



# ENVIRONMENTAL REPORT 2014



# TABLE OF CONTENTS

## **3 LERØY SEAFOOD GROUP**

- 4 HISTORY
- 6 IMPORTANT MILESTONES IN 2013
- 7 LERØY SEAFOOD GROUP
- 11 OPERATING SEGMENTS
- 26 BOARD OF DIRECTORS
- 36 STAKEHOLDERS
- 38 A DIFFICULT YEAR BUT THE BEST RESULTS IN THE COMPANY'S HISTORY
- 43 VISIONS, BUSINESS CONCEPT/ STRATEGY, ENVIRONMENTAL POLICY
- 45 ENVIRONMENTAL TARGETS
- 47 MOST IMPORTANT DEVELOPMENT ACTIVITIES IN 2013
- 48 LERØY IN SWEDEN
- 51 ORGANISATION OF ENVIRONMENTAL AND SUSTAINABILITY FACTORS
- 52 THE VALUE CHAIN

- 58 FROM ROE TO PLATE

- 60 FARMING

- 64 R&D – FARMING

- 67 LUMPFISH

## **73 FOOD SAFETY**

- 75 PREPAREDNESS

- 78 TRACEABILITY

- 80 QUALITY ASSURANCE AND CERTIFICATION

- 81 LERØY NO. 1 –ASC

- 87 EAT FISH - STAY HEALTHY

## **94 EXTERNAL ENVIRONMENT**

- 96 ACCIDENTAL RELEASE

- 100 LICE

- 105 BACTERIAL TREATMENT

- 106 LOCATIONS

- 109 LERØY FIRST TO ACHIEVE ASC

- 110 FISH FEED

- 122 RAW MATERIALS MARKET

- 124 5 KEY PROJECTS FOR SUSTAINABILITY

- 127 PRELINE

- 129 ENSILAGE OF RESIDUAL RAW MATERIALS FROM FISHING OF WHITE FISH

- 132 GREENHOUSE GAS EMISSIONS

- 135 ENVIRONMENTAL ACCOUNTING

- 141 DISTRIBUTION

## **145 SOCIAL RESPONSIBILITY**

- 146 EMPLOYEES

- 148 SALMON – AN IMPORTANT SOURCE OF PROTEIN FOR FUTURE GENERATIONS

- 151 THE SEA PROVIDING FOOD FOR FUTURE GENERATIONS

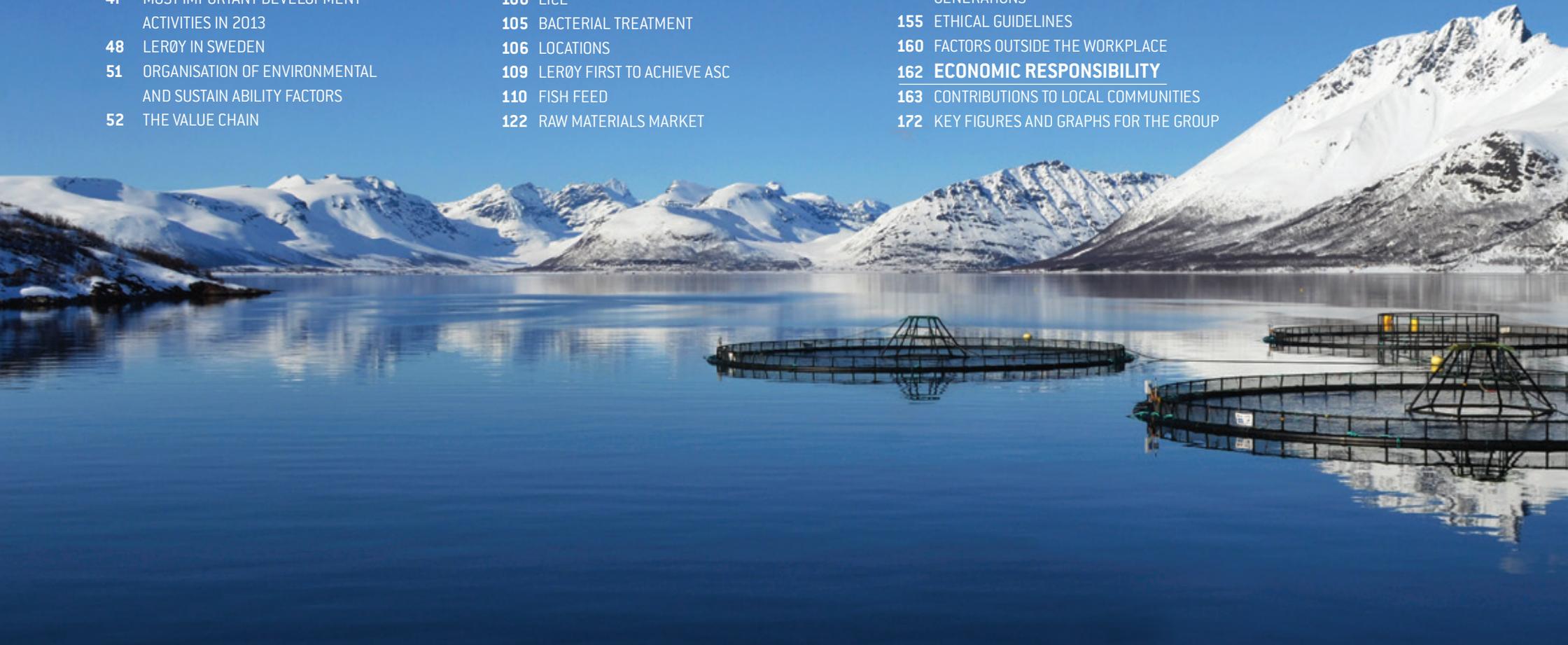
- 155 ETHICAL GUIDELINES

- 160 FACTORS OUTSIDE THE WORKPLACE

## **162 ECONOMIC RESPONSIBILITY**

- 163 CONTRIBUTIONS TO LOCAL COMMUNITIES

- 172 KEY FIGURES AND GRAPHS FOR THE GROUP



# LERØY SEAFOOD GROUP

A scenic landscape of a fjord with mountains and water. The sky is a clear, pale blue. The water is calm and reflects the light. The mountains are dark and rugged, with some snow on the peaks. The overall mood is serene and natural.

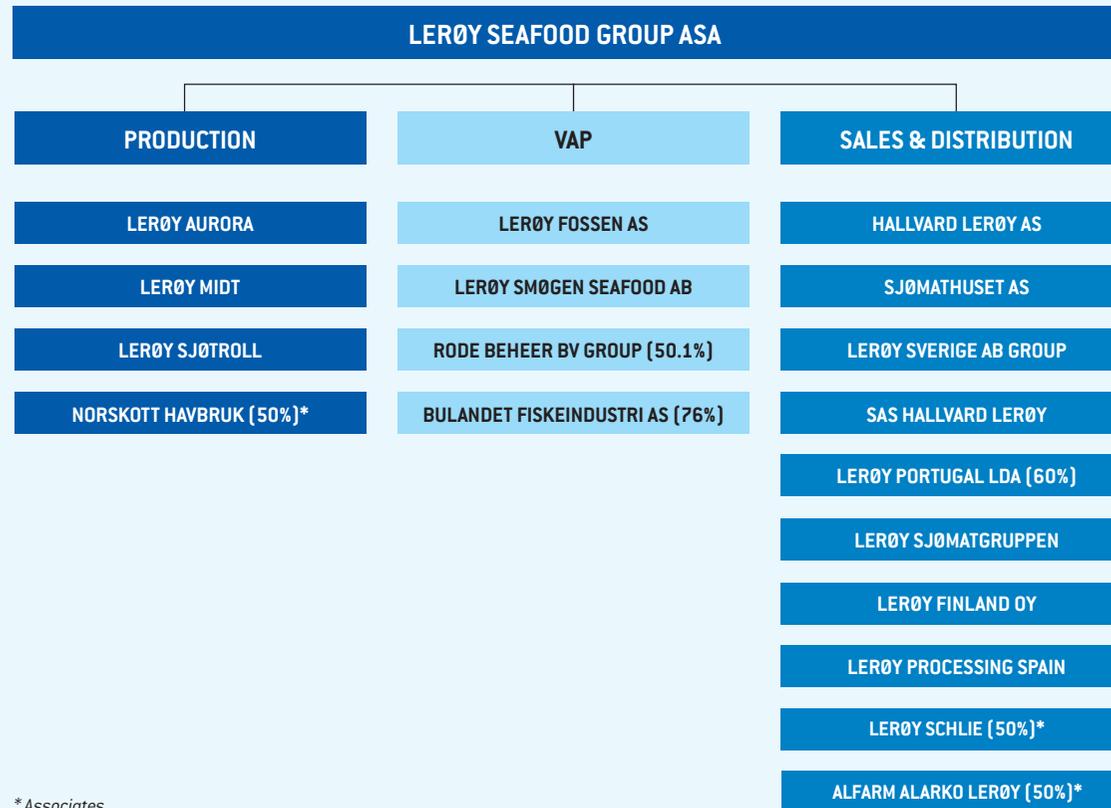


## HISTORY

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 either had caught himself or had bought from other fishermen. The fish was hauled to market in corfs behind Ole Mikkel Lerøen's rowing boat from Lerøy to the fish market in Bergen, a journey that could take between 6 and 12 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 what today has become the Group's largest sales company - Hallvard Lerøy AS. Since its establishment, the company has been a pioneering enterprise in a number of fields in the Norwegian fishing industry. The main focus has constantly been on development of markets for seafood. The company has very frequently been the first to launch on new markets, or to commercialise new species of fish, products and concepts. This pioneering spirit is still very much alive in the Group.

Since 1999, the Group has invested heavily in a number of national and international businesses both upstream and downstream. As a result of these investments, the Group is one of the world's largest enterprises involved in the production, sale and distribution of seafood.



\* Associates

The investments, made over a period of just over ten years, have afforded the Group a position as a fully-integrated seafood corporation with vast potential for further growth. The production of own salmon started at the end of 2003 when the Group acquired 100% of the shares in Lerøy Midnor.

Historically, the Group's growth has been based on sound operations, acquisitions, development of acquired companies and building of alliances. The corporate management and the Board of Directors continuously target strategic, forward-looking models for the Group's activities, and these will include business combinations and acquisitions; both upstream and downstream.

# IMPORTANT MILESTONES IN 2014

## PRODUCT DEVELOPMENT

- Lerøy consolidates their position as Norway's largest supplier of sushi.
- The range of smoked products is extended to include sliced smoked salmon for buffets.
- Launch of panko-crusted cod and pollock fillets.
- Lerøy has developed an oven-ready cod dish with herb butter.

## ENVIRONMENT

- Further development of Ocean Forest.
- LSG established as one of the largest producers of lumpfish.
- Zero use of antibiotics for salmon in the sea since 2011.
- Focus on various R&D&I projects within the environment and sustainability.
- Construction of Preline, a closed containment facility for post-smolt.

## STRATEGIC EVENTS

- Opening of Sjømathuset in Oslo in February. Norway's largest and most modern facility for freshly packaged products.
- Eight new licences in Finnmark acquired via demerger of Villa Organic AS.
- Agreement signed for the purchase of the remaining shares in seafood distributor Alfarm Alarko Lerøy in Turkey.
- Purchase of 34% of lumpfish producer, Norsk Oppdrettsservice AS





Egg



smolt



Havbruk



Høsting



Bearbeiding



Distribusjon



Kunde

## LERØY SEAFOOD GROUP

One important aspect of Lerøy Seafood Group's strategy is to be a fully-integrated supplier of the company's main products, Atlantic salmon and trout, and the business is currently operated via a number of subsidiaries in Norway and abroad. The Group has divided its reports into three operating segments since 2014: Farming, Value-added Processing (VAP) and Sales & Distribution (S&D). The Group views its operations as regional with a global perspective. The Sales & Distribution activities are global, while the production processes are largely local.

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 salmon and trout, but also other species. The businesses have strong local roots, but their products are sold to an increasing extent to a global market.

The Sales & Distribution segment has a global reach, including sales, marketing, product development, distribution and simple processing of both the Group's own produced products as well as for external suppliers.

Sustainability is an increasingly important part of the Group's strategy. As one of the world's largest companies in the seafood sector, the Group is very aware of its responsibility to choose and develop sustainable solutions throughout its value chain. The Group's operations are based on what is produced in the sea, and are highly dependent on the sustainable management of these resources, allowing for growth for the industry and the supply of products of an equally high quality also in the future.

The Group maintains a strong focus on the market. By actively developing new markets and new products from fishing and fish farming based on sustainable principles, the Group aims to develop profitable, efficient and binding alliances both nationally and internationally for both supply and marketing.

The seafood market is facing ever-increasing demands on food safety, quality, cost-efficiency, sustainability, continuity of supply and a higher level of processing. To meet these demands, and to drive development forwards, Lerøy Seafood Group actively targets increased coordination of the various elements within the value chain, production and sales units, increased sales expertise and investments to ensure the ability to supply the right product at the right time. With its major and significant position within Sales & Distribution of seafood, the Group believes it is uniquely positioned to meet these increasing demands.

Lerøy Seafood Group strives to ensure that all products manufactured and purchased comply as a minimum with the industry's prevailing rules and regulations.

Lerøy Seafood Group also seeks continuously to identify improvements which may reduce pollution and help protect the environment. Such improvements for sustainable solutions materialise from the Group's own operations, but also in close cooperation with the Group's suppliers and customers. The Group has a long list of environmental targets with indicators measured at least every month. These are described in the chapter entitled "External environment".



Developments in the world's food markets are making ever greater demands of our marketing work and require differentiated approaches depending on the respective market area and on the products being marketed. Lerøy Seafood Group shall therefore continue to strive to provide its customers with cost-efficient, individual and forward-looking solutions, thus providing the Group and its partners with the best possible opportunities for growth.

Lerøy Seafood Group and its collaborative partners form a commercial network, which must strive to ensure mutual exchange of expertise between network members.

The seafood industry harbours a considerable potential, but if this potential is to be realised and exploited to the full, new products will have to be created and developed in line with the evolution of new markets. Lerøy Seafood Group is active in the development of new products and markets. It is important that trade between Norway and other nations can take place according to international regulations. Lerøy Seafood Group and its partners and colleagues will therefore work systematically to improve the reputation of Norwegian seafood both nationally and internationally.

Throughout 2014, Norway succeeded in sustaining its position as the world's leading producer of the Group's main product, farmed Atlantic salmon. Even when wild salmon catches are included, Norway is also the largest supplier of Atlantic salmon.

Through a number of acquisitions over recent years, Lerøy Seafood Group has become the world's second largest producer of Atlantic salmon and trout, and this product area is therefore crucial for the Group's further development.

The Group's core activities demand various forms of expertise and a high degree of adaptability. For this reason, our organisation is made up of people from different sectors of trade and industry with a wide range of formal educational backgrounds and practical experience from different fields. As the Group is involved in a global industry which experiences continuous fluctuations in general conditions, it is paramount that our employees remain up to date and expand their knowledge and areas of expertise. The Group is made up of a young yet highly experienced organisation. With the constant rate of change in general conditions for the Group, we rely on employees who are dynamic, willing to learn and flexible. The Group has employees who meet these requirements. Our employees work hard to improve the Group's competitive edge and earnings and are passionate about ensuring that the individual companies fulfil future requirements and thereby achieve the Group's strategic goals and performance requirements.

In order to meet future challenges in the world's food markets, the Group will continue to develop its organisation through projects linked to the Group's strategic goals. The Group's rapid development in recent years has been made possible by capable people who have found the Group to be an attractive place of work. One of several important prerequisites for the Group's continued positive development is its ability to offer attractive jobs to as many talented employees as possible. The Group must maintain a strong focus on leading the competition for result-oriented and skilled personnel with higher than average capacities for work and change.

In Norway, the Group had activities in nine counties and 49 municipalities at year's end. The Group is a major employer in several of these municipalities and is grateful for the good support provided by both local and central public authorities. In countries outside Norway, the Group has most activities in Sweden and is well established in Stockholm, Gothenburg, Malmö and on the west coast in Smøgen. In other countries, the Group has established activities in Denmark, Finland, France, Portugal the Netherlands, Spain and Turkey. Finally, the Group has sales offices in several important seafood markets such as Japan, USA and China. The Group is also represented in Scotland through the associate, Norskott Havbruk AS.



## OPERATING SEGMENTS

### **FARMING**

In order to fulfil the increasingly strict requirements on food safety, product quality, cost efficiency, sustainability and continuity of supply within the Group's main areas of Atlantic salmon and trout, the Group believes it is vital to be a fully-integrated supplier. As a result of substantial investments over the past 15 years, the Group is now a fully-integrated supplier of Atlantic salmon and trout. This implies that the Group has the controlling interest in and ownership of all processes in the value chain.

Since 2002, the production of salmon and trout has enjoyed a tremendous development and the Group now comprises units that in total harvested 158,000 tons of salmon and trout from 141 licences in 2014. The Group is therefore now the second largest producer of salmonoid species in the world. Production takes place in three regions in Norway. The northernmost region comprises Troms and Finnmark Counties where Atlantic salmon is produced from 26 licences. In Central Norway, Lerøy Midt AS produces salmon from 55 licences. The third and final region is West Norway where the companies Lerøy Vest AS and Sjøtroll Havbruk AS produce

Atlantic salmon and trout from 60 licences. In addition, the Group's production of salmon in Scotland is effectuated through the associate Norskott Havbruk AS.

Balanced growth for all parts of the production process has been a central element in the company's strategy for growth. The Group follows a principal strategy to remain self-sufficient in terms of the supply of high quality smolt. It is also important for the Group to avoid transporting smolt over long distances. This strategy gave rise to the investment of NOK 350 million in a new smolt facility in Belsvik, completed in 2013, and the construction of a smolt facility for the northern region in Laksefjorden in 2014. The Group has high expectations in terms of the yield from these investments.

The winter of 2014 saw significantly higher sea temperatures than the year before. This had a positive impact on conditions for fish growth. At the same time, the summer of 2014 was very warm, bringing increased biological problems and poor growth. In total, Group production of Atlantic salmon and trout increased from 145,000 tons in 2013 to 158,000 tons in 2014. This is the highest production rate ever reported by the Group.

It is worth noting that the winter of 2013 was very cold, and the low temperatures had a negative impact on fish growth. In 2012, the Group reported production of 153,000 tons. Without the acquisition of Villa Organic AS, Group production would have been practically the same in 2014 as in 2012. This corresponds to the development in Norway's production of salmonoid species, and clearly shows that new licence capacity is required in order to achieve a sustained increase in production in Norway.

At the start of 2014, the Group had a very positive outlook on price developments and therefore entered the year with a low share of contracts for in-house produced fish. The Group increased its share of contracts throughout the year, reporting a total share for the year of 37%. The level of contract prices in 2014 was considerably higher than in 2013, but not as high as the spot prices for salmon during the same period. The Group's realised prices rose by 7% when compared with 2013. By comparison, the spot prices increased by 1.9% during the same period.

The spot prices in the second half of 2014 were significantly affected by the import ban imposed



by Russia on Norwegian salmon and trout, among other products, on 7 August 2014. Before the ban, approximately 10% of Norwegian salmon and 50% of Norwegian trout were exported to Russia. The loss of this market resulted in a significant decline in prices for salmon and, even more so, for trout. As the Group is the world's largest producer of trout, the realised prices for the Group suffered naturally from the import ban introduced on 7 August 2014.

Higher production volume combined with higher prices provided an increase in turnover for the Farming segment, from NOK 5,376 million in 2013 to NOK 6,243 million in 2014. The higher volume also provided an increase in operating profit before biomass adjustment – from NOK 1,327 million in 2013 to NOK 1,380 million in 2014. Despite the higher prices realised, the operating profit per kg produced fell from NOK 9.2 in 2013 to NOK 8.7 in 2014, due to increased costs. In 2014, the costs per produced kg increased substantially when compared with previous years. In total, the costs per produced kg were 11% higher than in 2013. One important cause was higher feed costs, but the Group also experienced an increase in the costs required to comply with lice limits imposed by the authorities. It is also probable that the extremely warm summer partly caused higher numbers of salmon lice along the Norwegian coast, and particularly so for the fish farms in the region of Hordaland.

A number of measures have been implemented to reduce costs, including a substantial investment in increased utilisation of cleaner fish to combat lice. When compared with 2014, the Group will more than triple its supply of cleaner fish in 2015 via acquisitions and an increase in own production of cleaner fish. The Group also has plans to double supply again from 2015 to 2016. At the start of 2015, feed costs were higher but the Group still aims to achieve a lower cost level per produced kg in 2015 when compared with 2014.

**1. LERØY AURORA AS**

NO. OF LICENCES: 18 • 2014 GWT : 23,515

**2. LERØY FINNMARK AS (MERGED WITH LERØY AURORA AS 2015)**

NO. OF LICENCES: 8 • 2014 GWT : 3,255

**3. LERØY MIDT AS**

NO. OF LICENCES: 55 • 2014 GWT : 68,284

**4. LERØY VEST AS**

NO. OF LICENCES: 34 • 2014 GWT : 36,876

**4. SJØTROLL HAVBRUK AS**

NO. OF LICENCES: 26 • 2014 GWT : 26,328



## LOCATIONS

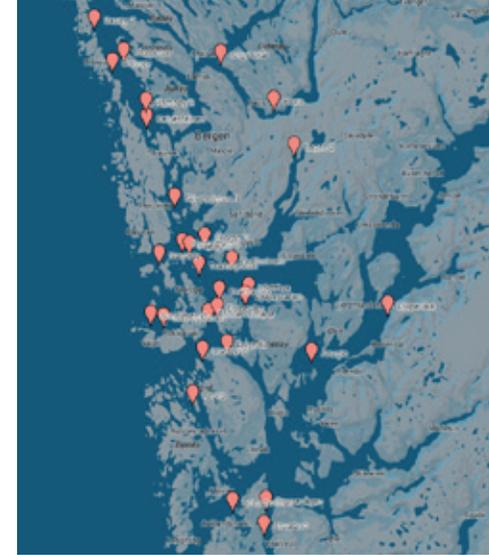
### Lerøy Aurora



### Lerøy Midt



### Lerøy Sjøtroll



Region	Licences	Smolt (in mil- lions)	2011 Tons	2012 Tons	2013 Tons	2014 Tons	2015E Tons
North Norway*	26	12	18,100	20,000	24,200	26,800	31,000
Central Norway	55	22	62,300	61,900	58,900	68,300	70,000
West Norway	60	23	56,200	71,600	61,700	63,200	65,000
<b>Sum Norway</b>	<b>141</b>	<b>57</b>	<b>136,600</b>	<b>153,400</b>	<b>144,800</b>	<b>158,300</b>	<b>166,000</b>
Villa Organic**						6,000	
Norskott Havbruk {UK}***			10,900	13,600	13,400	13,800	15,500
<b>Total</b>			<b>147,500</b>	<b>167,100</b>	<b>158,200</b>	<b>178,100</b>	<b>181,500</b>

#### Associates

\* Includes volume from Lerøy Finnmark AS with effect from second half of 2014 inclusive

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

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

## NORTH NORWAY

In 2013, the Group acquired a significant shareholding in Villa Organic AS, and the company was then divided between the main owners, Lerøy Seafood Group ASA and SalMar ASA in July 2014. The share demerged and allocated to Lerøy Seafood Group ASA was then merged with Lerøy Aurora AS at the start of 2015. This acquisition has afforded Lerøy Aurora AS access to eight new licences in Finnmark.

Lerøy Aurora AS is the cornerstone for production in North Norway, and the company is located in Tromsø. Lerøy Aurora AS is a fully integrated producer of Atlantic salmon. From the 17 licences to which the company had right of disposal throughout 2014, the company harvested a total of 23,500 tons of Atlantic salmon, on a par with the harvest volume of 24,000 tons reported in 2013. With the addition of the eight new licences, the total volume reported for North Norway was 27,000 tons in 2014. The estimated production volume for 2015 is 31,000 tons of Atlantic salmon, with sustained growth in 2016, when the company will be able to fully exploit the acquired licences.

In 2014, Lerøy Aurora invested approximately NOK 150 million in new smolt capacity at its facility in Laksefjord. This investment will increase production capacity in Laksefjord to 11.5 million smolt. At the same time, the investment allows the company to take sea water on land, so it can produce larger smolt in its shore-based facilities. Not only will this increase the volume of smolt produced, it will also allow Lerøy Aurora supply of larger smolt, cutting down on production time at sea. The Group has high expectations for the yield from this investment, estimating that it will provide further room for improvements to the excellent operations at Lerøy Aurora AS.

Lerøy Aurora's salmon processing facility on the island of Skjervøy is one of the most modern in Norway. Not only does this facility harvest its own fish, it is also a major supplier of slaughtering services for other suppliers.

As a result of the increased feed prices, Lerøy Aurora reported an increase in release from stock costs in 2014 when compared with 2013. Furthermore, the cost level for the acquired business in Finnmark is higher than in the traditional business in Troms. In total, the region of



North Norway reported an operating margin per produced kg of NOK 13.8, down from NOK 14.8 in 2013. The decline is mainly attributed to the high release from stock costs from the acquired business. The Group is very satisfied with developments at Lerøy Aurora and looks forward to the continued development of the company together with its expert management and staff. Lerøy Aurora AS shall continue to grow regionally in the years to come.

### **CENTRAL NORWAY**

Lerøy Midt AS owns 55 licences and has substantial processing capacity. In 2014, the company harvested 68,000 tons of Atlantic salmon, up from 59,000 tons in 2013. Lerøy Midt reported an EBIT per kg of NOK 9.8 in 2014, up from NOK 8.6 in 2013. The region suffered from increased biological challenges in 2014, with higher numbers of salmon lice and the first cases of amoebic gill disease (AGD). This caused increased production costs, and the businesses in this region will be substantially increasing investments in cleaner fish in 2015.

Lerøy Midt has highly skilled and fully motivated employees, and the growth achieved in 2014 is impressive.

In 2014, the company also started to notice the first effects of the new recycling facility for smolt in Belsvik, completed in 2013. The plant has production capacity of approximately

14 million smolt and cost NOK 350 million. Lerøy Midt and Lerøy Seafood Group have high expectations for how the new plant will optimise operations, in addition to supplying smolt of an extremely high quality.

## **WEST NORWAY**

Lerøy Seafood Group is represented in West Norway by Lerøy Vest AS, a wholly-owned subsidiary, and Sjøtroll Havbruk AS, of which Lerøy Seafood Group owns 50.71% subsequent to an acquisition in November 2010.

Lerøy Vest AS has 34 licences and harvested 37,000 tons of Atlantic salmon and trout in 2014, compared with 34,000 tons in 2013. The company also produces smolt. The summer of 2014 in the region of Hordaland had record-high temperatures, and this made it increasingly difficult for the businesses in the region to comply with the salmon lice limits imposed by the authorities, incurring significantly higher costs when compared with 2013. The companies in this region also suffered from the import ban introduced by Russia, and particularly for trout production. EBIT per kg in 2014 was NOK 6.2 compared with NOK 5.8 in 2013.

Sjøtroll Havbruk AS has 26 licences and harvested 26,000 tons in 2014, down from 27,000 tons in 2013. Sjøtroll Havbruk AS is involved in the production of fry/smolt, fish for consumption, slaughtering and processing. In December 2014, Sjøtroll Havbruk sold its 27.5% shareholding in the breeding company, SalmoBreed AS. Due to the same issues as for Lerøy Vest, the company reported increased release from stock costs when compared with 2013, and the increase was higher than for Lerøy Vest. EBIT per kg in 2014 was NOK 4.3, down from NOK 9.5 in 2013.

The businesses in this region employ highly skilled and motivated persons, but the framework conditions for operations in 2014 have been unusually difficult. The Group aims to invest substantially in and increase its utilisation of cleaner fish in 2015. Moreover, the Group is taking action to improve the level of collaboration between the fish farming businesses in the region.

## **VAP**

Lerøy Seafood Group has invested and will continue to invest considerable sums of money in the processing of Atlantic salmon and trout. The Group believes that new product development

is a key factor for sustaining growth in demand for Atlantic salmon and trout. This segment supplies a wide range of products such as portion sized products, smoked and cured salmon, sandwich fillings and ready-to-cook products. The majority of the Group's processing capacity is dedicated to processing Atlantic salmon and trout.

Lerøy Fossen AS was acquired in 2006 and is located in Valestrandsfossen in Hordaland County. Today, Lerøy Fossen is exclusively a salmon and trout processing company and has the largest fish smoking facility in Norway. The company has strong local roots and a high focus on quality. The company's products are sold all over the world, and fit exceptionally well into Lerøy Seafood Group's marketing strategy which calls for increasing levels of processing. 2014 was an eventful year to say the least for Lerøy Fossen. NOK 50 million was invested in doubling capacity at the facility. This development lays the foundations for substantial growth in activities at the facility in 2015.

Lerøy Smøgen Seafood AB is a Swedish seafood group involved in the production of various types of smoked seafood products. It also produces and distributes seafood salads and products based on shellfish in brine. Its products are marketed in a number



of countries. Lerøy Smøgen Seafood AB is an important incubator for new products in Lerøy Seafood Group ASA. In 2013, the company invested SEK 75 million in the development of Lerøy Smøgen AB. The facility is now one of the most modern and efficient facilities for production of high value processed salmon in the world. The increase in capacity has provided a considerable boost to turnover for Lerøy Smøgen in 2014, which is expected to continue in 2015.

In October 2011, Lerøy Seafood Group ASA signed an agreement for the purchase of 50.1% of the shares in Rode Beheer BV at a price of EUR 15 million. The subgroup Rode from the Netherlands is a leading producer of processed seafood and has a wide product range comprising smoked, marinated, freshly packaged and frozen products. The acquisition of the shares was concluded in 2012. Rode enjoys an excellent geographical position for supplying high-quality seafood to customers in markets such as the Benelux countries, Germany and France. Lerøy Seafood Group ASA is very satisfied with the development of Rode Beheer BV and is confident that the company has great potential.

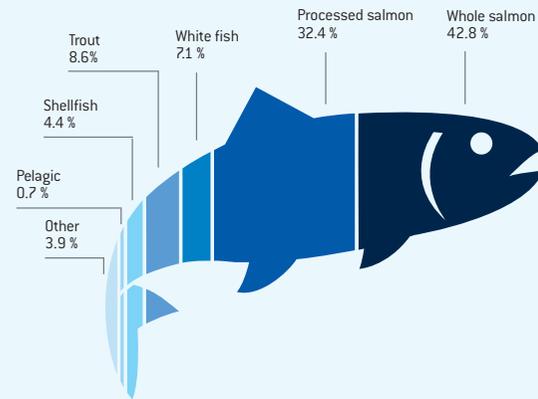
Bulandet Fiskeindustri AS is a modern Norwegian processing company producing processed white fish for the Norwegian groceries market. The facility is located in Bulandet in the region of Sogn og Fjordane. The most important raw material basis is saithe, cod, cusk and ling, and the company's products play an important role in completing the Group's product range.

