BioMar Group

Integrated Sustainability Report 2019

Decade of the Oceans

A Message from our CEO

When writing this message, we are in the middle of a global pandemic which is affecting all of us, and my thoughts go out to all who are experiencing tough times and personal losses.

Being an aqua feed producer, we feel a commitment towards keeping our facilities running, as food is critical to society. While assuming this responsibility, we must maintain our strong focus on people safety while working closely with local authorities and customers. With strict protocols and an incredible dedication by our teams, we are succeeding with this throughout our markets.

We will overcome this challenge, but the way of living may be changed forever. The challenges have already initiated reflections and innovations and organisations that react fast, with agility will succeed. The speed of change will be faster than ever, and the big task will be to prepare and plan for *The New Normal*. In BioMar we believe, more than ever, that we need to focus on innovation, R&D and sustainability. Our ability to ensure traceability, transparency and flexibility will be essential. We are in it for the long run, and besides our growth plans, we need to continue investing in our customers' possibility to succeed in a changing world.

Looking back, 2019 was a great year for the entire BioMar Group. We turned an ambitious strategy into tangible results, and we expanded capacity and global presence. At the same time, we have gone through extensive structural and organisational changes and fine tuned our strategy for the new realities and needs. The new strategy named *Shaping our Future* will guide our initiatives and actions going forward.

These initiatives are already showing results through a broader customer base, better price/volume balance as well as advanced product offerings. Furthermore, we have expanded our end-consumer facing segment of products with a strong sustainability and health profile.

We went into 2020 with tailwind, and this year we will bring further capacity on stream. We are already commissioning a new factory in Australia and a second factory in China. In addition, capacity expansions in Denmark and Ecuador will allow us to produce new lines of RAS feed and extruded shrimp feed respectively.

We are entering the Decade of the Oceans, as stated by the UN. Oceans are vital for all life and for aquaculture and it is expected that BioMar will lead ocean-based climate action within our industry. SalmonChile has announced that their members will reach 50% carbon neutrality by 2020 and 100% by 2025. To quote the Chilean President: *"addressing climate change is crucial for our ocean economy and for future generations, and the High-Level Panel for a Sustainable Ocean Economy's Call to Ocean-Climate Action will help us do so."*

At BioMar we have been active in this field. We were invited to join the advisory network for the High-Level Panel to contribute rethinking and promoting best practices with a responsible management of the ocean in mind. We have for years been a member of Sustainable Brands and we work together with many other industries in driving and communicating the importance of sustainable development to move further, simply because, it is *The Right Thing to Do*.

While it is difficult to predict how long the COVID-19 situation will last, we must support all measures to fight the pandemic. The world will recover and hopefully with new perspectives on our future. I hope now, more than ever, the world will acknowledge the need for developing a sustainable future.

Carlos Diaz
Chief Executive Officer, BioMar Group

Decade of Ocean Science

In December 2017, the United Nations declared that a Decade of Ocean Science for Sustainable Development would be held from 2021 to 2030. This Decade will provide a common framework to ensure that ocean science can fully support countries to achieve the 2030 Agenda for Sustainable Development.

The Decade will provide a once in a lifetime opportunity to create a new foundation across the science-policy interface and strengthen the management of our oceans and coasts for the benefit of humanity.

Reference: https://unesdoc.unesco.org/ark:/48223/pf0000261962

Driving Ocean-Based Climate Action for Aquaculture

At BioMar, we are willing and able to do our part for a sustainable future for us all. It will not be easy, but we are determined to continue driving sustainable change in aquaculture.

The High-Level Panel for a Sustainable Ocean Economy is a unique group of world leaders from around the globe committed to developing, catalysing and supporting solutions for Ocean health and wealth in policy, governance, technology and finance. The goal is to advance a new contract between humanity and the sea that protects the Ocean and optimises its value to humankind. The panel will make concrete contributions towards the United Nations' 2030 Agenda to aid in reaching its Sustainable Development Goals (UN SDGs).

Members of the Panel represent countries, small island states, and communities that rely on the Ocean for their survival. This diversity extends to the Expert Group, Advisory Network and Secretariat who will support the Panel with analytical work, communications and stakeholder engagement.

BioMar accepted the invitation to join the Advisory Network of the High-Level Panel because we believe it is naturally linked to our purpose to drive ocean-based climate action and understand the important role that aquaculture feed and seafood products play in ensuring a sustainable future for our planet by 2050.

A report launched by the Panel shows that ocean-based climate action can deliver a fifth of the reductions in greenhouse gas emissions required by 2050 to prevent global temperature rise beyond 1.5-2°C.

This science-based research is driven by the World Resources Institute, who are bringing together the worlds top scientific and policy minds focused on the oceans. Blue papers will be produced between November 2019 and October 2020 on 16 specific topics.

The Panel has already released a blue paper called *The Future of Food from the Sea,* which addresses how aquaculture is part of the solution for a sustainable future. The paper states the need for the adoption of novel ingredients in sustainable aquafeeds and this is why BioMar commits to continuing to drive innovation for the sustainable future of aquaculture.

HIGH LEVEL PANEL *for*
A SUSTAINABLE OCEAN ECONOMY

References: www.oceandecade.org/assets/The_Science_We_Need_For_The_Ocean_We_Want.pdf www.oceanpanel.org https://oceanpanel.org/sites/default/files/2019-11/19_HLP_BP1%20Paper.pdf

Photo: PickOne/shutterstock.com

Authenticity of Marine Products

While BioMar continues to transform aquaculture feeds with innovative new nutrient sources, there still remains no perfect substitute to marine ingredients. Fish oil and fishmeal are excellent nutrients and although we do source certified marine products, we do believe validation is essential in building stakeholder trust.

It has been clear for a long time that the industry could not grow at the expense of wild fish stocks. Since then, we have improved the sustainability profile of our sourced fisheries by supporting science-based certification schemes like IFFO RS and MSC and Fishery Improvement Projects (FIPs). We have also contributed in developing alternative raw materials such as vegetable protein and micro algae for marine omega-3s. Supporting the development of DNA-testing of marine ingredients is therefore the next step in BioMar's commitment to responsible sourcing of marine raw materials.

The authenticity testing platform, developed by Norway-based Orivo in collaboration with BioMar, is based on advanced DNA-technology. The test determines the species composition of marine ingredients with a high level of precision, able to detect the presence of even very small amounts of DNA. BioMar believes that DNA-testing of marine ingredients in the aquaculture industry is a natural answer to the call from customers and stakeholders for improved transparency and traceability in seafood value chains.

Reports of fraud in many of the world's largest seafood markets highlights the importance of accurate and reliable traceability data throughout the aquacultural value chain. BioMar will now be able to genetically test whether the species composition in a sample of raw material matches the reported composition on the traceability certificate. BioMar has a great deal of trust in our suppliers and understands that both have a responsibility as stewards of the ocean. As such, we expect this new DNA-based test to play a crucial role in efforts focused on building consumer and stakeholder trust.

ORIVO is looking to increase their footprint in the feed industry. Together with BioMar, they have started working on selected feed ingredients, but these represent just a small part of the many industry-specific issues they think can be solved with their technology. These can be extended to cover all marine ingredients and seafood. ORIVO is currently working very hard on developing tests that can address all these issues.

"To have BioMar join as our first client in this area has been key. We greatly appreciate the patience and faith they have shown during the development and testing stage of the technology. Their long-term commitment to this project is a sign that the service we are now providing is of value to the feed industry."

ORIVO CEO, Svein Erik Haugmo

Alpha to Omega 3

Securing EPA & DHA supply

Marine omega-3 fatty acids, EPA and DHA, are an essential part of healthy diets for both humans and fish. The growth in global aquaculture has increased the demand for EPA and DHA to levels where supply can no longer meet demand. Developing new sources and avoiding waste can help.

Mapping the EPA & DHA balance
It is common knowledge that eating seafood is good for you. It contains healthy omega-3 fatty acids, such as EPA and DHA, which are essential for neurological and visual development in infants and provide a range of cognitive and cardiovascular benefits for adults.

On average, the Global Organization for EPA and DHA Omega-3s (GOED) recommends an intake of 500 mg of EPA and DHA per day, sourced primarily from fish and marine supplements. However, when estimating the total EPA and DHA supply, only 30% of the world population gets what they need. This can have a severe impact on global human health. The reasons for the supply gap are numerous - but improved waste recycling, tapping into new sources, and changing diets to favour more seafood are all options to boost the omega-3 supply.

Fish stocks
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 a non-viable 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. To figure this out, first, we need to know how EPA and DHA are produced and consumed by humans and in the ocean.

One untapped source is krill. Krill, which is high in EPA & DHA, represents the largest standing biomass in the world. Despite the sizable available biomass, krill is currently harvested at approximately 5% of the total allowable catch (TAC) of 5.6 million tonnes per year.

Aquaculture can increase supply
Aquaculture can increase the omega-3 supply but some species, such as salmon, require fish meal and fish oil in their diets. If these fish do not get enough EPA and DHA, it negatively affects their health and reduces the omega-3 fatty acids they contain. Despite aquaculture being the largest consumer of EPA and DHA, it is also a producer through species like molluscs and carp which can biologically prolong shorter chained fatty acids into EPA and DHA.

Waste and novelties
Fish feed and fish oil can be made from fish waste and trimmings, if the waste can be collected and processed. In Europe and North America, fish are gutted and processed by industry, which makes it easy to collect and reuse by-products. However, in Asia, large amounts of food waste are generated by households making it difficult to use the waste for anything useful. Asia has, by far, the largest potential for increasing omega-3 supply by reducing and recycling waste.

New, novel sources of EPA and DHA include micro algae, bacteria and modified plants. These products are now being rapidly scaled up for intensive production and are showing economic viability. Along with undergoing measures on modified crops, these novel solutions will offer new omega-3 sources and help to close the supply gap.

There is no silver bullet for closing the supply gap and none of the strategies are easy. But we must find a way to balance healthy human nutrition, a growing population and protecting our environment.

Reference: Hamilton, H.A., Newton, R., Auchterlonie, N.A. et al. Systems approach to quantify the global omega-3 fatty acid cycle. Nat Food 1, 59–62 (2020). https://doi.org/10.1038/s43016-019-0006-0

Material Flow Analysis

Material flow analysis (MFA) is an analytical tool that tracks and quantifies the consumption and losses of materials or substances within a defined system in order to identify strategies to optimize their use.

See more details on page 46 - 47.

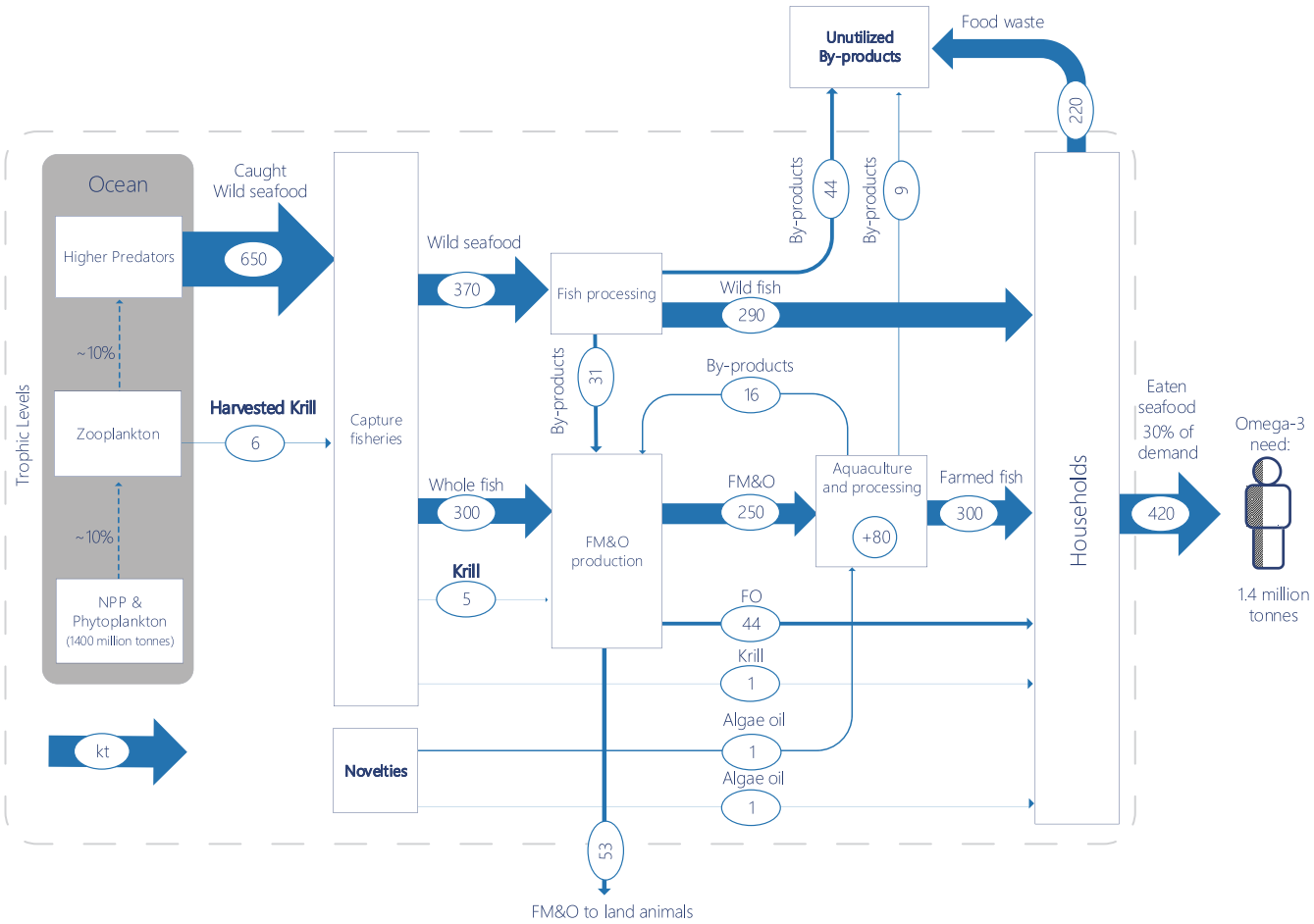
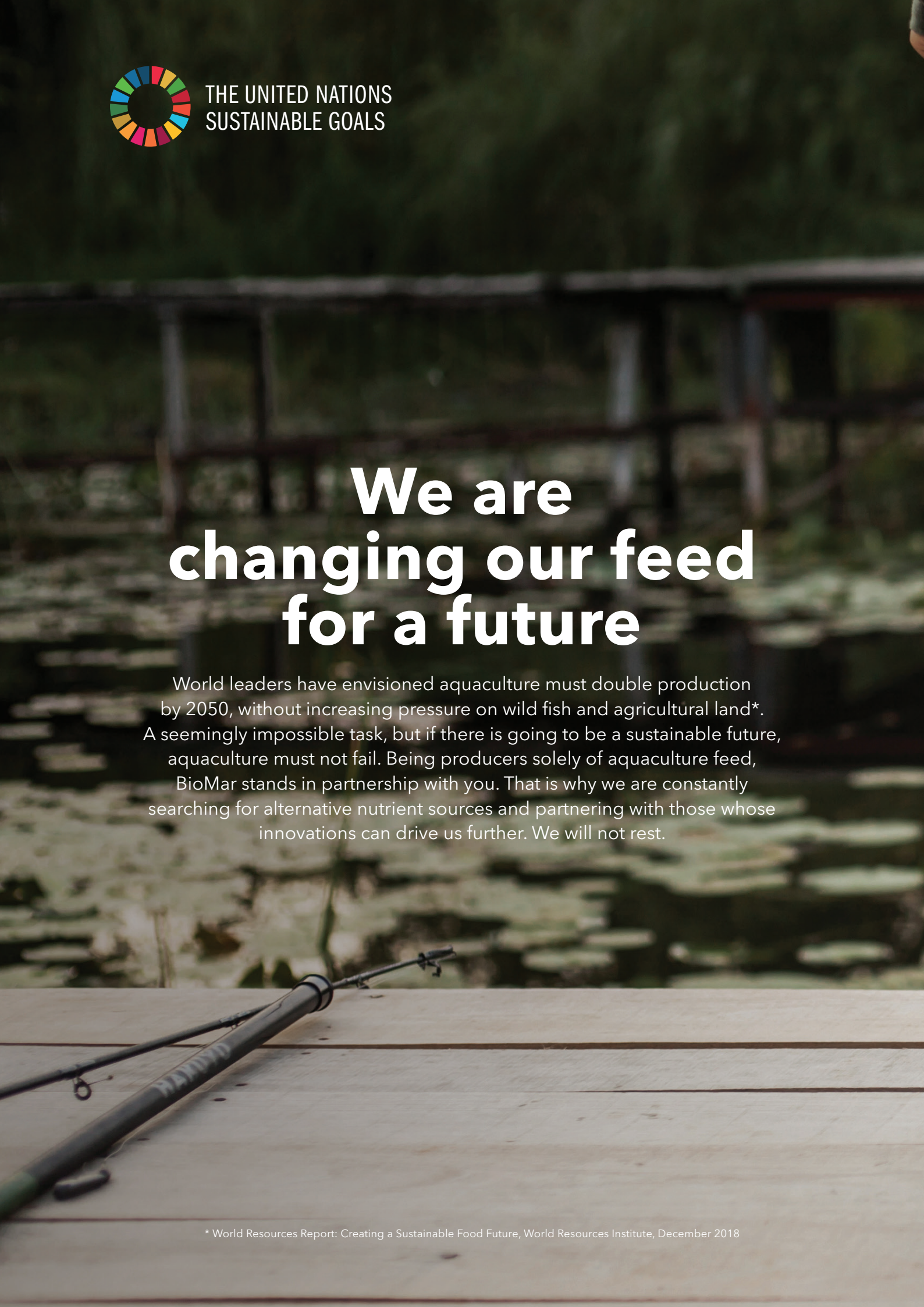


Figure 1. Global EPA and DHA balance adapted from Hamilton et al., 2020. Blue arrows show values of EPA + DHA per year in kilo tonnes (kt). Mass balance inconsistencies are due to rounding errors and uncertainty. FM&O, fish meal and oil; FO, fish oil; NPP, net primary production. Blue circle indicates biological production of EPA and DHA by fish.



