2020

ENVIRONMENTAL FOOTPRINT OF SKRETTING NORWAY SALMON FEED

Use and origin of ingredients and environmental impact of products and operations

SKRETTING
a Nutreco company

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1 The Environmental Footprint Report 2020

PURPOSE AND SCOPE OF THE ENVIRONMENTAL FOOTPRINT REPORT

Skretting seeks to develop unique combinations of products, services and models that are designed to help farmers boost productivity, support animal health and minimise negative environmental impacts.

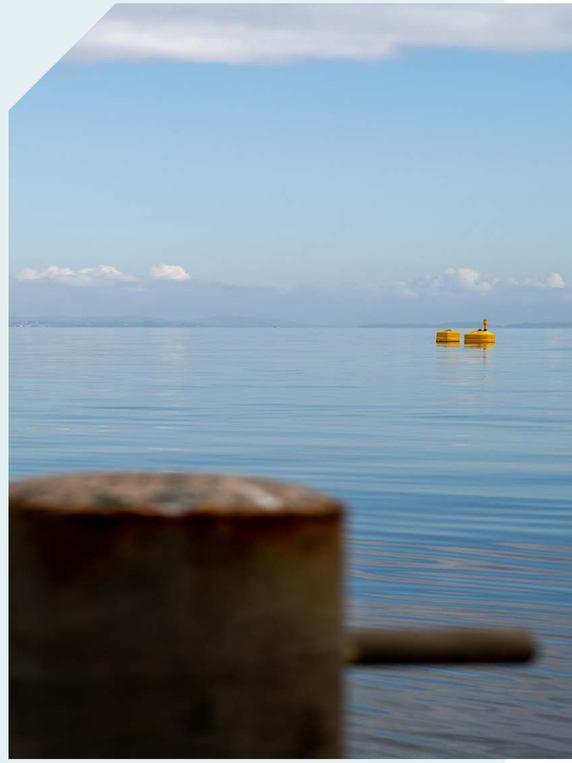
Skretting's commitment to sustainability is expressed through the Nuterra programme, which identifies the key sustainability issues facing the aquaculture industry and the actions Skretting undertakes to address them.

A number of our stakeholders, including customers, retailers and certification bodies require documentation of the environmental footprint of our products. As a responsible company, Skretting Norway is committed to make this information available in this report so that our customers can share it with their seafood buyers or other parties who request specific information.

The issues addressed under the umbrella "environmental footprint", relate to the areas where we have the most requests for information, and the areas where we at present are able to provide information of good quality.

This report describes the environmental footprint from Skretting feeds used to produce salmon and represents an average of the specific products used throughout the life cycle of the salmon.

The information provided here, is applicable to Skretting Norway fish feed and numbers are based on 2020 full year production. This footprint report is updated annually.



Mads Martinsen
Director Product Development
and Sustainability,
Skretting Norway

2 Our products

Skretting Norway has a large range of products for many aquaculture species. The focus here is on the most common products used in salmon farming in sea – which represents the bulk of our product sales.

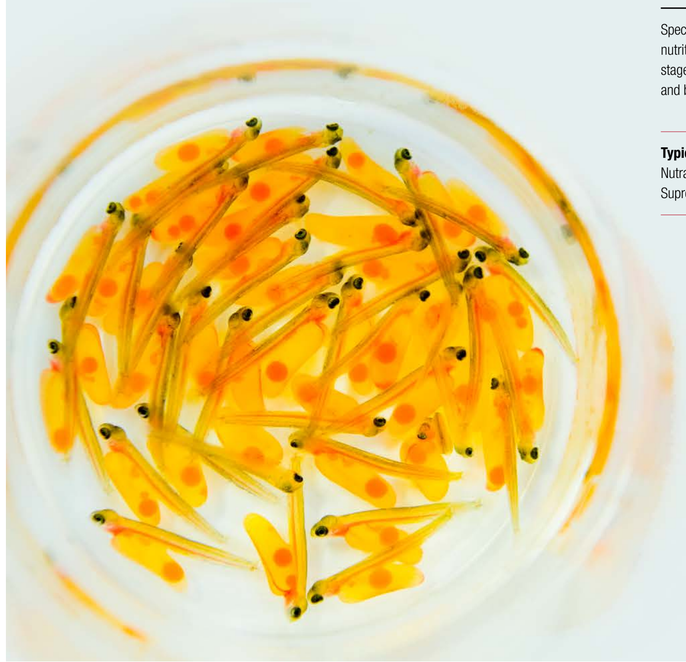


TABLE 2.1

PRODUCT OVERVIEW

LIFE START	FEED EFFICIENCY	HEALTH & WELFARE
Specific hatchery and nursery nutrition for challenging first life stages. Transition diets and broodstock nutrition	High performance feed for maximum growth and feed efficiency potential. Nutritional solutions to enable raw material flexibility	Functional feed for proactive fish health and welfare support. Nutritional solutions for specific challenges
Typical products Nutra Sprint, Supreme, Vitalis	**Typical products** Spirit Plus, Premium, Prime, Express	**Typical products** Protec, Aqura, myProtec

TRANSPARENCY AND TRUST

Changing consumer demands, easier and faster access to information are driving forces towards more transparency.

Companies from varied sectors are under constant pressure from stakeholders to be more open about what they do, and in the food industry this means that we're facing more demand for information about ingredients, food fraud, animal welfare, human rights and child labour, to name some. Today's consumers are not only concerned about where products come from, but the conditions in which they were produced.

The latest FAO's State of World Fisheries and Aquaculture and the United Nations Global Compact's Ocean Stewardship 2030 reports state that sustainable seafood production depends on industry transparency to prevent negative environmental and social impacts. At the same time, they point out that strengthening trust among the different players in the value chain is an important challenge to be addressed.

This background helps to explain why we have defined transparency and trust as a new pillar for Skretting. Not only dœs it allow us to be more straightforward on what we stand for and what we contribute with to the seafood value chain. It also helps us to simplify the message with regards to what we do in sustainability and feed to food quality and safety through Nuterra and Nutrace, the two strong internal programs that are the foundations to build a concrete position as a transparent and trustworthy company.

In addition to showing that we have our own house in order and that we do business with integrity, being transparent also helps us to reduce reputational risk and to create trust in Skretting as the leading partner in driving the journey towards a more sustainable industry, as stated in our previous sustainability and footprint reports.

Moreover, we see that our commitment to transparency and trust also help us to attract and retain the talented people who are keen to work for a responsible company that cares about making a positive environmental and social impact.

3 Nutritional solutions

USE OF WILD FISH FOR FEED

The salmon aquaculture industry has significantly reduced the inclusion rates of fish meal and fish oil from forage fish in salmon feeds during the past two decades. Skretting's Nuterra programme aims to support the trend toward lower inclusion rates as well as the increasingly efficient use of marine resources.

