

The background of the entire page is a close-up photograph of a salmon fillet. The vibrant orange-red flesh of the fish is in the foreground, showing its characteristic texture. The dark, silvery-grey skin of the salmon is visible along the top edge of the fillet, which runs diagonally across the frame from the top-left towards the bottom-right. The background behind the salmon is a soft, out-of-focus light grey.

# SUSTAINABILITY REPORT 2016

# SUSTAINABILITY REPORT 2016

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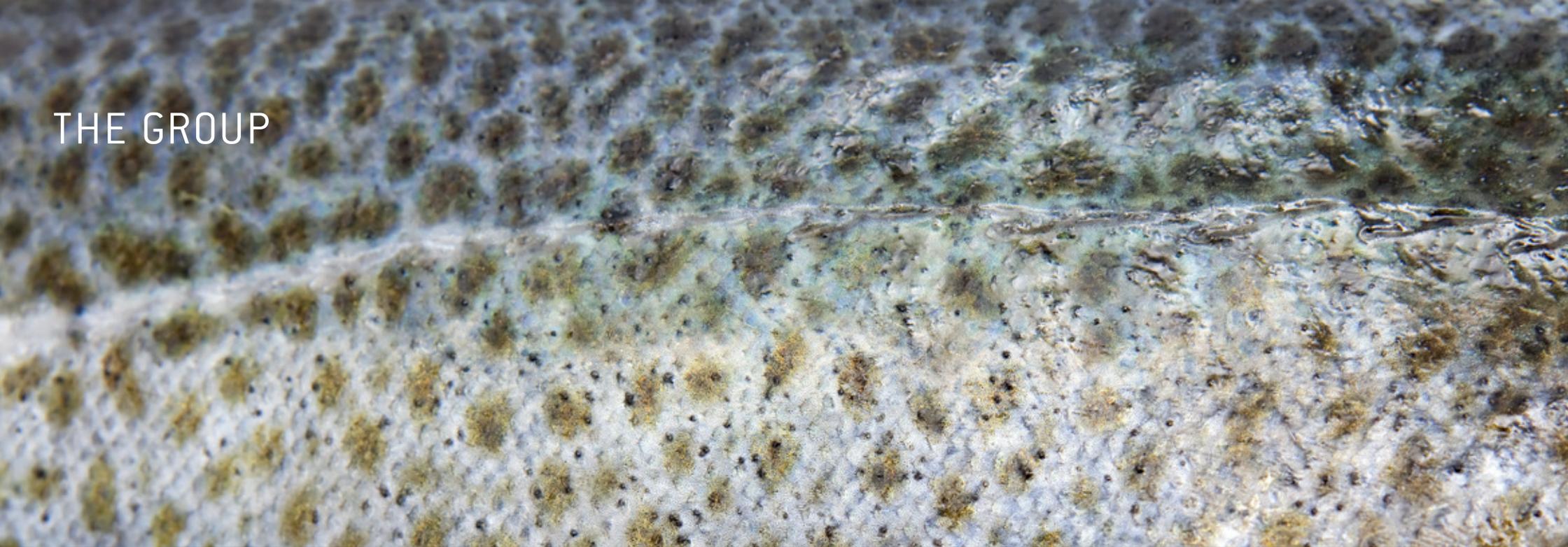
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THE GROUP



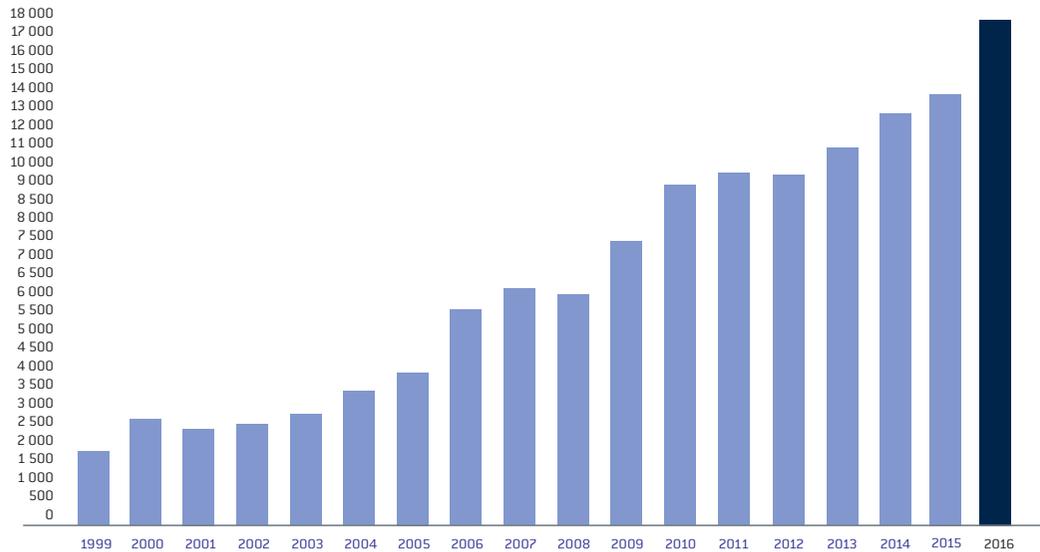
# LERØY – IN EVERY KITCHEN

Lerøy Seafood Group is the leading exporter of seafood from Norway and the world's second-largest producer of Atlantic salmon and trout. **Our vision is "... to be the leading and most profitable global supplier of sustainable seafood"**, and every day we supply the equivalent of three million seafood meals to more than 70 markets

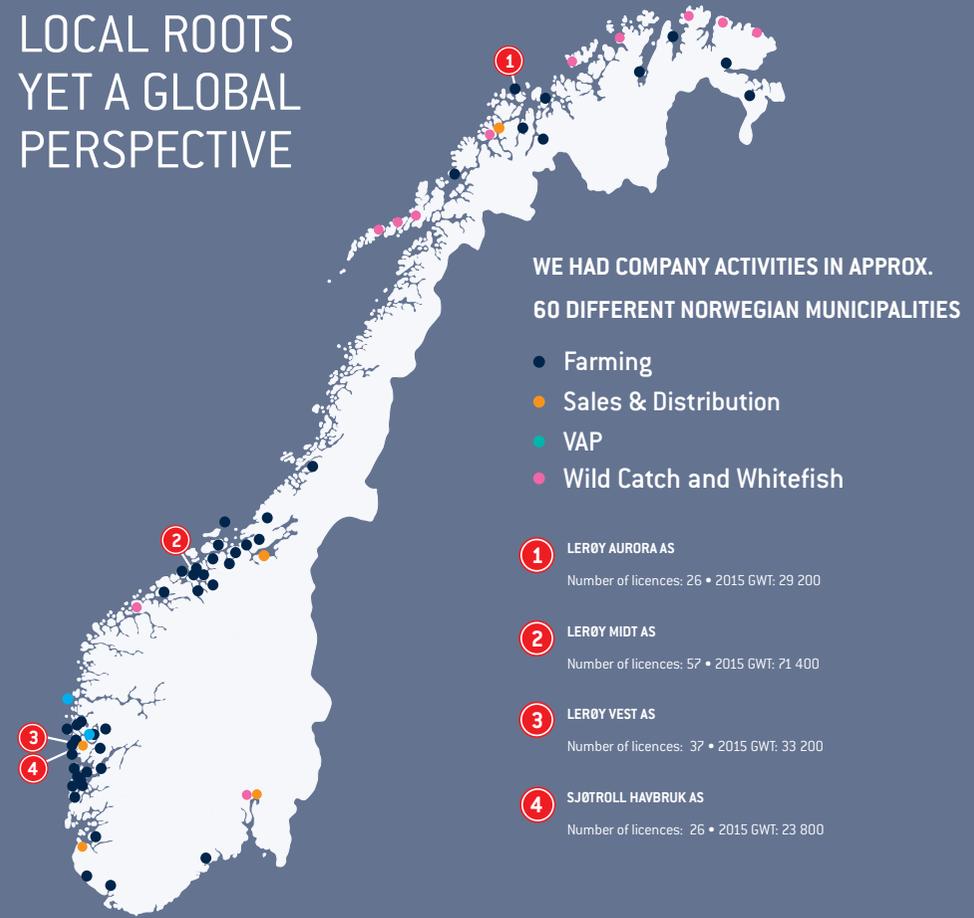
worldwide. The Group supplies a total range of seafood products from Norway including salmon, fjord trout, cod, saithe, haddock, mackerel, herring and shellfish. Lerøy Seafood Group is a wholly integrated company, carefully following each step throughout the entire value chain, from salmon eggs and fishing to finished products.



REVENUE (NOK MILLION)



## LOCAL ROOTS YET A GLOBAL PERSPECTIVE



## GLOBAL PRESENCE



The Group's core activities are production of salmon and fjord trout, wild-caught whitefish and shrimps, processing of seafood, product development, sale, marketing and distribution of seafood. Lerøy Seafood Group has grown significantly both organically and through acquisitions over the last 15 years. Today, the Group is one of the world's largest producers of Atlantic salmon and trout. Subsequent to acquisitions completed in 2016, the Group is also now easily the largest corporation in Norway in terms of catches and processing of whitefish, with a significant position internationally. Lerøy Seafood Group is one of the largest seafood exporters in the world. The seafood industry is still a young industry with substantial potential for future development and growth. The Group is a major employer in several of the municipalities in which it operates and is grateful for the good

support provided by both local and central public authorities.

In countries outside Norway, the Group is most active in Sweden and is well established in Stockholm, Gothenburg, Malmö and Smögen. In other countries, the Group has a global sales network made up of subsidiaries in Finland, Denmark, the Netherlands, France, Spain, Portugal, USA and Turkey, and sales offices in China and Japan. In addition, the Group provides national distribution of fresh fish to the Norwegian market through wholesalers in Bergen, Oslo, Stavanger and Trondheim. Moreover, the Group has 15 processing facilities located in various European countries.

The Group aims to take good care of the environment, the fish we produce, and all the people involved in our business. High quality

is ensured by control systems, and Lerøy is committed to food safety and delivers full traceability on all of its 2,500 products. In a global perspective, the production of Atlantic salmon and fjord trout is one of the most sustainable and environmentally friendly methods of food production that exists. However, the Group maintains a strong focus on the potential challenges represented by point pollution and other environmental impacts of the business. The Group's business is closely related to the natural conditions in Norwegian and international sources of fresh water and marine areas, and access to clean water and clean sea is a prerequisite for the Group's operations. The Group makes continuous investments to minimise its impact on the environment, and to maintain correct environmental attitudes among management and employees. At year-end 2016, the Group had 3,783

employees. In 2016, the Group produced 150, 200 tons of salmon and trout, and exported seafood worth more than NOK 17,26 billion.

Region	Licences	Smolt		2012 GWT	2013 GWT	2014 GWT	2015 GWT	2016 GWT	2017E GWT
		cap. (in mill)							
Lerøy Aurora AS*	26	11.5	20 000	24 200	26 800	29 200	30 000	39 000	
Lerøy Midt AS	57	22.0	61 900	58 900	68 300	71 400	52 200	62 000	
Lerøy Sjøtroll	63	22.6	71 600	61 700	63 200	57 100	68 000	64 000	
Sum Norway	146	56.1	153 400	144 800	158 300	157 700	150 200	165 000	
Villa Organic AS**						6 000			
Norskott Havbruk (UK)***			13 600	13 400	13 800	13 500	14 000	15 000	
<b>Total</b>			<b>167 100</b>	<b>158 200</b>	<b>178 100</b>	<b>171 200</b>	<b>164 200</b>	<b>180 000</b>	

● Associates

\* Includes volume from Lerøy Finnmark AS from and including second half 2014

\*\* LSG's share of Villa Organic's volume in H1 2014, not consolidated

\*\*\* LSG's share, not consolidated



## AN EVENTFUL YEAR!

2016 will go down in the record books as one of the most challenging and exciting years in the history of Lerøy – and certainly during the almost 24 years I have worked for the company. The level of activity in 2016 remained high, and we have succeeded in further boosting our market share on the global seafood market. Revenue for the year totalled an impressive NOK 17.3 billion, up more than NOK 3 billion from 2015 and the highest revenue in the history of the Group. Last year, I wrote that I was optimistic with regard to the Group's future position. It is gratifying to see that in 2016 we had a positive development and strengthened the Group's position even further. With the acquisitions of Havfisk and Norway Seafoods Group, I am confident that we will continue to thrive in 2017.

The acquisitions of Havfisk and Norway Seafoods Group come across as the most exciting events that took place in 2016 for Lerøy Seafood Group ASA. The acquisitions let us enter a new and exciting segment within the seafood industry, and represent a milestone in the history of the company.

### FULLY PREPARED FOR THE FUTURE

Our company is developing all the time, and 2016 will go down as one of the most important years in the company's history.

We initiated the process of forming a fully integrated company for salmon in 2003 with our very first acquisition – Nye Midnor (now Lerøy Midt). This was the start of a fantastic journey, and today we are one of the world's largest producers of salmon and trout.

With the acquisition of Havfisk and Norway Seafoods, we have now embarked on a new and equally exciting journey. We are working to integrate whitefish into our well-established value chain. We have grown into a fully integrated company, having achieved control of the entire value chain for a full range of seafood – from the sea to the consumer.

With such a solid position, we have every opportunity to shape the Lerøy Seafood Group of the future. We very much look forward to completing the integration of these two companies into Lerøy, and can confirm that the integration process has gone well so far.

### NEW COMPANIES, NEW OPPORTUNITIES

Havfisk is the largest trawling operator in Norway for whitefish, currently with nine trawlers. The company also has one trawler under construction, scheduled for completion in 2018. As such, Havfisk has the most modern trawler fleet for whitefish in Norway, and is very well run. Total catch volumes in 2016 were 63,764 tonnes, comprising 29,945 tonnes of cod, 11,508 tonnes of haddock and 9,409 tonnes of

saithe. With the integration of Havfisk, Lerøy gains access to stable deliveries of top-quality frozen and fresh whitefish. This will afford major development potential in terms of the market, making use of our already well-developed distribution network. We are delighted to confirm that Havfisk has reported increased revenue in 2016.

Norway Seafoods Group, now Lerøy Norway Seafoods, is an extremely exciting company. Geographically, it has strategically central locations with facilities throughout North Norway. Lerøy Norway Seafoods is Norway's largest purchaser of whitefish. The company has also played a key role in developing the sale, marketing and distribution of both fresh and frozen whitefish in many parts of Europe. We plan to sustain and build upon the achievements of this company over many years, and will make significant investments in the various factories in North Norway.

### FARMING – HIGH PRICES MEAN A SUCCESSFUL YEAR

2016 has been a wonderful year for the Farming segment due to extremely high prices for salmon and trout. The increase in price level is mainly attributed to the 6.7% decline in global supply. Lerøy Seafood Group produced 150,000 tonnes of salmon and trout in 2016, down 5% from 2015.

Release from stock costs in 2016 were at an extraordinarily high level from a historical perspective. Increased feed costs were one of the main drivers behind the high costs. We also incurred extremely high direct and indirect costs in order to comply with the statutory limits for salmon lice. The Group has initiated a number of measures and made substantial investments to combat salmon lice. These comprise both preventive measures and non-medicinal delousing methods that, in the long term, are expected to minimise the number of salmon lice and reduce production costs for salmon and trout.

### VAP – GOOD GROWTH IN ACTIVITIES

The VAP segment has experienced a challenging year with high and fluctuating prices. Price and volume stability are decisive if we are to optimise production at our VAP facilities. The result reported for VAP in 2016 was substantially lower than in 2015, down from NOK 106 million to NOK 73 million.

We are nonetheless satisfied with the result and the development achieved by the segment, given the difficult framework conditions encountered in 2016.

We are fully confident that we shall be able to further develop our VAP companies in the future. We aim to do this by focusing on product and market development and on measures to increase production efficiency in all units. We have identified major opportunities within increased technological development and automation in the future. These will boost competitiveness for those of our production units that are closest to the market.

### SALES & DISTRIBUTION

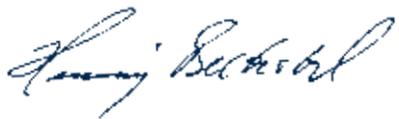
#### – A GRATIFYING DEVELOPMENT

For many years now, Lerøy Seafood Group has focused its efforts on building up a strong global production and distribution network for fresh seafood. In 2016, we were able to report a gratifying development in both revenue and profit for the Sales & Distribution segment. Revenue for the segment was up from NOK 12.6 billion in 2015 to NOK 15.6 billion in 2016. Operating profit for the segment increased from NOK 287 million in 2015 to NOK 326 million in 2016.

The segment will continue to develop its distribution network for fresh products on a number of central markets in the future. Demand for freshly packaged seafood is expected to grow significantly as these

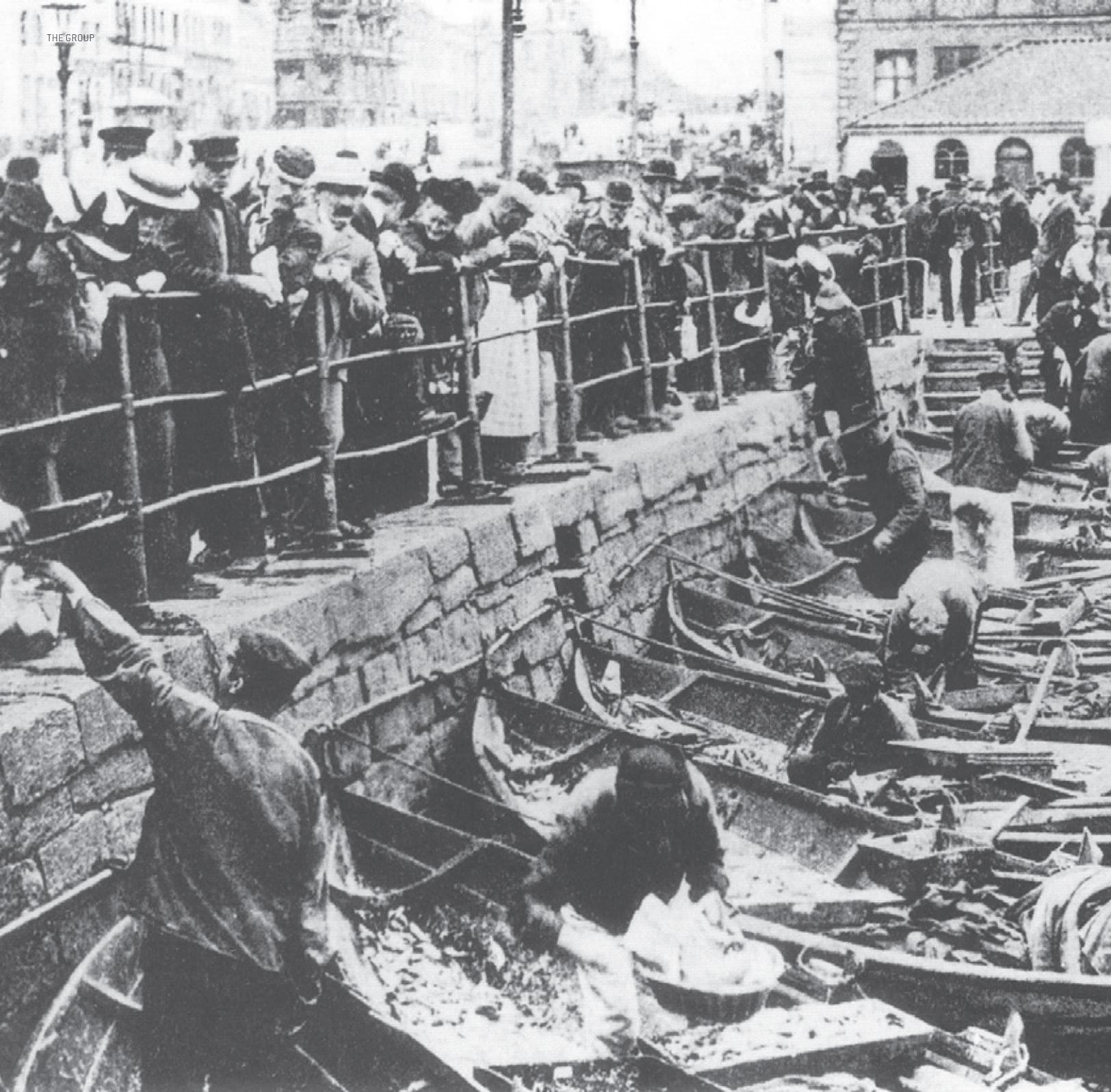
products become ever more readily available to consumers. The investments made in Havfisk and Lerøy Norway Seafoods will further reinforce our position within this segment moving forward. It is clear to me that the potential within whitefish is vast. I very much look forward to shaping the future of Lerøy together with our 3,500 employees, our suppliers, customers and other strategic partners.

My sincere thanks to all of you for your hard work in generating such fantastic results in 2016!



Henning Kolbjørn Beltestad  
CEO  
Lerøy Seafood Group





## HISTORY AND 2016

The Lerøy Seafood Group can trace its operations back to the end of the 19th century, when the fisherman-farmer Ole Mikkel Lerøen started selling live fish on the Bergen fish market. This was fish he had either caught himself or bought from other fishermen. The fish was hauled to market in corfs behind Ole Mikkel Lerøen's rowing boat from the island of Lerøy to the fish market in Bergen, a journey that could take between six and twelve hours, depending on prevailing winds and currents.

Over time, Ole Mikkel Lerøen's operations gradually came to include retail sales in Bergen, the sale of live shellfish and a budding export business. In 1939, two of his employees, Hallvard Lerøy sr. and Elias Fjeldstad, established a wholesaler and seafood export company – Hallvard Lerøy AS. In time, the company invested in a facility where they could receive pelagic and whitefish and carry out fish farming. Poor results and insufficient capitalisation in the late 1980s and early 1990s forced the company to close down its facility for receiving fish and sell its shareholdings at that time in fish farming in order to safeguard their core operation: wholesale and exports. In 1994, the company carried out a last emergency share issue and started the process of re-establishing a healthy business. At that time, the company's equity was valued at NOK 20 million, prior to an issue worth NOK 5 million.

The potential for growth within fish farming in combination with increasing customer requirements necessitated a radical change in the Group's business concept and strategy. The new strategy was extremely capital intensive. Up to 1997, the Group had been a family-owned operation. In 1997, a private placing with financial investors was carried out for

the first time. The purpose of the placing was to develop the Group throughout the entire value chain and participate in the future consolidation of the fish farming industry. The first of what was to become a number of major investments within fish farming occurred in 1999, when the company acquired a minority interest in what was then Hydrotech-Gruppen AS. In the summer of 2001, Norskott Havbruk AS was founded with the sole purpose of acquiring Golden Sea Products, now Scottish Sea Farms Ltd., in the UK.

The Group was listed on the Oslo Stock Exchange in June 2002, providing access to the capital market for the Group and thereby strategic financial room to manoeuvre. Sufficient access to capital and expertise have been critical factors in the development of the Group from a wholesaler/seafood exporter to the current global and fully integrated seafood corporation.

At the turn of the new millennium, large parts of the fish farming industry were seriously undercapitalised and suffering from the impact of a short-term perspective and a lack of risk management. This was not compatible with the requirements placed on enterprises in the fish farming industry at that time. Lerøy Seafood Group had achieved a more solid position by August 2003, when it purchased Nye Midnor AS as it was then called – the company that currently makes up the main share of Lerøy Midt AS. The Group went on to acquire Lerøy Aurora AS in 2005, Fossen AS and the remaining shares in Hydrotech-Gruppen AS in 2006, Lerøy Vest in 2007 via a business combination, and a majority shareholding in Sjøtroll Havbruk AS in 2010. The acquisition and demerger of Villa Organic were conducted in 2014. The above-mentioned companies along with a number of minor acquisitions have, together with highly skilled local management, been developed via organic growth to form what is now one of the world's largest

producers of Atlantic salmon and trout. The fish farming segment employed 1,323 persons at the end of 2015 in Norway.

The Group has over time made substantial investments within the Processing segment (VAP). These investments in VAP (value-added processing) not only generate a wider product range and open the door to new markets, but also provide more room for manoeuvre in relation to the sale of own-produced salmon and trout. The Group made its ambitions clear in 2002 with the investment in fish-smoking capacity in Sweden (Lerøy Smøgen). In 2005, it went on to invest in a processing facility for whitefish in Bulandet (Bulandet Fiskeindustri) in order to further expand its product range. In 2006, the Group expanded its high-value processing plant for trout and salmon on the island of Osterøy (Lerøy Fossen). The Group's acquisition of 50.1% of the shares in the Dutch seafood company Rode Beheer BV Group took place in 2012. The Group has subsequently gone on to expand capacity at all its existing plants.

The framework conditions for industrial development in Norway are increasingly unsatisfactory, resulting in a trend whereby production is outsourced from Norway to countries with low production costs. Despite this trend, Lerøy Seafood Group has invested heavily in Norway, most recently with the development and doubling in capacity of the plant on the island of Osterøy outside Bergen in 2014. The VAP segment currently employs 510 persons, 176 of whom work in Norway.

The Group's ambition to increase demand for seafood in the form of new products for new markets has constantly been the driving force behind its investments in the Sales & Distribution segment. This segment not only sells its own production of salmon and trout, but also has a high level of sales activity in cooperation with third parties, ensuring a wide product range for the Group within seafood.

In recent years, the Group has also made significant investments in processing facilities, in order to take part in leading the "revolution" within the distribution of fresh seafood. These investments have been made in what are known as "fish-cuts": processing facilities where proximity to the customer is key. The distribution of fresh seafood requires quality throughout the entire organisation, flexibility, continuity in supply and a high level of service. Today, the Group has a number of fish-cut facilities across Europe, and sells its products to more than 70 markets worldwide. The Sales & Distribution segment currently employs 830 persons, 398 of whom work in Norway.

Ever since its very foundation, the Group has taken a pioneering role within a number of areas in the Norwegian, and subsequently international, seafood industry. The main focus has always been on developing the markets for seafood. The Group has very frequently been the first to launch on new markets, or to commercialise new species of fish. One of the main goals for the Group is to be an innovator within seafood, preferably in cooperation with the end customer. This is important not only within product development, but also in other areas such as the development of efficient logistics and distribution. This pioneering spirit is still very much alive in the Group.

2016 will go down as one of the most important years in the company's long history. Lerøy Seafood Group acquired 100% of the shares in Havfisk ASA (a shipowning company with trawlers) and 100% of the shares in Norway Seafoods Group AS. These are two of the largest companies in Europe within wild catches and processing of whitefish respectively. This investment enables the Group to embark on a new and exciting development, whereby wild catches and processing of whitefish will be integrated into the Group's well-established value chain. Lerøy

Seafood Group is now a fully integrated company, having achieved control of the entire value chain for a full range of seafood products – from the sea to the consumer.

At the start of 2017, the seafood corporation Lerøy Seafood Group is uniquely positioned for further growth and development.

## IMPORTANT EVENTS 2016

The Group maintains a continuous focus on developing new products and markets. In recent years, the Group has achieved a position as Norway's largest producer of sushi. The Group's sushi concept has been successfully launched on several other markets, including Spain and Finland. The Group also continues to develop its "fish-cut" concept in many parts of Europe. The processing units follow a target-driven and efficient strategy, focusing on freshness, a high level of service and proximity to end customer. Furthermore, the Group has sustained its positive trend within the development and launch of new products, principally within freshly packaged fish, and is seeing an increase in demand.

