SUSTAINABILITY REVIEW



ANNUAL REPORT 2020





Review of stakeholder communication on sustainability and FM/FO

Several of our primary stakeholders have recently published sustainability reports, and an increasing number of companies are communicating the integration of sustainability into their strategy. European Fishmeal has gone through some of these reports to get a sense of in which direction the wind blows in the feed industry. As the use of sustainability reports is becoming a more strategic and forward-looking tool, the value of these reports has increased substantially and can provide us with an idea of the companies' aspirations and future strategies.

This report will first walk through the overall lines from FAO, then proceed with the sustainability reporting of five aquaculture feed producers, Skretting, Bakkafrost, Cargill, BioMar and MOWI. These will be structured around the critical points from the individual reports, followed by some central quotes.

Then we will go briefly through the Global Salmon Initiatives' sustainability report, which is built quite differently than the more traditional sustainability reports of the feed producers. GSI is furthermore a good indicator for the future as they know which parameters the feed producers' measure on.

Lastly, we will cast a look upon the general sustainability tendencies in agriculture and pet food, accounting for around 15 and 5 per cent respectively of the total global use of fishmeal and fish oil. To shed light on the feed production for land-based animals we have looked at DLG, and for the pet food producers, Néstle and Mars Inc. will be the cases.





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FAO - How is fish used?

FAO devoted their annual "State of World Fisheries and Aquaculture " to the topic of sustainability in action. Especially the SDGs are used to set off the discussion on sustainable fishery and aquaculture. The fishery and aquaculture sector has a role to play in several of the SDGs, but is at the core of SDG 14: Life Below Water, with 4 out of 10 targets directly referring to fishery. Furthermore, FAO mentions that one of the vital means in obtaining a sustainable fishing sector is through minimizing loss and waste "A large proportion of fisheries and aquaculture production is either lost or wasted - 35 percent of the global harvest. This must be reduced to improve the efficiency and sustainability of the sector"

 In 2018, about 88 per cent of the 179 million tonnes of total fish production (wild catch and aquaculture) was utilized for direct human consumption. The remaining 12 per cent was used for non-food purposes, out of which 80 per cent (18 million tonnes) were utilized for fish meal and fish oil (see figure 1)

A significant but declining percentage of world fisheries and aquaculture production is used for fishmeal and fish oil (figure 1). Fishmeal and fish oil are still considered the most nutritious and most digestible ingredients for farmed fish, and fish oil represents the richest available source of long-chain polyunsaturated fatty acids, which perform a wide range of critical functions for human and animal health. However, their inclusion rates in compound feeds for aquaculture have, according to FAO, shown a clear downward trend¹. This tendency is further supported by the fact that global aquaculture is predicted to increase by 32 percent (26 million tonnes)² while the total production of fishmeal and fish oil is predicted to increase 1 percent and 7 percent, respectively, up until 2030³.



¹ FAO, State of world fisheries and aquaculture. 2020, p. 63.

² FAO, State of world fisheries and aquaculture. 2020, p. 165

³ FAO, State of world fisheries and aquaculture. 2020, p. 169



FIGURE 23 UTILIZATION OF WORLD FISHERIES AND AQUACULTURE PRODUCTION, 1962–2018





Looking ahead

Note: The COVID-19 pandemic has affected most countries in the world, with severe impacts on the global economy. The following projections are based on the assumption that there will be a significant disruption in the short run for production, consumption and trade, with a recovery in late 2020 or early 2021.

World fish production, consumption and trade is expected to increase, but with a growth rate that will slow over time. Total fish production (aquaculture and wild catch) is expected to expand from 179 million tonnes in 2018 to 204 million tonnes in 2030. Aquaculture production is projected to reach 109 million tonnes in 2030, an increase of 32 per cent (26 million tonnes) over 2018, thus making aquaculture the sole driver for the global increase in fishery production.

Asia will continue to dominate the aquaculture sector and will account for more than 89 per cent of the increase in production by 2030. The sector is expected to expand most in Africa - up 48 per cent - driven by the additional capacity established in recent years. In nominal terms, prices in the fishery and aquaculture sector are expected to rise in the long run up to 2030.