THE UNITED NATIONS
SUSTAINABLE GOALS

We are changing our feed for a future

World leaders have envisioned aquaculture must double production by 2050, without increasing pressure on wild fish and agricultural land*. A seemingly impossible task, but if there is going to be a sustainable future, aquaculture must not fail. Being producers solely of aquaculture feed, BioMar stands in partnership with you. That is why we are constantly searching for alternative nutrient sources and partnering with those whose innovations can drive us further. We will not rest.

* World Resources Report: Creating a Sustainable Food Future, World Resources Institute, December 2018

BioMar Group

Powered by Partnership
Driven by Innovation

1962

BioMar is established in Denmark by a group of Danish fish farmers under the name Dansk Ørredfoder A/S.

BioMar is among the first in Europe to introduce pelletised dry feed.

1986

BioMar AS is founded in Norway.

1994

Dansk Ørredfoder A/S takes over Aqualim S.A. in France and BioMar AS in Norway, merging under the name of BioMar A/S.

1996

BioMar establishes production in Karmøy, Norway.

1988

Dansk Ørredfoder is taken over by Aktieselskabet Korn og Foderstof Kompagniet (KFK).

BioMar pioneers extruded fish feed.

Ecoline is the first environmentally declared fish feed in the world and wins prestigious Danish Environmental Award for improved eco-performance.

1995

BioMar establishes a factory in Scotland.

BioMar is the first feed company to be ISO 9001 certified.

1997

BioMar establishes sustainability as one of the main goals in feed development .

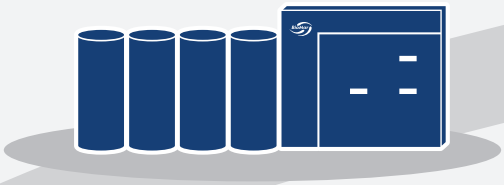
2012

BioMar establishes a JV in Costa Rica.

MS Høydal is the world's first cargo ship powered by liquefied natural gas (LNG).

2013

BioMar and Lallemand sign a research, development and commercial collaboration agreement, expanding the knowledge and use of probiotics in fish nutrition.



2016

BioMar establishes a JV production in Turkey.

BioMar's JV in China acquires the fish feed company Haiwei.

Salmon from the value chain collaboration, "In the Blue" hit the shelves of Whole Foods.

BioMar Chile wins 1st place in the Air category for our project "A sustainable aquaculture, our legacy and commitment to Chiloé Island".

BioMar is first to use novel omega-3 from micro algae in feed at commercial scale.

2015

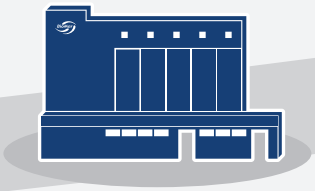
BioMar establishes a JV with Tongwei, in China.

BioMar becomes the first to launch a specialized feed (Tri-X) for triploid salmon.

BioMar partners with the Antarctic Wildlife Research Fund to facilitate and promote research on the Antarctic ecosystem.

Company & Activity Timeline

2000
BioMar acquires 50% of two factories in Chile, achieving full ownership in 2002.



2001
BioMar establishes production in Greece.

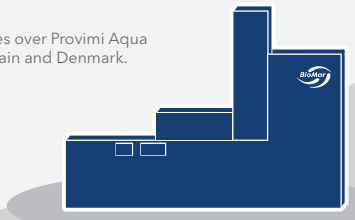
2005
Schouw & Co. becomes majority stakeholder in BioMar A/S.

Ecolife Pearl is the first certified organic fish feed.

2006
Revolutionary open formulation and performance concept, Ytelse2, is launched.

2007
BioMar launches the sustainability concept and improvement programme, BioSustain™

2008
BioMar takes over Provimi Aqua in Chile, Spain and Denmark.



2009
BioMar launches the SMARTfeed™ concept in Norway.

BioMar launches the first fish feed in the EU with probiotics.

2011
A revolutionary new feed line for recirculating aquaculture systems. (RAS)

2017
BioMar announces a new feed factory in Australia.

BioMar acquires shrimp feed factory in Ecuador.

BioMar establishes a global hatchery unit in France.

First to report a FIFO ratio below 1:1 on overall fish feed production through a year.

2018
BioMar first to launch consumer facing transparency tool.

Redesigned targeted global health strategy, SmartCare™.

2019
BioMar becomes full owner of the Joint Venture factory in Chile, renaming the factory to Ercilla.

Refreshed corporate identity

Markets & Operations

BioMar is a leading supplier of high-performance aqua feeds, supplying feed for more than 45 different species, to over 80 countries from 16 factories.

Figure 2. BioMar markets and production by country including manufacturing units and ATC centres.

BioMar Group has its head office in Aarhus, Denmark, and has until now divided its operations into three divisions: Salmon, EMEA and Emerging Markets. From 2020, BioMar will consist of 4 divisions, where a new Asia division will support our growth ambitions in China and Asia in general. Our approach stimulates local market engagement, while ensuring global synergies in terms of processes, access to world-class expertise and knowledge built. All business units are headed by local managers, with solid knowledge and experience from the industry.

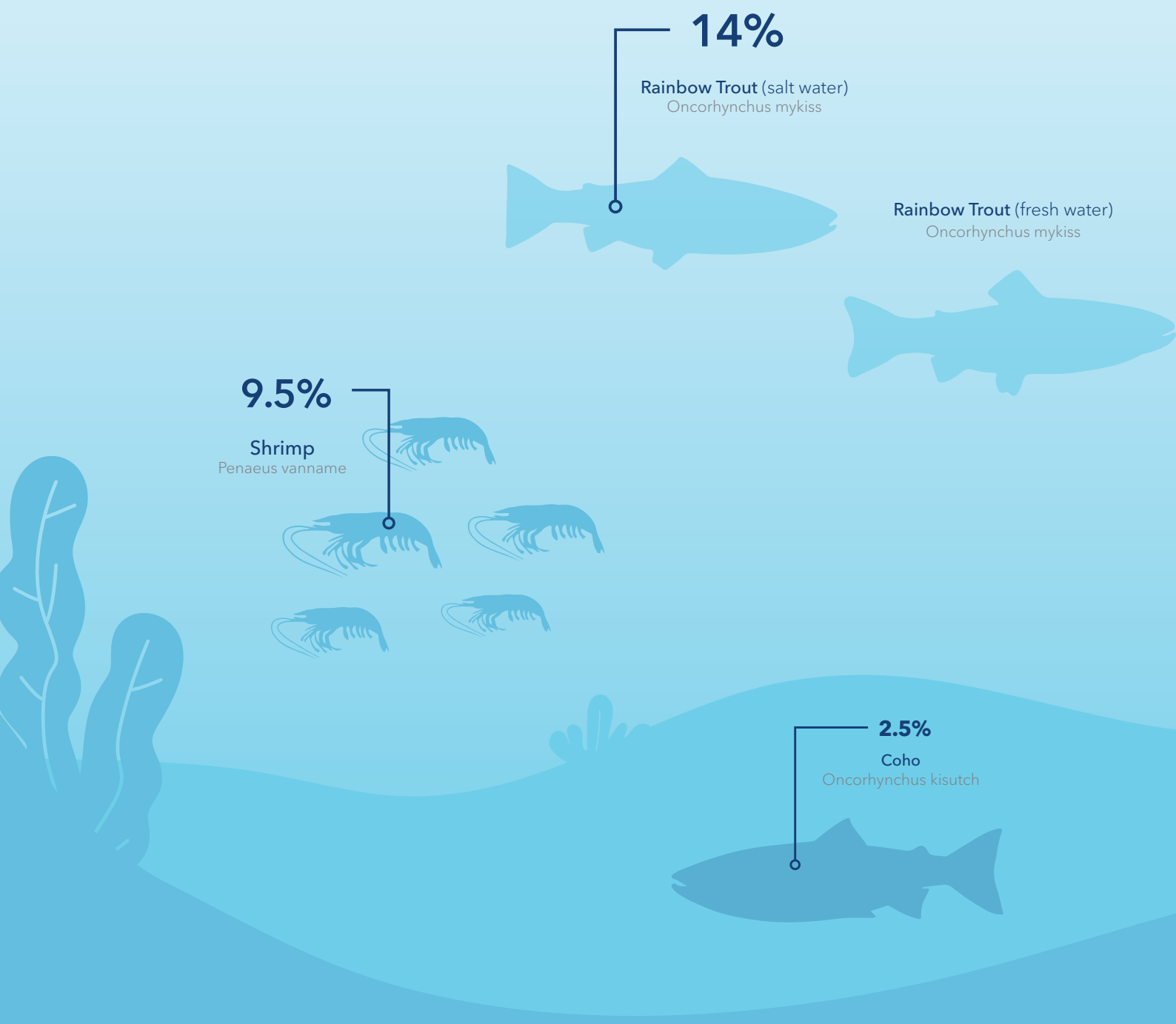
In 2019, the Salmon Division has operations at the factories in Norway, Scotland and Chile with an upcoming foothold in Australia. The EMEA Division covers the EMEA region and involves all operations other than salmon, and has a foothold with factories Denmark, France, Spain, Greece and Turkey. The Emerging Markets Division encompasses operations in Costa Rica, China and Ecuador, and focuses on new territories and business development activities. The business operations in Turkey and China, both driven through joint ventures with local partners, are not consolidated.

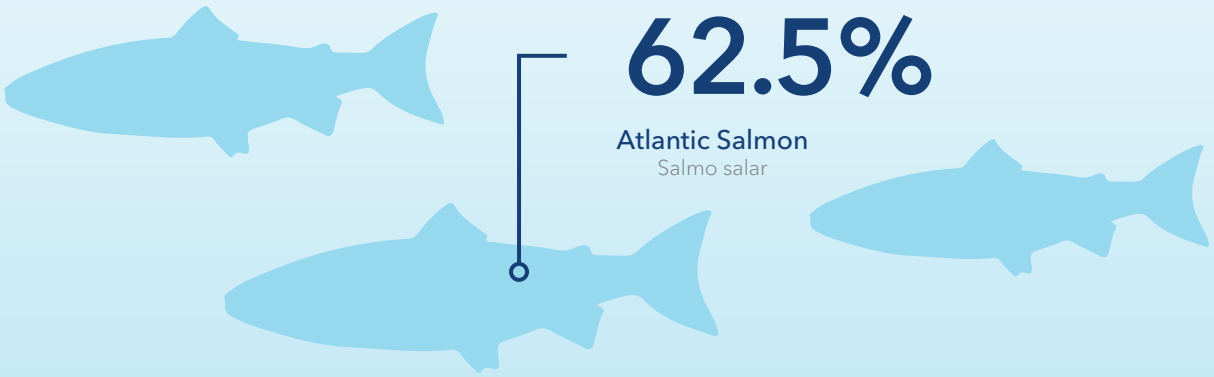
Our main business areas are feed for salmon and trout in Norway, the UK and Chile. In Continental Europe we produce feed for trout, sea bass, sea bream meagre and eel. While in South and Central America we provide feed for shrimp, cobia and tilapia. The acquisition of Alimentsa in Ecuador, BioMar has targeted shrimp as an important growth segment. In China, our main business is feed for Japanese seabass and snakehead.

The operating model is explained more in detail on pages 26 - 27.

Powered by Partnership
Driven by Innovation

Top species where BioMar supplied the most feed in 2019





62.5%

Atlantic Salmon
Salmo salar

9%

Gilthead Sea Bream
Sparus aurata

European Sea Bass
Dicentrarchus labrax

2.5%

+ other species

European Eel
Anguilla anguilla

Siberian Sturgeon
Acipenser baeri

Tilapia
Oreochromis niloticus

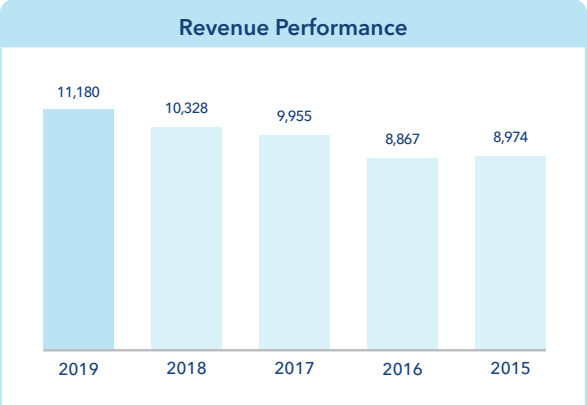
Outlook & Financial Statements

Record-breaking full-year performance with strong improvements in both revenue and earnings. New production capacity added in Chile and Denmark and more on the way in Australia, Ecuador and China. Guiding for sustained improvements in 2020.

Financial Performance
The year closed on a strong fourth quarter. Volume growth and a strong product mix drove an 11% increase in revenue to DKK 3,126 million, and earnings were solid.

Revenue growth in Q4 and for the year was attributable mainly to the Salmon division, whose innovative product offering and close collaboration with customers on developing advanced feed solutions were some of the most important factors driving the improvement. To this should be added the acquisition of the remaining shares in formerly 50%-owned Alitec Pargua in Chile in June 2019.

BioMar's full-year 2019 revenue was DKK 11,180 million, an 8% increase from DKK 10,328 million in 2018, reflecting a 3% increase in volumes sold relative to 2018, higher average raw materials prices and a stronger product offering. All three divisions contributed to the increase. Developments in foreign exchange rates had a positive overall impact of approximately DKK 140 million on revenue, mainly due to higher USD and GBP rates that were only partially offset by a lower NOK rate relative to DKK.



Reported EBITDA was up from DKK 713 million in 2018 to a higher-than-expected DKK 966 million in 2019, of which, however, IFRS 16 effects accounted for DKK 128 million. Adjusted for this factor, the EBITDA change was a 18% improvement.

Other than revenue growth, the EBITDA improvement was driven by concept development and the strong product offering. The Norwegian business continued the positive trend after the extensive structural and organisational changes implemented earlier in the year. These changes are now filtering through to results in the shape of a better price/volume balance. Overall, exchange rate developments had a positive effect on EBITDA of approximately DKK 17 million.