Fish meal and fish oil are both limited resources that are shared across a range of users with increasing demands including direct human consumption, aquaculture and pork and poultry production. The Nuterra programme promotes the efficient use of these resources, producing increasing amounts of farmed salmon from a given input of fish meal and fish oil.

With the knowledge that we have at Skretting, salmon grower feeds can essentially require zero marine ingredients. This is possible due to 30 years of R&D at Skretting Aquaculture Research Centre.

Under the Nuterra programme, we regularly update the industry with our use of wild fish used to produce 1 kg of feed, based on the average, weighted raw material composition. The use of wild fish is expressed as the Forage Fish Dependency Ratio (FFDR). It will be calculated based on the use of fish meal and fish oil.

Salmon that has never eaten any wild fish
Grethe Rosenlund completes the world's first full-scale aquaculture at sea at the CAC research center "Center for Aquaculture Competence AS" in Hjelmeland in 2020, with salmon that has only been fed without any fishmeal or fish oil.

TABLE 3.1

USE OF WILD FISH IN FEED
(FORAGE FISH DEPENDENCY RATIO — FISH MEAL)

FORAGE FISH DEPENDENCY RATIO FISH MEAL	2014	2015	2016	2017	2018	2019	2020	UNIT
PROPORTION FISH MEAL FROM TRIMMINGS	15.0	24.0	17	27.0	22.0	21.7	13.7	% — of total fish meal
TOTAL FISH MEAL	14.8	13.1	12.6	13.1	12.4	10.3	11.7	% — of total feed
MINUS FISH MEAL FROM TRIMMINGS	2.2	3.2	2.3	3.5	2.7	2.2	1.6	% — of total feed
FISH MEAL FROM WHOLE FISH	12.6	9.9	10.3	9.6	9.7	8.1	10.1	% — of total feed
FISH MEAL FROM WHOLE FISH PER KG FEED	126	99	103	96	97	81	101	grams
FISH MEAL YIELD, STANDARD NUMBER	23	23	23	23	23	23	23	% — yield of fish meal*
FFDRM PER KG FEED	0.53	0.43	0.45	0.41	0.42	0.35	0.44	kg wild fish per kg feed

TABLE 3.2

USE OF WILD FISH IN FEED
(FORAGE FISH DEPENDENCY RATIO — FISH OIL)

FORAGE FISH DEPENDENCY RATIO FISH OIL	2014	2015	2016	2017	2018	2019	2020	UNIT
PROPORTION FISH OIL FROM TRIMMINGS	20.0	26.0	20.0	32.0	26.0	12.0	16.6	% — of total fish meal
TOTAL FISH OIL	11.2	9.8	10.7	10.5	10.9	10.4	10.0	% — of total feed
MINUS FISH OIL FROM TRIMMINGS	2.2	2.6	2.2	3.4	2.8	1.2	1.7	% — of total feed
FISH OIL FROM WHOLE FISH	9.0	7.2	8.5	7.1	8.1	9.2	8.3	% — of total feed
FISH OIL FROM WHOLE FISH PER KG FEED	90	72	85	71	81	92	83	grams
FISH OIL YIELD ADJUSTED FOR GEOGRAPHICAL ORIGIN (ACCORDING TO THE ASC STANDARD)	5.0	5.0	5	6.3	6.5	6.0	6.0	% — yield of fish oil*
FFDRO PER KG FEED	1.79	1.44	1.70	1.13	1.24	1.52	1.39	kg wild fish per kg feed

** The yield refers to the amount of fish meal and fish oil one in average will get from processing 1 kg of wild fish. Typical figures from the industry refers to that one in average get 230 grams (23%) fish meal from processing 1 kg of wild fish and in average 50 grams to 70 grams of fish oil (depending on origin) from processing 1 kg of wild fish. The yield of fish oil will be highly variable – depending on species and season of the year.*

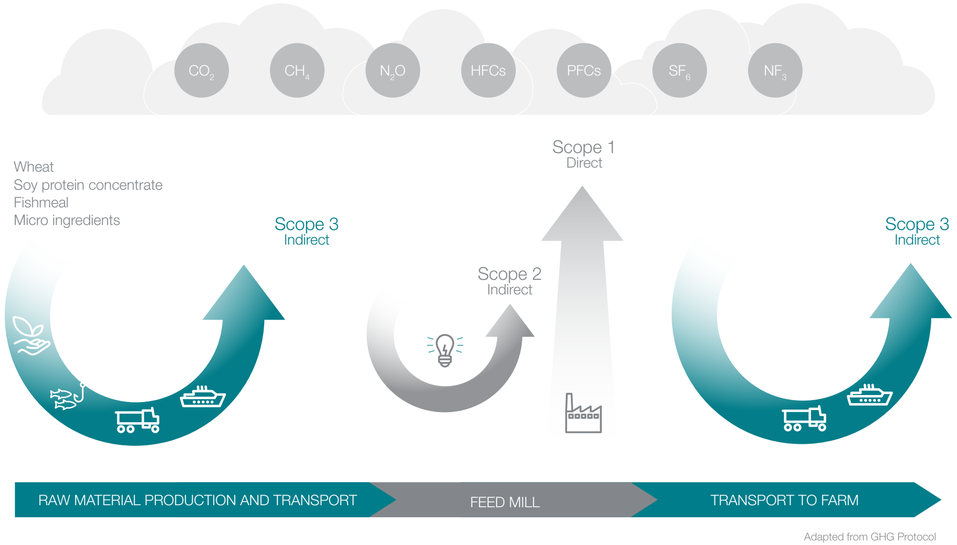
FOOTPRINT OF FEED

Feed plays an essential role in ensuring the health and wellbeing of farmed fish, and can greatly improve the efficiency of the aquaculture process. While gains are made in optimising feed efficiency, feed also contributes one of the biggest environmental impacts.

Carbon footprint is an estimate of the climate change impact of activity – for example producing one kilogram of aquaculture feed. Typically, a carbon footprint is calculated by estimating not just the CO_2 emissions that the activity in question causes, but also factors in emissions of other greenhouse gases (such as methane and nitrous oxide) and in some cases other types of climate impacts as well, for example the effect of deforestation. For simplicity, all these impacts are added together and expressed as a single number in terms of carbon dioxide equivalent (CO_2eq): the amount of CO_2 that would create the same amount of warming.

The true carbon footprint of one kilogram of feed includes not only the direct emissions resulting from the manufacturing process and the transportation of the feed to the farm.

It also includes a whole host of indirect emissions, such as those caused by growing the crops used in the feed, processing of feed ingredients, mining activities, production of vitamins, transport of the raw materials and so on. These are just a few of the processes involved. These are just a few of the processes involved. Transport of feed ingredients from the market to Norway is for instance less than 4% of the feed carbon footprint at the point where it is delivered to the fish farmer. (Winther et al 2020). So in order to make major reduction in the total carbon footprint, we must look for reductions along the whole value chain.