## **SALES & DISTRIBUTION**

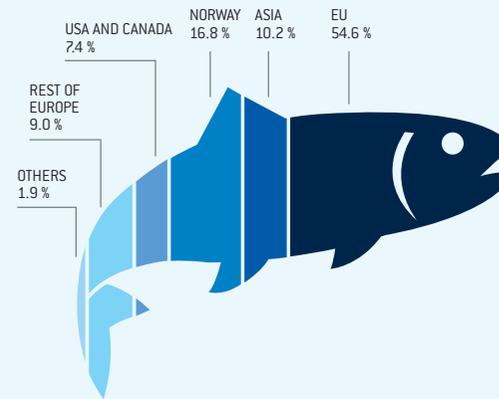
A central aspect of Lerøy Seafood Group's strategy for growth is to offer new products to new markets. This requires knowledge of and proximity to both customer and market. Lerøy Seafood Group has a long, proud history within the sale and distribution of seafood. Today, the Group sells its products to more than 70 markets worldwide and has a vast network of customers on the majority of these markets. Not only does this major customer portfolio afford unique knowledge of market trends, it also allows for a significant diversification of risk.

The Group divides its products into the main sectors of salmon products, white fish, pelagic fish and shellfish. On the market for salmon products, the Group sells and distributes its own production volume but also has alliances with a number of other companies involved in sales and distribution. The market for white fish also shows significant potential. In recent years, this product area has developed favourably through cooperation with a number of small and

## TURNOVER BY PRODUCT 2014



## TURNOVER BY MARKET 2014



medium-sized companies, and the Group intends to develop these partnerships for the future. The Group is also a supplier of shellfish and fresh pelagic fish to both Norway and Europe. This activity currently represents a small but interesting niche market.

The Sales & Distribution segment operates with a clear distinction between farmed species and wild fish, and these require different logistics and working methods. In addition, more than 80% of products distributed are fresh produce, placing extremely high requirements on market proximity and efficient logistics. Lerøy Seafood Group has a long-term goal for growth of the Sales & Distribution segment so that it can in time generate an operating margin of between 2.5 and 3.0% per year. In 2014, the segment reported turnover of NOK 12.0 billion, a significant increase from the figure of NOK 10.3 billion reported in 2013. The operating margin in 2014 was 2.0%, on a par with the figure reported in 2013. The major increase in turnover provided an increase in operating profit for the segment from NOK 204 million in 2013 to NOK 241 million in 2014.

Over recent years, the Group has invested substantially in so-called "fish-cuts". These are end market facilities with a relatively simple level of processing, but with high volumes and with a focus on proximity to the end customer. Fish-cuts have in many ways paved the way for a revolution within the distribution of fresh fish. New and simple consumer-targeted packaging and short and efficient logistics chains allow many more shops to sell fresh fish.

This is extremely positive for demand for both salmonoids and other fish species. The Group started a number of new fish-cuts in 2013 and 2014, and has incurred start-up costs as a result. Today, the Group is confident in having achieved a strong position on numerous markets, and has a clear goal to increase its margin from this segment in the future.

**Hallvard Lerøy AS** has the highest turnover of all the Group companies and reported both record-high turnover and profit in 2014. For the first time in the history of the company, it reported turnover in excess of NOK 10 billion. The company reported turnover of NOK 10.7 billion in 2014 compared with NOK 9.1 billion in 2013. Hallvard Lerøy is a market-oriented organisation with a focus on customer needs, providing the basis for cost-efficient management of individual customers. The Group's wide product range is structured to meet the market's need for a broad selection of seafood products.

In view of Hallvard Lerøy AS' central position in the value chain, developing and maintaining the interaction between its partners is a priority area. The Group's global sales network comprises Hallvard Lerøy AS' sales offices in a number of countries, as well as associates in Sweden, Finland, France, Spain and Portugal. The company has sales offices in China, Japan and the USA. The sales offices and the associates therefore cover different parts of the Group's international markets. The Group's presence in central markets allows for closer follow-up of key customers and for the development of new customer relationships. The Group will work to establish representation on new markets in the years ahead.

In addition to international sales and marketing, the Group is also engaged in nationwide distribution of fresh fish on the Norwegian market via Lerøy Sjømatgruppen AS. This business is based upon establishing regional foundations and expertise in the customer's geographical operating area. At the same time, the Group's network offers economies of scale from nationwide marketing and distribution of seafood. Experience gained from this network and other businesses allowed the Group to sign a very long-term agreement with Norway's largest grocery chain in 2013. On the basis of this agreement, a new, large production facility for fish was built and named Lerøy Sjømathuset AS. The new facility started operations in 2014 and has paved the way for a revolution within freshly packaged fish and sushi in Norway. The level of activity at the facility is high and on the increase, and the Group is looking forward to developing the seafood category in Norway together with Norway's largest chain of grocery stores.

**Lerøy Sverige AB** is the holding company for the three Swedish companies Lerøy Allt i Fisk AB, Lerøy Stockholm AB and Lerøy Nordhav AB. These companies have been owned by the Group



since 2001. Lerøy Allt i Fisk AB in Gothenburg is a full-range seafood company holding a particularly strong position in the Swedish catering and institutional households market. Lerøy Stockholm AB is located in Stockholm and is one of the city's largest distributors of seafood, with a particularly high level of expertise in the grocery trade. The Swedish market has been challenging in both 2013 and 2014. Nonetheless, Sweden is an important market for the Lerøy Group. The Group and the Swedish businesses have implemented several major initiatives to cultivate operations in 2013 and 2014. Lerøy Allt i Fisk AB and Lerøy Nordhav AB are now major wholesalers while Lerøy Stockholm AB has been cultivated following the model applied for Lerøy Sjømathuset in Oslo. The Group expects these changes to have a positive impact on activities in Sweden in 2015.

The sales and distribution activities in France are of vital importance and currently consist of SAS Hallvard Lerøy located in Boulogne, France. France represents an important market for Lerøy. Subsequent to the construction of a new facility completed in 2013, the Group now has two major plants for processing and distribution of fresh seafood in France. Further development of the Group's enterprises in France continues in cooperation with their very able local management and their motivated and competent staff.

**Lerøy Portugal Lda** is located in Portugal and is 60% owned by Lerøy Seafood Group ASA. The company enjoys a good position on the Iberian Peninsula, which is a large and important market for Norwegian seafood. The company works diligently to improve its position as a distributor of fresh seafood. The company's motivated management and minority shareholder possess considerable expertise and will, together with the company's professional organisation, make important contributions to this operating segment.

**Lerøy Finland OY** joined Lerøy Seafood Group in 2011. Lerøy Finland OY is located in Åbo/Turku in Finland, and enjoys a strong position within the sale and distribution of seafood on its domestic market.

In 2013, the Group purchased a modern facility in Madrid, Spain and founded the company **Lerøy Processing Spain**. Operations at the facility are based on the model applied to Sjømathuset in Oslo, and the level of activity has seen a significant increase in 2014.

## ASSOCIATES

Lerøy Seafood Group ASA has ownership interests in several associated companies, of which Norskott Havbruk AS and Alfarm Alarko Lerøy in Turkey are the two largest.

**Norskott Havbruk AS** is 50% owned by Lerøy Seafood Group ASA and the fish farming company SalMar ASA respectively. Norskott Havbruk was founded in 2001 with the sole purpose of acquiring the company currently named Scottish Sea Farms Ltd, which is the second largest fish farming company in Scotland. In 2014, the company harvested 27,500 tons of salmon and expects to see an increase in volume in 2015. Scottish Sea Farms Ltd produces smolt and largely covers its own need for smolt. The company runs two modern land-based plants for processing salmon in Scotland and on the Shetland Islands. The company's highly skilled management and staff are actively involved in consolidating the company's position as the leading and most cost-efficient producer of high-quality Atlantic salmon within the EU. The company already holds a strong position in several market segments with a focus on high quality, for instance under the respected brand name Label Rouge. The projected volume of harvested salmon for 2015 is 31,000 tons. Lerøy Seafood Group acquired a significant shareholding in Villa Organic AS in April 2013, and the company was an associate until the demerger between the main shareholders (Lerøy Seafood Group ASA and SalMar AS) in July 2014. Subsequent to the demerger, the Group's shareholding is wholly-owned and operations are organised geographically under North Norway and within the Farming segment.

**Alfarm Alarko Lerøy** has operations based in Turkey. In close collaboration with Hallvard Lerøy AS, the company has developed the Turkish market for Atlantic salmon. The company is continuously developing its sales to forward-looking and demanding customers in an exciting market for fresh fish. In addition to importing and distributing fresh fish, the company is also engaged in fish processing and smoking. At the start of 2015, the Group increased its shareholding in Alfarm Alarko Lerøy to 100%. The administration is looking forward to developing the company together with its motivated and highly skilled staff.

For some time now, the Group has had a working relationship with **Brdr. Schlie** in Denmark. In 2013, both parties entered into a joint venture and founded Lerøy Schlie AS, with a 50% stake each. Lerøy Schlie has purchased and built a new facility for distribution of fresh fish, primarily in Denmark. In 2014, the level of activity for the new company saw a considerable increase, and the Group has high expectations for future developments.





## THE BOARD OF DIRECTORS

In its central position between owners and management, it is the Board of Directors' function to safeguard the shareholders' need for strategic governance and operational control of the business. The function and focus of the Board will always vary somewhat depending on circumstances within the company and on developments in the external business environment.

Chairman of the Board, Helge Singelstad, was appointed to the Board by the extraordinary general shareholders' meeting on 26 November 2009. Helge Singelstad holds a degree in computer engineering, a degree in Business Administration from the Norwegian School of Economics and Administration (NHH) and a 1st degree of law from the University of Bergen. Helge Singelstad has previously been CEO, Vice CEO and CFO of Lerøy Seafood Group over a number of years. Consequently, he has broad knowledge of the Group and the industry.

Helge Singelstad is Chairman of Austevoll Seafood ASA and member of the board of DOF ASA. In addition, he is the Managing Director of Laco AS. Helge Singelstad has no shares or options in Lerøy Seafood Group ASA as of 31 December 2014, but indirectly owns shares in the company as a shareholder of Austevoll Seafood ASA.

Pursuant to the Norwegian Public Companies Act, the Chief Executive Officer is not permitted to be a board member. NUES, the Norwegian Code of Practice for Corporate Governance, is also very clear in its recommendation that neither the CEO nor other executive personnel in the company should be board members. In Lerøy Seafood Group ASA, neither the CEO nor other executive personnel are members of the board of directors.

For several years, as well as in its eight meetings in 2013, the Board has maintained a particular focus on the connection between practical operations and strategic business development. The Board and company management work purposefully to develop the Group into the most profitable, fully-integrated, international seafood group. This work has for a considerable time been carried out in accordance with our public announcements. The Board's work reflects this strategy and the results are shown through management implementation. Although the strategic development of the company is a continuous process and part of the work of the Board of Directors, the company also holds strategy meetings. Strategy meetings were held in 2014.

The Group structure, with autonomous units in different regions, is supervised through participation by Group staff in the administrative bodies in the various companies. Also the employees, through their representation on the boards of the subsidiaries, contribute to satisfactory operational development. The audit committee conducts quality assurance of internal control and reporting, and is responsible for the Board of Director's dialogue with and monitoring of the external auditor. The audit committee held three meetings in 2014.

One of the board members is allocated principal responsibility for the environment and sustainability. An extensive review of the company's activities in relation to the environment and sustainability is carried out during meetings held by the audit committee.

Rules of procedure have been prepared for the work of the Board of Directors. The scope of the work of the CEO is laid down in separate rules of procedure, in addition to close dialogue with the company's Chairman of the Board.

During the shareholders' meeting of 25 May 2005, article 5 of the company's Articles of Association was amended in order to allow for a nomination committee in the company.

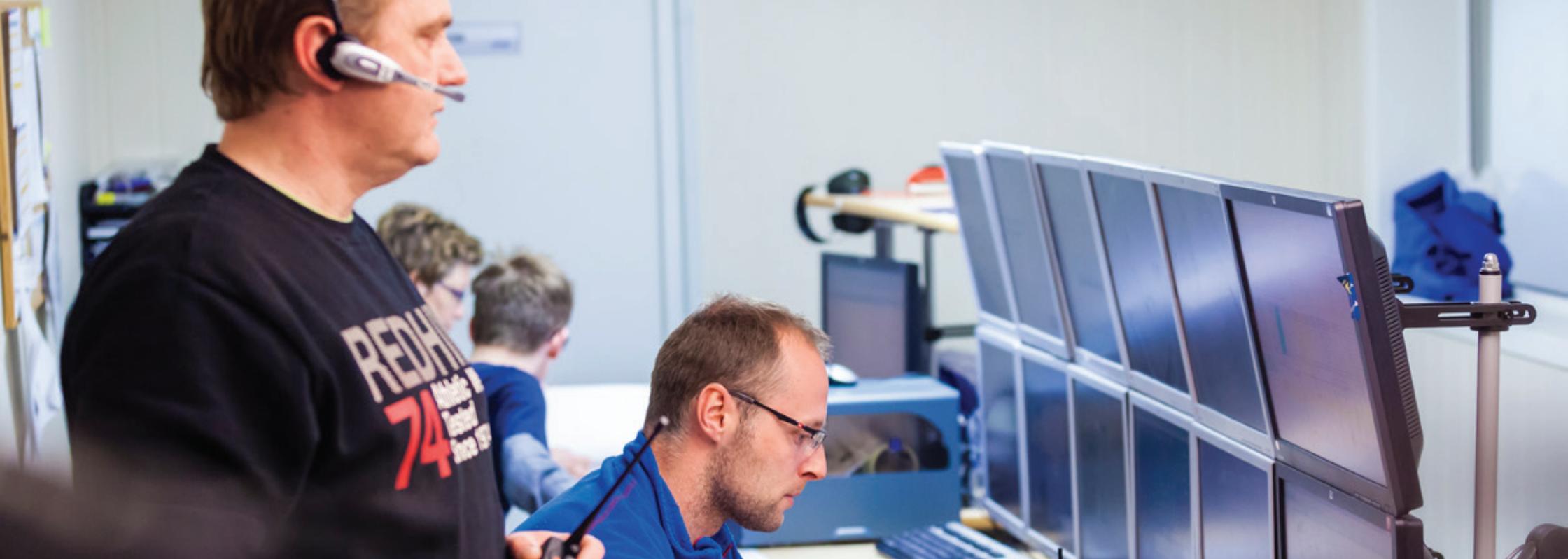
The nomination committee consists of three members elected by the shareholders' meeting for a period of two years. The company's nomination committee is charged with preparing proposals for the composition of an owner elected board of directors and to submit recommendations to the shareholders' meeting for appointments to the board.

Lerøy Seafood Group also aims to supply high-quality products in order to develop a profitable, efficient and binding collaborative network in terms of both supply and marketing. The Group's Board of Directors and corporate management continue to work on developing and adapting the Group's control system for the environment and commerce, to remain in line with national and international requirements.

The Board of Directors underlines the importance of strategic, forward-looking business models that may comprise acquisitions and business combinations both downstream and upstream. The Board actively follows a policy to ensure the financial and structural premises required to meet the Group's long-term financial goals.

Based on continued growth and improved profitability, Lerøy Seafood Group aims to generate financial value for its shareholders, staff and society in general. Lerøy Seafood Group aims to provide a satisfactory rate of return from all its activities.





## RISK

### Internal control and risk management

The Group's activities are varied, depending on each unit'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 economic conditions. The Group's regional structure with independent units, 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 the importance of uniform reporting procedures and formats in order to ensure correct reporting from all units 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, limit individual risk and keep risk as a whole within acceptable constraints.

### **Operating risk**

The Group's fish farms are located 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 accidental release of fish in 2014; ref. the company's Environmental Report for a more detailed description. Keeping animals in intensive cultures will always represent the risk of disease. Fish are particularly vulnerable to disease 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 disease can be reduced by ensuring high quality smolt, vaccinations, good conditions and the correct locations for the fish. The Group has also increased its focus on sustainable feed.

For more detailed comments on biological production, please refer to the Group's environmental report.

### **Market risk**

The developments in global salmon and trout prices have a considerable impact on the results achieved by the Group. In order to reduce this risk factor, attempts are made to ensure that a certain quota of sales is so-called contract sales.

In addition, Norwegian fish farming and the fish processing industry in Norway and the EU 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 annulled the programme which involved so-called minimum prices for Norwegian salmon and punitive duties on Norwegian trout. Punitive duties on whole salmon exported to the USA were abolished in 2011. Russia introduced a ban on imports of Norwegian salmon and trout on 7 August 2014. As Russia is normally a major market for Norwegian salmon and trout, the ban on imports had a negative effect on prices realised during the second half of 2014.

**Currency risk**

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

**Credit risk**

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

**Interest risk**

The Group's long-term liabilities are mainly based upon agreements for floating rates of interest, representing exposure to increases in the market interest rate. Risk is minimised by making use of interest swap agreements.

**Liquidity risk**

The most significant individual factor related to liquidity risk is fluctuations in salmon prices. Liquidity is also affected by fluctuations in production and slaughter volumes and changes in feed prices, which are the most prominent single factors on the cost side. Feed costs are impacted by the 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 valuations 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 valuations 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 different 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 entities which issue the reports 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 of an appropriate and efficient internal control and are responsible for compliance with requirements.

The audit committee shall monitor the process of financial reporting and ensure that the Group's internal control and risk management systems function efficiently. The audit committee shall also ensure 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**

Entities which issue reports 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 segments' 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 figures for profit/loss and balance sheet.

### **Reviews by the audit committee, Board and shareholders' 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 the presence of the administration.

The Board reviews the interim accounts per quarter and the proposal for the annual accounts. The annual accounts are adopted by the shareholders' meeting.

### **Information and communication**

The Group strongly emphasises correct and open information to shareholders, potential shareholders and other stakeholders. Ref. item 13 "Information and communication" for more detailed information.

### **Follow-up**

Reporting entities. Those persons responsible for entities which issue reports 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.

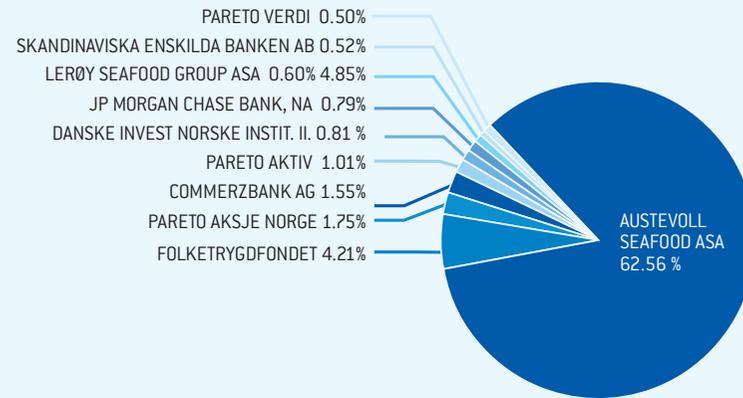
### **External auditor**

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

### **The Board of Directors**

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

## THE 10 LARGEST SHAREHOLDERS



## OWNERSHIP

When recruiting board members, the company's owners have already 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 on 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 most influential and are likely to remain so in the future.



## STAKEHOLDERS

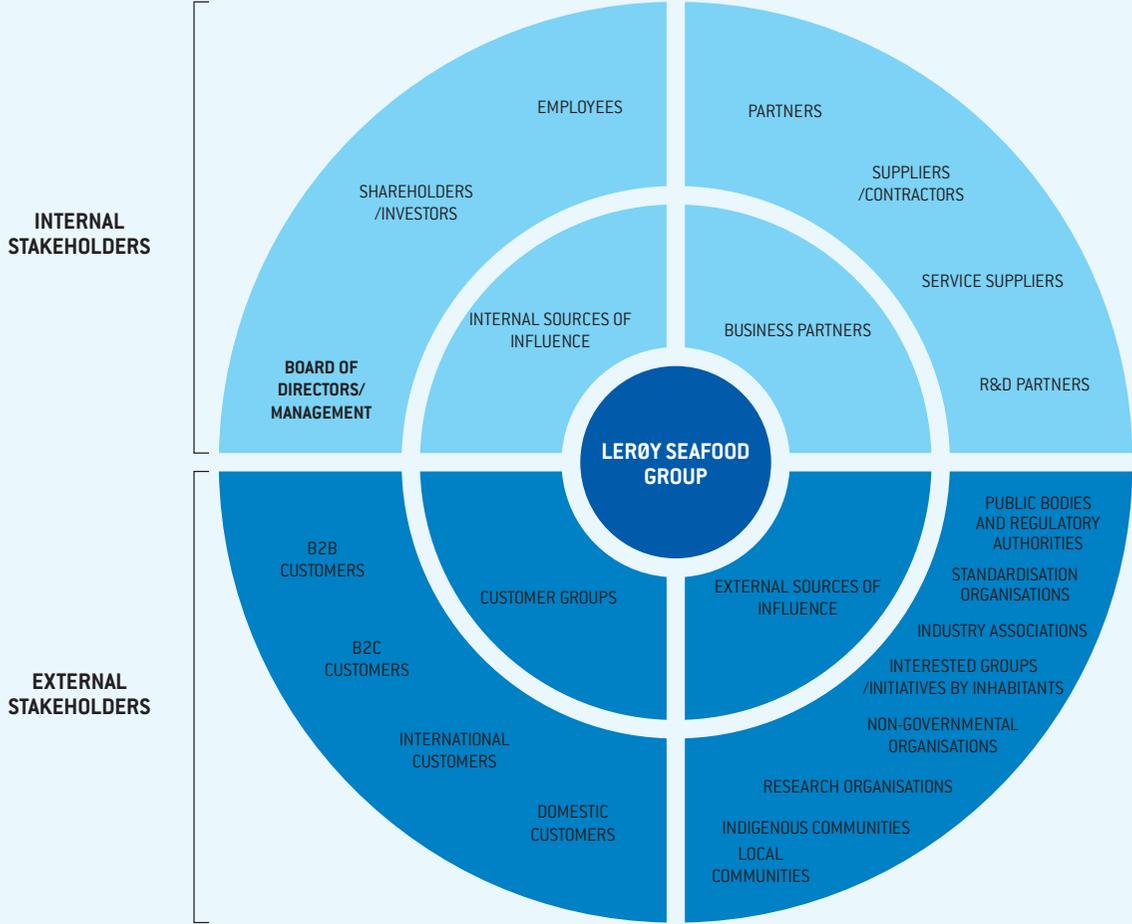
A stakeholder is an accountant, a group, an organisation, a member or a system that has an influence on or may be affected by the actions of an organisation. Lerøy Seafood Group has various stakeholders and communicates with them via meetings, annual reports, environmental reports, GRI reports, CDP reports, the media, announcements, registration, public reports, collaborative projects, cooperation agreements, the stock exchange, web pages etc.

Successful communication with stakeholders is an important part of daily activities. One new process introduced is the analysis of stakeholders based on the influence they have on our organisation. This helps us identify how we can involve them more efficiently, and not least ensure that both parties benefit from the cooperation.

Key words:

- Approval of selected subjects
- Various perspectives on influence
- Identification of problems
- External perception
- Know-how

# STAKEHOLDERS





## A DIFFICULT YEAR BUT THE BEST RESULTS IN THE COMPANY'S HISTORY



**We had high expectations for a very successful year in 2014, and we were not wrong. 2014 will now go down in the history books as a record-breaking year for Lerøy Seafood Group ASA. Turnover increased by NOK 1.8 billion, from NOK 10.8 billion to NOK 12.6 billion, and our operating profit totalled NOK 1.8 billion compared with NOK 1.6 billion in 2013. With such a solid result, our company can continue its impressive rate of development sustained over the past two decades. It is incredibly inspiring to be part of a company and an organisation that constantly strives to reach new goals, and that is able time after time to achieve these goals. I am genuinely proud to be able to say that I have been employed by such a company for 22 years.**

Over the past 15 years, we have made significant strategic investments both upstream and downstream in our efforts to create the type of organisation we are today. Our work on the further development of our company strategy, with a focus on continuous improvements throughout the value chain, has been a core activity throughout 2014 and will remain so in the years to come.

Lerøy Seafood Group has had a strategic goal to be self-sufficient in terms of smolt in all regions. We have made substantial investments over the past years towards achieving this goal. The most significant investments were made in Belsvik in 2012. To date, this facility has shown extremely satisfactory results with regards to the quality of the smolt, fish health and growth. In 2014, we invested NOK 150 million in extending our smolt facility in Laksefjord in Finnmark. This company is now a highly modern recirculation plant with a total capacity of 12 million smolt. As a result of these investments, Lerøy Seafood Group has total production capacity of 57 million smolt with the following geographic distribution: 23 million in Hordaland, 22 million in Central Norway and 12 million in North Norway. This provides us with an extremely strong position for the future.

Fish farming represents a major share of value generation for Lerøy Seafood Group. In 2014, we had a total production of 158,258 tons of salmon and trout. This is an increase of close to 13,500 tons (9.3% growth) from 2013. Keeping in mind the biological challenges we have faced and the fact that the total rate of growth in Norway has been 4%, we have every reason to be very satisfied with this result. In 2013, we purchased a significant percentage of the shares in Villa Organic AS. This company was split up in 2014, with eight licences allocated to Finnmark. We have gained extremely positive experience during our first year of operations in Finnmark, and we are very confident that we can make significant developments in this region in the years to come. We have made great progress in Finnmark to date and have high expectations for the future. We were also extremely gratified to confirm the licence for demonstration and training granted to Lerøy Aurora in the autumn of 2014. We feel it is important to help distribute information and knowledge about fish farming to groups and persons not involved in our industry.

2014 brought a number of biological difficulties, with an extremely warm summer causing problems. Although 2014 was a difficult year biologically for Norwegian fish farming, I would like



to make clear that salmon production in Norway over the years has been and remains the most sustainable method of salmon production worldwide. Norway has the most stringent statutory environmental requirements, also including limits for lice at which measures have to be implemented. I am saddened by the fact that an efficient Norwegian method of food production, that is competitive both at home and abroad in terms of the environment and economy, is constantly exposed to dishonest or strategic attacks aiming to prevent future development in Norway.

In our efforts to achieve our goal of optimal environmentally and economically sustainable production, we have made significant investments in the production of lumpfish, as a cleaner fish. In 2014, we purchased 34% of Norsk Oppdrettservice AS, a leading producer of this species and with production facilities in both Central and South Norway. We have also developed two of our own facilities for production of lumpfish, and acquired a producer in North Norway in early 2015. In the future, Lerøy Seafood Group will be self-sufficient with regards to lumpfish in all regions. All experience gained to date indicates that lumpfish will be an extremely good cleaner



fish. In 2014, Lerøy released 0.6 million lumpfish. This figure will increase five-fold in 2015 to 3 million, then double once again the following year to 6 million lumpfish. Our VAP segment (value-added processing) can report a very successful 2014, with a total improvement in profit of 28%. The segment made substantial investments in 2013 in Norway, Sweden and the Netherlands in order to increase capacity. Since then, we have worked hard to gradually exploit our increased capacity, and can confirm an impressive growth in both turnover and profit in 2014. Moreover, we still have vast potential for further growth in the years to come. Lerøy Seafood Group aims to further develop this segment and is seeking strategic investments on new and interesting markets in the future.

2014 was also a very successful year for Sales & Distribution (S&D), with an increase in turnover from NOK 10.3 billion in 2013 to NOK 12.0 billion in 2014. I would like to highlight Hallvard Lerøy AS particularly, who for the first time have exceeded the milestone of NOK 10 billion in turnover, reporting a total of NOK 10.7 billion. This is an impressive result! At the same time, we have to remember that 2014 was a year when we achieved the best prices in the history of the Group.

On 7 August 2014, Russia implemented a full ban on imports of all salmon and trout from Norway. Russia was a very important market for Lerøy Seafood Group, and represented 10% of our total sales of salmon and trout. Naturally, it was very difficult to find new markets for this volume of products over night. Norway is currently excluded from both Russia and China. This shows how vulnerable we are and how important it is to develop new markets, products and segments in the future.



After several years of important, strategic investments, 2014 has been a very exciting year. In 2013, we started work on the construction of Sjømathuset in Kalbakken, Oslo, in cooperation with NorgesGruppen. Our objective for Sjømathuset was to create a highly modern processing and distribution plant for fresh seafood, targeting NorgesGruppen's grocery stores. Production at Sjømathuset started on 17 February 2014. The start-up phase has been very challenging, but we have learned so many important lessons and now, at the end of the year and start of 2015, we are confident that our new facility will help us take our category for fresh seafood to a whole new level. This project has been extremely exciting both for me personally and everyone else involved. 2015 will hopefully be an even better year for S&D, and we aim to realise the full potential of what has been generated by the investments made in recent years.

My warm thanks to all our employees and partners for their hard work in 2014. I am sure that together we can sustain our fantastic rate of development to date. I know we can do it – but if we are to succeed, we all have to aim for a shared goal: **To do everything a little better than before.**

Henning Kolbjørn Beltestad  
CEO  
Lerøy Seafood Group



## VISIONS, BUSINESS CONCEPT/STRATEGY, ENVIRONMENTAL POLICY

### **ENVIRONMENTAL VISION**

Take action today – for a difference tomorrow

## **VISION**

Lerøy Seafood Group shall be the most profitable global supplier of sustainable quality seafood.

## **BUSINESS CONCEPT AND STRATEGY**

Lerøy Seafood Group aims to satisfy demand for seafood and culinary experiences, both at home and abroad. This will be achieved by supplying high-quality products from fisheries and fish farms where operations are based on principles of sustainability.

## **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 regulations and requirements of our industry.

We will furthermore strive to find the most environmentally friendly and sustainable systems for our products through close cooperation with our customers and suppliers of fish feed and transport.

Lerøy Seafood Group also seeks continuously to identify improvements which may reduce pollution and help protect the environment.

Our employees will focus on the company's environmental targets and will include the environment as one of our main focus areas in the future, in terms of both employees and products.

# ENVIRONMENTAL TARGETS

As previously mentioned, Lerøy Seafood Group is a company with activities that cover every part of the value chain.

Environmental targets have been established for all parts of the value chain. All key performance indicators are measured on a monthly basis and utilised internally in order to achieve improvements within individual companies and for benchmarking between comparable companies.

