



# Sustainability in everything we do!

SalMar's Environment and Social Responsibility Report 2014



# Content

## GRI-report 2014

<b>1 Passion for Salmon</b>	5	
Scope of the report	5	
<b>2 SalMar takes responsibility</b>	6	
<b>3 Sustainability in everything we do</b>	9	
Core businesses and segments	9	
The ABC of salmon farming	10	
This is SalMar	14	
SalMar around the world	16	
Leadership of the sustainability effort	18	
<b>4 We care!</b>	20	
The workforce	20	
Society	21	
Business ethics and the reporting of wrongdoing	22	
<b>5 The job we do today is vital to the success of us all</b>	23	
Preventing the escape of fish/limiting the number of escapees	24	
Fish welfare	24	
Green licences	25	
Efficient feed utilisation	26	
Emissions	26	
<b>6 The job is not done until the person you are doing it for is satisfied</b>	28	
The value chain	29	
Customers	29	
Products	29	
<b>7 What we do today we do better than yesterday</b>	32	
Research and Development	33	
Active use of R&D licences	33	
Increased focus on genetics	33	
Safer workplaces	33	
R&D – escape of fish	33	
Technology and people	34	
Environmental documentation	35	
<b>8 Focus on the solution</b>	36	
Employee involvement	37	
Sustainable smolt production	37	
Innovation with respect to feed and feeding	38	
In-house production of cleaner fish	38	
InnovaMar from dream to reality	39	
Product development and packaging solutions	40	
Nutrimar AS: Nothing is wasted	40	
Open-ocean fish farming in the best interests of the salmon	41	
GRI-index	42	





## 1 Passion for Salmon

SalMar is one of the world's largest producers of farmed salmon, and the world's largest producer of farmed organic salmon. The company aims to be the lowest-cost producer of salmon. This goal can be achieved only through sustainable biological production. In 2014 SalMar decided to formulate a new vision: **"Passion for Salmon"**

Over several years of work and refinement, SalMar has arrived at the following tenets, which reflect its corporate culture, values and attitudes:

- What we do today we do better than yesterday
- The job is not done until the person you are doing it for is satisfied
- Focus on the solution
- The job we do today is vital to the success of all
- We care!
- Sustainability in everything we do

### Scope of the report

The report covers those Norwegian companies in which SalMar's shareholding and operational liability exceeded 50 per cent in 2014. SalMar has previously presented several aspects of sustainability in its annual reports, but this is the first report which focuses exclusively on the environment and corporate social responsibility.

The report accords with version G4 of the Global Reporting Initiative (GRI), and will be followed by subsequent annual reports. Any questions relating to this edition should be addressed to IR Manager Runar Sivertsen or community affairs spokesperson Alf Jostein Skjærvik.

SalMar's tenets run like a red thread through this report, and create a framework for its disposition. Each chapter is introduced by a brief text linking its contents to one of the company's tenets.

## 2 SalMar takes responsibility

When I joined SalMar in 1996 there were around 90 people on the payroll. Today there are almost a thousand of us. This expansion and development tells me two things: that a lot has been done right since the company's foundation in 1991, and that those who were there at the start and those who have joined since have done a fantastic job for SalMar. The level of growth also shows that we work in an industry for tomorrow – an industry which many people predicted would suffer an early demise, some 40 years ago. Over the years a great many challenges have been overcome thanks to the hard work of a lot of people and – not least – the vision and unwavering faith of individual entrepreneurs.

SalMar operates in beautiful, pristine natural surroundings. We have access to a wealth of natural resources, such as clean water and energy, and the fish we produce are adapted to the light and temperature conditions along the coast of Norway. These are advantages we are enormously grateful for, and manage with reverence. SalMar has now chosen to publish its first sustainability and social responsibility report to raise awareness internally of the efforts we have made over many years to promote sustainability, and to highlight the focus we have on continually improving the way we operate.

2014 was yet another record year for SalMar. The combination of a higher harvested volume and higher salmon prices resulted in a consolidated gross revenue of NOK 7,19 billion and an operating profit of NOK 1.88 billion. Having achieved such results it might be tempting to sit back and 'rest on our laurels', but the challenges and the opportunities facing the Norwegian aquaculture industry are too many for that. In recent years, amid the satisfaction over growth and development, we have experienced a worrying rise in the cost of producing a kilo of salmon. Much of this increase is attributed to the challenges we have had with pancreas disease (PD) and salmon lice, whose impact on costs reverberates through the entire value chain.

The Norwegian aquaculture industry's position and reputation at home remains controversial, despite the fact that as a product 'Norwegian Salmon' became an almost overnight sales success in the international market. Many of the myths surrounding the Norwegian aquaculture industry continue to be believed here at home. Unfortunately, we ourselves have been unable to explode these myths. Nor – unfortunately – are they all myths. Some things remain bitter realities, like disease, lice and escapes. If the Norwegian aquaculture industry is to succeed in gaining a strong place in the public's collective consciousness, we must make ourselves worthy of that position. It is not enough to point out that we represent the country's second largest export sector, or that we are an important factor for employment and the prevention of rural depopulation along our extensive coast.

But I believe there is light to be seen on the horizon. The aquaculture industry has long engaged with research and development circles. SalMar is working on several projects – on both a small and large scale – to improve our productivity and help to resolve some of the challenges the sector faces. This report shows some examples of how we are working systematically



through day-to-day routines and R&D partnerships to overcome biological and environmental challenges and prevent them from having a major impact.

We are seeing steadily stronger engagement in these issues at many political levels, and through the year we receive visits from key political leaders who are interested in learning more about what we are doing. That is good. It is our responsibility to ensure that the people who determine the framework conditions under which we operate are factually up to date about the aquaculture industry. Media interest in the aquaculture industry is strong. Although it is still strongest with regard to the challenges and problems we face, the industry's social significance is gradually attracting more attention in the media. Nevertheless, we must do the lion's share if the industry is to create a good name for itself.

Our red, white and blue logo is SalMar's trademark and brand. The almost 1,000 employees who make up SalMar today are also SalMar's trademark. We are the ones who embody SalMar, which means we have 1,000 potential ambassadors – a marketing resource whose potential we must exploit. SalMar's reputation is the sum of the impressions we create and communicate, the way we are perceived and spoken of by others. We have succeeded in creating a good reputation when people's actual experience of SalMar is better than their expectation.

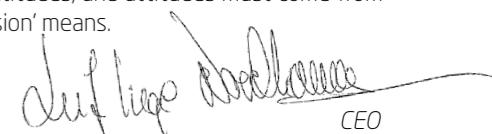
For many years, we at SalMar have been working systematically to create the right attitudes, particularly through the SalMar School. We know that the public's perception of us is determined solely by our own actions and behaviour. The 'mental fingerprint' we leave behind is ours and ours alone.

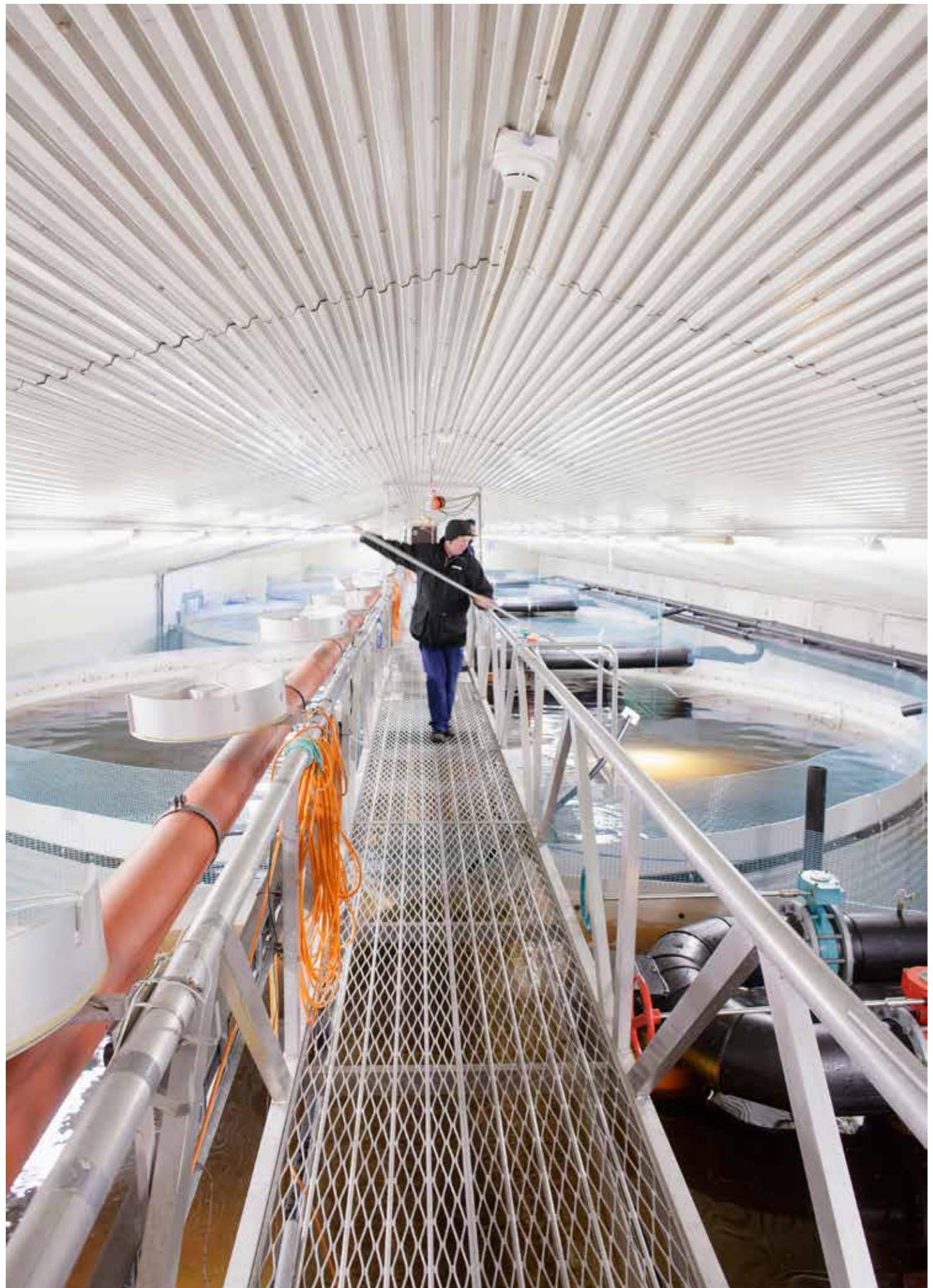
Brand-building is about showing a passion for what we do. A passion for the fish we farm, the environment, our own workforce, our local communities and the authorities who determine our framework conditions. That is why SalMar's new vision is a 'Passion for Salmon'.