The global food fish consumption was in 2018 split 52% - 48% between aquaculture and capture fish. In 2030 the relation is expected to be 59% - 41%.





Aquaculture feed

In this section we look at some of the largest feed producers targeting the aquaculture industry, namely Skretting, Bakkafrost, Cargill, BioMar and Mowi. The chapter is rounded off with a section on the Global Salmon Initiative (GSI). Each company section focuses mainly on the most recent sustainability report or, when it is integrated in this - the most recent annual report. However, when the company has communicated relevant sustainability claims elsewhere, these may also be included.

Skretting

Based in Norway but owned by Dutch Nutreco, Skretting produces 2,5 million tonnes of aquaculture feed annually for more than 60 species and with production facilities in 18 different countries, thus making them one of the market leaders. Skretting has produced sustainability reports since 2013.

- Skretting's long-term ambition is to reduce its dependence on fishmeal and fish oil, and many of their R&D activities are seemingly targeting this reduction.
 - In a press release from August 2017 Skretting revealed their N-3 Algae oil, which they claim could replace fish oil. In that press release, it is stated that " fish oil, like fishmeal, is a natural and well-balanced source of high-quality protein for aquaculture feed formulation and carries large quantities of energy per unit weight, Skretting will continue to use it as an ingredient. However, in utilizing the algae oil in its new N3 diet, Skretting can be even more flexible with regards to its raw material inclusions. Accordingly, fish oil becomes just like any other raw material; it is interchangeable and can be formulated into feeds at varying levels depending on specific nutrient requirements, customer needs as well as fluctuating prices and availability."⁴
- Traceability is paramount for Skretting both on marine ingredients and on other ingredients such as soy etc.

⁴ Skretting, August 18 2017: " No constraints, no limitations - the infinite age of N3 is here"





- The ambition is that "by 2025 100% of fishmeal and fish oil purchased from wild catch will be from MarinTrust". Skretting is, in general, very committed to the certification agenda.
- Focus on reducing carbon footprint but writes that 95-99% of the footprint from their feed comes from external processes, such as shipping and ingredients making.
 - This indicates that CO2 reduction is likely to be a competitive factor.
- Does not mention FIFO but in turn FFDR (Forage Fish Dependency Ratio)
- It is implicit that they want to increase their share of fishmeal and oil coming from byproducts.

Quotes

- "[we have a] long-term ambition to reduce the value chain's dependence on finite ingredients like fishmeal and fish oil, we also continue to invest considerable resources into the development and commercial introduction of novel ingredients. It is our belief that these will have a huge positive impact on the aquaculture space in the years and decades ahead."
- 2. "our sustainability commitment considers safeguarding human and animal health at the core of our responsibilities, and we choose to work with partners that share our vision that responsible sourcing is not only seen from an economic point of view, but also in connection with environmental protection and social development."
- 3. "With the knowledge that we have at Skretting, salmon grower feeds essentially require zero marine ingredients[...] Currently, however, the prices of the novel alternatives that are reaching the market make marine-free feeds less viable from an economic perspective. However, new feed ingredients are entering the market rapidly, and we anticipate that within the coming years, these alternatives will offer a competitive solution for our aquaculture feeds."
- 4. "We are already providing commercial feeds that are independent of fishmeal and have recently validated diets that are free of both fishmeal and fish oil. For the first time, salmon has been grown in commercial conditions from sea transfer to harvest with diets that did not contain marine ingredients."





Bakkafrost

Bakkafrost is different than the other companies in this section as they cover the entire value chain with production of FM/FO, salmon feed and salmon. Nevertheless, the sustainability reporting of Bakkafrost is noteworthy because it adds to the overall consensus in the aquaculture and feed industry. Furthermore, Bakkafrost was one of the original members of GSI, and it thus seems fair to assume that they have a strong voice in this forum. The CEO of Bakkafrost has in 2020 furthermore been appointed as co-chairman of GSI.