- 2016 will go down in the record books as one of the most exciting years in the history of Lerøy Seafood Group ASA. In June 2016, Lerøy Seafood Group acquired 64% of the shares in Havfisk ASA and 74% of the shares in Norway Seafoods Group. At the same time, a mandatory offer was issued for the acquisition of the remaining outstanding shares in Havfisk ASA and a voluntary offer for the remaining shares in Norway Seafoods Group. The acquisitions were approved by the Norwegian Ministry of Trade, Industry and Fisheries and relevant competition authorities in August, and the process was completed in October 2016. With sole ownership of Havfisk ASA and Norway Seafoods Group, Lerøy Seafood Group has embarked on a new and exciting journey to integrate whitefish into the Group's well-established value chain. As a result, Lerøy Seafood Group is now a fully integrated company, having achieved control of the entire value chain for a full range of seafood – from the sea to the consumer.

- Havfisk made a significant contribution to the signing of the so-called Arctic Agreement. As a result of the shrinking ice sheet around the North Pole, and what are referred to as new areas becoming available, a map has been prepared showing the traditional locations for fisheries. The parties agree not to start fishing north of these areas until the seabed has been charted and it has been ascertained that fishing will not cause permanent damage to vulnerable benthic biotopes.

- A contract was signed for the construction of a new trawler scheduled for delivery at the start of 2018. The newbuilding is to replace an older trawler, and will be equipped with modern and environmentally efficient gear. As with the previous three newbuildings, the vessel will also make use of all residual raw materials as part of the strategy for maximum exploitation of resources.

- Construction start for new factory for Lerøy Midt. This involves merging the two current factories into one new factory, designed to ensure optimal environmental efficiency in operations. The measures planned to reduce energy consumption will generate a 45% reduction in comparison with current consumption, while consumption of fresh water will be reduced by 50%. Direct delivery from well boat to factory will improve fish health and increase the rate of survival. The new factory is designed to provide 100% exploitation of fish, and there will be no emissions other than purified process water. All waste will naturally be sorted at source, and power required by well boats will be provided from shore.

- After a two-year upgrade and extension, Lerøy Seafood Group's Laksefjord smolt facility

in Finnmark was officially opened in June 2016. The facility is now one of Norway's largest and most modern smolt facilities with capacity for 11 million smolt. In terms of production, there is a focus on efficient and environmentally sound solutions, using RAS technology for both fresh water and sea water. As such, the facility can produce post-smolt weighing up to 250 grams. As early as the start of January 2016, during the dark months in North Norway and with temperatures as low as minus 20 degrees, the very first "small salmon" were released from the juvenile fish plant in the Laksefjord. 870,000 post-smolt with an average weight of 230 grams were released to the Angstauren locality in Troms. These fish, which have thrived since their release, will be harvested during the first half of 2017. By that time, they are expected to have an average weight of 5 kg. A second release of small salmon from the facility in the Laksefjord took place in January 2017, this time to Årøya in the Lyngenfjord in Troms. To date, these fish have also thrived in their locality.

- Opening of new RAS facility both at Bjørsvik Settefisk in the south and in Laksefjord in the north.

- In 2016, Lerøy Seafood Group gained access to the new well boat, Seihav, via Seistar Holding AS, a company 50% owned by LSG. Seihav has been equipped with state-of-the-art technology and equipment, and is designed to carry live fish and smolt to and from cages and slaughtering plants. In addition, Seihav has the capacity for fish-sorting operations and different methods for treating lice and AGD. The boat, which can carry up to 550 tonnes of live fish, will mainly operate in the county of Hordaland and parts of Sogn og Fjordane.

- In 2016, Lerøy Seafood Group issued an application for development licences for the "Pipefarm" concept, a closed-containment, floating raceway plant. The Group is confident that this concept can be developed into an optimal solution for closed-containment production at sea and, in the long term, contribute to improving area-efficiency within the fish farming industry. The application covers a total of nine R&D licences and a combined capacity of 7,020 tonnes.

- LSG established as one of the largest producers of lumpfish

- Further development of Ocean Forest, harvesting and packing 17,000 kg tare from Ocean Forest

- Exposure of 6 million self-produced smolt

- Zero use of antibiotics for salmon in the sea since 2011

- Improved fish welfare, as direct delivery from the well boat to the factory will result in increased survival.

- 100% utilisation of the fish

- No emissions except purified process water

- Waste sorted at source

# GOVERNANCE

When recruiting board members, the Group's owners have already for many years taken into consideration the Group's need for varied expertise, continuity, renewal and changes in ownership structure.

In 2016, the Board of Lerøy Seafood Group had Helge Singelstad as the Chairman, and the six Board members were Arne Møgster, Britt Kathrine Drivenes, Hege Charlotte Bakken, Hans Petter Vestre, Marianne Møgster and Didrik Munch. Read more about the board members in the Group's annual report. Neither the CEO nor other senior executives in Lerøy Seafood Group ASA are members of the company's Board of Directors.

## OWNERSHIP

When recruiting board members, the company's owners have for many years considered the company's needs for varied expertise, continuity, renewal and changes in ownership structure. It will always be in the interest of the company's stakeholders to ensure that the composition of the Board varies in line with the demands made of the company and with expectations regarding Group performance. The Board's assessment of its own performance and of Group management must of necessity be seen in conjunction with the Group's performance. To date, the Board has not issued reports on its assessment of its own work; this is a conscious priority decision and must be viewed in connection with other announcements in the company's communications to the public. Moreover, external assessments of the Board's work are probably the more influential and are likely to remain so in the future.



Helge Singelstad  
*Chairman*



Marianne Møgster  
*Board Member*



Hege Charlotte Bakken  
*Board Member*



Britt Kathrine Drivenes  
*Board Member*



Arne Møgster  
*Board Member*

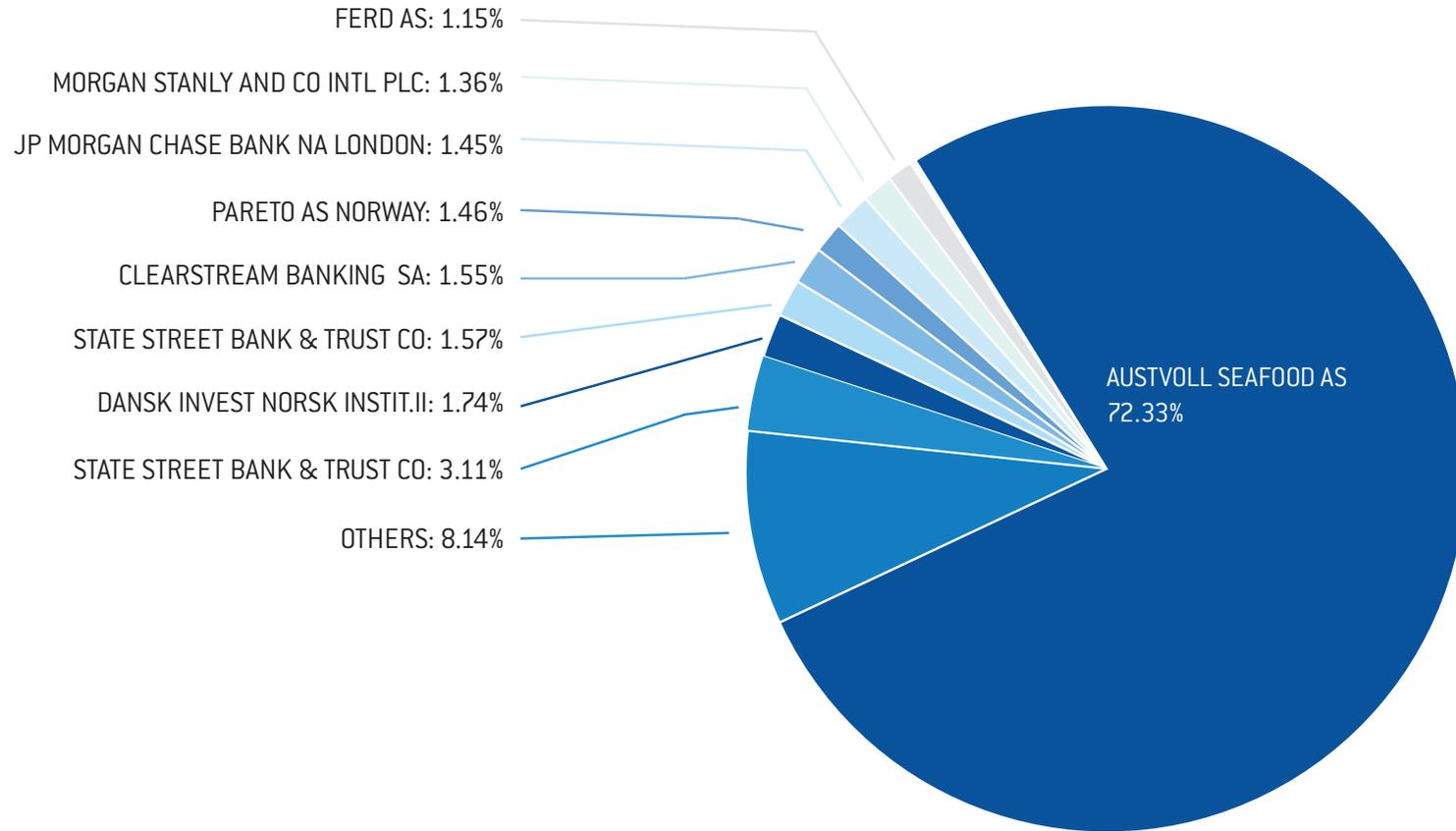


Didrik Munch  
*Board Member*



Hans Petter Vestre  
*Employee's representative*

# THE LARGEST SHAREHOLDERS IN LERØY SEAFOOD GROUP:



# ENVIRONMENTAL AND SUSTAINABILITY MANAGEMENT

The Board of Directors of Lerøy Seafood Group ASA has one member who is assigned extended responsibility for the environment and sustainability. In the Group, the CEO has main responsibility for this area. The Head of Quality and CSR is responsible for coordinating work involving the environment/sustainability for all the companies within the Group. Responsibility is delegated to the Managing Director of each subsidiary, while the Quality Manager or delegate is responsible for daily follow-up within the companies. Competency groups are set up in each part of the value chain for quality/the environment/sustainability. These groups are made up of representatives from the different subsidiaries. These competency groups are headed by the Head of Quality and CSR.

## ENVIRONMENTAL POLICY

Lerøy Seafood Group is one of the largest seafood corporations in the world. We live off the natural resources produced in the sea and rely on these resources being properly managed so that we

can continue to sell seafood in the future. The management of Lerøy Seafood Group will do their utmost to ensure that the products manufactured and purchased comply with the prevailing rules and regulations of our industry.

We will furthermore strive to find the most environmentally friendly and sustainable systems for our products via close cooperation with our customers and suppliers of fish feed and transport. Lerøy Seafood Group will continuously seek to introduce improvements that will reduce pollution and help protect the environment. Our employees will focus on the company's environmental targets. In fact, Lerøy Seafood Group will include the environment as one of its main focus areas in the future, in terms of both employees and our products.

## ETHICAL GUIDELINES

Lerøy Seafood Group is a corporation involved in global business and working relationships with suppliers and subcontractors worldwide. In order

to safeguard all our activities, we have prepared a set of ground rules which apply to us and our partners on a daily basis. Our ethical guidelines have been reviewed by the Board of Directors and implemented in every Group company. The Group is responsible for ensuring these ethical guidelines are put into practice, but each employee also bears an individual responsibility to follow the guidelines when carrying out tasks for the Group. The company management is responsible for ensuring the ethical guidelines are followed and complied with in full. The set of ground rules has been divided into two separate areas and comprises the following:

- Part 1: Factors relating to the company, suppliers and subcontractors.
- Part 2: Factors relating to the individual employee.

Our goal is to combine healthy business management with a clear responsibility for society and the environment. As a general rule, Lerøy Seafood Group together with its suppliers and subcontractors shall comply fully with legislation in respective countries. The Group has a principal rule that the strictest requirements shall be met. In the event of deviations, measures shall be implemented to improve the situation.

The Group's goal is to contribute towards improving human rights, labour rights and environmental protection, within the Group, in relation to our suppliers and subcontractors, and in relation to trading partners. The Group did not expose any cases of corruption in 2016. Lerøy Seafood Group does not support individual political parties or individual politicians, but the Group takes part in public debate when in the interests of the Group. Environmental aspects shall be taken

into consideration throughout the production and distribution chain, from production of raw materials to sales, and shall not be delimited to the Group's own activities. Every effort shall be made to safeguard local, regional and global environmental aspects. Aspects regarding animal ethics shall also be taken into full consideration.

## VISION

We shall be the leading and most profitable global supplier of sustainable quality seafood.

## ENVIRONMENTAL VISION

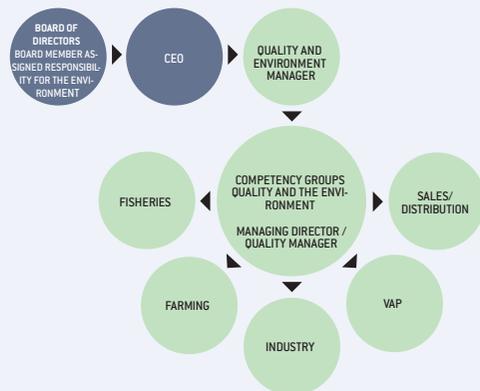
Take action today – for a difference tomorrow

## QUALITY VISION

We shall be the customers' preferred supplier of seafood by focusing on preventive action, quality, the environment and professional competency.

## QUALITY POLICY

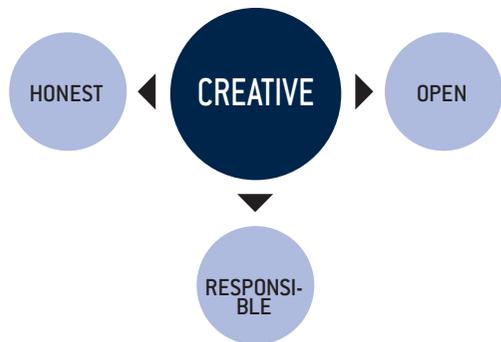
The right seafood products delivered to the right place at the right time to optimise profitability for all parties.



Lerøy focuses on a good working environment, where job satisfaction is essential for the performance of important tasks. The photo above is from Lerøy Midt's new hatchery facility in Belsvik, Sor-Trøndelag.

**OUR VALUES**

Lerøy Seafood Group, in collaboration with the entire organisation, has drawn up a set of values that apply across the Group. These were implemented in all Group companies in 2016/2017.



**Creative**

There are several definitions of the word “creative”: effective, enterprising, inventive and innovative. Creativity is based on the desire and capacity to solve challenges, wanting to achieve results and continuously develop the company. A creative and innovative environment requires openness and honest discussions – all focusing on the progress of the company.

**Honest**

- Involves*
- Being sincere
- Being reliable
- Being honest even in uncomfortable situations
- Being honest with yourself
- Not taking part in gossip or slander
- Being pleasant to your colleagues

*Does not involve*

- Stating your opinion about everything and anything
- Being brutally honest

**Open**

- Involves*
- Keeping an open mind to ideas and input
- Sharing with your colleagues
- Being open about your activities
- Being cooperative
- Reporting all aspects of your activities in-house
- Being open to change

*Does not involve*

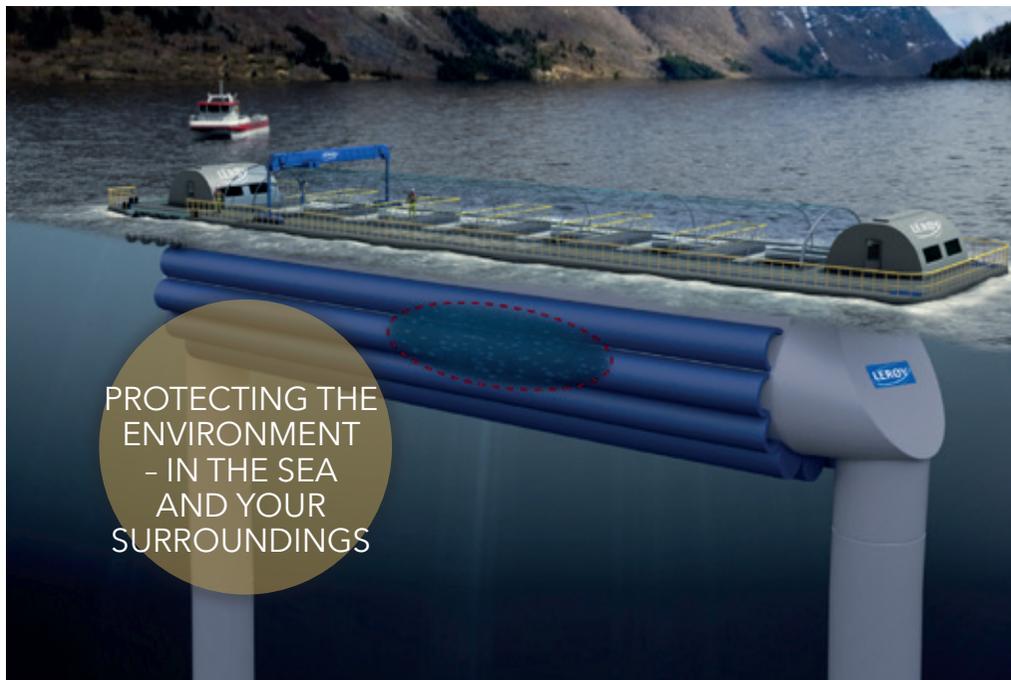
- Sharing sensitive information
- Sharing information on personnel issues
- All employees being entitled to express their thoughts outside the workplace,
- we have to comply with the Group’s guidelines

**Responsible**

- Involves*
- Complying with regulations
- Being considerate
- Supporting your colleagues
- Being aware of the role you play in the company
- Being reliable

*Does not involve*

- Taking on responsibility “”for everything and everyone””
- Taking over responsibility from others and thereby preventing them from growing by learning



# RISK MANAGEMENT AND INTERNAL CONTROL

The Group's activities are varied, depending on each entity's position in the value chain, and consequently require differentiated forms of management and follow-up. Good internal management systems are essential for success, and these must be continuously developed in order to accommodate fluctuating conditions. The Group's regional structure with independent entities, also in respect of short-term reporting, facilitates good control and a powerful focus. Internal control is based on daily and weekly reports that are summarised into monthly reports tailored to the individual company, and at Group level. There is an emphasis on developing uniform reporting procedures and formats in order to ensure correct reporting from all entities and up to an aggregate level.

As Lerøy Seafood Group is an international seafood corporation with decentralised operations and a significant volume of biological production, the company is exposed to a number of risk factors. The Board of Directors therefore works hard to ensure that the Group implements all measures required to control risk, to limit individual risks and to keep risk as a whole within acceptable constraints.

## Operating risk

Fish farming takes place in relatively open seas, which provide the best conditions for fish farming in terms of the environment and the health of the fish. However, this places significant demands on both personnel and equipment. The production

plants are continuously subjected to the forces of nature, representing a certain risk of damage to equipment which, in turn, may result in accidental release of fish. The company reported three accidental releases of fish in 2016. Keeping animals in intensive cultures will always carry a risk of illness. Fish are particularly vulnerable to illness when they start life at sea, as they are exposed to stress during this period and have to adapt to a completely new environment. The risk of illness can be reduced by ensuring high-quality smolt, vaccinations, good conditions and the correct locations for the fish. The Group also has a focus on sustainable feed.

## Market risk

The developments in global salmon and trout prices, and now also the prices of whitefish, especially cod, have a considerable impact on the results achieved by the Group. The Group seeks to reduce this risk factor by ensuring that a certain proportion of sales are so-called contract sales.

In addition, Norwegian fish farming and the fish processing industry in Norway and the European have a history of exposure to the risk represented by the constant threat of long-term political trade barriers imposed by the European Commission. In 2008, the European Commission abolished the programme which involved so-called minimum prices for Norwegian salmon and punitive duties on Norwegian trout. In 2011, punitive duties on whole salmon exported to the USA were also lifted. Russia introduced a ban on imports of salmon and trout from Norway on 7 August 2014. As Russia is normally a major market for Norwegian salmon and trout, the import ban had a negative impact on realised prices for trout again in 2016.

## Currency risk

The Group has international operations requiring a number of currencies, and is thus exposed to currency risk. The Group makes use of currency derivatives combined with withdrawals/deposits in multi-currency accounts in order to minimise currency risk on outstanding customer receivables, signed sales contracts and ongoing contractual negotiations. The Group's long-term liabilities are mainly in Norwegian kroner.

## Credit risk

Pursuant to the Group's strategy for managing credit risk, the Group's customer receivables are mainly covered by credit insurance or other forms of security. All new customers are subjected to a credit rating.

## Interest rate risk

The main share of the Group's long-term liabilities is based upon agreements at floating rates of interest, representing exposure to increases in the market interest rate. Interest rate swap agreements are signed to reduce interest rate risk.

## Liquidity risk

The most significant individual factor related to liquidity risk is fluctuations in salmon prices, and now also the prices of whitefish, especially cod. Liquidity is also affected by fluctuations in production and slaughter volumes and changes in feed prices, which are the most prominent single factor on the cost side. Feed costs are impacted by developments in prices for marine raw materials and agricultural products.

## Review by the Board of Directors

A significant share of the work of the Board of Directors is ensuring that the company management is familiar with and understands the Group's risk areas, and that risk is managed by means of

appropriate internal control. Frequent evaluations and assessments are conducted of both the management's and Board's understanding of risk and internal control. The audit committee plays an important role in these evaluations and assessments.

## Description of the main elements of risk management and internal control related to financial reports

Internal control within the Group is based on the recommendation from the "Committee of Sponsoring Organizations of the Treadway Commissions" (COSO), and covers control environment, risk assessment, control activities, information and communication, and monitoring. The content of these various elements is described in detail below.

## Control environment

The core of an enterprise is the employees' individual skills, ethical values and competence, in addition to the environment in which they work.

## Guidelines for financial reporting

On behalf of the CFO, the Chief Accountant for the Group provides guidelines to entities within the Group. These guidelines place requirements on both the content of and process for financial reporting.

## Organisation and responsibility

The Chief Accountant for the Group reports to the CFO and is responsible for areas such as financial reporting, budgets and internal control of financial reporting within the Group.

The Directors of the reporting entities are responsible for continuous financial monitoring and reporting. The entities all have management groups and financial functions which are adapted to their organisation and business. The entity managers shall ensure implementation appropriate and efficient internal control and are responsible for compliance with requirements. The audit committee monitors the

process of financial reporting and ensures that the Group's internal control and risk management systems function efficiently. The audit committee also ensures that the Group has an independent and efficient external auditor.

The financial statements for all companies in the Group are audited by an external auditor, within the framework established in international standards for auditing and quality control.

#### Risk assessment

The Chief Accountant for the Group and the CFO identify, assess and monitor the risk of errors in the Group's financial reports, together with the managers of each entity.

#### Control activities

Reporting entities are responsible for the implementation of sufficient control actions in order to prevent errors in the financial reports.

Processes and control measures have been established to ensure quality assurance of financial reports. These measures comprise mandates, division of work, reconciliation/documentation, IT controls, analyses, management reviews and Board representation within subsidiaries.

The Chief Accountant for the Group provides guidelines for financial reporting to the different Group entities. The Chief Accountant for the Group ensures that reporting takes place in accordance with prevailing legislation, accounting standards, established accounting principles and the Board's guidelines.

The Chief Accountant and the CFO continuously assess the Group's and the entities' financial reports. Analyses are carried out in relation to previous periods, between different entities and in relation to other companies within the same industry.

#### Review by the Group management

The Group management reviews the financial reports on a monthly basis, with the review including the development in figures for also ensures and balance sheet.

#### Reviews by the audit committee, Board and general meeting

The audit committee and Board review the Group's financial reports on a quarterly basis. During such reviews, the audit committee has discussions with the management and external auditor. At least once a year, the Board holds a meeting with the external auditor without managerial presence.

The Board reviews the interim accounts per quarter and the proposal for the financial statements. The annual accounts are adopted by the annual general meeting.

#### Information and communication

The Group has a strict policy of providing correct and open information to shareholders, potential shareholders and other stakeholders. Item 13, "Information and communication", contains more detailed information.

#### Monitoring Reporting entities

Those persons responsible for reporting entities shall ensure appropriate and efficient internal control in accordance with requirements, and are responsible for compliance with such requirements.

#### Group level

The Chief Accountant and CFO review the financial reports issued by the entities and the Group, and assess any errors, omissions and required improvements.

#### External auditor

The external auditor shall provide the audit committee with a description of the main elements of the audit from the previous financial year, in particular significant weak points identified during internal control related to the process of financial reporting.

#### The Board of Directors

The Board, represented by the audit committee, monitors the financial reporting process.



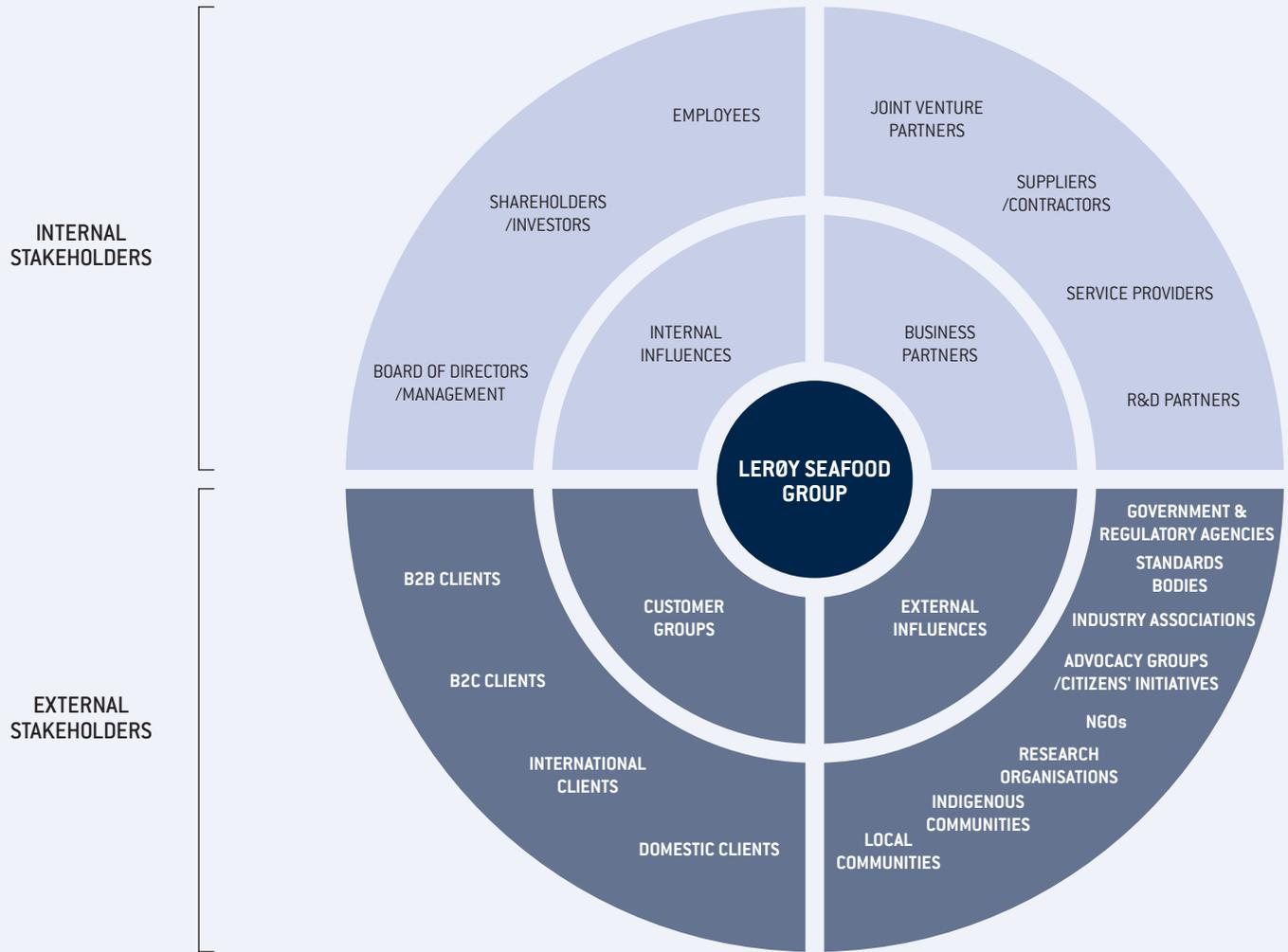
# STAKEHOLDERS

A stakeholder is an accountant, group, organisation, member or system who affects or can be affected by an organisation's actions. Lerøy Seafood Group has various stakeholders and communicates with these via meetings, annual reports, environmental reports, GRI reports, CDP reports, communication in the media, announcements, registrations, public reporting, joint projects, partnership agreements, the stock exchange, websites etc.