Working capital increased from DKK 846 million at 31 December 2018 to DKK 1,315 million at 31 December 2019, mainly due to the higher revenue and shifts in customers and geographies resulting in extended credit periods. BioMar taking full ownership of Alitec Pargua in June 2019 and inventory build-up at the new production facility in Australia were other factors driving the increase.

ROIC excluding goodwill remained high, at 18.9% at 31 December 2019, but still lower than the 22.8% reported at 31 December 2018 with the higher average capital invested in, among other things, more production capacity offsetting the stronger earnings. To this should be added the significant IFRS 16 effects, which increased average invested capital by DKK 546 million. Net of IFRS 16 effects, ROIC excluding goodwill would have been 21.9% at 31 December 2019.

BioMar Group	Q4 19	Q4 18	2019	2018
Volume ('000 of tonnes)	337	331	1,250	1,210
Revenue (DKKm)	3,126	2,822	11,180	10,328
- of which salmon north	1,568	1,339	5,008	4,892
- of which salmon south	764	672	2,819	2,315
- other divisions	793	811	3,353	3,121

Business Review
For several years, BioMar has run the Chilean feed business Alitec Pargua in a 50/50 joint venture with a local business partner but took over full ownership on 7 June 2019. Following the acquisition, BioMar now has substantially more production capacity, i.e. some 60,000 tonnes annually, at its disposal in the

strategically important Chilean market. The production unit is now fully integrated with BioMar's two other production units in Chile.

In response to BioMar Ecuador's positive performance combined with the market growth anticipated for the coming years, BioMar in 2019 initiated additional capacity expansion in Ecuador in addition to the new product line of pelleted feed that began operating earlier in the year. The expansion includes a production line for extruded feed, which will increase annual capacity by a further 40,000 tonnes. The new production line represents an investment of approximately DKK 50 million and is expected to be commissioned in Q2 2020.

In China, construction of the new fish feed factory in Wuxi near Shanghai is now in its final phase. However, completion of the factory, constructed in a joint venture with Chinese partner Tongwei Co. Ltd., has been affected by the current situation involving COVID-19 in China. In combination with the existing factory in Guangdong province, the new factory, with annual fish feed capacity of about 50,000 tonnes and a further expansion potential, will provide a good platform for penetrating the Chinese market by providing quality, sustainable feed.

Construction of the new feed factory in Tasmania, Australia, has progressed on schedule, and the plant will now commence commercial production. The project, adding annual fish feed capacity of about 110,000 tonnes, represents an investment of about DKK 300 million, of which approximately DKK 280 million had been paid by the end of 2019.

BioMar has completed a project that has lifted the output capacity at the Brande factory in Denmark and reduced the load on the existing production facility. The new production line, which represents a total investment of about DKK 100 million, is dedicated to specialising in larval and fry diets as well as RAS feeds (Recirculating Aquaculture Systems).

Regulatory Investigation in Chile

In December 2019, the Chilean competition authority indicted four Chilean fish feed producers, including BioMar Chile, on charges of concerted practice. The charges are based on isolated circumstances related to the Chilean fish feed industry during 2003-2015.

The case, which is expected to be rather long running, is still in the early stages, but BioMar Chile does not acknowledge the charges and the company intends to rebut the charges that it has participated in concerted practices so as to restrict competition in the industry. For more information, refer to the consolidated financial statements on contingent liabilities. [1]

Outlook

Demand for farmed fish and shrimp is generally developing well in many markets, and there are no immediate indications of any changes to this trend. BioMar expects to grow volume sales in 2020 relative to 2019, and all three divisions are expected to contribute to the improvement.

BioMar will defend its market share and consolidate its position by developing and implementing new products and maintaining its strong focus on optimising margins, enhancing efficiency and on customer communication.

Against this background, BioMar expects to generate full-year 2020 revenue of about DKK 12 billion, but as always, changes in raw materials prices and foreign exchange rates may impact revenue. Earnings may also be affected by currency movements, but based on the current outlook, BioMar expects to generate EBITDA in the range of DKK 1,000-1,060 million in 2020.*

Associates and joint ventures, which are recognized at the share of profit after tax, are expected to contribute profit of approximately DKK 60 million in 2020.*

Reference: [1] https://www.schouw.dk/media/1788/schouw-annual-report-2019-eng.pdf

Foot note: * Outlook announced on March 6, 2020, before global COVID-19 pandemic lock-down. Financial guidance for 2020 suspended.

BioMar Group

2019 delivered a strong set of financial results within BioMar Group resulting in record breaking full year performance.

Income Statement	2019	2018
Revenue	11,180	10,328
Gross profit	1,482	1,279
EBITDA	966	713
Depreciation and impairment	-307	-180
Operating profit (EBIT)	**659**	**533**
Profit after tax from associates and joint ventures	79	76
Financial items, (net)	-62	-35
Profit before tax	**676**	**574**
Tax for the year	-135	-164
Profit for the year	**541**	**410**

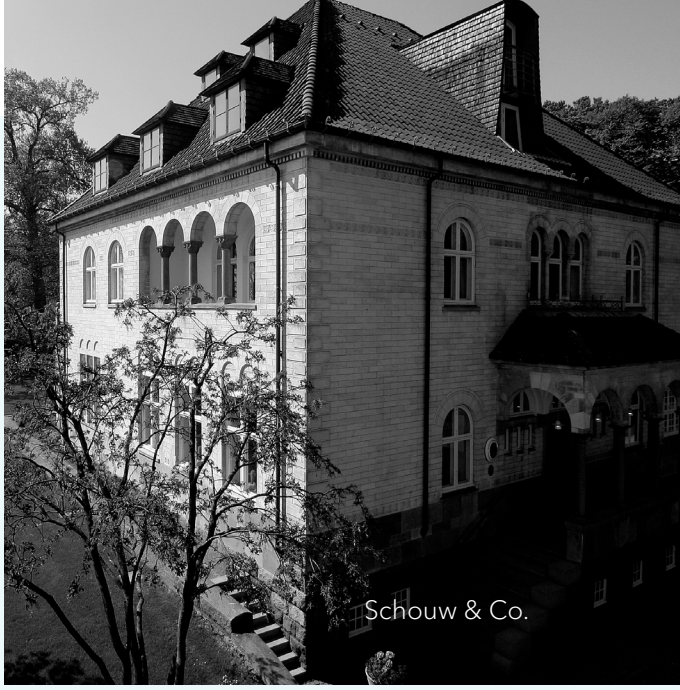
Cash Flows		
Cash flows from operating activities	328	366
Cash flows from investing activities	-543	-217
Cash flows from financing activities	198	-109
Cash flow for the year	-17	40

Balance Sheet		
Intangible assets	1,320	1,303
Property, plant and equipment	1,746	1,291
Other non-current assets	1,194	568
Cash and cash equivalents	270	284
Other current assets	4,246	3,695
Total assets	**8,776**	**7,141**

Equity	2,857	2,583
Interest-bearing debt	2,565	1,415
Other liabilities	3,354	3,143
Total equity and liabilities	**8,776**	**7,141**

Financial Key Figures		
EBITDA margin	8.6%	6.9%
EBIT margin	5.9%	5.2%
ROIC ex goodwill	18.9%	22.8%
ROIC incl. goodwill	13.7%	14.8%
Working capital	1,315	846
Net interest-bearing debt	2,077	880

Table 1. BioMar financial figures for 2019 and 2018 in DKK millions.


Schouw & Co.

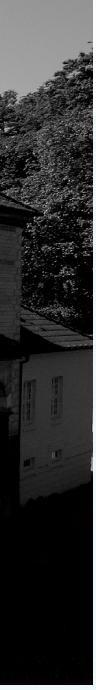
Ownership

The BioMar Group is fully owned by **Schouw & Co.**, a Danish industrial conglomerate listed on the Nasdaq Copenhagen Stock Exchange who practice ownership through and alongside company managements.

Schouw & Co. acquired 68% of BioMar in 2005 and achieved full ownership in 2008 by merging the parent company, BioMar, into Schouw & Co. This acquisition has made Schouw & Co. both larger and stronger. BioMar's performance has been a strong contribution to Schouw & Co.s portfolio, generating most of the current revenue and earnings.

Schouw & Co. is an industrial conglomerate. Through its subsidiaries, the company produces fish feed for aquaculture, non-woven textiles for personal care and industrial applications, hydraulic solutions and components, electronics and advanced mechanics, and components to the automotive industry.

Schouw & Co. maintains an ongoing and close dialogue with portfolio company management teams on such issues as strategy, financing, accounting, investments and acquisitions. The active ownership is always exercised through and alongside company management teams.



DKK MILLION	2019	2018	2017	2016	2015
Revenue and Income					
Revenue	20,946	18,253	17,032	14,369	12,566
Operating profit before depreciation (EBITDA)	1,951	1,579	1,568	1,472	1,214
Depreciation and impairment losses	802	532	475	434	383
Operating profit (EBIT)	1,149	1,047	1,093	1,038	831
Profit/loss after tax in associates and joint ventures	50	70	42	566	86
Gains on equity divestments	29	9	0	0	0
Net financials	-79	-40	-30	-27	-46
Profit before tax	1,149	1,086	1,105	1,578	871
Profit for the year	906	796	875	1,339	645
Cash Flows					
Cash flow from operating activities	1,410	837	763	1,598	1,171
Cash flow from investing activities	-1,043	-1,360	-2,763	-395	-569
Of which investment in property, plant and equipment	-774	-685	-809	-828	-354
Cash flows from financing activities	-421	623	818	-925	-324
Cash flows for the year	-54	100	-1,181	277	278
Invested Capital and Financing					
Invested capital (ex. goodwill)	10,510	8,831	7,337	5,416	4,464
Total assets	18,777	16,940	14,389	12,273	10,516
Working capital	3,738	3,441	2,505	1,727	1,598
Net interest-bearing debt (NIBD)	3,298	2,425	1,275	-1,028	-511
Share of equity attributable to shareholders of Schouw & Co.	9,519	8,652	8,317	7,797	6,656
Non-controlling interests	2	7	15	18	21
Total equity	9,521	8,659	8,332	7,814	6,677
Financial Data					
EBITDA margin (%)	9.3	8.7	9.2	10.2	9.7
EBIT margin (%)	5.5	5.7	6.4	7.2	6.6
EBT margin (%)	5.5	6.0	6.5	11.0	6.9
Return on equity (%)	10.0	9.4	10.9	18.6	10.2
Equity ratio (%)	50.7	51.1	57.9	63.7	63.5
ROIC excluding goodwill (%)	12.3	14.5	17.6	20.2	18.3
ROIC including goodwill (%)	10.0	11.3	13.8	16.6	15.1
NIBD/EBITDA ratio	1.7	1.5	0.8	-0.7	-0.4
Average no. of employees	9.683	7.174	6.087	4.108	2.382
Per Share Data					
Earnings per share (of DKK 10)	38.27	33.43	36.85	56.56	27.48
Diluted earnings per share (of DKK 10)	38.27	33.35	36.63	56.41	27.38
Dividends per share (of DKK 10)	14.00	13.00	13.00	12.00	10.00
Net asset value per share (of DKK 10)	397.34	365.17	346.99	328.38	282.10
Share price, end of year (per share DKK 10)	560.00	485.60	581.50	526.00	387.00
Price/Net asset value	1.41	1.33	1.68	1.60	1.37
Market capitalisation, end of year	13,415	11,505	13,939	12,489	9,131

Table 2. Schouw & Co. A/S financial summary: a five-year overview.

Structure & Operational Model

Up until 2019, BioMar's operational model was made of three divisions: Salmon, EMEA and Emerging Markets. Moving forward this will change.

This model served different customer profiles and market conditions and has proven to be an efficient in ensuring global synergies and efficient collaboration towards the customers. The global setup will be somewhat changed in 2020 to support the next phase of BioMar's growth strategy.

The new management structure will be implemented as part of our *Shaping Our Future* strategy to support the further development of a global focus across the divisions. The goal is to prepare for further growth and to strengthen *The BioMar Way* of operating worldwide. Increasing we see more products being used across divisions. To serve global customers we will continue to adjust our approach and optimise our product portfolio and customer support. The new structure reflects BioMar's further approach to combine global excellence with local agility.

Board Members

Chairman
Jens Bjerg Sørensen

Jørn Ankjær

Asbjørn Reinkind

Anders Wilhjelm

Tbd.

Executive Committee

CEO
Carlos Diaz

CFO
Claus Eskildsen

VP Salmon
Paddy Campbell

VP EMEA
Ole Christensen

VP LATAM
Henrik Aarestrup

VP Asia
Tbd.

VP People, Purpose & Communications
Sif Rishoej

Global Functions

R&D
Tbd.

Sourcing
Morten Møjbæk

Sustainability
Vidar Gundersen

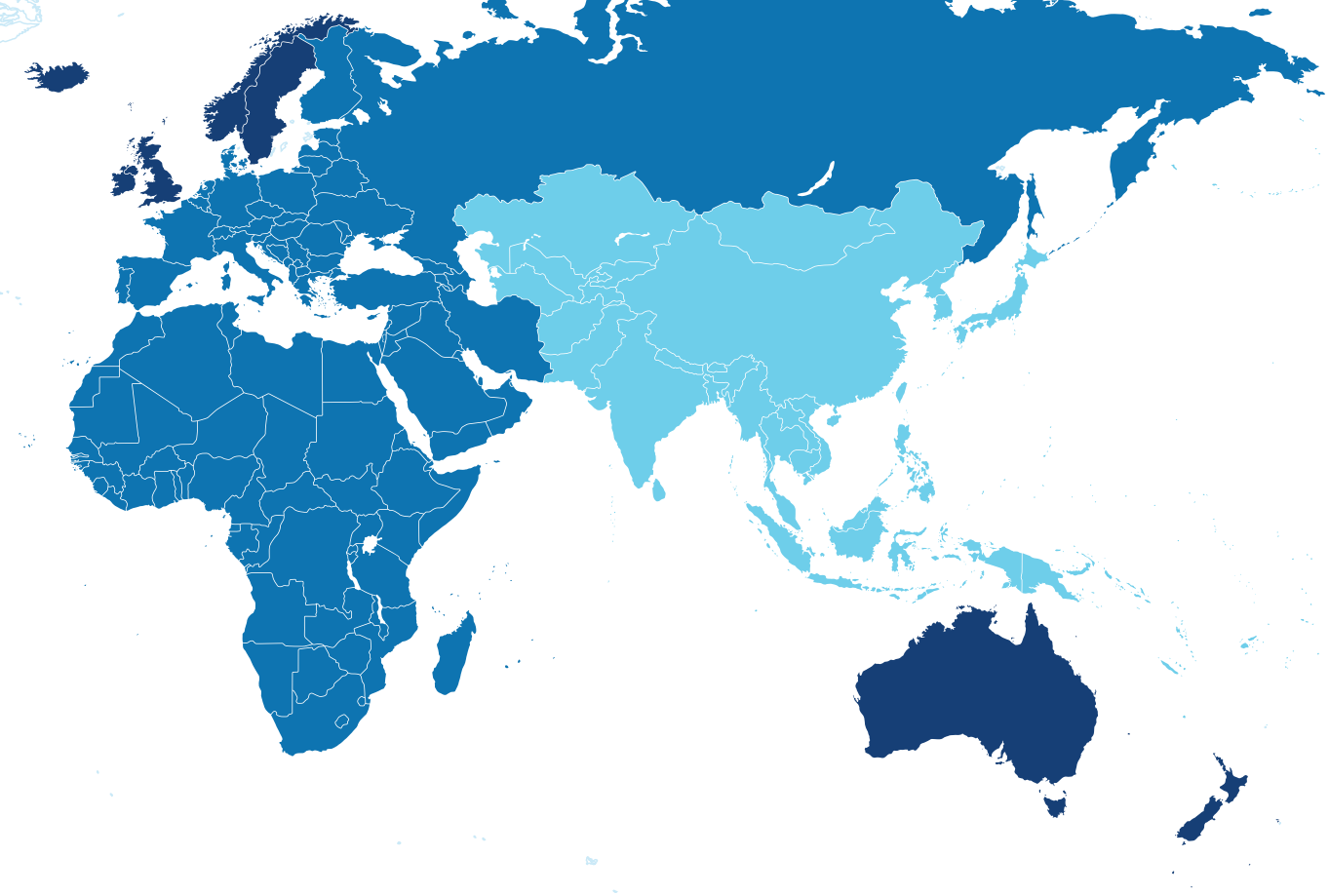
Business Development
Michael Gammelgaard

Manufacturing & Technology
Roger Hendry

Marketing
Katherine Bryar

IT
Thomas Mortensen

Finance
Carsten Nielsen



	LATAM	EMEA	North Sea, Chile & Australia	Asia
	Shrimp & Hatchery			
		Fresh Water, Marine & RAS		
			Salmon	
				Knowledge transfer between new business units

In the new set-up, each divisional VP will assume global business ownership for one or more of the main product segments. From 2021 BioMar will consist of 4 divisions as the Emerging Markets division is divided into a division focusing on LATAM and a division focusing on Asia.

