



Full length article

No logo? The failure of ASC salmon labeling in Norway and the UK

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ABSTRACT

This article examines why the growing supply of farmed salmon certified by the Aquaculture Stewardship Council (ASC), a leading standard for responsibly farmed seafood, has been sold as conventional, unlabeled salmon in some countries. Two countries are examined: Norway, the world's main producer of ASC-certified farmed salmon, and the United Kingdom, a longstanding demand-side market leader on eco-labels. The study finds that unresolved environmental challenges of salmon farming, combined with perceived weaknesses in the ASC salmon standard, have led not only non-governmental organizations but also several major retailers to view the ASC as not setting the bar high enough to enable salmon farming to be defined as "sustainable." Consequently, many producers and retailers use ASC certification only on a business-to-business level and have not been incentivized to label salmon products as "responsibly farmed" in supermarkets and other consumer markets.

1. Introduction

Over the past two decades, seafood labeling schemes have been launched by non-state actors to address problems ranging from by-catch of certain species, harmful fishing methods, and overfishing, to food safety and unsustainable aquaculture and fish-farming practices. The uptake of some labels has been driven by consumer demand and activist-group pressure on retailers to supply sustainably sourced foods and products [1,2]. In the case of wild-capture fisheries, consumer concerns about overfishing, combined with NGO campaigns and engagement with retailers, were important for the creation and growth of a market for the Marine Stewardship Council (MSC), the leading certification program for wild-capture fisheries [3,1,4,5].

In the rapidly growing aquaculture sector, which accounts for over half of seafood consumption worldwide (FAO, 2020), environmental NGOs, fish-farming companies, and other stakeholders have attempted to replicate the success of the MSC and create a "gold standard" for environmentally and socially responsible fish farming. In 2010, following on the heels of the Aquaculture Dialogues initiated by the World Wide Fund for Nature (WWF), the Dutch Sustainable Trade Initiative IDH teamed up with WWF Netherlands to create the Aquaculture Stewardship Council (ASC) certification and labeling scheme. After contentious negotiations involving various stakeholders, including NGOs, fish farmers, seafood processors, retailers, and foodservice operators, a standard for farmed salmon became operational in 2013.

Despite widespread producer uptake of ASC certification, market

demand for salmon products that carry the ASC logo has been substantially lower than the aquaculture industry had expected. Limited retailer willingness to sell ASC-labeled salmon products in key European markets has resulted in large volumes of ASC-certified salmon being sold as "conventional" farmed salmon without the ASC label on the packaging [6].

This article investigates why a growing supply of ASC-certified salmon is sold as non-labeled salmon. The focus is on two countries where market demand for ASC-labeled salmon has been low or virtually non-existent: Norway and the United Kingdom (UK). The non-use of the ASC logo on salmon in those markets seems surprising. In the UK case, leading retailers have generally been frontrunners in creating markets for certification and eco-labeling—specifically for the substantial uptake of the MSC scheme for wild-capture fisheries products [4]. In Norway, the fish-farming industry is the world's main producer of ASC-certified salmon [6], so substantial uptake of the ASC-label could have been expected in the home market.

The analysis presented here sheds light on the crucial role of NGOs and retailers for the uptake and evolution of seafood certification and labeling. We find that a lack of consistent NGO support for ASC salmon certification, unresolved environmental challenges of salmon farming practices, and perceived weaknesses of the ASC salmon standard go a long way towards explaining the limited retailer interest in using the ASC label on farmed salmon products in the UK and Norway.

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2. Seafood labeling and certification as market-based governance

Eco-labeling and certification schemes initiated by non-state actors are market-based systems involving the establishment of standards for responsible and sustainable production, auditing compliance with these standards, attaching labels to products that meet the standards, and creating institutions to perform these functions. As participation in these schemes is voluntary, producers must in principle be convinced of the benefits of participating. It is also up to the retailers to decide if they want to demand or pay more for certified products with the on-product label of a certification scheme. Use of the label requires payment of a logo-licensing fee and sometimes royalties to the scheme.

The conventional view of voluntary eco-labeling, often reflected in research based on applied economic theory and willingness-to-pay studies, is that consumer demand drives market supply of eco-labeled products [7-9]. Once consumers are aware of the sustainability challenges associated with certain products, or have been mobilized by social movement campaigns, it has been assumed that they will accept paying a price premium for eco-labeled products or pressure retailers to source products based on sustainable production practices. However, research on seafood labeling indicates that this conventional model of consumer-driven demand for sustainability certification and labeling is far too simplistic [10].

Studies of sustainability certification schemes find that NGOs and activist groups are often pivotal actors in creating market demand for certified products. Environmental NGOs can increase demand for eco-labeling by targeting retailers and well-known brands near the distribution end of global supply chains [11,12,4,10]. Further, NGOs have enrolled consumers in boycott and “buycott” campaigns to put pressure on retailers and other professional purchasers to source eco-certified products [13,14,1]. A common retailer response has been to pass incentives and requirements for eco-certification up the value chains to the producers. In creating a market for the MSC, for example, NGOs formed strategic alliances with distributors and retailers, and have been active in promoting the label in the consumer market [3,15,4,16]. NGOs can also threaten action against a given product or company, “borrowing” the purchasing power of consumers; or they may take a wider advocacy role, shaping public opinion around an issue-area or corporate practice [13,4,10]. Thus, NGOs can employ a range of strategies to increase or decrease demand for certain products and labels. Their support, or lack of support, for an eco-labeling scheme may prove crucial for the credibility of the scheme [17].