Good communication with stakeholders is important in our daily work. In a new process, we analyse our stakeholders on the basis of their influence on our organisation. This helps us to identify how to engage them more effectively, and more importantly ensures shared value on both sides of the table.

Keywords:

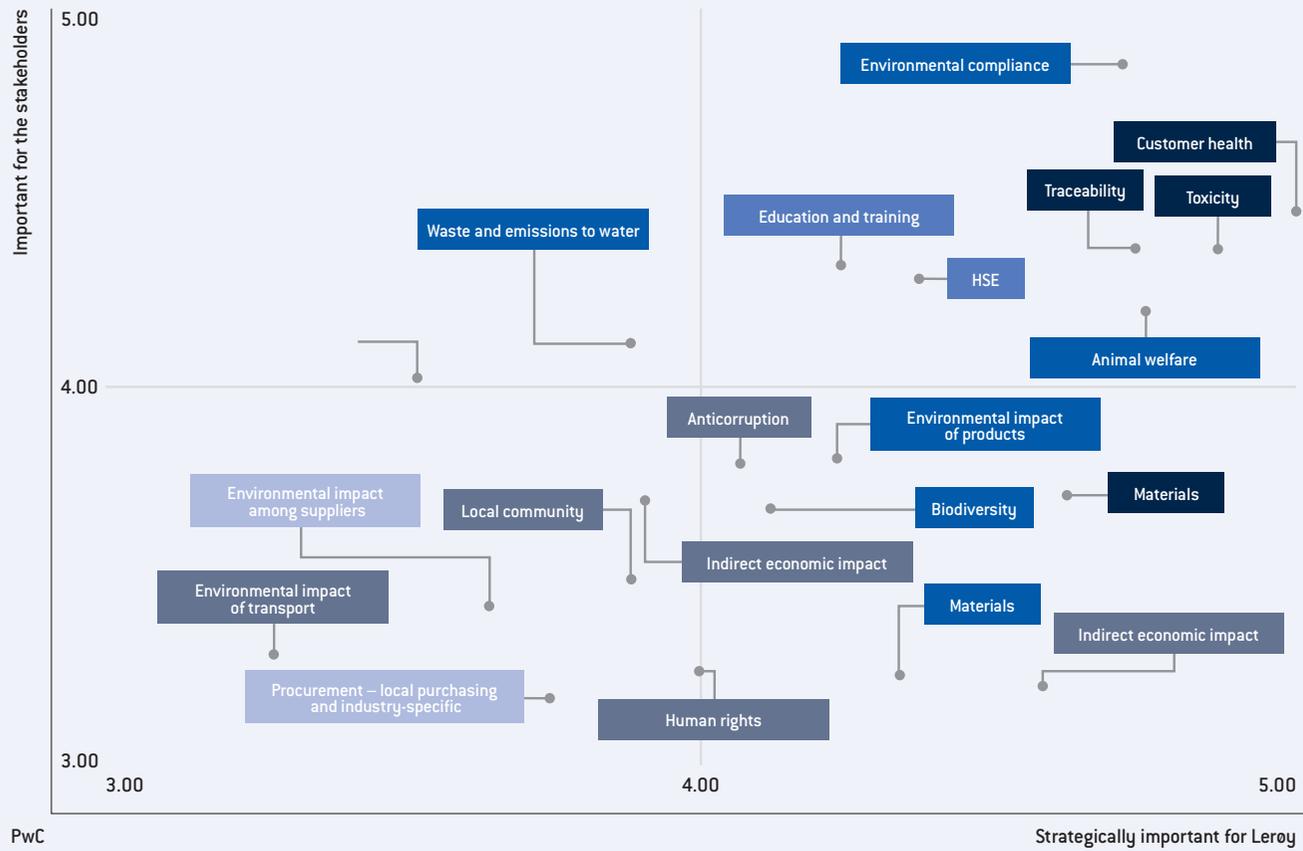
- Acceptance of topics chosen
- Different perspectives on impacts
- Problem identification
- External impression
- Knowledge



# FINDINGS FROM STAKEHOLDER DIALOGUE

Overview of the most material aspects

- Product
- Employees
- Environment
- Society
- Value chain



# MATERIALITY ANALYSIS

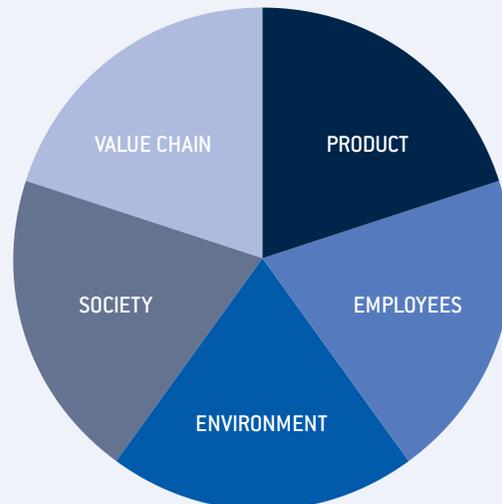
Lerøy Seafood Group conducted a materiality analysis in autumn 2015. The study was carried out by a third-party company, PwC, which conducted interviews with a sample of our key external and internal stakeholders. The interviews were conducted by telephone or face to face. The stakeholders were weighted to reflect their importance to Lerøy.

The aim of the analysis was to find out which areas our stakeholders consider to be important to report on, and whether these match the areas we ourselves consider important.

The materiality analysis identified five main areas:

- **Value chain**
- **Product**
- **Employees**
- **Environment**
- **Society**

The importance attached to topics within these five areas varies among stakeholders.



# THE VALUE CHAIN



# VALUE CHAIN

One paramount element in Lerøy Seafood Group's strategy is to be a fully integrated supplier of the Group's key products, Atlantic salmon, trout and whitefish, and business is currently operated via a number of subsidiaries in Norway and abroad. The Group reports within three segments: Wild catch and whitefish, Farming, Value-added Processing (VAP) and Sales & Distribution (S&D). The Group views its operations as regional with a global perspective. The Group aims to be an enterprise with local roots in communities where it has operations, thereby making a contribution to all local communities irrespective of region and nationality.

On 2 June 2016, Lerøy Seafood Group signed agreements that on execution would afford the Group majority ownership of both Havfisk ASA and Norway Seafoods Group. The acquisitions were executed on 31 August 2016, providing Lerøy with 67% of the shares in Havfisk and 74% of the shares in Norway Seafoods Group. On 16 September 2016, Lerøy issued a mandatory offer for all remaining shares in Havfisk ASA and a voluntary offer for all those in Norway Seafoods Group. On 20 October, the Group reported that on expiry of the mandatory offer for Havfisk, it had received acceptances that would provide Lerøy with a total shareholding in Havfisk of 96%. On 27 October 2016, Lerøy took the decision to apply the option for compulsory acquisition of minority shareholdings, laid down in the Public Limited Companies Act (Norway), and thereby gained ownership of 100% of the shares in Havfisk ASA and Norway Seafoods Group. Reference is also made to the more detailed information in the note regarding business combinations and redemption of non-controlling interests.

Subsequent to these transactions, Havfisk ASA and Norway Seafoods AS were consolidated into Lerøy's financial statements as of 1 September 2016. In total, the two businesses represented a positive contribution to Lerøy's operating profit of NOK 88.6.

The Farming segment comprises the Group's activities involving production of salmon and trout and includes harvesting and an increasing volume of filleting. The Group companies in this segment represent a major employer along the Norwegian coastline, and strive to be visible and supportive in all operating regions.

The VAP segment is mainly involved in high-value processing of primarily salmon and trout, but also other species. The segment's products are increasingly sold to a global market. The Sales & Distribution segment has a global reach, and is involved in sales, market development, product development, distribution and simple processing of the Group's own raw materials, as well as a large volume of raw materials from partners and the Group's network of suppliers.



\* Associate  
\*\* Excluding Lerøy Smøgen Seafood AB

PRODUCTION					SALES & DISTRIBUTION	
FARMING				WILD CATCH		VAP
SMOLT	FARMING	HARVEST	PROCESSING			PROCESSING
				HAVFISK	NORWAY SEAFOODS GROUP	
LERØY VEST					LERØY SEAFOOD	
LERØY AURORA					LERØY SEAFOOD – JAPAN	
LERØY MIDT					BULANDET FISKEINDUSTRI	
SJØTROLL HAVBRUK					LERØY SMØGEN	
					LERØY SEAFOOD – CHINA	
					LERØY SEAFOOD – FRANCE	
					LERØY SVERIGE	
					RODE BEHEER BV GROUP	
					SAS HALLVARD LERØY	
					LERØY TURKEY	
					LERØY PORTUGAL LDA	
					LERØY FINLAND OY	
					SJØMATGRUPPEN	
					SAS FISHCUT	
					SAS EUROSALMON	
					LERØY PROCESSING SPAIN	
					LERØY USA	
					SJØMATHUSET	

# “TAKE ACTION TODAY – FOR A DIFFERENCE TOMORROW”

**NO OTHER COUNTRY IN THE WORLD CAN MATCH NORWAY'S COAST IN TERMS OF FOOD PRODUCTION. FEW NATIONS CAN BOAST SUCH A RICH COASTAL CULTURE, WHERE THE SEAFOOD INDUSTRY HAS PLAYED SUCH A CENTRAL ROLE THROUGHOUT HISTORY IN PROVIDING FOR VIGOROUS LOCAL COMMUNITIES ALONG THE COAST. WITH THE GLOBAL POPULATION APPROACHING 9 BILLION (BY 2050), IT SEEMS PERFECTLY NATURAL FOR THE INCREASED DEMAND FOR FOOD PRODUCTION TO BE SATISFIED BY SIGNIFICANT GROWTH IN FISH FARMING.**

For Lerøy Seafood Group, it is essential to maintain a focus on the entire concept of sustainability, a concept that encompasses not only the environment, but also social and economic factors. Our industry plays a significant role within society, and Lerøy Seafood Group in Norway aims to take its social responsibility very seriously, and to ensure that the social benefits provided by our activities are safeguarded by maintaining robust and profitable businesses, ripple effects within local communities and stronger environmental management within fisheries and fish farming.

## FISHERIES

Our operations within fisheries are based on fish as a natural resource. We therefore rely on proper management of the different species in the sea. Limitations on the harvest volumes of individual fish stocks come from Mother Nature herself. Information on fishing volumes (catch statistics), monitoring of fish stocks and estimates provided by researchers from numerous countries all form the basis for the fishing quotas established. Research

and advice from the Institute of Marine Research in Bergen and the International Council for the Exploration of the Sea (ICES) shall help ensure that future generations are able to harvest the major assets in the sea and along the coast. One of the vessels owned by our subsidiary Havfisk is part of the Institute of Marine Research's reference fleet. As such, we play a part in collecting a significant amount of biological data utilised in the research into fish stocks.

Norway enters into negotiations with other countries when total fishing quotas are to be established. The final decisions regarding the total quotas for fishing different species are taken based on stock assessments and advice on quotas from the International Council for the Exploration of the Sea (ICES). More than 90% of the fish resources harvested by Norway are managed in cooperation with other countries. The national quotas in Norway are discussed by the various stakeholders during regulation meetings, for which the Norwegian Directorate of Fisheries is responsible. These regulation meetings are held twice a year. Subsequent to the discussions during the regulation meetings, the Directorate of Fisheries issues a proposal for regulation of fisheries to the Norwegian Ministry of Trade, Industry and Fisheries. The Ministry issues provisions regarding the distribution of quotas to Norwegian fishing vessels and provisions regarding fisheries in the form of annual regulations for each species of fish.

Our operations are based on public permits for the harvesting of Norwegian fish resources. The entitlement provided by these permits entails statutory obligations in terms of activity and delivery, as well as a responsibility to fish sustainably. It is our aim to be a “proud custodian”, and we have taken an active

” *All the major Norwegian fisheries have gained certification according to international environmental standards*

approach to ensuring full compliance with all regulations involving fisheries. We manage our natural resources on behalf of society as a whole, and therefore accept a particular responsibility for ensuring sustainable operations, leaving behind the smallest possible ecological footprint. The Group monitors all employees and management to ensure compliance with prevailing regulations and quota provisions. The Group has also cooperated with authorities, trade associations and non-governmental organisations to help counteract illegal fishing, thereby safeguarding resources for future generations. Norwegian North East Arctic cod, haddock and saithe fisheries gained Marine Stewardship Council (MSC) certification in 2010. This was followed by MSC certification for shrimp fisheries in 2012. These certificates substantiate the sustainability of Norwegian fisheries for these species. The cod, haddock and saithe fisheries were awarded a new five-year certificate in 2015. Our fisheries operations mainly comprise MSC-certified cod, haddock and saithe, in addition to shrimp.

In 2016, Havfisk and the other parties involved in the Norwegian trawling industry entered into the Arktisavtalen (Industry Group Agreement to Cod fishery in the northern part of North-East Atlantic). As a result of the melting of the ice sheet around the North Pole and so-called new areas becoming accessible, a map has been prepared showing those regions traditionally fished. The parties to the agreement have committed to not fishing in waters north of these areas before the seabed has been charted and it has been established that fishing will not cause permanent damage to vulnerable benthic biotopes. There are 19 areas under Norwegian administration

that are protected against bottom trawling. These are mainly found along the coastline and have been established to protect coral and other benthic organisms. Farther north, there is a total prohibition on fishing around all the islands surrounding Svalbard in an area extending to 12 nautical miles. Combined with a more comprehensive nature reserve where fishing is prohibited and a general prohibition on fishing in waters that are shallower than 100 metres around Svalbard, the protected area covers 70,000 square kilometres. The minimum water depth of 100 metres protects food sources for animals that live on shore and birds that dive for food close to the coast. A number of other regulatory measures also apply, including a prohibition on fishing deeper than 1,000 metres to protect potentially vulnerable benthic biotopes in these areas.

**Main goal: Eco-friendly and profitable operations supplying healthy food from sustainable stocks in the cleanest sea waters in the world.**

## FLEET RENEWAL

In general, Havfisk has renewed its fleet by rebuilding/modernising some of its older trawlers and selling others. Three new trawlers were delivered from 2013 to 2014. The new trawlers are equipped with modern technology ensuring more eco-friendly operations.

Several vessels in the existing fleet have been upgraded with more eco-friendly solutions. Other vessels have been rebuilt as combi-vessels that can deliver both frozen and fresh fish all year round. This boosts flexibility and reduces fuel consumption when compared with vessels that only deliver fresh fish.

The delivery obligation implies that we deliver a share of our catches as fresh fish, a positive obligation with a view to fresh fish distribution to the end customer.

In 2016, Havfisk received a number of subsidies from the NOx fund for investment in equipment that saves on energy when compared with current solutions, for example LED lights, variable frequency-controlled compressors, more energy-efficient pumps etc. In February 2016, a contract was signed for a new-building scheduled for delivery at the start of 2018. The newbuilding is to replace an older trawler, and will be equipped with modern and environmentally efficient gear. As with the last three newbuildings, this new vessel will provide utilisation of all residual raw materials as part of the strategy to ensure maximum resource utilisation.

#### R&D PROJECT – SUSTAINABLE DEVELOPMENT

Havfisk is an industrial partner in an international, interdisciplinary research cooperation involving the effect of climate change on the marine eco-system. The name of the project is GreenMar. The cooperation comprises research groups within ecology, climate and marine resources. The aim of the project is to increase know-how that will contribute to “green growth” via sustainable administration and utilisation of our marine areas.

In 2016, Havfisk provided information to students at NTNU who were writing a term paper for the “Green Value Creation and Ethical Perspectives” course. By taking part in such projects, we are able to contribute to education and research while following our goal to expand our own knowledge within this area. Havfisk has ongoing R&D projects relating to increased total utilisation of raw materials. The main aim of these projects is to increase utilisation of resources and boost value creation. Havfisk is also participating in the “E-sushi” project, led by the research organisation SINTEF, with other enterprises in the fisheries indus-

try. The goal of this project is to gather comprehensive data, so-called big data (large volumes of empirical data), on numerous levels, in order to gain a better understanding of factors that impact on fisheries. This will allow for better prognoses and information for sustainable management and efficient fisheries.

#### “FISHING FOR LITTER”

Our sea waters and coast are increasingly littered by vast volumes of man-made waste. Pieces of plastic, rubber and other non-degradable materials may remain in the environment for hundreds of years, causing harm to animals and humans. Havfisk's fleet is involved in the “Fishing for litter” project, a voluntary environmental project to clear up marine waste from the sea, led by the Norwegian Environment Agency. The aim is to send as much of this waste as possible for recycling, by facilitating sorting, registration and recycling of all waste collected.

” *Cod, haddock and saithe can be caught all year round, but the season peak is from January to April*

” *9 trawlers, 4 purchasing stations*



## FARMING

Lerøy Seafood Group has a strategy whereby its fish farming activities are based on a "lasting perspective" which lays the foundations for the Group's utilisation of coastal resources. Such a perspective requires the involvement of owners, employees and suppliers, and is applied daily as we work to produce the best seafood in the world from production activities based on natural resources.

Lerøy Seafood Group is organised with local management of its fish farming activities, and the local management's knowledge of and care for the local communities, environment and nature are of decisive importance. It is particularly important for Lerøy to establish proper arenas where parties involved in coastal fishing and fish farming can meet to exchange knowledge and to ensure that these two industries interact in the development of their potential to benefit local communities and Norway as a nation. Lerøy Seafood Group shall take a leading role in constantly improving the interaction between fish farming and the environment, aiming at generating positive and lasting environmental gains.

Lerøy Seafood Group has fish farming activities in three regions: West Norway (Lerøy Sjøtroll), Central Norway (Lerøy Midt AS) and North Norway (Lerøy Aurora AS). All three regions work closely together, benchmark and exchange experiences in order to arrive at a best practice, laying the foundations for further development of the local operating organisations.

Simultaneously with the reinforcement and development of competencies within the local operating organisations over many years, the Group has built up a strong team to support the local operating organisations in their efforts to secure good environmental and biological results.

### Advisory group for environment and safety:

- supports the production companies in relation to prevention of accidental release and staff safety
- standardises operating concepts, technology and methods

### The fish health team:

- supports preventive work and ensures good routines for managing salmon lice, and ensures good fish health and welfare

### The RAS/post-smolt team:

- provides project management and support to the production companies when selecting appropriate solutions for environmental and more efficient operations, and shorter production time in open-cage systems at sea

### The cleaner fish team:

- supports our six production plants for lumpfish and develops good models for optimal utilisation of own-produced and wild-caught cleaner fish to combat salmon lice at our fish farms

### The technology team:

- builds up Lerøy's own technological development team, with competencies related to ordering and in-house competencies for the improvement of current production concepts and development of new production technology

Lerøy Seafood Group follows a goal-oriented strategy to improve routines, methods and the company's environmental results. To the extent that certification schemes can contribute to this strategy, international standards such as GLOBALG.A.P and ASC, along with standards developed in-house, may be useful in providing inspiration for and documentation of good routines and attitudes.

### Routines and attitudes.

The following areas are of particular importance for the operational part of the Group's environmental work within fish farming activities:

- measures to reduce salmon lice
- work to prevent accidental release of fish
- fish health and fish welfare
- efficient utilisation of land and sea areas
- reduction of discharge of nutrient salt from premises

Among the above, there has been a special focus in recent years on work to minimise the challenges related to salmon lice and the secondary effects of a transition from medicinal methods to mechanical methods to treat salmon lice. Despite this, we have experienced extremely challenging situations, particularly in Central Norway, in 2015 and 2016. These experiences have provided new knowledge that will aid us in our future efforts.

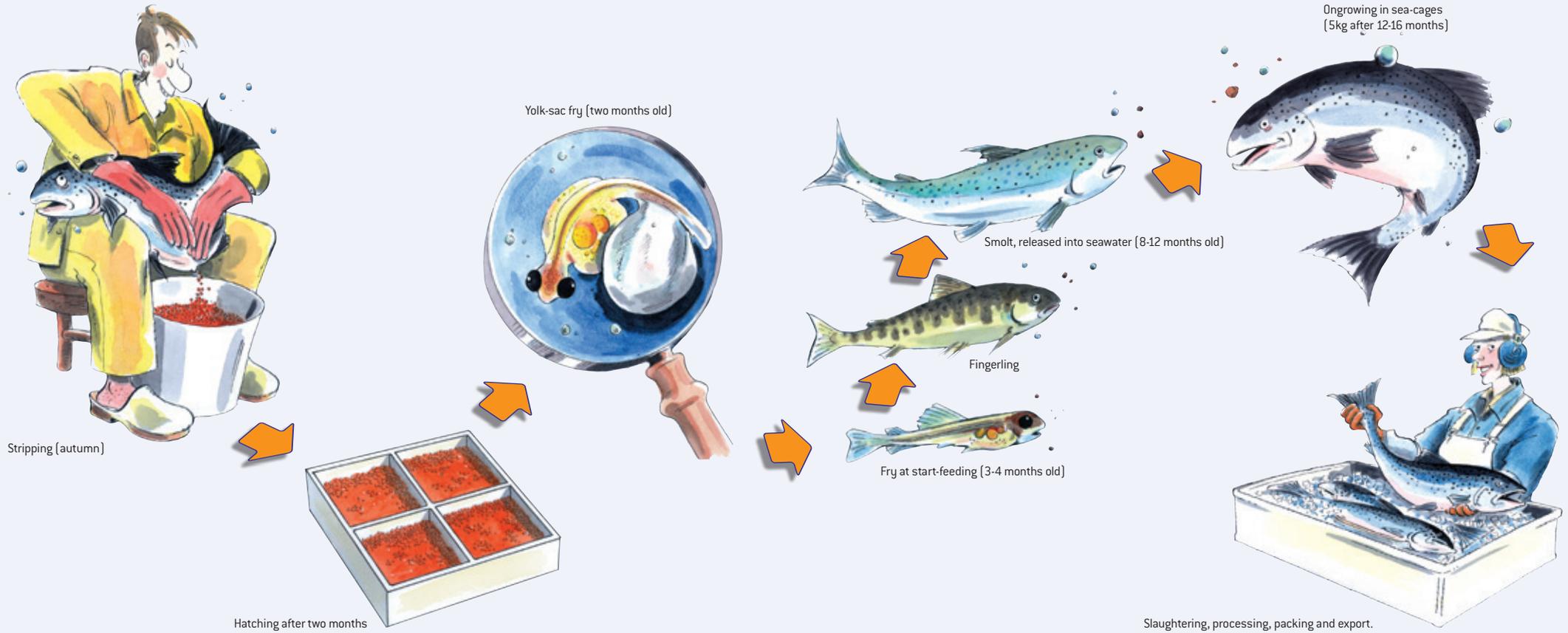
Having documented positive results with the use of lumpfish as a lice eater, Lerøy Seafood Group has decided to make further investments in our own production of lumpfish as a cleaner fish at our facilities. We aim to be self-sufficient in terms of in-house production of lumpfish. Our work on cleaner fish comprises both in-house-produced lumpfish and wrasse caught in the wild. Our efforts involving cleaner fish have made a positive contribution to the work to eliminate the use of medicinal methods. In 2016, our companies have been actively involved in developing mechanical delousing methods and have invested in increasing treatment capacity with those methods that have to date provided the best results. In addition, the Group has invested a lot of work in development projects to strengthen sustainability within fish farming, including:

- raw materials for fish feed
- ensuring compliance with our requirements for sustainable and regulated fisheries
- ensuring that fish health, fish welfare and the environment are taken into account when developing and producing new raw materials for fish feed
- contributing to the production of new marine raw materials for fish feed
- paving the way for improvements to bio-safety throughout the value chain, from parent fish to harvesting.
- development of new technology for fish farming in both fresh water and at sea.

The Group's fish farming companies have established a clearly defined set of goals for each main operating segment and have developed operating procedures specifically to ensure that they can reach the goals set for such important environmental work. The Group also carries out regular internal and external audits to ensure full correspondence between operating procedures and actions. The Group has implemented advanced technology to secure and monitor operations. In addition, we have developed requirement specifications for our suppliers, in an effort to contribute to their active participation to achievement of our environmental targets.

There is vast potential off the coast of Norway for increased production of seafood. At the same time, however, we also have a heavy obligation to take care of the environment effectively so that we can realise our lasting perspective for fish farming.

Our environmental vision – "Take action today – for a difference tomorrow" – therefore provides a clear statement from every employee within the Group that we fully intend, every day, to take the initiative for environmental improvements, benefiting the environment, the fish farming industry and our coastal communities.



## FROM ROE TO PLATE

**Stripping:** The brood stock fish are stripped of their roe and milt. The inseminated roe are placed in the hatchery, where they take 60 days at a maximum water temperature of 80°C to hatch out.

**Hatching:** When the eggshell breaks, the eggs hatch out, yielding fry with yolk-sacs on their stomachs. The yolk-sac is the fry’s “lunch-box” for the first few weeks of its life before start-feeding, when it gradually begins to take dry feed.

**Smolt:** After about one year in a hatchery tank, the salmon have grown enough to be set out in seawater. At this point they have already undergone physiological changes that enable them to live in the sea. An average smolt weighs 80-100 g when it is released into the sea. Smolt used to be set out in the spring, but this now also takes place at other times of the year.

**On-growing in the sea:** After just over 12-16 months in the sea cages, the salmon have grown to a

weight of about 5 kg. The rate of growth depends, among other factors, on the water temperature.

**Well-boats:** Well-boats are used to transport both smolt from the hatchery to the on-growing farms and fully grown live salmon from farms to the slaughterhouse. All salmon are slaughtered in specialised fish-processing plants. They are anaesthetised before they are slaughtered and are then immediately cleaned, sorted, chilled and processed for further transport. Some fish

are smoked or turned into fillets or “table-ready” products, but most are sold as cleaned whole salmon.

**Transport:** Around every 20 minutes, every day of the year, a trailer fully loaded with salmon crosses the Norwegian border on its way to the market. In addition, salmon is also exported on board its own salmon aircraft. Several companies are now also evaluating the use of sea transport to carry salmon from processing plants to market.



### ROE PRODUCTION

Lerøy Seafood Group has capacity to produce 130 million fertilised eggs per year. In 2016, the Group's production volume was 102 million fertilised eggs and the Group imported 12.5 million fertilised eggs.

The majority of the Group's production activities are certified according to GLOBALG.A.P., and roe production is subject to particularly stringent requirements for fish health and the environment. Roe production involves taking parent fish ashore in May prior to stripping. Production of roe takes place mainly from October to December. Roe is delivered from the breeding facilities to the young fish facilities during the hatched larvae stage.