Without a passion for what we do, we cannot hope to develop. At SalMar we strive for development, but development that is in the best interests of the salmon, and on their terms. That costs. But without the necessary passion for the best interests of the salmon, any investments can quickly be in vain. Today, it is easy to believe that techniques and technologies will solve most problems. Yet, ultimately, the deciding factor remains the individual business operator. Our six cultural tenets are still valid. Our culture may have changed, but our cultural foundation – what guides us day to day – remains the same.

We will continue to do things better today than we did yesterday. We will continue to do our utmost to satisfy everyone throughout the value chain, right up to the end user in the market. But we can only succeed in doing so if we work together as a team. We will resolve the challenges we face – together, and we will continue to care and to contribute towards sustainability in the aquaculture industry.

We can neither buy nor build our way to sustainability. Sustainability is about attitudes, and attitudes must come from within. That is what 'passion' means.

  
CEO



## 3 Sustainability in everything we do

Although Salmon farming is one of the most sustainable and environment-friendly ways of producing food, the process poses a number of environmental challenges. The Group focuses on resolving those challenges through continuous development of its operations and investment in new technology.

SalMar will safeguard its long-term profitability and growth through sustainable fish farming and industrial operations, and by acting as a responsible corporate citizen. For SalMar, sustainability is about maintaining high ethical and business standards, and contributing to a greater awareness of the environment in which we operate day to day. We protect the environment and ensure that it is managed in a way that benefits future generations.



### Core businesses and segments

SalMar's core business is the farming, processing and sale of Atlantic salmon. The Group's activities extend along the entire value chain from broodfish and the production of roe, to the freshwater and marine phases, harvesting, processing, sale and distribution. SalMar has been growing since its foundation in 1991. In 2014 it produced 141,000 tonnes of salmon in Norway, the equivalent of around 1.93 million nutritious and delicious dinner portions per day.

The salmon are raised in clean water and under controlled conditions at fish farms in Møre & Romsdal, Trøndelag, Troms and Finnmark. The Group has harvesting and processing facilities in Frøya (InnovaMar) and Aukra (Vikenco AS).

At the start of 2014 Yngve Myhre informed the board of directors that he wished to step down as CEO of SalMar ASA. On 13 January 2014 it was announced that Leif Inge Nordhammar had been appointed as the new CEO. Please see the 2014 annual report for further information about changes in the Group.



### BROODSTOCK

The broodstock are the parent fish which provide the eggs and sperm (milt) required to produce new generations. The fertilised eggs take 60 days to hatch when placed in an incubator kept at eight degrees Celsius.

### EYED SALMON EGGS

After 25-30 days in the incubator the eggs have developed to the stage where the eyes of the salmon are clearly visible as two black dots inside the egg.

### FRY

The egg hatches when the eggshell cracks open, liberating the baby fish ( fry) inside. When it hatches the fry is attached to a yolk sac, which provides it with the sustenance it needs during its first few weeks of life. From now on the fish's growth and development will all depend on temperature.

### INITIAL FEEDING

When most of the yolk sac has been absorbed, the fry can be moved from the incubator into a fish tank. They are now ready for initial feeding. The water temperature is kept at 10-14 degrees Celsius, and the fry are exposed to dim lighting 24 hours a day. The initial feeding period lasts for six weeks. As they grow the fry are sorted and moved to larger tanks. Well ahead of their "smoltification" all the fish are vaccinated before being shipped by wellboat to the fish farm's marine net-pense.

### SMOLTIFICATION

The process whereby the juvenile fish transition from a life in freshwater to a sea-going existence is called smoltification. During this process the fish develop a silver sheen to their bellies, while their backs turn a blue-green colour. Their gills also change when the juvenile fish turns into a smolt.

### ON-GROWING

The farming of fish for human consumption takes place in net-pens, large enclosed nets suspended in the sea by flotation devices. In addition to a solid anchorage, net-pens require regular cleaning and adequate measures to prevent the farmed fish from escaping. Growth in the net-pens is affected by feeding, light and water quality. Here too the fish are sorted as they develop and grow.

### HARVESTING & PROCESSING

A year after transfer to the marine net-pens, the first fish are ready for harvesting. The fish are transported live by wellboat to the processing plant. There the fish are kept in holding pens, before being carefully transferred to the plant itself. The fish are killed and bled out using high tech equipment, and always in accordance with applicable public regulations. After harvesting the salmon is subject to various degrees of processing.

### SALES

The fish is sold either as whole gutted salmon (fresh or frozen), fillets, in individual portions or a wide range of other products, which are distributed to markets around the world.





#### FINANCIAL CALENDAR 2015

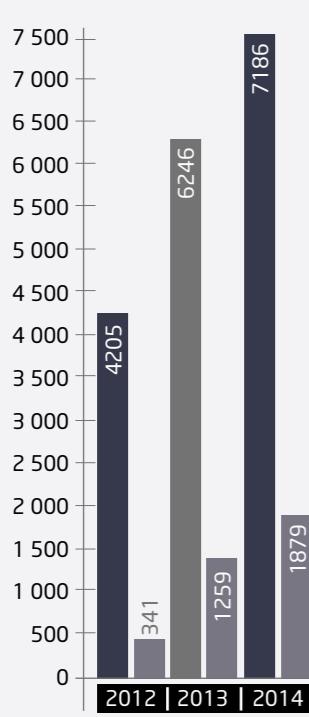
- > 4th Quarter 2014 results
- 26.02.2015
- > 1st Quarter 2015 results
- 20.05.2015
- > Annual General Meeting
- 02.06.2015
- > 2nd Quarter 2015 results
- 25.08.2015
- > 3rd Quarter 2015 results
- 12.11.2015

SalMar holds quarterly presentations open to the public. The presentations will take place at 08.00 CET at Hotel Continental in Stortingsgaten 24/26 in Oslo, Norway.

The annual general meeting will be held at Frøya. Please note that the dates are subject to change. Changes will be communicated.

Operating revenue and Operational EBIT NOK mill.

- Operating revenue
- Operational EBIT

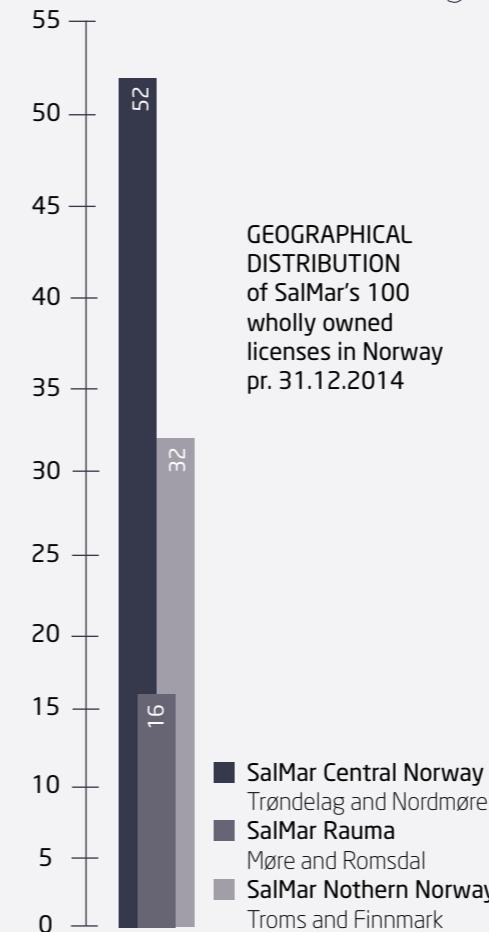


HARVEST VOLUME 2014 by geography, gutted weight

- SalMar Central Norway
  - 75 200 tons
- SalMar Northern Norway
  - 37 500 tons
- Rauma
  - 16 500 tons
- Villa Organic
  - 11 800 tons
- Scottish Sea Farms Ltd <sup>1</sup>
  - 13 800 tons

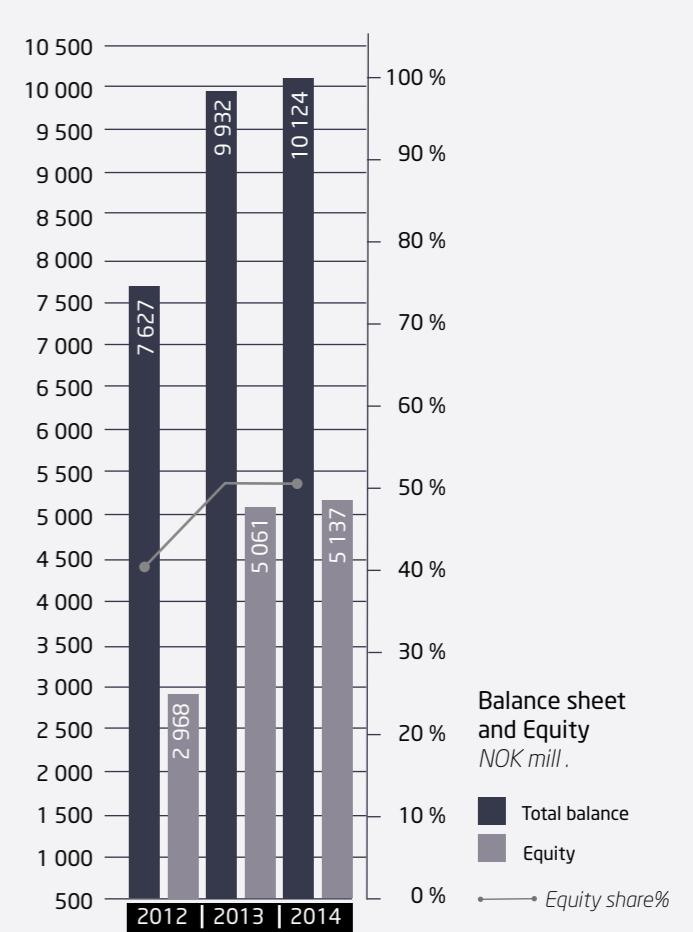
<sup>1</sup> SalMar's 50% share

GEOGRAPHICAL DISTRIBUTION of SalMar's 100 wholly owned licenses in Norway pr. 31.12.2014