Many environmental NGOs and consumers have been skeptical to fish farming. For instance, several UK NGOs have been directly hostile to industrialized farming because of the negative environmental impacts related to escapees, the spread of disease and parasites like sea lice, chemical treatments and water pollution from organic matter [18]. Canadian NGOs have framed salmon farming as something inherently unnatural, using slogans like “Wild Salmon Don’t Do Drugs” and “Farmed and Dangerous” [19]. In Norway, fish farmers struggled with a poor reputation in the early years, when the industry was less strictly regulated—but concerns over farming methods, environmental impacts, and fish mortality in the pens have continued [6,20]. Media debates about salmon farming have centered on concerns about environmental sustainability, including negative impacts on biodiversity, methods used for lice treatment, fish welfare and high fish mortality, and the effects of farm-source sea lice on wild fish populations [21].

Another strand of research takes businesses—and sometimes business associations—as the unit of analysis, and examines how individual or collective business interests may facilitate the uptake of voluntary standards and certification schemes ([22]: 395). From this perspective, the adoption of certification schemes is driven by the desire of businesses to protect their reputation, provide credible information to the market, or gain competitive advantages through product differentiation [14,23]. Because environmental and social reputations can reflect on a

group of companies or the industry as a whole, companies could also benefit from working together and endorsing certification collectively [24,25]. Earlier research indicates that, at least in the early days of certification, Norwegian salmon-farming companies were interested in using certification primarily on a business-to-business level—to provide retailers, not end-consumers, with some kind of sustainability or responsibility assurance [26].

Although it is unclear whether consumers drive retailer demands for sustainability certification, the lack of a price premium on farmed seafood is often held to explain the failure of seafood labeling to penetrate consumer markets in some countries [10]. The literature also provides substantial evidence that consumers are considerably less willing to pay more for farmed fish than the case with wild-caught fish [27]. This present study examines a different explanation for why much ASC-certified salmon is sold at spot market prices, without the ASC-label: As NGO campaigns and media debates have framed salmon farming as an environmentally harmful business, and as governments and fish farmers have struggled to resolve the environmental problems related to salmon farming, retailers may not have been incentivized to display an aquaculture label on their salmon products. Negative NGO and consumer attitudes toward salmon farming—combined with a lack of NGO support for the ASC, and perceived weaknesses in the ASC salmon standard—could help to explain the failure of *ASC-labeled salmon* to penetrate retail markets in Norway and the UK.

This proposition is examined here through an inductive analytical approach, drawing primarily on in-depth interviews with NGOs, retailers, supermarket chains, and salmon farmers in Norway and the UK, as well as ASC staff in the Netherlands. Altogether 12 in-depth interviews were conducted in 2020 and 2021. A further three retailers in the UK and one in Norway rejected requests for interviews but answered questions via email. The study also draws on information obtained from public documents, including reports from NGOs, fish-farming companies, certification programs, and other stakeholders. Data on ASC-labeled salmon in European markets were provided by the ASC on request. In addition, various public sources were used to compile annual data on total volumes, sales values, and ASC-certified production volume of farmed Norwegian salmon, as well as on ASC-certified salmon production sites in Norway.

3. Emergence of the ASC salmon standard

The origins of the Aquaculture Stewardship Council (ASC) can be traced back to the global Aquaculture Dialogues, initiated by the WWF in 2004, to advance standards for minimizing the negative environmental and social impacts of seafood farming. These Dialogues, one for each farmed species—including salmon, shrimp, tilapia, pangasius, and trout—drew over 2000 participants, including farmers, seafood processors, retailers and foodservice operators, NGOs, government agencies, and research institutes. This eventually resulted in the formal establishment of the ASC by WWF Netherlands and the Dutch Sustainable Trade Initiative IDH in 2010. The ASC was founded as an independent, non-profit organization with the goal of becoming the world’s leading certification and labeling scheme for environmentally and socially responsible farmed seafood.

The ASC requires fish farmers to comply with performance-based standards and engage with accredited third-party certification bodies (certifiers) to verify compliance. Once a farm is independently assessed and certified as being environmentally and socially responsible, it may use the ASC label. Using the ASC logo is assumed to offer companies a competitive advantage, by providing access to retailers with strict sourcing certification requirements, as well as proof to the consumer that the seafood product has been responsibly farmed or produced.¹ Use

¹ ASC, 2021. “Our Logo”. URL: <https://www.asc-aqua.org/what-we-do/our-logo/>

of the label requires producers to pay a logo licensing fee.

