmon farming industry even outside of its membership.

Another successful initiative in improving sea lice treatment has been to share information related to rotational treatments. Some common non-medicinal treatments for sea lice include laser treatments, high concentrate hydrogen peroxide baths, and use of wrasse (a small fish that eats sea lice). The problem with these individual treatments is that the wrasse are more effective when waters are warmer (although other considerations such as species and regional differences may play a role as well) and the other two are less effective over time as the lice adapt to them. Various companies had used these treatments individually, but by sharing insights, they learned that by rotating practices such as these three treatments, the length of time each was effective increased considerably.

Feed Efficiency

Another key area in which the GSI has made a demonstrable impact on its members' businesses is related to feed, both in terms of feed conversion ratio (FCR) as well as the amount of fishmeal and fish oil required. The feed conversion ratio is the measurement of efficiency for the amount of protein and energy required to convert the fish into food for human consumption. In addition, historically, the aquaculture industry required use of fishmeal and fish oil as part of the diet to maintain healthy fish. For years, the salmon farming industry had been criticized for having a high FCR, with ratios quoted anywhere from 1.5:1 to 3:1. Prior to the timing of formation of the SAD and GSI, FCR ratios were even higher, often quoted at 4:1 or more, numbers that often got cited past the timing of their reality due to misinformation. Individually, companies were struggling to invest sufficiently in research

and development on fishmeal and fish oil alternatives and improvements in FCR, while also trying to reduce use of antibiotics, prevent escapes, and ensure a high-quality protein source. Though progress was being made, it wasn't fast enough to outpace criticism from some buyers and others outside of the industry.

Today... the feed conversion ratio has dropped to around 1.2:1

Recognizing the critical need for more innovative solutions, the GSI, alongside its associate feed company members, put out a tender for novel alternatives in feed and marine ingredients and received an overwhelming response. Working closely with feed companies has allowed for more direct engagement across the industry, leading feed companies to more deeply understand the needs and challenges of their farming customers and to spur innovation at a quicker pace. Fast forward to today, and the feed conversion ratio has dropped to around 1.2:1 or 1.1:1 for the industry at large. The goal is to get down to a 1:1 ratio. It seems clear that, individually, companies would have found it hard to achieve this level of progress. While FCR was trending in this direction prior to the GSI's formation, this provides another example of industry using influence to encourage innovation at a faster pace and towards a more significant result.

Furthermore, the amount of fishmeal and fish oil in feed formulation has also been significantly reduced over the last six years, by 17% and 9%, respectively, thanks to the innovation of non-marine fish sources such as algae oils. For decades, fishmeal and even more so fish oil availability limited growth within the salmon farming industry. Thus, every



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reduction in fishmeal and fish oil required has allowed the industry grow, and at the same time reduce its dependency on marine ingredients. This is a tremendous improvement in efficiency and reduces strain on the fish stocks used for fishmeal and fish oil, increasing the likelihood of their longevity, which is key for the environment and for businesses relying on these stocks as part of their business model. Additionally, the process of exploring alternate solutions to fishmeal, fish oil and feed ingredients has served as a way to demonstrate to large companies that influencing market solutions requires collaboration and is not easily accomplished by individual companies.

Impact on Reputation

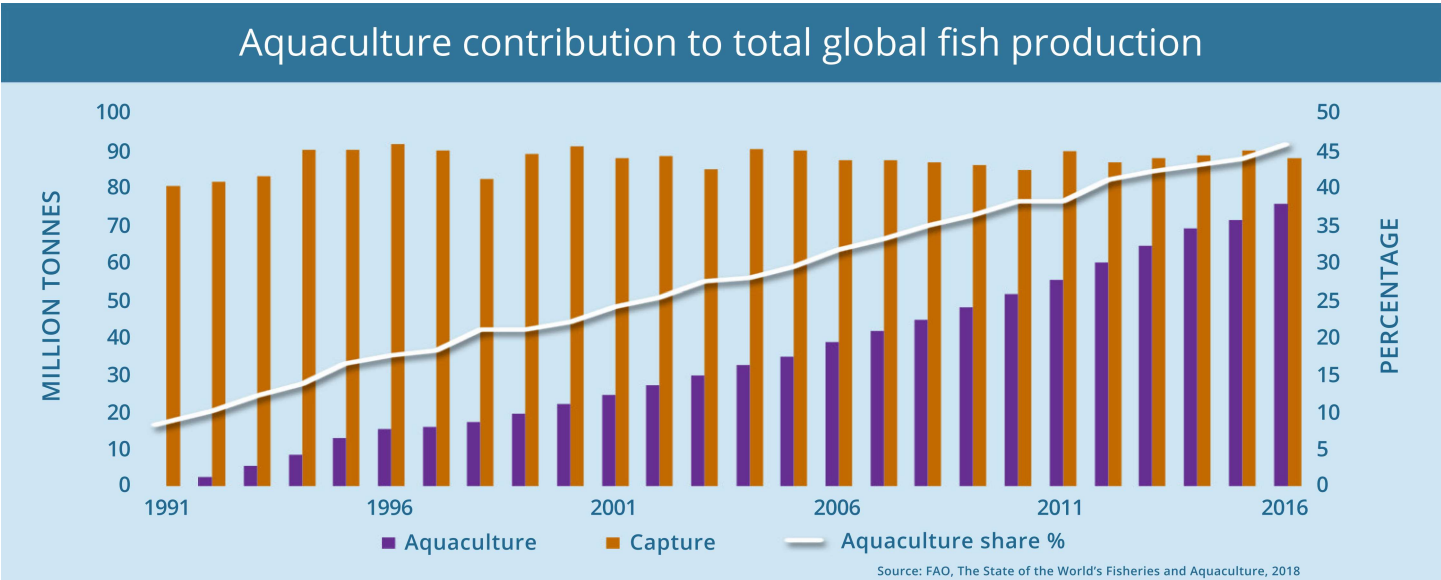
One of the main reasons that the CEOs of the salmon aquaculture companies saw value in creating the GSI was that sub-par performance of any member of the industry reflected poorly on everyone. In short, publicity about a problem with one company reflected on them all. This concern is what spurred their willingness to work together to reduce key impacts and then report the results publicly for the entire sector. The data shows that considerable progress has been made in getting operations certified according to ASC criteria and making significant reductions in a number of key impacts.

What is not clear, however, is whether the reputation of the industry has been improved or not. There is some anecdotal evidence that this might be the case, although this has not been measured by the GSI. There is more coverage of salmon aquaculture than in the past, but it appears that it may be less critical, on the whole, than previously. That research was beyond the scope and budget of this work. Similarly, it would be important to determine whether improved performance

through certification of product and the reduction of key impacts has given the industry more time and input to inform policies that could push the rest of the industry to be more sustainable.

Conclusion

Global seafood consumption has doubled in the last 50 years¹ and is continuing to grow, making the ongoing benefits of this kind of platform extraordinary. The significant increase in aquaculture production, in particular, has enabled this growth in consumption. The need for sustainable aquaculture is no longer a question, but an important part of future global food systems. The business case for pre-competitive collaboration is a case for change at scale that would not be possible for individual companies, and which would take the market far longer to achieve without collaboration. At a time when natural resources are being depleted far more quickly than they can regenerate, and pressure on the food system mounts, the lessons learned from the GSI can be applied to other industries to enhance bottom lines and accelerate progress towards sustainability across industries and the planet. The GSI is the leading example of industry leadership in transforming an entire sector towards a more sustainable future.



¹<https://ec.europa.eu/jrc/en/news/how-much-fish-do-we-consume-first-global-seafood-consumption-footprint-published>