Adapted from GHG Protocol

NUTRIENT RELEASE

Nutrients such as phosphorus and nitrogen are essential for life and these elements occur naturally in the water column of both fresh and marine environments. In the environment they function as nutrients for algae growth. The reported nutrient discharge cannot be used to measure the effect of the nutrients in the environment (the farm site).

The effect of the nutrient load must be measured in the ecosystem through for example analyses of water and the surrounding environment of the farm.

Under the Nuterra programme, we will regularly update and inform the industry about the nutrient discharge of nitrogen and phosphorus from our standard product lines.

TABLE 3.3

CARBON FOOTPRINT OF SKRETTING NORWAY'S SALMON FEED

	MASS ALLOCATED WITH LAND USE CHANGE	MASS ALLOCATED WITHOUT LAND USE CHANGE	ECONOMIC ALLOCATED WITH LAND USE CHANGE	ECONOMIC ALLOCATED WITHOUT LAND USE CHANGE	UNIT
RAW MATERIALS	2,77	2,03	3,33	2,35	kg CO_2eq/kg
MANUFACTURING PROCESS	0,03	0,03	0,03	0,03	kg CO_2eq/kg
TOTAL — CARBON FOOTPRINT OF FEED (AT FACTORY GATE)	**2,80**	**2,05**	**3,36**	**2,38**	kg CO_2eq/kg

METHOD AND DATA

Functional unit: 1 kg of salmon feed (based upon average raw material composition)

System boundaries: From growing of crops and fishing of marine ingredients to finished feed pellets at factory gate. A cradle-to-gate assessment.

Method: The assessment is performed with respect to the established ISO standards for life cycle assessment. Skretting 2019 data are updated with more accurate data on micro ingredients and fully aligned with methodology of the SINTEF report "Greenhouse gas emissions of Norwegian seafood products in 2017".

Allocation: Mass allocation and economic allocation are used.

Impacts assessment method: IPCC 2013 GWP 100a v1.03.

TABLE 3.4

NUTRIENT RELEASE OF NITROGEN AND PHOSPHORUS. GRAMS PER KG OF FEED*

	NITROGEN	PHOSPHORUS
IN FAECES	7,6	5,5
DISSOLVED IN WATER	29,5	1,0
TOTAL DISCHARGE	**37,1**	**6,5**

**The actual emission can vary with body composition, feed waste and feed conversion factor.*

4 Responsible sourcing and use of feed ingredients

RESPONSIBLE SOURCING POLICY

Aquaculture feed can contain many different ingredients of vegetable, marine and land animal origin. The most common agricultural crops are soya, wheat and rapeseed. Marine ingredients traditionally originate from wild fisheries like sardine, anchovy, herring and many more. There are a number of sustainability issues linked to the primary production of feed ingredients. Cultivation of agricultural crops needs to be responsible; otherwise, it can lead to detrimental impacts like deforestation, loss of valuable habitats (for example rainforests and wetlands), excess use of water and soil erosion – to mention a few.

A wild-capture fishery needs to be responsibly managed so that it is not overfished and dœs not lead to the unwanted catch of protected or endangered species.

The primary source of the feed ingredient is processed into different forms; wheat can be processed into wheat flour and wheat gluten, soya into soybean meal, soybean concentrate and soybean oil. A fish or by-products from fish can be processed into fishmeal and fish oil. This means that the primary sources of the feed ingredients are shipped to a factory and processed into the feed ingredient by manufactureres of feed ingredients.

There are a number of sustainability issues that are common for manufacturers. For instance, the manufacturing process must not lead to environmental pollution like harmful emissions to air or effluents to water. Sustainability also encompasses social issues, including ensuring that the factory is a safe working place. In addition, manufacturers must respect basic human rights and labour rights.

Skretting operates a system of systematic evaluation of the sustainability risks linked to primary sources of feed ingredients and manufacturers of feed ingredients. Based on the outcome of these risk assessments, the combination of primary source and manufacturer of feed ingredient must be evaluated and approved before a Skretting company can buy the feed ingredient.

Our *Supplier Code of Conduct* enables us to engage with our suppliers on material issues relating to their operations and to set minimum criteria relating to environmental, social and legal aspects.

TRACEABILITY OF RAW MATERIALS

Raw material traceability is fundamental to the Nuterra programme. This requirement makes raw material sourcing more transparent in the value chain. For some feed ingredients this will demand traceability with regard to country of origin, while for marine raw materials we demand more detailed traceability back to the fishery from which the marine raw materials originated.

TABLE 4.1

AVERAGE RAW MATERIAL COMPOSITION OF 1 KG OF SALMON FEED IN 2020

FISHMEAL FROM WHOLE FISH	10.1
FISHMEAL FROM TRIMMINGS	1.6
VEGETABLE PROTEIN	
SOY PROTEIN CONCENTRATE	20.1
FABA BEANS	4.1
WHEAT GLUTEN	10.0
SUNFLOWER MEAL	4.9
PEA PROTEIN	0.9
GUAR MEAL	4.8
NOVEL PROTEINS*	
INSECT MEAL*	0.0
CALANUS*	0.0
MARINE OILS	
FISH OIL FROM WHOLE FISH	8.3
FISH OIL FROM TRIMMINGS	1.7
MICRO ALGAL OIL*	0.2
FISH OIL FROM FARMED FISH	0.8
VEGETABLE OILS	
RAPESEED OIL	18.9
CAMELINA OIL	1.1
LINSEED OIL	0.6
CARBOHYDRATES	
WHEAT	8.2
OTHER	3.8
TOTAL	**100.0**

** Insect meal, calanus and micro algal oils were used in small, but commercial quantities*

SOURCE OF MARINE RAW MATERIALS

Wild fish harvested from the ocean and processed into fish meal and fish oil are ingredients in salmon feeds. Small pelagic fisheries are used in the fish meal and fish oil industry, but in some regions they are also important for direct human consumption. Also known as forage species, these are small, short-lived species that occupy a low trophic level (LTL) in the ecosystem. Due to their specific population biology and dynamics, these species are frequently resilient to fishing pressure if catches are well managed, but overfishing is always a possibility without effective controls. Through the Nuterra programme, we strive to ensure that marine-based feed ingredients come from sustainable sources in the short- and long-term. The requirements aim to align industry incentives to support processes that will lead to improved fisheries management.

All fishmeal and fish oil we use must originate from fisheries that are managed according to the FAO Code of Conduct for Responsible Fisheries.