Negotiating the ASC salmon standard took a long time, due to the many difficult issues that had to be resolved and agreed by various stakeholders. The dialogues began in 2004, but the standard was not agreed until 2012, becoming operational in 2013. Unlike the MSC, which was the first certification and labeling scheme for wild-capture fisheries, several other certification programs for responsible or sustainable aquaculture were established at this time. These include the GLOBALG.A.P., the Best Aquaculture Practices by the Global Aquaculture Alliance (GAA), the Friends of the Sea marine aquaculture standard, BRC Global Standards (food safety), and the International Federation of Organic Agriculture Movements (IFOAM) standard. However, the ASC is the only aquaculture certification program to be endorsed by the International Social and Environmental Accreditation and Labelling Alliance (ISEAL)—a non-governmental organization that recognizes best practices among certification and labeling schemes. It is considered one of the most comprehensive aquaculture certification standards, covering a range of sustainability issues [28].

The ASC salmon standard comprises seven overarching principles for environmentally and socially responsible fish farming, each of which contains a range of specific criteria and requirements. Many of its indicators and requirements are stricter than the legal requirements set by salmon-farming countries. In Norway, both the ASC and government regulations regulate the use and release of chemicals, nutrients, and medicines to protect local biodiversity, seabed and water quality, and set formal sea-lice limits. However, the ASC goes further than Norwegian law in setting a maximum level of 300 escapees, which effectively prevents actors with significant escapee rates from becoming certified. It also requires farms to adhere to a strict limit of maximum 0.1 mature sea lice per farmed salmon in the “sensitive period” when the young salmon smolt migrate from their natal rivers to sea. This sea-lice limit is stricter than Norway’s 0.2 requirement, which itself is very strict compared to other salmon-farming countries. Moreover, the ASC goes further than Norwegian law in setting maximum levels for fish disease and medicinal treatments. Marine ingredients in salmon feeds require certification of marine and soya-derived ingredients; smolt production in open-net cages is prohibited.

Data provided by the ASC show that the income (from labeling of all farmed species) and organizational capacity of the scheme have grown steadily over the past decade. Whereas funding from charities and grants were the main sources of income in the early years, trading incomes—from certification and logo licensing fees and royalties—have increased every year since 2012 (see Fig. 1). In parallel, as shown in Fig. 2, ASC staff expanded from one full-time employee in 2010 (plus the Supervisory Board) to 60 full-time equivalents in 2020.

4. Producer and market uptake

The market for farmed salmon is global, and Norwegian production is predominantly for export. Norway has become the world’s leading salmon producer, exporting farmed salmon worth about €6.6 billion in 2020.² Half of the global supply of Atlantic salmon comes from Norwegian salmon farms, and some 75% of the annual Norwegian harvest goes to other European countries.³ Since the launch of the ASC salmon standard, Norway’s major salmon producers have committed to certifying many or all their farms with the ASC [6].

Fig. 3 shows strong growth in volume, measured in the total weight of live stock, and sales value 2000–2020.⁴ However, the period

2016–2019 can be characterized as one of stagnation in both live stock and sales value, whereas the former increased in 2020. There is broad agreement among fishery scientists that this stagnation is due to problems with sea lice, leading to greater fish mortality and negative environmental consequences [29]. The government has in effect banned further production increases until sea-lice problems have been resolved. Fig. 3 also shows the increase in the share of ASC-certified production volume out of total weight of live stock, 2017–2020.⁵

The number of ASC-certified, Norwegian salmon production sites has grown steadily since 2013 (see Fig. 4). As of September 2021, about 28% (274 out of 966) of Norwegian farm sites were ASC-certified; another 22 sites were under assessment.⁶ In total, Norwegian, ASC-certified salmon amounted to some 450,000 tons,⁷ or approximately 50% of Norwegian salmon production (see also Fig. 3).⁸ Half of the global supply of ASC-certified salmon comes from Norwegian fish farms. In comparison, Scotland’s small supply of ASC-certified salmon represents only 2% of its production. By 2020, there were three ASC-certified farm sites in the UK (owned by Norway’s major salmon-farming company, Mowi), 39 in Canada (owned by the Norwegian companies Mowi, Cermaq, and Grieg), and 123 sites in Chile. Hence, Norway is not only the world’s biggest salmon producer but also the frontrunner in terms of producer adoption of the ASC salmon standard.

There are notable differences in demand for ASC-labeled salmon products among European markets. As Fig. 5 shows, sales of ASC-labeled salmon products have been substantially higher in Germany, France, the Netherlands, and Belgium than in Norway and the UK. In the UK case, many leading retailers have sourcing policies that require their salmon suppliers to be certified by the GLOBALG.A.P., the GAA or the ASC—but they do not pay a price premium for labeling their salmon. In Norway, no retailers or supermarket chains offer ASC-labeled salmon, although some 50% of their supply is ASC-certified.

Norwegian salmon producers—the main suppliers of ASC-certified salmon—report that large volumes of ASC-certified salmon, eligible for sales with a price premium, have been sold as conventional farmed salmon, at spot market prices. One explanation is that use of the label requires payment of a logo-licensing fee. According to several major Norwegian salmon-farming companies, less than 15% of the ASC-certified Norwegian salmon is sold with the ASC label.¹⁰ Thus, overall, market demand for ASC-labeled salmon products has been considerably lower than the growth in certified production volumes.