The development of hatched larvae takes place at defined temperatures, allowing for flexible delivery times within certain limits. This allows the Group to adapt production, allowing for optimal utilisation of capacity in the young fish facilities.



### SMOLT PRODUCTION

Lerøy Seafood Group can produce 51 million smolt per year in its subsidiaries. In 2016, the amount of smolt produced was between 40 and 45 million. Smolt production takes place in an onshore facility in fresh water, where hatched larvae are delivered from producer to individual young fish facilities. The roe hatch and the fry receive start feed in the young fish facilities. The first smolt are delivered from the young fish facilities to the production facilities 8 to 12 months after hatching. Lerøy Seafood Group has regionalised its production of smolt in order to ensure optimal adaptation of smolt quality.

Lerøy Seafood Group is mainly self-sufficient with smolt from its own young fish facilities. Selection of the smolt produced by Lerøy is based on traditional breeding methods, which are very similar to traditional breeding methods for livestock and poultry. The breeding programme for salmon is family-based, using a systematic measurement of the 22 different properties of Atlantic salmon. By measuring and keeping control of these properties, there is a good basis for selection for maximum genetic progress and minimal degree of inbreeding. New selection methods based on genetic markers have also been implemented in recent years.



### FISH FARMING

Production of salmon takes place in carefully selected locations in the sea. An optimum environment must have good flow of water and the correct temperature range, topography, oxygen content and exposure. Once the location has been approved by fishery, environmental and coastal authorities, the cages (nets and floating devices) are installed at the location so that the fish will have the best possible environment. All parts of the production equipment are certified in accordance with a specified Norwegian standard: NS 9415 for floating fish farming installations.

Once the smolt have been carefully assessed to determine whether they are ready for sea water, they are released to sea. Production in these facilities takes from 12 to 20 months, depending on temperature, genetic potential, and the quality of the farming and care of the fish during this period. Production is monitored in the individual cages, where cameras and sensors ensure optimal feed and control to ensure optimal growth, fish health and welfare, and to prevent discharges to the environment.



### PRODUCTION

Production at Lerøy is defined as slaughtering and processing. These processes take place in modern factories designed for the production of food and approved by the proper authorities. The fish are anaesthetised and put to death in accordance with set rules to avoid unnecessary suffering and to ensure high product quality. Lerøy Seafood Group has six facilities in Norway involved in slaughtering, packing and processing of salmon and trout. In addition, the Group has two plants that produce sushi and whitefish. Abroad, the Group has 15 plants that produce various seafood products with salmon products being the main focus. All of the facilities meet prevailing requirements regarding discharges to the external environment.

# SUPPLIERS

The Group has developed a set of ethical guidelines that is included in our purchase agreements. Our Code of Conduct protects the individual employee`s rights. The guidelines are based on UN guidelines for human rights. The contents of the ethical guidelines are communicated also to subcontractors. In 2016, our purchase of goods and services amounted to NOK 11 billion, divided among 283 Norwegian municipalities.

The Group's main suppliers are suppliers of equipment and fish feed.

## REQUIREMENTS FOR SUPPLIERS

In 2016, Lerøy Seafood Group purchased feed from Biomar, EWOS and Skretting. The main target is to ensure that the raw materials used in the Group's feed are both fished or harvested in an ethically sound manner and in compliance with legal frameworks and based on sustainable harvest or fishing. The Group cooperates with feed suppliers in the work required to meet this target.

The Group has established requirements for its suppliers of fish feed to make sure that raw materials are managed in a satisfactory manner. Moreover, the Group will require its suppliers to monitor closely how quotas are established and respected, and how the catch is utilised. Lerøy Seafood Group requires the raw materials in its fish feed to come from areas regulated by national quotas for the respective species, and where the quotas are allocated as far as possible in conformance with accepted scientific recommendations, such as ICES, FAO, IMARPE and SERNAPESCA\*.

The Group requires all of its feed suppliers to prioritise use of raw materials certified in accordance with IFFO's standard for sustainability, or raw materials with MSC certification or similar. The supplier's certification scheme should be a member of ISEAL and have guidelines for sustainability requirements, including for small pelagic fisheries. Palm oil should not be used. Raw materials based on soya require "Roundtable on Responsible Soy" (RTRS), certification or similar.

MSC - Marine Stewardship Council – a standard for sustainability for fish caught in the wild  
 ICES - International Council for the Exploration of the Sea – an organisation for enhanced ocean sustainability  
 FAO - Food and Agriculture Organization of the United Nations  
 IMARPE – Instituto del Mar del Perú  
 SERNAPESCA – Servicio Nacional de Pesca y Acuicultura (Chile)  
 IFFO – The Marine Ingredients Organisation  
 ISEAL - International Social and Environmental Accreditation and Labelling Alliance  
 RTRS - Roundtable on Responsible Soy



# THE PRODUCTS





Trout - a stunning colour and delightful texture

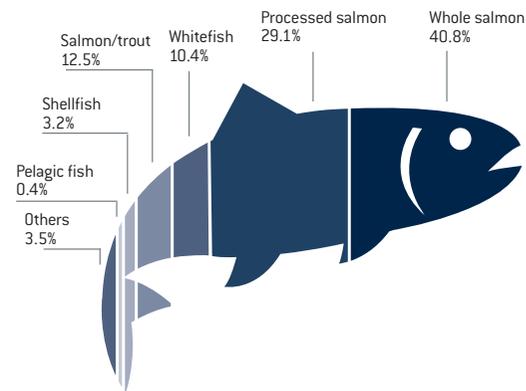
## THE PRODUCTS

The Group divides its products into four main areas: salmon products, whitefish, pelagic fish and shellfish. The distinction between farmed species and wild fish is significant and requires different logistics and working methods. These products are distributed on the Norwegian market and more than 70 other markets worldwide.

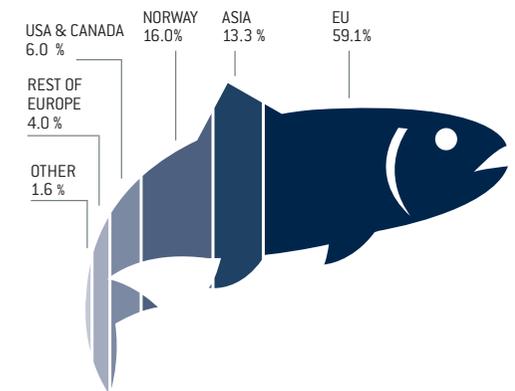
The Group's strategy is to meet the market's ever-increasing demands for food safety, quality, product range, cost efficiency and continuity of supply. This is achieved by coordinating the various elements in the value chain: the production units, the Group's sales network and established strategic alliances with sea farms, fishing vessels and fish processing plants primarily along the coast of Norway.

The Lerøy Seafood Group has a large proportion of fresh fish products in its product range. At present the share of fresh fish products is more than 80%. After Atlantic salmon and trout, whitefish is the largest product area. In recent years, this product area has developed favourably through cooperation with a number of small and medium-sized companies. Lerøy Seafood Group is also a supplier of shellfish and fresh pelagic fish to Norwegian and European markets. The sale of shellfish and fresh pelagic fish represents a small but interesting niche product area.

### PRODUCT AREAS YTD 2016



### GEOGRAPHIC MARKET YTD 2016

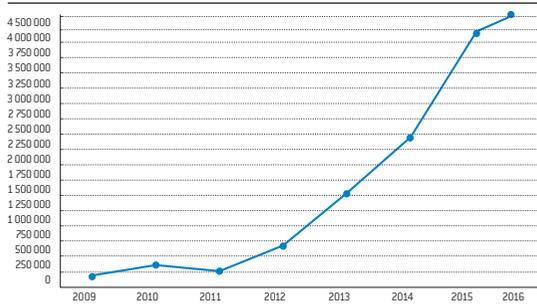


**LERØY IN SWEDEN:**

Lerøy Smøgen Seafood AB in Sweden is one of the Group's largest processing facilities. The facility is one of the largest in Europe for processing salmon, and has a complete, certified environmental control system in compliance with ISO 14001. In addition, the Group has three wholesale companies located in Sweden: one in Stockholm, one in Gothenburg and one in Lomma. In total, the Swedish companies increased their sales of eco-labelled products by 17% from 2015 to 2016. The share of eco-labelled products in 2016 comprised

approx. 32,3% of the total volume of products sold, compared with 27,6% in 2015. Swedish consumers are among those consumers most interested in eco-labelled products in Europe.

**MSC- AND KRAV-LABELLED PRODUCTS SOLD IN SWEDEN 2011 – 2016 (KG)**



Lerøy Seafood Group is the largest producer of sushi in Norway, and has now expanded this segment with successful launches on new retail markets, including Finland and Spain. The Group has sustained its positive trend within product development in 2016, with the launch of a number of innovative products and new product types, mainly within freshly packaged fish.

The Group also continues to develop its “fish-cut” concept in many parts of Europe. The processing units follow a target-driven and efficient strategy, focusing on freshness, high level of service and proximity to end customer. Furthermore, the Group has sustained its positive trend within the development and launch of new products, principally within freshly packaged fish, and is seeing an increase in demand.

### “TIL LÅNS” (ON LOAN)

“Til Låns” is a project in which Lerøy Seafood Group is cooperating with waste and recycling company Norsk Gjenvinning to ensure that the packaging for products packed in aluminium trays is returned to circulation after use. Such packaging is thus only “on loan”. Waste is a resource that is not properly utilised, and we aim to do something about this. An extra label will be attached to these products telling the user what to do with the packaging after use. This informative label is meant as a careful nudge in the right direction and is therefore only the first step on the road to ensuring correct handling of packaging. This is an exciting project, heading in the right direction. We also focus on using the correct packaging and the correct size of products in order to avoid waste.



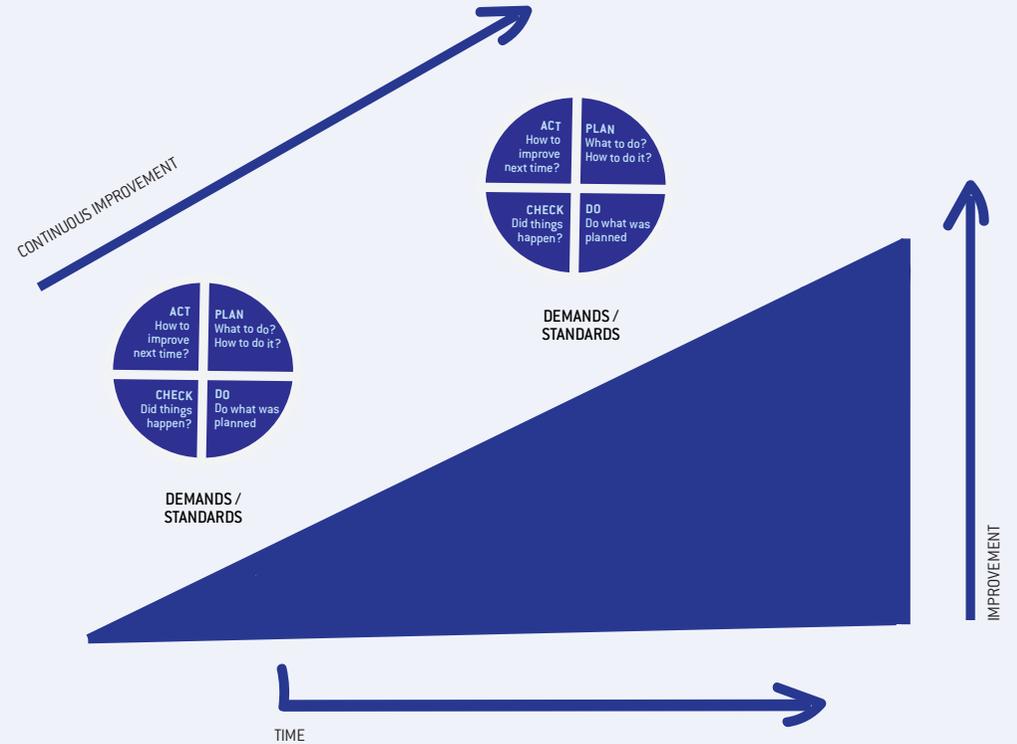
**FOOD SAFETY**

Lerøy Seafood Group is actively involved in all parts of the value chain in order to ensure supply of safe products to the consumer. Based on experience gained over many years, we have developed a quality system comprising routines and procedures to ensure supply of safe products. As a part of our quality assurance routines, we carry out control and monitoring of our manufacturers and partners. This involves specifying requirements for their quality systems and routines, and carrying out analyses and monitoring operations. Our quality team carries out from 250 to 300 quality audits every year. Moreover, the products are controlled by Lerøy Seafood Group at different stages throughout the production process: from egg/boat/purchasing station to finished product in a box and, in certain cases, up to delivery to the customer.

The target for Lerøy Seafood Group is to ensure, together with the Group’s feed suppliers, that the raw materials used in the Group’s feed are fished and harvested in an ethically sound manner and in compliance with legal frameworks, and based on sustainable harvest and fishing. In addition, the Group is actively involved in all parts of the value chain in order to ensure supply of safe products to the consumer.

The aquaculture industry is strictly regulated by the Norwegian authorities, which frequently visit our plants to ensure that they operate in accordance with applicable laws and regulations. Lerøy Seafood Group is continuously working to satisfy all the demands of our stakeholders. Lerøy Seafood Group currently has a large number of manufacturers of fish and shellfish. Our audit system includes a risk analysis of manufacturers in order to determine how often the individual manufacturer is to be audited. The analysis covers risk related to product, volume purchased, customer requirements, history of complaints and results of audits.

**QUALITY MANAGEMENT**





### QUALITY IN THE SUPPLY CHAIN

Fish feed is the most important raw material for seafood production, and quality assurance is absolutely essential. In 2015, Lerøy Seafood Group purchased its fish feed from EWOS and Skretting. Lerøy Seafood Group has close gap sampling program for re-examination of feed in terms of chemical content, dust, presence of foreign substances etc. The feed supplier carries out audits of its own suppliers, and Lerøy Seafood Group executes annual audits of the feed companies. These measures, combined with the internal control by feed suppliers and traceability, allow us to maintain control of feed content and quality.

### QUALITY AND ENVIRONMENTAL CERTIFICATION

An important tool in the Group's quality and environmental efforts is certification according to international standards. In 2013, Lerøy Seafood Group was the first company worldwide to be certified according to the ASC standard, which ensures that our aquaculture business is conducted in an environmentally sound and sustainable manner.

The Group has worked for many years to ensure high quality and has developed control systems based on GLOBALG.A.P., MSC, ASC, ISO 9000; 14000 and 22000, BRC, IFS, Label Rouge, NS 9415 and HACCP. These standards are applied where appropriate, for example:

- Fish farming is covered by GLOBALG.A.P. and ASC certificates
- All the Group's production plants have BRC certification
- The sales department at the Bergen headquarters is certified in accordance with ISO 9001, and the "chain of custody" for ASC, MSC and GLOBALG.A.P.
- All fish farming production equipment is certified in accordance with the NS 9415 standard for floating fish farming installations.

**GLOBALG.A.P.** (Good Agricultural Practice) – Voluntary standard for the certification of agricultural products

**MSC** (Marine Stewardship Council) – Standard for sustainability for fish caught in the wild

**ASC** (Aqua Stewardship Council) – Standard for sustainability for farmed fish

**ISO 9000** – Standard for quality management system

**ISO 14000** – Standard for environmental management system

**ISO 22000** – Standard for food safety

**BRC** (British Retail Consortium) – Quality standard with focus on food safety

**IFS** (International Featured Standard) – Quality and food safety standards

**Label Rouge** – Quality assurance in France

**NS 9415** – Norwegian standard for floating fish farming installations

**HACCP** (Hazard Analytical Critical Control Point) – Risk analysis principles

# GLOBALG.A.P.



## GLOBALG.A.P. (GOOD AGRICULTURAL PRACTICE)

Global GAP is a standard for environmental conditions involving the Group's production activities and employees' working environment. The standard covers the production process from roe stage to fish slaughter.

Focus areas within GLOBALG.A.P.:

- **Food Safety:** The standard is based on criteria for food safety developed from the generic HACCP\* principles.
- **Environment:** The standard has two parts, one for environmental protection and one for good aquaculture practice to minimise the negative environmental impact of aquaculture.
- **Employees' health, safety and welfare:** The standard sets global criteria for workers' health and safety in the production facilities, and contains guidelines for social issues.
- **Fish welfare:** The standard sets forth global criteria for fish welfare in production facilities.

\*HACCP (Hazard Analytical Critical Control Point)  
– Risk analysis containing critical control points

## ASC (AQUA STEWARDSHIP COUNCIL)

The ASC is a certification and labelling programme for responsibly farmed seafood. The ASC has various standards compiled for fish farming, while the MSC (Marine Stewardship Council) compiles standards for fish caught in the wild. To date, the ASC has compiled eight standards, covering 12 species, all based on the same principles:

- Comprehensive legal compliance
- Conservation of natural habitat and biodiversity
- Conservation of water resources
- Conservation of species diversity and wild population through prevention of escapes
- Use of feed and other inputs that are sourced responsibly
- Good animal health (no unnecessary use of antibiotics and chemicals)
- Social responsibility for workers and communities impacted by farming

## FIRST ASC CERTIFICATION

Lerøy Seafood Group has been involved in the development of the ASC standard since 2004 and was the very first company in the world to offer the market salmon produced according to the new environmental standard – ASC, Aquaculture Stewardship Council.

The three first facilities in the world to gain certification according to this standard are all connected to Lerøy.

- No. 1 Jarfjord - Villa Organic
- No. 2 Hogsneset Nord - Lerøy Midt
- No. 3 Årøya - Lerøy Aurora

The goal is to gain ASC certification for all our fish farming facilities. By the end of 2014, all fish sold by Lerøy Aurora had ASC certification.

Furthermore, Lerøy has achieved ASC "chain of custody" for its sales, distribution and value-added processing chain, and is now able to offer the Japanese, American and European markets a variety of ASC-certified salmon products.

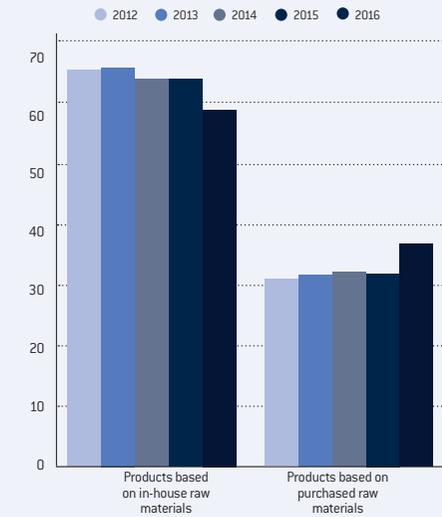
**BRAND PRODUCTS**

In recent years, Lerøy Seafood Group has targeted the sale of its own brand products under the Lerøy brand. The Group also produces products under other brands such as: Aurora Salmon, Norway Seafoods Poseidon, Smögen Seafood, Fossen, Finest, Aurora Seafood, Catch and Fossen Fjord Fish.

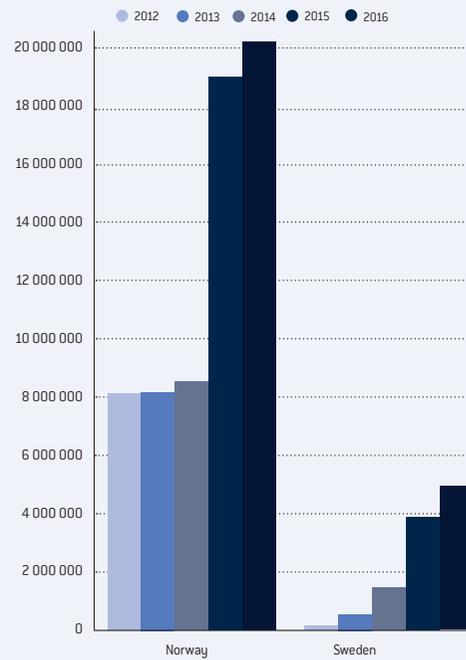
In 2016, the percentage of products based on raw materials owned by the Group was 62.5%, compared with 65,5% in 2015.

The Group also sells a number of products certified to various sustainability standards, such as ASC, MSC, GLOBALG.A.P. and Debio/KRAV. The volume of certified fish sold is higher than the volume labelled with a certification label. This is because the current production volume exceeds market demand for these products. However, there has been a significant increase in demand for certified products from 2015 to 2016, and in particular for

**SALE OF PRODUCTS BASED ON IN-HOUSE RAW MATERIALS (%)**

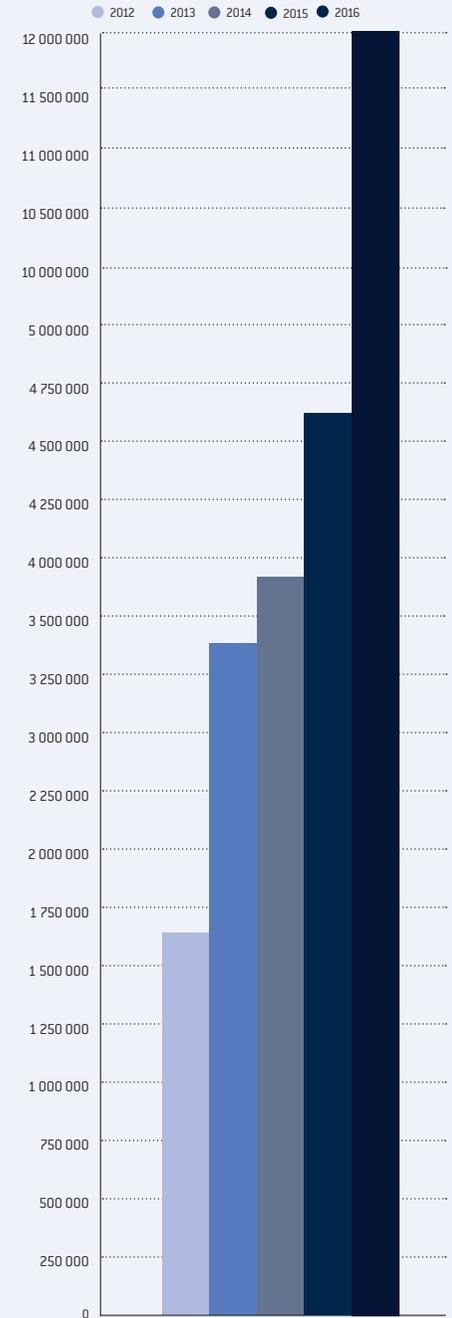


**ASC/MSC/KRAV-LABELLED PRODUCTS SOLD VIA HALLVARD LERØY AS AND LERØY SVERIGE AB (KG)**



The products sold from Norway have MSC certificates, but they are not labelled as MSC or sold as MSC products.

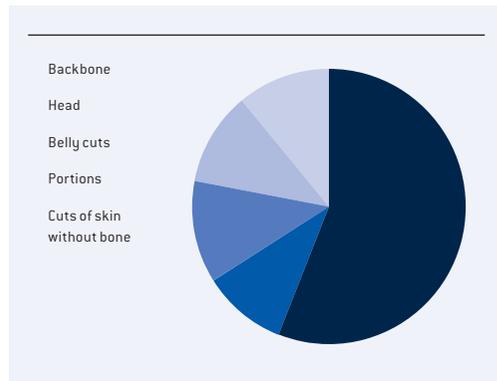
**SALE OF GLOBALG.A.P.-CERTIFIED SALMON VIA HALLVARD LERØY AS (KG)**



Salmon is certified to the GLOBALG.A.P. standard, but will not always have the GLOBALG.A.P. brand.

**BY-PRODUCTS**

The major by-products in Lerøy Seafood Group's operations are:



Lerøy Seafood Group works hard to achieve the highest possible rate of utilisation of raw materials produced or caught. This implies a goal of 100% utilisation of all nutritious raw material not used in the main production process. The by-product share depends on the type and specification of the processed products. The most important processed products are fillets and salmon and trout portions with or without skin. The utilisation rate for fillets is 55 – 74%, while the residual products become by-products. For portions, the utilisation rate is 45 – 68% depending on the specification.

## AN IMPORTANT SOURCE OF PROTEIN FOR FUTURE GENERATIONS

### - THE WORLD WILL NEED MORE FOOD IN THE FUTURE

The UN Food and Agriculture Organization (FAO) has estimated that the world's population will increase to approx. 9 billion people by the year 2050. Population growth of approx. 30% will require increased food production of approx. 30%, based on current food production volumes. The FAO has estimated that the increased demand for seafood will total 40 million tonnes by 2030.

Only 30% of the earth's surface is land, with 70% covered by sea. Today, less than 5% of the protein consumed worldwide originates from the sea. There is no doubt that we will need some source of protein in the future, making the potential for increased production of food from the sea particularly relevant.

Seafood is highly advantageous in terms of sustainability, for several reasons:

- Production at sea does not require a lot of space, as production is three-dimensional.
- Salmon is a poikilothermic animal, which means that it adapts to sea temperatures and does not require an energy supply, for example to heat up housing for animals on land.
- Most species of seafood require relatively low volumes of fresh water.
- The volume of feed required by most species to grow 1 kg is low.

- Most species provide a high yield, i.e. a high percentage of the fish can be utilised, principally align.
- Fish have a small carbon footprint when compared with other types of protein.

Foods rich in protein include meat, eggs, milk and seafood.

## AN IMPORTANT CONTRIBUTION TO PUBLIC HEALTH – ACTION PLAN FOR A HEALTHIER DIET

On 6 December 2016, a letter of intent was signed between the food industry and the health authorities in Norway to facilitate a healthier diet. Signatories included Bent Høie, the Minister of Health and Care Services, and the trade associations NHO Mat og drikke [FoodDrinkNorway], NHO Handel, Virke Dagligvare, Coop Norge SA, Sjømat Norge and Norges Frukt- og Grønnsaksgrossisters Forbund [the Norwegian association of fruit and vegetable wholesalers]. Numerous companies have also committed to the targets in the letter of intent by signing an endorsement agreement – including Lerøy Seafood Group, to date the only seafood company to do so. Other companies that have signed the endorsement agreement are: BAMA, Grilstad, Kolonial.no, Mills, Rema 1000, Nestlé, Norgesgruppen, Norgesmøllene, Nortura, Orkla, TINE, Marked.no, Germann Vervik Eftf., Meum Frukt & Grønt and T.L. Måkestad.

The agreement obliges the parties to work towards the following shared targets:

1. The average intake of added sugar shall be reduced by minimum 12.5% per person by 2021. This implies a reduction to an energy content of close to 11% by 2021. In 2013, sugar intake represented an energy content of 13%.
2. The average intake of saturated fats shall be reduced to an energy content of 13% by 2018. In 2015, saturated fat intake represented an energy content of 14%.
3. The average intake of salt shall be reduced to 8 grams per person per day by 2021. In 2010, salt intake

was 10 grams per person.

4. The intake of healthy foods such as fruit, vegetables and fish shall be increased.

Lerøy Seafood Group will focus on items 3 and 4 in the future. We take public health very seriously and we aim to help improve the health of consumers with our products. Recent consumer surveys have indicated a reduction in the consumption of seafood among children and young people.

Lerøy Seafood Group aims to assume more responsibility for the diet and nutrition of this group of people. A focus on diet and exercise is therefore common to all our cooperative projects involving culture and sports.

While children in developing countries continue to struggle with malnourishment, an increasing number of children and young people in the more prosperous countries are overweight. Lerøy Seafood Group has entered into a cooperation with Leger Uten Grenser [the Norwegian branch of Médecins Sans Frontières] that focuses on correct nutrition.