This means that our suppliers must be able to demonstrate that the fishmeal and fish oil is certified according to the MarinTrust standard (which includes Marine Stewardship Council certification), or be participating in an improvement project with the aim of becoming MarinTrust certified.

TABLE 4.2

ORIGIN OF FISHMEAL AND FISH OIL FROM WHOLE FISH

SPECIES	LATIN NAME	FISHMEAL	FISH OIL	COUNTRY OF ORIGIN
BLUE WHITING	*Micromesistius Poutassou*	31.3 %	4.0 %	DENMARK, ICELAND, NORWAY
SANDEEL	*Ammodytes Marinus*	20.8 %	13.3 %	DENMARK
SPRAT	*Sprattus Sprattus Sprattus*	16.2 %	10.7 %	DENMARK, NORWAY
NORWAY POUT	*Trisopterus Esmarkii*	9.2 %	4.3 %	DENMARK, NORWAY
HERRING	*Clupea Harengus*	6.4 %	10.4 %	DENMARK, NORWAY
MACKEREL	*Scomber scombrus*	0.8 %	3.8 %	DENMARK, NORWAY
BALTIC SPRAT	*Sprattus Sprattus Balticus*	0.6 %	0.5 %	DENMARK
HORSE MACKEREL	*Trachurus Trachurus*	0.2 %		NORWAY
PACIFIC ANCHOVETA	*Cetengraulis mysticetus*		4.2 %	PANAMA
PERUVIAN ANCHOVETA	*Engraulis ringens*		24.0 %	PERU
MENHADEN	*Brevoortia patronus*		7.4 %	USA
OTHER	*Multiple*	0.7 %	0.7 %	
TOTAL		86.3 %	83.4 %	

More than 98 % of the fish meal used in 2020 was certified, and more than 95 % of the fish oil. The rest is mainly due to trimmings and by-catch.

TABLE 4.3

ORIGIN OF FISHMEAL AND FISH OIL FROM TRIMMINGS

SPECIES	LATIN NAME	FISHMEAL	FISH OIL	COUNTRY OF ORIGIN
HERRING	*Clupea harengus*	9.5 %	7.8 %	DENMARK, ICELAND, NORWAY
MACKEREL	*Scomber scombrus*	2.1 %	3.2 %	DENMARK, ICELAND, NORWAY
MENHADEN	*Brevoortia patronus*		1.7 %	USA
NORWAY POUT	*Trisopterus esmarkii*		0.3 %	NORWAY
SPRAT	*Sprattus sprattus sprattus*	0.4 %	0.2 %	DENMARK, NORWAY
TRIMMINGS — OTHER	*Multiple*	1.7 %	3.4 %	DENMARK, NORWAY
TOTAL		13.7 %	16.6 %	

TABLE 4.4

ORIGIN OF FISHMEAL AND FISH OIL FROM FARMED FISH

SPECIES	LATIN NAME	FISHMEAL	FISH OIL	COUNTRY OF ORIGIN
FARMED SALMON*	*Salmo salar*		100.0 %	NORWAY

** Fish oil from farmed fish is only included in customer specific feeds*

TABLE 4.5

CERTIFICATION STATUS OF MARINE RAW MATERIAL

	FISHMEAL		FISH OIL	
	WHOLE FISH	TRIMMINGS	WHOLE FISH	TRIMMINGS
MSC APPROVED	85 %	70 %	41 %	53 %
MARINTRUST	14 %	23 %	54 %	36 %
MARINTTRUST FIP	0 %	0 %	2 %	0 %
NONE	1 %	7 %	3 %	11 %

ADVOCATING FOR A RESPONSIBLE BLUE WHITING FISHERY

Blue whiting is one of the most abundant fish stocks in the semi-pelagic water masses of the Northeast Atlantic. It is very important as raw material for fishmeal and fish oil production in Norway and Europe. Nearly half of fishmeal production in North Western Europe originates from blue whiting.

In previous years, the blue whiting fishery has held a Marine Stewardship (MSC) certificate and been approved by the MarinTrust program. In 2020, there was a continuing dispute over quota allocation of blue whiting resulting in annual catches well in excess of the science-based advice. As a result of the dispute and the catch exceeding recommended limits, the Marine Stewardship Council (MSC) certification of the blue whiting fisheries in the North Atlantic was suspended on 30 December 2020.

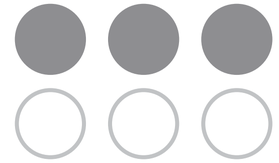
This fishery is relevant for Skretting Norway operations. As part of its procurement policy, Skretting Norway requires that the fishmeal and fish oil originating from whole fish must originate from MarinTrust approved fisheries or from a fishery improvement project. For Skretting and our customers, the loss of certification due to this dispute means a significant reduction in access to already scarce marine resources.

Commitments to sustainable fishing have been made by all coastal states involved in Northeast Atlantic fisheries through the adoption of the UN SDGs, in particular SDG 14 ‘life below water’. Skretting has SDG related targets through responsible sourcing criteria of marine ingredients, and certification offers a credible and impartial tool to demonstrate that we meet the ambitions to contribute to a healthy planet for future generations. Loss of certification would reduce progress against UN's Sustainable Development Goal (SDG) 14.

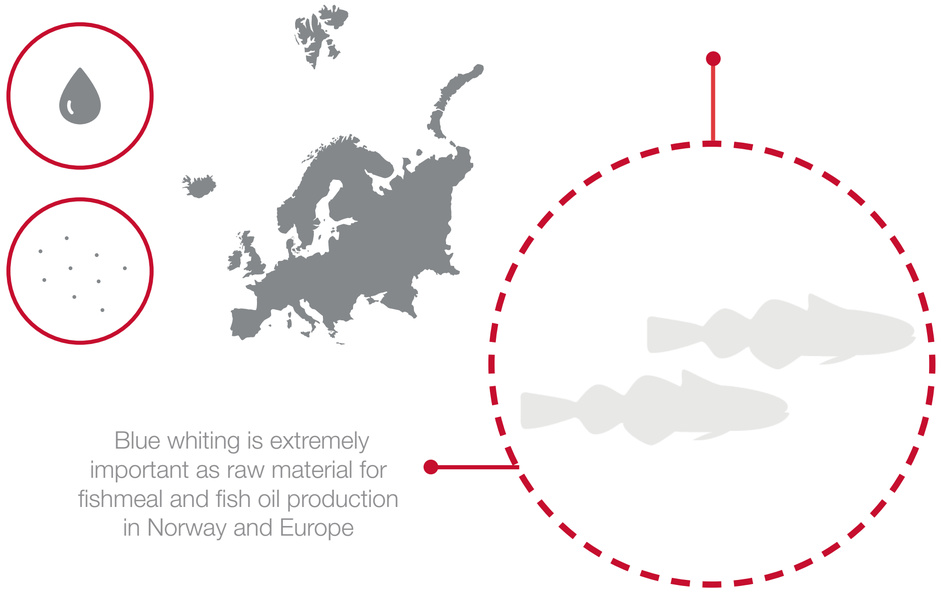
In 2020, Skretting sought support from fellow concerned stakeholders to work to maintain responsible management of the blue whiting fishery. Consequently, Skretting became a founding member of the North Atlantic Pelagic Advocacy Group (NAPA), a market-led approach to improve North Atlantic pelagic fisheries management. Partners include retailers, food service companies and suppliers who are working together with the aim to secure an agreement on total allowable catches for these fisheries in line with scientific advice for a long-term science-based management agreement.