5. Explaining the Lack of Demand for ASC-Labeled Salmon

During the Aquaculture dialogues, many NGOs had high hopes for what was intended to be the “gold standard” for salmon farming. Given the range of other certification schemes for responsible fish farming, the idea was that the ASC would stand out by setting stringent environmental standards—making only the top 10% of salmon producers qualified. However, several highly contentious issues in the negotiations—related to marine and soya-derived ingredients in the salmon feed in particular, resulting in the removal of a proposed requirement to MSC-certify all marine feed ingredients—led several NGOs to withdraw from the process. Moreover, in the process of increasing uptake of ASC certification by salmon-farming companies, many NGOs have expressed concerns that the salmon standard has become too flexible and

² Norwegian Seafood Council (2021). <https://nokkeltall.seafood.no/>

³ Statistics Norway (2020): <https://www.ssb.no/jord-skog-jakt-og-fiskeri/arkiv/arkivpublikasjoner/opprettslaks-til-heile-verda>

⁴ Directorate of Fisheries (2021). <https://www.fiskeridir.no/Akvakultur/Tall-og-analyse/Akvakulturstatistikk-tidsserier/Laks-regnbueoerret-og-oerret/Matfiskproduksjon>

⁵ ASC data (2021). The ASC receives information on certified production on farms on an annual basis; these figures represent estimated production volume for the coming year.

⁶ <https://www.asc-aqua.org/find-a-farm/>

⁷ Data received from ASC on tons of ASC salmon produced in Norway

⁸ Directorate of Fisheries (2021), weight of live stock per 2020: <https://www.fiskeridir.no/Akvakultur/Tall-og-analyse/Akvakulturstatistikk-tidsserier/Laks-regnbueoerret-og-oerret/Matfiskproduksjon>

¹⁰ Personal communication.

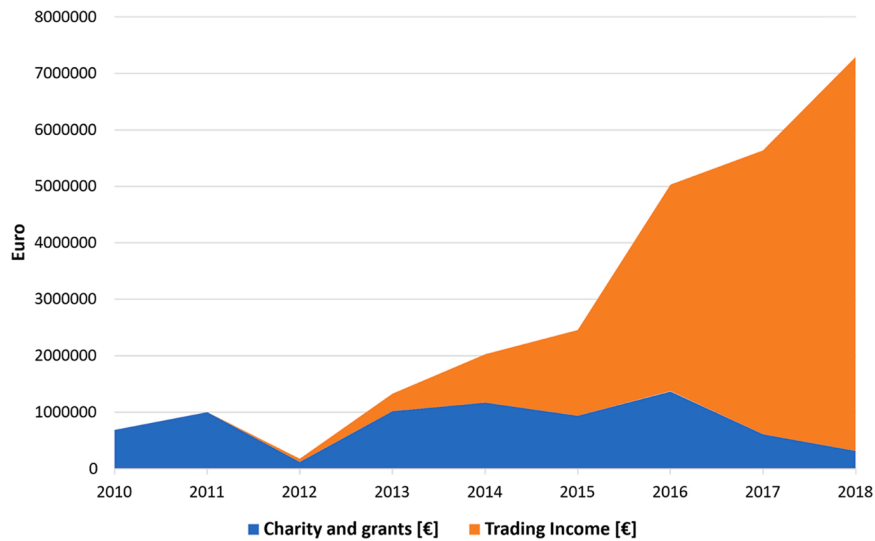


Fig. 1. ASC Funding. Data provided on request. Source: ASC, Utrecht, the Netherlands, 2020.

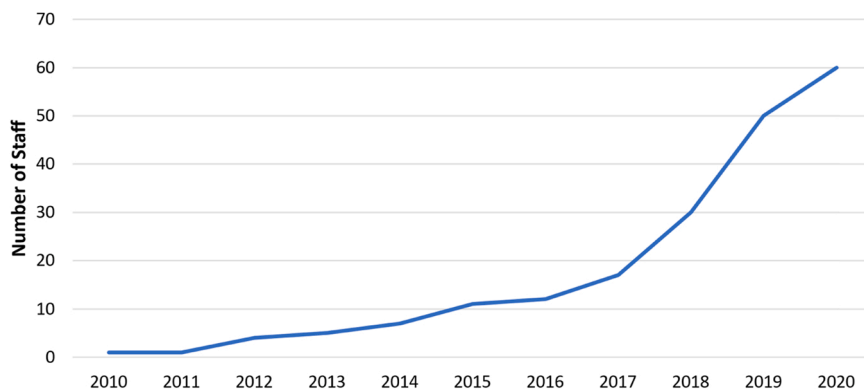


Fig. 2. Growth of ASC Staff. Data provided on request. Source: ASC, Utrecht, the Netherlands, 2020.