The wrong diet can cause various types of illness. The lifestyle diseases now emerging in large parts of the world can be prevented by ensuring a correct diet. All dietary experts recommend that we eat more seafood and less red meat. We are in a unique position to contribute in this area. We therefore take an active role with our partners to encourage people to eat seafood, and to increase knowledge of and access to seafood in different arenas.

Seafood is good for you! Oily fish has a high Omega-3 content and a low Omega-6 content. We tend to focus on Omega-3 in our diets and forget Omega-6. The World Health Organization (WHO) is concerned about the high consumption of Omega-6 in our diets, and recommends that we all reduce the amount of Omega-6 we eat. Seafood often has a high content



of Vitamins A, E and D and is rich in the minerals zinc and iodine. Cod is a particularly good source of iodine. The health authorities recommend that we eat more fish and reduce our consumption of red meat. An increase in the consumption of seafood will improve public health. It has been documented that salmon has a positive effect on cardiovascular diseases, and several trials have shown a positive impact on other lifestyle diseases such as dementia, diabetes, depression etc.

In addition to all the important factors above, the fish farming industry and fisheries generate significant income for Norway, create jobs and improved infrastructure for local communities, and lay the foundations for a major supplier industry in various parts of Norway.



### LIFESTYLE RELATED DISEASES ARE EXPECTED TO REPRESENT A GLOBAL CHALLENGE FOR THE FUTURE

THE WHO HAS ESTIMATED THAT:

- 80% of all heart attacks
- 90% of people with type 2 diabetes
- 30% of cancer cases

CARDIOVASCULAR DISEASES

- Overweight
- Diabetes
- Osteoporosis

CAN BE PREVENTED BY:

- Better diet
- Physical activity
- Not smoking

1999:

- 60% of all deaths
- 43% of all illnesses

2025:

- 73% of all deaths
- 60% of all illnesses

# TRACEABILITY AND PREPAREDNESS

## TRACEABILITY - OPENNESS

Lerøy Seafood Group has full traceability for all products. For species related to fish farming, such as salmon and trout, the customer can go to Lerøy Seafood Group's website, [www.leroyseafood.com](http://www.leroyseafood.com), to download traceability information for products sold via Lerøy Seafood AS. One example of this is the Gladlaks concept, where the consumer can go to Gladlaks.no online and download information specific to the product purchased by entering the traceability code on the product packaging.

The current traceability system follows a fish from roe stage to finished, packaged product. When customers log on to the system, they receive detailed information on the product throughout the entire value chain. The system provides information on fish from parent fish stage to slaughter, such as location, treatments and also quality information such as fat, colour and condition.

These tests involve contacting the manufacturer about a fictional matter, tracing the products from production and identifying which customers have received the product. A risk assessment is always carried out to determine whether the product should be recalled and which bodies are to be notified.

## PREPAREDNESS

### Recall

Lerøy Seafood Group has full traceability for all products from egg/boat/trawler/purchasing station to customer. Every year, recall tests are carried out in relation to our major manufacturers. *In 2016, Hallvard Lerøy AS carried out seven recall tests.*

### Preparedness group

The preparedness group is made up of:

- the CEO
- the Head of Quality and CSR
- the EVP Farming
- the Technical Director, feed/R&D
- the EVP Fisheries
- the EVP Whitefish

The core of the preparedness group comprises the CEO and the Head of Quality and CSR. The other members are invited to meetings depending on the items to be discussed – farming, fisheries or the whitefish industry. The preparedness group has primary responsibility, both internally and externally, for communications and handling of any relevant challenges/crises. Preparedness plans are also prepared locally.

The typical procedure for recall of products consists of the following phases:

1. Written explanation of nonconformity
2. Classification:
  - Class I: Need for information
  - Class II: Other faults/nonconformities in the product
  - Class III: Products representing a health risk
3. Notify manufacturer and management /preparedness team
4. Tracking product, verify nonconformity
5. Notify customers
6. Written explanation of what is to be withdrawn
7. Inventory / Destruction
8. Corrective action to prevent recurrence

Lerøy Seafood Group has compiled a directive for preparedness and recall of products. The preparedness group comprises representatives from management, production, market, quality and environment.

**The Group did not have any recalls of product recalls in 2016.**



Lot: 132155

Species: Norwegian Atlantic Salmon

## Trace Information

### Broodstock

Broodstock:	Aahvik
License:	12899
Strain:	AquaGen

### Juvenile

Hatchery:	Laksefjord	Smolt Plant:	Laksefjord
License:	FLB0003	License:	FLB0003
Hatching Period:	- 2011-08-01	Wellboat:	
Smolt Weight:	81 g		

### Farm

Fish Farm:	1112 Gourtesjohka	Last Day of Feeding:	2013-02-04
Farm License:		Temp. Last Day of Feeding:	2,5 C
Location License:	10734	Date of Sea Transfer:	2011-07-30
Name of Fjord:	Kålfjord, Lyngen	Wellboat:	
Cage Density:	3 kg/m3	Duration of Transport:	0 hours
Cage Number:	1208		

### Packing Station

Packing Station:	Lerøy Aurora AS T126	Packing Date:	2013-02-15
License:	T-126	Core Temperature:	2,0 C

### Processing

Processing Plant:	Lerøy Aurora As Skjervøy
License:	T-126
Processing Date:	2013-02-15

Lot: 132155 Specie: Norwegian Atlantic Salmon

Feed			Treatment		
Supplier	Type	First Day	Type	Name	Period
<b>Juvenile</b>					
Skretting	Nutra XP 0,5, 0,5 mm	2011-01-14	Vaccination	Alpha Ject Micro 6	2011-06-23 - 2011-06-24
Skretting	Nutra XP 0,7, 0,7 mm	2011-01-21	Vaccination	Autogen ERM	2011-03-15 - 2011-03-16
Skretting	NUTRA XP 1,0, 1 mm	2011-02-23			
Skretting	Nutra Olympic 1,2, 1,2 mm	2011-03-18			
Skretting	Nutra Olympic 1,5, 1,5 mm	2011-04-13			
Skretting	Protec 1.5 , 1,5 mm	2011-04-15			
Skretting	Nutra Olympic 2,0, 2 mm	2011-05-12			
Skretting	Protec 2, 2 mm	2011-06-02			
Skretting	Nutra Supreme 2, 2 mm	2011-06-25			
Skretting	OXOLINSYRE 5G/KG 2.0, 2 mm	2011-07-06			
<b>Farm</b>					
Skretting	Spirit 75 50A, 3 mm	2011-07-31			
Ewos	ADAPT MARINE 50 40A 500, 3 mm	2011-09-04			
Ewos	Opal 200 40A, 4 mm	2011-10-09			
Ewos	Opal 110-500 50A, 6 mm	2011-11-25			
Ewos	Robust-110 50A 500, 7 mm	2011-12-11			
Ewos	Opal 500 50A, 6 mm	2012-01-05			
Ewos	Opal 110 1000 50A, 9 mm	2012-02-23			
Ewos	OPAL-110 Ice 500 50A 500, 8 mm	2012-02-27			
Ewos	OPAL-110 Ice 1000+ 50 A 500, 9 mm	2012-03-12			
Ewos	Opal-110 2500 30A 500, 9 mm	2012-04-02			
Ewos	Opal 120 1000 50A, 9 mm	2012-06-07			
Ewos	Opal-110 1000 50A, 9 mm	2012-08-30			
Ewos	Opal 120 2500 50A, 12 mm	2012-09-16			
Ewos	Opal-120 2500 30A 500, 9 mm	2012-10-29			
Ewos	ROBUST-120 1000+ 30A , 9 mm	2012-11-14			
Ewos	Opal-120 ICE 1000 50A 500, 9 mm	2012-12-19			
Ewos	Opal-120 1000 20A , 9 mm	2013-01-03			

Lot: 132155 Specie: Norwegian Atlantic Salmon

Quality	
Sampling Date:	2013-02-15
Fat Content:	20,0%
Colour	Salmofan: 28,0
	Mg/kg: 9,0
Condition Factor:	

# RESEARCH, DEVELOPMENT AND INNOVATION

Lerøy continuously carries out a number of major and minor R&D projects focusing on improved operating procedures, improved fish health, and improved survival rates and production optimisation. These are important projects that have a direct impact on daily production, and rapidly generate results and improvements. Developments in technology and methods based on interaction between technology and biology are key factors behind optimal operations.

## THE GROUP'S RD&I EFFORTS IN 2016 HAVE FOCUSED ON SIX MAIN SUBJECTS:

1. Salmon lice
2. Feed/Feed utilisation/Feed strategies
3. Fish health
4. Technology
5. IMTA
6. Human health

Lerøy also plays an active part in a number of external and internal R&D programmes and projects. We would like to mention some of them here:

### SALMON LICE

- **CtrlAQUA**, focusing on production in closed-containment systems – either RAS systems on shore or closed-containment/semi-closed-containment, floating systems at sea. Thanks to the focus on and efforts to develop this type of system in recent years, a major need for knowledge relating to fish biology and welfare has been uncovered in order to ensure optimal sustainability and rational production. CtrlAQUA has a timeline of 5 + 3 years and a total budget of NOK 160 million. The Research Council of Norway contributes 50% of this sum, while the remaining financing is provided by the fish farming industry. Lerøy makes use of the knowledge gained from CtrlAQUA in both the production of juvenile fish on shore in RAS plants and for the development of closed-containment, floating facilities at sea.

- **Sea Lice Research Centre:** Lerøy participates in the Sea Lice Research Centre, a research programme focusing on salmon lice. The centre has contributed a large amount of fundamental knowledge on the biology of the salmon lice, knowledge now being used in the development of vaccines and functional feed, and in the work on salmon breeding.



A major part of the current salmon lice strategy focuses on treating the fish once it is infested. There is now an increasing trend towards preventing the lice from attaching to the salmon. Fundamental biological knowledge is required to achieve this aim. In addition to this major salmon lice project, Lerøy plays an active role in several smaller projects all aiming to produce new methods for the prevention and non-medicinal treatment of salmon lice.

- The use of **cleaner fish** is one of our most important tools for ensuring low levels of salmon lice at our plants. Cleaner fish are Mother Nature's own way of removing salmon lice on fish. Lerøy has therefore decided to build up substantial capacity for own production of cleaner fish, and has made major investments in recent years to achieve self-sufficient supply. To date, production has mainly involved lumpfish. The total number of lumpfish released by Lerøy in 2016 was approximately 6 million. The Group also makes use of vast numbers of wrasse caught in the wild and purchased from local fishermen.

In 2013, the Group decided to become a significant producer of cleaner fish. Throughout 2016, Lerøy Seafood Group has taken a leading role in investments in cleaner fish for fish farming. The acquisition of 100% of the shares in Senja Akvakultursenter AS and 51% of the shares in Norsk Oppdrettsservice AS, in addition to the start-up of lumpfish production in a number of facilities, will – according to plans – give the Group a self-sufficient supply of cleaner fish in 2016.

Over time, the Group has invested in capacity to deliver quality smolt throughout the year, made adaptations to production at sea, but also taken measures to satisfy the market demand for a year-round supply of salmon and trout. One central element in this process is the Group's investments in smolt facilities that make use of recycling

technology. In 2016 Lerøy Sjøtroll opened a new part of Bjørsvik smolt plant built with RAS technology. Lerøy Aurora also had a new opening of their smolt-plant in Finmark. This represented a further boost to the Group's smolt capacity.

- Having documented positive results with the use of **lumpfish** as a lice eater, Lerøy Seafood Group has decided to invest heavily in our own production of lumpfish. The production and utilisation of lumpfish as cleaner fish in our facilities makes us less reliant on cleaner fish caught in the wild. At the same time, we will be able to achieve optimal density and release time for cleaner fish in our cages, depending on problems with lice in individual locations.

In 2014, Lerøy Seafood Group acquired 34% of the shares in lumpfish producer Norsk Oppdrettsservice AS, with facilities in Flekkefjord and Molde. This allows us to provide a satisfactory supply of lumpfish to our regions in South and Central Norway. Lerøy Seafood Group also has ownership rights in production facilities for lumpfish in North Norway. As a result, we can also achieve a self-sufficient supply of lumpfish for our localities in North Norway if necessary. To date, salmon lice have not been problematic at our facilities in North Norway.

Our goal is to be self-sufficient in the supply of lumpfish by the end of 2015. Our lumpfish strategy shall ensure a substantial reduction in our use of medicinal treatment in 2015, and close to zero use in all our fish farms in 2016.

The use of wrasse is an important element in Lerøy Seafood Group's strategy to fight salmon lice. To date, we have purchased wild wrasse from professional fishermen, but Lerøy Seafood Group has taken part in two different projects involving the farming of wrasse. These projects have now allowed us to establish farming of wrasse. Experience indicates that wild wrasse are very

vulnerable in terms of handling and injury.

A programme of close follow-up has therefore been established in order to prevent local overfishing and to ensure the gentlest possible handling of the fish.

To date, the successful, and Lerøy Seafood Group aims to extend its utilisation of this method. In order to ensure a regular and predictable supply and correct fishing of the natural stocks, Lerøy Seafood Group is taking part in the project financed by the Norwegian Seafood Research Fund for wrasse production (with a total budget of NOK 33.1 million). This allows us to ensure that our R&D activities in this area target our industry, while acquiring new expertise as it emerges.





## FEED

• Feed is the largest individual input factor for Lerøy Seafood Group and we place a significant focus on optimal and cost-efficient utilisation of feed. Lerøy Seafood Group works closely with our feed suppliers to influence the further development of feed composition in order to ensure that it is as highly adapted as possible to our fish farming environment, our fish material and our various markets. We have established ultra-modern R&D facilities where we carry out feed trials, maintaining full control of feeding and the volume of feed eaten per vessel. Several trials were performed in 2015 involving the use of new raw materials in the feed and benchmarking of existing feed concepts. Moreover,

Lerøy has maintained a major focus in 2016 on feeding regimes, and has accumulated and incorporated "best practice" throughout the organisation. Lerøy Seafood Group has an extra focus on the quality of the end product supplied to the end customer. Throughout the year, the Group has invested significant resources in the concept of sustainability and in certification schemes for individual raw materials. Salmon from Lerøy shall have a high level of Omega-3 fatty acids, and we currently produce some of the most Omega-3-rich salmon on the market. This may present a challenge in terms of sustainable exploitation of the available resources rich in Omega-3, but we have an extensive programme that targets making salmon a net producer of marine Omega-3 fatty

acids, in the same way that salmon is currently a major net producer of marine protein.

• We are constantly seeking new and sustainable raw materials for use in our fish feed. In 2016, we introduced several new raw materials to increase the sustainability of our feed. **Camelina oil** is an oil extracted from the Camelina plant. This plant is well known for its ability to grow in infertile soil, with only low levels of water and fertiliser. The oil from this plant is particularly rich in Omega-3 fatty acids and has an extra-low content of Omega-6 fatty acids. We aim to minimise the amount of Omega-6 fatty acids in our salmon and the fish we eat, as our diet contains more Omega-6 than recommended.

- For several years, Lerøy Seafood Group has had a level of Omega-3 fatty acids in its feed, and therefore also in its fish, that is higher than the market standard. These Omega-3 fatty acids have originated from fish oil, the most common commercially available source of Omega-3 in the world to date.

**Microalgae** also produce Omega-3 fatty acids, and microalgae meal is a good source of the essential Omega-3 fatty acids. A number of bodies have worked with microalgae to trigger production of Omega-3 fatty acids. The challenge has been to achieve sufficiently efficient cultivation in large cultures, so that they can provide a genuine alternative to fish oil.

Lerøy Seafood Group has worked with fish feed containing various microalgae since the end of 2014. The fish have to enjoy the taste, the microalgae must be digestible and the raw material must be reasonably priced.

Microalgae can be produced in two ways, depending on the source of energy they use.

One main group of microalgae use sunlight as a source of energy and, when combined with CO<sub>2</sub> the algae grow and produce protein and marine fatty acids. Lerøy Seafood Group is part of CO<sub>2</sub>Bio, which has opened a national pilot centre for microalgae cultivation in Mongstad. The employees at the centre are working on developing commercial production of these microalgae. To date, neither CO<sub>2</sub>Bio nor others have succeeded in developing cost-efficient production of marine fatty acids using this method – but the work on identifying optimal production conditions has only just begun.

The second main group of microalgae live in the dark, in large tanks, and use sugar as a source of energy. Developments with this group are further along, and several parties are now producing commercially, although the prices vary significantly.

Together with the feed company BioMar, Lerøy Seafood Group has chosen a producer located in south Brazil. This is an American company primarily involved in cultivating sugar cane in Brazil. When evaluating the different suppliers, we apply several criteria:

- Primarily, the algae must not be a genetically modified (GM) organism, i.e. it cannot have been modified with genes enabling it to produce extra Omega-3.
- Secondly, production must have a minimal carbon footprint. The algae are cultivated in a “soup”. When production is complete, the residual products are dried to form a powder.

What energy source is used for the drying process? Many suppliers use gas or oil, leaving a significant footprint. “Our” Brazilian producer uses residual waste from sugar production (straws or sugar canes) as fuel to produce vapour used in the drying process. This ensures a minimal footprint.

In summary, the Omega-3 source from algae used by Lerøy is produced using one of the most sustainable and eco-friendly methods available.

Today, we add so much microalgae to our feed that we are able to close the gap between 6% (the standard) and 7.5% (the Lerøy standard). We are therefore free from the criticism that we “waste” valuable fish oil. And the best part is that the fish love the feed!

The introduction of new raw materials for fish feed is one of the most important focus areas in Ocean Forest, where we aim to make use of nutrient salts to produce new raw materials for fish feed. Meal from mussels is one example of this.



## FISH HEALTH

- Lerøy Seafood Group maintains a constant focus on fish health and controls fish health at its facilities. The fish farming industry faces a number of health-related challenges – in particular viruses – which cannot currently be solved by vaccination or medication but also faces other more unspecific problems such as gill problems and ulceration during the winter. Together with the Department of Biology at the University of Bergen, Lerøy Seafood Group has established a position for a PhD student in nutrition to work systematically on problems with fish gills. We are also actively involved in working with vaccine suppliers to solve the problems relating to ulceration.

Fish health is a target area for Lerøy Seafood Group.

## TECHNOLOGY

- The current production practice, using open cages located in waters close to the coast, represents the greatest advantage for the Norwegian fish farming industry, but the concept brings certain challenges, for example the risk of lice and accidental release. Lerøy Seafood Group is actively involved in several research projects challenging current technology in order to further develop the industry to become as environmentally and financially sustainable as possible. Lerøy Seafood Group has enjoyed a collaboration with **Preline AS** since 2010, working toward the development of a closed-containment floating facility for post-smolt production. This collaboration has resulted in what is close to a full-scale pilot facility that was launched to sea in the winter of 2015 at Sagen, Samnanger municipality in Hordaland county. In a Preline facility, smolt will be produced in a closed-containment facility at sea. The smolt will remain in the facility until they weigh approx. 1 kg, when they will be transferred to open

cages. This will reduce the amount of production time in open cages. The first fish were released to the facility in the spring of 2015, and production round no. 2 started in October.

To date, we have recorded positive results in terms of growth and survival. There have been no salmon lice in the facility since start-up – an extremely encouraging sign but not surprising given that all the water in the facility is taken from sea depths far below the level where you normally find salmon lice larvae.

Lerøy Seafood Group currently owns more than 91% of the shares in Preline AS. Lerøy is also a partner in SFI CtrlAQUA, a centre for research-based innovation (2015-2022), which aims to develop and document a range of post-smolt concepts. Lerøy Seafood Group believes that the problems relating to lice and accidental release of salmon will be resolved. One major technological challenge is to identify and implement localities with the highest possible degree of biological sustainability. Such localities may place new requirements on equipment and operational formats which we currently do not face. At the same time, we rely on the goodwill of our local communities so that we can make use of such localities. Lerøy Seafood Group is involved in several projects targeting both offshore fish farming and use of closed-containment fish farming technology for parts of the production phase.

The accidental release of farmed salmon is a challenge to the industry in terms of sustainability, economic loss and impairment to the industry's reputation. Both in-house projects and active participation in R&D projects have allowed the Group to further optimise its production equipment and operating procedures. However, we are fully aware that none of our facilities (whether sea- or land-based, open or closed) are 100% safe from

accidental release, as indicated by the report issued by the Norwegian Board of Technology, entitled "Salmon farming in the future". Several closed-containment production concepts are currently being tested. Lerøy Seafood Group is confident that closed-containment, floating concepts may provide a solution for particularly vulnerable locations, from smoltification until the fish weighs approximately 1 kg. We are participating in a number of R&D projects within this area, e.g. the OPP project (Optimal Post-Smolt Production).

Lerøy Seafood Group is also involved in a new full-scale project together with several other major fish farming enterprises in Norway. The project involves **tracing escaped fish** back to its original locality. New technology has been developed to allow traceability of salmon back to its original locality by carrying out analyses of fish scales. The new technology can be used to trace a farmed fish back to its owner.

Lerøy Seafood Group played an active role in establishing the study entitled "How can charting the **salmon genome** help solve the challenges of the Norwegian fish farming industry?", which is financed by the Norwegian Seafood Research Fund and led by the Department of Biology at the University of Bergen. There is no doubt that this project opens the door to a number of unknown methods now that the salmon genome has been mapped, and this will have a substantial impact on salmon welfare, combating disease and optimising operations. Lerøy Seafood Group, together with bodies such as the Norwegian Seafood Research Fund and the Research Council of Norway, is fronting an initiative to establish a common knowledge platform to gain a greater perspective on knowledge of genomics (system biology), and to make a "salmon database" available to the industry.





- **The pipefarm** development project builds upon the Preline pilot facility, a semi-closed-containment fish farm for production of post-smolt at sea. Development permits have been applied for based on this concept. Pipefarm as a project has major innovation height and will require significant competencies and capital to reach completion. Lerøy is confident that this concept will be of major importance for the future development of the Norwegian fish farming industry.

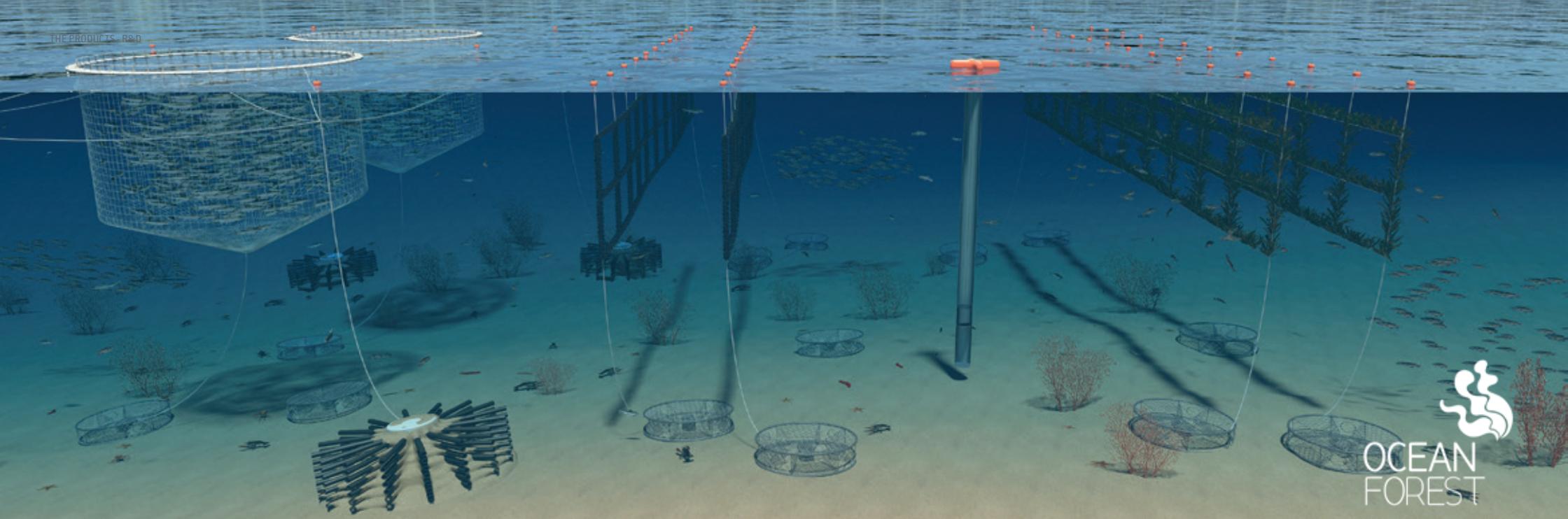
- Lerøy has invested heavily in the production of juvenile fish in our three farming regions. In 2013, we opened the Belsvik juvenile fish plant in Central

Norway, which remains one of the world's largest and most modern facilities for juvenile fish, with a capacity of approximately 14 million smolt. In 2016, we opened the "new" Laksefjord facility in the north of Norway with an RAS department for both fresh water and sea water production. This represented an increase in production capacity from 7 to 11 million smolt per year. The initial construction phase of the new juvenile fish facility for Bjørsvik in the south of Norway was also completed in 2016, and the second construction phase started. This facility is Lerøy's main facility for production of trout. The facilities in both the Laksefjord and Bjørsvik are based on modern

RAS technology that provides impressive savings in the consumption of energy and water. At the start of 2017, we have plans for a number of major development projects for post-smolt in all three production regions.

- In cooperation with Multiconsult, the Norut research centre and Akva AS, Lerøy has developed **a system for improved prevention of accidental release**, improved predictability and safe operations at sea. Via the advanced use of data from measuring stations in the facility combined with weather data from satellite stations, we can now take the step from experience-based to fact-

based operational management using real-time data. The concept is expected to be launched on the market in 2017.



### IMTA

- Sustainable fish farming is a high priority for Lerøy Seafood Group. New, enterprising projects and innovation play a decisive role in identifying good sources of marine raw materials for a growing fish farming industry and in being able to feed a growing population in the years ahead. In 2013, Lerøy cooperated with Bellona, an environmental organisation, to launch an ambitious project principally targeting exploitation of those products we have in excess in order to produce those products we are lacking.

The company's vision is: The sea – the major future source of new production of food, feed ingredients and energy/biomass, through the capture of CO<sub>2</sub>. Lerøy Seafood Group and Bellona, together with national and international R&D groups, aim to research how the organic interaction between different species can help solve the environmental problems created by fish farming, while at the

same time attempting to achieve significant value generation by taking a leading role in developing new sources of biomass for human consumption, fish feed and bioenergy.

The cultivation of kelp, shellfish and invertebrates alongside fish is a new concept within the history of Norwegian fish farming. Waste produced by one species becomes a resource for another species, forming an interacting ecosystem of value-generating species in harmony with their environment. Mussels, kelp and other invertebrates filter large organic particles from fish feed or carried by water currents from fish farming plants, e.g. small lice larvae. At the same time, these organisms absorb excess nutrient salts along with vast volumes of CO<sub>2</sub>. By increasing production of these new species, we can enhance value generation while also producing high-quality raw materials that can be utilised to produce fish feed, for consumption or for energy production.

**Ocean Forest AS** is a joint venture between Lerøy Seafood Group ASA and Bellona Holding AS, and had its first full year of operations in 2014. The company's personnel are all employees of various Lerøy Seafood Group companies. Ocean Forest AS has focused on establishing a knowledge base for production of oligotrophic species such as mussels and various macroalgae based on the recycling of nutrient salts.