In October 2020, Skretting formally contacted the delegations of the coastal states regarding negotiations for determining fishery quotas of shared stocks in the North East Atlantic. Skretting called for agreement and stressed that together we can find a sustainable approach to managing key fisheries in European waters. But we must act now.

In 2021 Skretting will continue our cooperation with NAPA in working towards regaining responsible fishery management certification of the blue whiting fishery.



Nearly 50% of fishmeal production in North western Europe is made out of blue whiting



Blue whiting is extremely important as raw material for fishmeal and fish oil production in Norway and Europe

SUSTAINABLE DEVELOPMENT GOALS

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

14 LIFE BELOW WATER

USE OF SOY RAW MATERIALS IN FEED IN RELATION TO DEFORESTATION AND LOSS OF BIODIVERSITY

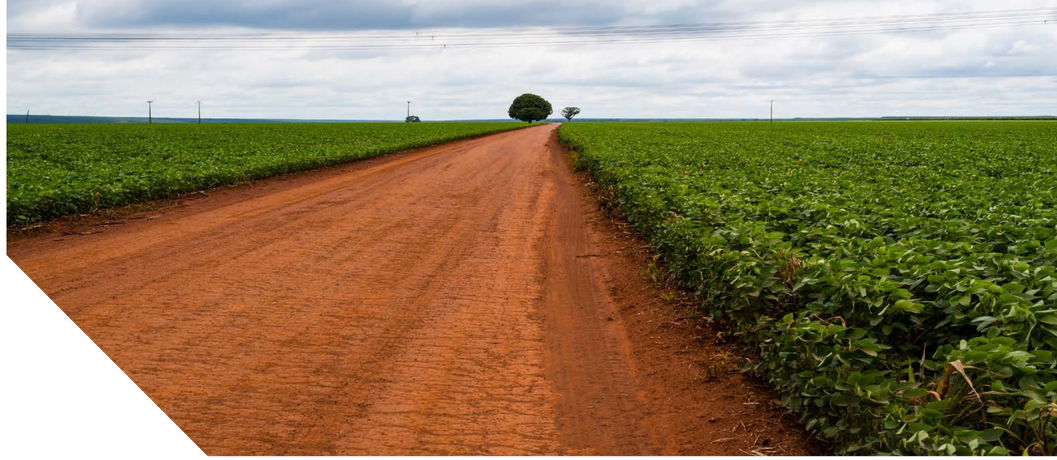
Tropical deforestation is widely regarded as one of the most serious global environmental problems of our time. As such, Skretting is committed to supporting raw material production initiatives that do not occur in regions subject to deforestation.

We have also built long-term sustainable purchasing and supplier policies that prohibit the sourcing of soy products from lands that are illegally deforested. In addition, part of our purchasing policy is to encourage our suppliers to pursue certification according to recognised schemes for responsible production, especially when it comes to soy.

So soy is a crop we are following particularly close. We only use certified soy that are guaranteed to be grown in a respectful and sustainable manner and with no deforestation. To ease the pressure of demand on Brazilian soy, we have started to also source European soy, , after Skretting initiated the demand for European production of soy protein concentrate (SPC).

Under the Nuterra programme, soy raw materials originating from Brazil must come from responsible producers. They must not originate from areas of deforestation. Furthermore, soy producers must also ensure legal use of land and water, and respect the needs and rights of smallholders and indigenous people as well as protection of workers' health and rights.

All soy protein concentrate in Skretting Norway products originates either from Brazilian soy which is ProTerra certified (www.proterrafoundation.org), or European soy which is Europe Soya/Donau Soja certified (www.donausoja.org).



NORWEGIAN SALMON INDUSTRY FIRST INTERNATIONAL FOOD SECTOR WITH 100 % DEFORESTATION-FREE BRAZILIAN SOY SUPPLIERS

Our Brazilian soy suppliers, CJ Selecta, Caramuru and Imcopa, are the first Brazilian soy dealers to have a 100 percent deforestation and conversion free soybean value chain.This decision is a historic breakthrough towards an end to soy-related deforestation in Brazil.

The salmon sector will now be the first food sector to achieve this, and WWF Brazil applauds this bold leadership move and the Rainforest Foundation describe it as historic and a game changer that sets a new global standard for sustainability. Major international grocery chains such as British Tesco and German Metro say that this is one important step towards a more sustainable global food system as it reduces the risk for the entire Brazilian soy industry.

This gœs beyond the certified soy we buy

For many years, Skretting Norway has only used certified soy in our feed, which ensures that the soy dœs not come from deforested areas. This new commitment extends our soy vendors deforestation-free commitment to their entire soybean business, also outside the salmon value chain. This means that soybeans produced on land converted after August 2020 cannot enter the supply chain of any of these soy companies and cannot be delivered to other customers. No Brazilian soybean company has previously made a similar commitment.

It means we have worked together with our Brazilian suppliers to have one policy for everything they sell. And we influence the whole development in Brazil. This is the opposite of double standards.

We would not have achieved any of this if we had stopped buying Brazilian soy when the criticism was at its peak and the demand for boycott was high. When we work with soy in Brazil, one often feels like a tiny little fish in a large pond - and it is not always easy to believe that we can accomplish so much. Therefore, it is incredibly inspiring to see that the work we have put in really leads to concrete changes.

A possible game changer for deforestation

“With this decision, the Brazilian soy suppliers and the Norwegian salmon industry show leadership and set a new bar for sustainable supply chains. Norwegian fish farming companies are now given the opportunity to produce salmon without a link to deforestation in Brazil. This historic commitment from the Brazilian soy suppliers will change the rules of the game for sustainable value chains internationally” says Ida Breckan Claudi, senior adviser at the Rainforest Foundation.

The Brazilian soy suppliers have agreed that they will not trade in soy grown on Brazilian land deforested after August 2020. The obligation applies to the entire business of the company, including those who do not set this type of requirement. An independent control system will be established to ensure that the soybean companies meet the obligation, in line with a proposal from Brazilian environmental organizations, including WWF Brazil.