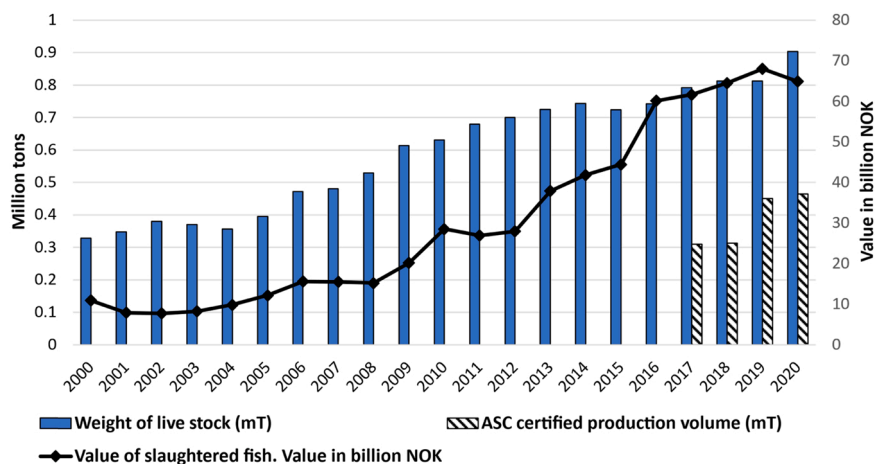


Fig. 3. Total volume, sales value and ASC certified production volume of farmed Norwegian salmon 2000–2020.

discretionary. In order to make the business model more financially viable, the ASC has watered down requirements in the salmon standard, making it more achievable for “mainstream” producers. “Variance requests” have been widely granted in all major jurisdictions, allowing farmers to comply with local regulations instead of the relatively strict

ASC requirements. One example concerns salmon farmers requesting approval to deviate from the maximum 0.1 lice requirement on salmon during sensitive periods of smolt migration (ASC indicator 3.1.7). According to one UK NGO, “they lost a lot of the NGO support by doing that [watering down the standard], because several of the NGOs engaged had

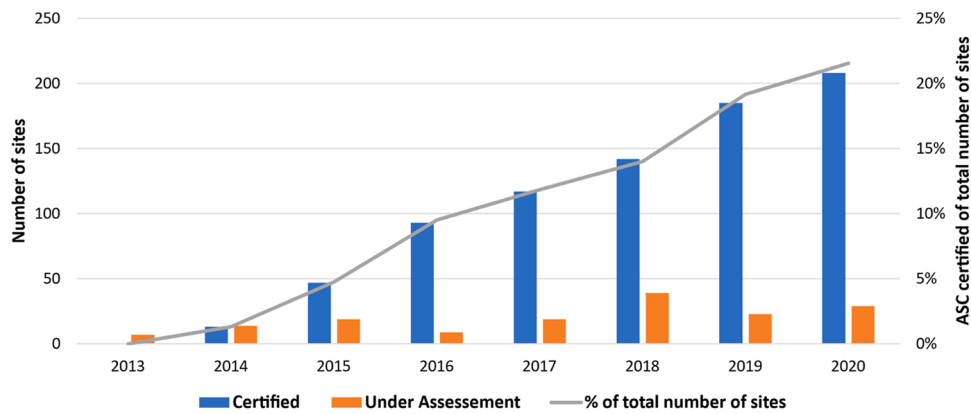


Fig. 4. ASC certified salmon production sites in Norway.⁹¹

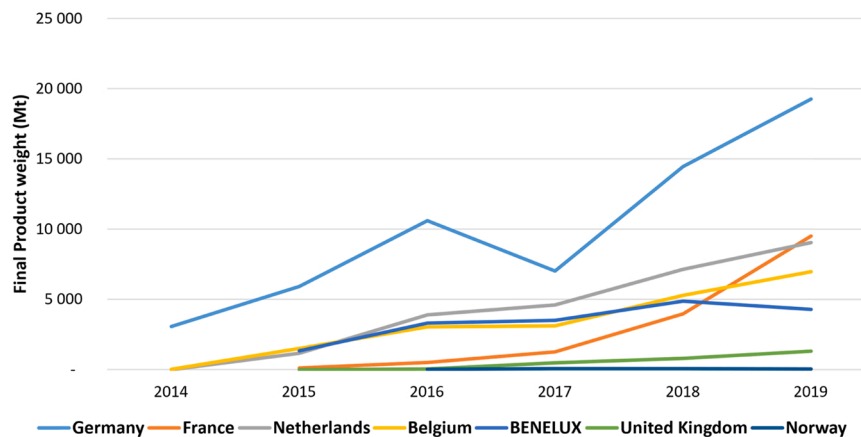


Fig. 5. Sales of ASC-labeled salmon products in Europe: five largest markets, plus UK and Norway.

high hopes that the ASC would certify only the top performers.”

Many NGOs also believe that, although the ASC may be the most stringent standard available for environmentally and socially *responsible* salmon farming, it does not qualify as a *sustainability* standard. As one UK NGO argued:

We as an organization do not use the word “sustainable” to apply to aquaculture, unless it is shellfish, because there is no chemical input and no fed input in shellfish farming... You cannot have a sustainable aquaculture product unless you have a sustainable feed. A sustainable aquaculture product will have to have 100% MSC-certified sustainable fisheries going into the feed to get a sustainable product coming out.