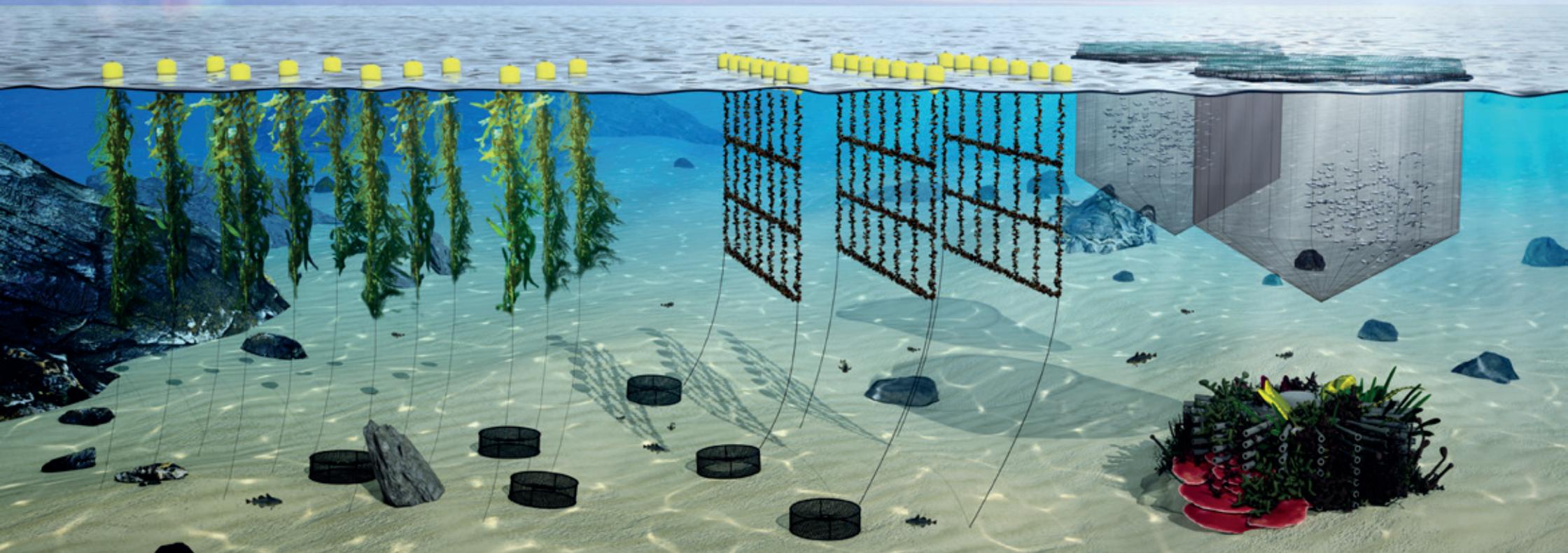
The company has licences for production of macroalgae such as sweet tangle, winged kelp and dulse, in addition to the production of mussels. These licences are linked to a total of three of Lerøy Sjøtroll's facilities in Hordaland.

Lerøy's initiative involving integrated multitrophic aquaculture (IMTA) is realised via Ocean Forest AS, a company jointly owned with Bellona Holding AS. The purpose of Ocean Forest is to develop industrial production of macroalgae and production methods for mussel meal so that this product can

provide a satisfactory replacement for fishmeal. The continued growth in the fish farming industry both in Norway and abroad requires us to utilise even more sustainable raw materials in fish feed in the future. This in turn requires the harvesting of raw materials from lower down in the food chain than the current fishmeal and fish oil. Mussels and macroalgae are materials very low down in the food chain but are also raw materials that are currently not being utilised – we are not competing with other user groups for these materials.

Our main focus in 2015 was on mussel meal. Subsequent to four trials where mussel meal was fed to salmon, we were able to determine that mussel protein was a satisfactory replacement for fishmeal. When we replace fishmeal with mussel protein, the salmon show improved growth.

Comprehensive testing is now under way to determine whether mussels with algal



toxins – poisonous in high concentrations for humans – are also poisonous for salmon. The results to date are promising, and it appears that the salmon can withstand high doses of algal toxins. The outbreak of toxic algae represents a major challenge for the mussel industry, requiring comprehensive sampling and analysis prior to harvesting. The volume of such work may be significantly reduced if the shells are to be used as a raw material for feed.

Ocean Forest has focused on kelp in 2016. The company harvested 17,000 kg of sweet tangle and winged kelp, representing the first industrial production volume for the company and a milestone

in Ocean Forest's development. The company has followed a steep learning curve, and continues to do so. The work on further industrialisation of production and harvesting of cultivated macroalgae will continue in 2017.

The project and its impact on the environment surrounding the facilities are closely monitored by the Institute of Marine Research in Bergen.

## A SUSTAINABLE FISH FARMING INDUSTRY

OCEAN FOREST HAS THE FOLLOWING AMBITIOUS GOALS:

- Production of sustainable raw materials and clean energy
- Production of marine raw materials for feed
- Absorption of large volumes of CO<sub>2</sub>
- Minimisation of environmental impact from Norwegian fish farming



## HUMAN HEALTH

- Ever-greater emphasis is given to increased innovation as a fundamental element in securing Norway's future. Lerøy Seafood Group is recognised for its innovative efforts over the past century. We aim to continue in this way, and our ambition is to be at the very forefront of innovation within every part of our value chain.

- **The FINS programme** is a comprehensive study of how eating fish affects human health. A number of studies have been conducted of newborn babies (mother/baby), kindergarten children, lower-secondary school pupils and persons who are overweight. The study has focused on the effect of eating oily fish such as salmon, mackerel or herring, and the results have been in part remarkable. In particular, a significant increase has been identified in the concentration and learning skills of young children when they eat fish three to four times a week. FINS is partly financed by the Norwegian Seafood Research Fund (FHF), with the National Institute of Nutrition and Seafood Research (NIFES) as project.

Lerøy Seafood is also playing an active role in a project focusing on nutritional quality and the end product's importance for the physical and mental health of the consumer.

## Ensilage of residual raw materials from fishing of white fish

- As a shareholder in Austevoll Seafood, Lerøy Seafood Group has opportunities to exploit raw materials that were previously dumped at sea by the deep-sea fishing fleet. Over the past years, Hordafôr, another company within the AUSS Group, has worked actively to utilise raw materials otherwise regarded as waste. This includes not only fish guts and heads, but also by-catches etc. Hordafôr is currently working on a major project in cooperation with the white fish industry and fleet in North Norway, supported by the Norwegian Seafood Research Fund.

In 2011, the Norwegian and foreign deep-sea fishing fleet delivered around 580,000 tonnes of white fish (round weight) to Norwegian harbours (statistics provided by the Norwegian Directorate of Fisheries). Assuming that approximately 30% of this round weight can be utilised as ensilage, there is a total potential of 175,000 tonnes of raw materials available from the deep-sea fishing fleet for white fish which can be utilised, for example for fish feed.



# THE ENVIRONMENT





# FOCUS AREAS AND TARGETS

For Lerøy Seafood Group as a corporation, it is essential to maintain a constant focus on areas where we have the greatest influence in terms of sustainability. Based on a critical evaluation of the value chain and our processes, we have reached the conclusion that we currently have the greatest influence within our work on the various areas related to our fisheries and fish farming activities. A major share of our efforts related to the environment and sustainability will therefore focus on these areas.

The different sizes of the images in the value chain to the right represent how we prioritise work on sustainability within the different parts of the value chain.

A materiality assessment was performed in 2015, involving interviews of in-house and external stakeholders. The assessment concluded that our sustainability reporting should focus on five main areas: product, employees, environment, society and value chain. These areas will therefore receive particular focus.



The different sizes of the images in the value chain above represent how we prioritise work on sustainability within the different parts of the value chain.

	Target				Target achievement		
	2014	2015	2016	2017	2014	2015	2016
1. Work to prevent accidental release of fish							
Accidental release, amount of fish	0	0	0	0	52098	7340	18599
2. Measures to reduce salmon lice							
Number of cage treatments*	753	753	753	837	1514	1240	1122
Average sexually mature lice							
3. Fish health and fish welfare							
Survival, rolling 12 months (GSI)	94%	94%	94%	94.3%	92.50%	93%	92.20%
Density kg/m3, average per year	25%	25%	25%	25%	7.54%	8.05%	9.17%
Use of antibiotics, for fish health only,, kg active ingredient	0	0	0	0	1.8	38.4	1.6
4. Efficient utilisation of land and sea areas							
Location status, max. average 1.5 MOM-B per location	1.5	1.5	1.5	1.5	1.44	1.25	1.29
5. Reduction of discharge of nutrient salts per location							
Biological feed factor	1,20	1,20	1,15	1,15	1.17	1.17	1.16
FIFO oil	< 2.95	< 2.00	< 1.75	< 1.5	2.18	1.56	1.49
6. Others							

#### Reduction of discharge of nutrient salts

#### Differents R&D Ocean Forest, Preline - Ongoing process

Complaints from stakeholders

Energy consumption in kWh/ton Energy company establishes individual targets

Water consumption in m3 per ton produced. Each company establishes individual targets

The share of packaged raw materials shall be increased (the term "packaged raw materials" is defined as commodities)

All complaints shall receive a written response

Lerøy Seafood Group believes that aquaculture activities must be conducted with an "eternal perspective" as a condition for exploitation of coastal resources. The Group works hard to constantly improve the interaction between fish farming and the environment, aiming at generating positive and lasting environmental benefits.

The Group's environmental vision – "Take action today for a difference tomorrow" – is a clear signal from every employee that every day we will be pushing for improvements to benefit the environment, aquaculture and our coastal communities.

Lerøy Seafood Group works hard to constantly improve the interaction between fish farming and the environment, aiming at generating positive and lasting environmental benefits. The Group has five main elements related to environmental work within fish farming activities:

- Work to prevent accidental release of fish
- Measures to reduce salmon lice
- Fish health and fish welfare
- Efficient utilisation of land and sea areas
- Reduced discharge of nutrient salts from premises

Environmental targets have been established for the following indicators:

- Farming
- Fisheries
- All

LSG KPI 1: accidental release
LSG KPI 2: lice
LSG KPI 3: mortality
LSG KPI 4: density
LSG KPI 5: locality status
LSG KPI 6: use of medicines
LSG KPI 7: biological feed factor
LSG KPI 8: reduction of discharge of nutrient salts
LSG KPI 9: fish feed
LSG KPI 10: zero tolerance for discarding fish
LSG KPI 11: 100% utilisation of raw materials
LSG KPI 12: complaints from stakeholders
LSG KPI 13: waste
LSG KPI 14: energy consumption per kWh/tonne produced
LSG KPI 15: water consumption per m <sup>3</sup> /tonne produced



# LERØY SEAFOOD GROUP'S TARGET AREAS FOR THE EXTERNAL ENVIRONMENT

- Accidental release
- Lice
- Fish health
- Locations
- Fish feed incl. raw materials
- Greenhouse gases
- Distribution

## ACCIDENTAL RELEASE

Prevention of accidental release of fish is an extremely important and high-priority area for Lerøy Seafood Group. The Group invests a considerable amount of work in optimising equipment and routines specifically to avoid accidental release of fish. Actual incidents of accidental release and all events that can lead to accidental release are reported to the fisheries authorities. Securing against accidental release is a question of focusing on execution and action, good planning of all operations in order to ensure safe execution and efficient re-examination of operations. Key elements are: ATTITUDE, ACTION and RESPONSIBILITY. However, these have no impact if not clearly defined by management. Moreover, it is essential that all employees are made aware of their responsibility to ensure zero – 0 – accidental release of fish within our companies.

The advisory group for the environment and safety plays an important role in this work. In addition to in-house processes, the group is responsible for the quality assurance and auditing of our suppliers in terms of the role they play within an environmental perspective, where prevention of accidental release is key.

**18 February: 18,451 fish from locality 26235 Stualand**  
Damage to net probably caused by contact between net and bottom ring chain in combination with exposure to electricity, wave frequency and response in bottom ring chain.

**7 April: 20 fish from locality 18898 Skaftå**  
Accident on well boat during H2O2 treatment.

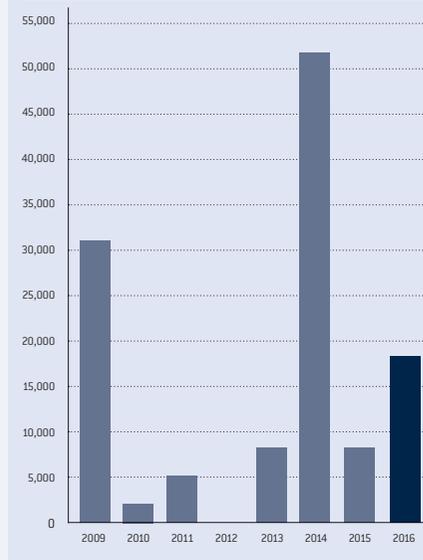
**7 October: 128 fish from locality 12075 Sundal**  
Fry were transported over the edge of the container and out into the sea.

The company, Rådgivende Biologer, immediately recaptured/re-caught the fish.

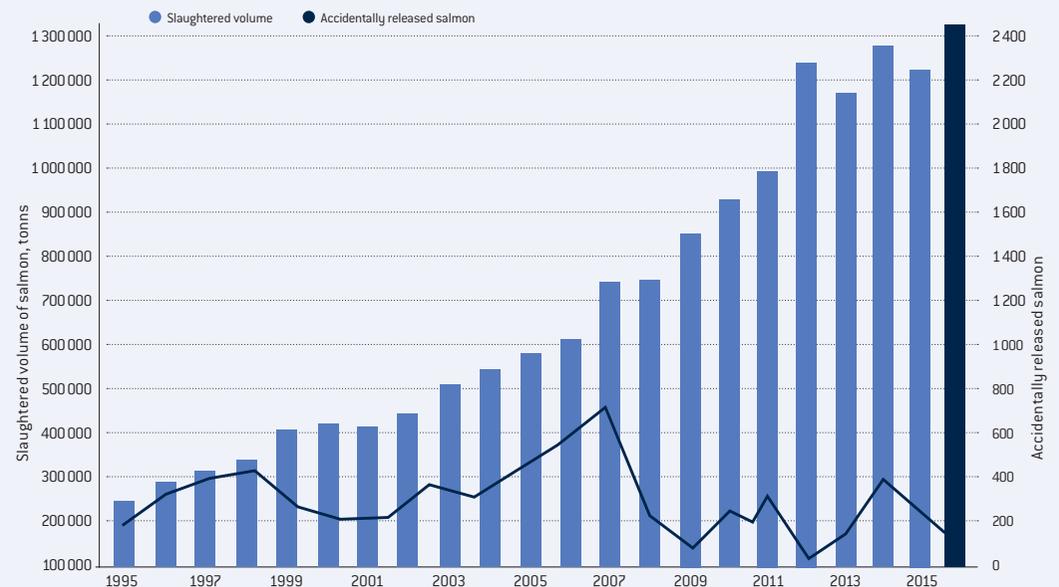
Date	Company	Location	Species	No. of units
18.02.16	Sjøtroll Havbruk	26235	Trout	18451
07.04.16	Sjøtroll Havbruk	18898	Trout	20
07.10.16	Sjøtroll Havbruk	12075	Trout	128

**Main goal: "Zero – 0 – accidental release"**

ACCIDENTAL RELEASE IN LERØY SEAFOOD GROUP (NO. OF FISH)



ACCIDENTAL RELEASE OF SALMON AND PRODUCTION GROWTH OVER LAST 15-20 YEARS



The table shows accidental release of salmon compared with total volume of harvested salmon in Norway.

# MEASURE TO REDUCE SALMON LICE

## SALMON LICE

The company has a general strategy for fighting salmon lice, based on the principle of "Integrated Pest Management", i.e. the implementation of a number of measures to prevent and fight salmon lice, wherein treatment with medication is the last resort.

### The Group's RD&I work related to salmon lice takes four different approaches:

- 1) keep the salmon away from lice
- 2) keep the lice away from salmon
- 3) destroy the lice before they find the salmon
- 4) destroy the lice once they have attached to the salmon

The first three methods are preventive, while the fourth involves treating salmon infected with lice. Lerøy uses all four methods, and has applied for a specific R&D licence to test "packages" of different measures at full scale according to the principle of "Integrated Pest Management".

The work to prevent salmon lice and develop successful methods for non-medicinal delousing is a central element in our work on fish health. Salmon lice still represent one of the major biological obstacles to further development of the fish farming industry, and activities involving management and control of salmon lice represent a substantial cost-driver and have an impact on fish health and welfare. The Group's salmon lice strategy is sound and shall provide control by means of perpetually effective measures, a focus on individual cages at the highest aggregate level and early intervention in situations where the preventive efforts are not sufficiently effective.

Despite the fact that Lerøy Seafood Group can report a significant level of control over salmon lice, experience from the autumn of 2016 has shown that the challenges related to salmon lice may in certain circumstances imply challenges for individual fish and our fish farming operations. The much-discussed "Langskjæra case" is an example of how quickly things can escalate when the industry loses control of the levels of salmon lice in one area. This incident was extremely unfortunate, and is a clear illustration of how much we depend on collaboration within the industry in order to tackle biological challenges. The Group has once again upscaled its capacity within prevention and non-medicinal treatment in 2016, based on new knowledge gained from the situation off the coast of Frøya in 2016.

## SINCE 2011

Prevent infection regionally Since 2011, Lerøy Seafood Group has chosen to regionalise the value chain for its own fish farming production, from release of roe to slaughter, in order to prevent undesired infection by known and unknown agents. As a result, the Group no longer moves live fish by sea between its three fish farming regions: West Norway, Central Norway and North Norway. This implies major costs for Lerøy in developing regional capacity and ensuring biosafety. We are confident that other enterprises in the industry will recognise the value of introducing similar in-house regulations.

The Group cooperates with other enterprises and research groups to contribute actively towards establishing new knowledge of and new tools with which to fight salmon lice. New knowledge and new tools are implemented as they emerge and will form part of the Group's future lice strategy alongside existing measures.

Chitin inhibitors are a group of delousing agents used in Norway and abroad to fight salmon lice. At present, it is suspected that chitin inhibitors may cause damage to certain species during ecdysis. The severity of this problem has not however been documented, making it difficult to reach a conclusion on the use of chitin inhibitors. Chitin inhibitors have been approved by Norwegian authorities for use to combat salmon lice, but Lerøy Seafood Group has decided to take a precautionary approach. Chitin inhibitors shall therefore not be used if use is not because of due to resistance problems. Special approval is required for the use of chitin inhibitors.

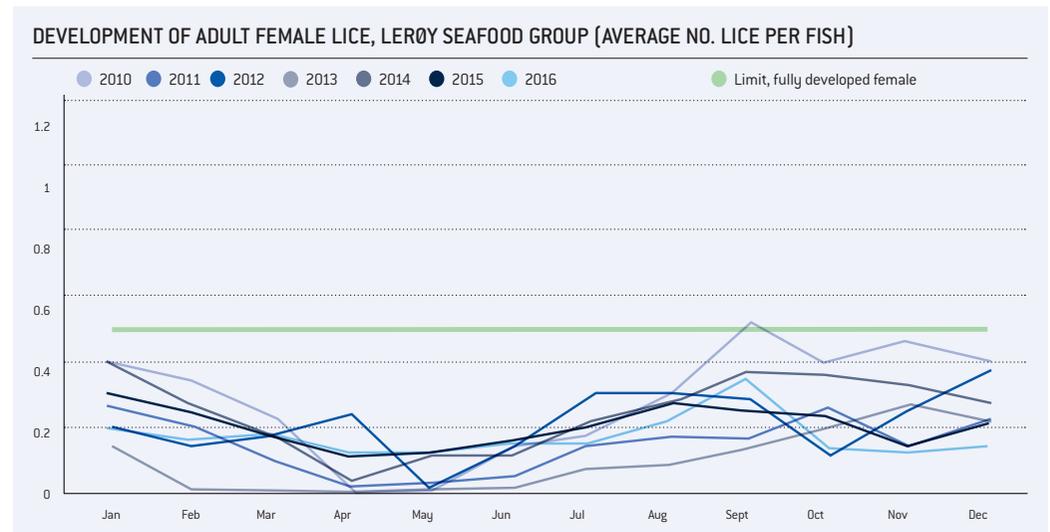
Since 2011, the Group has utilised chitin inhibitors on one occasion at one facility. Lerøy Seafood Group is

working hard to achieve its long-term goal of eliminating the use of medicines to combat salmon lice, if justifiable in relation to regulations and factors relating to fish health.

Main goal: "We aim to avoid salmon lice of reproductive age in our fish farms and we aim to avoid use of medicines in treating salmon lice infestation."

### Main goal:

**"We aim to avoid salmon lice of reproductive age in our fish farms, and we aim to avoid use of medicines in treating lice infestation."**





**Important target areas for the future:**

- More intensive use of wrasse than before
- Use of alternative release patterns and locality structures
- Continuous monitoring of release and localities
- Treatment with approved treatment agents
- Coordination among facilities
- Testing of mussels in relation to delousing.

**We aim to achieve this by focusing on three main areas:**

**Prevention:**

- Good localities
- Good smolt
- Clean nets
- Common plan for fallow areas

**Monitoring:**

- Counting of lice

- Notification of lice counts to neighbouring facilities
- Better communication between neighbouring facilities
- Effective monitoring can result in the right treatment at the right time and reduce the number of treatments.

**Treatment:**

- Use of delousing bath – tarp and well boat
- Feed
- Wrasse

- Rotation of medicines
- Common treatment in certain areas correctly timed to suit emigration of wild smolt
- Treatment in good weather conditions
- Follow-up and corrective action.

The volume of chemicals used for delousing by Lerøy Seafood Group has seen a substantial reduction in recent years, while the volume nationwide has increased. There has been a particularly high increase in the use of chitin inhibitors nationwide.

CHEMICALS USED IN DELOUSING AGENTS, LERØY SEAFOOD GROUP (ACTIVE AGENT)

	VIA FEED (GRAMS)	VIA BATH (GRAMS)	HYDROGEN PEROXIDE* (KG)
2013	0.01	2.08	0.00
2014	2.35	3.06	38.74
2015	0.18	3.91	44.94
2016	0.13	0.47	13.39

\* Hydrogen peroxide is also used for AGD treatment

**PLANS – TARGETS FOR 2017**

**Main target: "We aim to avoid salmon lice of reproductive age and we aim to avoid use of chemicals in treating lice infestation."**

- Increased use of own-produced lumpfish
- Optimal utilisation of wrasse
- Strategic utilisation of treatments
- Introduction of new methods
- Limiting infestation pressure
- Lumpfish production
- Improved rotation of use of medication over larger areas
- Large wrasse for parent fish and in areas with more than one generation
- The capacity to execute treatments within authority deadlines in all localities and coordinated throughout generations
- Compliance with authority requirements in the regulations regarding lice and zone regulations
- Cooperation with other enterprises

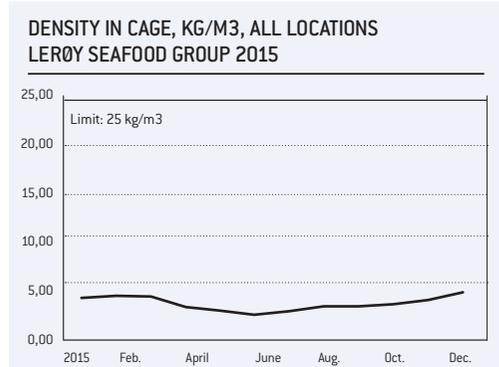
# FISH HEALTH AND WELFARE

**Target: Increase survival rate from release to slaughter**

- Survival rolling 12 months (GSI) 94.3%
- KPI 4 Density max 25 kg / m3

The main target for fish health and welfare is to increase fish survival rate from release to slaughter. All employees involved in fish farming take part in training focusing on fish welfare.

Fish welfare is developed and monitored by keeping use of medicines at a minimum, with careful assessment of use, using only approved medicines which have documented environmental impact in accordance with the requirements of SLV, monitoring and documenting tolerance, and following up biological feed factors.



Furthermore, cage density, i.e. how much space the fish have in the cages, influences fish welfare. The maximum limit is 25 kg/m3 but the results in 2016 were far below this limit, indicating that the fish have enough space in the cages. Fish health and fish welfare are at the core of our operations as a producer of Atlantic salmon and rainbow trout. As

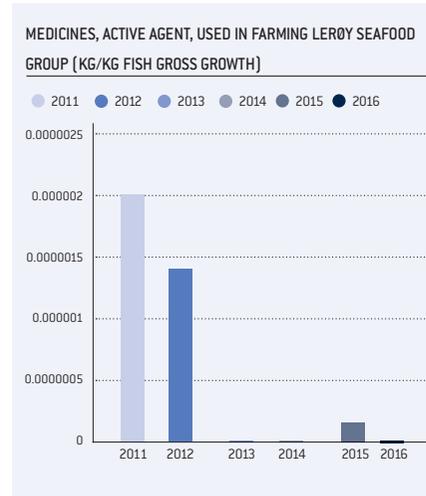
such, we have both ethical and statutory obligations governed by Norwegian legislation.

A healthy fish is also a good fish for production and a prerequisite for good financial results. There are therefore numerous incentives for putting fish health and fish welfare at the top of the agenda for fish farming operations. In an effort to ensure that we continuously fulfil these obligations, the Group has chosen to invest substantial resources in preventive measures for fish health, and this is now a major part of the production strategy for the entire Group. At the end of 2016, the companies in the Lerøy Seafood Group had 16 employees who are fish health biologists/veterinaries, as well as purchasing external fish health services. An interdisciplinary approach is required to solve the challenges related to fish health and to ensure that the correct and necessary preventive action is taken. The interaction between factors such as technology, the environment, fish disease, nutrition and production biology is part of the whole, and forms the basis for how we as a Group work with preventive fish.

**BACTERIAL TREATMENTS**

Salmon is by far the healthiest "farmed animal" among the species from which food is produced here in Norway. No antibiotics have been administered to fish in the sea in recent years. Any antibiotics utilised were administered to juvenile fish to prevent disease. In 2016, Lerøy Seafood Group utilised a total of 236,371 tonnes of fish feed and 1.6 kg of antibiotics (active ingredient). This means our fish feed contains 0.00000068% antibiotics.

**Lerøy Seafood Group's goal is to restrict the use of medicines.**



**The Group will not use any kind of antibiotics if it is not necessary for fish welfare. There is also no use of anti-inflammatories, hormones or growth promotion treatments in our production.**





## EFFICIENT UTILISATION OF LAND AND SEA AREAS

**Target: Avoid harmful impact on species caused by intervention in the natural environment in fjord systems, including sedimentation/seabeds.**

- KPI 5: Average MOM-B max 1.5 per location

All the locations utilised by Lerøy Seafood Group are approved for fish farming by various Norwegian authorities. Before starting operations at a location, approval is required from a number of official and private bodies. Furthermore, approval requires compliance with numerous analyses, requirements and local conditions.

One of the assessments carried out both prior to approval for operations at a location and during fish farming at the facility is a so-called MOM-B evaluation.

MOM-B stands for:

- M – matfiskanlegg (production facility)
- O – overvåkning (monitoring)
- M – modellering (models)

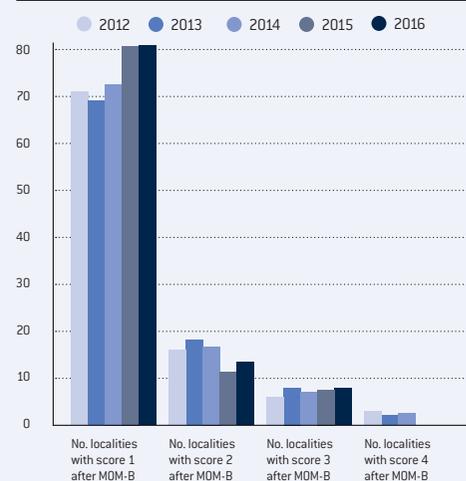
A MOM-B evaluation is carried out by a third party and involves extraction of samples from the seabed under cages and around the cages in a facility.