“Global pork, poultry and beef producers are lagging behind, by still allowing deforestation in their supply chain. To stop being complicit in deforestation, the meat industry must follow suit and require their suppliers to become fully deforestation-free”, says Claudi.

She is supported by Brazilian environmental protection organizations that work against deforestation in the country.

New sustainability benchmark in Brazil

“We see this voluntary sector-wide commitment as a benchmark to inspire other global animal protein sectors, as well as other markets linked to the soy supply chain. We celebrate together this relevant private sector led process for the protection of the unique Brazilian Cerrado”, says Maurício Voivodic, head of WWF Brazil.

We have influence

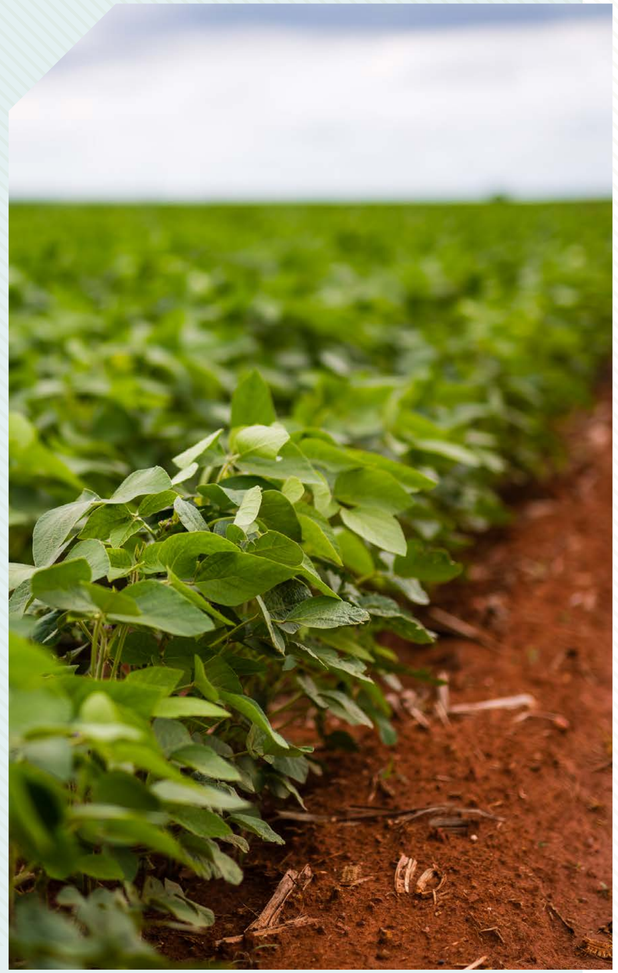
We have worked with several Norwegian fish farming companies and other feed suppliers in the past year to use our purchasing power and put pressure on Brazilian players. Through the ‘Aquaculture Dialogue for Sustainable Soy Sourcing from Brazil’, the feed producers Skretting, Cargill Aqua Nutrition, Biomar and Mowi have had a dialogue with the soy companies to become completely deforestation-free.

In addition, the fish farming companies Grieg Seafood, Lerøy, Cermaq, Norway Royal Salmon and SinkabergHansen have put pressure on soy suppliers. We have also had valuable participation from international grocery chains such as Tesco, Ahold Delhaize, Waitrose, Coop UK, Metro and Marks and Spencer, and processors such as Hilton Food Group, Labeyrie Fine Foods and Aquascot.

Our soy activity makes ground breaking change in Brazil

It is fabulous that soy suppliers have agreed to become deforestation-free and with it set a new global benchmark for sustainable value chains. It is important to achieve the climate goals and to protect forests and wildlife in Brazil. We work to reduce our footprint in production and the value chain, and this commitment shows that the work works. We hope the international meat industry will continue to work with us.

Global companies, including international grocery chains, investor groups and protein producers with Brazilian soy in their value chain, have this pushed for other Brazilian soy companies to also become deforestation-free. Our three soy suppliers to the salmon industry are the first to agree to this requirement with this bold leadership move.



USE OF NOVEL RAW MATERIALS

Novel ingredients are unconventional feedstuffs of plant or animal origin

In 2020 Skretting progressed in the use of novel feed ingredients. maintaining its leading role in the development and application of novel ingredients within the aquaculture space.

Worldwide, there has been increased activity focused on the R&D of such ingredients with the aim to ascertain new protein raw materials and alternative sources of essential omega-3 long chain fatty acids for use in aquaculture feeds. The latest technologies include microbial and insect-based protein and oil sources, and already, algae oils containing EPA and DHA and high-quality proteins based on different insect species using waste streams as resources are commercially available.

INSECT MEAL

Skretting Norway continued to produce salmon feed with insect meal in 2020 after the introduction to the market in 2018. Insect meal offers an alternative to fish meal and soy and the fish show the same growth performance with feeds using insect meal as with traditional protein sources. Insects are an important food for the wild salmon, and we see that insect meal even can increase the feed intake of the fish.

Insect meal has the potential to be an important raw material in the future. The feed produced by the Skretting Norway factory contained insect meal made from the larvae of the black soldier fly, an EU approved commodity. Consumers are positive to eating salmon that had insect meal in the feed.

In the European market, there is now little available insect meal for use on a large scale, and Skretting is working with manufacturers who wish to come up at a commercial level. Ideally, by 2022 there will be at least five different European suppliers, each producing 20,000 tonnes of insect meal per year.

OMEGA-3 OIL FROM MICROALGAE

Norwegian salmon farmers have started feeding their salmon a diet produced by Skretting which includes omega-3 EPA + DHA algal oil.

This has been possible due to the innovation from our collaborator Veramaris, a joint venture between DSM and Evonik, to produce industry-first marine algal oil containing both long-chain omega-3 fatty acids, EPA and DHA.

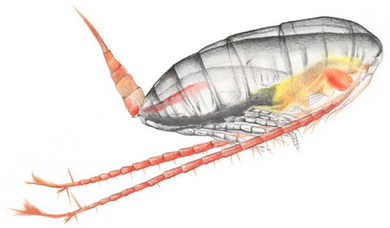
Fish oil has been difficult to substitute out of fish feed because previously the only source of EPA and DHA was pelagic fish harvested from the ocean. Despite being currently in good supply, fish oil is a limited resource and in high demand from a number of other feed, food and pharmaceutical sectors.

However, fish cannot produce large amounts of long-chain omega-3 fatty acids. The original source is marine microalgae. Through the culture of microalgae, the fatty acids can be obtained while bypassing the marine food chain entirely. Feeding salmon with natural marine algal oil resonates strongly with the sustainability efforts of numerous retailers worldwide.