## **Environmental targets have been established for the following indicators:**

- LSG KPI 1: accidental release
- LSG KPI 2: lice
- LSG KPI 3: mortality
- LSG KPI 4: density
- LSG KPI 5: location status
- LSG KPI 6: use of medicines
- LSG KPI 7: biological feed factor
- LSG KPI 8: complaints from stakeholders
- LSG KPI 9: fish feed
- LSG KPI 10: Reduction of discharge of nutrient salts
- energy consumption in kWh / ton produce
- water consumption in m<sup>3</sup> / ton produce
- utilisation of packaging



KEY PERFORMANCE INDICATORS (KPI)	TARGETS FOR 2014	STATUS 2014	TARGETS FOR 2015
<b>1. Work to prevent accidental release of fish</b>			
LSG KPI 1: Accidental release	Zero accidental release	Target not achieved	0
<b>2. Measures to reduce salmon lice</b>			
LSG KPI 2: Lice	Max. 0.1 female lice of reproductive age during emigration period for wild salmon and char. Max. 0.5 female lice of reproductive age during rest of the year.	Target achieved	0.1
LSG KPI 6: Use of medicines	Max. 4 chemical delousing procedures per generation in south / max. 1 in north	Target not achieved in south /target achieved in north	Max. 4 chemical delousing procedures per generation in south / max. 1 in north
<b>3. Fish health and fish welfare</b>			
LSG KPI 3: Mortality per generation	6 %	Target not achieved	7.0 %
LSG KPI 4: Density	Max. 25 kg/m <sup>3</sup>	Target achieved	25 kg /m <sup>3</sup>
<b>4. Efficient utilisation of land and sea areas</b>			
<b>5. Reduction of discharge of nutrient salt per location</b>			
LSG KPI 5: Location status	Max. average MOM-B per location: 1.5	Target achieved	Max. average MOM-B per location: 1.5
LSG KPI 7: Biological feed factor	Biological feed factor: 1.1	Target achieved	Biological feed factor: 1.09
LSG KPI 10: Reduction of discharge of nutrient salts	R&D via Ocean Forest		R&D via Ocean Forest
<b>6. Other</b>			
LSG KPI 8: Complaints from stakeholders	All complaints shall receive a written response	Target achieved	All complaints shall receive a written response
LSG KPI 9: Fish feed	Increased content of MSC certified raw materials FishSource score for marine raw materials for individual species > 6, biomass score > 8 FFDRm < 1.35	Target achieved	Increased content of MSC certified raw materials FishSource score for marine raw materials for individual species > 6, biomass score > 8 + FFDRo < 2.95
Energy consumption in kWh / ton produce	Each company establishes individual targets		Each company establishes individual targets
Water consumption in m <sup>3</sup> per ton produce	Each company establishes individual targets		Each company establishes individual targets
The share of packaged raw materials shall be increased (the term packaged raw materials is defined as commodities)	Each company establishes individual targets		Each company establishes individual targets



## MOST IMPORTANT ACTIVITIES INVOLVING DEVELOPMENT IN 2014

- Opening of Sjømathuset in Oslo, Norway's largest and most modern facility for freshly packaged products.
- Eight new licences in Finnmark acquired via demerger of Villa Organic AS.
- Agreement signed for the purchase of the remaining shares in seafood distributor Alfarm Alarko Lerøy in Turkey.
- Purchase of 34% of lumpfish producer, Norsk Oppdrettsservice AS

## ENVIRONMENTALLY LABELLED PRODUCTS SOLD IN SWEDEN 2011-2014 (KG)



## 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 of 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, these companies increased their sales of environmentally labelled products by 65% from 2013 to 2014. The share of environmentally labelled products in 2014 comprised approx. 17.5% of the total volume of products sold in Sweden, compared

to 12% in 2013. Swedish consumers are among those consumers most interested in environmentally labelled products in Europe.



## **GOALS AND RESULTS FOR FISH CUT AND EUROSALMON IN 2014**

<b>Fish Cut</b>	<b>Goals 2014</b>	<b>Result 2014</b>	<b>Goals 2015</b>
Power consumption	0.170 KWh/Kg	0.460 kwh/kg	0.420Kwh/kg
Water consumption	2.20 L/kg	2.72 L/kg	2.72 L/kg
Total sick leave	< 3.22%	4.19%	< 4.19%

<b>Eurosalmon</b>	<b>Goals 2014</b>	<b>Result 2014</b>	<b>Goals 2015</b>
Power consumption	0.400 kwh/kg	0.194 kwh/kg	0.400 kwh/kg
Water consumption	2 L/kg	2.49 L/kg	2.50 L/kg
Total sick leave	< 6.67 %	4.92%	< 4.92%

### **FROM OUR PRODUCTION COMPANIES IN FRANCE: FISH CUT AND EUROSALMON**

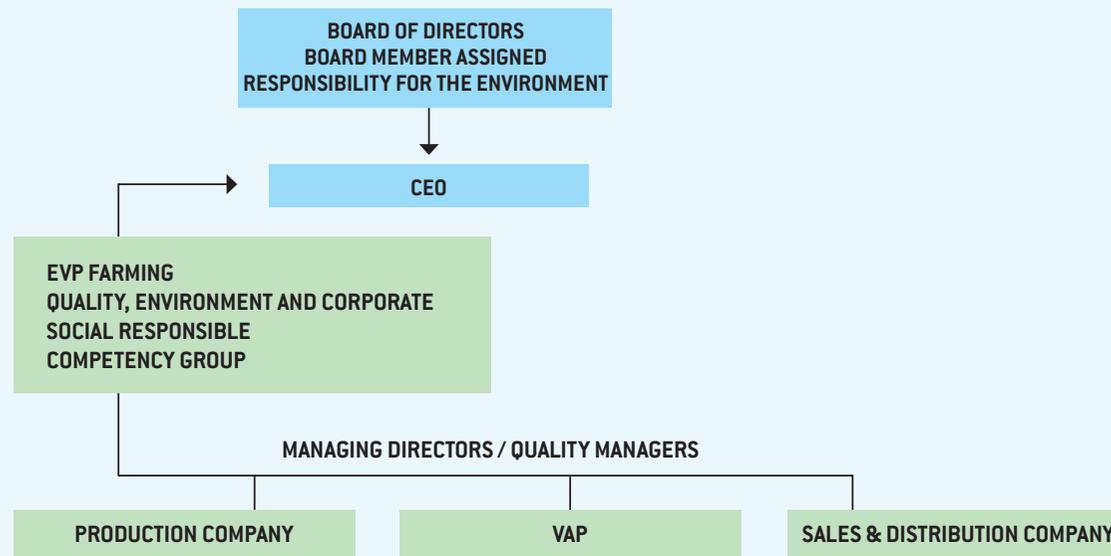
The environment and sustainability are natural elements in the French companies' guidelines, and both companies have carried out extensive work in recent years in these areas. As a result, the companies now have clearly defined goals for both the environment and social responsibility.

The start-up and utilisation of new and larger facilities for Fish Cut presented challenges in terms of goals and goal achievement. More realistic goals have now been set for 2015. The cause of the non-achievement of goals for water consumption for Eurosalmon was a new machine that uses a lot of water. This was not taken into account when the goals were set.

## FOCUS ON THE CUSTOMER ON THE JAPANESE MARKET

The environment and sustainability are also focus points on the Japanese market. In recent years, international organisations such as WWF, Greenpeace and Sustainable Fisheries Partnership, have all launched campaigns on the seafood market. The Japanese consumer is environmentally conscious and an increasing number of consumers prefer to buy products with an environmental label. A clear trend has emerged in recent years for high sales of products labelled as MSC and ASC.





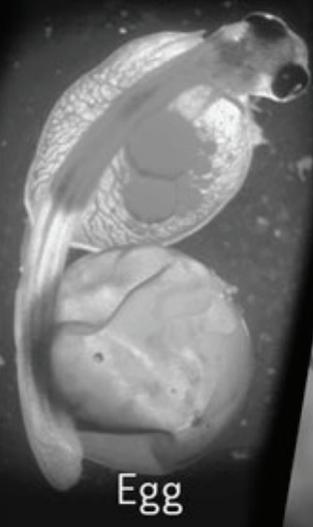
## ORGANISATION OF ENVIRONMENTAL AND SUSTAINABILITY FACTORS

The person in charge is the CEO. The Quality, Environment and CSR (Corporate Social Responsibility) Manager, is responsible for coordinating work for all the companies within the Group. Responsibility is also delegated to the Managing Director of each subsidiary, while the Quality Manager or delegate is responsible for daily follow-up within the companies. A number of competency groups have been set up in Lerøy Seafood Group. The different Quality Managers make up a competency group for quality and the environment, as illustrated above. This is led by the Quality, Environment and CSR Manager. The Quality, Environment and CSR Manager holds regular meetings with representatives from the other competency groups, where quality and the environment are on the agenda.

Lerøy Seafood Group has established competency groups within:

- Quality and the environment
- Production of fish for consumption
- Production of young fish
- Fish health
- Industry
- Economy

One of the board members is allocated principal responsibility for the environment and sustainability. An extensive review of the company's activities in relation to the environment and sustainability is carried out prior to meetings held by the audit committee.



Egg



Smolt



Ekstra fokus på  
Havbruk



Høsting



Bearbeiding



Distribusjon



Kunde



## VALUE CHAIN

### WHAT ARE OUR FOCUS POINTS?

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 different areas related to our fish farming activities. A major share of our efforts related to the environment and sustainability will therefore focus on fish farming.

Lerøy Seafood Group plays an active role in all parts of the value chain for production of salmon and trout.

## ROE PRODUCTION

Lerøy Seafood Group has capacity to produce 130 million fertilised eggs per year.

Production is in the main GLOBAL G.A.P. certified and roe production is subject to particularly stringent requirements on fish health and the environment. Roe production involves taking parent fish ashore in May prior to stripping. Production of roe takes place mainly in October, November and 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 own subsidiaries. Smolt production takes place in an onshore facility in fresh water, where hatched larvae are delivered from roe producer to each young fish facility. 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 mainly regionalised its production of smolt in order to ensure optimal adaptation of smolt quality. In 2013, the Group produced approximately 40 million smolt.

The companies in Lerøy Seafood Group are mainly self-sufficient with smolt from their own young fish facilities. Selection of the smolt produced by Lerøy is based on traditional breeding methods. However, new selection methods based on genetic markers have also been implemented in recent years.

The smolt delivered in 2014 originated from roe from parent fish which had been selected with genetic markers (QTL) for extra resistance to infectious pancreatic necrosis (IPN). This virus has previously caused major losses after fish have been released. As a result of the new genetic markers, the rate of loss caused by IPN in 2014 was lower than previous years. 2014 also saw the use of roe from parent fish selected using genetic markers (QTL) for strong resistance to pancreatic disease (PD) and the company expects to see a corresponding reduction in loss in the years to come as a result.





In the first week of 2013, Lerøy Midt's new young fish facility in Belsvik started operations. This has been established to replace a number of smaller facilities, and production in this region will now feature new and more eco-friendly methods.

The facility in Belsvik has been able to fully supply the orders placed by the Farming segment. This means that the facility has supplied 10,821,019 fish with an average weight of 97 grams, according to plan.

This figure is slightly lower than originally planned, but the size of each individual fish is higher.

Water consumption at the facility has been approximately 3,000 litres per minute, corresponding to a recycling rate of 98-99%.

As planned, water heating has been provided by exploitation of seawater heat using a heat pump.

Discharges to recipients have complied with the discharge permit, with an average rate of purification of suspended substances (SS) of 79.7% and 64.8% for organic material (BOF5). All accumulated mud and organic material has been delivered to biogas production plants.

Noise analyses have been carried out from the facility and show that noise from the facility complies with requirements from the County Governor's environmental protection department.

In 2014, the facility received approval for a measuring station in Belsvikbekken stream, for control of minimum water flow and passage of fish in order to ensure return of anadromous fish. This station will be built in 2015.

### **RECYCLING STATION**

**Water consumption:** Use of recycling technology throughout the facility helps reduce water consumption by 98-99% compared with a conventional flow-through facility, thereby preventing the need for major installations in the landscape, such as dams and pipelines. This will allow for a very low impact on nature and the biological diversity in the water source when compared with the consequences of a flow-through facility. Water consumption at the Belsvik facility will be logged.

**Energy:** The consumption of energy is lower in a recycling facility than in a flow-through facility. Although a certain amount of energy is required to pump and purify water, there are substantial savings to be made from recycling the energy found in heated water. Heat energy at the Belsvik facility is based on the exploitation of seawater heat using a heat pump.

**Mud:** Mud generated by the mechanical filtering of water is set aside and preserved at the recycling facility. Mud is a resource which can be used as soil improvement or fertiliser, or for the production of biogas.

**Accidental release:** Outflow water in a recycling plant passes through several filters and purification processes before arriving at the recipient. Outflow water is reduced by 98-99% compared with conventional facilities. This provides for a much higher prevention rate of accidental release than with conventional facilities. The transition to a major recycling plant will result in the gradual closure of small, conventional young fish facilities. All the small young fish facilities make use of water sources which, in time, can either be used to produce eco-friendly power, or the watercourses can be returned to their natural state.

The environmental targets in 2012 were to phase out traditional sources of energy and make the transition to more energy-friendly operations, based on renewable energy sources and improved energy recycling. The phase-in of the new Belsvik facility is a huge step forward in the right direction for Lerøy, with a view to energy consumption at its young fish facilities.

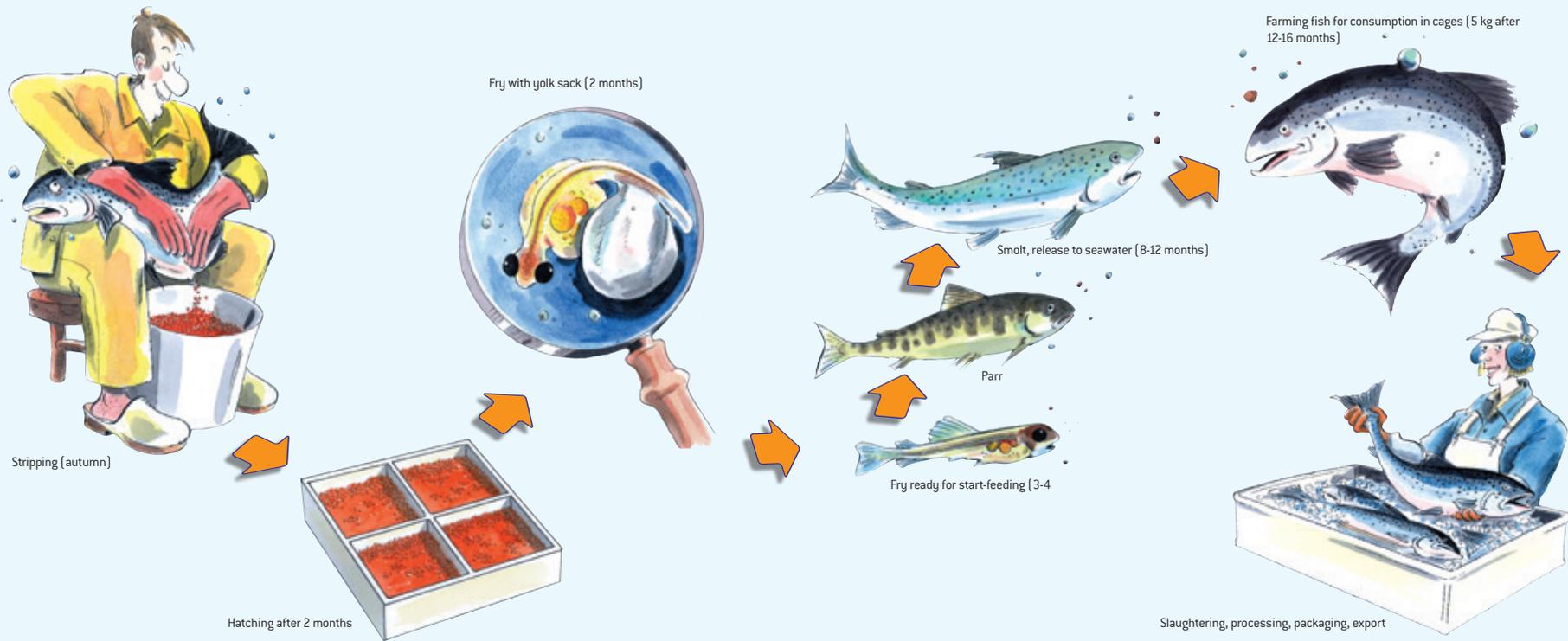
## **PRODUCTION OF FISH FOR CONSUMPTION**

Production of salmon in the sea takes place in carefully selected locations. An optimum environment must have a good flow of water and the correct temperature range, topography, oxygen content and exposure. Once the location has been selected and approved by the fisheries authorities, environmental authorities, municipality, the coastal authorities and other stakeholders, 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 according to a specific standard in order to ensure that the facilities can withstand exposure to the prevailing environment. 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 and time of release. Production is monitored by camera and sensors in each cage. This ensures optimal feed and control, so that we can prevent discharges to the environment and ensure optimal growth and fish health, in addition to optimal fish welfare.

## **INDUSTRY**

Production is defined as slaughtering and processing, which take place in modern factories designed for production of food and approved by the proper authorities. The fish are anaesthetised by a blow or shock then put to death in accordance with applicable rules to avoid unnecessary suffering and to ensure top product quality. Lerøy Seafood Group currently has seven own facilities for full-range production, from whole gutted salmon to processed products within all categories. The facilities meet applicable requirements regarding discharges to the external environment.





## FROM ROE TO PLATE

**Stripping:** The broodstock 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 8 degrees Celsius 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 it gradually begins to take dry feed. This is known as start-feeding.

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

**Ongrowing in the sea:** After just over two years in the sea cages, the salmon have grown to a weight of about 5 kg. The rate of growth depends on, among other factors, the water temperature and light.

Well-boats are used to transport live salmon. These boats are used for transport of smolt from the hatchery to the ongrowing farms and fully grown live salmon from farms to the slaughterhouse. All salmon are slaughtered in the company's own slaughtering plants. They are anaesthetised before slaughter and are then immediately cut, gutted, sorted, chilled and made ready for further transport. After slaughter, some parts of the fish are processed into fillets, smoked salmon or “table-ready” products etc., but most are sold as fresh, gutted fish.

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





## FARMING

**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 vital 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 a significant increase in fish farming.**

Lerøy Seafood Group has a strategy whereby their fish farming activities are based on a "lasting perspective" which forms 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 for its fish farming activities, and the local management's knowledge of and care for the local environment are of decisive importance. 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.

One important aspect in our efforts to reach our environmental targets for fish farming is certification according to international environmental standards, including GLOBAL G.A.P. and the ASC standard.

This allows us to guarantee and document that our fish farming activities are the foremost in the world in terms of environmentally sustainable production and that we possess both the competencies and capacity to make progress in such an important field. Lerøy Seafood Group was the first fish farming corporation in the world to achieve ASC certification for its entire value chain – from production to consumer. The Group is experiencing significant demand for ASC certified salmon, and has secured continuity of supply of ASC certified products in 2014.

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

- prevention of accidental release
- measures to reduce salmon lice
- fish health and fish welfare
- efficient utilisation of land and sea areas
- reduction of discharge of nutrient salt per location

We have focused specifically on efforts to reduce problems related to salmon lice in 2014.

Lerøy Seafood Group has fish farming activities in three regions: North Norway, Central Norway and West Norway. While Lerøy Seafood Group in North Norway has not experienced problems with excessive levels of salmon lice, our companies in Central Norway and West Norway have incurred major costs in 2014, higher than normal, in order to keep lice under the limits specified in the regulations. This is a problem we share with the rest of the industry in these two regions. 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 as a cleaner fish at our facilities. 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.



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

The Group's fish farming companies have established a clearly defined set of goals for each 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 proper conduct. 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 towards achievement of our environmental targets.

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. We aim to ensure that the social benefits provided by our activities are safeguarded by maintaining robust and profitable businesses, by providing spin-off effects within local communities, and by having a clear environmental management profile within fish farming.

There is vast potential off the coast of Norway for increased production of seafood. At the same time, however, we also have a strong obligation to ensure full environmental protection 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 both the environment, the fish farming industry and our coastal communities.



A handwritten signature in blue ink, appearing to read 'Stig Nilsen', written in a cursive style.

Stig Nilsen,  
EVP Farming,  
Lerøy Seafood Group



## R&D – FARMING

### **RESEARCH, DEVELOPMENT AND INNOVATION**

Research, development and innovation are central factors in the work to further develop the entire value chain in Lerøy Seafood Group. The Group has a history of active participation in R&D&I projects directly or via our subsidiaries in order to ensure proximity to and ownership of the projects and maximum exploitation of the input factors. Ordering and implementation competency are central concepts in Lerøy Seafood Group's R&D&I work. We shall have the ability to formulate our challenges and goals as precisely as possible and to rapidly implement results throughout the organisation. The actual R&D&I work is often carried out in cooperation with national and international R&D groups. The R&D&I projects comprise a wide range of subjects, from innovation in cooperation with internal and external groups to participation in major, significant research projects, such as the Research Council of Norway's SFI scheme [SFI – centre for research-based innovation].

**The Group's R&D&I efforts in 2014 have focused on 4 main areas:**

- 1) Combating lice
- 2) Feed/feed exploitation/feed strategies
- 3) Fish health
- 4) Technology

An increase in innovation is increasingly underlined as a fundamental element for the future of Norway. 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 in terms of innovation within every part of our value chain.

**SALMON LICE**

The company has a principal 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 very last measure utilised.

**The Group's R&D&I work related to salmon lice takes four different approaches:**

- 1) keep the salmon away from the lice
- 2) keep the lice away from the salmon
- 3) kill the lice before it finds the salmon
- 4) kill the lice once it has found the salmon.

The first three methods are preventive, while the fourth involves treating salmon infected with lice. Lerøy is active within 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".

Lerøy Seafood Group employs a package of initiatives comprising cleaner fish (ballan wrasse, goldsinny wrasse and/or lumpfish) which eat the lice from salmon, functional feed to reinforce fish resistance to lice, and efficient and systematic cleaning procedures for nets etc. to allow the cleaner fish to feed properly, combined with a coordinated and selective use of medicinal treatment when required. When required, the "combination method" is used upon agreement with the patent holder in order to minimise use of medicines while reducing the risk of

resistance to medication. Hydrogen peroxide, which has no negative impact on the environment, is also used substantially where appropriate.

Lerøy Seafood Group is involved in a number of comprehensive research projects involving the fight against salmon lice. As one of two fish farming companies, Lerøy Seafood Group is part of the prestigious research programme entitled "SFI Salmon Louse Research Centre", a 5+3-year research programme with a total financial framework of more than NOK 200 million. The focus in this programme is to strengthen both the non-specific and specific natural defences of fish against salmon lice, the development of precise methods for resistance testing, development of new medicinal methods of treatment and the utilisation of salmon lice genomics in order to develop more precise research tools and treatment techniques. To date, know-how about salmon lice has advanced significantly, laying the foundations for development of feed types that reduce the volume of lice infection for salmon or increase the salmon's ability to rid itself of lice infection. Several gene tests have been developed and commercialised, indicating the sensitivity of salmon lice to different medical treatment methods utilised. This ensures an optimal choice of treatment agent and method when medicines are necessary. Furthermore, both vaccines and repellents with long-term effect are under development.



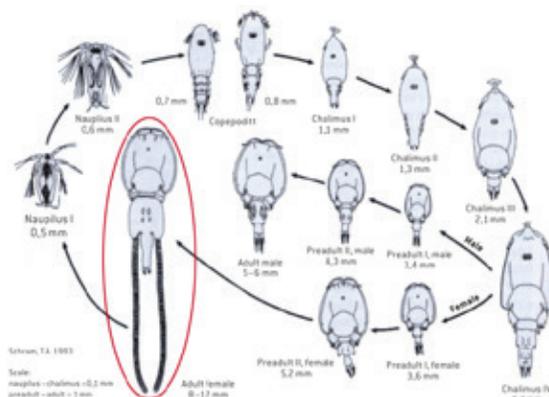


## LUMPFISH

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 allows us to minimise reliance 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 move allows us to provide a satisfactory supply of lumpfish to our regions in South and Central Norway. Lerøy Seafood Group also has ownership rights to production facilities for lumpfish in North Norway. As a result, we can also achieve a self-sufficient supply of lumpfish for our locations in North Norway, when 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.



Sea lice: *Lepeoohtheirus salmonis*

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.

In order to ensure a regular and predictable supply and correct fishing of the natural stocks, Lerøy Seafood Group takes 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 accumulating new expertise as it emerges.

Lerøy Seafood Group also chairs several other R&D projects which focus on combating salmon lice, in cooperation with research institutions, equipment suppliers and other fish farming companies. The main objective for these projects is to:

- Keep the salmon away from the upper parts of the sea waters where we know there is the highest concentration of salmon lice larvae. We make use of LED lights with a special wavelength or physical barriers taking into account the fact that salmon require access to air so they can regulate buoyancy.
- Use of laser to remove lice from freely swimming salmon. Laser treatment of salmon lice.



## FEED AND FEED UTILISATION

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 and takes an active and influential role in 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 different markets. We have established ultramodern R&D facilities and carry out feed trials, maintaining full control of feeding and the volume of feed eaten per vessel. Several trials have been performed in 2014 involving the use of new raw materials in the feed and benchmarking of existing feed concepts.

Moreover, Lerøy has maintained a major focus in 2014 on feeding regimes, and has accumulated and incorporated "best practice" throughout the organisation. Lerøy Seafood Group requires an extra focus on the quality of the fish supplied as an end product 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 problem 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 proteins.

We maintain a significant focus on the correct use of raw materials with a view to optimal exploitation of marine resources, fish welfare and quality. FINS (Fish Intervention Studies) is a major project involving the effect of fish on human health. The objective of the project is to both document and explain the effect of marine protein and fat in the form of fatty and lean fish on the medical and mental health of sections of the population such as children, pupils at lower secondary school, people who are overweight and the elderly. The project has a total budget of more than NOK 60 million. The Norwegian Seafood Research Fund (FHF) is financing the project, in direct cooperation with enterprises such as Lerøy Seafood Group. The project is chaired by NIFES, the National Institute of Nutrition and Seafood Research, in Bergen. Lerøy Seafood also plays an active role in the project focusing on the nutritional quality and the end product's importance for the physical and mental health of the consumer.

## **FISH HEALTH**

Lerøy Seafood Group maintains a constant focus on fish health and control of health at our facilities. The fish farming industry faces a number of health-related challenges which cannot currently be solved by vaccination or medication - in particular viruses - 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 has been 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.

Throughout 2014, Lerøy has cooperated with Preline Fishfarming Systems AS on the development and construction of a closed-containment, floating post-smolt facility. The facility takes the form of a large pipe 50 metres long, 12 metres wide and 8 metres high. The water inlet is flexible and can be arranged at depths from 0 to 30 metres. The facility is designed purely as a flow-through system, and is located in Sagen in Samnanger municipality in the region of Hordaland. Comprehensive tests will be carried out on the new facility in 2015.

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 locations with the highest possible degree of biological sustainability. Such locations may place new requirements on equipment and operational formats which we currently do not face today.

At the same time, we rely on the goodwill of our local communities so that we can make use of such locations. 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.

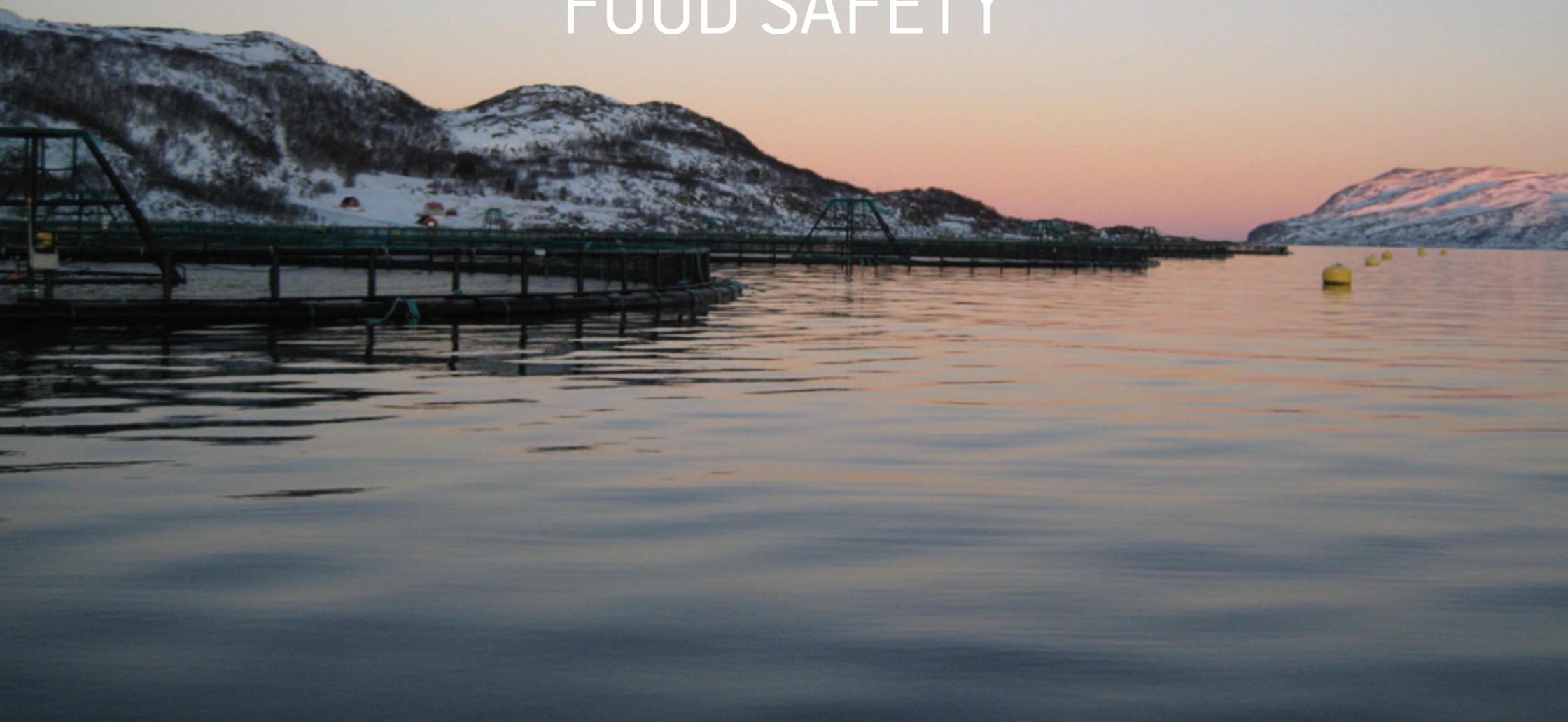
The accidental release of farmed salmon is a challenge to the industry in terms of sustainability, economic loss and impairment to the industry's reputation. Both in-house projects and participation in R&D projects have allowed the Group to optimise its production equipment and operating procedures. However, we are fully aware that none of our facilities (whether sea or land based, open or closed) can guarantee 100% against 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 stage and until the fish weighs approximately 1 kg. We participate 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 location. New technology has been developed to allow traceability of salmon back to its original location, 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 review entitled "How can charting salmon genomics 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 salmon genomes have been mapped, and this will have a substantial impact on salmon welfare, combating disease and optimising operations.

Lerøy Seafood Group, together with enterprises 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 more extensive perspective on knowledge of genomics (system biology), and to make a "salmon database" available to the industry.

# FOOD SAFETY



## 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 which contains 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 procedures, and carrying out analyses and monitoring. Our quality department conducts between 250 and 300 external audits every year in order to ensure that all products purchased by the Group meet the requirements we make of our own products. Moreover, the products are controlled by Lerøy Seafood Group at different stages throughout the entire production process; from egg/processing plants to finished product in a box and, in certain cases, up to delivery to the customer.