- Bakkafrost seemingly has more focus on nutrition than on CO2. This is further supported by the title of their sustainability report: "Healthy Living".
- There is not a single word of alternatives to fishmeal and fish oil. On the contrary, Bakkafrost prides themselves on the high inclusion of marine ingredients in their salmon feed⁵.
- Has an admirable usage of the SDG's, and is the only one using the SDG targets directly.
- Only uses certified marine ingredients.
- Bakkafrost published its first sustainability report in 2018.

Quotes

- "Our updated three-year Healthy Living sustainability plan was designed around a vision to enable healthy living for millions of people through the provision of healthy and nutritious salmon. We believe we have a critical role to play in the shift towards healthy and sustainable diets to meet the demands of the growing population."
- 2. 2023 plan:
 - a. To maintain our high omega-3 levels.
 - b. To remain antibiotic-free.
 - c. To maintain salmon survival rate at 94% or above.
 - d. To increase research to optimize fish welfare and product quality.
 - e. To maintain an industry-leading approach to animal welfare.
 - f. To reach and maintain ASC certification of all Bakkafrost salmon.
- 3. In respect to the SDGs, Bakkafrost distinguish between:
 - a. Potential for high positive impact (2, 8,)

⁵ https://www.bakkafrost.com/en/about-us/full-vertical-integrated-value-chain/fish-feed/





- b. Potential for limited positive impact (5, 7, 9, 14, 17,)
- c. Responsibility to mitigate the potential negative impact (6, 12, 13, 15)
 - Bear in mind that SDG14 "Life Below Water" is placed in the middle section, where SDG2 "End hunger" and 8 "Decent jobs and economic development", is the only in the top category. This witness of nutrition, health and food safety is the most crucial for Bakkafrost.
 - ii. For SDG 14 Life Below Water: "Conserve and sustainably use the oceans, seas and marine resources for sustainable development. <u>We are contributing towards target 14.4 by only using marine ingredients certified as sustainable</u>, and 14.1 by managing our impacts on the fjord environment."

Cargill

Cargill is the USA's biggest non listed company, has a revenue of US\$114 billion and produces feed for both agriculture and aquaculture. Even though Cargill is also very present in the agriculture sector, their sustainability communication regarding FM/FO is most present in their report "Healthy seafood for future generations". In Cargill's communication on fishmeal in relation to agriculture, they mention neopigg[™] as a suitable alternative for fishmeal in pig feed aiming at "reducing the pressure on marine ingredients"⁶.

- Cargill is very committed to Fishery Improvement Projects (FIPs) and describes in detail their involvement herein.
- Does not, like Skretting, focus on reducing the inclusion of fishmeal and fish oil. They do, however, have an ambition of maintaining their current amount, while having the goal to grow their production in total, why the inclusion rates of fishmeal and oil will decrease.
- Across their operations in 2018, 40% of Cargills marine ingredients came from trimmings, 88% from IFFO RS certified suppliers and almost 50% from fisheries aligned to MSC.
- Their tone of voice when mentioning fish meal and fish oil is less "antagonistic" than Skretting's (see quote 1).
- Will in 2025 only buy sustainably managed marine ingredients (See figure 2).

⁶ Cargil: "Growing together sustainably" brochure, 2019

https://www.cargill.com/doc/1432139968865/cargill-premix-and-nutrition-sustainability-brochure-2019.pdf





- Will as of 2020 only buy Marin Trust certified fishmeal and fish oil to their salmon feed
- The current, 2019 sustainability report was their 10th.
- For Cargill's concrete goals, see figure 2 (below)