CALANUS — PLANKTON HARVESTING OPENED UP

The Norwegian authorities decided in 2019 to allow commercial harvesting of the zooplankter *Calanus finmarchicus*. This small copepod is probably the largest renewable and harvestable resource in the Norwegian sea, and it is only the new production or growth that is harvested. The quota is set at 254,000 tonnes, which is 0.08% of the new production that takes place every year in the Norwegian Sea - which is less than the scientific advice in order to have cautious approach to this new fishery. The authorities will closely monitor the harvesting of the biomass.

Skretting has tested this new raw material in fish feed for a long time, and the results have been positive. Looking for raw materials in the ocean harvesting from a lower trophic level is important for the quest for novel raw materials. Calanus looks promising, as it does not compete with food for human consumption and since it eats phytoplankton, it becomes an important link between phytoplankton production and fish. Skretting has committed to use this novel raw material in commercial feed, and is pleased to get access to this local protein resource.



USE OF GENETICALLY MODIFIED PLANT MATERIAL IN FEED

Under the principle of legal compliance Skretting Norway does not use any transgenic* plant raw materials in its products

Processed genetically modified foods must be approved by Food Act general regulations for production and marketing of food and feedstuffs. These regulations contain the key elements of EU legislation on the approval of genetically modified products. Those who want to use gentically modified feed ingredients in feeds in Norway must first apply to the Norwegian Feed and Food Safety Authorities (Mattilsynet) for approval of products, even in cases where the same transgenic feed raw material has already been approved in the EU. Approval is based on thorough risk assessments. When genetically modified materials have been approved, they shall comply with the labelling regulations and labelled accordingly in order that customers can make an informed choice. In addition, Norway has distinct regulations prohibiting genetically modified products that contain genes coding for antibiotic resistance.

Currently, Norwegian food and feed law has not approved any transgenic plants for use in food or feeds, and there is a mandatory requirement to disclose the use of transgenic* plant raw material to the customer.

**Defined as containing <0,9% transgenic materials in the plant raw material used. When less than 0,9% transgenic material is found, it must be the result of technical random and unavoidable pollution in the supply chain.*

5 Operations

Skretting seeks to minimise the negative impacts of our direct operations and create valuable employment opportunities for the communities in which we operate.

Skretting Norway is certified to a number of recognised standards within the area of food safety and environmental compliance.

TABLE 5.1

SKRETTING NORWAY CERTIFICATION OVERVIEW

STANDARD	
NS-EN ISO 9001:2015	QUALITY MANAGEMENT SYSTEMS
NS-EN ISO 140001:2015	ENVIRONMENTAL MANAGEMENT SYSTEMS
ISO 22000:2005	FOOD SAFETY MANAGEMENT SYSTEMS
GLOBAL G.A.P. - GGN NUMBER: 4050373823641	COMPOUND FEED MANUFACTURING (NORWAY)
GLOBAL G.A.P. NON-GM/"OHNE GENTECHNIK" ADD-ON	COMPOUND FEED MANUFACTURING (NORWAY)
GLOBAL G.A.P. - GGN NUMBER: 4052852471015	COMPOUND FEED MANUFACTURING (FRANCE) - IMPORTED STARTER FEEDS
HAZARD ANALYSIS AND CRITICAL CONTROL POINTS (HACCP)	ALL 3 SKRETTING NORWAY FACTORIES HAS IMPLEMENTED HACCP (NOT CERTIFIED)
ASC RESPONSIBLE SALMON STANDARD	DELIVER ASC COMPLIANT FEED FOR PART OF THE PRODUCTION
DEBIO	APPROVED FOR PRODUCTION OF ORGANIC FISH FEED (STAVANGER PLANT)
LABEL ROUGE LA31-05	CERTIFIED FOR FRESH WATER FEED (AVERØY PLANT)

OPERATING IN COMPLIANCE WITH ALL APPLICABLE NATIONAL LAWS AND LOCAL REGULATIONS

Skretting operates in accordance with the Norwegian laws governing feed production.

These laws are:

- The food law
- The feed regulation
- Regulations on the use of feed ingredients
- Regulation on feed hygiene
- Regulation on labelling and trade of feed stuffs
- Sector regulation on feed production.
- Factory emission permits

Skretting's operations are registered with the Norwegian Feed and Food Authorities (Mattilsynet).

TABLE 5.2

SKRETTING NORWAY'S FEED PLANTS

REGISTRATION NUMBER	OPERATION
NO10050187	SKRETTING STAVANGER
NO10050270	SKRETTING AVERØY
NO10050269	SKRETTING STOKMARKNES

Skretting Norway also operates in accordance with the Pollution Control Act (Act of 13 March 1981 No.6 Concerning Protection Against Pollution and Concerning Waste).

Each operating plant has permits related to emissions to air, effluents to water and ground and handling of waste. Detailed description of permits for each operating plant together with historical records of emissions can be found here http://www.norskeutslipp.no/

Skretting Norway seeks to be a safe work place. In 2020 we registered 0 Serious Injuries and Fatality (SIF) and 7 Potential Serious Injuries and Fatality (PSIF). We had 7 Total Recordable Cases (TRC), meaning any injury beyond first aid.

TABLE 5.3

ENVIRONMENTAL FOOTPRINT OF OPERATIONS

ENVIRONMENTAL PERFORMANCE INDICATOR	2019	2020	CHANGE	UNIT
ENERGY CONSUMPTION	218	212	-2.6 %	KWH PER TONNE
CARBON EMISSIONS	26.5	25.6	-3.1 %	CO_2 EQ KG PER TONNE
WATER WITHDRAWAL	473	385	-18.6 %	LITERS PER TONNE
WASTE GENERATION	6.1	4.7	-22.9 %	KG PER TONNE

6 Multi stakeholder involvement

ENGAGEMENT IN THE VALUE CHAIN

Skretting is of the opinion that we can only progress if we communicate to and enter into dialogues with stakeholders, in particular with our own employees, but also with society in general. Together with our parent company Nutreco we are involved in several multi stakeholder initiatives to improve sustainability in aquaculture.

In this report we would like to highlight some engagements on the following pages. For the full list of initiatives Skretting is involved in, please see our Sustainability Report.

MARINTRUST

MarinTrust, formerly known as the Global Standard for Responsible Supply (IFFO RS) has become the leading independent business-to-business certification programme for the production of marine ingredients. Skretting is a member of the MarinTrust governance board.

The main purpose of the standard is:

- To ensure that whole fish used come from fisheries managed according to the FAO Code of Conduct for Responsible Fisheries.
- To ensure no Illegal, Unreported and Unregulated (IUU) fishery raw materials are used.
- To ensure pure and safe products are produced under a recognised Quality Management System, thereby demonstrating freedom from potentially unsafe and illegal materials.
- To ensure full traceability throughout production and the supply chain.