Thus, the failure of the ASC standard to require MSC-certified feed appears to have been a game-changer for many civil society actors. As one Norwegian NGO stressed:

The feed requirements are simply not good enough. The ASC does not address the problematic use of soy in the feed, nor does it require that fishmeal or fish oil be 100% MSC-certified [...] So we do not actively support the ASC. We do not encourage retailers to source ASC products, and if ASC-labeled salmon had been available in the market, we would not have promoted it to consumers either.

This argument was echoed by other actors, emphasizing that there are challenges that the ASC standard does not resolve, such as feed, sea lice and escapees—which in turn does not make the promotion of ASC labeling a high priority. Many NGOs in Norway and the UK see the ASC salmon standard as deficient in terms of resolving the industry’s key environmental challenges. For this reason, NGOs have not spent resources on promoting the ASC label to consumers, or engaged with retailers to convince them to sell ASC-labeled salmon products.

Retail groups in both countries confirmed that NGOs have not

campaigned or approached them to advocate for the benefits of ASC-labeling. Some retailers also reiterated NGO arguments about the salmon standard being deficient or flawed. One Norwegian retailer emphasized the inability of the standard to resolve the environmental challenges of salmon farming, including sea lice, feed, animal welfare, and discharges from production. “That tells me the standard is not good enough to make a difference, in a marketing perspective,” this informant argued. Another Norwegian retail group held that the standard was not strict enough to enable a meaningful differentiation between “ordinary” Norwegian salmon and ASC-certified salmon. Further, according to one of the largest and most environmentally progressive UK retailers, the standard’s limitations concerning feed regulation, fish welfare and zonal management—which had made this retailer unable to make sustainability claims—were the main reason for not investing in the ASC logo. This also partly relates to the fact that most UK retailers are members of the Sustainable Seafood Coalition (SSC), which, in the common Code of Conduct (CoC) negotiated in 2011, decided to treat wild-capture and farmed fish differently. Here, aquaculture practices are not defined as “sustainable”—a nuance whose importance is also evident from the ASC logo, which states “responsibly farmed.” Thus, several NGOs and retailers seem to agree that the ASC’s salmon standard is not sufficiently stringent to enable sustainability claims on certified products.

Moreover, retailers’ unwillingness to invest in ASC labeling was found to relate to their knowledge about consumer preferences for and attitudes towards salmon farming. Here it should be noted that this examination does not include consumer surveys: the focus is on what the major retailers know and think about consumer attitudes towards farmed fish and labeling. All informants, among retailers as well as NGOs, emphasized that while consumers tend to be skeptical of fish

farming, they usually do not realize that salmon products available in supermarkets come largely or exclusively from fish farms. In a survey conducted by Fidra, a UK environmental charity, only 5% of the respondents knew that all Scottish salmon sold in supermarkets was farmed ([30]: 10). Most respondents (94%) answered, incorrectly, that there was a mix of farmed and wild-caught salmon, whereas one percent of respondents believed that no Scottish salmon was farmed ([30]: 10). “They think it comes from Scottish rivers,” a representative of a UK NGO said. This was echoed by another NGO: “most people are not aware that fish is farmed.” Retailers also confirmed they believe this was largely the case.

Norwegian retailers and NGOs also claimed that consumer demand for salmon-farming labels is generally lower in Norway compared to other countries, because people believe that Norwegian food production is sustainable and safe, and they have confidence in the public authorities and regulations. “We trust the Norwegian farmer, the Norwegian fishermen,” one retailer noted. “Norwegian production is just considered cleaner, safer, using less chemicals, better at animal welfare, and so on [...] We don’t see that certification labels promote sales. We don’t need labels.” This observation is confirmed by earlier research showing that that US and EU consumers have greater distrust in the ability of their respective governments to protect them from unsustainably produced and unhealthy food, compared to Norwegian consumers, who generally trust the government [26].

In contrast to the low sales of ASC-labeled products in the UK and Norway, sales of MSC-labeled cod products—which also come from Norway—have grown substantially since about 2015. In the UK, the MSC logo has been widely used by retailers to label products from wild-capture fisheries. This raises the question of what the benefits of investing in MSC-labeled cod are, as against ASC-labeled salmon.

According to retailers, poor consumer knowledge and understanding of salmon farming makes it hard to communicate the *advantages* of ASC certification. Aquaculture rules and practices are complex, and the ASC standard covers a range of highly technical issues that are difficult for consumers to grasp. This has arguably not been the case with MSC certification, however. As one Norwegian retailer noted, “the main message of the MSC is simple. It’s about the need to manage of our fish stocks sustainably, which is something most people can relate to. Ola and Kari [John and Jane Doe] know that the coastal cod stock is threatened in many places [...] This provides marketing opportunities for the MSC logo.” UK informants also explained that, as fisheries have been part of the national history and culture for centuries, most people know that wild fish populations have been threatened and depleted, and they believe in the need for sustainable management of wild fish stocks. This seems to make MSC certification an easy sell compared to the ASC.