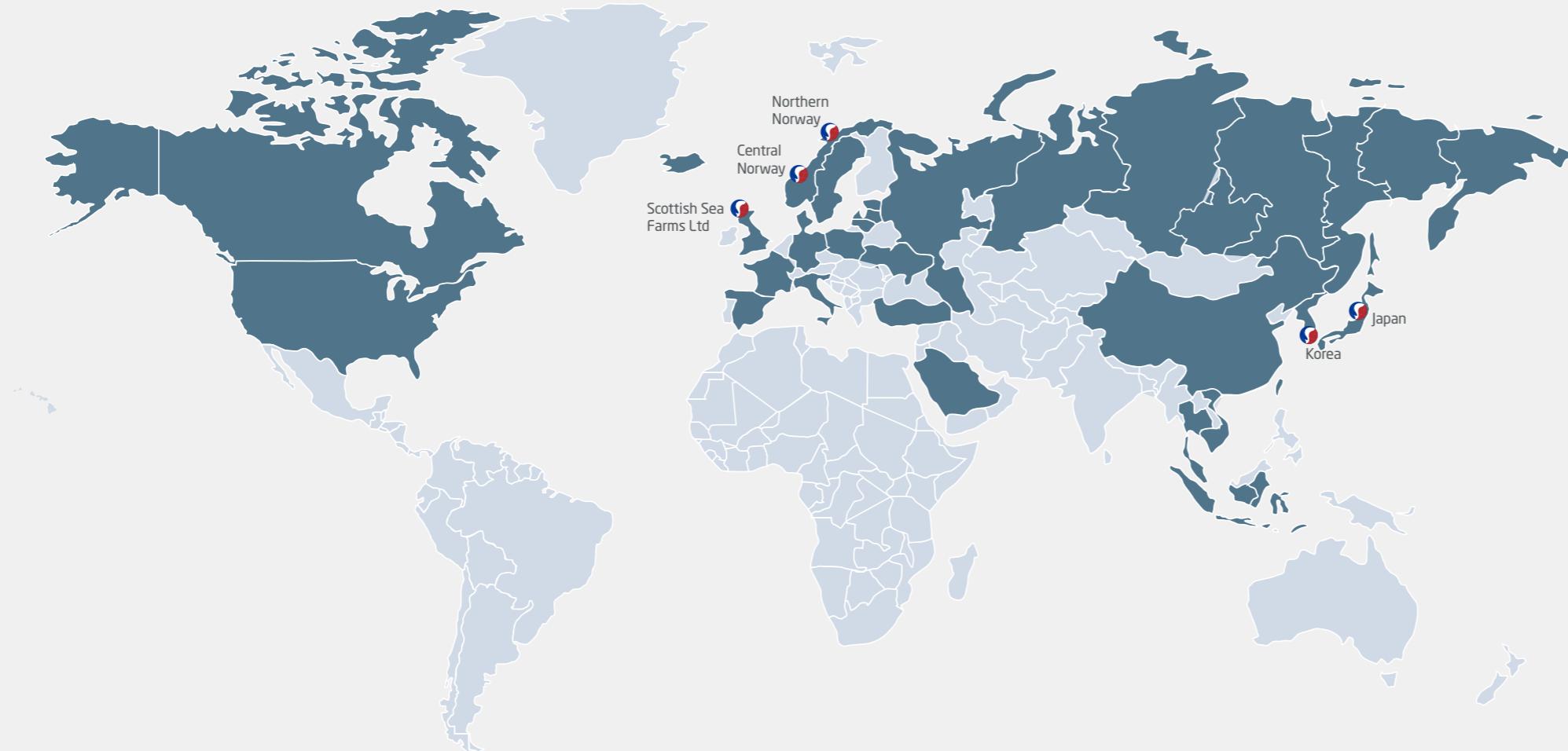


Balance sheet and Equity NOK mill.

- Total balance
- Equity



# SalMar around the world



Direct sales to approx. 40 nations worldwide!

## SalMar ASA

The salmon produced by SalMar is sold either through its own sales organisation or through close business associates. Systematic efforts in the area of traceability and control ensure that SalMar's salmon is of high quality in terms of both nutritional value and food safety. SalMar supplies a wide range of fresh and frozen salmon products.

The business is organised into four companies handling biological production and one company handling processing and sales. SalMar ASA is headquartered in Frøya, South Trøndelag.

In 2014 SalMar sold direct to over 40 countries. SalMar's most important market in 2014 was Europe, with Poland, Lithuania and the UK as the largest national markets. The second largest market was Asia, where Japan, Vietnam and Singapore were major national markets. Russia was SalMar's third largest market in 2014, by itself importing some 4 per cent of SalMar's overall volume. The fourth largest market was North America, with the USA as the largest single market.

### ROE/SMOLT/JUVENILES:

#### Central Norway:

- Follasmolt AS
- Langstein Fisk AS
- Rauma Stamfisk AS
- Rauma Sætre AS
- Rauma Eik AS
- Villa Smolt AS

#### Northern Norway:

- Troms Stamfiskstasjon AS

### FARMING:

#### Central Norway:

- SalMar Farming AS
- SalMar Organic AS

#### Northern Norway:

- SalMar Nord AS

#### UK:

- Norskott Havbruk AS - 50%  
(Scottish Sea Farms Ltd)

### PROCESSING

#### Central Norway:

- InnovaMar facility  
SalMar Processing AS (ST-423)
- Vikenco AS (M-200)
- Romsdal Processing (M-190)

### SALES & DISTRIBUTION:

- SalMar Sales AS  
(Frøya and Ålesund, Norway)
- Vikenco AS
- SalMar Japan
- SalMar Sales Korea

## Leadership of the sustainability effort

The Group's CEO is ultimately responsible for SalMar's environmental footprint and for its efforts to increase its sustainability. SalMar has dedicated quality departments which monitor and assess the work being done within this area, but the activity is coordinated by management teams within the segments Fish Farming, and Processing and Sales. Systematic risk assessments are carried out at the overarching level and in all departments to ensure that SalMar as a group is able to implement necessary precautionary measures. Management of each department is responsible for ensuring that monitoring activities are performed and reported, and the quality managers at the various companies follow up and support departmental and operative leaders in this area. Quality managers and other quality assurance staff take an active part in regular management meetings at all levels in the company. Quality, safety, fish welfare and the environment are regular issues discussed at these meetings.

## Environment policy

SalMar's facilities are situated in rural areas along Norway's coast, with clean water and good natural conditions for the salmon. Large and small coastal communities are important bases for SalMar's workforce and operations. The Group is conscious of the benefits it derives from the communities and environment along the coast. This recognition underpins SalMar's systematic efforts to fulfil its responsibilities as an employer, producer, supplier of healthy food,

user of the natural environment and administrator of financial and intellectual capital.

SalMar takes a holistic perspective of its fish farming operations, and the organisation strives to be energy efficient and implement climate-friendly solutions. SalMar is the world's largest producer of organic salmon, but its conventionally farmed salmon is also produced in accordance with strict health, safety and environmental standards.

### Focus areas and targets

It is important for SalMar to focus on the operational areas with the greatest potential for environmental impact. The potential for increased sustainability is greatest within these areas of the value chain:

1. Safety in the workplace
2. Preventing the escape of fish / limiting the number of escaped fish
3. Good fish welfare
4. Efficient feed utilisation
5. Minimal emissions and good environmental conditions beneath and around the facilities
6. Food safety
7. Increased level of processing

Table 1: Sustainability targets for 2015 and the results achieved in 2013 and 2014.

FO Sustainability targets	Target for 2015	Result 2014	Result 2013
1 Safety in the workplace			
Fatalities	0	0	1
LTIs (Lost time injuries)	0	42	26
2 Preventing the escape of fish/ limiting the number of escaped fish			
No. of fish escaped	0	376	70
3 Good fish welfare			
Marine-phase survival rate, from release to harvesting (last harvested generation) <sup>1</sup>	>95%	89.9%	87.1%
4 Efficient feed utilisation			
SalMar had a Fish in-Fish out feed utilisation rate of approx. 2.4 in 2014. The objective in 2015 is to develop methods to report and analyse production figures and determine a specific sustainability target for 2016.			
5 Minimal emissions and good environmental conditions beneath sites			
Modelling – On-growing Fish Farms – Monitoring (MOM-B) as an indicator of good environmental conditions. No. of active sites with MOM-B ≤2	100%	90%	93%
6 Food safety			
SalMar continuously monitors and takes samples to ensure that the food produced is safe for the consumer. Never in the company's entire history has any incident affected the consumer. SalMar carries out annual call-back tests.			
7 Increased level of processing			
SalMar aims to replace as much as possible of the gutted fish sent to market with pre-rigor fillets.			

<sup>1</sup> The 2014 figure is for the 2012 generation, while the 2013 figure is for the 2011 generation.

SalMar has embarked upon a process to clarify the expectations that its various stakeholders have with regard to the company. So far, interviews with a selection of SalMar's stakeholders have taken place. The input from the various groups and from internal strategy processes has been analysed, and the results have determined the choice of focus areas. Analysis of the emphasis which the stakeholders place on the various focus areas will continue, and SalMar is open to their adjustment. The Group will draw up specific targets in future phases of the process.

To contribute to the development of a healthy corporate culture and maintain the company's integrity, the board has drawn up a code of conduct. All employees have been made aware of SalMar's ethical and social responsibility guidelines, which are the subject of discussion at annual seminars at the SalMar School. The code of conduct details SalMar's attitude to business ethics and corruption, the working environment and community relations. Routines for the notification of wrongdoing are highlighted during internal training sessions. A high ethical standard in all aspects of the business is non-negotiable, and forms the very foundation for SalMar's entire HSE strategy. SalMar's tenets describe the behaviours and actions required of all employees. At any given time the SalMar culture is embodied and shaped by its employees. Their good attitudes and actions have always made a significant contribution to SalMar's success. The company's code of conduct and tenets can be found on SalMar's website: [www.salmar.no](http://www.salmar.no).

tic. The SalMar Standard sets the bar high, and the number of sites which meet it is published in monthly KPIs.

## Dialogue with stakeholders

SalMar has a number of different stakeholders, and is keen to maintain a good dialogue with all of them, for example, through face-to-face meetings, the media, annual reports, stock market notices, GRI reports, adverts, R&D projects and our website [www.salmar.no](http://www.salmar.no). Dialogue with stakeholders takes place both locally and at corporate level. Understanding that we can only succeed if we work together, and treating each other with candour and respect is an explicit part of SalMar's principles for all dialogue.

The stakeholders to be included in SalMar's future sustainability reporting efforts are determined by the extent of their influence over the organisation. We aim to discover how we can engage our stakeholders in an effective manner, while ensuring that they experience their contact with SalMar as providing added value. Important steps in the process include winning acceptance for the issues selected, illuminating different perspectives with regard to impact, identifying challenges, accumulating external impressions and sharing knowledge.

The identification of stakeholders with whom SalMar

- Public authorities which administer the public interest in the area and grant licences to operate.
- Selection and approval of suppliers and engagement in R&D is determined by management teams in the various parts of the company.
- Identification of the NGOs with which SalMar will have direct contact is determined by Group Management.

The table below shows the various stakeholders included in SalMar's analyses.

Table 2: SalMar's stakeholders

Internal influence	Business associates	Customer groups	External influence
Employees	Suppliers of goods	Norwegian customers	Government/regulatory authorities
Shareholders/investors	Suppliers of services	International customers	Standardisation bodies
Group Management	R&D partners	Organic customers	Business associations
		Customers with own standards	Groups of local people
			NGOs
			Research bodies
			Local communities (councils)



## 4 We care!

Caring about our co-workers, business partners and local communities is one of SalMar's core values. SalMar employees shall show they care, and their actions shall be rooted in a sense of responsibility, consideration and a desire to do their best. That we care has a positive impact on our biological and financial key figures, our HSE performance and our relations with the rest of society.