The analysis has three parts:

1. Fauna investigation
2. Chemical investigation (pH and oxidation-reduction potential)
3. Sensory investigation (gas, colour, odour, consistency, dredge volume and mud depth)

All parameters are given points according to how much sediment is affected by the organic substance. The distinction between acceptable and unacceptable sediment condition is set to the highest accumulation that allows burrowing benthic organisms living in the sediment. The analyses are carried out when production of one generation is at peak. On the basis of these investigations, the individual location receives a score, which also provides an indication of when the next MOM-B investigation should be carried out. A poor score often requires more frequent

**STATUS OF LOCALITIES, LERØY SEAFOOD GROUP AS OF 2012-2016 (NUMBER)**



Score 1 is the best score and score 4 the poorest score you can get.

seabed investigations than a good score. In addition to MOM-B, analyses are also conducted locally at individual facilities. These include measurement of density, oxygen level in the sea, currents, water quality, visibility, dives under the facility etc. Each facility is also linked with neighbouring facilities in a zone-based cooperation to work together on topics such as lice and preventing accidental release, spread of disease, outbreaks of disease etc.

MOM-B samples must always be taken before releasing fish to a location. Fish must not be released when the score is 3 or 4 without an additional evaluation of the status of the location, describing the reason for the lack of restitution. If a score of 3 or 4 is reported for a location, an MOM-C sample shall be taken.



## RAW MATERIALS

### FISH FEED

Target: KPI 9 Fish feed

- FishSource scores for marine raw materials, separated species,  $\geq 6$  biomass score  $\geq 8$
- What are the FishSource scores?  
<http://www.fishsource.org/>

FishSource does not have its “own” sustainability rating system, but provides the user with straight straightforward, clear information on how international, accredited systems would rate/have rated the fisheries. Scores make use of commonly reported numbers from stock assessments but they do not define a fishery as “good” or “bad”. Fisheries can be ranked against one another, providing insights into how other groups would score a fishery against current measures of sustainability. Scores currently relate to the Marine Stewardship Council (MSC) standards, which in turn rely on international organisations’ criteria – e.g. International Council for the Exploration of the Sea – ICES. Scores have been developed in a way that a score of 8 corresponds to an 80 MSC rating – i.e. an “unconditional pass” on that criteria, towards MSC certification. The same rationale applies to e.g.

a FishSource score below 6, i.e. “the fishery will be ineligible for certification” [MSC standards].

- FFRDm < 1.35, Forage Fish Dependency Ratio
- Increased usage of raw materials, which are certified according to a sustainability standard

	FIFO meal	FIFO oil
2010	0.85	2.5
2011	0.55	1.99
2012	0.38	1.74
2013	0.44	1.41
2014	0.57	2.09
2015	0.63	1.56
2016	0.63	1.49

Fish feed is the most important input factor in fish farming, and quality assurance of feed and feed raw materials is therefore absolutely essential. In 2016, Lerøy Seafood Group purchased feed from all three major suppliers in Norway: EWOS, Skretting and BioMar.

Working closely together with our feed suppliers, Lerøy Seafood Group has taken an active role in influencing the further development of feed composition in order to ensure that it is as highly adapted as

### MARINE RAW INGREDIENTS IN FISH FEED, LERØY SEAFOOD GROUP 2016

English	Latin	Norwegian	% Fishmeal	% Fish oil
Blue whiting	<i>Micromesistius poutassou</i>	Kolmule	34.21	7.49
Capelin	<i>Mallotus villosus</i>	Lodde	1.64	3.80
Capelin trimmings	<i>Mallotus villosus</i>	Loddeavskjær	0.57	0.38
Herring	<i>Clupea harengus</i>	Sild	1.03	1.12
Herring trimmings	<i>Clupea harengus</i>	Sildeavskjær	14.84	11.83
Horse mackerel	<i>Trachurus trachurus</i>	Hestmakrell	0.12	1.01
Jack mackerel	<i>Trachurus murphyi</i>	Stillehavsmakrell	0.00	0.00
Krill	<i>Euphausia superba</i>	Krill	8.07	0.00
Mackerel	<i>Scomber scombrus</i>	Makrell		0.08
Mackerel trimmings	<i>Scomber scombrus</i>	Makrellavskjær	1.27	3.62
Menhaden	<i>Brevoortia patronus</i>	Beinfisk	1.10	12.52
Norway pout	<i>Trisopterus esmarkii</i>	Øyepål	1.57	0.94
Anchoveta	<i>Engraulis ringens</i> <i>S. pilchardius</i> , <i>S. aurita</i> , <i>S. maderensis</i>	Ansjos	12.60	19.31
Sardines		Sardin	0.19	3.84
Sand eel	<i>Ammodytes marinus</i>	Tobis	3.39	3.16
Silver smelt	<i>Argentina sphyraena</i>	Sølvfisk	0.01	3.20
Sprat (North Sea)	<i>Sprattus sprattus sprattus</i>	Brisling Nordsjøen	9.55	21.95
Sprat (Baltic Sea)	<i>Sprattus sprattus balticus</i>	Brisling Østersjøen	0.00	0.00
Whitefish		Hvitfisk	0.00	
Whitefish trimmings		Hvitfiskavskjær	6.74	1.92
Other		Andre fiskeslag	3.11	0.35
Other trimmings		Avskjær div. arter		3.49
<b>Total</b>			<b>100.00</b>	<b>100.00</b>



possible to our fish farming environment, our fish material and our market strategy. In order to facilitate these efforts, the Group has developed state-of-the-art R&D facilities where feed trials can be carried out. In 2016, several trials were performed on both the use of new raw materials in feed and in benchmarking existing feed concepts. During 2016, Lerøy Seafood Group has carried out extensive benchmarking of growth feed from the Group's three largest suppliers. The trials focused on feed factor and feed costs per kilo of fish produced. The benchmarking process has been carried out as a controlled trial at the Group's own trial facilities, as cage trials at commercial trial facilities (LetSea) and at the Group's own production facilities. Benchmarking at in-house production facilities is demanding, as we have to take into account a high number of variables in addition to feed. In total, 33 production cages have been in use during the trials, and the results are clear and conclusive. Lerøy Seafood Group aims to continue with these types of trials.

Lerøy Seafood Group has a particular focus on product quality for the end customer. During the year, the Group has intensified its efforts on sustainability and certification schemes for individual raw materials. The aquaculture industry currently consumes up

to 80% of the worldwide production of Omega-3-rich fish oil. Fish oil is the most important source of the healthy essential fatty acids, EPA and DHA. Lerøy has chosen to sustain a higher level of these Omega-3 fatty acids than required in the industry standard, with a view to both fish welfare and the quality of the end product. The gap between the level required in the standard and the level utilised by Lerøy is principally covered by Omega-3-rich oils produced by microorganisms. This is currently the most sustainable source of oil available.

Lerøy Seafood Group has introduced a comprehensive sampling programme for re-examination of feed in terms of chemical content, dust, presence of foreign substances. The Group is able to trace both species and origin of the raw materials used in its fish feed. The feed suppliers carry out audits of their own suppliers, and Lerøy Seafood Group conducts annual audits of the feed companies. These measures, combined with the feed suppliers' internal control activities and traceability, allow us to maintain control of feed content and quality.

Ethoxyquin, an antioxidant, has recently been the subject of much discussion. This antioxidant is added to fishmeal to avoid explosion during long-distance

transport by boat. Without the addition of the antioxidant, the fishmeal may ignite when it heats up. This antioxidant is currently subject to a new approval round in the EU, leading to discussions as to whether Ethoxyquin shall be approved or not. Ethoxyquin is not utilised directly in feed. Together with our suppliers of fish feed, Lerøy has worked for the lead principle and has now come up with an alternative to Ethoxyquin. This means that Lerøy no longer uses Ethoxyquin in fishmeal to be used in our fish feed.

Access to raw materials for fish feed is good, despite a number of external factors which impact on supply. There are no special requirements for the raw material content of feed for fish (for example fishmeal), but fish require feed with a specific nutritional content. Today, we prefer to produce fish feed from cuttings from the wild fish industry and to supply wild fish directly for human consumption where possible. Raw material from wild fish is utilised as an ingredient in numerous different types of animal feed. Among all farmed animals, salmon is the most efficient at converting raw materials into consumable goods. The volume of wild fish caught and utilised for fishmeal and oil remains relatively stable and will most likely not increase in the near future.

2016 saw an increased demand for marine raw materials, putting pressure on the supply of marine raw materials. The steady growth of the aquaculture industry, particularly in Asia, and the vast increase in direct consumption by humans, for example of oil in Omega-3 capsules, have resulted in higher prices and a reduced supply of marine raw materials. The Group has taken an active approach to these challenges and has been able to find successful and sustainable solutions in cooperation with the feed industry.

**Catch methods for the most common marine species:**

**Capelin:** Ring net, floating trawler, trawler

**Herring:** Ring net, trawler

**Mackerel:** Purse seine, trawler

**Sand eel:** Fine-mesh trawler

**Blue whiting:** Ring net with pelagic trawler, industrial trawler

**Brisling:** Industrial trawler, coastal net vessel

**Norway pout:** Small-mesh trawler

## FEED FACTOR

The feed factor is an important indicator of how efficiently we convert feed in relation to produced volume of fish. Salmon farming is exceptionally efficient compared with other domestic animals. The feed factor for chickens is approx. 2 and for pork approx. 3.5, while Lerøy Seafood Group's fish farming companies reported a feed factor of 1.18 for salmon in 2013. This implies that we need 1.18 kg feed to produce 1 kg salmon, while we need 3.5 kg feed to produce 1 kg pork.

The following actions have been initiated in order to reduce the feed factor:

- Investment in better monitoring equipment
- Training of personnel
- Implementing new locality structures
- Improved fish health with special focus on salmon lice
- Feeding adapted to oxygen
- Increased focus on clean nets

In 2016, blue whiting and trimmings were the largest input factors among the marine raw materials in feed. The largest input factors among vegetable raw materials were soya and rape.

In recent years, there has been a marked increase in vegetable sources of raw materials for fish feed. This leads to a reduction in the utilisation of marine raw materials and, in turn, reduced utilisation of different fish species.

Within the farming of salmon and trout, fish feed is the most important individual component in terms of both environmental accounts and costs. Lerøy Seafood Group relies on sustainable production of the fish used in fish feed so that the Group can continue to produce tasty and healthy seafood in a lasting perspective. In principle, it is desirable that all fish suitable for consumption is used as human food, but in practice this is not always possible.

Fishermen will first try to deliver their catch for human consumption.

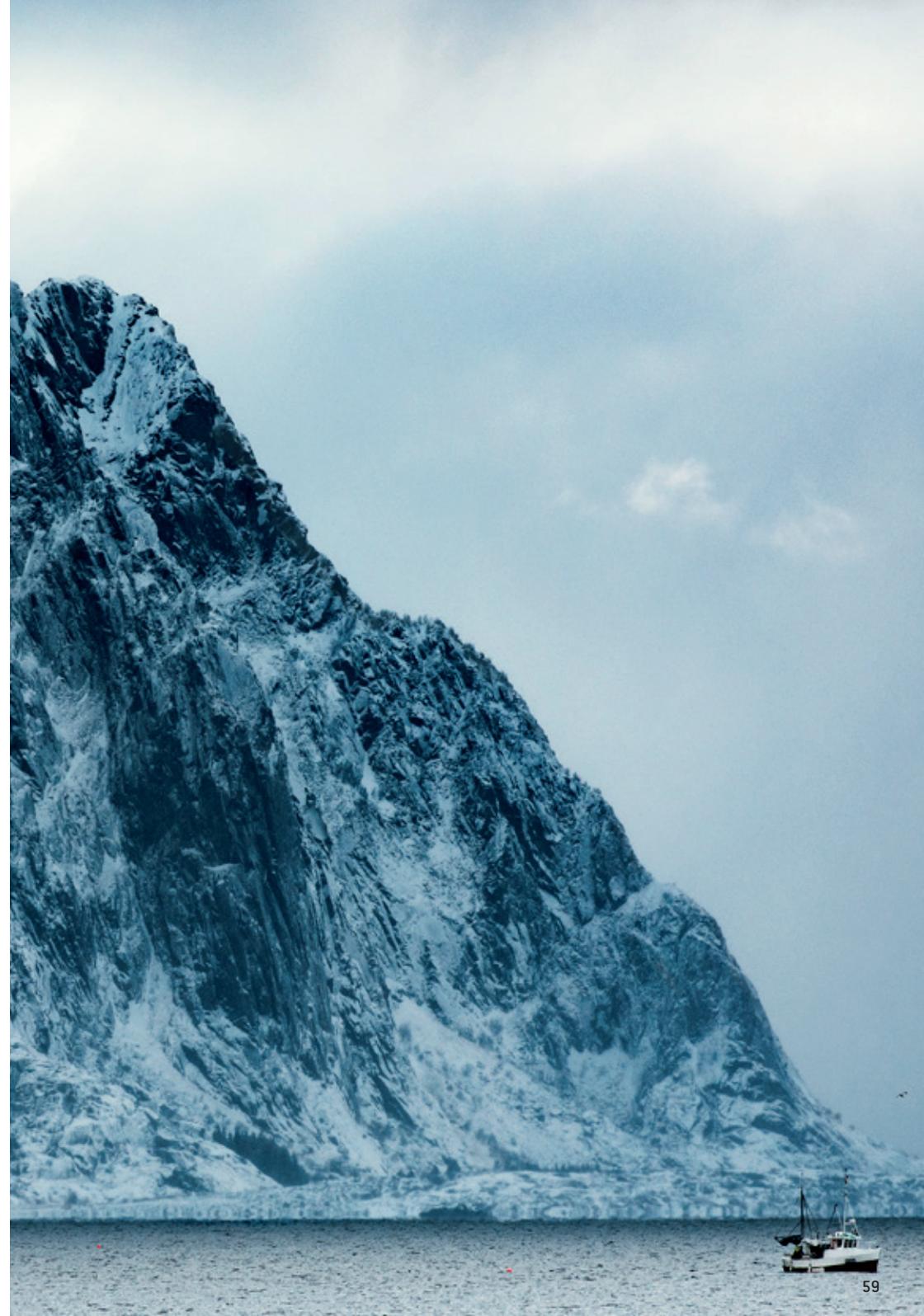
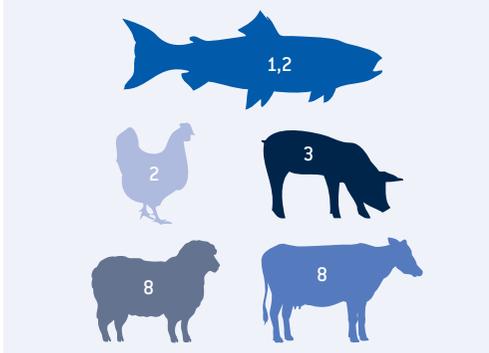
However, onshore capacity to receive large volumes of fish is often insufficient. A large volume of the parts of the fish used for fish feed come from by-products of the actual fish.

Demand for raw materials is a prerequisite for sale of fish for human consumption. It is important to underline that fish not suited for direct human consumption is best used as feed for other fish species.

It is paradoxical to maintain that salmon farming is a problem in terms of use of industrial fish when we know that 50% of all fishmeal is used for raising other domestic animals such as pigs, chickens and other warm-blooded species. Salmon and trout are champions when it comes to recycling of industrial fish. At the same time, they bring the healthy essential fatty acids into human consumption.

In nature, fish is a natural part of the salmon's diet and farmed salmon is therefore a fantastic vector for introducing valuable marine proteins and oils into the human diet. We feel privileged to be part of this, and to be able to participate in its future development.

AMOUNT OF FEED TO GROW 1 KG (KG)



**“FISH IN – FISH OUT” – FIFO**

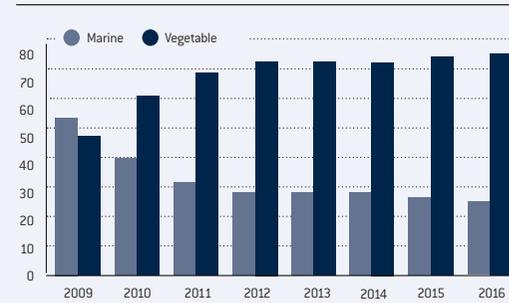
FIFO is the volume of wild fish used to produce 1 kg of salmon. The targets set in the ASC standard are: FIFO for protein (meal) lower than 1.31 and FIFO for oil lower than 2.85.

For 2016, the FIFO value for protein at Lerøy Seafood Group will be approx. 0.53, while the FIFO value for fish oil will be approx. 1.49. It is natural to calculate one FIFO value for protein and one FIFO value for oil, as these two raw materials have very different characteristics. We need 1.56 kg of wild fish to produce enough oil to produce 1 kg of salmon, but we only need 0.53 kg of wild fish to gain enough protein for 1 kg of salmon. As such, we have a surplus of fishmeal that can be utilised for other products.

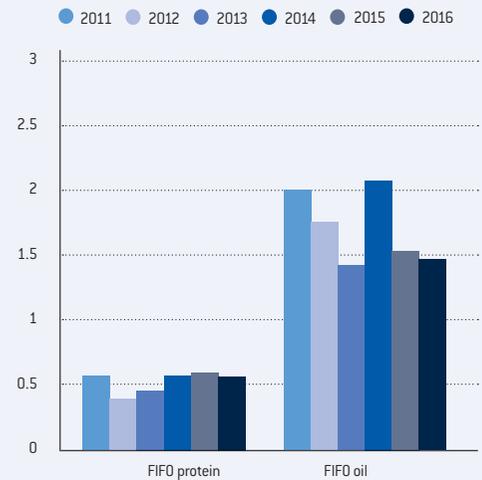
The main reason for the reduction in FIFO for oil from 2015 to 2016 is the increased use of cuttings in feed, new raw materials and a higher volume of oil from South America.

**DEVELOPMENT IN RAW MATERIALS IN FEED IN**

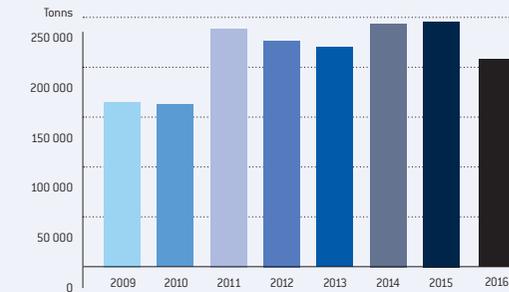
**LERØY SEAFOOD GROUP (%)**



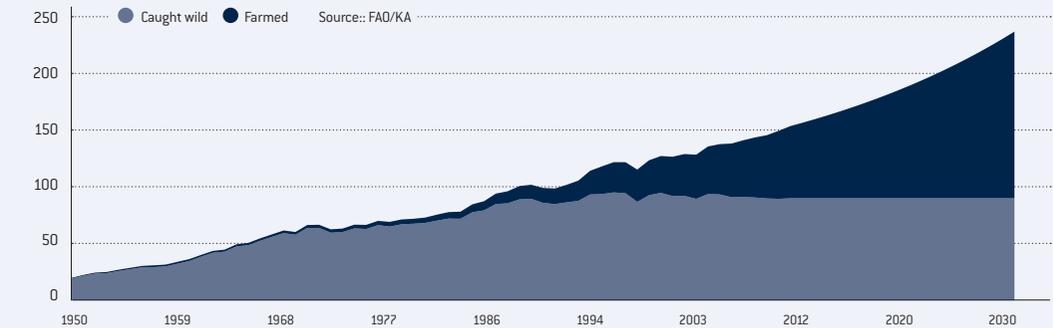
**FISH IN – FISH OUT • LERØY SEAFOOD GROUP (KG)**



**CONSUMPTION OF FISH FEED IN LERØY SEAFOOD GROUP**



**DEVELOPMENT AND ESTIMATES - WILD-CAUGHT AND AQUACULTURE PRODUCTION 1950 - 2030 (MILLION TONNES)**



# EMISSIONS

Below is a brief summary of the general framework and assumptions made when calculating greenhouse gas emissions for Lerøy Seafood Group in 2016.

The framework selected for calculating emissions includes emissions from combustion processes required for the operation of the Group's fish farming companies and the related processing activities. This is referred to in the following as direct emissions. The Group also wanted to gain an overview of the indirect impact on global warming from the company's activities and has therefore included CO2 emissions from the production of electricity consumed by the company's fish farming companies in Norway.

Significant sources of greenhouse gas emissions from Lerøy Seafood Group's core activities in Norway have been included in the calculations.

The purchase of products and services such as transport has not been included in the calculations. Lerøy Seafood Group is currently working on obtaining a good basis for calculating the above. The tables provide a summary of consumption of fossil fuels and electricity, and greenhouse gas emissions for our most important segments. In addition, the feed companies have average emissions of 1.73 CO2e per kg feed produced for Lerøy Seafood Group. In 2016, Lerøy Seafood Group utilised a total of 236,371 tonnes of fish feed.

## DIRECT EMISSIONS

Direct emissions of CO2, CH4 (methane) and N2O (nitrogen oxide) are estimated based on the consumption of different fuel sources such as diesel, heating oil, petrol, propane and marine gas oil (MGO). Emissions from the combustion of petrol are assumed to be associated with cars, while emissions from marine gas oil are assumed to be associated

with boats. Methane and nitrogen oxide emissions are converted to CO2 equivalents by means of their respective global warming potential (GWP), see explanation below.

The emission factors on which the calculation of direct emissions is based have been sourced from the Department for Environment, Food & Rural Affairs in the UK, 2016.

## INDIRECT EMISSIONS

Indirect emissions are emissions of CO2 from purchased electricity. The conversion for these emissions in Norway is based on the emission factor for energy mix in Norway, obtained from the Norwegian Water Resources and Energy Directorate (NVE).

## GLOBAL WARMING POTENTIAL (GWP)

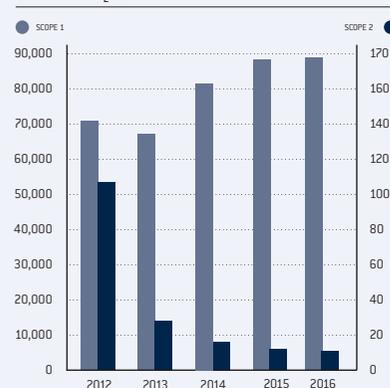
GWP is a measurement of the warming effect of various greenhouse gases on the atmosphere. The most significant greenhouse gases are CO2, methane and nitrogen oxide. GWP allows comparison of the warming potential of these gases, expressed as CO2 equivalents. Taking a perspective of the next 100 years, for example, emissions of 1 tonne CH4 will have an impact on global warming equivalent to emissions of 25 tonnes CO2.

Emissions caused by Fisheries are managed directly by Havfisk and are not calculated using the same methods as the other three segments. The segment will be incorporated into the Group's routines with effect from 2017.

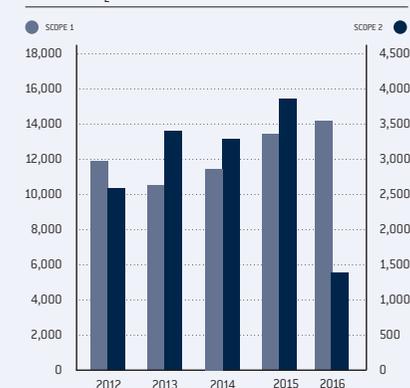
## FISHERIES

The analysis is based on the international standard, A Corporate Accounting and Reporting Standard, developed by the Greenhouse Gas (GHG) Protocol Initiative. This is the most commonly applied method worldwide for measuring greenhouse gas emissions. The ISO standard 14064-1 is based on this.

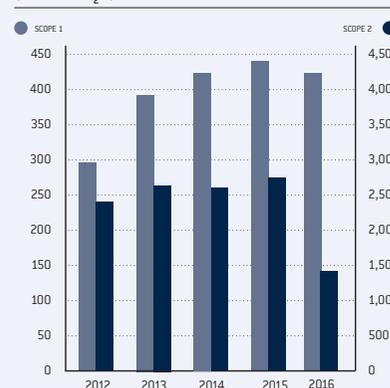
TOTAL GREENHOUSE GAS EMISSIONS 2012-2016 (TONNES CO<sub>2</sub>E) - FISHERIES



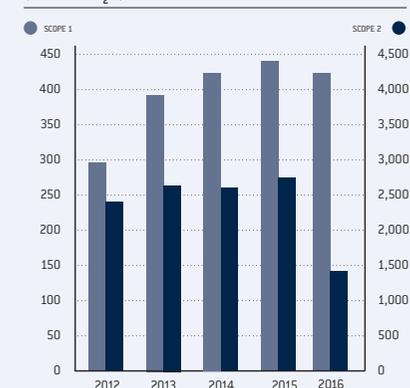
TOTAL GREENHOUSE GAS EMISSIONS 2012-2016 (TONNE CO<sub>2</sub>E) - FARMING



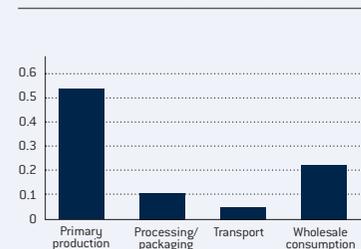
TOTAL GREENHOUSE GAS EMISSIONS 2012-2016 (TONNE CO<sub>2</sub>E) - VAP



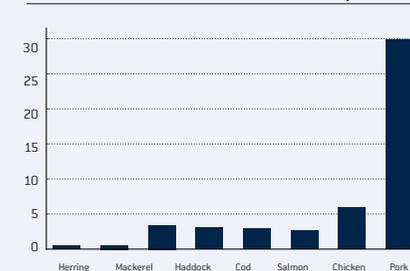
TOTAL GREENHOUSE GAS EMISSIONS 2012-2016 (TONNE CO<sub>2</sub>E) - SALES & DISTRIBUTION



GREENHOUSE GAS EMISSIONS (KG CO<sub>2</sub>e) PER 227 G FRESH SALMON FILLET FROM FISH FARM IN BRITISH COLUMBIA DELIVERED TO SAN FRANCISCO



GREENHOUSE GAS EMISSIONS (KG CO<sub>2</sub>e/KG EDIBLE PART AT TIME OF SLAUGHTER/LANDING)



” Seafood has a low carbon footprint

” The fishing fleet has reduced its greenhouse gas emissions by 25% since 1990

	2016	2015	2014	2013	2012
Total consumption of fossil fuels, litres	5,365,429	5,080,626	4,252,729	3,927,876	4,464,489
Total consumption of electricity, GWh	74	78	60	58.0	53.1
Total CO2 emissions, tCO2	15,578	17,349	14,770	13,909	14,404

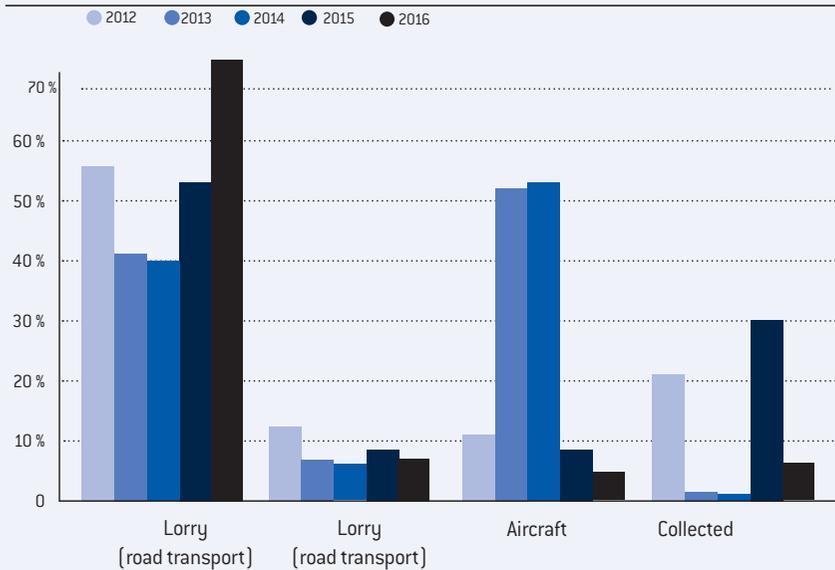
The emission factors are based on IPCC-2006 overview of factors for the fish farming industry.