Progress				
Goal 2020	Coldwater	Warmwater	Group	Comment
By 2020 reduce relative Scope 1&2 GHG emissions by 20% against a 2015 baseline	-3.8% 🕹 😑	77.0% 🕇 🔴	24.2% 个 ●	Change in emission factors used for electricity in 2018 and increased energy use in warmwater operations has driven this increase.
By 2025 reduce absolute Scope 1&2 GHG emissions by 10% against a 2017 baseline	7.07% 🕇 😑	57.2% 🕇 🔴	27.7% 🕇 🔴	Coldwater feed production growth of 25.2% puts perspective on the increased total output, but warmwater increased emissions faster than feed production.
By 2020 source all soy products from supply chains meeting FEFAC benchmarked certifications	100%	3.0%	52.0%	Whilst the coldwater team have met the goal, the market in warmwater does not accept the extra cost of certification and availability can be challenging
By 2020 source palm oil products only from suppliers certified to RSPO or equivalent	100%	0%	38.0%	Palm oil is used only in small amounts, but we need to have progress in warmwater feeds
By 2020 source all marine ingredients from IFFO RS certified factories	92.0%	69.0%	88.0%	Great progression towards goal, but challenging to close the gap in Asia. Does not include IFFO RS IP supplies.
By 2025 only source marine ingredients from MSC certified fisheries	57.0%	13.0%	50.0%	Reporting fisheries aligned to MSC standards.

Red circles highlight where progress is poor.

Yellow shows some progress, but more work is required.

• Green indicates good progress towards the goal.

Blue shows that the goal has been achieved.

Figure 2

Quotes

- 1. "Our priority is making the most efficient use of feeds produced from sustainably sourced raw materials. To lessen the pressure on global fishmeal and fish oil supplies, we put great effort into augmenting key nutrients supplied by marine ingredients with sustainable options from terrestrial sources, by-products and novel ingredients. As a result, we have broadened our raw materials basket significantly, supporting further growth for aquaculture."⁷
- 2. "Our goal for our salmon feeds is to have all of our marine ingredient coming from factories certified to IFFO RS standards by 2020. We are close to this but need to work a bit more with our suppliers, particularly for fish oil. In May 2020 IFFO RS rebranded to MarinTrust, and Cargill Aqua Nutrition's commitment to these standards remains the same."
- 3. SDGs:



⁷ Cargil, Aquanutritiom, 2019 Sustainability Report, p. 12



- a. 2) We help to produce more nutritious food around the world.
- b. 3) We help produce healthy seafood, rich in protein, essential omega-3 fatty acids, minerals and vitamins.
- c. 8) We empower and protect our employees and support local communities wherever we operate.
- d. 9) We foster innovation and bring knowledge to bear in seafood production worldwide.
- e. 12) We strive for the best possible use of resources to support sustainable and even healthier seafood.
- f. 13) We explore ways to reduce the carbon footprint of our operations, our feed and the seafood we help produce.
- g. 14) We source our marine ingredients from certified sustainable fisheries and increase resource efficiencies of farmed fish.
- h. 17) We partner with a range of stakeholders to drive best practices in aquaculture.
- 4. "Cargill Aqua Nutrition has a focus on purchasing certified fishmeal and oil, specifying IFFO RS and MSC certifications as the two of interest. These certifications help us to reduce the risk of IUU fish caught and endangered or critically endangered species being impacted, which are part of our Responsible Sourcing Policy."





BioMar

BioMar is a Danish-based company that in 2018 had a revenue of 159 million Euro. Of the companies in this report, BioMar is claiming the sustainability agenda most vigorously and has published sustainability reports since 2016. BioMar has since 2008 been owned by Schouw & Co.

- BioMar has, compared to Cargill, a tone of voice more similar to that of the NGO's, (see quote 1 and 2).
- BioMar prides themself on being market leaders on alternates to fish oil.
- BioMar has since 1990 reduced their use of fishmeal from 80% 20%.
- BioMar has a detailed graph projecting their planned phasing out of fishmeal and oil and how they will be substituting it with various alternatives (see figure 3).
- Has invested heavily in the alternative "AlgaPrime", which is an alternative to fish oil (see quote 3).

Quotes

- "Our oceans are fully exploited. We can't keep doing things the same way and expecting change to happen. We harvest from well-managed fish stocks and have chosen technologies that create natural omega-3s. This way, we create innovative feeds for clever aquaculture."
- 2. "On average, all fish stocks are considered fully exploited and have been so for 30 years. We cannot harvest more from the ocean, which makes wild fish an unviable source for extra EPA and DHA. This means that we must better manage the EPA and DHA that we already have or find new sources."