In this chapter we present the sustainability targets that cover the workforce and society. In addition, we present results associated with business ethics.

### The workforce

In 2014 SalMar employed a total of 1082 full-time equivalents. This is 74 full-time equivalents more than in 2013. 28 per cent of the workforce are women. The percentage of women is considerably higher at the Group's harvesting and processing facilities than at its hatcheries and fish farms. SalMar's workforce is made up of people from around 25 different countries. To ensure good integration and a shared platform for communication, the working

language is Norwegian. Language tuition is a high priority, and SalMar has a dedicated Norwegian language teacher attached to the production plant in Frøya.

The Group's code of conduct includes a clearly stated policy with respect to the promotion of diversity and equality. SalMar accepts no discrimination of employees, shareholders, board members, customers or suppliers on the basis of ethnicity, nationality, age, gender or religion. Respect for the individual is the cornerstone of the company's policy. Everyone shall be treated with dignity and respect, and shall not be unfairly prevented from carrying out their duties and responsibilities. This attitude springs from acknowledgement that a relatively even gender balance and ethnic diversity contributes to a better working environment, greater adaptability and better results in the long term.

Two employee representatives sit on SalMar's board of directors. Further information about the board's membership may be found in the annual report.

### Safety at work

Working at SalMar shall be safe. The company works systematically with risk management and training to protect its workforce. Nevertheless, the company experienced some serious incidents in 2014 that led to permanent injuries, but none that led to fatalities or the risk thereof. A total of 42 lost time injuries (LTIs) were recorded in 2014, compared with 26 LTIs in 2013. The majority of these injuries occurred in our harvesting and processing facilities.

Continued focus on industrial safety initiatives is important to reduce the number of injuries in 2015. All parts of the Group have an industrial safety representative, and every year two industrial safety inspections are carried out in each department. 2014 saw significant progress in the performance of safety inspections, and our efforts to identify safety improvement areas will continue in 2015.

All serious accidents are investigated to prevent similar incidents occurring in the future. Great emphasis is placed on ensuring that hazardous operations are well planned before they are performed and evaluated afterwards. The mapping of our overall risk picture is the most effective measure we can implement to reduce the probability of personal injuries occurring. In 2014 we worked systematically in this area to produce overviews of all our risk assessments (in a dedicated module in our EQS management system). Further development of how critical control points should be followed up will continue in 2015, as will our focus on developing user-friendly tools for risk planning, assessment and mapping.

Overarching HSE targets have been drawn up, along with associated activities and action plans. On the basis of the overarching targets, each individual division and department has defined its own local subtargets. Management has an obligation to meet the targets set. All employees are covered by a company health service in the vicinity of their workplace. The Group ensures that everyone receives the training necessary to perform their tasks.

### Training and arenas for development

New recruits to SalMar receive HSE training through induction courses, operational seminars and the SalMar School. All employees shall have received training in how to report wrongdoing or unacceptable circumstances within the company, and shall know that they are safe from reprisal if they do so. The procedure for reporting concerns is described in the management system, which is available to all employees.

The SalMar School holds seminars for all employees on relevant work-related topics, in addition to focusing on ethics and good attitudes. The SalMar School helps all employees to develop and grow. Through a revitalisation of the SalMar School the Group wishes to ensure that the various divisions share information and knowledge.

The level of risk associated with the work being performed every single day at SalMar means that training and having the right competence is vital. Training is provided internally and in the form of external courses. Day-to-day follow-up and on-the-job learning are, nevertheless, the most important methods for individual growth.

### Management tools and systems

In 2013 and 2014 a new business management platform has been built up in SalMar. The management system has been supplied by Extend AS, and is called EQS. EQS will strengthen the individual's ability to make a direct contribution and submit improvement suggestions. It will take some time before the new system is implemented throughout the Group, but EQS will, in time, be an effective tool for monitoring and managing risk. EQS became available for all SalMar employees on 1 May 2014.

### Society

SalMar endorses wholeheartedly the principles set out in the Universal Declaration of Human Rights. Those aspects which relate to our operations, eg protection against discrimination and the right to form a trade union, are included in the Group's code of conduct and several other governing documents.

SalMar has a presence in several local communities, and is attentive to developments in villages and local districts. It is important for our employees that the local communities in which they live have the necessary infrastructures and opportunities for leisure activities. For SalMar, it is crucial that the Group is able to operate at locations offering good growing conditions for our fish stocks. SalMar is actively engaged in numerous local projects. It is also important for SalMar to participate in local arenas for the exchange of views and information, and to take part in planning processes. Salmon farming is still considered a 'young' industry, and it is important to ensure that local decision-makers and other local residents are informed about our operations and plans for development. Through active participation in business associations and the public debate, SalMar contributes to important sustainable development processes in Norway.

### NOK 2,392 million

in taxes and public charges can finance:

**4,349** public sector jobs

or

**2,838** care home places for the elderly

or

**16,844** local authority nursery places

## Social accountingp

On the basis of the company's financial statements and underlying data from Statistics Norway, the Confederation of Norwegian Enterprise (NHO) has calculated SalMar's financial contribution to society through direct taxes paid by the company and its employees, as well as taxes generated when the Group buys goods and services from its suppliers. As Fig. 1 shows, each SalMar employee

generated NOK 2.39 million in 2014. To this must be added the economic value created by subcontractors, such that the overall contribution to the Norwegian economy deriving from SalMar's operations came to NOK 6,527 million in general value creation and NOK 2,392 million in taxes and public charges paid.

### Salmar ASA

Value creation:  
Tax and public charges:  
- Taxes and public charges from employees:  
- Company taxes:

2,589 million  
725 million  
308 million  
417 million  
670 thousand  
2,390 thousand

Tax and public charges per manyear  
Value creation per manyear:

3,938 million  
1,667 million

### Norwegian suppliers:

Value creation:  
Tax and public charges:

### Total contribution to the Norwegian economy

6,527 million  
2,392 million

37 %



NHO strive to keep their models and calculation methods correct and up to date, and will not be held responsible for any loss or problems these models or methods might cause



### Sponsorships and donations

To give something tangible back to the local communities in which the Group operates, SalMar supports a number of local clubs and voluntary associations through the SalMar Fund. The following causes have been given priority with regard to the allocation of funds:

- Village development initiatives aimed at children and young people
- Competence development for the leaders of clubs and voluntary associations
- Youth work
- Further development of existing cultural initiatives of a general nature
- Establishment and promotion of young entrepreneurship

### Rosenborg partner

In 2013 SalMar became a sponsor of the football club Rosenborg Ballklubb (RBK). This partnership continued in 2014. In addition to profiling SalMar, the partnership includes a separate programme for children and teenagers, and the development of grassroots football clubs in Trøndelag. RBK has highlighted the partnership through the SalMar Sports Ground and the SalMar Academy. The objective is to help transfer competence from Rosenborg to grassroots clubs in Trøndelag County in the form of good training sessions to promote player and trainer development.

### Business ethics and the reporting of wrongdoing

To date, SalMar has not received any reports of corruption or other violations of its code of conduct. Nor has any wrongdoing been reported internally.

## 5 The job we do today is vital to the success of us all



What counts is what the individual employee does today – every day. At SalMar we are very conscious that every action and every day is important, and that success depends on the individual and collective efforts of the entire workforce.

In this chapter we will present the day-to-day efforts being made to achieve the Group's sustainability targets for fish welfare and the external environment, and report on our current status.

## Preventing the escape of fish/limiting the number of escapees

Although there were no major incidents involving the escape of fish at SalMar in 2014, a total of 376 fish escaped from the Group's facilities. Twenty of these were lumpfish. All escapes occurred in connection with the handling of fish. The non-conformances have been dealt with and remedial measures immediately implemented. Success in escape prevention efforts derives primarily from effective day-to-day operation of the sites. However, investments in R&D and more secure equipment have also played a part. The R&D effort to reduce the risk of escaped fish harming wild fish populations is described in more detail in chapter 7: What we do today we do better than yesterday; and chapter 8: *Focus on the solution*.

Our facilities have been upgraded and equipped to withstand the conditions prevailing at locations exposed to extreme weather conditions. The most important factor for preventing the escape of fish will, nevertheless, be the people performing their day-to-day tasks and handling the fish. For many years competent co-workers have focused intently on preventing the escape of fish or at least keeping the number of escapees to a minimum. Daily inspections and checks of the facilities, as well as systematic fol-

low-up of non-conformances and risk factors are key elements in this effort. The careful planning of tasks and the sharing of information will also play an important role in maintaining this positive trend.

## Fish welfare

Fish health and fish welfare are two important focus areas at SalMar. SalMar's entire philosophy rests on the presumption that good health is a precondition for the salmon to thrive and achieve their maximum potential. This in turn is a precondition for achieving good financial results. In our view, the best indicator of fish welfare is the fishes' rate of survival from their transfer to the sea until harvesting. SalMar's target is for 95 per cent of the fish to survive this period. The figure below shows the accumulated survival rate at SalMar's facilities for the generations held at sea during 2014. When the last of the most recent generation of fish (2012) was harvested in July 2014, it had achieved a survival rate of 89.9 per cent. By comparison, the 2011 generation, which was fully harvested the year before, had a survival rate of 87.1 per cent.

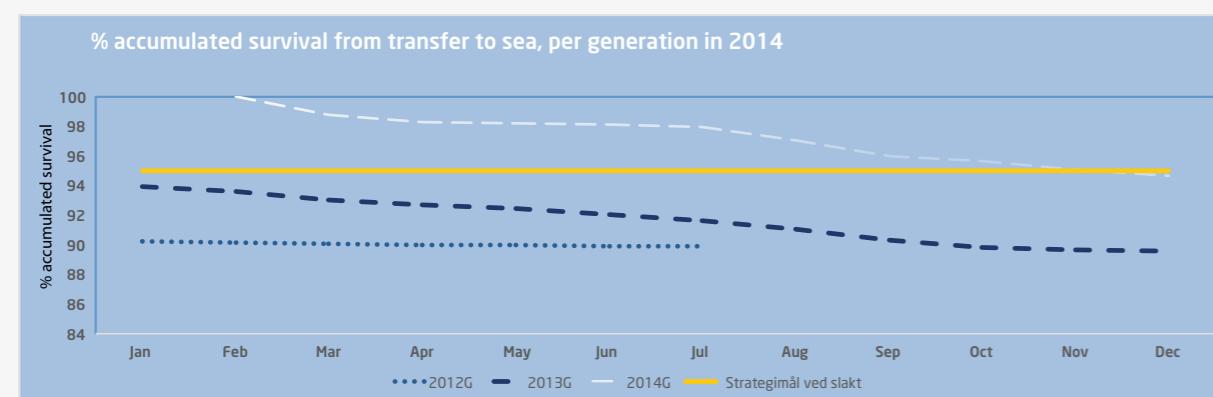


Fig. 2: Shows the month-on-month survival rate per generation from its transfer to the sea and through 2014. At the close of 2014, much of the 2013 generation had been harvested, while the 2014 generation was transferred to sea in the period February to October 2014, and will be harvested in 2015.