Lerøy Seafood Group currently has a large number of manufacturers of fish and shellfish products. 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.

A specific audit form is utilised during an audit, based on Lerøy Seafood Group's requirements. The audit of manufacturers covers the following: HACCP, different certification schemes, customer specifications, in-house specifications, legislation, traceability, marking, hygienic design, fish welfare and bacteriological analyses of equipment, product and water. After the audit, the manufacturer receives a nonconformance report, on which basis the manufacturer is obliged to prepare a plan for measures. The nonconformances shall be closed within a specified deadline.

All products are labelled in relation to prevailing labelling regulations in Norway/EU and customer requirements and import countries. Experience from individual cases of poor food safety within different protein groups in different parts of the world over recent years has resulted in an increased focus on food safety. Lerøy Seafood Group takes this work very seriously and has invested significant resources in developing satisfactory procedures and systems in order to ensure that we are in compliance with the strict requirements we have established and the requirements we must fulfil from other bodies.



## PREPAREDNESS

### RECALL

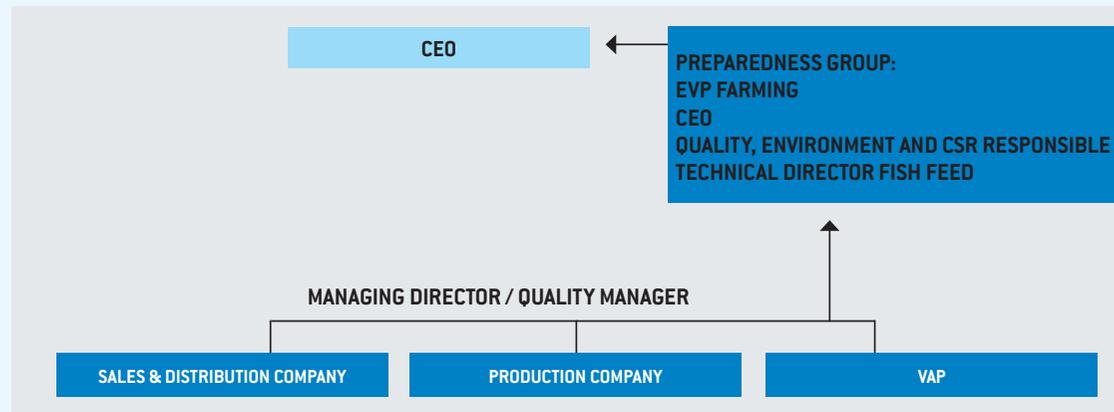
Lerøy Seafood Group has full traceability for all products from boat/cage to customer. Every year, recall tests are carried out in relation to our major producers.

In 2014, Hallvard Lerøy AS carried out six recall tests. These involve contacting a producer about a fictional matter and tracing the products from production, identifying which customers have received the product. A risk assessment is carried out to determine whether the product should be recalled and which bodies are to be notified.

### PREPAREDNESS GROUP

The preparedness group comprises representatives with expertise in management, marketing, production, R&D, quality, the environment and social responsibility. The Group has primary responsibility, both internally and externally, for communications, management and execution involving any relevant challenges/crises.

## ORGANISATION OF THE PREPAREDNESS GROUP



### Examples of bodies that may make requirements on the Group's activities:

- Media
- Customers
- Authorities
- Organisations
- Consumers
- In-house organisations in the event of accidents/crises that affect employees

A separate set of procedures has been compiled for preparedness management and recall of products.

## EXAMPLE OF A RECALL TEST



**Feedback detail overview**

Claim no.	25361	Team	Quality
Source	Production	Claim Type	Recall test
Producer	Austevoll Fiskeindustri AS		

**Case history**

Description	Registered by	Date	Status
<p>Årlig tilbakekallingstest H-72</p> <p>Øvelse startet kl. 13:30</p> <p>Myndighetene i Vietnam har påvist medisinske rester i et parti frysede laksehoder Y cut pakket hos H-72 22.10.2009. Kunden A&amp;O CO. Ltd har kjøpt 50 kasser med totalt 1 023 kg. myndighetene har gitt kunden og oss pålegg om å trekke tilbake all fisk som samsvarer med dette partiet.</p> <p>På bakgrunn av dette er det viktig at vi får vite hvilken lokalitet fisken stammer fra, slik at vi kan spore opp hvem som har mottatt samme fisken.</p>	RUJ@leroy.no	13.04.2010	14:48:50
<p>Test startet 13.04.2010 kl 13:30, parti identifisert og sporet kl. 13:51.</p>	RUJ@leroy.no	13.04.2010	14:48:50
<p>Totalt 2 040 kg laksehoder produsert i partiet, all levert til samme kunde i Vietnam [Sjøtt]. Laksen kommer fra Sauøy Merd B og 14, partinummer 121129. Mattilynet er informert om test.</p>	RUJ@leroy.no	13.04.2010	14:48:50
<p>Automatically approved when closed.</p>	RUJ@leroy.no	13.04.2010	14:48:50
<p>Sporingsstet tok 21 minutter- Partinummer kontrollert og samsvarer med Sauøy Merd B og 14. Suksess.</p>	RUJ@leroy.no	13.04.2010	14:48:50



## TRACEABILITY

Lerøy Seafood Group has 100% traceability of all products. For fish farming-related species, such as salmon, trout, cod etc. the customer can go to Hallvard Lerøy AS' website, [www.leroyseafood.com](http://www.leroyseafood.com), to download traceability information for products sold via Hallvard Lerøy AS.

The current traceability system follows a fish from roe stage to finished, packaged product. When the customer logs in to the system, they receive detailed information on the product throughout the entire value chain. All data is entered in the Group's database and can subsequently be downloaded on request via the traceability system. Individual customers have user accounts that allow them to trace products on a specific invoice. Each LOT provides the customer with traceability information from parent fish to slaughter, regarding factors such as location, feed, treatments and quality information such as fat, colour and condition.

# EXAMPLE OF TRACEABILITY DOCUMENTATION

**LERØY** *Creating Tasteful Solutions*

Lot: 132155    Species: Norwegian Atlantic Salmon

### Trace Information

**Broodstock**

Broodstock:	Ashvik
License:	12869
Strain:	AquaGen

**Juvenile**

Hatchery:	Lakeford	Smolt Plant:	Lakeford
License:	FL0093	License:	FL0093
Hatching Period:	2011-08-01	Wellboat:	
Smolt Weight:	41 g		

**Farm**

Fish Farm:	1112 Gourtegothle	Last Day of Feeding:	2013-02-04
Farm License:		Temp. Last Day of Feeding:	2.3 C
Location License:	10734	Date of Sea Transfer:	2011-07-30
Name of Farm:	Kjøfjord, Langes	Wellboat:	
Cage Density:	3 fish/m <sup>2</sup>	Duration of Transport:	
Cage Number:	1268		

**Packing Station**

Packing Station:	Lerøy Aurora AS 7126	Packing Date:	2013-02-15
License:	7-126	Core Temperature:	2.0 C

**Processing**

Processing Plant:	Lerøy Aurora AS Sjøsøy
License:	7-126
Processing Date:	2013-02-15

**LERØY** *Creating Tasteful Solutions*

Lot: 132155    Species: Norwegian Atlantic Salmon

Feed			Treatment		
Supplier	Type	First Day	Type	Name	Period
Juvenile			Juvenile		
Seedling	Nutra XP 0.5, 0.5 mm	2011-01-14	Vaccination	Alpha Jekt Mure 6	2011-06-23 - 2011-06-24
Seedling	Nutra XP 0.7, 0.7 mm	2011-01-21	Vaccination	Autogen EPIM	2011-02-19 - 2011-02-19
Seedling	NUTRA XP 1.0, 1 mm	2011-02-23			
Seedling	Nutra Olympic 1.2, 1.2 mm	2011-03-18			
Seedling	Nutra Olympic 1.5, 1.5 mm	2011-04-13			
Seedling	Protek 1.5, 1.5 mm	2011-04-15			
Seedling	Nutra Olympic 2.0, 2 mm	2011-05-12			
Seedling	Protek 2, 2 mm	2011-06-02			
Seedling	Nutra Supreme 2, 2 mm	2011-06-25			
Seedling	OKOLINSYRE SGKG 2.0, 2 mm	2011-07-06			
Farm					
Seedling	Spil 75 SGA, 3 mm	2011-07-31			
Ewe	ADAPT MARINE 50-40A 500, 3 mm	2011-08-04			
Ewe	Opal 200 40A, 4 mm	2011-10-09			
Ewe	Opal 110-500 SGA, 6 mm	2011-11-25			
Ewe	Robust 110 SGA 500, 7 mm	2011-12-11			
Ewe	Opal 500 SGA, 8 mm	2012-01-05			
Ewe	Opal 110 1000 SGA, 9 mm	2012-02-23			
Ewe	OPAL-110 lite 500 SGA 500, 8 mm	2012-02-27			
Ewe	OPAL-110 lite 1000 SGA 500, 9 mm	2012-03-12			
Ewe	Opal 110 2500 30A 500, 9 mm	2012-04-02			
Ewe	Opal 120 1000 SGA, 9 mm	2012-08-07			
Ewe	Opal 110 1000 SGA, 9 mm	2012-08-30			
Ewe	Opal 120 2500 SGA, 12 mm	2012-09-18			
Ewe	Opal 120 2500 30A 500, 9 mm	2012-10-29			
Ewe	PROBUST-120 1000 SGA, 9 mm	2012-11-14			
Ewe	Opal 120 ICE 1000 SGA 500, 9 mm	2012-12-19			
Ewe	Opal 120 1000 20A, 9 mm	2013-01-03			

**LERØY** *Creating Tasteful Solutions*

Lot: 132155    Species: Norwegian Atlantic Salmon

**Quality**

Sampling Date:	2013-02-15
Fat Content:	20.2%
Colour:	Salmon: 26.0
	Mg/kg: 8.0
Condition Factor:	

# QUALITY ASSURANCE AND CERTIFICATION

One important aspect of the Group's quality and environmental work is certification to international standards. In 2013, Lerøy Seafood Group was the first company in the world to achieve ASC standard certification. This standard guarantees that the company operates its fish farms in an eco-friendly and sustainable manner.

The Group has worked hard for many years to ensure high quality, and has developed control systems based on GLOBAL G.A.P.; MSC; ASC; ISO 9000, 14000 and 22000; BRC; IFS; Label Rouge; NS 9415 and HACCP. These standards apply to different areas, for example:

- Fish farming is covered by GLOBAL G.A.P.- and ASC- certificates.
- All the Group's production facilities have BRC certificates.
- The sales department at the Bergen headquarters has certification according to ISO 9001, and has "chain of custody" for ASC, MSC and GLOBAL G.A.P.
- All fish farming production equipment is certified according to the NS 9415 standard for marine fish farms.

**GLOBAL G.A.P.** (Good Agricultural Practice)  
– voluntary standard for certification of agricultural products

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

**ASC** (Aqua Stewardship Council)  
– a standard for sustainability for farmed fish.

**ISO 9000**  
– standard for quality assurance 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)  
– standards for quality and safe food

**Label Rouge** – quality assurance in France

**NS 9415**  
– Norwegian standard for marine fish farms

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



## LERØY NO. 1 – ASC

We are extremely proud to confirm that the three first facilities in the world to gain certification to this standard are all linked to Lerøy.

Lerøy Seafood Group is the very first company in the world to offer the market salmon produced to the new environmental standard – ASC, Aquaculture Stewardship Council, in 2014.

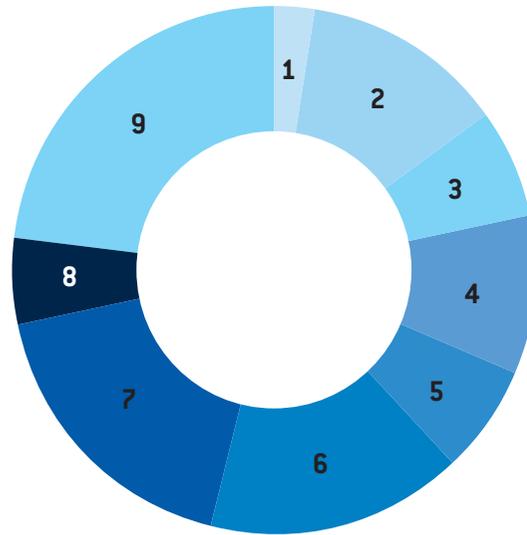
Lerøy Seafood Group was also the first company in the world to have the entire distribution chain for salmon approved to the ASC standard.

ASC stands for Aquaculture Stewardship Council. This is a standard for fish farming and is based on the same criteria as for the MSC standard (Marine Stewardship Council) for fish caught in the wild. The ASC standard is currently the most comprehensive standard on the market in terms of responsible and

sustainable salmon production. The standard makes numerous requirements on salmon production: a total of 152 main requirements, with related sub-requirements, divided into nine different disciplines.

The standard is based on the following nine disciplines:

- 1) Legal requirements
- 2) Conservation of natural habitat and biodiversity
- 3) Conservation of water resources and water quality
- 4) Conservation of species diversity and wild populations
- 5) Use of feed and feed raw materials
- 6) Fish health
- 7) Social responsibility
- 8) Being a good neighbour
- 9) Smolt production



Distribution of the different requirements in the ASC standard in relation to the nine different focus areas

- Legal requirements
- Conservation of natural habitat and biodiversity
- Conservation of water resources and water quality
- Conservation of species diversity and wild populations
- Use of feed and feed raw materials
- Fish health
- Social responsibility
- Being a good neighbour
- Smolt production

## ASC APPROVED DISTRIBUTION CHAIN FOR SALMON



Our goal is to gain ASC certification for all our fish farming facilities by the end of 2020. The Group is now able to supply ASC certified products every week throughout the year.

For Lerøy Seafood Group, an ASC certificate is a natural conclusion of the Group's strong commitment to environmental protection.

This allows us to guarantee and document that our fish farming activities are the foremost in the world in terms of environmentally sustainable production and that we possess both the competencies and capacity to make progress in such an important field.



## GLOBAL G.A.P.

GLOBAL G.A.P. is a standard for environmental protection during production and for the working environment for our production employees.

- The Global Partnership for Safe and Sustainable Agriculture

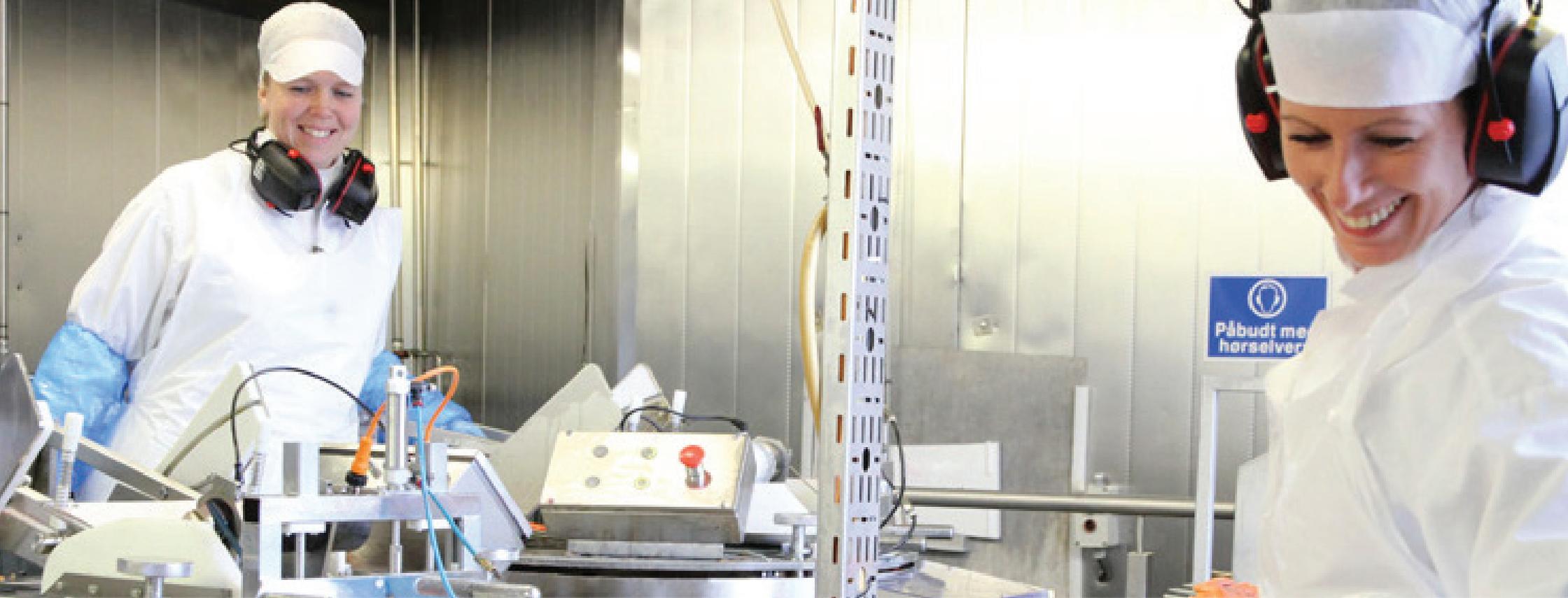
### Scope of the standard:

Roe - Smolt - Fish for consumption - Production

The standard covers the production process from roe stage to fish slaughter.

### There are GLOBAL G.A.P. standards in the following areas:

- Fruit and vegetables
- Flowers and ornamental shrubs
- Integrated agriculture, module for sheep, pigs, cattle, poultry and dairy
- Coffee
- Integrated aquaculture - salmon and trout
- In the pipeline: pangasius, shrimp, tilapia



## FOCUS AREAS

**Food Safety:** The standard is based on criteria for food safety developed from the application of generic HACCP principles (Hazard Analysis & Critical Control Points).

**Environment:** The standard comprises environmental protection and Good Aquaculture Practices developed to minimise negative environmental impacts of fish farming.

**Employees' health, safety and welfare:** The standard stipulates global limits for occupational health and safety in the production facilities and awareness of and responsibility for social relations in the workplace. However, this should not be seen as a substitute for thorough audits of ethical social responsibility.

**Fish welfare:** The standard sets forth global criteria for a minimum level of fish welfare in production facilities.

## BRAND PRODUCTS

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

In 2014, the percentage of products based on raw materials owned by the Group was 67%, compared with 67.4% in 2013.

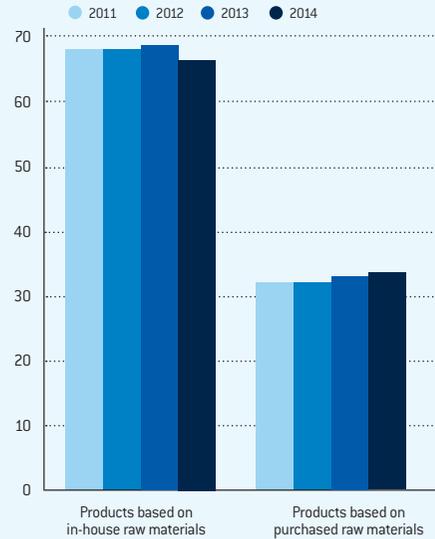
The Group also sells a number of products with certification to various sustainability standards, such as ASC, MSC, GLOBAL G.A.P. and Debio/KRAV. The volume of certified fish



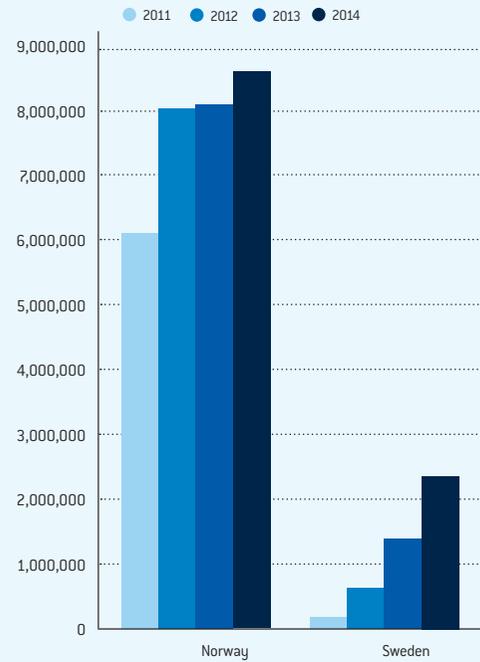
sold is higher than the volume labelled with certification. The reason for this is that the current production volume exceeds market demand for these products. However, there has been a significant increase in demand for certified products from 2013 to 2014, and in particular for ASC certified fish.



**SALE OF PRODUCTS BASED ON IN-HOUSE RAW MATERIALS [%]**

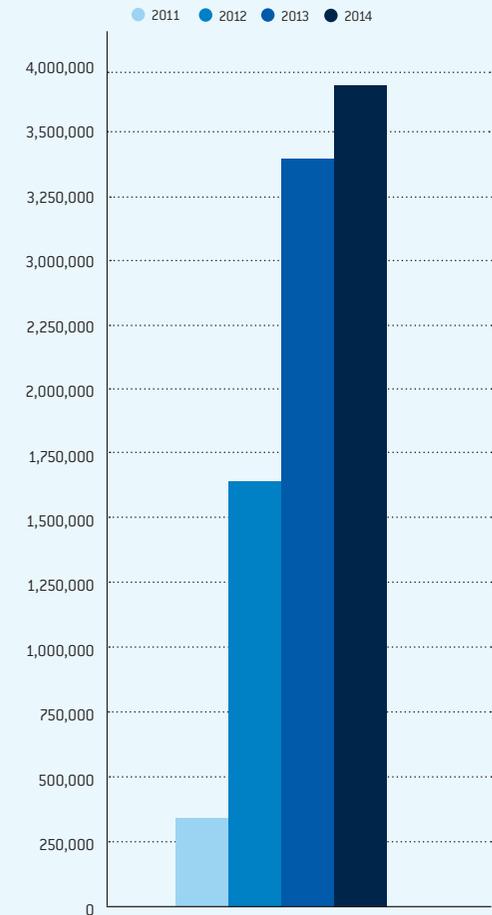


**ASC/MSC/KRAV-LABELLED PRODUCTS SOLD VIA HALLVARD LERØY AS AND LERØY SVERIGE AB (KG)**



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

**SALE OF GLOBAL G.A.P. CERTIFIED SALMON VIA HALLVARD LERØY AS (KG)**



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



## EAT FISH - STAY HEALTHY!

“Fish is good for your health, all year round.” This old Norwegian saying has been confirmed by research in recent years. It has been shown that eating seafood lowers the risk of cardiovascular diseases. Norwegian health authorities and WHO, the World Health Organization, recommend that everybody should eat more seafood. The Directorate of Health in Norway has published new dietary advice where they recommend eating seafood 2-3 times a week.

## KEY ADVICE FOR A HEALTHY DIET

What you eat and drink has a direct influence on your health. The Directorate of Health recommends a varied diet with plenty of vegetables, fruit, berries, whole-grain corn products and fish, and limited amounts of processed meat, red meat, salt and sugar. Products carrying the keyhole symbol are also recommended.

- You should eat at least five portions of vegetables, fruit and berries every day.
- You should eat whole-grain corn products every day.
- Your daily diet should also include low-fat dairy products.
- Eat fish for dinner two to three times a week. Fish is also recommended as sandwich fillings. This corresponds to a total 300-450 grams of pure fish a week.
- Six portions of sandwich filling with fish equals around one dinner portion.
- At least 200 grams of this should be fatty fish such as salmon, trout, mackerel or herring.
- We recommend fish products carrying the keyhole symbol.
- Choose lean meat and lean meat products.
- Limit the amount of processed and red meat you eat.
- Choose cooking oils, and liquid and soft margarine instead of hard margarine and butter.
- Choose foods with low salt levels and limit the use of salt when cooking and on food.

- Avoid daily intake of food and drink with a high sugar content.
- Drink water to quench your thirst.
- Keep a good balance between your energy intake in the form of food and drink, and the energy you expend in various activities.

## LOOK FOR PRODUCTS WITH THE KEYHOLE SYMBOL!

The keyhole symbol makes it easier for customers to choose healthy products. The Directorate of Health and the Norwegian Food Safety Authority are behind the keyhole system.

When compared with other foods of the same type, products with the keyhole symbol fulfil one or more of the following requirements:

- Lower and healthier fat content
- Less sugar
- Less salt
- More fibre and whole-grain

Lerøy Seafood Group places a focus on the keyhole symbol when developing new products. We aim to provide our customers with healthy and safe products which also have health benefits.



## 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



### CAN BE PREVENTED BY:

Better diet  
Physical activity  
Not smoking

### CARDIOVASCULAR DISEASES

Overweight  
Diabetes  
Osteoporosis



### 1999:

60% of all deaths  
43% of all illnesses

### 2025:

73% of all deaths  
60% of all illnesses

Fish is rich in protein and Omega 3, and does not contain sugar. There is a current trend for diets rich in sugar and excessive levels of Omega 6. By replacing parts of your diet with seafood, you gain a double benefit: You eat less sugar and less Omega 6 while at the same time consuming more Omega 3 and other important nutrients. Omega 3 and Omega 6 are different types of n-3 and n-6 fatty acids. It is generally believed that it is the marine n-3 fatty acids, Omega-3, that generate positive health effects. We find a lot of these fatty acids in fat fish such as salmon and trout.

The most important Omega-3 fatty acids are DHA and EPA. These are essential fatty acids, meaning that the body needs them to maintain several vital functions. These essential fatty acids are only found in seafood and,

moreover, the Omega-3 type of fatty acid can only be obtained through the food we eat since the body does not produce it. It is therefore vitally important to supply the body with enough of the right type of Omega-3.

Lack of essential fatty acids shows up as skin problems, nervous system disturbances and reduced growth in children. Today's discussion about nutrients focuses to a considerable degree on the importance of fatty acids in preventing, for example, cardiovascular diseases and arteriosclerosis.

An imbalance between Omega-3 and Omega-6 fatty acids contributes to lifestyle diseases such as heart disease, diabetes type 2, cancer and mental ailments.

The ratio of these two acids in the blood should be 2:1, i.e. more Omega-3 than Omega-6. There is also a growing body of evidence indicating that people with rheumatic ailments, such as inflammation of the joints, are able to reduce the inflammation reaction with ingestion of fish oils - preferably together with vitamin E and the trace element Selenium.

EFSA, the European Food Safety Authority, recommends that healthy people have a daily intake of 0.25 grams EPA and DHA, 1.75 grams per week, in order to prevent cardiovascular disease. On average, 100 grams of salmon contains 2.1 grams of EPA and DHA.

So by eating 100 grams of salmon, you consume the recommended volume and more.

A varied diet with different types of seafood is the best guarantee for providing your body with essential nutrients. Eating fish is a good investment in your own health. What's more, it is delicious and can be prepared in a whole number of different ways - on the barbecue, in the oven, boiled, fried or just raw.

Research has shown that a combination of fat and sugar may lead to obesity. And of interest to weight watchers, the data indicate that it makes a difference if the fat in your food is combined with sugar rather than with protein. An investigation carried out at the National Institute for Nutrition and Seafood research shows that diets composed of sugar in combination with fat resulted in significantly more obesity than a diet composed of protein and fat. The diet composed of protein and fat also resulted in less weight gain than a diet with fewer calories. The reason is probably that when limiting the supply of sugar,

production of sugar for energy to the brain and other organs must come from consumption of fatty tissue.

The increasing incidence of obesity will be one of our greatest challenges in the years ahead. And, as we know, obesity can cause diabetes. Diabetes is a growing health problem both nationally and globally and it has been estimated that 300 million people will suffer from type 2 diabetes in 2025. Meanwhile, other studies suggest that fish protein can protect against the risk of diabetes. A correct diet is extremely important in the prevention of disease.

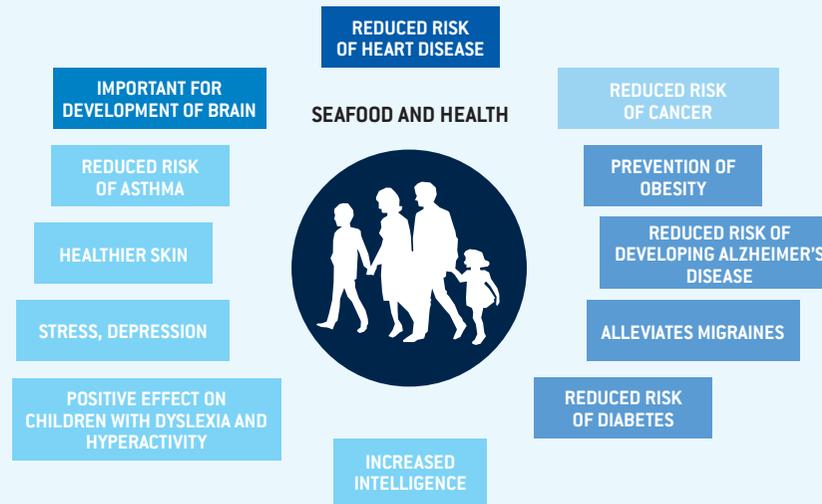
There is overwhelming documentation to show that, in general, eating fish is good for our health. Also, there are strong indications that consumption of fat fish slows and prevents the development of heart and cardiovascular diseases. Consumption of fish and other seafood is also important for development of the foetus, particularly as regards weight

gain and neurological development. Other investigations have shown positive effects on illnesses such as dementia, post-partum depression, osteoporosis, skin disease, migraine and hyperactivity.

What eventually could limit the consumption of fat fish is its content of dioxins and similar substances like PCB, but with today's control of raw materials in fish feed and the fish itself, the limits for environmental toxins in fish are far below recommended values. Tolerable, weekly intake (TWI) of dioxin and dioxin equivalents like PCB is 14 pg TE per kg bodyweight per week. This means that a person weighing 70 kg can eat 980 pg TE per week (TE - toxic equivalents / pg = Pico gram).



**THE RESULTS OF VARIOUS STUDIES IN DIFFERENT PARTS OF THE WORLD INDICATE THAT EATING SEAFOOD, PARTICULARLY FATTY FISH, HAS A POSITIVE IMPACT ON VARIOUS DISEASES**



*The darker the colour of the box, the higher the number of studies concluding that seafood has a positive impact.*

Tests of LSG's salmon show that in 2012 the fish contained approx. 0.49 pg TE/g. A portion of salmon normally weighs 200 grams. This means that by eating a salmon meal with 200 grams of fish, one's intake is approx. 98 pg TE. In other words, we can eat 10 salmon meals with 200 grams fish per week without exceeding the recommended intake of TE. Recommended limits are usually set with a considerable safety margin. With seafood we also cover the daily needs for other vital nutrients such as vitamins B12, D and E.