The VP for North Sea & Australia will be responsible for driving alignment and value creation within Salmon. The VP for LATAM will drive the shrimp and hatchery segment, while the VP for EMEA will drive Fresh Water, Marine Species and RAS. The VP in Asia will assume responsibility for knowledge transfer between the new division and the existing BioMar divisions.

As the world changes, we adapt by strengthening our strategic focus to combine local agility with global expertise. It becomes more obvious that customers not only choose BioMar because of our products, but also the people and our way of working. To support this important differentiator and ensure that communication of our value proposition is strengthened, BioMar will create a new executive role from 2020: VP for People, Purpose & Communication.

In the future, global management will consist of those responsible for the divisions and the global functions.

Purpose & Strategy

Shaping Our Future

In 2019, BioMar launched a refreshed strategy for the period 2019-2023, named *Shaping Our Future*. It builds upon our purpose and our four guiding principles, which form the base of all our strategic decisions. We promote Innovation, Collaboration, Sustainability and Performance in the aquaculture industry.

Our purpose was defined in 2015 and summarizes a culture and focus that has characterised the company since its founding in 1962. The updated strategy is a continuation of our growth strategy from 2016. We continue our organic growth while conducting systematic assessments of potential acquisitions. At the same time, we have established new strategic areas within RAS and hatchery. To enable this growth, we have increased our focus on people, sustainability, technology and digitalisation.

We believe in the future of the aquaculture industry and we understand that to ensure our future we must continue to innovate our feeds. This is vitally important to us, as aquaculture feed is the totality of our business.

We know that change can be difficult, but we believe change is possible through trust and mutual beneficial collaborations. That is why we are developing partnerships across the value chain in an effort to accelerate innovation to secure all our futures.

To promote our purpose and attract like-minded people and organisations, we have launched the global tagline:

Powered by Partnership. Driven by Innovation.

Along with this tagline we will be promoting our purpose with the launch of a campaign in 2020. We hope that through awareness we can drive innovation adoption throughout the industry.

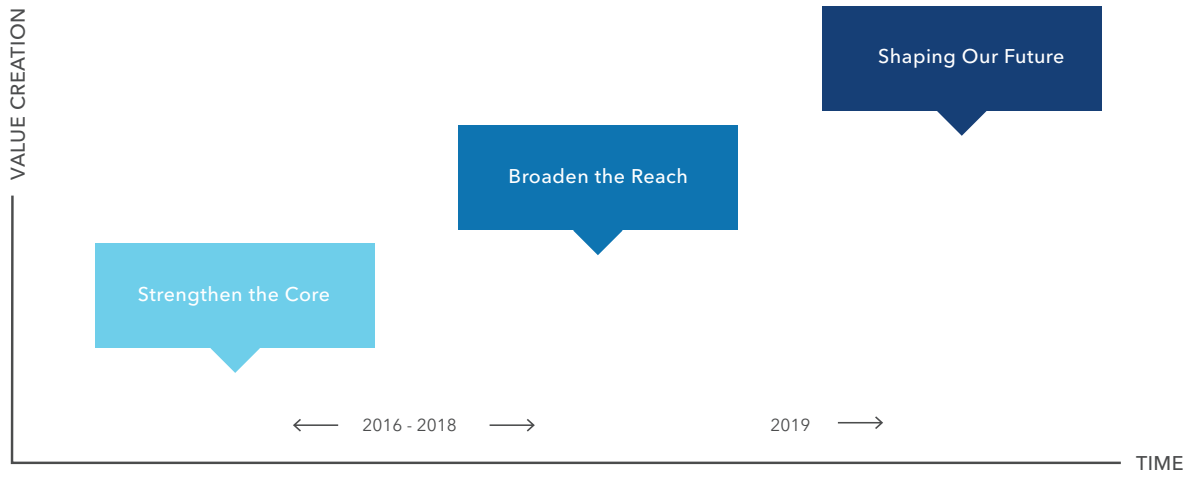


Figure 3. Stages in our strategy "Shaping Our Future" towards 2020.

Photo: Geir Mogen

Corporate Policies

BioMar is committed to ensure high standards of corporate responsibility.

Part of our role as a multinational company, which sources raw materials in the global market, is to ensure that we, along with our suppliers, meet the standards detailed in our Code of Conduct (COC) and applicable policies. BioMar acknowledges that a sustainable business must be built upon certain ethics like ensuring the fundamental human rights, amongst others. Our COC is essential to the way we drive our business and in which we require employees and business partners to comply with overall standards and provisions.

Failure to comply with the principles set forth in our policies will result in corrective measures and, in worst case, contract cancellation. Fundamental to accepting our policies is the understanding that a business, in all of its activities, must operate in full compliance with the laws, rules and regulations of the countries in which it operates, including, but not restricted to, labour and environmental issues.

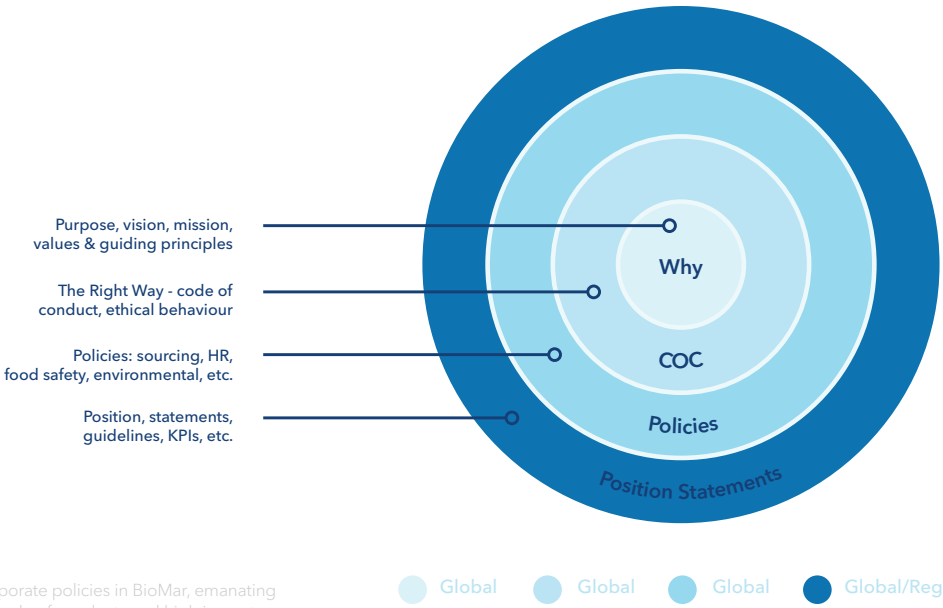


Figure 4. Illustration of corporate policies in BioMar, emanating from global core statutes, code of conducts and high impact policies to more market driven position statements.

BioMar People

In BioMar Group, we are strongly driven by our purpose:
We are innovators dedicated to an efficient and sustainable global aquaculture.

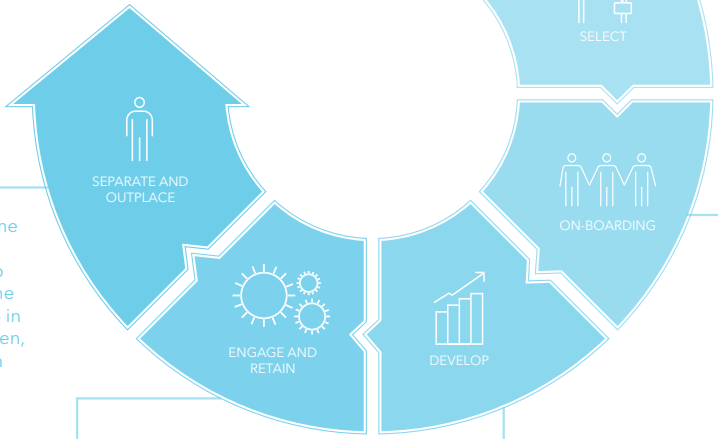
We have promised to contribute to the development of the industry by delivering innovative, sustainable and high-performing feed solutions, creating strong partnerships and fostering a collaborative culture. We are never in doubt that our responsibility goes beyond applicable legislation. For many years we have been running our business striving to take on corporate responsibility. We embrace the UN Sustainable Development Goals, which we believe helps steering the industry in the right direction: Making sure we deliver a more sustainable world for future generations.

As a part of our focus on the sustainability goals, we have during 2019 increased our focus on social responsibility internally as well as externally. To support us, we have implemented one of the world leading IT solutions for handling people processes and employee data. The solution embraces all employees in BioMar and will in several areas enable us to analyse and improve our governance as well as our practices.

Our purpose is a fundamental part of our value proposition. We strive to attract people who share our passion for being innovators dedicated to an efficient and sustainable global aquaculture.

Employee Life Cycle

Organisational Strategy and Capability



We drive a meticulous selection process making sure that we get the match between the position, the stakeholders and the employee right. This goes for personality as well as competences.

During the on-boarding process we make sure to accelerate the on-boarding process through use of the 4F model: Fit, Friends, Focus and Future.

We continuously develop our staff, based upon the business strategy and individual career aspirations. Through the yearly HR wheel, we ensure shared objectives for performance as well as personal and professional development.

Fair pay and good working conditions are fundamental for our business. We benchmark salaries and follow up upon the employee experience across the world. We strive to make sure people stay based upon our way of working.

One day it will be time to say goodbye. We are always striving to make sure we end the working relationship in a good way. Very often, we end up staying in touch.

Photo: BioMar EMEA

Diversity & Talent

As a global company, we believe that we need to take responsibility for driving our company in a way that inspires others to follow. We embrace human rights and benefit from the advantages of a diverse workforce.

Our top management reflect our vision of diversity in the sense that we are embracing different 12 nationalities. When looking at gender equality, in management, we have for the third year in a row managed to increase our level of women represented in leadership roles.

	2017		2018		2019	
Gender	Female	Male	Female	Male	Female	Male
Top Management	5%	95%	5%	95%	5%	95%
Management Total	19%	81%	19%	81%	22%	78%
Total	20%	80%	20%	80%	21%	79%

Executive Committee, Global Heads and Managing Directors

To increase our growth of female talent, we chose to dedicate 40% of our seats at the Schouw Talent Program 2018/2019 to female talent. During the program the participants were engaging in high level training and strategic projects, all the time with executive mentoring and sponsorship. The talent program has been designed to accelerate the growth of employees with a high potential to develop towards more strategic roles. The program is designed and facilitated by HR in BioMar Group in collaboration with INSEAD and is open to all Schouw & Co companies. All women completed the program with acknowledgement from executive management. The program will be going forward as an important part of our portfolio of tools for talent development.

In BioMar, we do not accept discrimination or harassment based upon race, ethnicity or sexual orientation. Furthermore, we strive to ensure that we are not biased in our decision when promoting, rewarding or hiring staff. In 2019, we have 26% of our regular hires being women, setting an important trend for our future.

Photo: Allen Xia

Social Responsibility

In 2019 BioMar took an important step to improve the employee experience, ensuring efficient people processes and support global compliance on our social responsibility. We implemented the world leading global platform from Workday. This platform will strengthen governance on human rights while addressing the UN SDGs by closely following patrameters such as equal pay, diversity, compliance on people processes, goal management, employee development and handling of safety related incidents.

We implemented Workday across all BioMar markets and will continue to build upon the platform in 2020 ensuring we integrate a wide range of our HR related processes. All employees in BioMar have access to applications for mobile and PC, where they can view and edit information related to their employment in BioMar. At a manager level, we have deleted a wide range of paper-based processes, introducing digital approvals and system-based processes.

Safety

Safeguarding human rights includes safeguarding the health & safety of our employees as well as ensuring the right to create unions and employee representation. In BioMar safety always comes first and we collaborate with our factories to minimize the risk factors inherent in daily work. Unfortunately, we have seen an increase in the level of accidents in 2019, breaking the positive development of the previous years. However, the total days lost per employee has decreased, reflecting a lower severity level of the accidents. To strengthen our focus on health & safety, we are implementing new tools to ensure continuous reporting and focus by local management and to analyse for trends and capture learning opportunities.

HEALTH & SAFETY	Target 2020	2016	2017	2018	2019
LTI RATE	< 2.0	9.1	6.4	5.0	7.0
DAYS LOST/EMPLOYEE	No Target	0.10	0.09	0.12	0.08

To BioMar, dialogue and collaboration are fundamentals. We believe in creating and maintaining sustainable relationships with employees as well as other stakeholders. The base for innovation is trust, engagement and collaboration. We have during 2019 welcomed a new union in Spain. Our employees have chosen representatives and we have established regular meetings discussing the further development of our way of working. Around the globe, we are continuing our collaboration with unions and other employee representatives in order to co-create an engaging work environment and a continuous improvement of our production quality and efficiency.

BioFarm

BioFarm is a highly specialised function within BioMar focused on education and knowledge exchange. It consists of experts in nutrition and farming efficiencies, technologies and best practices. This dedicated team of 63 people spans over 80 countries with a mission to spread the latest knowledge on the most efficient and sustainable aquaculture techniques.

The BioFarm family consist of biologists, veterinarians and engineers, some of them former fish farmers, who bring extensive experience and a deep understanding of the many different areas related to aquaculture. Our BioFarm teams spend most of their time out in the field, although they work closely with our Global R&D, Product Managers, Sustainability teams and the broader aquaculture industry. This ensures they have knowledge in both theoretical and practical farm management issues while having access to the latest developments in nutrition, sustainability and best aquaculture practices.

BioFarm covers all stages of farming and life cycle for most aquaculture species. The work includes a variety of areas within planning and monitoring of the production, feeding strategies, water quality and recirculation technology, veterinarian services and questions related to sustainability, food safety and the environment which are increasingly demanded by society. Their expertise extents from the hatchery to the grow out units, be it in sea cages, ponds or land-based facilities.

Knowledge Exchange

At BioMar we believe education is the key to driving long term, sustainable change. That is why we offer over 15 different type of courses dedicated to all aspects of aquaculture and business management, including programs for children and families of farm workers. These courses not only cover topics within biology, technology and nutrition for the early detection of farming challenges, but also social issues, communities welfare and environmental impact.

Training sessions range from a few hours to certificate level accreditations with local institutions and universities. Besides client and community training, we have partnerships with several academic centres, providing post study experience and employment opportunities for aquaculture students. In 2019, we provided direct training to over 5000 people, with a total of close to 48,000 training hours.

Knowledge exchange is a key focus of our business. We collaborate closely with our customers to give support on feeding strategies, defining and predicting production results and ensuring the quality of the final product. The implementation of correct feeding practices and being able to anticipate problems during production are vital parts for a sustainable aquaculture business model. Not only will it reduce production costs, but can minimise feed waste, animal losses and unwanted impacts on the environment.

Developing Together

The complexity of aquaculture means that BioFarm will differ from market-to-market as needs can vary greatly. In areas where there are smaller sized farming operations, farmers may lack access to key services that can help in the early detection of farming challenges and the optimisation of management techniques.

That is why our Aquaculture Technology Centres (ATCs) and production facilities around the world have physical laboratories that can undertake a variety of tests including water/soil analysis, molecular diagnostics, pathology and finished product quality and safety. In 2019 more than 45,000 individual BioFarm analyses were undertaken on behalf of farmers.