AQUACULTURE STEWARDSHIP COUNCIL

Established in 2010, the Aquaculture Stewardship Council (ASC) is a robust and credible environmental/social standard in the farmed seafood sector. It currently has over 1.6 million tonnes of farmed seafood independently certified and compliant to the standard. Nutreco's Sustainability Director sits on the Supervisory Board of the ASC. Currently Skretting is a member of the steering committee overseeing the work related to develop an ASC Feed Standard.

SUSTAINABLE FISHERIES PARTNERSHIP (SFP)

Skretting is a sponsor of the Sustainable Fisheries Partnership (SFP). SFP fills a specific gap between industry and the marine conservation community, utilising the power of the private sector to help less well-managed fisheries meet the environmental requirements of major markets. Their work is organised around two main principles: making available up-to-date information on fisheries for the benefit of major buyers and other fisheries stakeholders and using that information to engage all stakeholders along the supply chain in fisheries improvements and moving toward sustainability.

SFP operates through two main principles: information and improvement.

THE NORTH ATLANTIC PELAGIC ADVOCACY GROUP

The North Atlantic Pelagic Advocacy Group (NAPA) was created as a sector wide, multi-stakeholder initiative of partners to build a shared, global and non-competitive solution to complex sustainability issues in the Northeast Atlantic Pelagic fisheries .

NAPA represents retailers, foodservice companies and suppliers from EU and non-EU countries with the shared aim of sourcing sustainable and certified seafood in order to supply a growing demand for eco-labelled fish products. To achieve this, NAPA is seeking an agreement on total allowable catches for Northeast Atlantic Pelagic fisheries in line with scientific advice, and for a long-term science-based management agreement.

GLOBAL SALMON INITIATIVE

An important way in which Skretting is helping advance the salmon sector is through its membership of the Global Salmon Initiative (GSI). In partnership, GSI salmon farmers and feed companies have committed to working precompetitively together to accelerate progress towards ever increasing standards of sustainability for the farmed salmon industry, and to driving progressive innovation in the feed sector.

Skretting is an Associate Member of GSI. These are organisations that have a shared interest in the continued growth and prosperity of the farmed salmon industry as well as a shared commitment to improving the sustainability of the sector.

Associate Members work closely with the GSI members on specific projects where shared knowledge and collaborative working will support accelerated progress.

SEABOS

In 2020, Skretting continued to be a key contributor to the Seafood Business for Ocean Stewardship (SeaBOS) initiative. CEOs from the 10 largest global seafood companies have joined forces through SeaBOS to create transformative change.

The work is divided into five task forces: (1) Illegal, Unreported and Unregulated (IUU) Fishing & Modern Slavery, (2) Transparency and Traceability, (3) Improving Regulations, (4) Internal Governance and (5) Innovation.

GLOBAL AQUACULTURE ALLIANCE

Skretting is a member of the Global Aquaculture Alliance (GAA), an international non-profit organisation that promotes responsible aquaculture practices through education, advocacy and demonstration.

For over 20 years GAA has demonstrated our commitment to feeding the world through responsible and sustainable aquaculture. GAA does this by providing resources to individuals and businesses worldwide who are associated with aquaculture and seafood. They improve production practices through partnerships with countries, communities and companies, as well as online learning and journalism that boasts active readership in every country of the world.

GLOBALG.A.P.

Skretting is member of GLOBALG.A.P. which is an organisation that has developed criteria for food safety, sustainable production methods, worker and animal welfare, and responsible use of water, compound feed and plant propagation materials. Skretting is also a member of the technical committee that oversees the GLOBALG.A.P. aquaculture standard.

EUROPEAN FEED MANUFACTURERS' FEDERATION

Nutreco is a member of the European Feed Manufacturers' Federation (FEFAC) Sustainability Committee, which meets two or three times each year in Brussels, Belgium, to address sustainability initiatives associated with the European feed industry.

A positive outcome of this committee was the roll-out of the FEFAC Soy Sourcing Guidelines, which lay out the minimum criteria that purchasing feed mills could incorporate when making their soybean, soybean meal and soy concentrate purchases.

THE PROTERRA FOUNDATION

Skretting is member of the ProTerra Foundation which is a not-for-profit organisation that advances and promotes sustainability at all levels of the feed and food production chain. A commitment to full transparency and traceability throughout the supply chain and concern for corporate social responsibility and the potential detrimental impact of herbicide-resistant, genetically modified crops on ecosystems and biodiversity is integral for ProTerra.

Independent third party certification is central to the Proterra Foundation. ProTerra certification ensures that high quality supplies of crops, food, and feed are independently certified and produced with improved sustainability.

ProTerra certification ensures that high quality supplies of crops, food, and feed are independently certified and produced with improved sustainability.

THE ROUND TABLE ON RESPONSIBLE SOY

Nutreco is member of the Round Table on Responsible Soy (RTRS) which is a civil organisation that promotes responsible production, processing and trading of soy on a global level.

RTRS encourages current and future soybean to be produced in a responsible manner to reduce social and environmental impacts while maintaining or improving the economic status for the producer through the development, implementation and verification of a global standard.

NEW YORK DECLARATION ON FORESTS

Skretting is a signatory of The New York Declaration on Forests (NYDF) which is a voluntary and non-binding international declaration to take action to halt global deforestation. It was first endorsed at the United Nations Climate Summit in September 2014, and by October 2017 the NYDF supporters grew to include over 191endorsers: 40 governments, 20 sub-national governments, 57 multi-national companies, 16 groups representing indigenous communities, and 58 non-government organisations.

These endorsers have committed to doing their part to achieve the NYDF's ten goals and follow its accompanying action agenda.

New York Declaration on Forests
GLOBAL PLATFORM

CERRADO MANIFESTO STATEMENT OF SUPPORT GROUP

Established in 2017, Nutreco was one of 23 founding member signatories to the Cerrado Manifesto Statement of Support Group (SoS). The SoS has become the world's largest business-driven group calling for immediate action in defence of the Cerrado by supporting local and international stakeholders.

Today, there are 132 company signatories to the SoS across agro-industrial, farming and food processing, finance, packaged consumer goods, retail and foodservice and other supporter groups. Its key focus in 2019-2020 is to support the activity of the Brazilian Grupo de Trabalho do Cerrado (GTC) by accelerating the transition to deforestation and conversion-free soy production and to share knowledge and action plans with key Chinese companies and stakeholders.

UN GLOBAL COMPACT

Nutreco is a member of The United Nations Global Compact programme. This is a non-binding United Nations pact to encourage businesses worldwide to adopt sustainable and socially responsible policies, and to report on their implementation.

The UN Global Compact is a principle-based framework for businesses, stating ten principles in the areas of human rights, labor, the environment and anti-corruption. Under the Global Compact, companies are brought together with UN agencies, labor groups and civil society. Nutreco has been a member since 2015.

SKRETTING
a Nutreco company

www.skretting.no/baerekraft