**Nutritional content of salmon (National Institute of Nutrition and Seafood Research)**

Product	Ash g/ 100 g	Energy g/ 100 g	Fat g/ 100 g	Protein g/ 100 g	Carbohydrates g/ 100 g	Solids g/ 100 g
Salmon, farmed	0.9-1.3	784-1202	9-23	14-26.1	0	30-42

<b>Water-soluble vitamins:</b>	<b>Fat-soluble vitamins:</b>	<b>Minerals</b>	<b>Trace elements</b>	<b>Amino acids</b>
Biotin	Alpha-tocopherol (vitamin E)	Phosphorus (P)	Fluoride (F)	Alanine
Folic acid	Gamma-tocopherol (vitamin E)	Potassium (K)	Iron (Fe)	Arginine
Cobalamin (B12)	Vitamin A1 (Sum retinol)	Calcium (Ca)	Iodine (I)	Aspartic acid
Niacin	Vitamin A2	Magnesium (Mg)	Copper (Cu)	Phenylalanine
Pantothenic acid	[3.4 didehydro-all-trans-retinol]	Natrium (Na)	Selenium (Se)	Glutamine acid
Pyridoxine (B6)	Vitamin D (D3)		Zinc (Zn)	Glycine
Riboflavin (B2)				Histidine
Thiamine (B1)				Hydroxyproline
				Isoleucine
				Leucine
				Lysine
				Methionine
				Proline
				Serine
				Taurine
				Threonine
				Tryptophan
				Tyrosine
				Valine

# EXTERNAL ENVIRONMENT

A scenic sunset over a large body of water, likely a lake or bay. The sky is filled with colorful clouds, transitioning from a deep blue at the top to a bright orange and yellow near the horizon. The sun is low on the horizon, casting a golden glow over the water and sky. In the middle ground, several long, rectangular floating structures, possibly aquaculture pens, are visible on the water. The water is calm, reflecting the colors of the sky. In the foreground, the silhouettes of trees and bushes are visible, framing the bottom and right sides of the image.



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

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

# ACCIDENTAL RELEASE

Prevention of accidental release of fish is an important and high priority area for Lerøy Seafood Group. Lerøy Seafood Group invests a considerable amount of work into optimising equipment and routines to avoid accidental release of fish. Actual incidents of accidental release and all events that can lead to accidental releases are reported to the Fisheries Authorities. Securing against accidental release is a question of maintaining a focus on execution/action, good planning of all operations in order to ensure safe execution and efficient re-examination of operations. Keywords such as ATTITUDE, ACTION and Responsibility must be clearly defined by management and require full awareness of our responsibility to ensure zero accidental release of fish within our companies.

Five incidents involving accidental release of fish were recorded by Lerøy Seafood Group in 2014 – 52,098 fish or 0.05% of the total number of our fish in the sea in 2014.

## **Date Company Facility Species Number**

25.04.14 Accidental release during loading of smolt.

10.08.14 Accidental release after a storm.

04.11.14 Accidental release during sorting in well boat.

10.11.14 Accidental release during work on well boat.

18.11.14 Accidental release due to hole in net.

None of our young fish facilities reported accidental release in 2014. Following accidents that could have caused, or actually did cause, accidental release of fish, it is of utmost importance that all circumstances surrounding the episode are made known to everybody in the organisation. Such events are used actively in personnel training and for optimising routines and equipment. An increased focus on accidental release in recent years has already resulted in several changes to our facilities in order to prevent similar incidents in the future.

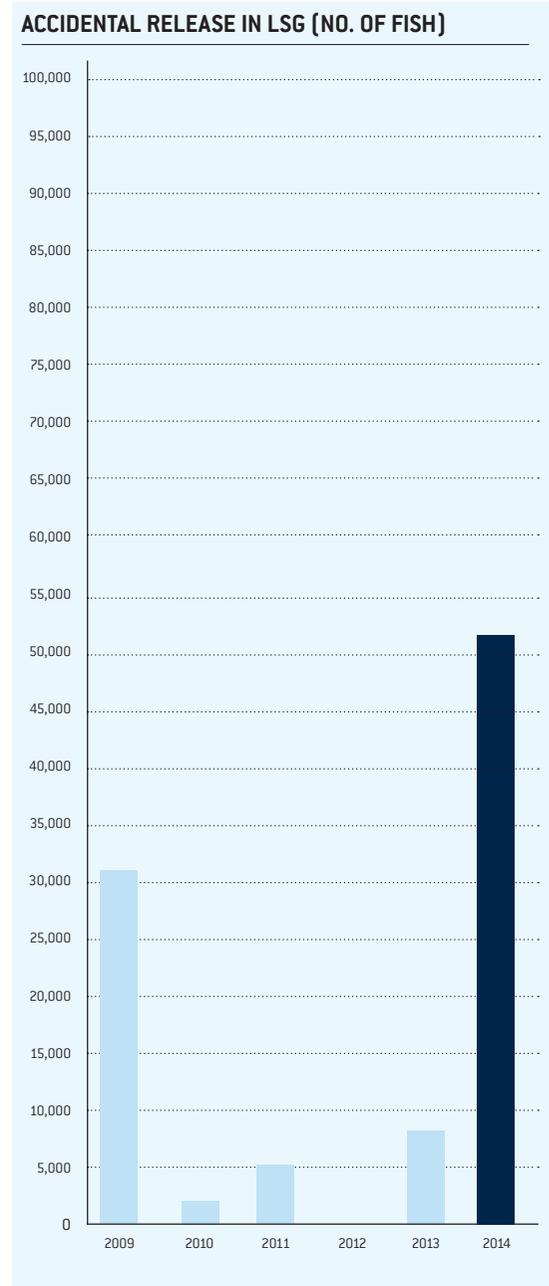
**Main goal: "Zero accidental release".**

**Specific measures include:**

- Production of large smolt in closed containment facilities
- Replacement of nets
- All facilities shall comply with the new Nytech standard
- Certificates for all facilities
- Active participation in development of solutions to prevent accidental release, with a focus on solutions targeting nonconformances in bottom ring, chain and nets
- Modernisation of equipment
- No nets in sea without drawings
- No assembly of haul rope where there is no cross rope
- Marking of nets
- Extensive use of camera/divers during/ after work on nets
- New procedures for net handling
- New logging form for all work involving nets

**We can increase our:**

- Continual work on attitudes
- Control/re-examination - always
- Continual revision of procedures
- Assessment of suppliers
- Use of new technology for monitoring





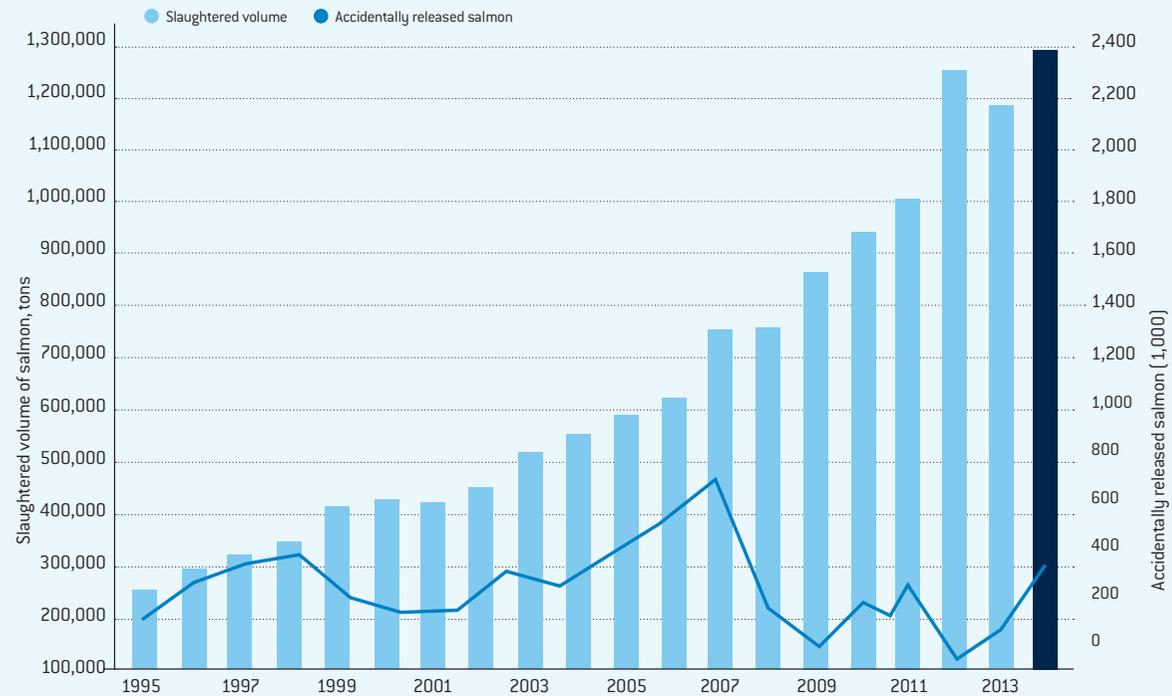
It is important that incidents which result in accidental release of fish give rise to exchange of experience between fish farming companies. The companies in the Lerøy Seafood Group participate in groups where experience and competency are shared among

the actors. In order to improve our preparedness we also collaborate with other fish farming companies in our vicinity and participate actively in the work to increase expertise and enhance preparedness by taking part in activities coordinated by FHL (the Norwegian Seafood Federation). Moreover, our fish-farming companies maintain close contact and communication with the authorities regarding prevention of accidental release of fish.

**Not only do we comply with statutory requirements, we have implemented other preventive measures:**

- Established a common preparedness stock of 500 retrieval nets in Kristiansund that are ready for deployment by a trained team when needed.
- Established a collaboration agreement with other major companies in Central Norway where each company is committed to keeping a central preparedness stock of 500 retrieval nets to be used by all companies when helping the company experiencing an accidental release situation.
- Established internal control with a higher frequency and scope of inspections.

## 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.

- Routine diver inspections of nets after deployment in sea, as well as through the entire production phase.
- Increased requirements for maintenance inspections between each release.
- Participation in various development projects to test new equipment. One example is the GRIP project, which provided important answers to how nets and cages should be built and connected in order to prevent rubbing and wear.
- Surveillance project for unmanned facilities.

The fish farming companies in Lerøy Seafood Group will place prevention of accidental releases among its top priorities in the year to come, and will continue to maintain a focus on work to prevent accidental release.

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



## LICE

Salmon lice have coexisted with salmon fish for a long time. The first written record of salmon lice is from the 17th century. In 1837 the zoologist Henrik Nikolai Krøyer described the species and gave it the Latin name *Lepeophteirus Salmonis*. Salmon lice have a natural co-existence with salmon.

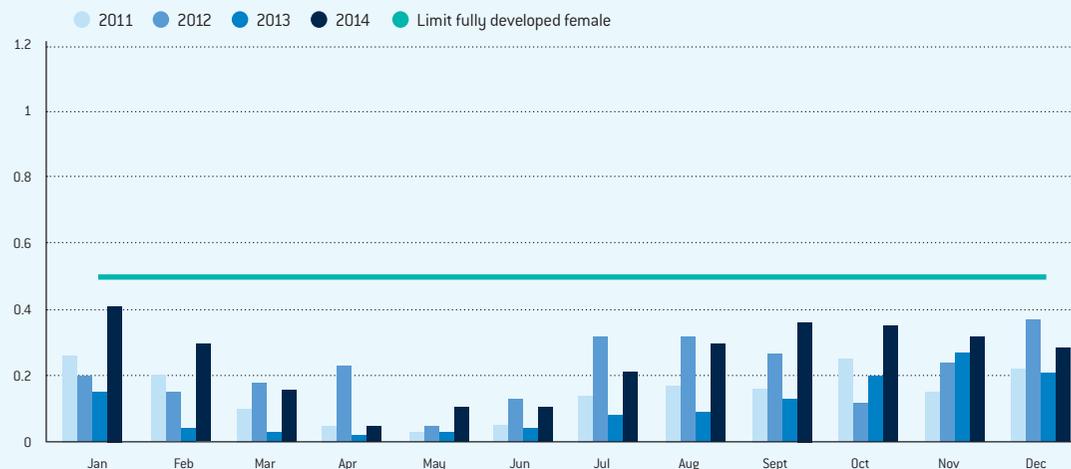
Male and female salmon lice develop at slightly different rates; the male louse grows somewhat faster than the female. The growth rate is influenced by temperature; a higher temperature leads to faster growth.

At 5 °C it takes 11 weeks from Copepodite to fully developed female lice.

Important information re. salmon lice:

- Some areas present greater challenges than others for salmon lice
- Some salmon farmers have good control, while others have poor control
- Some rivers have a good salmon return rate, while others have a low rate
- Some companies achieve good results with Wrasse while others fail

## DEVELOPMENT OF FULLY DEVELOPED FEMALE LICE WITH EGGS, LSG (AVERAGE NO. LICE PER FISH)



### LICE STATUS IN 2014

2014 has been a difficult year in terms of salmon lice. While we had practically zero salmon lice at our facilities in North Norway, high temperatures in the sea in other parts of the country have caused higher numbers of salmon lice. In Central and West Norway, the reduced effect of medicinal treatment has resulted in increased costs in order to comply with salmon lice regulations. These difficulties have caused an increase in input factors required to combat and control salmon lice.

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. The agent has been approved by Norwegian authorities for use to combat salmon lice, but Lerøy Seafood Group has decided to take a precautionary approach. Unnecessary use of chitin inhibitors shall therefore be eliminated due to resistance problems. Any use of chitin inhibitors requires special approval.

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

The number of moving salmon lice and fully grown female lice with eggs is measured and reported to the Food Safety Authorities on a regular basis. Lerøy Seafood Group is working hard to achieve its objective to eliminate the use of medicines to combat salmon lice, if justifiable in relation to regulations and factors relating to fish health. In 2014, Lerøy Seafood Group has therefore made significant investments to facilitate increased use of cleaner fish at our facilities. These investments will result in self-sufficient supply of cleaner fish in the future. The use of cleaner fish forms the basis of our work to combat salmon lice, and we aim to avoid use of chemicals in treating lice infestation.

**Main goal:**

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

Both the management and employees at our facilities have been and remain committed to lice treatment. We have met all public requirements as to counting, registration and treatment.

Lerøy Seafood Group sees huge potential in using wrasse to combat salmon lice, and has invested vast resources in recent years to learn more about Wrasse, including farming, utilisation and survival.

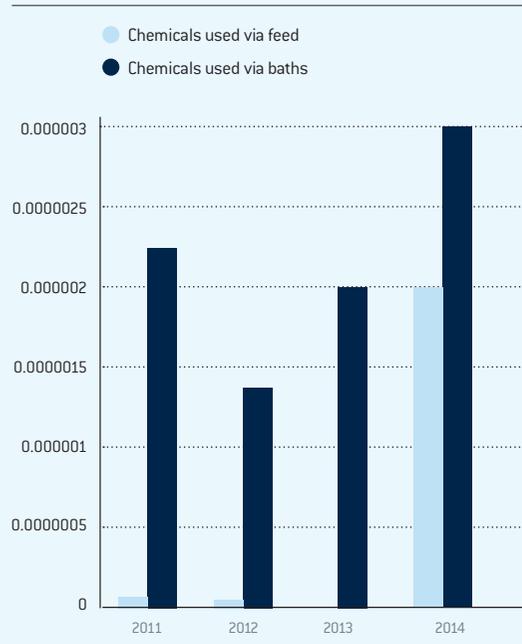
**Examples of important measures for success with Wrasse:**

- Plenty of shelter in the cages - Lerøy Seafood Group has recruited sports clubs and school children to create shelters for Wrasse in the cages
- Cleaning of nets - demanding work but necessary. The cages are washed down every 10th day. Cleaning boats are used to clean nets. Start-up in early July.
- Reduction of mesh size in nets - from 22 omfar to 28 omfar for large fish. This means that we can use somewhat smaller Wrasse for larger fish.
- Registration of dead Wrasse and refilling throughout the season.
- Goal for 5% Wrasse in all cages.
- Our goal is to be self-sufficient in the supply of lumpfish by the end of 2016.

### Important target areas for the future:

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

### CHEMICALS, ACTIVE AGENT, USED IN DELOUSING AGENTS (KG/KG FISH GROSS GROWTH)



We aim to achieve the above by focusing on three main areas:

### Prevention:

- Good locations
- 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
- Good monitoring for correct and timely treatments and reduce treatment frequency

### 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 during optimum weather conditions
- Follow-up/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.

## **PLANS – GOALS FOR 2015**

**Main goal: "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
- Implementation of new methods
- Limit infestation pressure
- Production of lumpfish
- 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 locations and coordinated throughout generations
- Compliance with authority requirements in the regulations regarding lice and zone regulations
- Cooperation with other companies



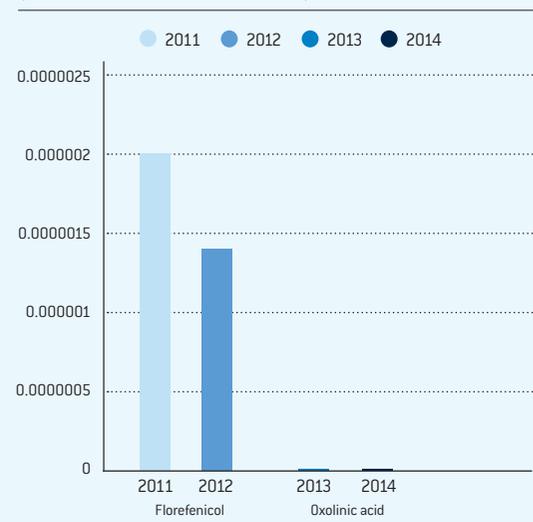


## BACTERIAL TREATMENTS

Salmon is by far the healthiest "farmed animal" among the species from which food is produced here in Norway. No antibiotics have been administered for fish in the sea in recent years. The only type of antibiotic used is administered to young fish. In 2014, Lerøy Seafood Group utilised a total 24,470 tons of fish feed and 1.8 kg of antibiotics, active agents. This represents a 0.00000074% proportion of antibiotics in our fish feed.

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

**MEDICINES, ACTIVE AGENT, USED IN FARMING (KG/KG FISH GROSS GROWTH)**





## LOCATIONS

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

M – matfiskanlegg (production facility)

O – overvåkning (monitoring)

M – modellering (models)

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

### The investigation has 3 parts:

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

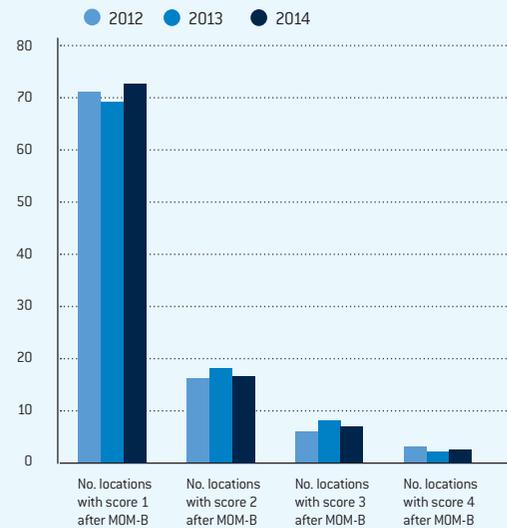
All the parameters are rated according to how much sediment is impacted by organic materials. The difference between acceptable and unacceptable sediment condition is established as the largest accumulation which allows for survival of digging bottom fauna in the sediment. The investigation is executed when production of one generation is at peak.

On the basis of these investigations, the individual location receives a score from 1 to 4, where 1 is the most positive.

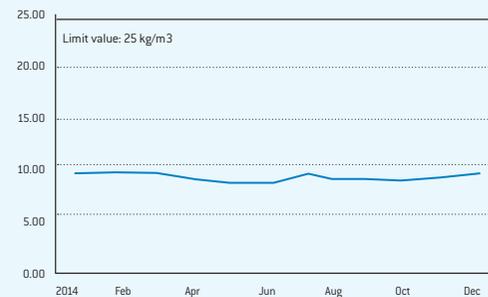
The score achieved also provides an indication of when the next MOM-B investigation shall be carried out. A poor score often requires more frequent seabed investigations than a good score.

In addition to the MOM investigations carried out by third party companies, investigations 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.

STATUS OF LOCATIONS, LERØY SEAFOOD GROUP AS OF 2012-2014 (NUMBER)



CAGE DENSITY, KG/M3, ALL LOCATIONS LERØY SEAFOOD GROUP 2014



Each facility is also linked with neighbouring facilities in a zone-based cooperation relating to lice, protecting against accidental release, preventing the spread of disease, outbreaks of disease etc.

## **GOAL FOR LOCATION CONDITIONS IN 2015**

MOM-B samples shall 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 being carried out, where the reason for the lack of restitution is described. If a score of 3 or 4 is reported for a location, an MOM-C sample shall be taken.

## **FACTS**

### **MOM-investigations**

The MOM-system (Matfiskanlegg - Overvåkning – Modellering) comprises two types of soft bed investigations:

#### **MOM-B**

MOM-B investigations indicate impact on the seabed under a facility, ranging from "good" to "very poor" (1-4). The investigation monitors for trends, is based on risk and is performed at regular intervals. It shall be performed by an expert body with documented expertise and that is independent of the customer. The MOM-B shall be reported to the Directorate of Fisheries, which follows up on and quality assures the reports.

#### **MOM-C**

MOM-C investigations are utilised in the area influenced by the facility. The investigations shall be carried out by a company accredited for sampling seabed sediment, execution of taxonomic analyses and professional assessments. The county council is entitled to demand MOM-C investigations upon application for approval of a location. The Directorate of Fisheries is entitled to demand such investigations during the operational phase in the event of unacceptable conditions. Alternatively, the county governor may on occasion require a MOM-C as a condition for a discharge permit.

## LERØY FIRST TO ACHIEVE

Lerøy Seafood Group is the very first company in the world to offer the market salmon produced according to the new environmental standard – ASC, Aquaculture Stewardship Council.

We are extremely proud to confirm that the three first facilities in the world to gain certification according to this standard are all linked to Lerøy.

**No. 1 Jarfjord – Villa Organic**

**No. 2 Hogsneset Nord – Lerøy Midt**

**No. 3 Årøya – Lerøy Aurora**

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

For Lerøy Seafood Group, an ASC certificate is a natural conclusion of the Group's strong commitment to environmental protection.

This allows us to guarantee and document that our fish farming activities are the foremost in the world in terms of environmentally sustainable production and that we possess both the competencies and capacity to make progress in such an important field.

The ASC standard implies requirements within the following seven areas:

- Legal requirements
- Conservation of natural habitat and biodiversity
- Conservation of water resources
- Conservation of biodiversity
- Fish feed
- Fish health
- Social responsibility



Proud employees at Hogsneset Nord, Lerøy Midt, as they receive their ASC certificate.



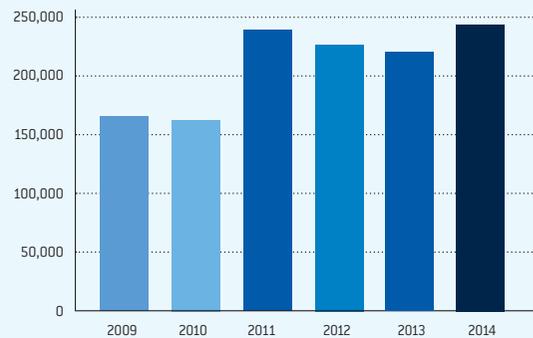
## FISH FEED

### HARVESTING

Lerøy Seafood Group plays an active role together with fish feed suppliers in ensuring that the raw materials used in our feed are:

- Fished/harvested in an ethically sound manner
- Fished/harvested in compliance with legal frameworks
- Based on sustainable fishing/harvesting

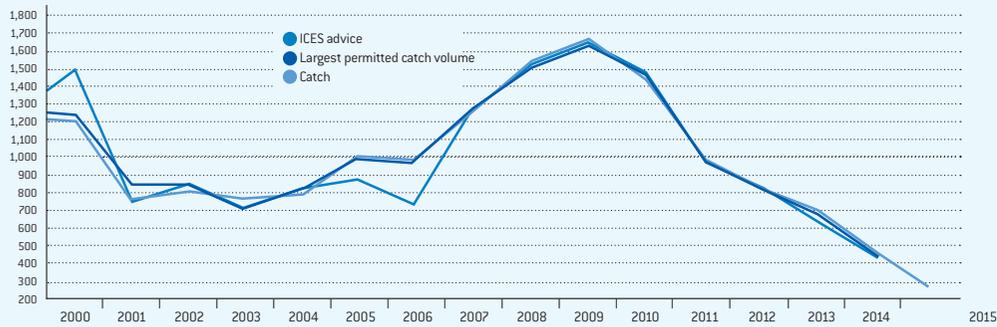
CONSUMPTION OF FISH FEED IN LSG (TONS)



**MARINE RAW INGREDIENTS IN FISH FEED, LERØY SEAFOOD GROUP 2014**

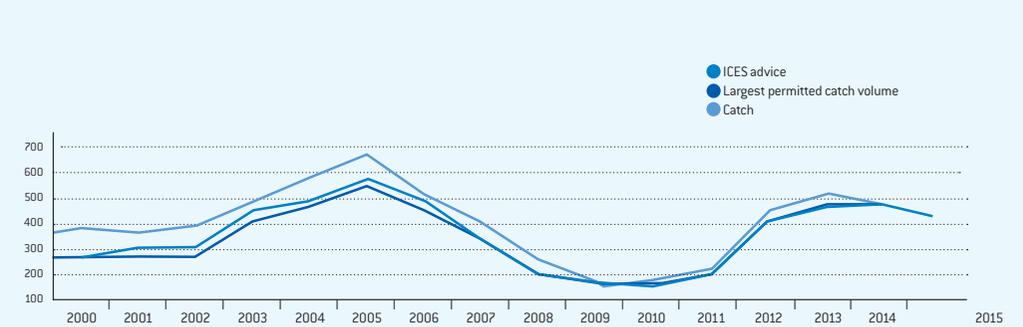
<b>English</b>	<b>Latin</b>	<b>Norwegian</b>	<b>% Fishmeal</b>	<b>% Fish oil</b>
Blue whiting	<i>Micromesistius poutassou</i>	Kolmule	30.23	3.23
Boar fish	<i>Capros aper</i>	Villsvinfisk	0.97	0.51
Capelin	<i>Mallotus villosus</i>	Lodde	3.42	2.51
Capelin	<i>Mallotus villosus</i>	Lodde	0.36	0.43
Capelin trimmings	<i>Mallotus villosus</i>	Loddeavskjær	1.83	0.80
Herring	<i>Clupea harengus</i>	Sild	1.87	1.66
Herring trimmings	<i>Clupea harengus</i>	Sildeavskjær	18.96	10.31
Horse mackerel	<i>Trachurus trachurus</i>	Hestmakrell		0.06
Mackerel trimmings	<i>Scomber scombrus</i>	Makrellavskjær	2.44	1.94
Menhaden	<i>Brevoortia patronus</i>	Beinfisk		21.64
Norway pout	<i>Trisopterus esmarkii</i>	Øyepål	2.51	1.60
Peruvian anchoveta	<i>Engraulis ringens</i>	Ansjos	20.21	21.81
Pilchard	<i>Sardina pilchardius</i>	Sardin		11.16
Sardine	<i>Strangomera bentincki</i>	Sardin		1.29
Sandeel	<i>Ammodytes marinus</i>	Tobis	6.04	6.47
Sprat	<i>Sprattus sprattus sprattus</i>	Brisling Nordsjøen	3.33	8.11
Sprat	<i>Sprattus sprattus balticus</i>	Brisling Østersjøen	1.61	0.23
Whitefish trimmings		Hvitfiskavskjær	6.28	5.88
<b>Total</b>			<b>100.00</b>	<b>100.00</b>

**NORWEGIAN SPRING-SPAWNING HERRING, COMPARISON OF SCIENTIFIC ADVICE, LARGEST PERMITTED CATCH VOLUME AND ACTUAL CATCH (1,000 TONS)**

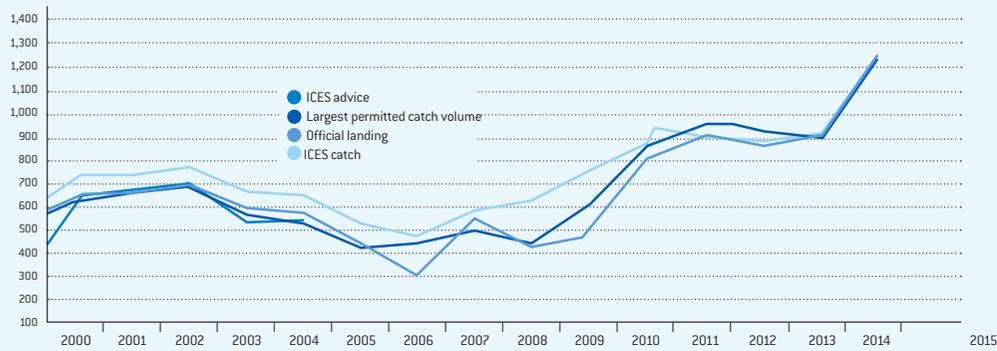


No agreement was established for largest permitted catch volume between 2003 and 2006. The figure is the total of the quotas for each individual part.

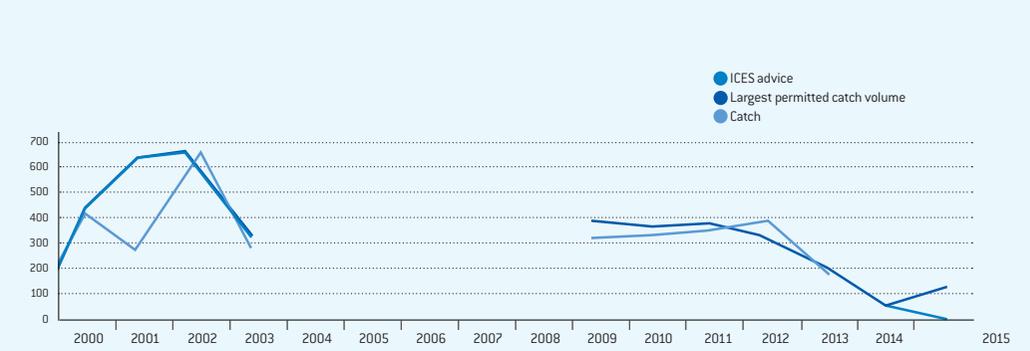
**NORTH SEA HERRING, COMPARISON OF SCIENTIFIC ADVICE, LARGEST PERMITTED CATCH VOLUME AND ACTUAL CATCH (1,000 TONS)**



**ATLANTIC MACKEREL (1,000 TONS)**

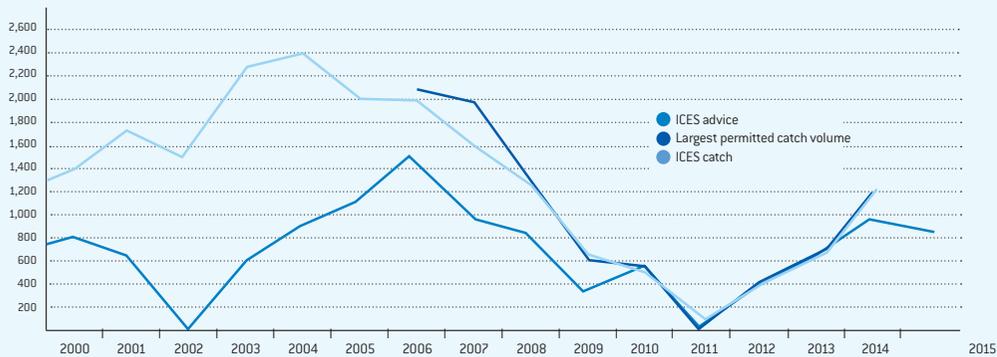


**CAPELIN, COMPARISON OF SCIENTIFIC ADVICE, LARGEST PERMITTED CATCH VOLUME AND ACTUAL CATCH (1,000 TONS)**

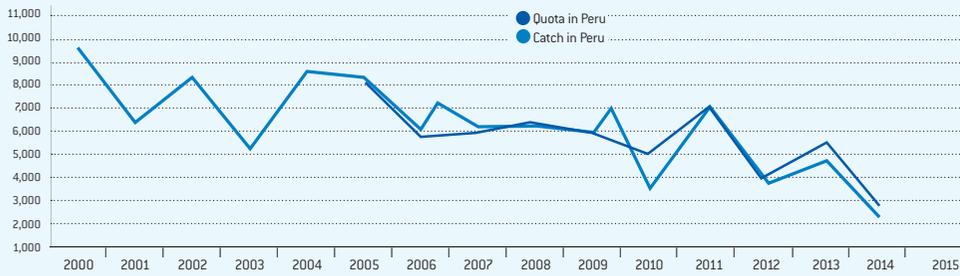


Capelin fishing was stopped between 2004 and 2009.