Finally, many informants also maintained that concerns about the added price on labeled salmon is a substantial barrier to ASC labeling. Given the high spot-market price of salmon—combined with limited consumer demand for the ASC label—retailers seem convinced that consumers are unwilling to pay extra for a product with the ASC logo. As one Norwegian retailer noted, “salmon is already too expensive [...] and there is no demand for certified salmon in the market, so increasing the price is not an option.” UK retailers also explained that their consumers are price-weary and not necessarily environmentally conscious, and generally not willing to pay a price premium for farmed salmon.

This examination of the role played by NGOs, retailers and consumers in the failure of ASC-labeling in Norway and the UK shows, as noted by a respondent from a large, multinational seafood seller, “demand [for eco-labels] does not come from below, from the consumers. We must *create* demand. We have to build consumer knowledge, which drives demand.” This analysis of ASC salmon certification has shown that, in the absence of a positive dynamic involving NGO pressure,

consumer demand, and retailer engagement with the certification scheme, the result has been a failure to create consumer markets for ASC-labeled salmon in Norway and the UK.

6. Conclusions

This study has examined why increasing volumes of ASC-certified salmon are being sold as non-labeled salmon in Norway and the UK. It finds that, despite growing uptake of certification among salmon producers, the continuing sustainability challenges of salmon-farming practices help to explain the lack of environmental NGO commitment to support the scheme. According to several UK retailers, certain perceived weaknesses in the ASC salmon standard and the relatively poor reputation of aquaculture practices among consumers, as well as the relatively high costs of labeling (logo licensing fees and royalties), have made it hard to obtain widespread support for salmon labeling. These factors combined may explain the disengagement with efforts to create a consumer market for the ASC label in the UK. In that market, the standard’s apparent weaknesses concerning feed regulation, animal welfare, and zonal management have made it a *responsibility standard*, not a *sustainability standard*, in the eyes of many NGOs and retailers.

Indeed, the ASC itself does not claim to be a sustainability standard: it labels salmon products as “responsibly farmed.” According to retailers, the apparent lack of consumer awareness of buying farmed salmon, combined with lack of knowledge and understanding of ASC certification, make the ASC label a hard sell. Low consumer awareness and demand provide few incentives for retailers to pay a price premium for ASC-labeled products. In Norway, consumer trust in public regulations and in “Norwegian salmon” helps to explain the lack of demand for the ASC label.

Future research should inquire more deeply into why retailer demand for the ASC label has been substantially higher in certain other markets, particularly Germany, France, the Netherlands, and Belgium. Interview data gathered for this study indicate that NGOs—particularly the WWF—have campaigned actively to build markets for the ASC in the Netherlands, Germany, and France. In the Netherlands, for example, the ASC and the WWF have organized joint marketing campaigns together with retailers to create consumer awareness of the advantages of ASC labeling. Although NGO activism in countries like the UK has focused more on the environmental problems related to salmon production, the market for ASC-labeled salmon products may increase if the labeling program manages to address key challenges in salmon farming, notably the problems with sea lice and unsustainably sourced feed. However, addressing such problems will require not only more stringent voluntary standards, but also public enforcement of strict sea-lice limits on farmed salmon and other government regulations.

Concerning the supply-side of certification and labeling, this study shows that the supply of certified products can increase substantially even in the absence of significant consumer demand for the label. In the UK and Norway, ASC salmon certification appears to be used on a business-to-business level—to reassure retailers that salmon producers adhere to standards for responsible salmon farming. This observation indicates the importance of considering a range of producer motivations for adopting non-state certification and labeling schemes. Producers adopt certification standards not only to provide credible information to consumers, but also to inform big buyers, protect their individual or collective reputations, regulate markets, and gain competitive advantages. Looking beyond this study, seafood labeling may provide a key testing ground for understanding the role of such business motivations in driving sustainability.

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⁹ Data from Barentswatch (2021): <https://www.barentswatch.no/havbruk/sertifisering>