**EMISSIONS FROM LOGISTICS**

Lerøy Seafood Group can influence its greenhouse gas emissions by developing logistics solutions. Identifying the optimal transportation solution is beneficial for the environment while at the same time contributing to Group profitability. More than 80% of the Group’s products are distributed fresh. This places stringent requirements on proximity to the market and effective logistics solutions.

Hallvard Lerøy AS is the largest sales and distribution company within the Lerøy Seafood Group. The transport methods utilised by Hallvard Lerøy AS are road transport, aircraft, ships and containers. In 2016, over 80% of product distribution was by road.

**DISTRIBUTION IN | HALLVARD LERØY 2012–2016**



## ROAD TRANSPORT

The majority of distribution still takes place by road. This is mainly due to the limited options in terms of logistics solutions in the different regions. A number of our customers choose to provide transport themselves and therefore pick up products directly from our facilities. We work closely with our transport suppliers, reinforcing the importance of environmental protection. All told, the vehicles we use in our distribution are much newer and better than those which several of our customers have been using. If we can encourage some of these customers to use our distribution network, this will reduce CO2 emissions.

We continuously look for new distribution solutions that provide the level of service we currently offer our customers, while also being competitive on price. For example, in 2009 we altered one of our most heavily used routes to France. Whereas we previously transported salmon fillets from Norway to Arras in France in fully loaded trucks, we now make use of rail transport for parts of the route. This has allowed us to increase profitability as well as reduce our CO2 emissions. Solutions like this will make it easier for us to contribute positively to environmental protection.

By making use of rail transport for parts of the route between Trondheim and Rotterdam, we have achieved a 68.5% reduction in CO2, down from 3.91 to 1.23 tonnes.

The fact that the major transport companies now offer rail transport of entire articulated trailers to Germany and the Netherlands gives us new opportunities to make more use of rail transport.

## AIR TRANSPORT

The volume of fish transported by air has seen an increase in the past year, due to increased sales to Asia, Australia and the USA. We work closely with our air transport suppliers in order to identify the best air freight systems and the best solutions for the environment.

Among other things, we work closely with a major airline that has scheduled passenger flights covering many of our markets. We make use of the cargo capacity on these planes, which are modern and mainly fly the shortest distance possible from A to B. Consciously focusing on this type of air freight helps us to access our market using the most modern and least polluting planes. Conscious choices and attitudes have enabled us to fly lower product volumes in dedicated cargo planes.

## RAIL TRANSPORT

Lerøy Seafood Group's products from Northern Norway are transported to Southern Norway mainly by rail. This system works well during the summer months. During the winter there are sometimes delays due to weather conditions etc. that force the Group to make use of uneconomical solutions that may also be less than optimal for the environment.

## BOAT TRANSPORT

It is currently our frozen seafood that is transported by boat. We will maintain our focus on eco-friendly logistics in the years ahead and will collaborate closely with our main suppliers of distribution services to contribute to eco-friendly developments in this area. Our increased focus on processed fish and the fact that we process many of our products in Norway allow us to make positive contributions to environmental protection.



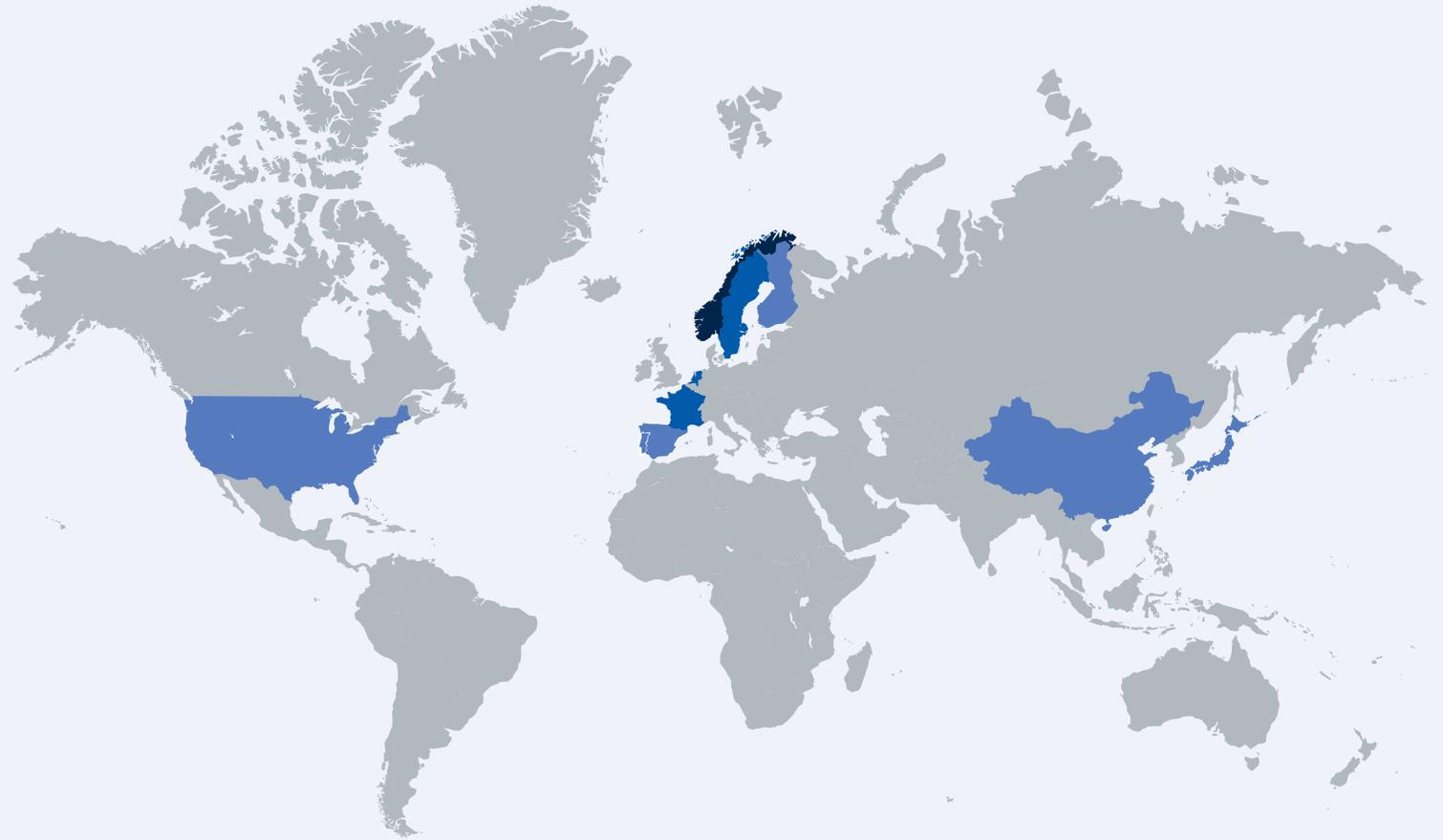
EMPLOYEES



## WHERE DO OUR EMPLOYEES WORK?

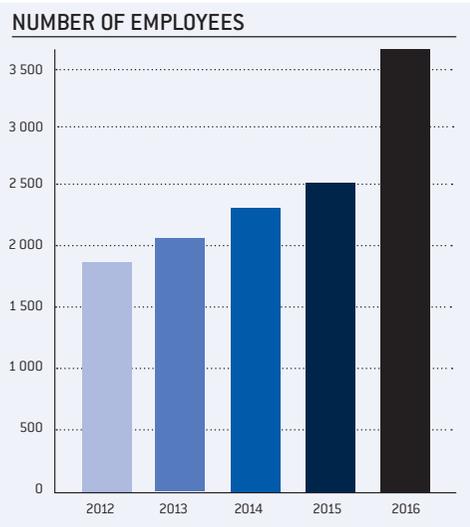
### NUMBER OF EMPLOYEES

- 0 - 100
- 100 - 500
- 500+



## EMPLOYEES

The parent company Lerøy Seafood Group ASA has its head office in Bergen, Norway. In addition to the Group CEO, the parent company has 11 employees. Administratively, all personnel functions are handled by the wholly owned subsidiary Hallvard Lerøy AS. At year-end the Group had 3,783 employees, with 1,265 women and 2,518 men, compared with a total of 2,306 employees at year-end 2015. The ratio of language, religion or



personal philosophy. One of the company's goals is to provide a workplace without discrimination because of disabilities. For employees or work applicants with disabilities, the company will arrange for individually adapted workplaces and work tasks where possible. The company is a player in a global industry where the constant rate of change in framework conditions requires flexible employees who are dynamic and willing to adapt and learn.

The Board of Directors would like to take this opportunity to praise the employees' efforts, their understanding of the need for an operational focus which targets results and their willingness to adapt to change throughout the entire organisation. The Board of Directors would like to thank all employees for their hard work in 2016.



## EMPLOYEE WELFARE

In 2016, only minor injuries were reported among employees. The Group's Norwegian subsidiaries reported an accumulated sick leave of 4.4% (5.8% in 2015). This figure comprises 1.8% long-term and 2.6% short-term sick leave. The Group works actively to keep sick leave rates as low as possible. Comparable sick leave statistics are not available from our foreign subsidiaries. However, the organisations in the individual subsidiaries are subject to continuous development, and all employees within the Group complete training in health and safety. The Group takes particular responsibility in relation to children and the young, to ensure good guidance and follow-up, helping avoid accidents or other negative incidents. Number of accidents, near-misses and safety issues are recorded monthly.

The Group offers various forms of skills development for our employees, such as internal/external courses, further education, training on operations assessed for risks related to corruption, and trainee programs etc. The various companies in Lerøy Seafood Group have their own employee representatives who take care of the formal cooperation between company and employee. All employees are entitled to join or establish trade unions as they choose. Each company organises different types of events. These may be family days, social gatherings, motivation meetings or events involving sports. The majority of our subsidiaries offer different types of sporting activities for their employees.

With the seafood cluster in Bergen, the Group has played a strong role in creating customised training programmes for the seafood industry in recent

years. A specific one-year trainee programme and two-year MBA programme have been developed at the Norwegian School of Economics (NHH), in addition to a Masters programme in aquaculture and seafood at the University of Bergen. Since their development, these programmes have proved extremely popular and a number of new programmes and places for students have been and continue to be created.

The Group has a strategy to promote good health and a healthy diet with a focus on children and young people who the Group targets via a number of channels. The Group, via its subsidiaries, has also provided plenty of opportunities for Group employees to keep fit and improve their health, with a number of measures including weekly fitness sessions, participation in company sports

teams, mountain hikes, cycling, skiing etc. The Group companies have a constant focus on and carry out regular evaluations of the working environment. Measures are implemented to ensure that the working environment is optimal for all parties involved.

# SOCIETY



# SOCIAL IMPACT

## SOCIETY

### AN IMPORTANT SOURCE OF PROTEIN FOR FUTURE GENERATIONS

#### THE WORLD WILL NEED MORE FOOD IN THE FUTURE

The UN Food and Agriculture Organization (FAO) has estimated that the world's population will increase to approx. 9 billion people by the year 2050. Population growth of approx. 30% will require increased food production of approx. 30%, based on current food production volumes. The FAO has estimated that the increased demand for seafood will total 40 million tonnes by 2030.

Only 30% of the earth's surface is land, with 70% covered by sea. Today, less than 5% of the protein consumed worldwide originates from the sea. There is no doubt that we will need some source of protein in the future, making the potential for increased production of food from the sea particularly relevant.

Seafood is highly advantageous in terms of sustainability, for several reasons:

- Production at sea does not require a lot of space, as production is three-dimensional.
- Salmon is a poikilothermic animal, which means that it adapts to sea temperatures and does not require an energy supply, for example to heat up housing for animals on land.
- Most species of seafood require relatively low volumes of fresh water.
- The volume of feed required by most species to grow 1 kg is low.
- Most species provide a high yield, i.e. a high percentage of the fish can be utilised, principally as a food source.
- Fish have a small carbon footprint when compared with other types of protein.

Foods rich in protein include meat, eggs, milk and seafood.

### AN IMPORTANT CONTRIBUTION TO PUBLIC HEALTH ACTION PLAN FOR A HEALTHIER DIET

On 6 December 2016, a letter of intent was signed between the food industry and the health authorities in Norway to facilitate a healthier diet. Signatories included Bent Høie, the Minister of Health and Care Services, and the trade associations NHO Mat og drikke (FoodDrinkNorway), NHO Handel, Virke Dagligvare, Coop Norge SA, Sjømat Norge and Norges Frukt- og Grønnsaksgrøssisters Forbund (the Norwegian association of fruit and vegetable wholesalers).

Numerous companies have also committed to the targets in the letter of intent by signing an endorsement agreement – including Lerøy Seafood Group, to date the only seafood company to do so. Other companies that have signed the endorsement agreement are: BAMA, Grilstad, Kolonial.no, Mills, Rema 1000, Nestlé, Norgesgruppen, Norgesmøllene, Nortura, Orkla, TINE, Marked.no, Germann Vervik Eftf., Meum Frukt & Grønt and T.L. Måkestad.

The agreement obliges the parties to work towards the following shared targets:

1. The average intake of added sugar shall be reduced by minimum 12.5% per person by 2021. This implies a reduction to an energy content of close to 11% by 2021. In 2013, sugar intake represented an energy content of 13%.
  2. The average intake of saturated fats shall be reduced to an energy content of 13% by 2018. In 2015, saturated fat intake represented an energy content of 14%.
  3. The average intake of salt shall be reduced to 8 grams per person per day by 2021. In 2010, salt intake was 10 grams per person.
  4. The intake of healthy foods such as fruit, vegetables and fish shall be increased.
- Lerøy Seafood Group will focus on items 3 and 4 in

the future. We take public health very seriously and we aim to help improve the health of consumers with our products. Recent consumer surveys have indicated a reduction in the consumption of seafood among children and young people.

Lerøy Seafood Group aims to assume more responsibility for the diet and nutrition of this group of people. A focus on diet and exercise is therefore common to all our cooperative projects involving culture and sports.

While children in developing countries continue to struggle with malnourishment, an increasing number of children and young people in the more prosperous countries are overweight. Lerøy Seafood Group has entered into a cooperation with Leger Uten Grenser (the Norwegian branch of Médecins Sans Frontières) that focuses on correct nutrition.



Lerøy Seafood Group actively supports children and young people by contributing to local clubs and associations.

Together with several other Norwegian seafood enterprises, the Lerøy Group has signed an agreement to reduce waste in the value chain. At the time of writing, close to 100% of all fish is exploited in some way. Going forward however, the focus will be on exploiting more of the fish products currently used as animal feed for direct human consumption.

*” In 2016 we supported children and young people around Norway with 350 000 pieces of sushi*



Ladies from Hallvard Lerøy keeping fit on a hike to Fløyen in Bergen.



**SUSTAINABILITY TARGETS**

UN member states have adopted 17 global common goals for sustainable development over the next 15 years. The new sustainability targets look at the environment, economy and social development in a context. Extreme poverty must be eradicated. Social inequalities should be leveled out. Climate change must be braked. All UN 193 countries have participated in the design of sustainability targets. In Lerøy we have chosen some of the 17 goals that we want to work to fulfill. The goals chosen are the most relevant to our processes.

- 1. Eradicate hunger, achieve food security and better nutrition
- 2. Ensure good health and promote quality of life for all, regardless of age
- 8. Promote lasting, inclusive and sustainable economic growth, full employment and decent work for all
- 12. Ensure sustainable consumption and production patterns

- 13. Act immediately to combat climate change and the consequences of them
- 14. Conserve and use marine and marine resources in a way that promotes sustainable development
- 17. Strengthen partnerships for sustainable development

**AREA EFFICIENCY**

The fish farming industry is an extremely area-efficient producer of protein. The committee established to review the quota system and economic rent within fisheries (Gullestad committee) calculated that the average size of a locality in 2010 was 36,800 m<sup>2</sup>. An average locality with eight cages can produce approx. 320,000 kg of fish. This implies 8.7 kg of protein per square metre.

Norway has 90. 000 km<sup>2</sup> of seawater within its maritime boundaries.

**ECONOMIC IMPACT**

Lerøy Seafood Group is strongly involved in the local communities in the areas in which it operates, and aims to contribute to local incomes in the form of purchasing goods, services and supplies locally whenever possible. Total purchases of goods and services by the Group's companies in Norway amounted to NOK 13.45 billion in 2015, and these purchases were made in more than 295 municipalities in Norway. In 2015, the Group's operations were located in 52 municipalities in Norway. Our employees contributed NOK 236 million in taxes to 131 municipalities. Based on our business over the last five years, the Group has contributed NOK 1.8 billion in taxes. As such, we contribute to the maintenance of a number of communities and workplaces around Norway.

**LOCAL COMMUNITIES**

Lerøy Seafood Group's companies are often located in decentralised areas, making significant contributions to employment and income in the local communities. As far as we know, we have not affected any communities negatively. The Group aims to develop positive, close cooperation with these communities, and contribute by sponsoring and supporting local sports clubs and festivals/ various events. The Group supports various local activities related to children and young people. Diet, health and healthy eating are important common values in this collaboration. It is therefore rewarding to see children and young people enjoying healthy food at different events supported by the Group.

Through our decentralised locations, we also contribute to investments in buildings, infrastructure, quays, floating quays and modern equipment in small, local communities. These form the grounds for local commerce. In fact, we represent 25-80% of the economic basis for certain suppliers in the municipalities in which we have facilities.

According to a spin-off analysis performed by Nofima, based on 2013 figures, the fish farming industry generates a number of spin-off effects. The table below shows the most significant of these.

The purchases made by the fish farming industry have spin-off effects throughout most of Norway. Goods are purchased from a number of different segments. The most important of these are:

- Industry
  - Rubber goods and plastic industry
  - Machine industry

- Textile industry
- Machine repairs and installation
- Chemical industry
- Metal industry
- Timber and wood industry
- Paper and paper goods industry
- Computer and electronics industry
- Transportation industry
- Printing, graphic industry
- Mineral product industry
- Electrotechnical industry

- Agriculture, forestry and fishing
- Transport and storage
- Commodities, car repairs
- Financial services and insurance
- Professional, scientific and technical services
- Building and construction
- Power supply
- Public admin, defence, social insurance
- Sale and operation of real estate
- Commercial services
- Information and communication
- Hotel and restaurant trade
- Mining and extraction
- Water, sewage and waste removal
- Other services
- Cultural activities, entertainment etc.
- Health and social services
- Commodities, repair of vehicles
- Education

” *Less than 5% of the protein we eat comes from the sea*

” *Seafood helps prevent cardiovascular diseases*

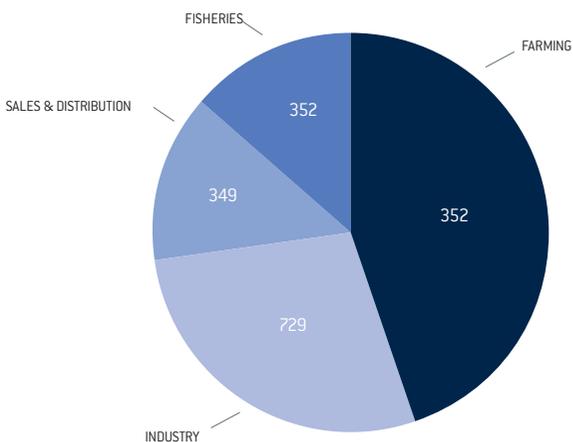
**2016**

- Revenue: 17,269,278 (NOK 1,000)
- Pre-tax profit: 2,925,930 (NOK 1,000)
- No. employees in Norway: 2878
- Purchasing, excl. intragroup, in Norway: NOK 11.8 billion
- Purchasing in Norway from 5,269 different suppliers
- Purchasing from suppliers in Norway in 286 different municipalities
- Tax payments by employees in Norway: NOK 451 million
- Total tax payments: NOK 570 million
- Tax payments to 198 different municipalities in Norway

**2016**

- 2,593 full-time equivalents in Norway
- Generates 3,112 full-time equivalents in other industries
- NOK 1,021 million paid by the Group and its employees in Norway in taxes and duties
- 969 places in nursing homes and 5,733 children in municipal kindergartens

**DISTRIBUTION OF FULL-TIME EQUIVALENTS LERØY SEAFOOD GROUP NORWAY**



When measured in terms of value creation per full-time equivalent, the individual businesses made the following contributions in 2014\*:

- Aquaculture NOK 2.663 million per full-time equivalent
- Fishing and catches NOK 1.082 million per full-time equivalent
- Fish processing NOK 1.103 million per full-time equivalent

When transferred to Lerøy Seafood Group in Norway, this will provide the following value creation:

Lerøy Seafood Group Norway	No. full-time equivalents Lerøy Seafood Group 2016	Provides following value creation in other industries:
Fisheries	352	380.86
Farming	1,163	3,097.07
Fish processing	729	804.09

\* The figures above are based on own figures and figures obtained from Nofima and SINTEF's ripple effect analyses.

National ripple effects of fish farming industry, Nofima 2013/National importance of the seafood industry, SINTEF 2016

” Each job offshore creates two jobs on shore.\*

” Each NOK 100 spent on fisheries generates revenue of NOK 350 in other industries.\*





According to a spin-off analysis performed by Nofima, based on 2013 figures, the fish farming industry will generate a number of spin-off effects. The table below shows the most significant of these.

	TOTAL	PER LOCATION IN USE
Employment (full-time equivalents)	24,299	42
Farming	9,621	17
Derived (suppliers, immediate)	14,678	25
Volume produced (tonns)	1,243,000	2,169
Purchase (NOK million)	34,300	60
Export (NOK million)	42,200	74
Value generation (NOK million)	14,735	25.7
Tax cost from companies (NOK million)	3,207	

## THE SEAFOOD BUSINESS IN LERØY SEAFOOD GROUP IN NORWAY IN 2016 HAD MAJOR RIPPLE EFFECTS FOR SOCIETY SUCH AS:

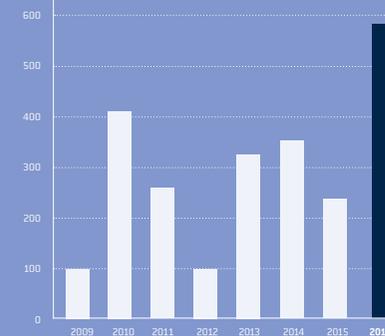


\*Subject to prevailing market prices

## IN 2016, LERØY SEAFOOD GROUP MADE A NUMBER OF DIFFERENT CONTRIBUTIONS TO LOCAL MUNICIPALITIES AND COMMUNITIES.

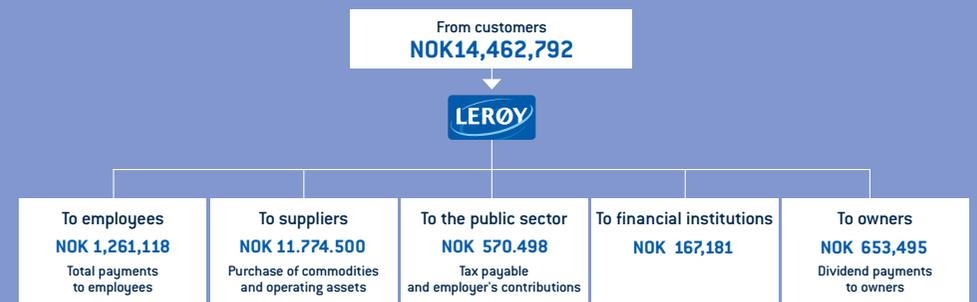
LERØY SEAFOOD GROUP HAS PAID A TOTAL OF NOK 2.4 BILLION IN TAX OVER THE PAST YEARS.

(TAX PAYABLE 2009-2016)

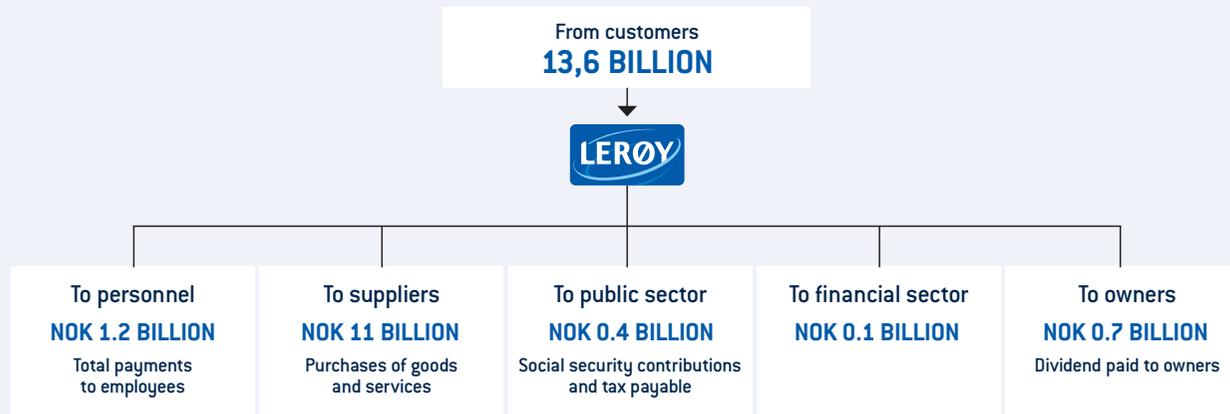


We purchased goods and services amounting to **NOK 11.8 billion** from **286** different Norwegian municipalities

## ECONOMIC VALUE GENERATION AND DISTRIBUTION PER SECTOR IN 2016



## ECONOMIC VALUE GENERATION AND DISTRIBUTION PER SECTOR IN 2015



LERØY SEAFOOD GROUP, CONSOLIDATED FIGURES (NOK 1,000)							
	2016	2015	2014	2013	2012	2011	2010
LSG stock price last annual trading day	<b>481.10</b>	330.00	273.00	177.00	129.50	84.00	192.00
Dividend paid per share (distribution year)	<b>12.00</b>	12.00	10.00	7.00	7.00	10.00	7.00
Dividend per share for payment following year	<b>13.00</b>	12.00	12.00	10.00	7.00	7.00	10.00
Cash flow from operating activities per share	<b>48.48</b>	14.05	25.92	23.06	8.13	15.99	28.05
Diluted cash flow from operating activities per share	<b>48.48</b>	14.05	25.92	23.06	8.13	15.99	28.05
Operating revenue	<b>17 269 278</b>	13 450 725	12 579 465	10 764 714	9 102 941	9 176 873	8 887 671
Net interest-bearing debt	<b>3 433 487</b>	2 594 653	1 876 121	2 116 865	2 231 860	1 592 914	1 298 726
Equity ratio	<b>53.7%</b>	54.8%	54.4%	54.3%	50.7%	50.6%	52.8%
Harvest volume (GWT)	<b>150 182</b>	157 697	158 258	144 784	153 403	136 672	116 824

# LERØY SEAFOOD GROUP, GRI-TABLE 2016

The report uses the GRI (Global Reporting Initiative) G4 reporting framework as a reference. In addition, the report includes GRI's Food Processing Sector Supplement indicators, where applicable.

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