## Antibiotics

Resistance to antibiotics is a growing problem worldwide. To prevent the development of resistance it is important that all food producers do what they can to keep the use of antibiotics as low as possible. The use of antibiotics in the production of Norwegian salmon is extremely low, far lower indeed than for all other farmed livestock. Antibiotics were used at SalMar's Norwegian facilities on two occasions to increase the survival rate and improve fish health

at the site/hatchery concerned. This involved use of 34.35kg of antibiotics in 2014. The treatment corresponds to 0.000213g of active ingredient per kg of live salmon produced by the Group as a whole. By comparison, 1.2g of antibiotics is used per 1kg of chicken produced in the USA<sup>2</sup>.

Table 3: Shows consumption of antibiotics (g active ingredient) per kg live salmon produced in 2013 and 2014.

g active ingredient/kg live weight	
2013	0,000221
2014	0,000213

<sup>2</sup>Source: US Dept. of Health and Human Services, Centers of Disease Control and Prevention (US), Ørjan Olsvik, Professor in Clinical Microbiology, University of Tromsø.

Important steps to keep down the use of antibiotics include the vaccination of fish, ensuring good day-to-day fish welfare and upholding the zoning boundaries between generations of fish. Fig. 3

shows the sharp reduction in the use of active ingredients, as well as the growth in the volume of farmed salmon in Norway from 1992 until 2013.

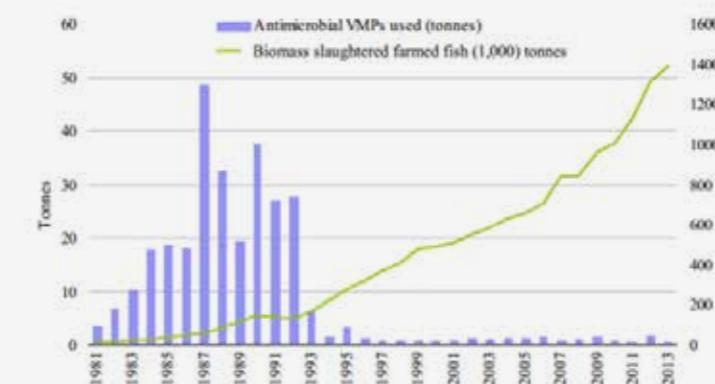


Fig. 3 Total sales (kg) of active ingredients, antimicrobial substances given to farmed fish in Norway in the period 1981-2013, as well as the volume of farmed fish harvested during the same period. (NORM/NORM-VET 2013)

## Salmon lice infestation and treatment:

Use of 'cleaner fish', the release of large smolt and effective zoning has kept the salmon lice situation under control throughout 2014. During their first year at sea we handle the lice situation by means of cleaner fish. The intensity of treatment is consequently extremely low. Cleaner fish are less effective on larger salmon, which resulted, in 2014, in a slight increase in the frequency of treatment of fish in their second year at sea, compared with 2013.

Use of hydrogen peroxide to combat salmon lice was substantially higher in 2014 than the year before. There was also a small rise in the use of the other delousing methods. The more widespread use of  $H_2O_2$  in 2014 compared with 2013 can be attributed to the fact that the other delousing medications worsened in 2014.

SalMar's overarching objective is to reduce the use of chemical treatments by focusing on biological delousing methods, using cleaner fish farmed in-house, effective and robust zones, a reduction in the time each generation spends at sea, and alternative treatment methods. Considerable investment has been made in a dedicated cleaner fish farm at Langstein in Trondheimsfjord. Lumpfish from this facility were deployed in the final quarter of 2014. For more on this facility, see chapter 8 Focus on the solution.

## Green licences

SalMar was granted leave to purchase eight "green" licences after the authorities' 2013/2014 licensing round, and seven of these went into operation in the autumn of 2014. The terms of the "green" licences set stricter limits on the number of salmon lice

and the number of medicinal delousing treatments, as well as a stronger focus on escape prevention. At its green-licence sites, SalMar has focused particularly on the use of cleaner fish, in the form of farmed lumpfish, to control lice levels, and uses a more escape-proof cage construction. We have also emphasised participation in a salmon surveillance project in Trøndelag's salmon rivers, in order to assist in the development of methods and expertise related to the tracking and mapping of escaped farmed salmon in rivers. So far, experience from the operation of these licences has been very good. A separate report summarising SalMar's evaluation of its "green" licence operations will be published annually.

## Efficient feed utilisations

Second only to the fish themselves, feed is the most important input factor in the production of farmed salmon. The nutritional value, consistency and taste of the feed are important. Equally important, however, is correct dosing to ensure that the feed is utilised as effectively as possible and keeps the fish healthy. SalMar has focused heavily on competence development and specialisation for those responsible for feeding the fish.

Feeding is monitored using underwater CCTV cameras, and is adapted to the fish in each cage. The benefits of correct feeding include optimal growth, a low feed factor, reduced emissions, fish that thrive and have a greater resistance to disease, low mortality, smaller variations in fish size, less harvesting waste and higher quality fish flesh. SalMar had a Fish in-Fish out feed utilisation rate of approx. 2.4 in 2014. This is good, and in line with other Norwegian salmon producers. The objective for 2015 is to develop methods for reporting and analysing the production figures, and determine specific sustainability targets for 2016. The equipment and the feed must be appropriate, but the competence that has been built up in SalMar with regard to feed and feeding is a significant factor for the achievement of good results.

## Systematic monitoring of the feed's chemical, physical and biological quality

SalMar uses an all-round feed that optimises production and pro-

motes good fish health. In other words, a high-value salmon feed that ensures good growth, a low feed factor and meets the fishes' nutritional needs. In 2014 almost 192,000 tonnes of dry feed pellets were used in SalMar's salmon farming operations. In addition, a small volume of feed was used for the company's own production of lumpfish.

The biological value of the feedstuffs used in the hatcheries and marine-phase fish farms was verified through their fat, protein, phosphorous and fibre content. SalMar performs routine controls on the feeds' physical quality on receipt to identify non-conformances (dust & crumbs, floatability and oil ooze), and measurements indicate a stable level of dust and crumbs at less than 0.5 per cent in recent years. This shows that emissions caused by dust and crumbs are minimal.

In 2014 samples were taken for 188 digestibility analyses at SalMar's marine-phase fish farms. SalMar is probably the only aquaculture company in Norway that systematically monitors the biological value and utilisation of the feed it uses in its own farming operations. The figure below shows the average digestibility of protein and fat irrespective of feed company in 2014.

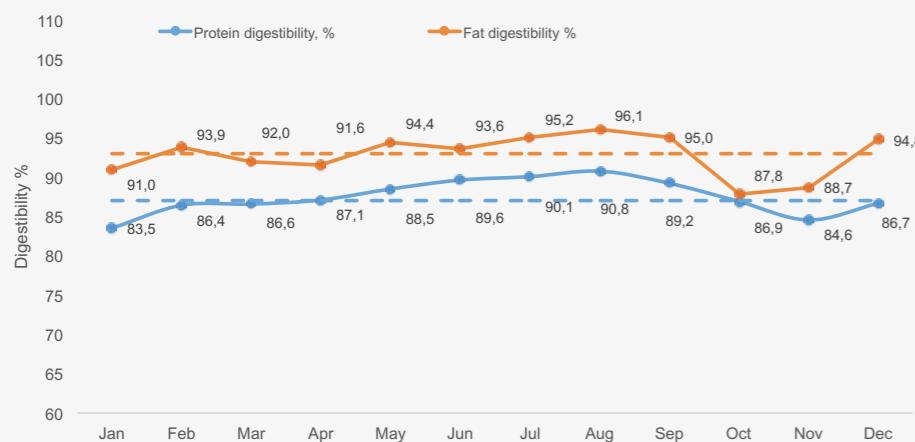


Fig. 4: Average digestibility of protein and fat per month in 2014, as well as normal values for protein and fat digestibility (horizontal dotted lines) at 87% and 93% respectively.

In 2014 protein and fat digestibility came to 87.2 per cent and 92.8 per cent respectively. This is considered to be a normally good level of nutrient digestibility in salmon weighing 1.5kg, and shows a generally high utilisation rate for the feeds used by SalMar's fish farms.

When a fish becomes ill, its ability to digest may be compromised. Assessment of the impact on digestion and feed uptake during and after outbreaks of disease will provide a better understanding of the way diseases develop, and will provide the knowledge needed to establish disease-reducing and cost-effective feeding regimes.

## Emissions

### Emissions of nutrient salts

The seabed beneath all sites is inspected regularly to see whether/to what extent the surroundings have been affected by our operations. In addition, monitoring of the feed's digestibility helps

to indicate the scale of nutrient salt emissions from a particular site. In 2014, 93 per cent of operational farms scored  $\leq 2$  in MOM-B analyses.<sup>3</sup> This was a good result, but work continues to find suitable locations for the farms, so that 100 per cent of those in operation achieve a MOM-B score of  $\leq 2$ . All sites had a satisfactory MOM-B score before the release of new fish stocks.

Together with the Norwegian Seafood Federation (FHL), other fish farmers and research institutions, SalMar monitors large areas to see whether fish farming operations are having a regional impact. See chapter 7 *What we do today we do better than yesterday* for further details. No long-term impact on the seabed or shorelines around SalMar's facilities has been identified. The Institute of Marine Research's latest Risk Assessment of Norwegian Aquaculture (2013) states

that emissions of nutrient salts create no risk of eutrophication along the Norwegian coast, although this may be an issue in certain sheltered areas. SalMar's facilities are not located in sheltered areas, but are largely sited in localities with extremely good water flow-through.

## Greenhouse gas emissions

A lifecycle study performed by Sintef Fiskeri og Havbruk and SIK (Institutet för Livsmedel och Bioteknik i Sverige), shows that salmon production is considerably more climate-friendly than the production of beef and pork. Among other things, the study shows that the production of 1kg of farmed salmon generates half as many carbon-equivalent emissions as the production of 1kg of pork, and around one-tenth of the amount generated by the production of 1kg of beef.<sup>4</sup>

Since SalMar ASA has been growing and changing considerably in recent years, it has been deemed expedient to take 2013 as the starting point for future efforts to monitor and reduce the climate impact of its operations. Changes in recent years have included the construction and start-up of a new factory in Frøya, and the acquisition of numerous undertakings. These changes are presented in the annual reports for the years in which they took place.