3. "For decades, the aquaculture industry the world over has obtained fish oil by fishing for trash fish and used it in feed for farmed fish. This trend cannot continue to grow over the longer term as it will adversely affect the stocks of wild fish. We cannot catch more edible fish in the world's seas, so the farming industry will grow, which is why there is a gap between supply and demand of omega-3 fatty acids. This makes AlgaPrime[™] very interesting. This supplement to marine fish oils is based on microalgae and contains exactly the fatty acids which salmon and other fish need to develop into high-quality, tasty fish."



Figure 3





MOWI

Mowi (formerly Marine Harvest) is a Norwegian based feed producer and the world's largest producer of Atlantic Salmon. They operate in 25 countries and has a revenue of 4.1 billion Euros. Mowi left the Global Salmon Initiative in mid July 2020 because they "do not believe that a global organization is the most effective solution to local and national challenges".

- Mowi has for at least a decade divided its sustainability strategy into four overall parameters: "Profit, People, Product and Planet" assimilating the well-known triple bottom line including the product parameter.
- Mowi's inclusion rate of fishmeal and fish oil in their salmon feed is 12.8% and 10.9% respectively.
- 57% of their marine ingredients are sourced from MSC certified fisheries, and 83% from IFFO RS (see quote 2).
- All ingredients used in salmon feed shall have a traceability system in place
- Mowi has, like many others, a short and somewhat standardized usage of the SDGs.
- Has worked on reducing their usage of fishmeal and sourcing more from trimmings, but does not emphasize this particularly in their sustainability report. In 2019, Mowi Farming used 0.66 kg of wild-caught fish to produce 1 kg of farm-raised salmon - comparatively in 2018 they used 0.75 kg.
- Mowi sources 44 490 (t) of fish oil and 42 391 (t) of fishmeal every year.
- Mowi uses the FIFO calculation to assess whether their "salmon production deplete scarce marine resources". Their FIFO score in 2019 was 0.66.

Quotes

 "In terms of raw material development, we strive towards independence from specific raw material sources be they of marine origin or those derived from commodities including wheat, soya, corn, peas or beans etc. This will secure our cost competitiveness..."⁸



⁸ Mowi, annual report, p63



2. "All ingredients, marine as well as non-marine in origin, which are used in the production of our feeds, are fully traceable[...] For our internal feed supply, fishmeal and oil were sourced from fisheries that are certified as sustainable according to the MSC fisheries standard (57%), the IFFO RS scheme (83%) or sourced from fisheries with SFP scores B2 and higher".

GSI

The Global Salmon Initiative (GSI) describes itself as "a leadership initiative established by leading farmed salmon CEOs from around the world who share a vision of providing a healthy and sustainable source of protein to feed a growing population, while minimizing their environmental footprint, and continuing to improve their social and economic contribution".

Besides Bakkafrost being a member, BioMar, Cargill and Skretting are all associated members. Mowi was also a member until mid-July 2020.

- The entirety of their sustainability report is build up around "sustainability indicators", segregated into ten environmental and five social indicators. These are:
 - Environmental:
 - Fish Escapes
 - Fish Mortality
 - Antibiotic Use
 - Sea Lice Counts
 - Sea Lice Treatments
 - Hydrogen Peroxide Use
 - Non-Medicinal Methods
 - Wildlife Interactions
 - Use of Marine Ingredients in Feed
 - Certifications & Environmental Licenses
 - o Social
 - Compliance
 - Occupational Health & Safety
 - Community Engagement
 - Direct Labor
 - R&D Investment





- Each of the above indicators is then divided by country and company.
 - It is, of course, not every parameter that is relevant to us. Nevertheless, it is of value to have their parameters in mind considering that one tends to lean towards prioritizing what is measured.
 - One can then wonder why the use of Marine Ingredients is an environmental indicator of sustainability when, i.e. deforestation and soy is not.