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References

- [1] L.H. Gulbrandsen, Creating markets for eco-labeling: Are consumers insignificant? *Int. J. Consum. Stud.* 30 (5) (2006) 477–489.
- [2] J. Jacquet, et al., Conserving wild fish in a sea of market-based efforts, *Oryx* 44 (2010) 45–56.
- [3] D.H. Constance, A. Bonanno, Regulating the global fisheries: The World Wildlife Fund, Unilever, and the Marine Stewardship Council, *Agric. Hum. Values* 17 (2000) 125–139.
- [4] L.H. Gulbrandsen, *Transnational Environmental Governance: The Emergence and Effects of the Certification of Forests and Fisheries*, Edward Elgar, Cheltenham, 2010.
- [5] T.J. Ward, B. Phillips, Anecdotes and lessons of a decade, in: T.J. Ward, B. Phillips (Eds.), *Seafood Ecolabelling: Principles and Practice*, Wiley-Blackwell, Oxford, 2008, pp. 416–435.
- [6] I. Vormedal, L.H. Gulbrandsen, Business interest in salmon aquaculture certification: Competition or collective action? *Regul. Gov.* 14 (2) (2020) 328–343, <https://doi.org/10.1111/rego.12213>.
- [7] D. Brécard, B. Hlaimi, S. Lucas, Y. Perraudau, F. Salladarré, Determinants of demand for green products: An application to eco-label demand for fish in Europe, *Ecol. Econ.* 69 (2009) 115–125.
- [8] C.A. Roheim, The economics of ecolabelling, in: T. Ward, B. Phillips (Eds.), *Seafood Labelling: Principles and Practice*, Wiley-Blackwell, Oxford, 2008, pp. 38–57.
- [9] M.F. Teisl, B. Roe, R.L. Hicks, Can eco-labels tune a market? Evidence from dolphin-safe labeling, *J. Environ. Econ. Manag.* 43 (2002) 339–360.
- [10] C.A. Roheim, S.R. Bush, F. Asche, J.N. Sanchirico, H. Uchida, Evolution and future of the sustainable seafood market, *Nat. Sustain.* 1 (August) (2018) 392–398.
- [11] T. Bartley, Institutional emergence in an era of globalization: the rise of transnational private regulation of labor and environmental conditions, *Am. J. Sociol.* 113 (2) (2007) 297–351.
- [12] T. Bartley, S. Koos, H. Samel, G. Setrini, N. Summers, *Looking Behind the Label: Global Industries and the Conscientious Consumer*, Indiana University Press, Bloomington, 2015.
- [13] M. Boström, M. Klintman, *Eco-Standards, Product Labelling and Green Consumerism*, Palgrave Macmillan, Basingstoke, 2008.
- [14] B. Cashore, G. Auld, D. Newsom, *Governing Through Markets: Forest Certification and the Emergence of Non-state Authority*, Yale University Press, New Haven, CT, 2004.
- [15] L.H. Gulbrandsen, The emergence and effectiveness of the Marine Stewardship Council, *Mar. Policy* 33 (4) (2009) 654–660.
- [16] I. Kvalvik, B.H. Nøstvold, J.A. Young, National or supranational fisheries sustainability certification schemes? A critical analysis of Norwegian and Icelandic responses, *Mar. Policy* 46 (2014) 137–142.
- [17] S.R. Bush, H. Toonen, P. Oosterveer, P.J. Mol, The “devil’s triangle” of MSC certification: balancing credibility, accessibility and continuous improvement, *Mar. Policy* 37 (2013) 288–293.
- [18] C. Carter, *The Politics of Aquaculture: Sustainability Interdependence, Territory and Regulation in Fish Farming*, Routledge, London, 2018.
- [19] N. Young, R. Matthews, *The Aquaculture Controversy in Canada: Activism, Policy and Contested Science*, UBC Press, Vancouver, 2010.
- [20] S. Sætre, K. Østli, Den nye fisken. Om temmingen av laksen og alt det forunderlige som fulgte, Spartacus, Oslo, 2021.
- [21] M.S. Olsen, T.C. Cecilie Osmundsen, Media framing of aquaculture, *Mar. Policy* 76 (2017) 19–27.
- [22] G. Auld, L.H. Gulbrandsen, Private regulation in global environmental governance, in: R. Falkner (Ed.), *Handbook of Global Climate and Environmental Policy*, John Wiley & Sons, London, 2013, pp. 394–411.
- [23] M.E. Porter, *Competitive Advantage: Creating and Maintaining Superior Performance*, Free Press, New York, 1985.
- [24] Matthew Potoski, Aseem Prakash, *Voluntary Programs. A Club Theory Perspective* (eds.), MIT Press, Cambridge, MA, 2009.
- [25] A. Prakash, M. Potoski, *The Voluntary Environmentalists. Green Clubs, ISO 14001, and Voluntary Environmental Regulations*, Cambridge University Press, Cambridge, 2006.
- [26] Nøstvold, B.H., Alm, S., Pleym, I., and Honkanen, P. (2010). Hva er drivkraften bak bærekraftig sjømat og hvordan er norsk sjømatnæring posisjonert? *Nofima Rapport* 27/2010.
- [27] C. Roheim, P. Sudhakaran, C. Durham, Certification of shrimp and salmon for best aquaculture practice: Assessing consumers’ preferences in Rhode Island, *Aquac. Econ. Manag.* 16 (2012) 266–286.
- [28] T.C. Osmundsen, et al., The operationalisation of sustainability: Sustainable aquaculture production as defined by certification schemes, *Glob. Environ. Change* 60 (January) (2020), 102025, <https://doi.org/10.1016/j.gloenvcha.2019.102025>.
- [29] Mikkelsen, E., Karlsen, K.M., Robertsen, R. and Hersoug, B. (2018), *Skiftende vindretning. Særlige hensyn for tildeling av tillatelse til lakseoppdrett*, *Nofima Rapport* 26/2018.
- [30] Fidra (2019) *Scottish Salmon Farming: Survey Results. A Fidra Study Into Consumer Opinions on Scottish Salmon*. Available from: (<https://www.bestfishes.org.uk/wp-content/uploads/Summary-of-Fidra-farmed-salmon-consumer-survey-results-full-length-final.pdf>) (accessed 17 September 2021).