SalMar has reviewed its energy and carbon footprint, based on the aggregated energy consumption of its day-to-day operations. The climate balance sheet presents a general overview of the company's greenhouse gas emissions, translated into carbon equivalents, and is based on reported data from internal and external systems. The emissions included are those over which SalMar has operational control and can implement measures to influence in the future. The industry's largest source of emissions is the production of feed. We refer here to the feed producers' reported targets and results. SalMar's energy and climate balance sheet has been drawn up by the company CO<sub>2</sub> focus AS. The analysis is based on the recognised international GHG protocol<sup>5</sup>. The table below shows SalMar's direct consumption of fossil fuel and electricity, as well as overall carbon emissions. From 2013 to 2014 we see a 3 per cent reduction in emissions per unit produced, although our total carbon footprint increased as a result of output growth.

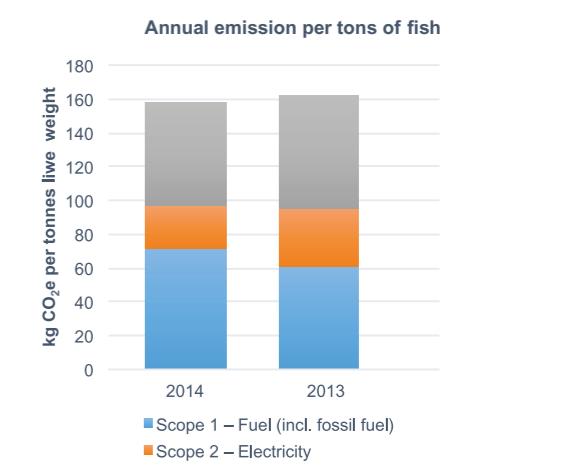


Fig. 5: Total annual carbon emissions and annual carbon emissions per tonne live weight.

	2014	2013
Total fossil fuel consumption (litres)	8,201,731	6,435,695
Total electricity consumption, MWh	45,465.7	40,506.7
Total carbon emissions, tCO <sub>2</sub> e <sup>5</sup>	25,429	21,260
tCO <sub>2</sub> e/full-time equivalent	23.5	21.1
tCO <sub>2</sub> e/million NOK	3.5	3.4
kgCO <sub>2</sub> e/tonne live weight	158	162

have power cables laid out to the floating structures. Such measures benefit the environment through a reduction in direct emissions from diesel generators.

## Waste and recycling

All SalMar departments have a waste-management plan, which stipulates the receiving facilities approved for various types of waste. Packaging and used fish farming equipment, such as collars, nets and mooring devices are delivered to undertakings that reuse the materials.

SalMar has an agreement with its main provider of electrical power, which guarantees that 27.0 GWh of the power delivered derives from renewable sources. This means that 59 per cent of the power consumed in 2014 is covered by green certificates. The planning of InnovaMar encompassed a large number of projects to keep energy consumption as low as possible, for which purpose SalMar received grants from ENOVA. In 2014 SalMar Farming embarked upon a major energy conservation project, whose objective is to supply as many fish farms as possible with onshore generated electricity during 2015 and 2016. This means that those farms which are located close enough to land for it to be feasible will

<sup>3</sup> The MOM-B analysis complies with Norwegian Standard NS9410. We use active sites in 2014, where samples of maximum output are taken. Any zero samples before start-up are excluded.

<sup>4</sup> Source: Carbon footprint and energy use of Norwegian seafood products SFH80 A096068. Calculations are based on Norwegian salmon delivered in Stockholm.<sup>5</sup> Includes emissions we have operational control over. This includes Scope 1 (direct fuel/oil), Scope 2 (indirect electricity), as well as emissions deriving from the transport of live fish and own workforce's business travel from Scope 3.<sup>6</sup> "The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard", as well as ISO 14064-1.

## 6 The job is not done until the person you are doing it for is satisfied

Salmon production is a collaborative process, in which the individual elements are mutually dependent and understanding the customer – whether internal or external – is vital. In this chapter we will focus on SalMar's suppliers, products and markets. Food safety and more processing are focus areas for sustainable development at SalMar. Both issues will be discussed in detail in this chapter.



### The value chain

The farming of fish is the part of the value chain in which SalMar has the greatest impact on the environment. Our efforts with respect to the environment and sustainability will therefore be focused primarily on biological production. SalMar produces its own roe and smolt, but in 2014 was still obliged to buy in some of its fish stocks. In addition to a strong internal focus on sustainable production, we therefore make demands on our suppliers.

The most important input factor, in addition to roe and smolt, is the feed that the fish eat. Since, the largest feed suppliers in 2014, Skretting and EWOS, both publish their own sustainability reports, please refer to these for further information. For SalMar, the most important sustainability issue relating to fish feed is digestibility and nutritional value. The composition of the feed must ensure the effective utilisation of the raw materials, good fish welfare, good fish growth and thereby a shorter marine-phase production time, minimal emissions and a high content of important amino-acids and other nutrients. SalMar also demands that all feed suppliers purchase raw materials which comply with the IFFO <sup>7</sup>standard for sustainability, or MSC-certified<sup>8</sup> raw materials or equivalent.

Other important suppliers of significance to SalMar's environmental footprint include producers of equipment, electrical power, chemicals and packaging, as well as maintenance, wellboat and fish-health service providers. Several of the suppliers in the above-mentioned categories participate in sustainability improvement projects along with SalMar.

### Customers

Proximity to markets and customers is important for SalMar. Our customers are global, and include exporters and importers of various sizes, as well as major processing companies and supermarket chains. Through the sale of our products, the Group has contacts in numerous countries worldwide.

SalMar is certified in accordance with the following customer and third-party standards: HACCP, BRC, IFS, ASC, Debio, Krav, Global G.A.P., Kosher, Carrefour, IWAY and MSC (for the Sales department).

### Products

Local processing enables SalMar to offer a wide range of first-class, fresh, frozen and organic salmon products.

### Salmon and health

Norwegian salmon contains a number of nutrients which make it an important component of a balanced diet. Norwegian salmon is

a healthy and tasty food. Salmon is safe to eat, and is one of our most analysed foodstuffs.

The World Health Organisation (WHO) has published a thorough report on both the risks and benefits of eating salmon. The report concludes that eating oily fish, like salmon, reduces the risk of cardiovascular disease and has a positive impact on the development of the nervous system in fetuses and infants. It is the products' fat composition, with a high content of the omega-3 fatty acids EPA and DHA, but also vitamin D, Selenium and easily digestible proteins, which contribute to this health benefit. The report warns of higher mortality rates if too little seafood is eaten. The biggest challenge with respect to seafood consumption remains the fact that people in general eat too little of the important nutrients provided by fish. The Norwegian Scientific Committee for Food Safety (VKM) provides recommendations to the Norwegian Food Safety Authority. The VKM has concluded that it is well documented that oily fish protects against cardiovascular disease, and has a positive impact on the neural development of babies, both before and after birth. The positive effects of eating seafood far outweigh any potentially negative impact. The VKM report further documents that dietary supplements containing fish oil do not give the same health benefits as eating fish<sup>9</sup>.

The Norwegian Directorate of Health issues dietary guidelines to the Norwegian population. Other countries have similar bodies who advise their citizens. The Norwegian Directorate of Health recommends a varied diet, and oily fish, such as salmon, is an important part of a varied and balanced diet.

### Food safety

SalMar's production is subject to Norwegian regulations for food production, and our facilities are regularly inspected by the Norwegian Food Safety Authority. In addition, the Group has its own sampling programme, under which feed and finished products are analysed and tested for a number of factors. The Norwegian Food Safety Authority's monitoring, performed by the National Institute of Nutrition and Seafood Research (NIFES), shows very little foreign matter in farmed fish, and no samples were found to exceed threshold values in the most recently published reports for 2013 and 2014 <sup>10</sup>.

SalMar produces healthy and tasty foods that are easy to prepare. SalMar's products are based on first-class raw materials, and the quality is maintained right through the value chain until the salmon reaches the

<sup>7</sup> The Marine Ingredients Organisation <http://www.iffo.net/>

<sup>8</sup> Marine Stewardship Council <http://www.msc.org/>

<sup>9</sup> <http://www.vkm.no/dav/0a646edc5e.pdf>

<sup>10</sup> [http://www.matportalen.no/verktøy/tilsynsresultater/lite\\_fremmedstoffer\\_i\\_oppdrettsfisk\\_og](http://www.matportalen.no/verktøy/tilsynsresultater/lite_fremmedstoffer_i_oppdrettsfisk_og) [http://www.matportalen.no/verktøy/tilsynsresultater/forelopige\\_resultater\\_fra\\_overvaakningen\\_av\\_medisinrester\\_oppdrettsfisk\\_fra\\_2014](http://www.matportalen.no/verktøy/tilsynsresultater/forelopige_resultater_fra_overvaakningen_av_medisinrester_oppdrettsfisk_fra_2014)

consumer. Thorough training at all levels with regard to procedures is important to maintain the high quality of SalMar's products. Production is organised such that the demands of different standards and customers are met. We perform regular internal audits, and welcome the public authorities, certification agencies and customers to carry out external audits and inspections. Food safety and the regulations relating thereto are taken extremely seriously.

In 2014 there were no violations of the regulations governing safe food, and only one directive relating to general maintenance was issued.

Audits performed in accordance with customer and third-party standards are important to document that the products are safe and healthy for the consumer, and have been produced in accordance with the requirements and expectations demanded of modern food production.

SalMar has defined routines for the follow-up of customer complaints, and the Group has informed its customers of how they should proceed if a product they have bought does not meet their expectations. All products can be traced back through the production process, and a well-trained team are on hand to deal with any complaints from consumers.

#### Pre-rigor fillet

SalMar supplies both fresh and frozen pre-rigor fillets. SalMar's investment in pre-rigor filleting is an important strategy with respect to energy consumption, transport-related emissions, 100 per cent exploitation of the raw material and the creation of local jobs.

Pre-rigor filleting means that the fish is harvested and filleted the same day, before the fish goes into rigor mortis. This processing strategy enables delivery to the market 2-6 days earlier than has been the norm. This way of handling fish has a number of advantages:

- Fresher fish to the customer
- Firmer muscle texture, better colour, less gaping and lower drip loss
- Longer shelf-life in the market
- No need to store and mature the fish before filleting and boning

For more information on the environmental benefits of SalMar's investment in pre-rigor filleting, see chapter 8 Focus on the solution.

#### Organic salmon

SalMar is the world's largest producer of organically farmed salmon. Organic salmon is supplied year round, and production is vertically integrated from the broodfish down to the finished processed products. Local processing means that we can deliver a wide variety of first-class fresh and frozen organic salmon products.

SalMar supplies both pre- and post-rigor organic salmon. A high content of marine oils means that this salmon is an exceptionally good source of EPA and DHA. Developments have been extremely positive since the very beginning, and the market's demand for organic salmon is increasing.