All members of the GSI has committed themselves to aspire to 100% ASC-certification of their production. Currently, 190 salmon farms are certified, which is a significant drop from the June numbers. In early June while writing this report, GSI calculated with 310 certified farm at the end of July. A peak of 311 was reached before the number dropped to 190. The cause of this major decrease is MOWI's exit from the GSI.



Number of GSI farms ASC certified and under ASC assessment

Figure 4

Agriculture feed producers

DLG

Danish based DLG is the third biggest producer of compound animal feed in Europe, after Nutreco and ForFarmers, with 4,600,000 metric tons annual compound feed production.

DLG market their premix and nutrition product division under the name Vilofoss. The revenue of Vilofos is split 36% in Denmark, 33% in Germany, 21% in France and the remaining 10% split across the globe. Vilofoss' revenue in 2019 was 3 billion DKK, and the revenue of the entire DLG Group was 50 billion DKK.





- DLG does not write anything directly related to fishmeal and fish oil in their CSR -report from 2019.
- DLG has a policy that 90% of their suppliers of raw material should have a certified quality management system in place, covering the raw materials bought by DLG.⁹
- DLG only has one page on the SDG. Here they write briefly on how the work with SDG 2, 8, 12 and 13. By the look of the CSR report, the SDG's are currently not an integrated part of the strategy of DLG. However, DLG plan to put forward a sustainability strategy later in 2020, where the SDG's, among others, seem to play a more significant part.
- None of the R&D activities they communicate is targeting fishmeal alternatives.
- A prevalent topic in DLG's sustainability report is soy and palm oil both of which DLG is addressing on the issue of sustainable sourcing.
- In their Risk management section on their website, DLG has a subpage focusing on raw materials, which they have dedicated to tracing currency development, soy prices and fishmeal prices. This underlines both their dependency and their primary concern regarding fishmeal.
 - a. Vilofoss (formerly Vitfoss), which is DLG's leading feed brand, writes in their 2015 guide to farmers who mix their feed, that "Although fishmeal is very expensive at times, in some cases it cannot be completely dispensed with in the weaning feed. In these cases, there may be economic arguments to reduce the content"¹⁰. Their report further argues that fishmeal increases the digestibility of proteins (see figure 5). In figure 5, with data from the mentioned report, the argument that the agricultural industry is still reliant of fishmeal is supported. However, in the quote above it is also clear that fishmeal is regarded as a necessary, but expensive ingredient, and there thus lies an economic not sustainability driver to reduce or replace fishmeal.

	With Fishmeal	Without Fishmeal
Start weight	kg 8,17	kg 8,24
End weight	kg 13,25	KG 12,88
Daily growth	g 301	g 271

⁹ DLG group CSR rapport 2019, translated from Danish

¹⁰ Translatated from danish from the report "Landmix - til hjemmeblandere" <u>http://www.vitfoss.dk/media/100569/landmix_2015_web.pdf</u>





Figure 5¹¹

Pet food producers

In this last section we will look at the pet food industry and their sustainability communication regarding fishmeal and fish oil. Being by far the biggest manufacturers of pet food, this section will look at Nestlé and Mars Inc.

Nestlé

Néstle sold for DKK 12,8 billion Euros worth of pet food in 2019, thus making pet care their third most valuable product line.¹² The pet care product line is traded under the name "Purina", and is after Mars Petcare the largest manufacture of pet food in the world.

- Under fishmeal along with the ingredients list of Purina products, it says:
 - Fishmeal is made up of fish that has been ground and cooked, reducing the fat content to create a protein-rich ingredient. And, as a natural source of fat and omega-3 fatty acids, it can help give your pet healthy skin and a soft, shiny coat.
 - Benefits: Strong Muscles, Skin & Coat Health".¹³
- And under fish oil:
 - "Fish oil has been derived from the tissues of oily fish, like menhaden. Rich in EPA, an omega-3 fatty acid, it promotes your pet's healthy joints, and skin and coat health. It also supports a healthy immune system. Plus, the DHA from fish oil contributes to healthy vision and brain development in puppies and kittens.
 - Benefits: Joint Health, Bright Eyes/Vision, Brain Development, Skin & Coat Health, Immune System Health" 14
- In Néstles annual report, the focus on reduction of fishmeal and fish oil is nonexistent.