BioFarm operates with the basic premise of collaboration and mutual support between customers and our BioFarm experts. This close working relationship is essential for implementing improvements which generate a real impact for sustainable change and optimised farm performance. In 2019 we actively undertook 129 collaborative aquaculture field trials.

The experiences gained by the more than 5,700 BioFarm onsite visits globally during 2019 and the free exchange of information, allow us to provide farmers with the best information available. In this way, we aim to be at the forefront of what is going on in our aquaculture regions, in a world which is characterised by constant change and challenges for farmers.

47,675 community education hours

Photo: BioMar Ecuador

"Farm managers show me around in order to give me an exact idea of the farm, of its equipment and how it is being operated. In order to give constructive advice to a customer you need to have an open dialogue. This involves insight in many aspects of the fish farm such as water parameters, environmental regulations, production targets, working routines, feed types that are being utilized and what his plans are for the future. This ensures we can have a thorough dialogue and can point to actions that might help to optimise the performance of the farm."

Anders Andreasen, BioFarm Specialist for 35 years

BIOFARM

129 Collaborative field trials in 2019

Stakeholder Management

BioMar has a long tradition of networking and interacting with stakeholders from inside and outside the aquaculture industry. This has contributed to shaping BioMar into the company it is today.

Throughout our history lasting more than 50 years, BioMar has engaged actively in a continued dialogue with internal and external stakeholders. There have been joint projects in improving nutritional and environmental performance of feed, and multi-stakeholder approaches for development of best practice standards in the industry. BioMar also support and are involved in public research projects and local educational activities. These activities strongly contribute to developing our corporate culture and driving continuous improvements in our operations and products. In the last chapter in this report, we share more details in our case studies along with other sustainability practices.

When it comes to sustainability and CSR, stakeholder engagement is of fundamental importance. Against the backdrop of new communications opportunities, such as social media, BioMar has recognized that we must engage with stakeholders in new ways, and that both virtual and actual representation is essential. Relating external engagement to core business activities is not an easy task, while building internal awareness and interest can be challenging in a global environment.

Our goal is to reach out to all interest groups to discuss and transform information, as well as learn from business intelligence. To do so, we need to map our stakeholders. In mapping our stakeholders, we have identified those to whom we have a legal, commercial or moral responsibility, such as our regulators, customers and communities around our facilities.

Employees and to some extent suppliers are important on an additional level since our business operations depend on them. Potential future clients or employees, such as students, are also important to us. We value diverse perspectives within our business, e.g. groups who can highlight new opportunities or areas that need attention like media or NGOs.

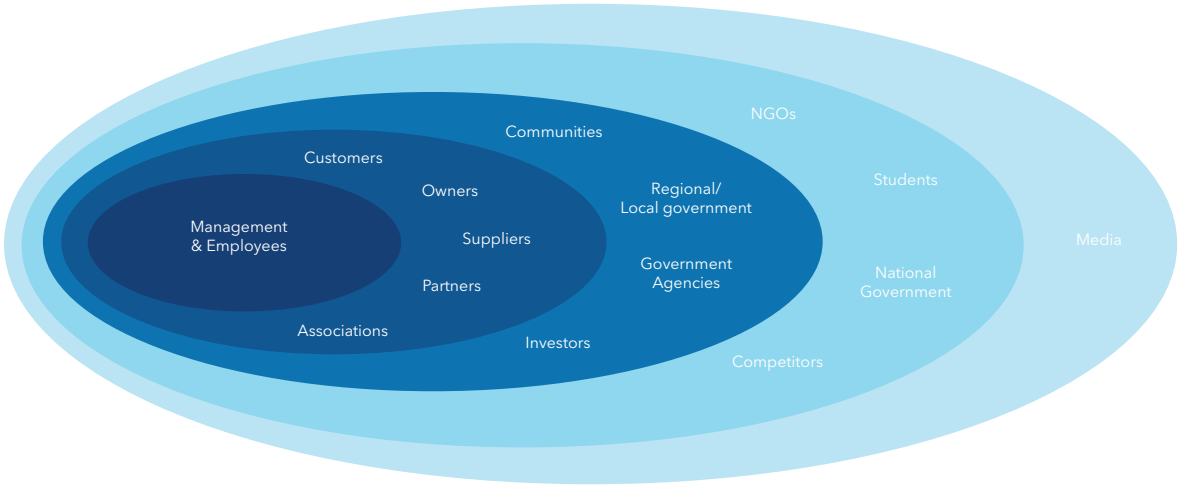


Figure 6. Stakeholder onion illustrating layers of stakeholders and interest groups of variable relevance and importance to BioMar.

Engagements

High Level Panel for a Sustainable Ocean Economy
Committee Member
www.oceanpanel.org

FEFAC
Committee Member
www.fefac.eu

SFP
Member
www.sustainablefish.org

Sustainable Brands
Member
www.sustainablebrands.com

Sustainable Brands Oceans
Committee Member
events.sustainablebrands.com/sb19oceans

EATIP
Committee Member
www.eatip.eu

ASC | Committee Member
www.asc-aqua.org

GlobalG.A.P. | Contributer
www.globalgap.org

Marin Trust | Committee Member
www.marin-trust.com

IFFO | Committee Member
www.iffo.net

ProTerra | Contributer
www.proterra.com

RTRS | Member
www.responsiblesoy.org

RSPO | Member
www.rspo.org

SSP | Member
www.sustainableshrimppartnership.org

GSI | Committee Member
www.globalsalmoninitiative.org

Materiality

Sustainability is a very broad topic, which makes it important in understanding the key priorities when aligning time, resources and investment. We have conducted an extensive materiality assessment and developed a materiality matrix based on the results. With the help of DNV GL, as an independent third party, to ensure objective input, we will revisit our materiality matrix in 2020.

Our intention is to review and adjust the matrix every other year to meet external and business context changes, as well as ensure the matrix functions as a guide in managing our sustainability agenda. We concentrate on the highest priority items in our Global Reporting Initiative (GRI) reports. Our corporate sustainability strategy focuses on taking responsibility, minimising negative social and environmental impacts and enhancing our positive reputation. Impact and focus areas are embedded as key performance indicators (KPIs) in our core operations and we strive to achieve measurable results for each of them.

Over the years, some business units have developed comprehensive metrics and goals to ensure sustainable development. Some of them have been adopted as KPIs for the entire BioMar Group, whereas others reflect a more local character or are, in other ways, difficult to address globally.

Importance to External Stakeholders	Importance to BioMar: Low	Importance to BioMar: Medium	Importance to BioMar: High
High		Climate change: Emissions Emergency preparedness Supply chain: Environmental practices Ethics & Anti-corruption Hazardous materials	Supply chain: High risk commodities Working conditions & HSE R&D & Innovation Public health Local pollution
Medium High	Climate change adaption	Supply chain: Anti-corruption Labour relations & standards & Human rights Accidental spills Training & education Waste from packaging Lobbying Impact on local economy	Stakeholder engagement Diversity & inclusion
Low	Security issues Charity & sponsorships	Energy source & use Fresh water use	

Figure 7. BioMar Group Materiality Matrix 2016/2017 conducted by DNV GL.

Our corporate sustainability strategy focuses on taking responsibility, minimising negative social and environmental impacts and enhancing our positive reputation.

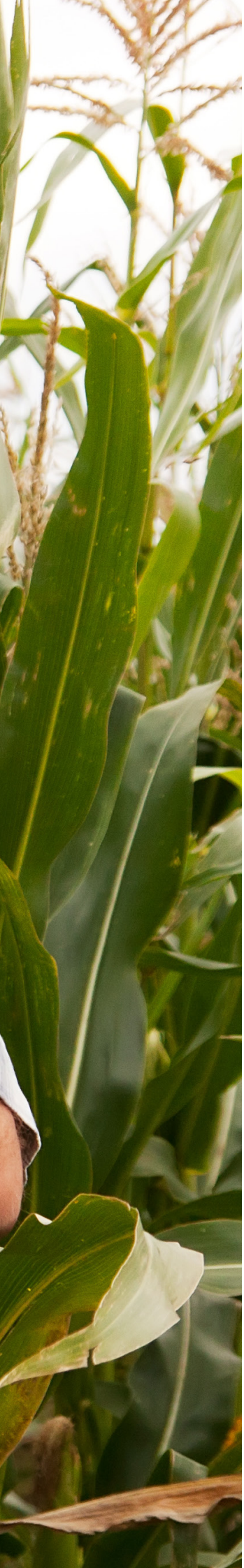
Photo: BioMar UK

Sustainable aquaculture is not just about the fish

We need to share our natural resources with the other inhabitants of this planet. Aquaculture should take only our share.
That is why we use both certified krill and wild fish. Whilst seeking alternative nutrients that don't take from the human or animal food chains.
Helping to ensure there is a tomorrow for us all.

Sustainability in BioMar

Powered by Partnership
Driven by Innovation



Our Sustainability Commitment

BioMar's products and services seek to improve four essential aspects in aquaculture production: fish health, growth performance, production economy, and environmental impact.

We commit to public transparency of our activities through annual disclosures in our BioMar Group Intergrated Sustainability Report. In addition, an essential part of our sustainability programme is to minimize sustainability risks and support value chain sustainability ventures by means of BioSustain™.

We work to optimise and strengthen sustainability in these four areas through our sustainability concept and improvement programme known as BioSustain™.

Our sustainability commitment includes continual improvement in our activities through:

- Certified Management Systems
- Cutting-Edge Knowledge
- Challenging Goals for Improvements
- Advanced Technology

Putting Our House in Order

BioMar is environmentally conscious and continuously focuses on reducing the environmental impact in aqua feed manufacturing. We have ambitious requirements and improvement targets covering all departments and operations, and all BioMar factories have modern production facilities that meet high standards for environmentally friendly production.

BioMar has developed and improved its product ranges over the years to reduce the environmental impact. This happens through focusing on sustainability throughout our internal value chain all starting with the responsible sourcing of raw materials.

The next step is the development and production of feed, with a focus on developing high quality and efficient feed types, in which nutrients are utilised for growth, rather than lost to the environment. Reliable packaging and responsible transport to customers reflect our focus on sustainability. In addition, BioMar offers services to improve sustainability throughout the value chain.

Health and Welfare

Nutrition and Food Safety

Sustainable Raw Materials

Better Living Conditions

Greenhouse Gases

Water

Waste

Employees

Figure 8. (Below)
The internal value chain of BioMar, according to traditional organisational thinking (care and support processes), showing departmental focus areas indicated by icons related to the company's KPIs.

BioSustain™

Portfolio Steering and Impact Assessment

BioMar launched its sustainability concept and improvement programme BioSustain™ in 2007 and, since then, sustainability has become an integral part of BioMar's corporate strategy. For more than a decade, BioMar has partnered with BASF on corporate sustainability to create and drive more sustainable solutions. Tangible examples of how BioMar carries out our company purpose are the Sustainable Solution Steering® method and the environmental impact assessment tool 'Eco-Efficiency Manager'. Both methodologies have been developed by BASF to analyse, assess and steer product portfolios based on defined sustainability criteria.

Sustainable Solution Steering
Over a two-year period, BioMar has applied the Sustainable Solution Steering methodology to our raw material and supply chain. BioMar strives to be the sustainability leader in the industry and this method supports us with a comprehensive and systematic tool that allows for transparency and documentation from raw material to end-product application.

Sustainability in the aquaculture industry starts with the feed and its raw materials. Sustainable Solution Steering helps to foster the use of high quality, low-impact raw materials in feed recipes, thereby promoting more sustainable aquaculture and sustainably produced seafood.

The tool considers the entire value chain and markets including industry and region-specific views. The approach reflects economic, ecological and social aspects of the products and solutions in their respective application. The methodology was adapted for the aquaculture feed industry by consulting with the company, Thinkstep – now Sphera. Sphera supports companies in all industries to customize and implement this approach – using a combination of consultancy, sustainability data and software tools.

The Sustainable Solution Steering method systematically reveals risks and opportunities along the entire value chain and enables the strategic steering of a product portfolio towards greater sustainability and revenue growth.

Environmental Impact Assessment
An Environmental Impact Assessment (EIA) is a systematic process of identifying the consequences of a current or proposed action. It shows transparency, practicability, flexibility, cost-effectiveness, credibility and accountability. Based on life cycle analysis (LCA) and the eco-efficiency methodology[1], BioMar has jointly developed with BASF a dynamic tool for the aquaculture value chain to measure, optimise and document environmental impacts.

BioMar uses the Eco-Efficiency Manager tool, both strategically and in terms of accountability, to document impacts to improve our business, as well as provide a service to our customers to help improve their business.

The Eco-Efficiency system is the most sophisticated and dynamic LCA tool available and has become a sought-after support tool for customers seeking EIA documentation for both certification and to add value.

Reference: [1]Grosse-Sommer at al., 2020. Applied sustainability in industry: The BASF eco-efficiency toolbox, Journal of Cleaner Production, vol. 258, doi: 120792.

The Circular Economy and Material Flow Analysis

The circular economy is gaining increasing currency as a strategy in the pursuit of global sustainability. In a circular economy, products are recovered and renewed, and resources are kept in use for as long as possible to extract their maximum value. However, to reach a circular economy, tools are needed to understand our resource consumption and measure progress. Material flow analysis (MFA) is one such method. MFA is an analytical tool that tracks and quantifies the consumption and losses of materials or substances within a defined system in order to identify strategies to optimize their use.

BioMar plays an active role in building a circular economy by using MFA to map key materials and identify business opportunities for increasing recycling and closing resource loops. Because our feed depends on scarce resources, such as phosphorus and wild fish stocks, BioMar prioritizes minimizing resource consumption and recovering and reusing by-products throughout supply-chain. We use MFA to aid in this strategic decision-making and partner with innovative raw material suppliers to realize our sustainability and circular economy goals.

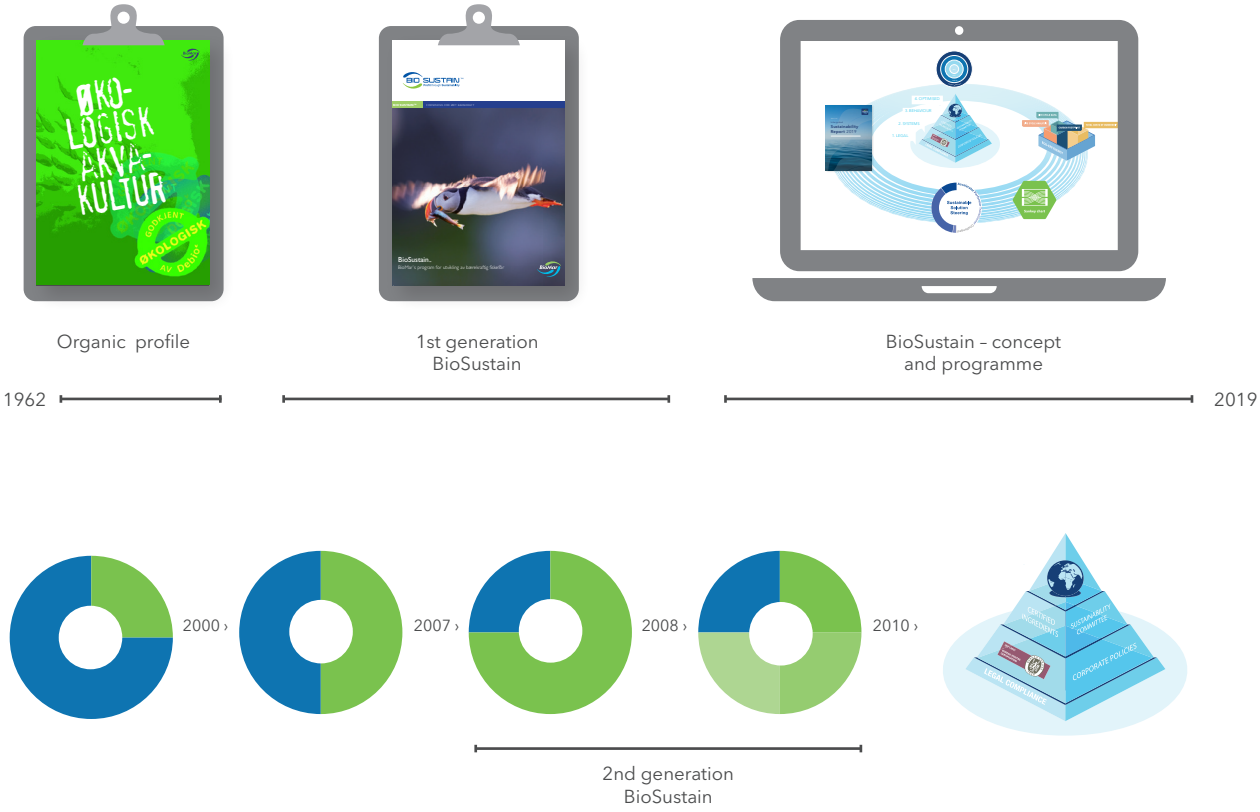


Figure 9. Developing history of BioSustain™: the pie chart illustrates the average feed recipe and the shift from a high dependency of marine raw materials (blue) to alternative ingredients and a smarter use of limited raw materials due to sustainability optimization.

Addressing the UN SDGs

Sustainable businesses operate in healthy, resilient societies. This is the logic that connects business objectives with the UN Sustainable Development Goals (UN SDGs). The UN SDGs have been shaped primarily for country-level adoption, but the goals can and should be adapted at company level.

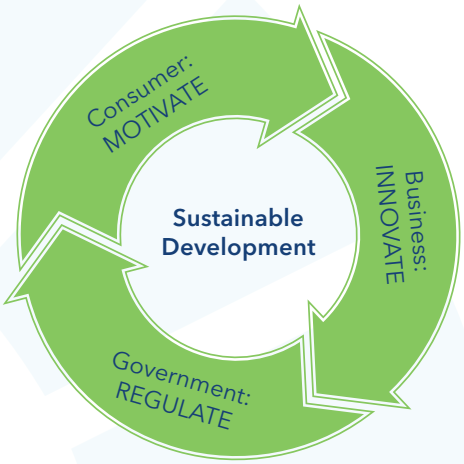
For companies with less mature sustainability strategies the SDGs offers a great opportunity to use a meaningful framework to move forward. For the more mature organisations it is about working out how the current strategy and activity addresses and overlaps with the SDGs, then working out whether the gaps could or should be filled.

Whilst the SDGs themselves may appear vague, they provide the best indication of a sustainable future for society to aim towards. There is a clear role for businesses in supporting the goals for sustainable development, contributing alongside other stakeholders to addressing the challenges that the goals seek to achieve.

For BioMar, like any organisation with activities and supply-chains spanning the globe, attention must be paid to the large regional differences when addressing and in the likelihood of achieving the SDGs. This tells any global organisation where the biggest challenges lie, but also where any activities would have the greatest impact.

Together with DNV GL BioMar has mapped our current strategy and activities against the SDGs and aligned our already established measurement criteria and focus areas with the SDGs we identified as most relevant to us.

In the wake of this process, new partnerships and collaborative opportunities have also emerged. As a forward thinking organisation, we are continuously building this knowledge into our strategy and innovating products and services in response to a changing world – sustainability is at the very core of our business strategy.



Sustainable Development

Sustainable development is a joint effort by many parties and stakeholders. Businesses must lead the innovation process while governments regulate through policies and incentives. Consumers are the crucial motivators that determine both speed and success of change through purchasing behaviour.

End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Ensure sustainable consumption and production patterns.

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Materiality assessment high impact areas

Public health

Supply chain: high risk commodities

Local pollution

Working conditions & HSE

R&D & Innovation

Business strategy focus areas

Talent attraction, development and well-being of employees.

The quality, performance and integrity of our products and services.

Reducing energy and carbon emissions per ton of end product, reducing emissions to environment.

R&D & Innovation.

Responsible sourcing.

Driving sustainability practices into our supply and value chain.

Contributing to local communities.

For us there are no leftovers

To ensure a future we must be responsible with
our planets resources. Nothing should go to waste.
We utilise high quality byproducts to create sustainable feed.
Aquaculture without the guilt.

Delivering on Ambitions

Powered by Partnership
Driven by Innovation

Our Sustainability KPIs

As a responsible global player, BioMar has identified several global KPIs in accordance with our materiality assessment. With these challenging metrics and goals, we seek to strengthen the sustainable development of our activities and improve the sustainability of the aquaculture value chain.

	Health & Quality		Environment		
	Health & Welfare	Nutrition & Food Safety	Greenhouse Gasses	Water	Waste
OVERALL KPI	Our health and functional feeds, SmartCare™, to be the global brand for functional feeds by 2020	All our products shall be risk assessed, comply with governmental regulations and traceable back to source of origin	We aim to reduce emissions of greenhouse gasses*	We aim to reduce the consumption of drinking quality fresh water in production*	We aim to assess waste generated from our manufacturing, primary waste from production and secondary waste from packaging and maintenance. Using the 3R model of reuse, recycle and recover
SPECIFIC KPI	Above 80 % recognition of SmartCare™ among fish farmers in target markets by 2020.	100% of all products	20% reduction per kg feed by 2020**	10% reduction by 2020*	100% 3R by 2020
2014	n/a	100%	58 kg/tonne	n/a	n/a
2015	n/a	100%	57 kg/tonne	Use: 0.6 m3 Red.: n/a	99.6%
2016	Will be revised	100%	60 kg/tonne IEA data	Use: 0.55 m³ -8%	99.6%
2017	Restructure	100%	59 kg/tonne IEA data	Use: 0.55 m³ -8%	>99%
2018	SmartCare™, a targeted global health strategy	100%	58 kg/tonne IEA data	Use: 0.51 M³ -15%	>99%
2019	77%	100%	57 kg/tonne IEA data	Use: 0.52 M³ Red.: -13%	97%

Society

Sustainable Raw Materials					Better Living Conditions	Employees	
We will use sustainable raw materials and continuously increase certification level of key raw materials					We aim to aid community and development projects in our geographic area of operations	We aim to ensure that all employees get regular feedback on their performance and have a plan to develop essential capabilities	OVERALL KPI
Fish meal 80% Certified by 2020[2]	Fish oil 80% Certified by 2020[2]	Krill 100% MSC by 2015[2]	Soy 100% Certified by 2020[3]	Palm oil 100% Certified by 2020[4]	Framework ready by 2017	90%[5] of all positions are described by responsibilities and competence requirements, by 2017[1]	90%[5] of all employees have taken part in a PDD within last 12 months, by 2017[1]	SPECIFIC KPI
93%	76%	100%	71%	90%	Ongoing	n/a	14%	2014
92%	86%	100%	80%	84%	Ongoing	21%	31%	2015
81%	70%	100%	78%	63%	Will be revised	69%	59%	2016
89%	81%	100%	82%	100%	In Progress	77%	76%	2017
94%	83%	100%	92%	100%	Aligned with policies and integrated into our BioMar COC	70%	71%	2018
92%	80%	100%	92%	100%	Community aid: 55	82%	70% [6]	2019

BENCHMARK/BASELINE: 2014* | 2016** (reset due to company expansion)
1) China excluded | 2) Certification schemes: IFFO RS, MSC or equivalent | 3) Certification scheme: ProTerra, RTRS or equivalent
4) Certification schemes: RSPO, GreenPalm or equivalent | 5) KPIs not set to 100% as new employees are continuously employed by the company.
6) Ecuador excluded

Health and Quality

Health and Welfare
Feed can be fortified with specific ingredients which not only aid to the health and welfare of farmed fish and crustaceans but also increases nutrient value of the end-product.

The BioMar SmartCare concept is a targeted health and welfare strategy that provides the opportunity to grow more robust fish and shrimp by use of bio-functional ingredients amongst others. The strategic use of SmartCare can aid in minimising use and possible avoidance of medicated feeds.

We have simplified the offering to address the three main health challenge areas to Resist, Control and Assist aquaculture species during difficult periods.

Nutrition and Food Safety
Feed selection and feed regime have the highest significance in relation to the feed conversion ratio (FCR). Choice and allocation of feed, with respect to the potential yields for the fish throughout the year, and with respect to local conditions, are active steps that need to be taken to increase fish production. FCR is of crucial significance to the feed cost (FCR x feed price) for fish farming. FCR is an indicator of feed utilisation and will therefore have a strong influence on emissions from the aquaculture industry.

Higher feed quality provides better feed efficiency. High nutritional value, a balanced composition and healthy ingredients are the most important factors in feeding fish. The dynamic nature of aquaculture necessitates a focus on continual improvement.

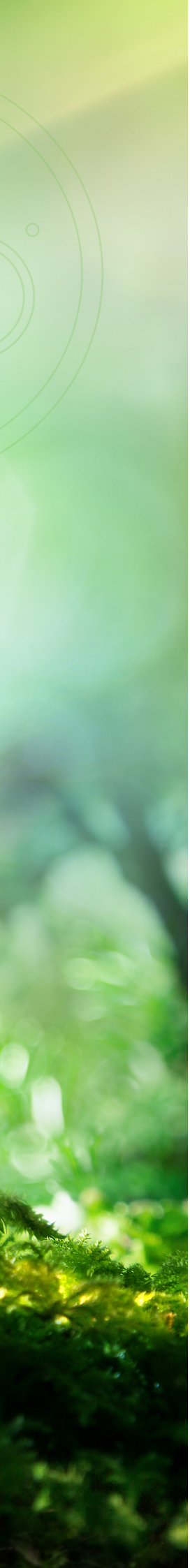
The BioMar R&D programme is constantly generating new knowledge and developing new raw materials for feed. The R&D program is buoyed by our quality assurance system that ensures that feed is safe and reliable and can be reliably traced back to the source of origin of its nutrients.

We consider food safety to be one of our most important tasks and strive to reach the highest possible security. We impose strict internal procedures for all processes at every one of our facilities and apply a level of control that often exceeds official requirements. We fully assess our product portfolio on a global level. In 2019, we found no major health and safety impacts, nor identified any non-compliance with regulations.

Manufacturing Unit	ISO 9001	ISO 14001	ISO 22000	Global G.A.P.	Other	Production Volume		Approved Suppliers
Myre (NO)	✓	✓		✓		205,289	15%	40 – 50
Karmøy (NO)	✓	✓		✓		192,313	14%	
Grangemouth (UK)	✓	✓	✓	✓	ISO 50001	124,348	9%	30 – 40
Castro (CH)	✓	✓	✓	✓	BAP, ISO 17025, OHSAS 18001	61,464	4%	50 – 60
Pargua (CH)	✓	✓	✓	✓		185,740	13%	
Ercilla (CH)	✓	✓	✓	✓		111,279	8%	
Brande (DK)	✓			✓		131,835	9%	40 – 50
Nersac (FR)			✓	✓		40,286	3%	30 – 40
Duenas (ES)	✓	✓	✓	✓		48,065	3%	20 – 30
Volos (GR)	✓	✓	✓	✓		53,683	4%	30 – 40
Soke (TU)				✓		21,845	2%	N/A
Cañas - JV (CR)	✓			✓		40,485	3%	10 – 20
Haiwei - JV (CN) *						65,000	5%	
Alimentsa (EC)	✓			✓	BAP	114,012	8%	N/A
BioMar Group	**11/14**	**8/14**	**10/14**	**13/14**		**1,395,644**	**100%**	**150 – 200**

Table 3. The table reveals certification schemes in BioMar manufacturing in 2019, along with unit production volume and the number of approved suppliers to manufacturing units.
* Estimate

Photo: Romolo Tavani/shutterstock.com



Environment

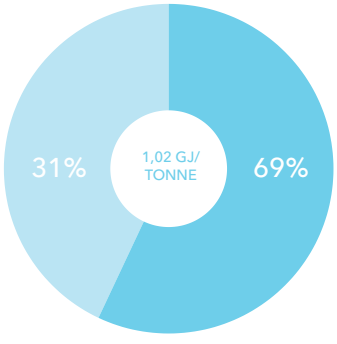
Energy management and greenhouse gases

The average temperature of the Earth's atmosphere and oceans indicates global warming. We see 11 out of the past 12 years are among the warmest since 1850. During the past 50 years, the warming has taken place twice as fast as during the preceding 50. The average global temperature increased by 0.74 °C during the 20th century. This, in and of itself, does not seem spectacular, but the effects are significant both on land and in the oceans.

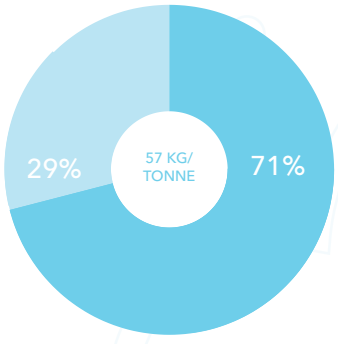
The carbon footprint (CF) represents the direct environmental impact of our actions in the form of carbon dioxide emissions. We all have a moral and social responsibility to reduce our own emissions of carbon. A reduction of carbon emissions is one of the most important concepts involved in mitigating global warming and climate changes.

ENERGY USE & GHG EMISSIONS	FOSSIL FUEL (GJ)	ELECTRICITY (GJ)	TOTAL ENERGY (GJ)	TOTAL MISSIONS (Kg CO_2)
Salmon Division	628,752	265,780	894,532	50,153,144
EMEA Division	237,200	87,304	324,503	18,392,495
Emerging Markets	115,037	82,951	197,988	10,583,923
BioMar Group incl. JVs	**980,988**	**436,036**	**1,417,024**	**79,129,562**

Distribution Energy Use

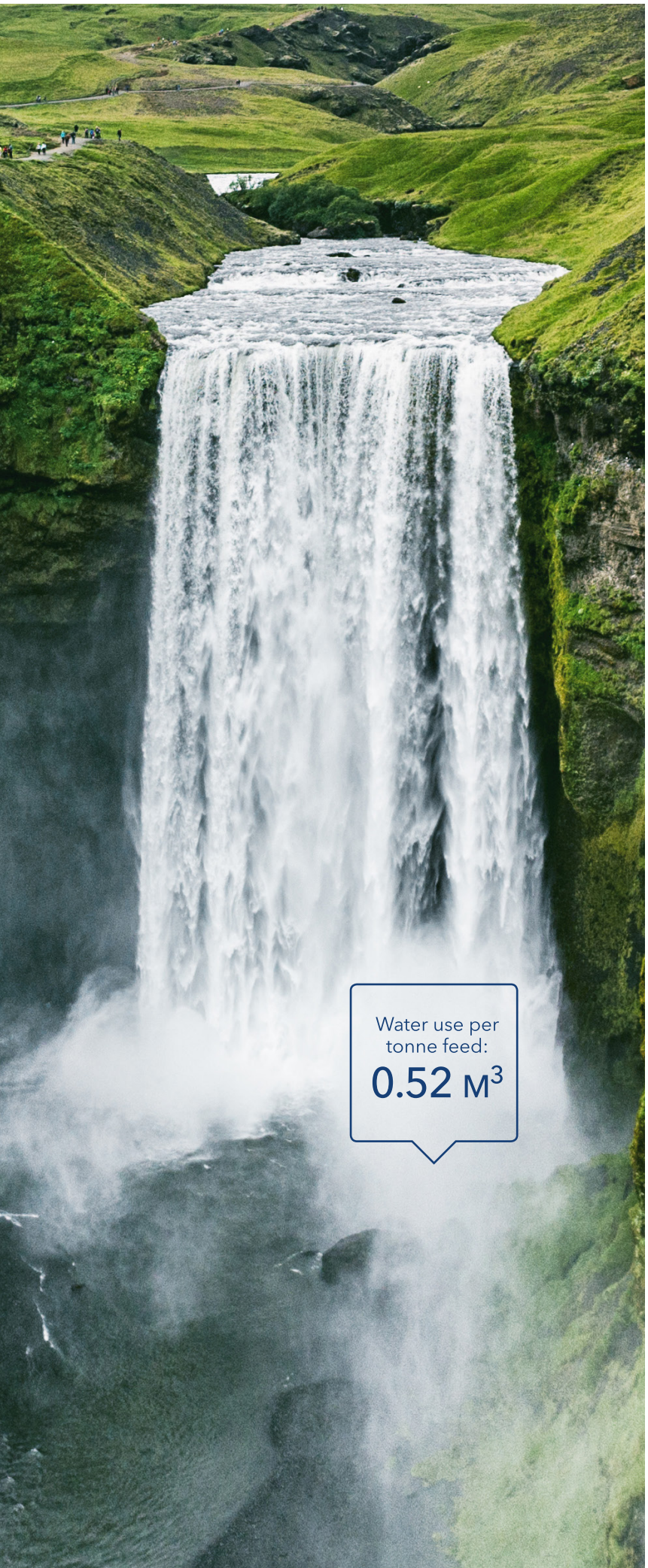


Distribution GHG Emissions



Fossil Fuels Grid Electricity

Table 4. The table discloses direct energy use in gigajoule (GJ) and direct greenhouse gas (GHG) emissions in kg CO^2 equivalents from fossil fuels and grid electricity by BioMar manufacturing divisions in 2019 using IEA factors.



Water

Globally, drinking water is a very scarce but a vital resource. Even though this is not a problem in most areas where BioMar operates, we do affect the consumption of this scarce resource by purchasing raw materials that are responsible for considerable water consumption in the countries of origin. These countries are often in areas where water shortage is critical. We address this by sourcing raw materials with respect to international guidelines and certification schemes, in which responsible use of water has a high priority.

Water is used in almost all food manufacturing processes. The "water footprint" of a product is the quantity of water used in their production. A water footprint is made up of three types of water consumption known as blue, green and grey water footprints. The green water footprint is the volume of rainwater stored in soil that evaporates through crop growth.

The blue water footprint is the volume of freshwater taken from surface layers (lakes, rivers, reservoirs), while groundwater (aquifers) is used and not returned to the system it was withdrawn from. The largest share of global blue water footprint occurs in crop fields as a result of evaporation of irrigation water. The grey-water footprint is the volume of water polluted as a result of production processes (industrial and agricultural) and wastewater from household water use. It is the volume of water required to dilute pollutants to such an extent that the water quality reaches acceptable levels.

Reference: http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/

Waste Management

As the world hurtles toward its urban future, the amount of municipal solid waste (MSW), one of the most important by-products of an urban lifestyle, is growing even faster than the rate of urbanization. In 2002, there were 2.9 billion urban residents who generated about 0.64 kg of MSW per person per day (0.68 billion tonnes per year). A decade later, these amounts increased to about three billion residents generating 1.2 kg per person per day (1.3 billion tonnes per year). By 2025, this will likely increase to 4.3 billion urban residents generating about 1.42 kg per person per day of MSW aggregating to 2.2 billion tonnes per year (World Bank, 2012).

As a part of life cycle thinking, BioMar supports the waste hierarchy view. The five stages of the hierarchy, ranking from the most favoured prevention via the three Rs (reuse, recycle and recover) to the disposal of waste, are implemented as part of the quality management system at all BioMar manufacturing plants, as well as covered in the ISO 14001 standard.

Photo: Aker BioMarine

Sustainable Raw Materials

We are using responsibly sourced raw materials that can be traced back to their source of origin.

BioMar makes ongoing assessments of precisely which purchasing criteria are necessary to ensure and document that raw materials associated with special sustainability issues are responsibly sourced. Purchases of marine raw materials, soya bean and palm products are subject to specific requirements. BioMar keeps track of the percentage of marine raw material deliveries originating from FAO COC approved fisheries, for example, IFFO RS, MSC or equivalent.

BioMar buys exclusively deforestation-free soya bean and palm products. We also aim, as far as possible, to utilize by-product raw materials in our feed production.

Compliance with Sourcing Policy

BioMar Group Sourcing is a centralised organization for the sourcing and purchasing of raw materials for BioMar. Although additional requirements may apply for some markets, BioMar Group Sourcing operates according to the following minimum standards:

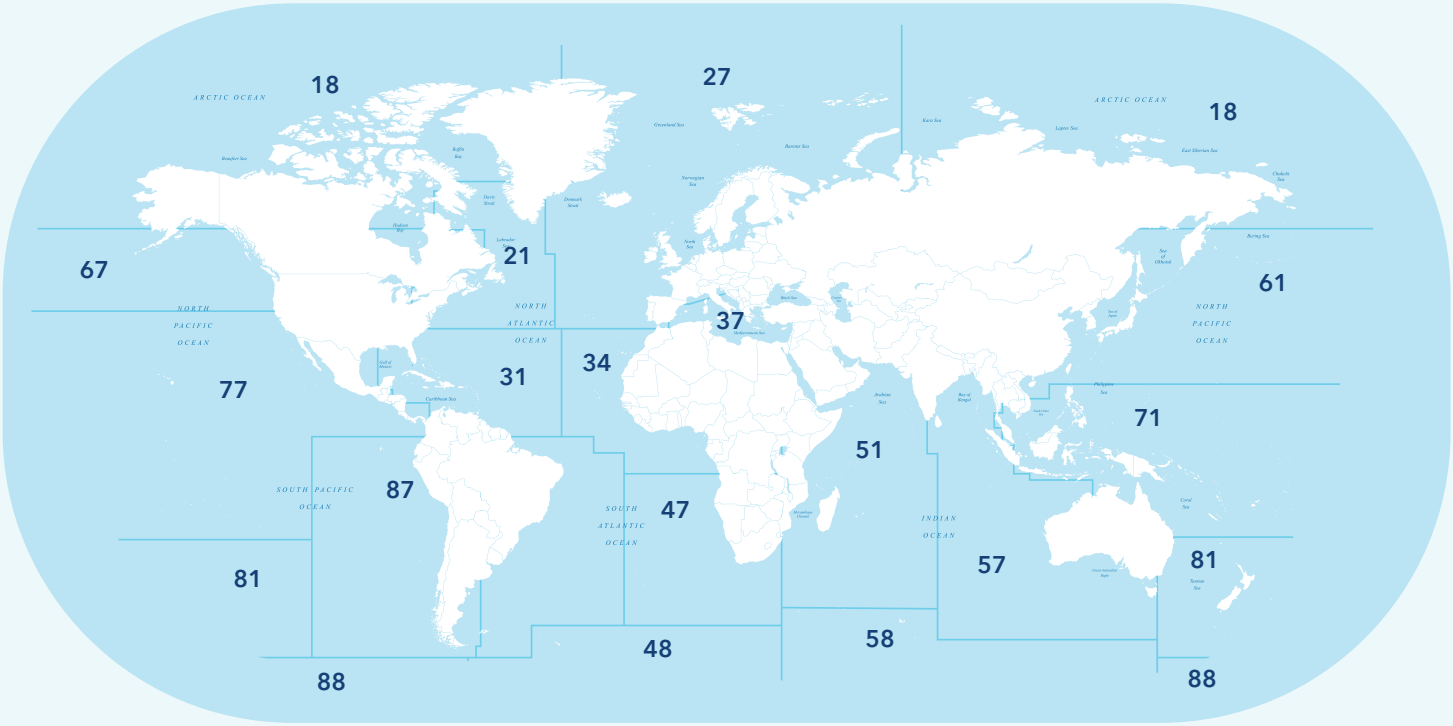
Criteria	Goal	Compliance	Notes
Legal	100%	100%	National and international regulations
Traceable	100%	100%	Full traceability through supply chain
Credibility: IFFO RS/MarinTrust Zero deforestation RTRS RSPO	KPI	On track (Soy) (Palm oil)	Board member NEW YORK declaration Supporting member Supporting member
SAAT Approval	100%	100%	Details on page 66
RM Specification	100%	100%	SAAT
R&D Validated	100%	100%	Nutritional and technical
Compliance to Policy	**100%**	**100%**	

Table 5. BioMar sourcing policy's minimum criteria to which suppliers and raw materials must comply and perform.

Raw Materials (RMs)	Share of Certified Materials	Certification Schemes
Fish meal	92%	MSC, IFFO, RS or equivalent
Fish oil	80%	MSC, IFFO, RS or equivalent
Krill meal	100%	MSC
Soy	92%	RTRS, ProTerra or equivalent
Palm oil	100%	RSPO, Green Palm or equivalent

Table 6. The table discloses certification in percentage terms of hot topic raw materials used in BioMar feed in 2019.

FAO Fishing Areas



Area	Sea	Area	Sea
18	Arctic Sea	57	Indian Ocean, Eastern
21	Atlantic, Northwest	58	Indian Ocean, Antarctic & Southern
27	Atlantic, Northeast	61	Pacific, Northwest
31	Atlantic, Western Central	67	Pacific, Northeast
34	Atlantic, Eastern Central	71	Pacific, Western Central
37	Mediterranean and Black Sea	77	Pacific, Eastern Central
41	Atlantic, Southwest	81	Pacific, Southwest
47	Atlantic, Southeast	87	Pacific, Southeast
48	Atlantic, Antarctic	88	Pacific, Antarctic
51	Indian Ocean, Western		

Fish Meal and Fish Oil

Species	Fishing Areas		Marine Protein		Marine Oil		Total Volume
	FAO	Catch Region	Tonnes	*Share*	Tonnes	*Share*	Tonnes
Trimmings	**27**	Northeast Atlantic	61 596	27.9 %	31 310	29.5%	92 906
Peruvian Anchoveta	**87**	Peru / Chile	49 954	22.6 %	20 034	18.9%	69 988
Blue Whiting	**27**	Northeast Atlantic	38 197	17.3 %	1 546	1.5 %	39 743
Antarctic Krill	**48**	Atlantic Southern Ocean	17 665	8.0 %			17 665
Araucanian Herring	**87**	Peru / Chile	9 366	4.2 %	4 862	4.6%	14 228
Atlantic Herring	**27**	Northeast Atlantic	7 362	3.3 %	4 352	4.1 %	11 714
European Sprat	**27**	North Sea	4 103	1.9 %	6 842	6.5 %	10 945
Sand eel	**27**	North Sea	8 741	4.0 %	2 847	2.7 %	8 741
South American Pilchard	**77**	Eastern Central Pacific			8 449	8.0 %	8 449
Pacific Jack Mackerel	**87**	Peru / Chile / Ecuador	4 951	2.2 %	3 260	3.1 %	8 211
Sardinella	**34**	Morocco			6 644	6.3 %	6 644
Menhaden	**31**	Gulf of Mexico	4 675	2.1 %	162	0.2 %	4 837
European Pilchard	**34**	Morocco	4 029	1.8 %	728	0.7 %	4 757
European Anchovy	**34/47**	Morocco / South Africa	965	0.4 %	3 296	3.1 %	4 261
Pacific Anchoveta	**31**	Panama			2 563	2.4 %	2 563
Norway Pout	**27**	Northeast Atlantic	1 896	0.9 %	275	0.3 %	2 171
Atlantic Chub Mackerel	**34**	Morocco	779	0.4 %	535	0.5 %	1 314
Pacific Anchovy	**87**	Peru / Chile / Ecuador			1 122	1.1 %	1 122
Capelin	**27**	Iceland	495	0.2 %	341	0.3 %	836
Atlantic Mackerel	**27**	Northeast Atlantic	80	0.0 %	280	0.3 %	360
Silver Smelt	**27**	Norway	220	0.1 %	111	0.1 %	331
Pacific Herring	**87**	Peru / Chile / Ecuador			144	0.1 %	144
Redeye Herring	**47**	South Africa	127	0.1 %			127
Other*	**87**	Northeast Atlantic	5 430	2.5 %	6 326	6.0 %	11 756
		TOTAL	**220 640**	**100 %**	**106 041**	**100 %**	**326 681**
		MSC	81 716	37.0%	21 085	19.9%	
		IFFO RS	173 811	78.8%	71 023	67.0%	
		ASC Compliance	203 083	92.0%	85 082	80.2%	

*Includes species landed in compliance with the revised EU Common Fisheries Policy Landing Obligation (discards ban), fully implemented on January 1st, 2019.

Table 7. Species in marine meals and oils used by BioMar in 2019 are disclosed in the above table in descending order, according to total volume (metric tonnes). Respective shares of species and MSC, IFFO RS- and ASC-compliant material is also shown.
China and Turkey volumes are not included.

Raw Material Distribution

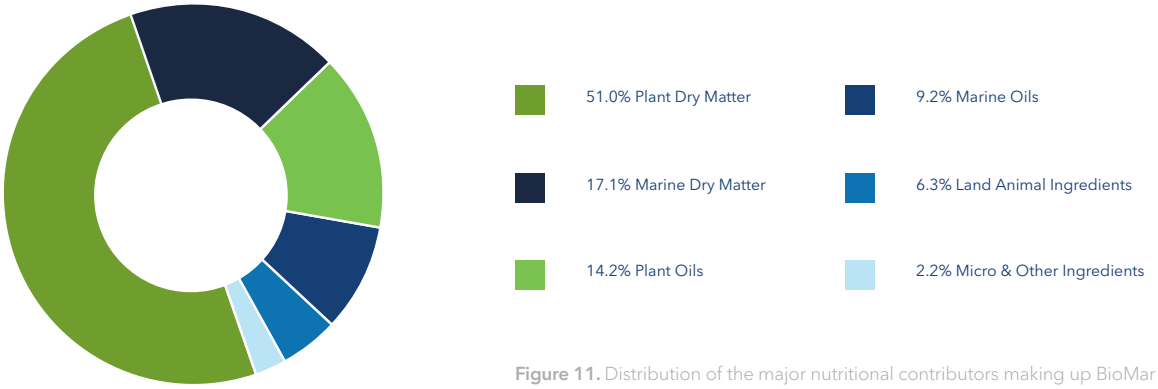


Figure 11. Distribution of the major nutritional contributors making up BioMar Group's total feed recipe of 2019.

Fish In : Fish Out

The fish in : fish out (FIFO) ratio indicates the overall quantity of wild caught fish used per quantity of cultured fish produced. According to the ASC standards, this measure is referred to as the forage fish dependency ratio (FFDR) and should be calculated for both FM and FO, using the inclusion levels of marine meals and marine oils in the feed recipe, multiplied by the feed conversion ratio and divided by their corresponding contribution factors. The below figures represent BioMar's global raw material usage in feed production and the FCR is therefore set to 1.0.

BioMar Group	2015	2016	2017	2018	2019
FFDRm (Fish meal)	0.68	0.58	0.85	0.53	0.48
FFDRo (Fish oil)	1.05	0.93	1.05	0.87	0.94
FIFO	**1.05**	**0.93**	**1.05**	**0.87**	**0.94**

Reference formula: https://www.asc-aqua.org/wp-content/uploads/2019/12/ASC-Salmon-Standard_v1.3_Final.pdf

Global Warming Potential

The global warming potential caused by climate gases, commonly referred to as the Carbon Footprint (CF), is expressed as kg CO_2 equivalents per tonne of produced feed. The methodology is recently updated and includes peat and land use change according to the EU PEF, an EU harmonised methodology for measuring the environmental impact of products.

The CF of the average BioMar Group feed, based on the overall raw material and energy use in 2019, was 1,812 kilos of CO_2 per tonne of feed produced (Figure 12).

Figure 9. The overall annual Carbon Footprint per tonne of feed produced in BioMar Group from 2015 to 2019.

BioMar Group Annual Carbon Footprint

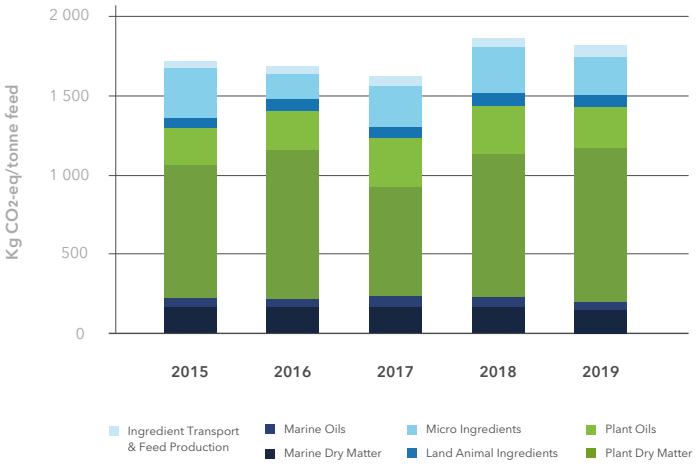



Photo: Artur Synenko/Shutterstock.com

Supplier Approval, Audit and Traceability (SAAT)

The Supplier Approval, Audit and Traceability (SAAT) team is responsible for overall approval and auditing, as well as to ensure traceability of common raw materials and suppliers to BioMar divisions. This is done in close cooperation with the local purchasing departments. All suppliers are approved before raw materials are contracted and purchased in the BioMar Group for commercial use. Approval status may vary among BioMar companies due to local requirements

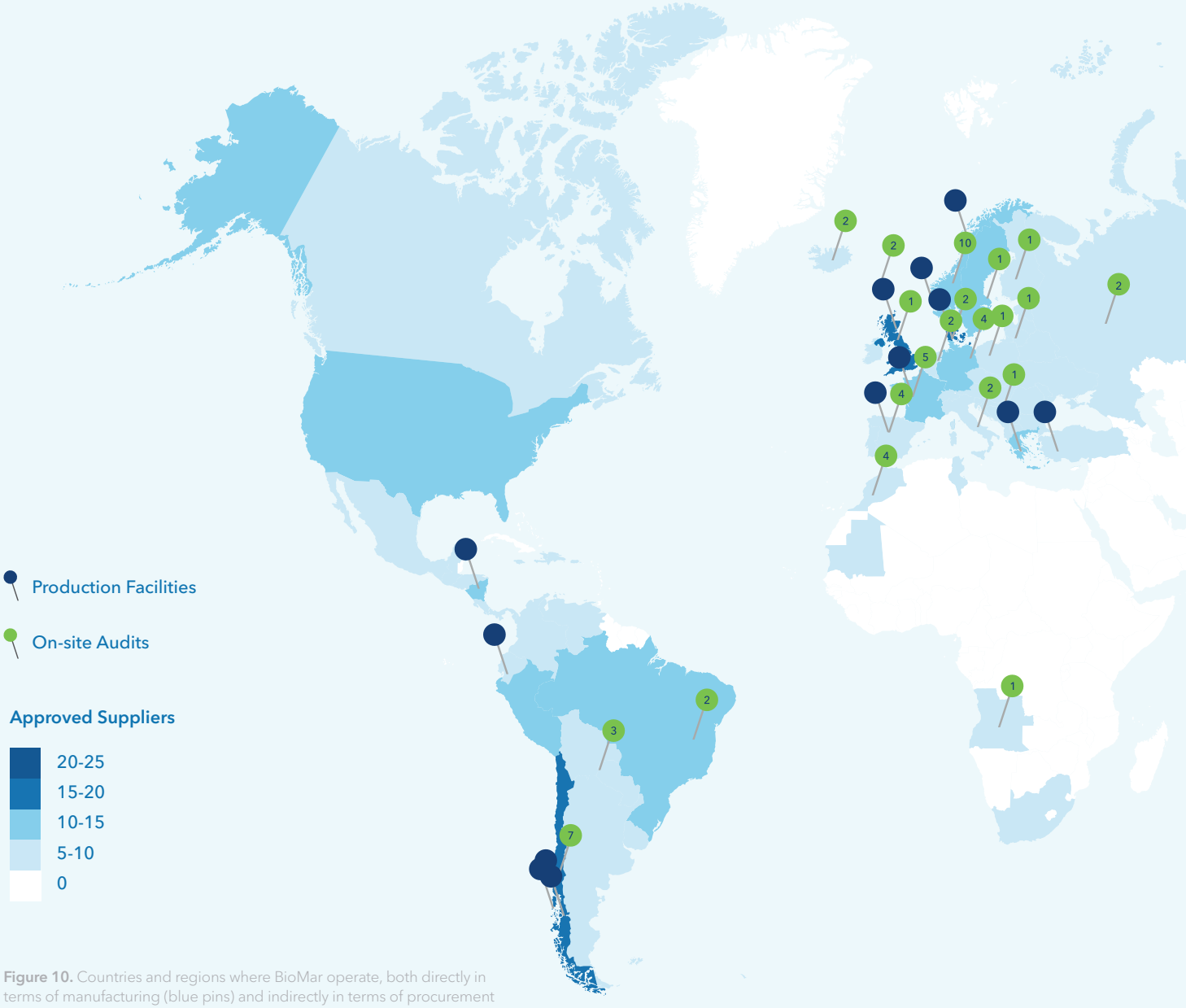
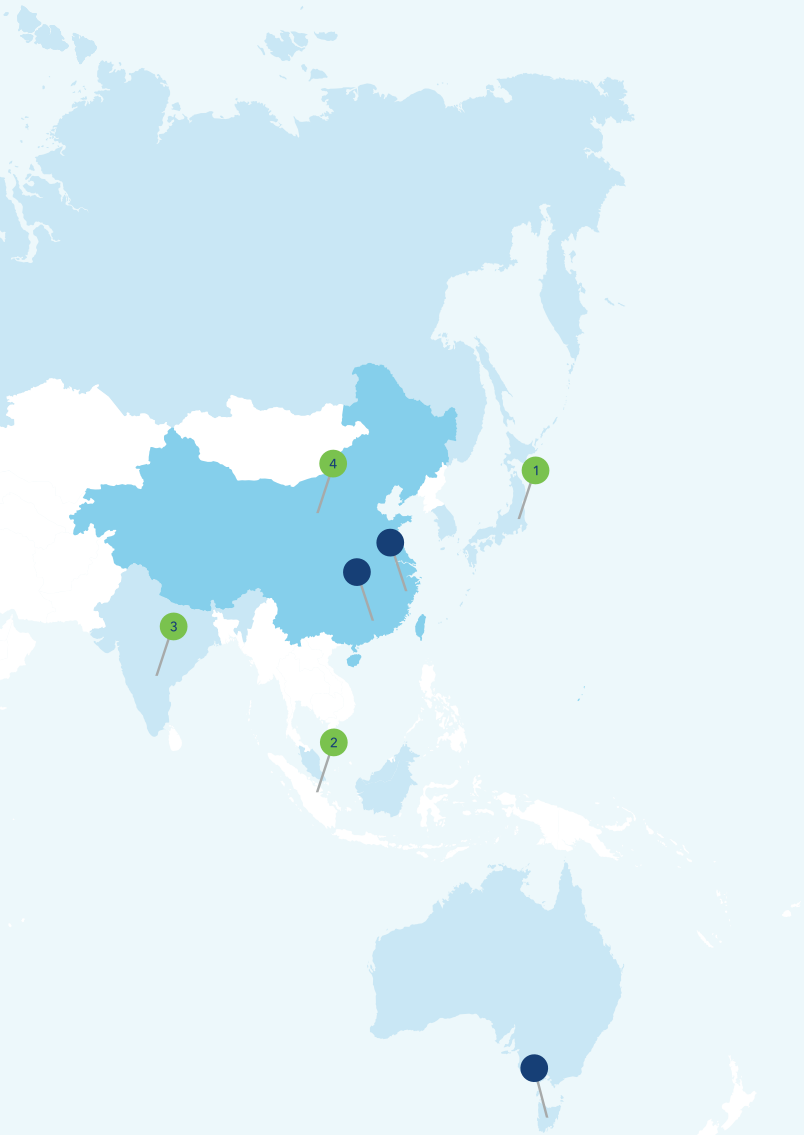


Figure 10. Countries and regions where BioMar operate, both directly in terms of manufacturing (blue pins) and indirectly in terms of procurement (coloured areas). Green pins indicate number of on-site supplier audits by our global SAAT team from 2017-2019 (both first time approvals/ audits and re-approvals/re-audits).

The SAAT is responsible for setting the minimum standard for raw material suppliers to BioMar, based on the BioMar COC and resolutions made by the Sustainability Committee, in agreement with the BioMar Sourcing Policy. Audits are an important control mechanism for this group. The Global Sourcing Director and SAAT team leader reports directly to the Executive Committee, which decides upon minimum standard approvals. Raw material transportation is part of the SAAT supplier approval system.



Raw material suppliers in the SAAT mandate includes producers and traders within the following categories:

Fish meal

Processed Animal Products

Plant Protein & Oil

Additives

Binders

Photo: BioMar Ecuador

Society

In BioMar, integrity and high ethical standards are crucial to the way we do business. We are committed to a diverse and inclusive workplace with equal opportunities for all.

Our BioMar purpose acknowledges that by respecting and promoting human rights we are able to drive a more efficient and sustainable global aquaculture. Our Code of Conduct (COC), which is publicly available, outlines our stance on human rights. BioMar's suppliers must comply with a supplementary COC, which requires a thorough approval and monitoring process.

External advisors on Human Rights
Our dedication to human rights is signed off by our executive management team and regularly train relevant staff in how to support human rights internally and externally. Naturally, our stand applies for BioMar as well as to our supply chain where we carry out risk mitigations and support supplier developments. Together with our owners Schouw & Co and external advisors from EY, we have been through a value chain risk assessment looking at violations to the holder's rights, focusing on severity, likelihood and our impact.[1]

In 2019, BioMar contributed to the Round Table event arranged by The Rafto Foundation, The Danish Institute for Human Rights and The Institute for Human Rights and Business, which laid the foundation for a report analysing the state of human rights in salmon farming and aquafeed production and potentials for improvements.[2]

The assessments have led to increased focus on communities and safety, indigenous people and our general impact through the supply chain with emphasis on raw materials.

References. 1. https://www.schouw.dk/en/about-us/statutory-corporate-responsibility-report-2017/ 2. https://www.rafto.no/news/human-rights-in-the-salmon-farming-industry

Photo: Jean Paul Araya

Initiatives in 2019

To promote human rights in 2019 we focused on training relevant staff in our recently acquired plant in Ecuador and newly constructed factories in China and Australia. We conducted 19 supplier assessments and engaged in dialogue with suppliers in high risk areas to create awareness and support their development. As an example, we engaged in dialogues with soy producers in Brazil on topics related to communities, indigenous people and the right to life.

We have established a self-sufficiency programme to support indigenous community developments around our plants in Chile. We also educate farmers worldwide in sustainable farming and efficient feeding practices to minimise negative impact on environment, water bodies and animal welfare.

Internally, we promoted human rights through dialogue with 12 unions and 2 employee representations across the world to advance on working conditions and continue improving the company. We also carried out over 60 safety related training sessions to up skill our employees and to minimise health and safety risks.

Furthermore, we implemented a complete HCM system for data driven approaches in safety improvements, safeguarding of equal rights and non-discrimination behaviour and general documentation of compliance to human rights.

Omega 3 should be harvested and cultured

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.

Walking the Talk

BioMar

Powered by Partnership
Driven by Innovation

Stories of 2019

CHILE

Photo: Viviana Sánchez

Connecting Cultural Roots

Diverse societies stay connected to cultural roots while embracing new cultures. In BioMar we help facilitate community activities in and around our production facilities.

In Chile our production facilities are neighbours to many indigenous tribes. Who have been living in the surrounding areas for centuries, long before the Europeans explored and immigrated to the very south of Latin America.

To BioMar, it is extremely important that we maintain a strong co-existence with the local communites and help contribute to a development of local societies and our shared environment.

BioMar has been engaged in strengthening the living conditions and future income potential for our neighbours by supporting local initiatives aimed at enabling self-sufficiency and general education. We believe that education and engagement provides the best possible long-term support.

In 2019, we supported initiatives such as a workshop to improve local hand-crafted products, beach cleaning, mutual visits between workers and the communities, school transportation, and programs aimed at promoting recycling as well as horse-therapy for kids.

Education for Change

Give a person a fish and they eat for a day, teach them to farm fish and they will feed their entire community for a lifetime. At BioMar we believe that education is the key to driving fundamental change for communities and ensuring a sustainable aquaculture industry.

Through our BioFarm program we are continuously sharing knowledge with our farmers to bring best practice in feeding and farming techniques. However, children are our future and that is why we have visited orphanages along the Ivory Coast, Africa to share our knowledge of the aquaculture farming and promote healthy eating.

BioMar has donated breeding tanks in both the Bingerville Orphanage for boys and the Grand Bassam National Orphanage for girls. We are setting up the tanks in collaboration with a local Ivorian farmer Mr Habibe Coullibally, owner of the Fish Farm Success, who has generously donated the fish fry for the project.

Healthy eating is also crucial for developing young brains and bodies, that is why BioMar donates 10kg of local farmed fish each month to each of the orphanages which provides a local alternative to frozen fish, which is generally imported from Asia.

This is just one small step in achieving food security, improved nutrition, and promoting sustainable food production in a much needed region of the world. We hope that through initiatives like this we can raise awareness and spark an interest in sustainable aquaculture.

Recycling for Play

In Ecuador systematic recycling is not yet widely implemented. It is not uncommon for empty feed bags are discarded, ending up in landfill and potentially contaminating the environment.

BioMar launched a program to inspire a new way of circular economy thinking by giving feed bags a second life by transforming them into a playground for kids in need.

To help shrimp farmers understand that plastic waste can be a valued resource we purchased back the used feed bags. Around 600,000 bags were collected that were transformed into recycled plastic or *plastic wood*. Through this process BioMar helped remove 120 tons of equivalent CO_2 which is comparable to taking 20 cars out of circulation for one year.

The playground made of BioMar feed bags was delivered to a local school in the community of Puerto Bolívar, providing a space for healthy recreation to the children from public schools without resources.

Photo: BioMar Ecuador

From Particleboard to Feed

In BioMar we believe that nothing should go to waste, if it can safely be reused. In 2017, BioMar decided to re-purpose a closed, former particleboard manufacturing mill in Tasmania and turn it into a state-of-the-art aquaculture feed facility.

There were some significant challenges in rehabilitating the site including asbestos in the original construction and derelict machinery to dismantle. We recycled everything we could and safely and correctly disposed of the rest, working closely with the Environment Protection Authority, local council planning department and the state government.

BioMar was able to preserve a significant proportion of the original 1963 mill site as most of the infrastructure, drainage, steel frames for buildings and foundations were in good condition. The old metallic frame structures were high pressure water cleaned and now forms the structure for the warehouse sections of the new factory.

Historically BioMar had been importing aqua feeds from Chile and most recently Scotland to the region. The start-up of local manufacturing provides the opportunity to use local ingredients and will also provide a much needed economic boost to a part of Tasmania that has suffered from downturn in the manufacturing industry.

Sustainability has been embedded in the DNA of BioMar from the very beginning. In BioMar we encourage circular economy thinking throughout the company and it's inspiring to see the novel, sustainability driven ideas that are brought to life.

GLOBAL

Harmonizing LCA data in feed production: Soy as a case study

Life cycle assessment (LCA) is a data intensive tool used to quantify the environmental impacts of products and services. Despite data access being essential for performing high quality assessments, robust and complete LCA datasets are in short supply even for key aquafeed ingredients, such as soy.

LCA, Soy and Land Use Change

Soy protein has been used for decades as a fish meal substitute, which has enabled feed producers to reduce their dependence on wild fish stocks. In addition, soy farming is relatively efficient considering its ability to fixate nitrogen from the atmosphere, thereby reducing fertilizer consumption. However, expanding soy cultivation can lead to adverse environmental outcomes, such as deforestation [termed 'land use change' in LCA]. When forests are cleared, the native habitat for a variety of species is destroyed and the carbon stored within the vegetation is released. These impacts need to be accounted for in LCA.

Most LCA practitioners account for land use change by applying country averages to all soy producers within a given region. With deforestation being a problem in many countries, these average emission factors are often quite high. This, however, unfairly inflates the carbon footprint of soy farmers producing deforestation-free products.

To acknowledge the environmental stewardship of best-in-class soy producers, BioMar is now collaborating with industry stakeholders to obtain farm-level LCA data. BioMar is in active dialogue with researchers and other stakeholders to ensure that these assessments are methodologically consistent, have a solid data foundation and are reproducible. This initiative addresses two of the biggest hurdles in sustainable development, namely 1) ensuring robust methods for science-based decision making and 2) promoting market incentives for responsible production.

Sustainable development is a continuous journey, as we endeavour to meet the needs of the present without compromising the requirements of the future.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