In 2009 SalMar was certified for the farming, processing and sale of organic salmon, and in March 2011 the Group's first organic salmon was harvested. Today, SalMar has five licences for the production of organic salmon, and it is produced by the subsidiary SalMar Organic AS in Møre & Romsdal. To qualify as organic the salmon must be produced within the framework of the EU's regulations, and must be approved by Norwegian organic foods certification body DEBIO.

#### Frøyas

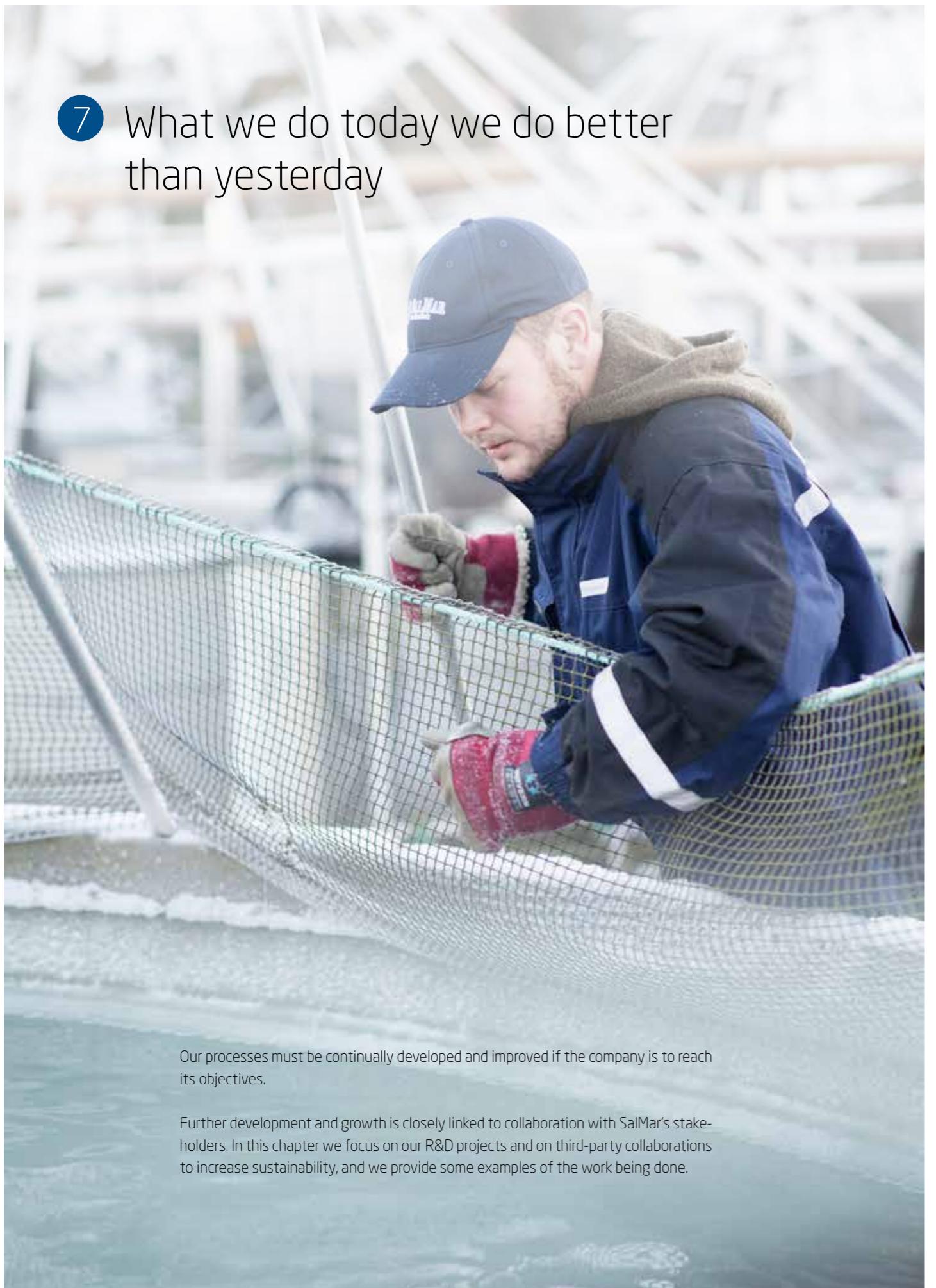
Since 2011 SalMar ASA, via its subsidiary Frøyas AS, has produced finely sliced, sashimi quality fish under the brand name Frøyas. Every single fish that is used by Frøyas is handpicked, and only the best boneless pieces of salmon are used. After slicing the fillets are packed within 1-4 hours to ensure maximum freshness and taste.

The objective is to offer a salmon product that maintains the same quality and taste as it had on the day it was caught right up until its use-by date – normally 11 days. To maintain this level of quality, Frøyas uses a unique packing, transport and refrigeration process. The majority of fish products are transported under ice in polystyrene boxes. These are difficult and expensive to dispose of. In contrast, Frøyas' products are transported in recycled cardboard boxes that are chilled using dry ice, which ensures optimal temperature control. The dry ice evaporates slowly, and the cold is transferred direct to the product. This ensures that the product is kept below zero degrees until it arrives at the supermarket. To prevent frost damage, Frøyas' salmon is protected by a layer of cardboard, which ensures that the salmon does not come into contact with the dry ice. As the dry ice evaporates, the salmon maintains a constant temperature that keeps its freshness.

Frøyas uses 40 per cent less plastic in its packaging than competing products, and takes less space in the supermarket chiller cabinet. For consumers, this efficient packaging results in less refuse and more space in their refrigerators. For more information, see: [www.froyas.com](http://www.froyas.com)



## 7 What we do today we do better than yesterday



Our processes must be continually developed and improved if the company is to reach its objectives.

Further development and growth is closely linked to collaboration with SalMar's stakeholders. In this chapter we focus on our R&D projects and on third-party collaborations to increase sustainability, and we provide some examples of the work being done.

### Research and Development

Norway's aquaculture industry has experienced fantastic growth and development. This has been possible because of the industry's unquenchable desire to improve and develop new, safer and more efficient ways of producing salmon. In such a perspective, research and development (R&D) is essential, and the industry has depended on close cooperation with the public authorities, educational and research establishments, and industry bodies. SalMar is an important contributor to the development of the industry, and gives high priority to the advancement of knowledge within its areas of operation.

In 2014 a number of projects were continued, and new ones initiated – the majority associated with biological production. The projects are a combination of in-house undertakings and projects in partnership with other aquaculture companies, feed and equipment suppliers, Sintef, the Norwegian Veterinary Institute, VESO, the Norwegian Institute for Nature Research (NINA), Ålesund University College, the University of Tromsø and certain other centres of expertise. Efforts have focused particularly on projects whose aim is to find solutions to the major challenges associated with fish escapes, salmon lice and fish welfare.

SalMar plays an active role in, and sits on the steering committees of, several projects run by the Norwegian Seafood Research Fund. These projects cover a wide field, and include topics relevant to the sustainability of the industry.

### Active use of R&D licences

SalMar has been actively engaged in partnerships with R&D establishments for many years. This also includes collaboration on the operation of R&D licences. The scale and professionalism relating to important development tasks has increased, and continues to increase. SalMar sees itself as a professional, but demanding partner, whose aim is to ensure that the results of any trials are as relevant as possible, and that plans and protocols take account of the practical realities of fish farming. SalMar has dedicated personnel who organise and assist research establishments in their efforts, at the same time as operational staff gain more and more experience in how best to safeguard research results under busy day-to-day operating conditions. Proximity to the research, with opportunities to influence both its planning and areas of focus are important sources of motivation for SalMar. The development of vaccines, optimisation of medication, feeding and nutrition, and technological issues relating to large-scale operations are examples of important areas for further research.

### Increased focus on genetics

SalMar has a growing focus on breeding and genetics through the company Rauma Stamfisk and the 'Rauma Broodstock'. The company has licences for the farming of broodfish, which has made it possible to establish a secure and expedient production structure for the future. We have set targets for data capture through the entire value chain, and InnovaMar's automated systems are important in this respect. By safeguarding the quality and scope of the salmon measurements, we see significant opportunities for focusing the breeding programme to further increase the quality of our products and make them even more robust. In 2014 the company has implemented marker-assisted selection in its broodfish activities. Through this it has been able to produce roe with genetic properties that ensure far greater resistance to disease. We have, moreover, reorganised the breeding structure by merging annual cohorts. This has been done to enable rapid implementation and propagation of genetic advances. Breeding targets are still being developed, but as a fully integrated undertaking, we are keen to exploit the opportunities that breeding activities offer to increase sustainability through feed utilisation and tolerance to new raw materials.

### Safer workplaces

The build-up and discharge of static electricity in the feed pipes used in the aquaculture industry represents an HSE challenge. Under certain, partially unknown, circumstances, a high current can build up in the feed pipes. This current is discharged when the pipes are cut or – on some occasions – when someone moves around in their vicinity. SalMar has been a driving force for, and active participant in, a Norwegian Seafood Research Fund (FHF) project that resulted in a set of guidelines for the use and handling of feed pipes, which was published in 2013. SINTEF Energy was the lead R&D institution, while project management was performed by ACE.

### R&D – escape of fish

#### Partnership for wild salmon

SalMar is a member of the Norwegian Seafood Federation (FHF). SalMar contributes actively to the development and enhancement of the industry's pool of shared expertise. Much of this effort revolves around our collective efforts to reduce the industry's environmental impact.

In addition to SalMar's engagement in efforts to reduce the risk of fish escaping, the Group has in recent years been an active participant in a project to monitor the status of wild salmon and record escaped farmed salmon in the Orkla, Gaula, Nidelva, Stjørdalselva, Verdalselva and Skauga rivers. Partners in the projects are the organisation Elvne rundt Trondheimsfjorden, the Norwegian Seafood Research Fund (FHF), the Norwegian Veterinary Institute, the Norwegian Institute for Nature Research (NINA), the Norwegian Environment Agency and the County Governors' environment departments. This effort is organised into several subprojects. Scale samples are sent for analysis to the Norwegian Veterinary Institute, and the results are distributed electronically as they are obtained via SMS and the internet. If a large number of farmed salmon is identified in the breeding population, the project will – in collaboration with the regulatory authorities – assess whether it is possible to implement remedial measures.

SalMar is also participating in a feasibility project in Troms that is focusing on the surveillance and mapping of escaped farmed salmon in local rivers.

The aquaculture companies Lerøy, Marine Harvest and SalMar have partnered with the Norwegian Seafood Federation (FHL), the Norwegian Veterinary Institute and VESO to establish the project FARMSALMTRACK, whose objective is to establish a system to trace farmed salmon back to the farm from which they escaped and their original hatchery. The aim is to trace individual fish back to the correct farm by comparing element profiles from reference materials supplied by hatcheries and fish farms with profiles of escaped farmed salmon caught in the wild. The tracing concept builds on the fact that there are stable geological differences between different areas in Norway. Trace elements dissolved in water reflect the area's geology. Trace elements in water are absorbed by fish through their gills, and are transported through the blood out to their scales where they remain fixed. Scales grow at the same rate as the fish, and trace elements in the water in which the fish swims are laid down along the outer edge of their upper mineralised and calcium-rich layer. In many ways scales can be seen as the fish's 'flight recorder', since they provide a constantly updated record of the fish's life.