¹¹ From the report "Landmix - til hjemmeblandere"

¹² <u>https://www.nestle.com/investors/annual-report/facts-figures</u>

¹³ <u>https://www.purina.com/ingredients</u>

¹⁴ <u>https://www.purina.com/ingredients</u>



Mars Inc.

Besides manufacturing pet food Mars Inc. also manufacture confectionery and other food products, as well as animal care services. Mars Petcare, which is the umbrella for a number of pet food brands, has an estimated total sale of 15,8 billion euro, thus making them the biggest manufacturer in the industry. Because of the many different brands and the both limited and similar communication regarding fishmeal and fish oil, we have chosen eclectically to create a general and representative picture.

- Many of their dog food lines marketize, that they do not use chicken-bi-product meal and grain.
- Mars have a significant "sustainable in a generation plan" which is divided into "Healthy planet" "Thriving people" and "Nourishing Wellbeing". Not a word on FM/FO.
- Every single one of Pedigree's[™] (a Mars Ing. brand) puppy foods contain fish oil. None contain fishmeal.
- Royal Canin[™] (another mars brand) has some product lines containing fishmeal and fish oil, namely their veterinary exclusive dog food, of which they write "Promotes healthy skin and a shiny coat with EPA & DHA, omega-3 fatty acids from fish oil". About 230 of their products contains either fishmeal or fish oil, with fish oil being by far the most prevalent one of the two.
- Nowhere is FM/FO mentioned in a negative tone of voice. On the contrary, when it is mentioned, it is as a positive extra in the food, often with a focus on omega-3's effect on fur with formulations such as "Promotes healthy skin and a shiny coat with EPA & DHA, omega-3 fatty acids from fish oil."¹⁵
- Crave[™] uses fishmeal solely in their fish flavour food, whereas Nutro[™] uses fish oil in most of their puppy food.

¹⁵ <u>https://www.royalcanin.com/us/dogs/products/vet-products/canine-selected-protein-adult-pw-large-breed-dry-dog-food</u>





Final remarks

After reviewing the sustainability communication in the agricultural feed producers (DLG) and the pet food producers (Néstle, Mars inc.), the conclusion is that the inclusion of fish meal and fish oil in production is not a matter of concern in these sectors. None of the sustainability reports reviewed seemingly had a dedicated focus on reducing or replacing usage of fish meal and fish oil. The fact that Néstle (Purina) and Marc Inc. are both highlighting the positive effects of FM&FO gives the impression that it is seen as a quality ingredient.

In the aquaculture feed industry, however, fishmeal and fish oil is seen as a matter of concern indeed. Some actively focus on replacing FM&FO claiming that it is not a sustainable raw material (see. BioMar and Skretting) others see FM&FO as a scarce, but still valuable, resource and hence is seeking to expand their feed production even though the supply stream of FM&FO cannot expand proportional (Cargill). Lastly, FM&FO from trimmings and by-products is generally spoken of in a positive tone.

Common to all is that reaching 100% MSC or MarinTrust certified FM&FO withing a few years is considered a KPI.

This report will be updated annually in mid-summer, perceiving the next string of sustainability reports.





SUSTAINABLE GOALS



Relevant SDG Targets

Below is a list of what we in European Fishmeal have found to be the most relevant SDG targets for the European fishmeal and fish oil producers. The listed targets are both the ones where we have a responsibility to mitigate potential negative impacts, and where we have potential of positive impact.



2.4) By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.







- 6.3) By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- 6.4) By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.



7.2) By 2030, increase substantially the share of renewable energy in the global energy mix.



- 8.2) Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.
- 8.4) Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead.



- 9.2) Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries.
- 9.4) By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of





clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities.

 9.4) Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.



- 12.2) By 2030, achieve the sustainable management and efficient use of natural resources.
- 12.3) By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
- 12.5) By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.
- 12.6) Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting



 14.4) By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.







17.6) Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries