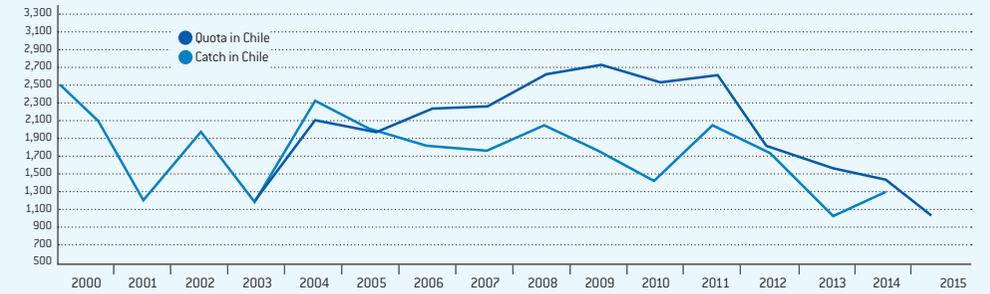
**BLUE WHITING (1,000 TONS)**



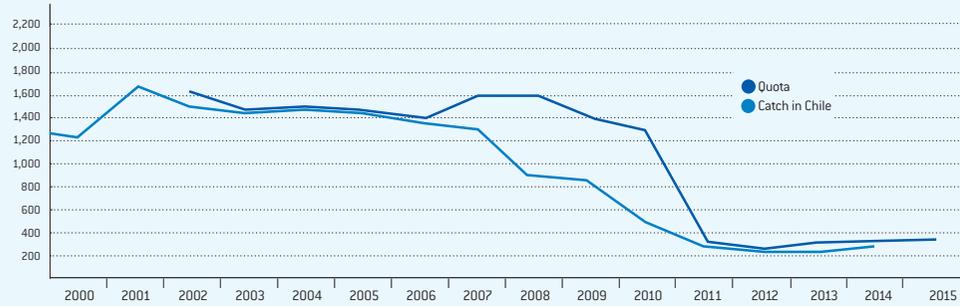
### ANCHOVY, COMPARISON OF SCIENTIFIC ADVICE, QUOTA AND ACTUAL CATCH (1,000 TONS)



### SARDINE/ANCHOVY, COMPARISON OF SCIENTIFIC ADVICE, QUOTA AND ACTUAL CATCH (1,000 TONS)



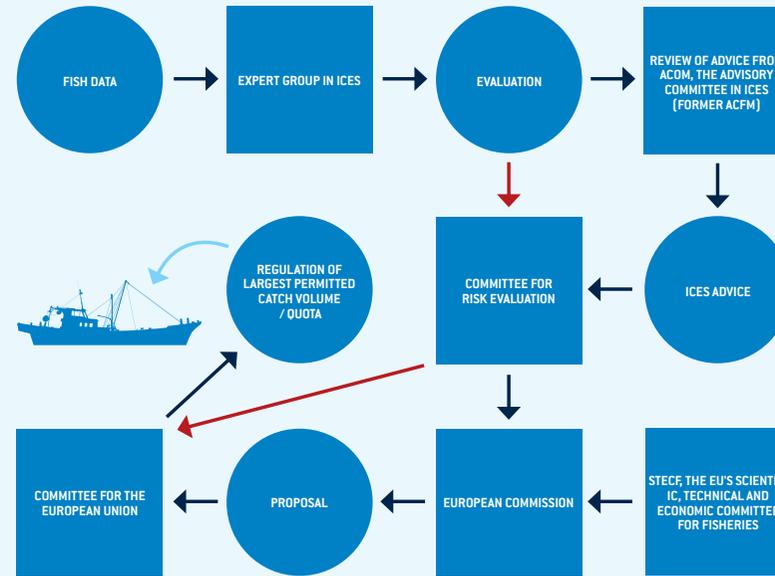
### PACIFIC MACKEREL, COMPARISON OF SCIENTIFIC ADVICE, QUOTA AND ACTUAL CATCH (1,000 TONS)



### SAND EEL, COMPARISON OF SCIENTIFIC ADVICE, LARGEST PERMITTED CATCH VOLUME AND ACTUAL CATCH (1,000 TONS)



Process for stipulating annual quotas for catch of wild fish in the North Atlantic:



Lerøy Seafood Group has established requirements for its suppliers of fish feed to make sure that raw materials for the fish feed are managed in a satisfactory manner. Lerøy Seafood Group requires all suppliers to closely monitor the stipulation of and compliance with quotas, and the utilisation of catches. Lerøy Seafood Group requires that the raw materials in its fish feed must come from geographic 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, (ICES, FAO, IMARPE, CERNAPESCA etc). We require that all our feed suppliers prioritise use of marine raw materials which have been certified in accordance with the IFFO's (International Fishmeal and Fish Oil Organisation) standard for sustainability or raw materials with Marine Stewardship Council, MSC certification or similar. Certification schemes shall be members of ISEAL and have guidelines which comply with the requirement for sustainability, including for small pelagic fishing.

Use of palm oil is prohibited and any raw materials based on soy shall be certified by the "Round Table for Responsible Soy (RTRS)," or similar.



## FISH FEED

Fish feed is the most important input factor for the farming segment, and quality assurance is absolutely essential. In 2013, Lerøy Seafood Group purchased most of its fish feed from EWOS and Skretting. Lerøy Seafood Group has introduced a comprehensive sampling programme for re-examination of feed in terms of chemical content, dust, presence of foreign agents etc. The feed supplier carries out audits of own suppliers and Lerøy Seafood Group executes annual audits of the feed companies. These measures, combined with internal control activities by feed suppliers and traceability, allow us to maintain control of feed content and quality.

Lerøy Seafood Group can trace raw materials utilised in feed back to species and origin.

Access to raw materials for fish feed is good, despite a number of external factors which impact on supply. There are no requirements for use of special raw materials for fish feed (e.g. fishmeal) but there are clearly defined nutritional requirements for the content of raw materials.

In 2013, there was an increasing demand for raw materials from wild fish and this is expected to grow further in the future. By introducing a cost-efficient optimisation of feed composition, the volume of fishmeal and fish oil in fish feed saw a slight reduction in 2013, without this having a measurable impact on growth or fish health.

Fish oil is the only Omega 3 rich source of oil available when it comes to the essential fatty acids, EPA and DHA. The aquaculture industry currently consumes up to 80% of the worldwide production of fish oil. Rapeseed oil is used in combination with fish oil as a source of oil/energy in fish feed. Demand for rapeseed oil also saw an increase in 2013. This is primarily due to the fact that rapeseed oil is utilised for biodiesel production.

The continued growth in global aquaculture production combined with a standstill in the worldwide stocks of wild fish and an increasing level of direct consumption will require us to further optimise our utilisation of fish oil in fish feed. The Omega 3 fatty acid requirement for fish is more than amply covered by current feed. However, a reduction in the mix of Omega 3 rich fish oil will result in a slight reduction in the level of Omega 3 in the fish.

#### **Country of origin, most popular raw materials:**

##### **Marine raw materials**

Fishmeal	Iceland, Norway, Denmark, Peru, Faeroe Islands
Fish oil	Iceland, Norway, Denmark, Peru, USA, Mexico, Panama, Chile, Faeroe Islands, South Africa

##### **Vegetable raw materials**

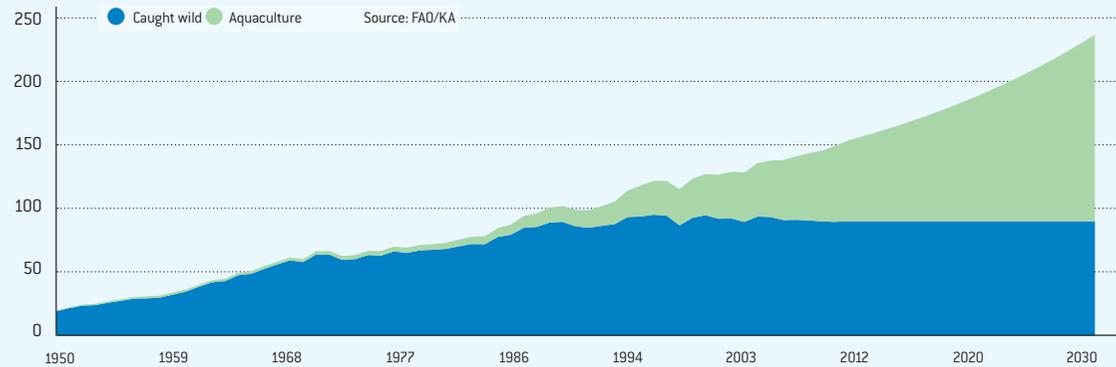
Soya protein concentrate	Brazil, Europe
Rapeseed oil	Russia, Belarus, the Netherlands, UK, Germany, Poland, EU
Wheat	Germany, Poland, EU
Wheat gluten	UK, Poland, Belgium, France, China
Sunflower meal	Ukraine, Russia
Fava beans	France, UK



#### **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

## DEVELOPMENT AND ESTIMATES - WILD FISH AND AQUACULTURE PRODUCTION 1950 -2030 (MILLION TONS)



Researchers at the National Institute of Nutrition and Seafood Research in Bergen, among others, have proven that salmon stores the Omega 3 rich fatty acids when the level of these substances is reduced in the fish feed. Irrespective of this, fish such as Atlantic salmon will have a level of Omega 3 which is several times higher than any other high-volume foodstuff.

In recent years, a new major consumer of Omega 3 rich fish oils has emerged on the market - the Omega 3 industry producing pills and capsules. In 2014, this industry utilised approx. 20% of the global supply of fish oil in production. The retention and biological value of Omega 3 fatty acids will in the majority of cases be higher in the use of fish feed than via capsules.

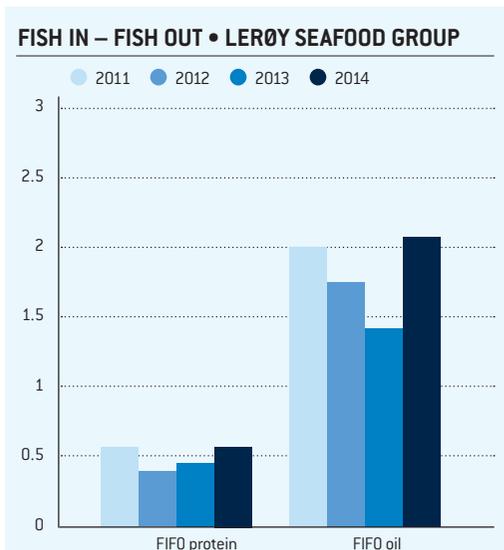


## FIFO (FISH IN – FISH OUT)

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 2014, the FIFO value for protein at Lerøy Seafood Group will be approx. 0.57 while the FIFO value for fish oil will be approx. 2.09. 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 2.09 kg of wild fish to produce enough oil to produce 1 kg of salmon, but we only need 0.57 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 increase in FIFO for oil from 2013 to 2014 is that the use of cuttings in feed has been reduced. Measures have been introduced to ensure an increase in the volume of cuttings in feed in 2015.



## 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, for pork approx. 3.5 while for salmon in 2013, Lerøy Seafood Group's fish farming companies reported a feed factor of 1.18. 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.

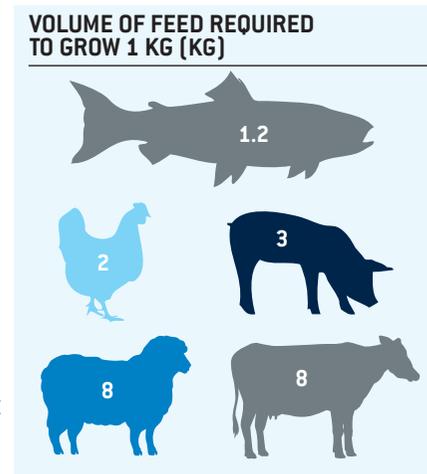
The following actions have been initiated in order to reduce the feed factor:

- Investment in better monitoring equipment
- Employee training
- Implementing new location structures
- Improved fish health with special focus on salmon lice
- Oxygen adapted feeding
- Increased focus on clean nets

In 2014, capelin and anchoveta were the largest input factors among the raw materials in feed. The highest input factors among vegetable 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 relation to environmental accounting 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 the foreseeable future. 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, capacity onshore to process the fish is often insufficient. A large volume of the parts of the fish used for fish feed come from by-products from the actual fish. Demand for raw materials is a prerequisite for sale of fish for human consumption. It is important to remember that fish not suited for direct human consumption is best used as feed for other fish species.





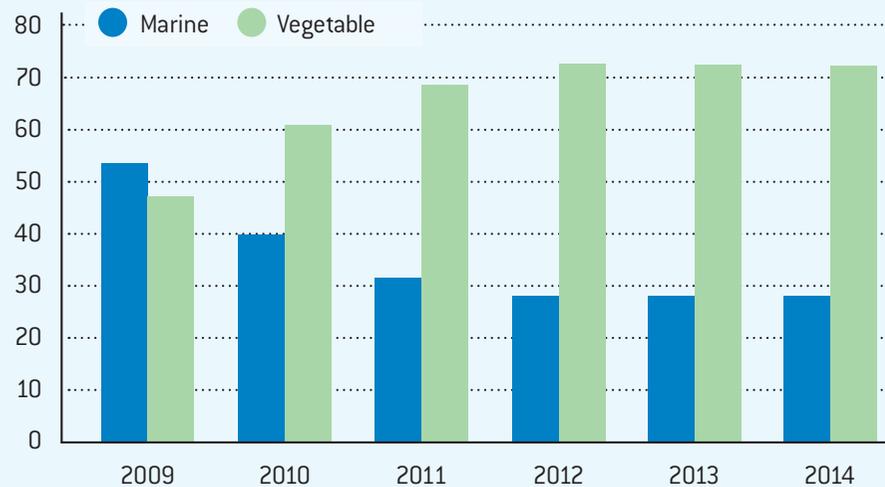
It is paradoxical to maintain that salmon farming is a problem for the use of industrial fish as long as we know that 50% of all fishmeal is used for raising other domestic animals such as pigs, chickens and other warm-blooded species. Salmon and trout are champions when it comes to recycling of industrial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

## **OTHER RAW MATERIALS**

Salmon feed contains both fishmeal and fish oil. These raw materials mainly come from wild fish which is not suited for human consumption or not in demand. Salmon farming has traditionally depended on a supply of wild fish since a lot of fish oil is consumed. In recent years this dependency has been significantly reduced, since much of the fish oil has been replaced with vegetable oils. Today, more than half of the oil used comes from vegetable sources.

## DEVELOPMENT OF RAW MATERIALS IN FEED



## THE RAW MATERIALS MARKET

In the future, the fish farming industry will require alternative sources of raw materials for fish feed. Initially, fish feed contained approximately 70% marine raw materials. In recent years, this percentage has been gradually reduced and replaced by vegetable raw materials. Today, the feed we use contains approximately 70% vegetable raw materials and approximately 30% marine raw materials.

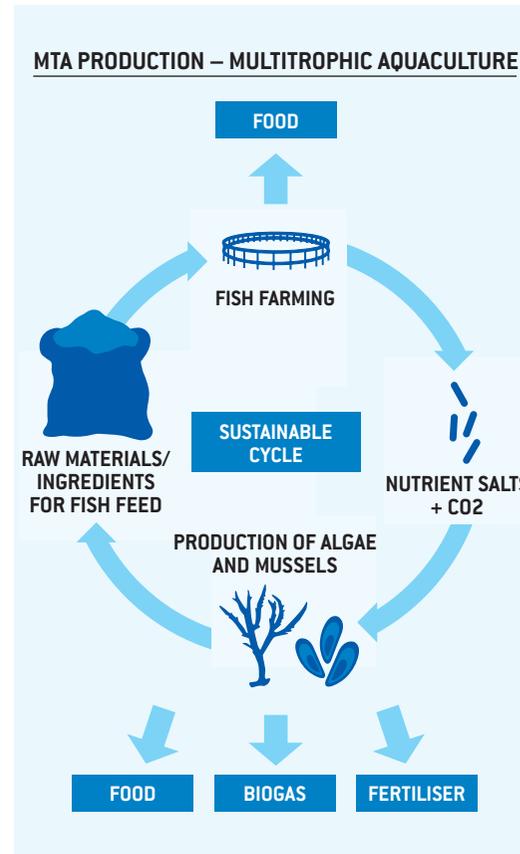
This change was mainly brought about due to the supply of raw materials, but also because of an increased focus on sustainable production. Fish for fishmeal and fish oil will provide much more sustainable utilisation if supplied directly for human consumption than for feed for farm animals. Today, we prefer to produce fish feed from cuttings from the wild fish industry and to supply wild fish directly to consumption, where possible. Raw material from wild fish is utilised as an ingredient for numerous different types of animal feed. Raw material from salmon is the

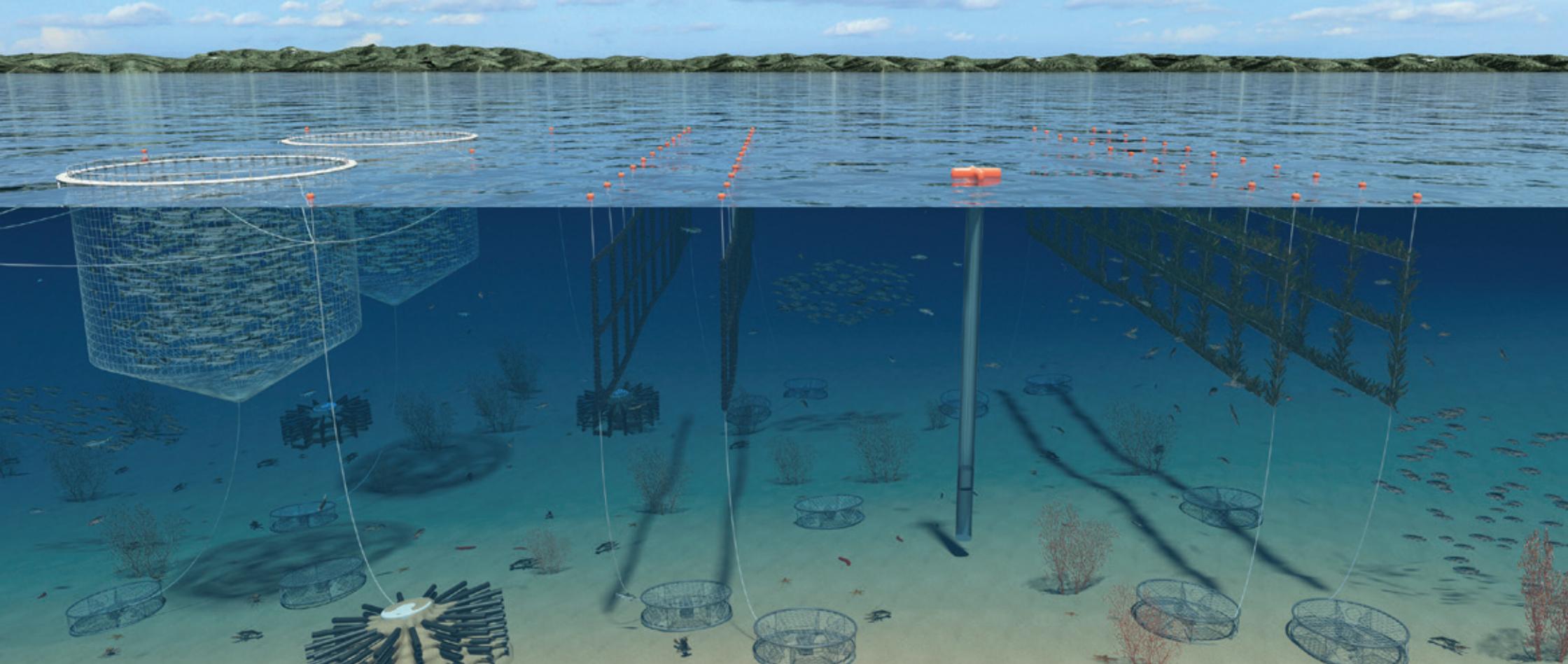
simplest to process into consumable goods. The volume of wild fish caught and utilised for fishmeal and oil remains relatively stable and will most likely not increase in the near future.

The steady growth of the fish farming industry, particularly in Asia, and the vast increase in direct consumption by humans, for example Omega 3 capsules, have resulted in higher prices and a reduced supply of marine raw materials for e.g. fish feed. One of Ocean Forest's main target areas is identifying new raw materials for fish feed. We aim to make use of nutrient salts to produce new raw materials. One example is meal from mussels.

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.

The steady growth of the fish farming industry, particularly in Asia, and the vast increase in direct consumption by humans, for example Omega 3 capsules, have resulted in higher prices and a reduced supply of marine raw materials for other markets e.g. animal feed. In line with our objective to increase our production of salmon and trout in the future, we therefore have to work hard to develop alternative and sustainable sources of raw materials which can be used in fish feed in the years to come. The following is a selection of the projects we have worked on in 2014 to achieve this objective.





## 5 KEY PROJECTS FOR SUSTAINABILITY

### **OCEAN FOREST**

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

The company's vision is as follows: The sea – the most important source for future production of food, feed raw materials and energy/biomass, via absorption 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 a significant value generation by taking a leading role in the development of new sources of biomass for human consumption, fish feed and bio-energy.

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

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

The company has applied for but not yet achieved a licence for those species they want to farm at Lerøy Sjøtroll's facility on Rongøy island. This facility is currently a salmon farm. While awaiting the licence, the company has focused on different areas related to macroalgae, for example:

## 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>
- Minimise environmental impact from Norwegian fish farming



- \* different types of farming technology
- \* absorption of nutrient salts
- \* use of macroalgae in different conditions

This work has partly been carried out in cooperation with Bicotec AS in Rogaland and the University of Wageningen in the Netherlands.

Ocean Forest in cooperation with Karmsund Fiskemel, Pelagia, has developed and tested fullscale production of mussel meal. The focus during this process was on separating the soft part of the mussel from the shell fraction. The meal types produced will now undergo biological trials using salmon, and thorough chemical characterisation. This field produces a world of opportunities and we are very much looking forward to continuing our research in the years to come.



## PRELINE

In recent years, Lerøy Seafood Group has been working on a project to produce large smolt in a semi-closed facility. The project has resulted in a pilot facility named Preline. With a Preline facility, we will be able to produce smolt in a closed containment facility in the sea. The smolt will be kept in the facility until it weighs approx. 1 kg, and will then be transferred to open cages. This will reduce the amount of time in the sea. Our first Preline facility has now been launched and the first generation of large smolt will be produced in 2015. The facility will produce larger and more robust smolt, and will be able to achieve 2-3 production cycles per year.

The facility is made of polyethylene and has a volume of 2,000 m<sup>3</sup>. It has an oblong shape and the fish will be able to swim against the current, like in a river. Water is sourced from depths of 25-30 metres and is replaced every 3-4 minutes. The plan is to run full-scale tests of the facility in 2014/2015. Construction of the facility complies with NYTEK and NS 9415.





The goal with this facility is to achieve the following:

- Improved control of biological and physical factors (current, temperature, O<sub>2</sub>, pathogens etc.).
- Minimise infection by using deep-sea water (25-30 metres).
- Minimise risk of salmon lice and requirement for lice treatment.
- Lower mortality rate.
- Minimise accidental release.
- Improved biomass control.
- Improved growth, improved feed factor.
- Minimise loss.
- Delivery of autumn smolt in the spring and spring smolt in the autumn.
- Improved utilisation of fish for consumption facilities, including equipment.
- Improved financial gain and reputation.

## **ENSILAGE OF RESIDUAL RAW MATERIALS FROM FISHING OF WHITE FISH**

As shareholders of Austevoll Seafood, Lerøy Seafood Group has the potential to exploit raw materials which were previously dumped at sea by the deep sea fishing fleet. Over the past years, Hordafôr, a company within the AUSS Group, has invested time and resources in utilising raw materials previously regarded as waste. This included 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, with the support of the Norwegian Seafood Research Fund.

In 2011, the Norwegian and foreign deep sea fishing fleet delivered around 580,000 tons 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 175,000 tons of raw materials available from the deep-sea fishing fleet for white fish which can be utilised for example for fish feed.



## TRIPLE

Companies now have to report three bottom lines.

- Economy
- Environment
- Social responsibility.

Triple is a project aiming to transform current social challenges into commercial opportunities of the future. The objective is to generate a triple yield: increased profitability, reduced discharges and a positive contribution to society. The project comprises various companies cooperating to identify sustainable solutions, allowing us to develop new products, services and solutions that benefit our company, the consumers and society in general - a Triple Win.

The food industry represents a major share of global greenhouse gas emissions, and a high number of health problems worldwide are related to diet. One half of all food produced is never eaten, but becomes waste. The food industry may hold the key to finding a solution for a sustainable future. It also provides substantial commercial opportunities. This is what TRIPLE aims to research.

The companies in the project comprise private, public and voluntary organisations, and do not compete directly with each other. The project involves all parts of the value chain.

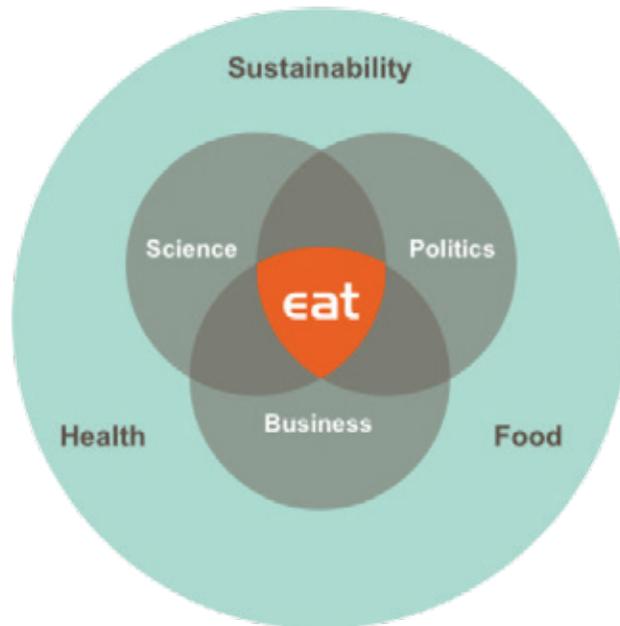


## EAT

What we eat has an influence on greenhouse gas emissions and ultimately the greenhouse effect. We do not have exact figures for the food industry's share of total greenhouse gas emissions, but we do know that it is one of the largest individual factors. What you eat also makes a difference.

Lerøy Seafood Group is a participant in EAT, as a business partner. By entering into discussions with various organisations within R&D, medicine, academics, politics and industry, we aim to participate in the dialogue on future methods to achieve a healthy and sustainable food industry. One objective is to identify specific goals, and measures shall be implemented up to 2050.

We aim to provide the ever-increasing global population with a healthy and nutritional diet, within safe environmental boundaries. This can only be achieved by integrating knowledge and management in close cooperation between the different bodies involved in food, health and sustainability.





## GREENHOUSE GAS EMISSIONS

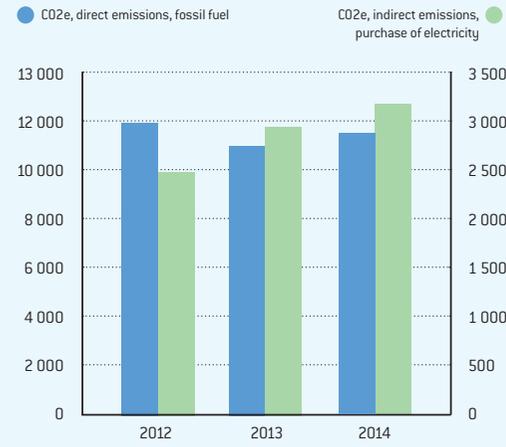
Below is a brief summary of the general framework and assumptions made when calculating greenhouse gas emissions for Lerøy Seafood Group in 2014.

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 total as Direct Emissions. The Group also wanted to gain an overview of indirect influence on global warming from the company's activities and has therefore included CO<sub>2</sub> emissions from the production of electricity consumed by the company's production units in Norway.

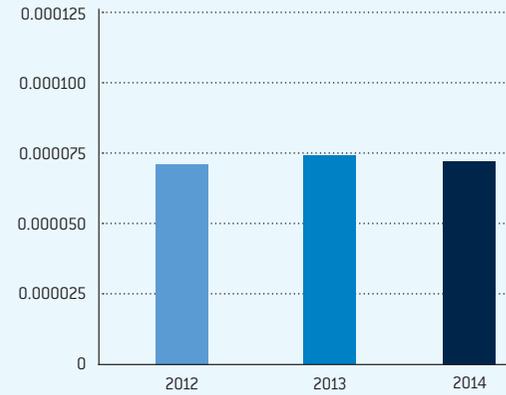
Significant sources of greenhouse gas emissions from Lerøy Seafood Group's core activities in Norway have been included in the calculations. The purchase of products and services, e.g. fish feed and transport services, have not been included in the calculations. Lerøy Seafood Group is currently working on obtaining a good basis for calculating the above.

The tables below provide a summary of consumption of fossil fuels, electricity and greenhouse gas emissions.

**GREENHOUSE GAS EMISSIONS, USE OF FOSSILE FUEL AND PURCHASE OG ELECTRICITY, (TONS CO2E) FARMING DIV.**



**CO2E EMISSIONS PER KG FISH PRODUCED, GROSS GROWTH**



**DIRECT EMISSIONS**

Direct emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are calculated based on available data. CO<sub>2</sub> emissions are only calculated from combustion of diesel, heating oil and undefined fossil fuels. Undefined fossil fuels are defined as diesel/heating oil in this context.

Emissions from combustion of petrol are assumed to come from passenger vehicles and this has allowed for calculation of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O-emissions.

Emissions from combustion of marine gas oil are assumed to come from boats and this has allowed for calculation of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O-emissions.

All CH<sub>4</sub> and N<sub>2</sub>O emissions are converted to CO<sub>2</sub> equivalents to enable total reporting. All factors utilised to calculate direct emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O are taken from the overview of elements for the fish farming industry in IPCC-2006.



## **INDIRECT EMISSIONS**

Consumption of electricity also results in the emission of greenhouse gases. We have calculated our emissions of CO<sub>2</sub> based on a Norwegian mix of electricity. The consumption of electricity is classified as indirect emissions.

## **GLOBAL WARMING POTENTIAL (GWP)**

Different greenhouse gases have different potentials when it comes to global warming. GWP provides an indicator with which to weigh all greenhouse gas emissions in comparison with each other and to produce total potential CO<sub>2</sub> equivalents. Taking a perspective of the next 100 years, for example, emissions of 1 ton CH<sub>4</sub> will have an equal impact on global warming as emissions of 25 tons CO<sub>2</sub>.

Lerøy Seafood Group has reported greenhouse gas emissions to the CDP, Carbon Disclosure Project.



## ENVIRONMENTAL ACCOUNTING

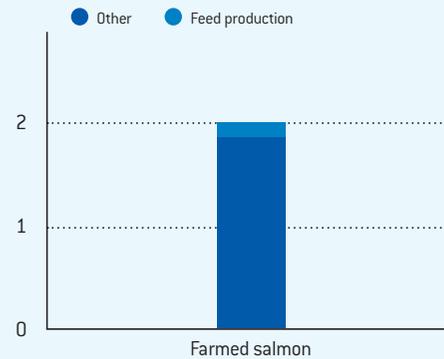
Lerøy Seafood Group has until further notice not prepared separate accounts for CO<sub>2</sub> equivalents discharged to the environment from our production, using the LCA method. We have, however, participated in various projects for analysing discharges of environmental gasses from production of salmon, both as whole fish and as fillets.

On assignment from FHL (the Norwegian Seafood Federation) and Norges Fiskarlag, SINTEF Fiskeri og Havbruk AS together with SIK, Institutet för Livsmedel och Bioteknik AB carried out a study of Norwegian seafood in 2009 under the heading "Carbon footprint and energy use of Norwegian seafood products". This study is representative of the products we produce.

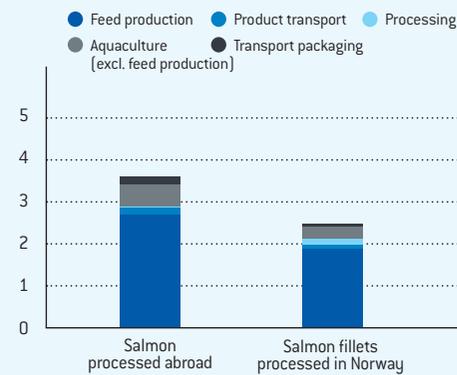
The results from this study show greenhouse gas emissions for whole salmon of 2.0 kg CO<sub>2</sub>e per kilogram live weight.

Lerøy Seafood Group has decided to focus on processed products with an emphasis on processing in Norway. One of the reasons for setting this goal was to achieve a reduction in greenhouse gas emissions per kg edible seafood.

### GREENHOUSE GAS EMISSIONS (KG CO2E/KG LIVE WEIGHT)



### PROCESSING IN NORWAY VERSUS ABROAD, GREENHOUSE GAS EMISSIONS (KG CO2)

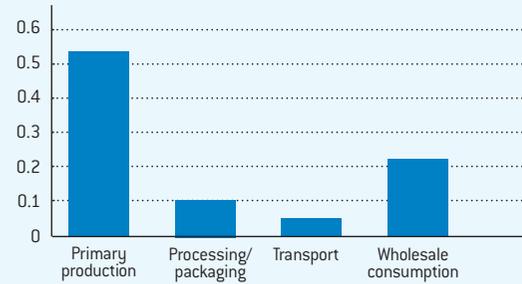


## ENVIRONMENTAL LABELLING

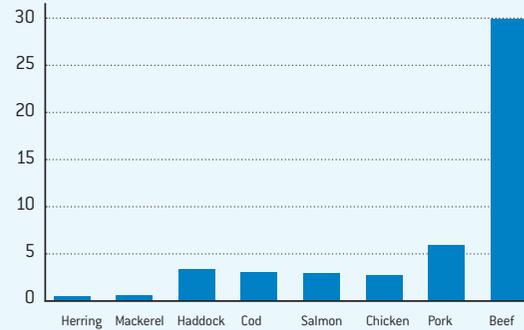
A few countries have started to label a number of products with their CO2 footprint. However, as of today there is no established standard for how this is to be implemented. As we see it, without standardised labelling for CO2, we risk confusing the consumer when they try to compare the various CO2 labels on different products. For this reason we have decided to postpone the labelling of our products until a standard procedure is established.

We input various resources to the value chain and at the same time greenhouse gases are emitted from the production chain. The resources used and discharged are converted to CO2 equivalents, providing environmental accounts. The amount of CO2 impacting the environment depends on where in the cycle we are. It is important to keep in mind that a product impacts the environment with the sum total of CO2 equivalents throughout the entire cycle.

**GREENHOUSE GAS EMISSIONS (KG CO2E) PER 227 G FRESH SALMON FILLET FROM FISH FARM IN BRITISH COLUMBIA DELIVERED TO SAN FRANCISCO**



**GREENHOUSE GAS EMISSIONS (KG CO2E/KG EDIBLE PART DURING SLAUGHTER/LANDING)**

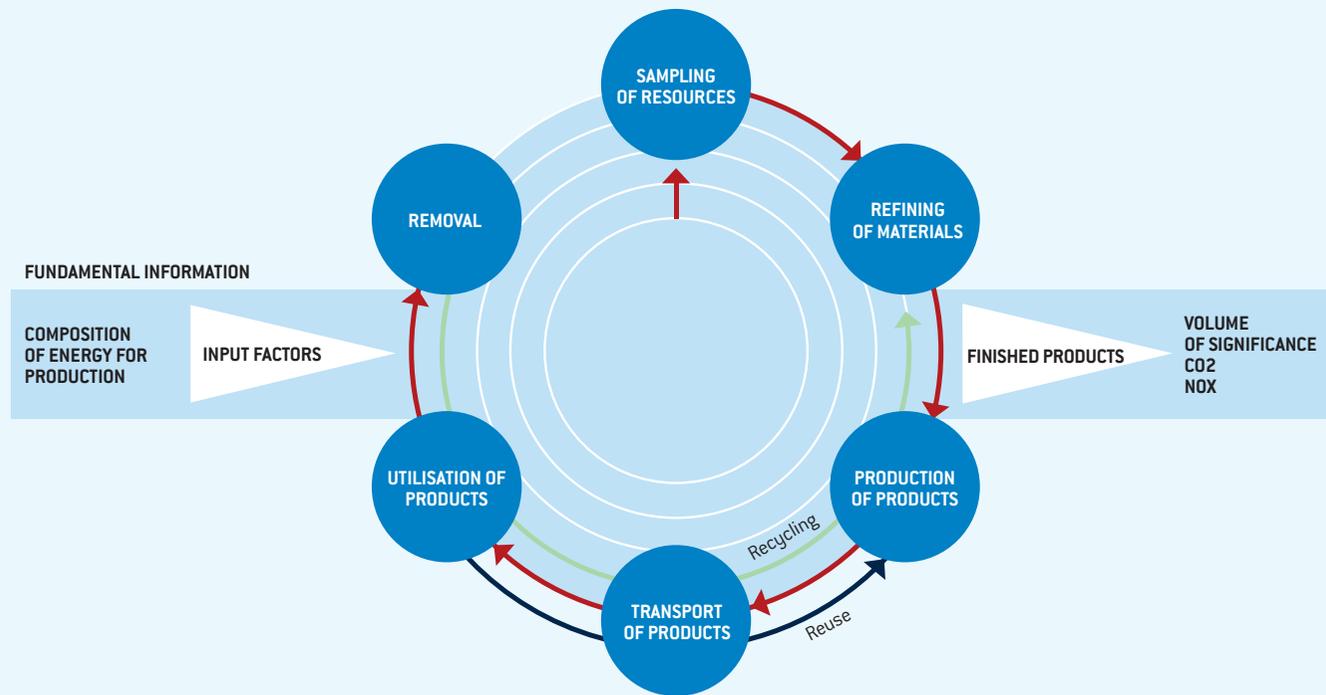


For example: if we label a product as it is taken out of the shop, a raw portion of salmon will be labelled with a lower CO2 value than a heated salmon portion taken from the hot food counter. However, if we look at the entire cycle, the warm salmon portion will normally score better than the cold one because it is probably heated in an industrial oven in the shop. If you bring a cold salmon portion home to the kitchen and heat it in an average household baking oven, the CO2 value will be higher.

The average consumer will probably not be able to consider these factors. It will therefore be to everybody's advantage if a standard is established for how far in the cycle we should go when calculating the CO2 value that subsequently will be labelled on the product.

## THE LCA METHOD LIFE CYCLE ASSESSMENT

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In 2010, a committee was established in Norway to compile a Norwegian standard for environmental labelling of seafood. Lerøy Seafood Group played an active role in this work, together with other representatives of the Norwegian fishing industry. The standard was completed and launched in the summer of 2012. It will be promoted as an ISO standard, and the aim is to establish the standard internationally for environmental labelling of all types of foods.

The majority of products and services in themselves do not cause that much pollution. However, the factories that manufacture products, the lorries that transport them, the consumers that consume them and the combustion plants where waste is burned represent the highest emissions. Life cycle analyses will help a company understand how their products and services impact on climate change, and which parts of the processes require a focus in order to reduce environmental impact. A life cycle analysis for a product can help a company:

- Reduce greenhouse gas emissions
- Identify possible cost savings
- Integrate climate impact into selection of suppliers, materials, product development, production processes
- Display environmental and social responsibility
- Provide information to customers and consumers on the environmental impact of a product/ service

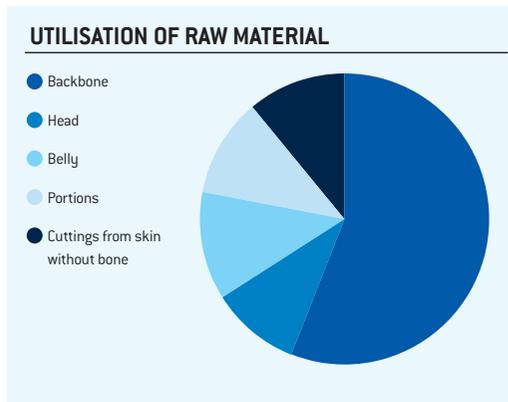




## RESIDUAL RAW MATERIALS

Lerøy Seafood Group works to achieve the highest possible rate of utilisation of raw materials produced. This implies a goal of 100% utilisation of all nutritious raw material not used in the main production. The share of residual raw materials depends on the type and specification of our main processed products. The most important processed products are fillet and salmon and trout portions with or without skin.

The utilisation rate for fillet is between 55% and 74%, i.e. between 55% and 74% of the salmon (gutted weight) becomes main products while the rest becomes residual raw materials. For portions the utilisation rate is between 45% and 68% depending on the specification.





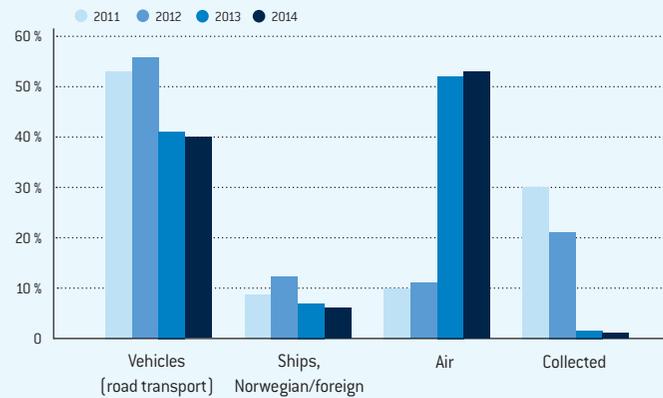
## DISTRIBUTION

How can we contribute to environmental protection by thinking green for logistics? By being environmentally conscious in our choices of logistics solutions, we can contribute to reduction of CO2 emissions. Carbon dioxide is a colourless and odourless gas. It is produced naturally by humans and animals and in connection with human activities such as combustion of petrol, diesel oil, coal, fuel oil and wood.

In practice, we often face demands to be both profitable and to protect the environment. Expensive transport which at the same time damages the environment is, of course, a solution we do not want. If the solution is kind to the environment but not profitable for the company, the environment is protected but the solution is bad for the company. The optimal solution is one that is kind to the environment and also provides improved profitability. Such solutions will also be strongly motivating and therefore easier to implement. Often we discover that environmentally friendly solutions do not cost as much as we thought, and that a focus on the environment in fact contributes to increased profitability.

Hallvard Lerøy AS is the largest sales and distribution company in Lerøy Seafood Group. In 2014, transport was distributed as illustrated below.

## DISTRIBUTION IN HALLVARD LERØY 2011-2014

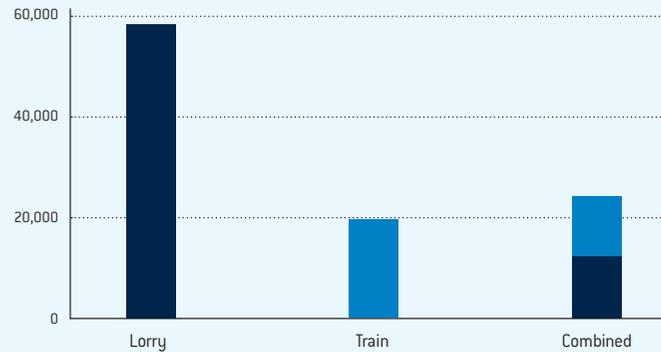


## ROAD TRANSPORT

The majority of distribution still takes place by road. This is mainly due to the limited options among logistic 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 together with our transport suppliers, reinforcing the importance of environmental protection. All told, the vehicles we use in our distribution are far younger and better than those our customers have been using. If we can encourage some of these customers to use our distribution network, we will help reduce CO<sub>2</sub> emissions.

We continuously look for new distribution solutions that are still competitive on price and that generate the same level of service as before. For example, in 2009 we altered our most heavily used route to France. Whereas we earlier transported salmon fillets in fully loaded trucks from Norway to Arras in France, we now make use of rail transport on part of the distance. This has allowed us to increase profitability as well as reduce our CO<sub>2</sub> emissions. Solutions like this will make it easier for us to contribute positively to environmental protection.

## RESOURCE UTILISATION , PRIMARY ENERGY (MEGAJoule)



By making use of rail transport on parts of the route between Trondheim and Rotterdam, we have achieved a 68.5% reduction in CO<sub>2</sub>. Our CO<sub>2</sub> emissions have been reduced from 3.91 to 1.23 tons.

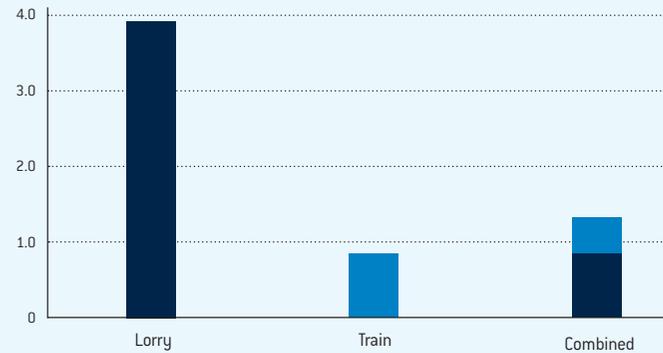
The fact that the major transport companies have developed services involving rail transport of entire articulated trailers to Germany and Holland provides us with new potential to make extensive use of rail transport.

## 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.

For air freight, we have worked closely with a large airline company that has scheduled passenger flights covering all 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. By consciously focusing on this type of air freight, we are able to meet our market demands using the most modern and least polluting planes. Conscious choices and an emphasis on environmental attitudes enable us to fly less of our products with dedicated cargo planes.

### CARBON DIOXIDE GREENHOUSE GAS, GLOBAL WARMING (TONS)



### RAIL TRANSPORT

Our products from Northern Norway are transported to Southern Norway mostly by train. This system works well during the summer months. During the winter we sometimes experience delays of varying magnitude that require uneconomical and non eco-friendly solutions.

### BOAT

Our frozen seafood is currently transported by boat. We will maintain our focus on eco-friendly logistics in the years ahead and will collaborate with our main suppliers of distribution services to contribute to an eco-friendly development.

Our increased focus on processed fish and the fact that we process the main part of our products in Norway allow us to make positive contributions to environmental protection.

### CUSTOMERS

We aim to achieve closer cooperation with our customers in maintaining a sustainable industry. Our goal for the future remains "Lerøy in every kitchen".

# SOCIAL RESPONSIBILITY

The image shows a vast, calm body of water under a clear blue sky. In the foreground and middle ground, several large, circular aquaculture cages are visible, constructed from dark metal frames and green mesh. The cages are arranged in a loose pattern across the water. A few bright yellow and red buoys are scattered around the cages. In the far background, a large, rounded mountain peak is covered in snow and partially shrouded in a light mist or fog. The overall scene is peaceful and suggests a coastal or island environment.



## EMPLOYEES

The parent company Lerøy Seafood Group ASA has its head office in Bergen, Norway. In addition to the Group's CEO, the parent company has nine employees. Administratively, all personnel functions are handled by the wholly-owned subsidiary Hallvard Lerøy AS. At year-end the Group had 2,306 employees, with 727 women and 1,579 men, compared with a total of 2,067 in 2013.

Of the Group's total number of employees, 1,682 work in Norway and 624 abroad. Independently of the demand for equal opportunities for men and women, the Group has always placed decisive emphasis on individual skills, performance and responsibility in its recruitment policy and salary systems. Furthermore, the Group ensures at all times equal employment opportunities and rights for all employees and works hard to prevent discrimination based on national origin, ethnicity, colour, 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 work tasks and environments.

The company is an actor in a global industry and the company's working environment changes continuously. This requires flexible employees who are dynamic and willing to learn.

In 2014, only minor injuries were reported for employees. The total sick leave rate was reported as 5.7%. This is up from 5,3% in 2013. Sick leave comprises 3.2% long-term sick leave and 2.5% short-term sick leave. Comparable sick leave statistics are not available from the foreign subsidiaries. However, the organisations in the individual subsidiaries are continuously being developed to ensure that they can deal with new challenges and changes in framework conditions. We have a good working environment and good conditions for cooperation.

The individual companies in Lerøy Seafood Group all have employee representatives to take charge of the formal cooperation between company and employees. Lerøy Seafood Group also aims for an open organisation and to ensure the best possible working environment for all employees.

The Group's personnel are highly skilled, and the working environment is positive, cheerful and where employees display enthusiasm for their work. Our employees are good at their jobs and are inspired by the "Lerøy spirit".

The individual companies arrange various events, such as family days, social gatherings, motivation or sporting events. Most of our subsidiaries have employees who take part in sporting events via their employers.

# SALMON – AN IMPORTANT SOURCE OF PROTEIN FOR FUTURE GENERATIONS

The greatest challenges we face in the future when it comes to food production will be:

- production areas/availability of land
- fresh water
- energy

Only 30% of the earth's surface is land, and land availability will be a struggle in the future. Should available land be used for industry in order to provide jobs for future generations? Should we use the land to build houses for future generations? The growing population also requires a good infrastructure, comprising schools, hospitals, kindergartens, roads etc. These are all requirements that have to be assessed in relation to the land required to produce food.

70% of the earth's surface is covered by oceans, and we currently exploit far too little of the earth's waters for food production. Only 5% of the food we eat on a global scale comes from the sea. By comparison, 40% comes from farming and 55% from vegetable sources. With such limited land availability and limited access to fresh water and energy, the sea will have to provide for a large volume of the increased requirement for protein. We cannot count on sufficient volumes of wild fish in the future, so an increase in production of food from the sea must be derived from some type of aquaculture.



## Facts about salmon

<b>Feed volume</b> kg, per kg. fish	<b>1.2</b>
<b>Energy retention%</b>	<b>27</b>
<b>Protein retention%</b>	<b>24</b>
<b>Footprint water:</b> litres/kg edible volume protein	<b>1.950</b>
<b>Footprint CO2:</b> e/kg edible volume protein	<b>2.5</b>
<b>Agricultural land:</b> m2, utilised per kg edible volume protein	<b>3.2</b>
<b>Use of antibiotics in sea</b>	<b>No</b>
<b>Omega 3 content:</b> g, per 100 gram protein	<b>10.9</b>
<b>Essential minerals and vitamins:</b> Selenium, Iodine, Vitamins A, D and E, B6 and B12	
<b>Yield %</b> , from whole fish	<b>68</b>

Salmon production may still involve certain challenges, but the positive aspects of this source of protein far outweigh the negative. If we eat salmon, then another foodstuff is spared. If we did not eat salmon, somebody else, somewhere in the world, would have to produce another source of food. No matter what type of food we produce, we leave a footprint. The question we have to ask ourselves for the future is how we can make this footprint as small as possible. Salmon production is one of the answers to this question. Salmon is the first fish to compete practically across the board with other proteins. It can compete with both white and red meat, and does so in every corner of the world. Not only is salmon an attractive and tasty product, it is also healthy and is acceptably priced. The increase in the middle class worldwide implies an increased demand for proteins.

The FAO or Food and Agriculture Organization of the United Nations has estimated that seafood production will increase to 40 million tons by 2030. So why should salmon be part of this increase?

- Production of salmon is three-dimensional and does not require a lot of space. A salmon farm normally comprises eight rings. Each ring contains 97% water and 3% fish. One salmon farm alone can produce 8,000 tons of salmon. In order to produce a corresponding amount of beef, you need approximately 27,000 cows.
- Salmon is a poikilothermic animal, which means that it adapts to sea temperatures. It does not need a "roof over its head", eliminating the need to supply energy to keep the salmon warm. 27% of the energy utilised in fish feed is reproduced in the edible part of a salmon. By comparison, this figure is 10% for chicken and 14% for pork. In addition, salmon has a higher exploitation rate of protein and phosphorus from its feed.
- Salmon need approx. 1.2 kg of feed to grow 1 kg. Chickens need 2 kg, pigs 3 kg, sheep and cattle 8 kg.
- Salmon has a minimal requirement for fresh water when compared with land-based animals. The water footprint for salmon production is 1.95 litres per kg of edible meat, compared with 4.325 litres per kg of edible meat for chicken. The same figure for pork is 5,988 litres/kg and for beef 15,415 litres/kg.

- Salmon has a low CO2 footprint – approx. 2.5 kg CO2e/kg protein.  
By comparison, chicken has a CO2 footprint of 3.4, pork has 3.9 and beef has approx. 30.  
You get a high yield from salmon, i.e. you can eat 68% of a salmon. The comparative figure for chicken is 46%, pork 52% and beef approx. 38%.
- Salmon is healthy! Salmon 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. In addition, salmon contains Vitamins A, E and D and is rich in the minerals zinc and iodine. The health authorities recommend that we eat more fish and reduce our consumption of red meat. An increase in our 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 salmon industry generates significant income for Norway, creates high employment and improved infrastructure and lays the foundations for a major supplier industry in different parts of Norway.

The FAO or Food and Agriculture Organization of the United Nations has estimated that the world's population will increase to approx. 9 billion people by the year 2050. A population growth of approx. 30% will require increased food production of approx. 30%, based on current food production volumes. We will need some source of protein in the future. Foods rich in protein include meat, eggs, milk and seafood.



# THE SEA PROVIDING FOOD FOR FUTURE GENERATIONS

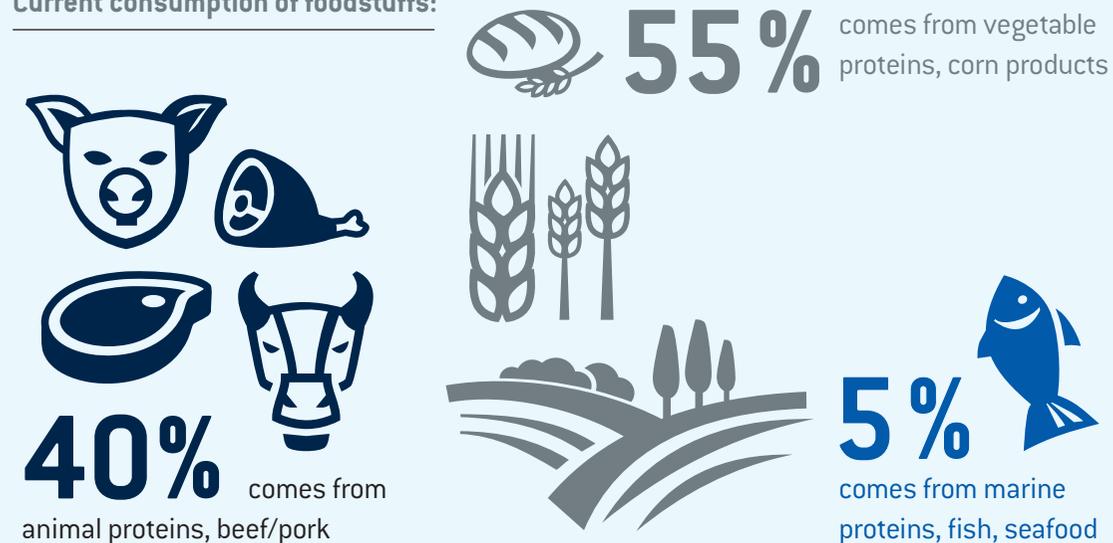
With the projected growth in population to come, the world will need more food. It is estimated that the global population in 2050 will increase to approx. 9 billion. How will we manage to feed all these people?



- There will be a shortage of agricultural areas on land
- We believe we will suffer a shortage of fresh water
- People will need more space to build their homes
- How will our future energy supply be and how can we use the available energy supply most efficiently with a view to availability and emissions?
- More than 70% of the earth's surface is covered by sea.

- In Norway, we currently use only 0.5% of our offshore waters for fish farming
- A mere 5% of current food consumption comprises marine proteins

## Current consumption of foodstuffs:

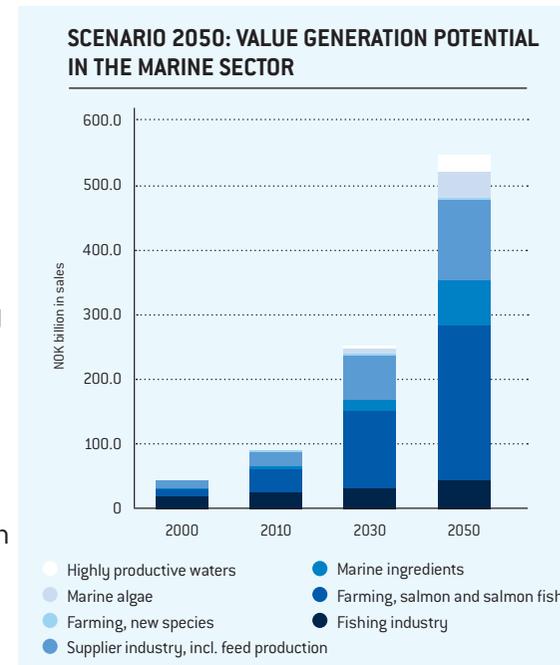


**A whole number of factors reveal the importance of the sea as the source of food for future generations.**

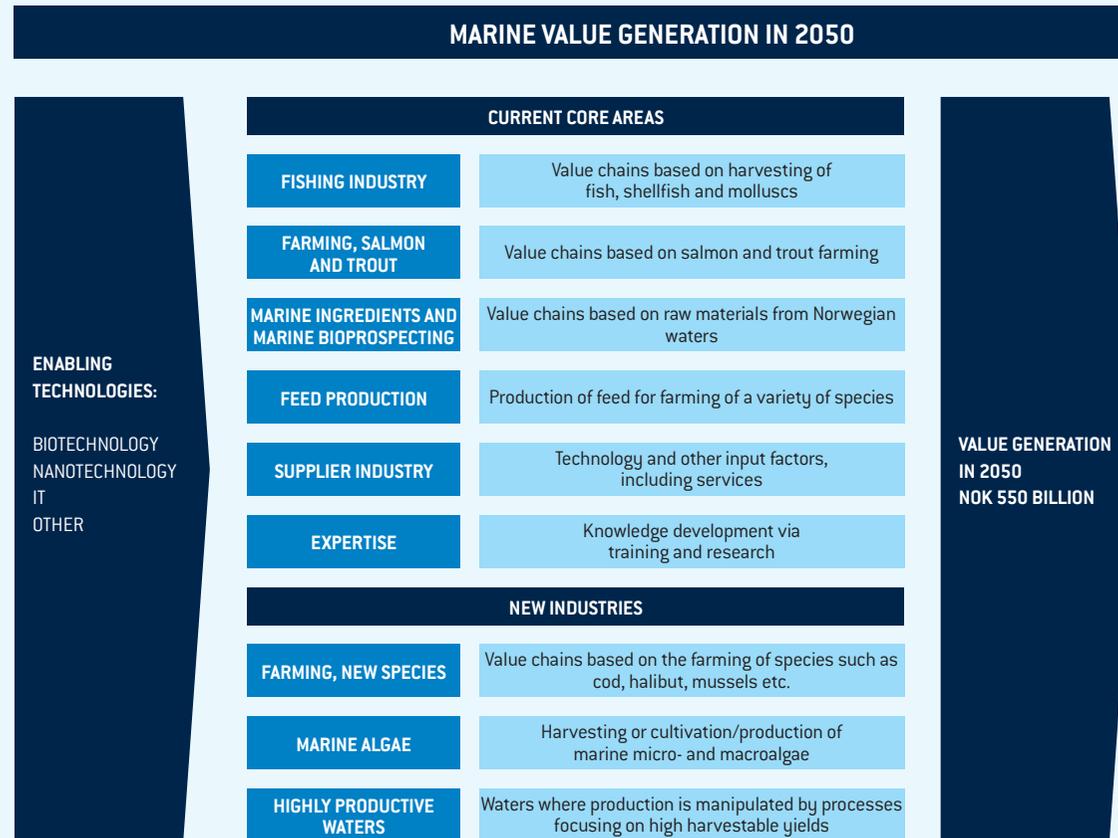
- The sea is home to numerous species about which we still know very little, and which undoubtedly will contribute to a healthy diet in the future. Marine resources not only cover fish, but plants, shellfish and new species which most probably will help us cover the future requirement for food.
- Those species we are familiar with today have a low CO2 footprint and very efficient feed exploitation rate. The edible portion of the animal/fish is high. You get a lot of meat in relation to the amount of feed used per kg fish. This means that you need approx. 1 kg feed to produce 1 kg of fish.
- The different species require little fresh water.
- No heating energy is required (in comparison to e.g. barns for animals on land).
- Many of the species currently found in the sea will contain marine fatty acids that are highly beneficial for nutrition and diet.
- WHO, World Health Organization, recommends that we eat less Omega 6. Seafood has a low content of Omega 6.
- Seafood also has a high content of essential vitamins and minerals.
- There is much to support the claim that a higher consumption of seafood will improve health for many populations and help improve social economics.

In 2012, SINTEF published a report entitled "Value created from productive oceans in 2050". The report was commissioned by DKNVS and NTVA (The Royal Norwegian Society of Sciences and Letters and the Norwegian Academy of Technological Sciences) and inspired many exciting ideas about the sea as a source of food for future generations.

As the figure indicates, there is room for growth within the current farming of salmon and salmon fish, but also for new species, marine algae and marine ingredients.



This may also pave the way for a number of new industries in Norway:

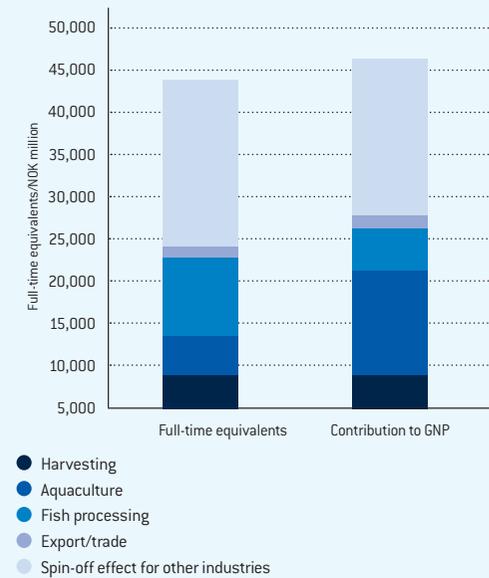




Not least, new employment and income for Norway as a nation.

We are therefore confident that the further development of marine resources is of great importance both for the Group, for Norway and for the world at large.

#### VALUE GENERATION FOR NORWEGIAN SEAFOOD INDUSTRY (SINTEF REPORT A23089)





## ETHICAL GUIDELINES

Lerøy Seafood Group is strongly committed to its social responsibility. Our aim is to combine healthy business management with a clear responsibility for society and the environment.

Employees shall behave in a manner which displays social consciousness and professionalism, respect for colleagues and other partners. As a general rule, Lerøy Seafood Group with suppliers and subcontractors shall fully comply with legislation in respective countries and the company's own/Lerøy Seafood Group's quality systems/procedures. The Group has a principal rule that the strictest requirements shall be met.

In the event of nonconformances, measures shall be implemented to improve the situation. Our goal is to contribute towards improving human rights, labour rights and environmental protection, both within our own Group, in relation to our suppliers and subcontractors and in relation to our trading partners.

Lerøy Seafood Group's business information will be precisely and elaborately communicated, both internally and externally. All accounting information shall be correct, fully registered and presented in accordance with laws and regulations, including relevant accounting standards. In relation to prevailing laws regarding securities and standards for stock exchange listing, Lerøy Seafood ASA is obliged to ensure complete, precise, accurate and understandable information in the interim financial statements and other documents.

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. Individual companies are responsible for ensuring practice of our ethical guidelines. In addition, each employee is responsible for the performance of their own jobs. The company management is responsible for ensuring compliance with the ethical guidelines.

The ethical guidelines have been divided into two parts and comprise:

Part 1: Factors relating to the company, suppliers and subcontractors

Part 2: Factors relating to the individual employee.

Key words for the contents of the ethical guidelines:

- Ethical requirements on suppliers and subcontractors
- Requirements on regulation of working conditions for employees
- The rights of the company's employees, employees of suppliers and subcontractors
- HSE aspects
- Forced labour/discrimination
- Exploitation of resources and impact on local environment
- Corruption
- Notification of censurable conditions
- Ethical guides for employees representing the company outside the workplace





Any form of forced labour, slave labour or involuntary labour is strictly prohibited. Employees shall not be obliged to submit a deposit or identity papers to the employer and shall be free to terminate their employment with a reasonable period of notice.

Employees shall be entitled to join or establish trade unions as they choose, and the employer shall not discriminate against trade union representatives, or prevent them from carrying out their trade union tasks.

We have a particular responsibility in relation to children and the young, to ensure good guidance and follow-up, helping avoid accidents or other negative outcomes. We shall pave the way for children and youth to attend school and gain an education.

All forms of discrimination at work based on ethnicity, religion, age, disability, gender, marital status, sexual orientation, trade union membership or political beliefs are strictly prohibited. Measures shall be established to safeguard against sexual harassment, threatening, insulting or exploitative behaviour and to prevent discrimination or dismissal on unfair grounds, e.g. marriage, pregnancy, parental status or status as HIV infected.

Physical cruelty or punishment or threats of physical cruelty are strictly forbidden. The same applies to sexual or other abuse or different types of humiliation.

Lerøy Seafood Group does not accept purchase of or acceptance of sexual favours on occupational trips or other assignments on the company's account. This also applies to employees' leisure time when on such assignments.

Employees shall have a safe and healthy working environment. Necessary measures shall be implemented to prevent and minimise accidents and damage to health as a result of, or in relation to, conditions at the workplace. Employees shall complete regular and documented training in health and safety. Health and safety training shall be repeated for new recruits.

Employees shall have access to clean sanitary facilities and clean drinking water. If the employer provides accommodation, this shall be clean, safe and sufficiently ventilated and with access to clean sanitary facilities and clean drinking water.

Salaries paid to employees shall as a minimum comply with the national provisions regarding minimum wage or the industry standard, and shall always be sufficient to cover basic needs. Payroll conditions and payment of salary shall be agreed upon in writing before employment starts.

This agreement shall be in a format which the employee can understand. Disciplinary deductions from salary are not permitted. Working hours shall comply with national legislation or the industry standard, and shall not exceed working hours in accordance with prevailing international conventions. Employees shall have a minimum of one day off a week. Overtime work shall be voluntary and should be limited to a maximum of 12 hours per week. Employees shall always receive overtime pay, at the minimum rate in compliance with prevailing agreements and legislation.

Obligations in relation to the employees, in line with international conventions and/or national legislation and regulations regarding regulatory employment, shall not be evaded via utilisation of short-term positions (such as use of contract workers, casual workers and day workers), subcontractors or other employment relationships. All employees are entitled to an employment contract in a language they understand. The apprenticeship programme shall be clearly defined in terms of duration and content.

Lerøy Seafood Group encourages employees to show moderation when travelling on business, entertaining etc. Transactions entered into on behalf of Lerøy Seafood Group shall be documented in line with good business practice. Employees must be able to explain and document any expenses, and these must be signed by a supervisor.

All employees have a duty of confidentiality regarding information of a sensitive, private or confidential nature which relates to Lerøy Seafood Group's business. All employees shall protect sensitive and confidential information and shall store documents, data and telephony in a safe manner. No individual shall use, or help others use, information regarding Lerøy Seafood Group or other companies which is of a sensitive, private or confidential nature, to subscribe to or trade securities,

whether on a private basis or on behalf of Lerøy Seafood Group.

Lerøy Seafood Group does not accept payments/other remuneration which contravenes Norwegian legislation, whether directly or via an intermediate, cf. section 276 of the General Civil Penal Code. Gifts, payments or offers of entertainment which may affect the integrity of the recipient shall not be accepted or offered.

Participation in social gatherings is a part of the company's activities and a natural part of courteous business relationships. The extent of such gatherings must not be allowed to develop to a stage where they may impact decision-making processes or give an impression of such to external parties.

Lerøy Seafood Group encourages all employees to notify the company of conditions they find worthy of criticism.





## FACTORS OUTSIDE THE WORKPLACE

All forms of environmental crime or ruthless exploitation of natural resources in the local environment are strictly prohibited. The local environment and production site shall be protected from pollution damage. Chemicals and other hazardous substances shall be properly handled. Production and the utilisation of raw materials for production, shall not represent destruction of resources.

Lerøy Seafood Group shall not either directly or indirectly contribute to the destruction of the source of income for marginalised communities, for example by seizing large plots of land or other natural resources on which these communities rely. Lerøy Seafood Group shall make a positive contribution towards sustaining a good environment for the local communities where our companies are located.

Lerøy Seafood Group does not support individual political parties or individual politicians. Lerøy Seafood Group has the right to take part in public debate, when in the interests of the Group.



All external communications to media/press etc. that are not of a local nature shall be taken care of by the company's CEO.

Production shall not conflict with national or international legislation and environmental regulations. Relevant permits shall be procured where necessary.

Environmental aspects shall be taken into account throughout the production and distribution chain, from production of raw materials to sales, and shall not be delimited to individual activities. Local, regional and global environmental aspects shall be taken into account. Animal ethics shall be taken into account.

# ECONOMIC RESPONSIBILITY





## CONTRIBUTIONS TO LOCAL COMMUNITIES

Our companies are often located in decentralised areas, making significant contributions to employment and income in the local communities.

Lerøy Seafood Group has a strong commitment to local communities in the areas where our companies are located, and we aim to make a contribution by purchasing as many goods, equipment and services as possible from local suppliers. In 2014, Lerøy Seafood Group's companies in Norway purchased goods, equipment and services for a total of NOK 9.9 billion from more than 272 different municipalities. The Group had locations in 49 different municipalities in Norway in 2014. Our employees contributed NOK 190 million in income tax to 125 different municipalities. Based on our activities over the past five years, Lerøy Seafood Group has in total contributed NOK 1.6 billion in tax. As such, we can confidently claim that we have helped sustain a number of local communities and workplaces nationwide.



As yet another consequence of our decentralised locations, we make contributions to investments in buildings, infrastructure, quays, floating quays and modern equipment in small, local communities. These form the grounds for local commerce. For certain suppliers in the municipalities in which we have facilities, we represent between 25 to 80% of their economic basis.

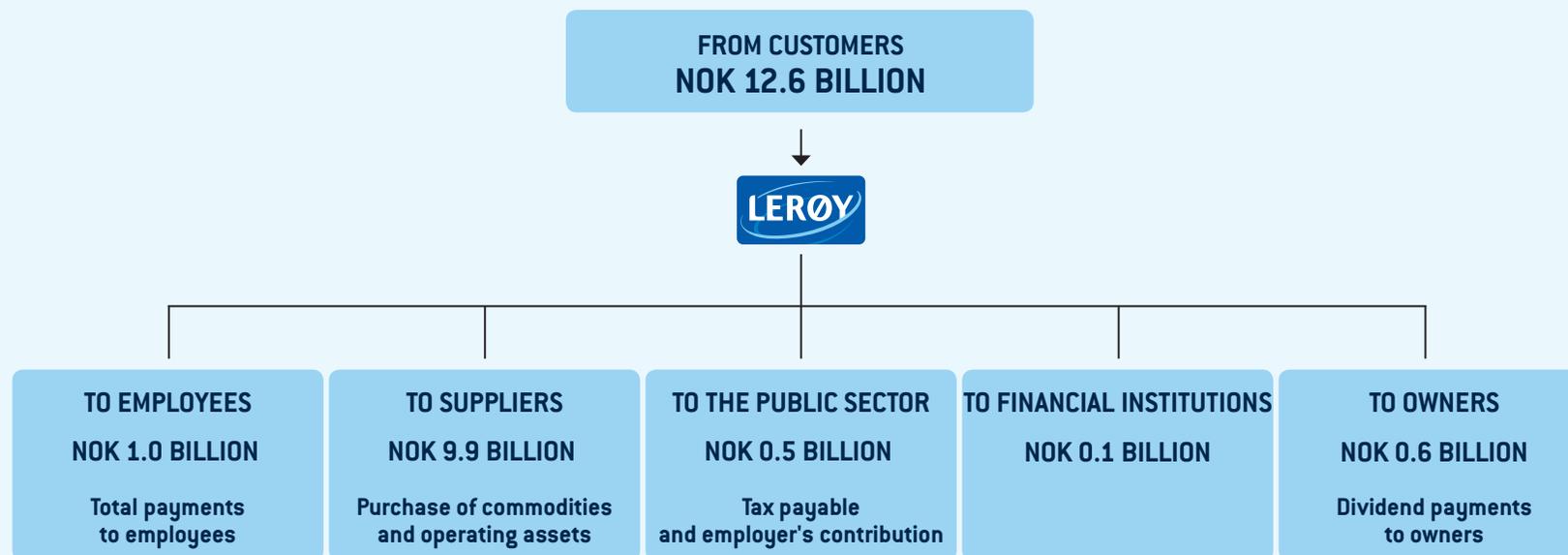
Lerøy Seafood Group compiles GRI reports, according to the Global Reporting Initiative. These reports can be downloaded from the company's website, [www.lsg.no](http://www.lsg.no). Lerøy Seafood Group has a company policy to support different activities involving children and young people in local communities. When providing such support, we focus on diet, health and healthy eating – all important factors if you want to do well. We are therefore always happy to see children and young people enjoying healthy seafood at different events.

We always strive to develop close relationships with our local communities, and are happy to contribute in a number of areas. We sponsor and support local sports clubs and sponsor a number of local festivals/various events, serving a range of seafood products to visitors and participants.

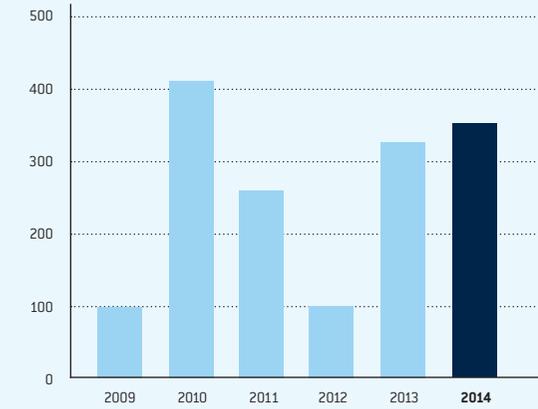
We also take part in a number of activities where our employees and local inhabitants help protect the environment by clearing beaches, picking up rubbish etc. We hold “environmental days” in several municipalities.

## ECONOMIC VALUE GENERATION AND DISTRIBUTION PER SECTOR IN 2014

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**LERØY SEAFOOD GROUP HAS CONTRIBUTED A TOTAL NOK 1.6 BILLION IN TAX OVER THE PAST SIX YEARS (TAX PAYABLE 2009-2014)**



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.

	<b>TOTAL</b>	<b>PER LOCATION IN USE</b>
Employment (full-time equivalents)	24,299	42
Farming	9,621	17
Derived (suppliers, immediate)	14,678	25
Volume produced (tons)	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 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

The fish farming industry is an extremely area-efficient producer of protein. The direct physical surface area utilised for salmon and trout production in Norway in 2013 was 21.09 square kilometres, upon which 1,243,000 tons of protein were produced from 573 locations. This implies an average production of 58,949 tons salmon/trout per square kilometre water surface area.

Every full-time equivalent in the production of fish for consumption generated an average value of NOK 3.5 million in 2013. By comparison, each full-time equivalent in agriculture had a value generation of NOK 360,000.

In terms of value generation per full-time equivalent, the figure for aquaculture is much higher than the average for mainland Norway. Value generation (contribution to GNP) is the value remaining after deduction of expenses related to consumption of goods and services as part of the production process. The average value generation for mainland Norway was NOK 0.83 million per full-time equivalent, while the corresponding figure for aquaculture was NOK 3.5 million per full-time equivalent. A simple calculation tells us that our 2,306 employees in Lerøy Seafood Group make a contribution towards value generation of NOK 8,071 million. The supplier industry is experiencing growth and the choice of suppliers and subcontractors will become increasingly important for the future development of the seafood industry.

\*SINTEF: "The significance of the fishing and agriculture industries for Norway in 2009 – a national and regional ripple effect analysis."

\*\*SINTEF-report A26088 (2014): "Value generation and employment in the Norwegian seafood industry".

Nofima, spin-off analysis performed in 2014 based on figures from 2013.



Lerøy Seafood Group is an active supporter of children and young people by making contributions to local clubs and associations.



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

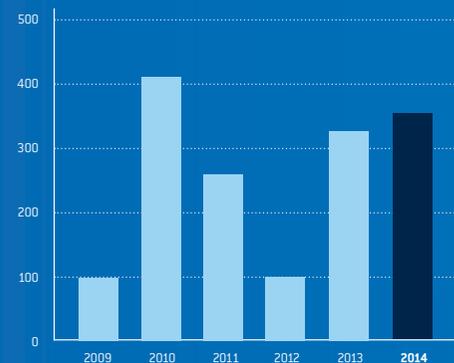
# LERØY SEAFOOD GROUP MAKES MANY DIFFERENT CONTRIBUTIONS TO MUNICIPALITIES AND LOCAL COMMUNITIES

The map displays municipalities in Norway where Lerøy Seafood Group purchased goods, equipment and services in 2014.

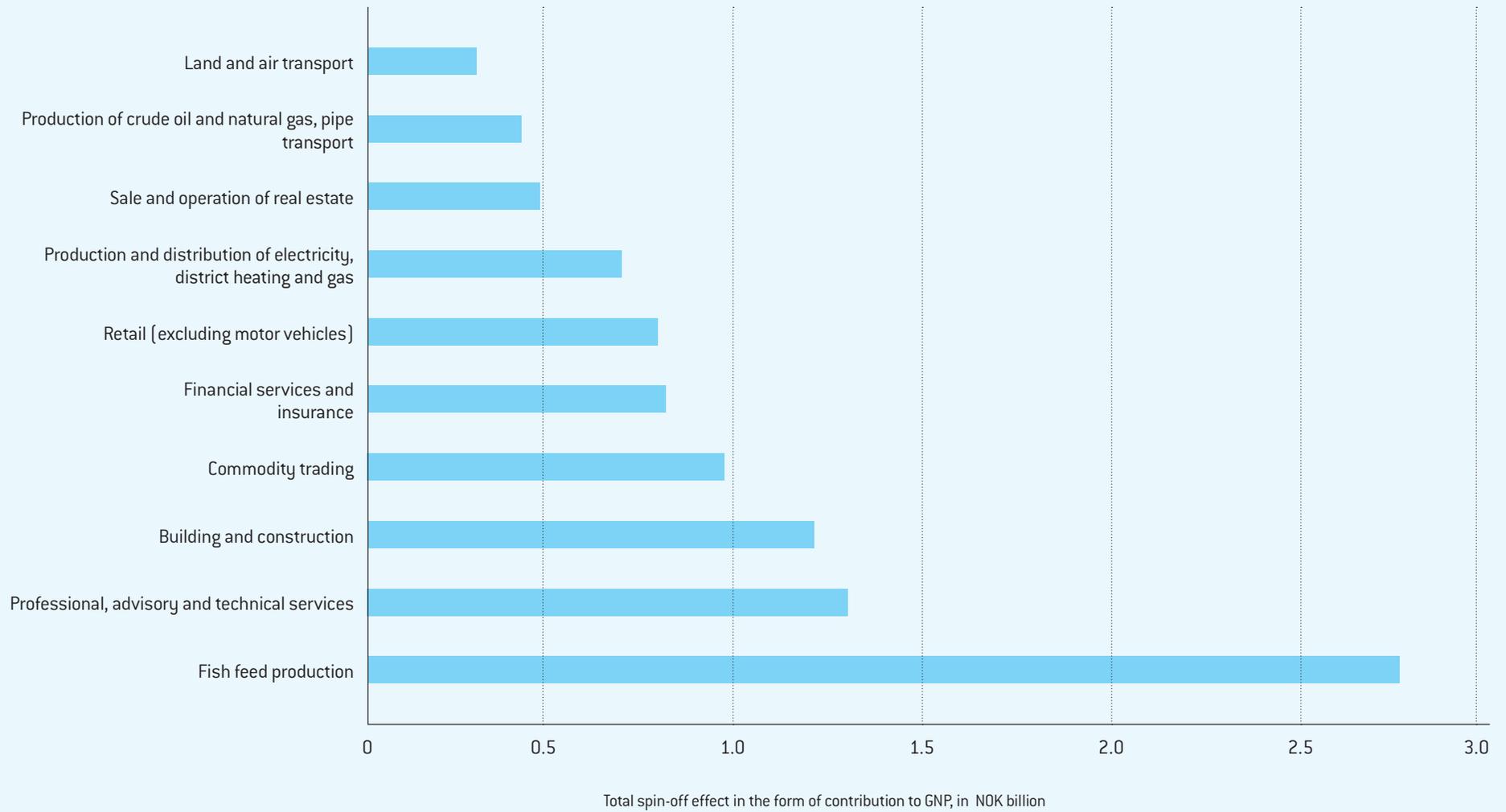
In 2014, Lerøy Seafood Group purchased goods, equipment and services in Norway for a total NOK 9.9 billion.



**LERØY SEAFOOD GROUP HAS CONTRIBUTED A TOTAL NOK 1.6 BILLION IN TAX OVER THE PAST SIX YEARS (TAX PAYABLE 2009-2014)**

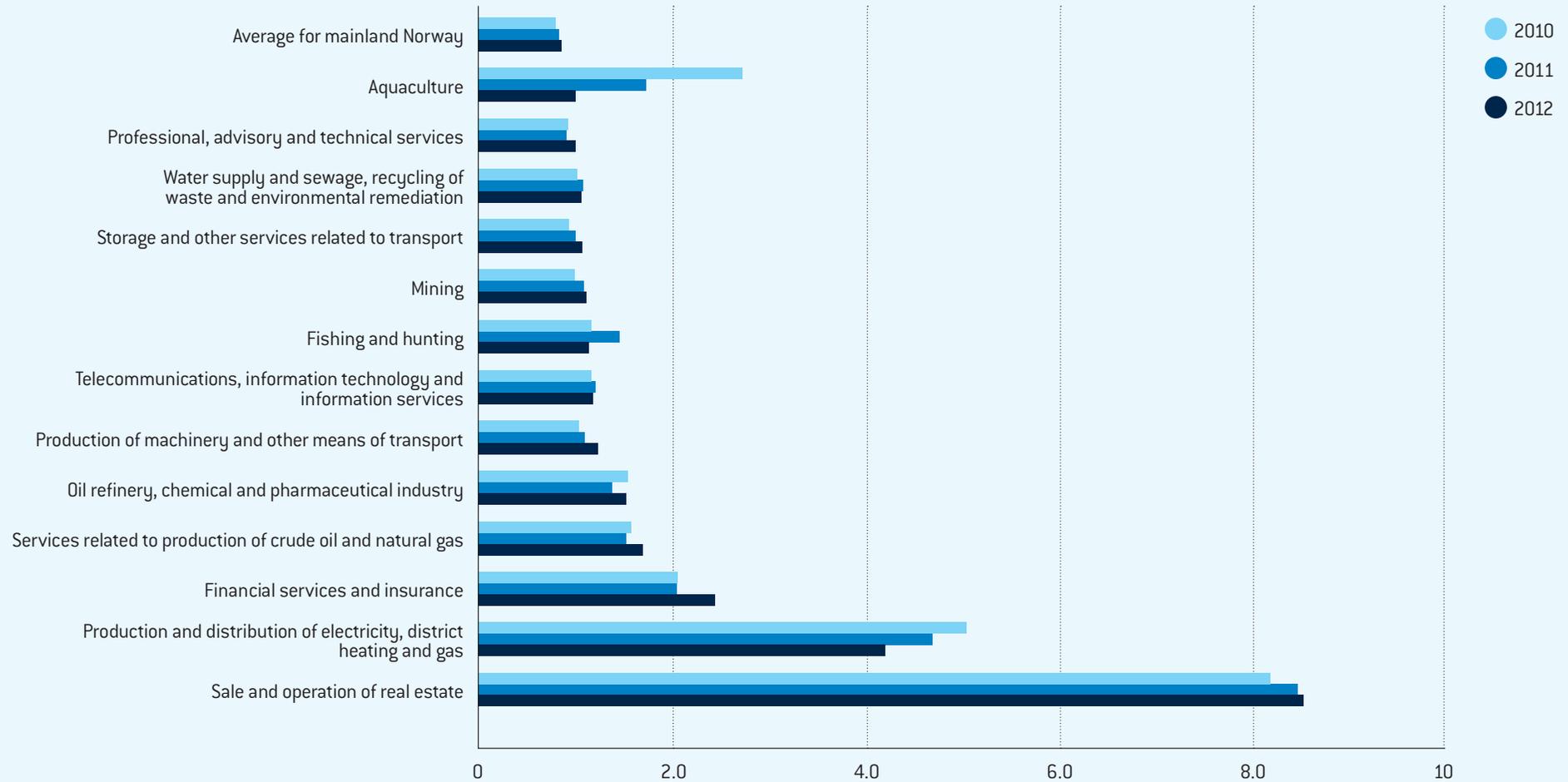


**THE TEN INDUSTRY GROUPS WITH THE HIGHEST SPIN-OFF EFFECT (CONTRIBUTION TO GNP) GENERATED BY THE VALUE CHAIN BASED ON AQUACULTURE IN 2012**



Sandberg et al. (2014)

**VALUE GENERATION (IN NOK MILLION) PER FULL-TIME EQUIVALENT FOR THE 14 INDUSTRY GROUPS IN NORWAY WITH HIGHEST VALUE GENERATION PER FULL-TIME EQUIVALENT IN 2012\***

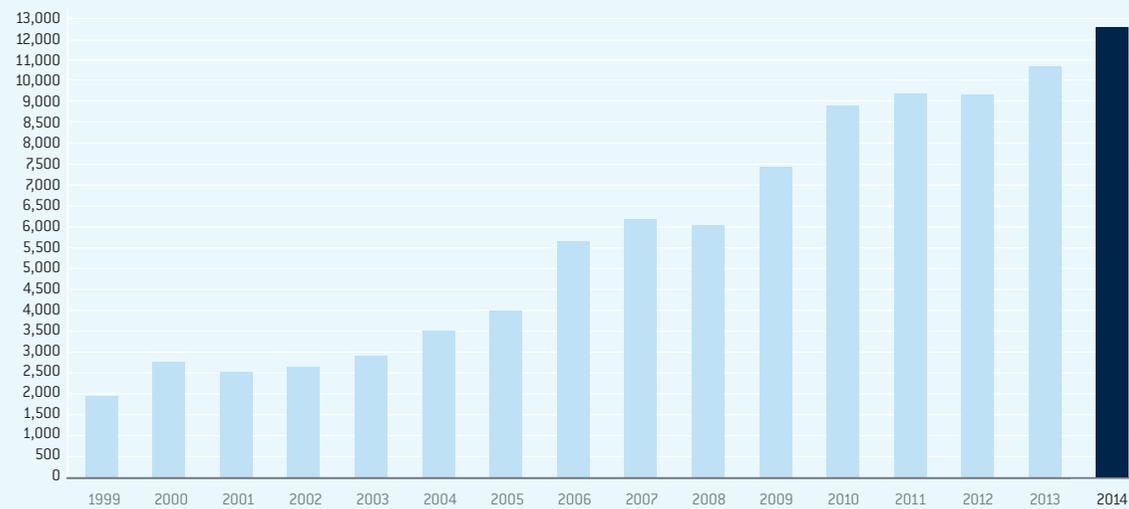


\*based on provisional figures from the public accounts for 2012

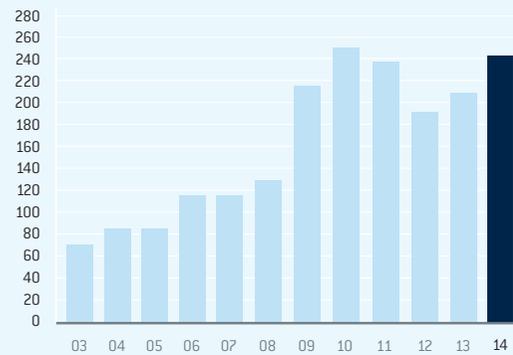
Sandberg, M., Henriksen, K., Aspaas, S., Bull-Berg, H., Johansen, U. (2014): "Value generation and employment in the Norwegian seafood industry – a spin-off analysis with a focus on 2012." SINTEF Fisheries and Aquaculture and SINTEF Technology and Society, Report A26088

# KEY FIGURES AND GRAPHS FOR THE GROUP

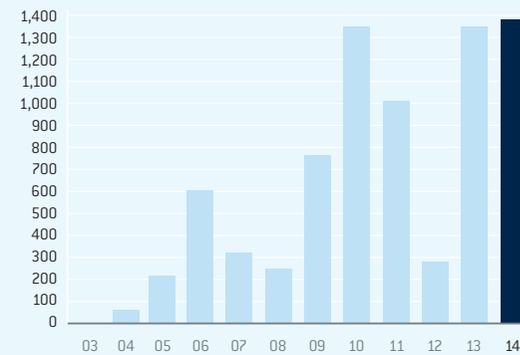
**PROFIT PERFORMANCE (FIGURE IN NOK MILLION)**



**DEVELOPMENT IN OPERATING PROFIT FOR SALES & DISTRIBUTION (FIGURES IN NOK MILLION)**

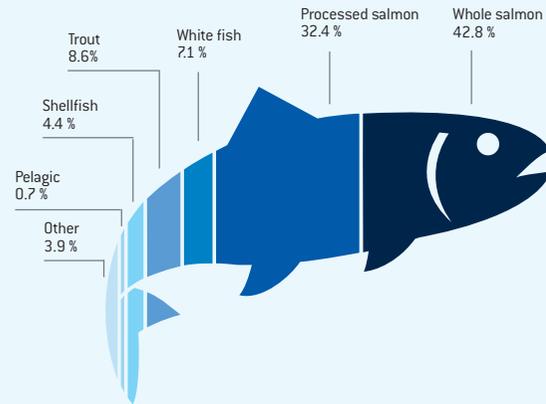


**DEVELOPMENT IN OPERATING PROFIT FOR FARMING SEGMENT PRIOR TO VALUE ADJUSTMENT FISH IN SEA (FIGURES IN NOK MILLION)**

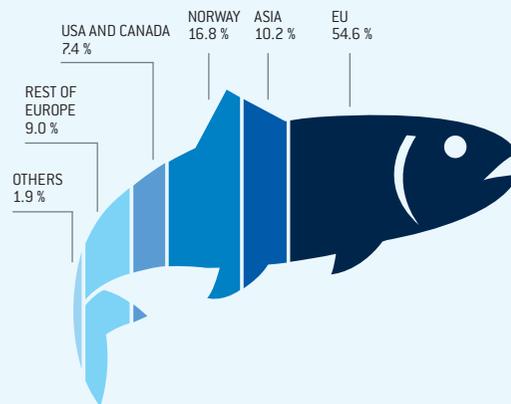


# KEY FIGURES AND GRAPHS FOR THE GROUP

## TURNOVER BY PRODUCT 2014



## TURNOVER BY MARKET 2014



## DEVELOPMENT IN OPERATING PROFIT PRIOR TO BIOMASS ADJUSTMENT LSG GROUP (FIGURES IN NOK MILLION)