### Technology and people

In conjunction with suppliers and research institutions, SalMar is involved in several projects to reduce the risk of fish escaping. These projects cover both the development of new technologies

and operating procedures. SalMar works closely with AquaCulture Engineering (ACE), and is involved in several projects being undertaken at our sites. See below for more information about ACE. With respect to suppliers, our work with Aqualine to develop safer cages based on an integrated design concept is of particular importance.

Aqualine AS has improved cage technology by developing a new concept for cage systems made from plastic. SalMar was actively involved in this project along with other major aquaculture companies, and made sites available for testing. In addition, Sintef Fiskeri og Havbruk, ACE and Sintef Marinetek were hired in connection with the testing and documentation of prototypes. For SalMar it was important to develop a concept which focused on the way the different parts of the fish farms interrelated. A further objective was to reduce the risk of wear between the net and the other components, improve working conditions on the collar for greater efficiency and safety, increase the lifespan of the equipment and reduce costs, as well as develop equipment suitable for use in exposed locations. The Midgard System meets the requirements outlined here, and went into normal operation at SalMar's sites in 2013.

Havtek AS is a small company that has developed and patented a net with built-in surveillance. The net has integrated wiring which detects any damage or holes via linked devices. SalMar has collaborated actively with Havtek AS on development of the El-Not net system.

In addition to its continuous efforts to maintain a high level of quality, the human factor as a reason for fish escapes is followed up in the Norwegian Seafood Research Fund (FHF) project entitled Human Factors and Escapes from Salmon Farms. The project aims to establish a knowledge platform for the development of solutions to prevent human error from resulting in the escape of fish. The project concluded in 2014, but experience from the project is continuously included in the ongoing development of SalMar's new management system.

### Environmental documentation

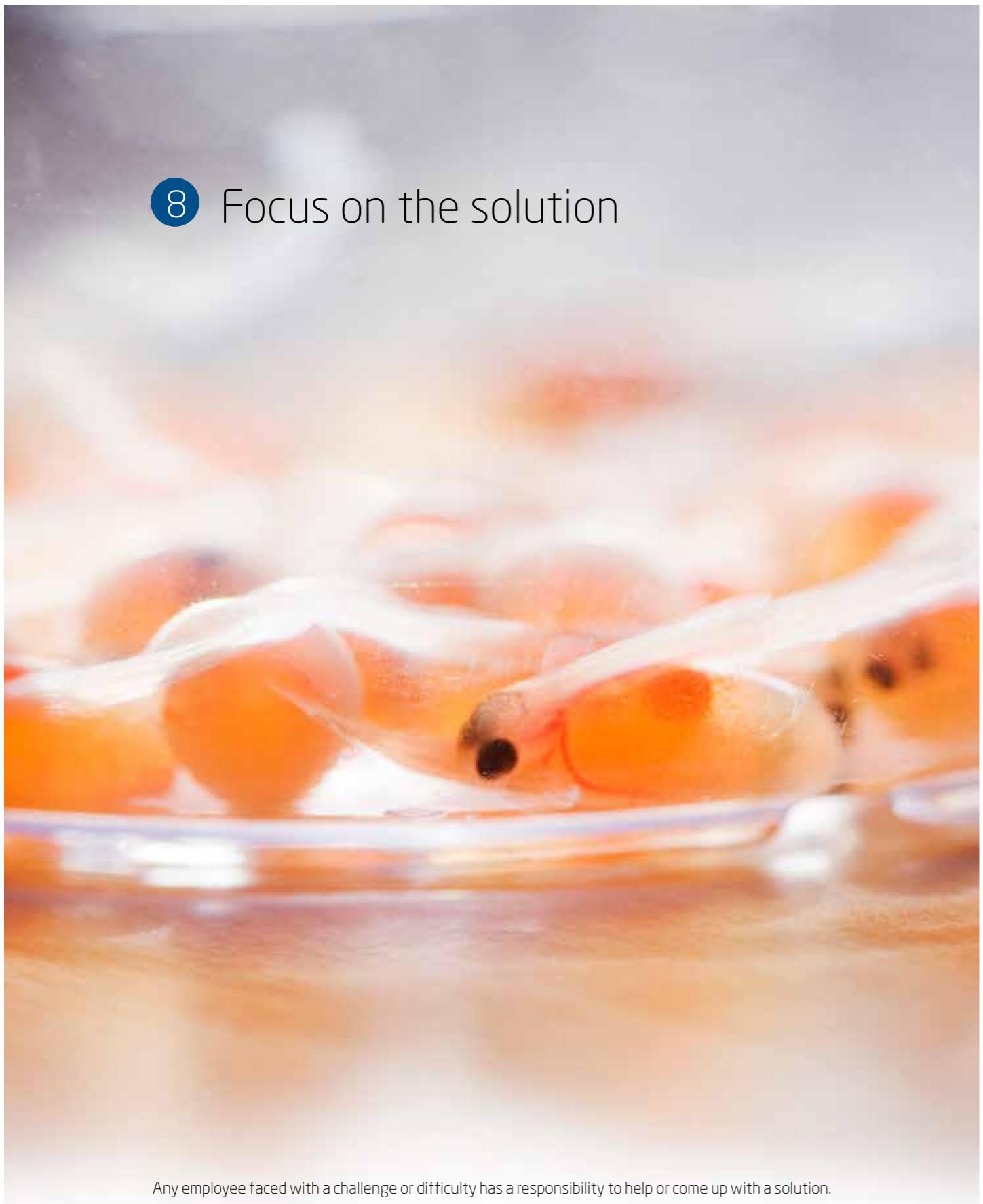
Through its membership of the Norwegian Seafood Federation (FHL), SalMar has participated in environmental documentation projects. This type of documentation is a precondition for a fact-based and rational assessment of today's operations, and provides a basis for determining how the industry can develop in the regions covered. So far SalMar has participated in documentation projects in Møre & Romsdal and Trøndelag. The projects involve several R&D institutions.



ACE, AquaCulture Engineering, was established in 2006 and manages 3 R&D licences on behalf of Sintef Fiskeri og Havbruk. In April 2009 ACE and SalMar concluded a cooperation and operating agreement. Under this agreement SalMar Farming AS undertakes the commercial operation of the licences in association with its own sites.

ACE focuses on the main challenges facing the aquaculture industry, eg salmon lice, escapes, HSE and emissions, by bringing together research establishments, suppliers and producers in large-scale projects whose aim is to develop and test new aquaculture technology. Users are often national and international scientists and others who want to perform practical experiments and tests under the most realistic and controlled conditions possible.

## 8 Focus on the solution



Any employee faced with a challenge or difficulty has a responsibility to help or come up with a solution. Every challenge represents an opportunity for progress. In this chapter we highlight some examples of internal development projects.

### Employee involvement

It is important that all employees contribute their opinions and suggest ways to improve things if SalMar is to develop and continually progress. To facilitate this regular meetings are held in each department to plan ahead and review what needs doing.

### Sustainable smolt production

SalMar's goal is that more than 95 per cent of the fish transferred to its sea farms will survive until harvested. Much of the good work required to achieve this involves the production of robust smolt. A great deal has been invested in making this part of the production process as sustainable as possible. Keywords here are fish welfare, recirculation, energy recovery and the prevention of escape. Below, we present two focus areas in the field of smolt production at SalMar.

#### Follafoess

SalMar Settefisk AS's Follafoess hatchery was established in 1985. Over the years the facility has been significantly expanded and modernised. Today it is a hypermodern production facility, licensed to produce 20 million smolt per year.

By means of heat exchangers, the hatchery exploits the energy from the waste water produced by the cellulose plant MM Karton FollaCell AS, which is located right next door. Energy corresponding to around 20 million kWh is extracted in this way. This energy is used to heat the production water used in the hatchery.

The hatchery's production water is obtained from the Follafoess Power Plant. A turbine has been installed in the supply pipe to the hatchery. As a result, up to 1.5 MW of electrical power is derived from the water supply before the water is used for fish production. The hatchery was originally built as a traditional flow-through facility, with a water consumption of up to 60,000 l per minute (3,600 m<sup>3</sup>/hour). Since 2007, however, four departments have been established, with recirculating technology that permits up to 97 per cent of the water to be cleaned and reused. Today, around half of the hatchery's output is produced in these recirculation departments. This means that an increase in production from approx. 5 million smolt per year to around 13 million smolt per year has been achieved with no increase in overall water consumption.

All waste water from the hatchery is cleaned using particle filtration before being released into the recipient. Sludge from the waste water treatment plant is delivered in accordance with applicable emission standards to farmers who mix it with traditional animal manure for spreading on the fields as a soil improvement measure.



Smolt from the hatchery are delivered to SalMar's own fish farms – primarily in central Norway. In recent years the hatchery's smolt have performed very well in the marine-phase, not least with respect to survival rates. The hatchery is measured on the smolt survival rate 90 days after transfer to the sea farms. The last two generations of smolt have achieved a 97.8 and 98.4 per cent survival rate, respectively.

#### New smolt production facility in Senja, Troms

SalMar is planning the construction of a new smolt production facility in Tranøy on the island of Senja in Troms. The facility will be capable of producing 15 million smolt per year, of which around 4 million will be large smolt weighing over 200g. An industrial site is currently being prepared for a plant with around 13,000m<sup>2</sup> of floor space. Construction is planned to start in the spring of 2015, and it is expected to be completed in the autumn of 2016. The first smolt produced at the plant are expected to be delivered as age 0+ salmon in the early autumn of 2017.

The facility is being built to make use of recirculation technology, with around 97 per cent of the production water being cleaned and reused. The production water will be heated using heat-pump technology, and all waste water will be cleaned using particle filtration.

It is expected that the facility will employ around 15 people.

## Innovation with respect to feed and feeding

During 2014 efforts have been made to optimise feeding at our production facilities. Particular emphasis has been placed on optimised feeding during the first 12 weeks at sea, and providing the greatest possible feed availability during this period to achieve a healthy and robust fish.

As a pilot scheme in 2013 we established a feeding centre at Valvågen in Senja. Based on the experience obtained from this pilot we established a permanent feeding centre at Lysnes in Senja in the spring of 2014. During the year up to 10 sites belonging to SalMar Northern Norway were fed remotely at the same time from the centre's control room. During the autumn of 2014 SalMar Northern Norway applied for permission for an educational and demonstration licence in association with the feed centre.

The remote feeding scheme has resulted in greater focus on feeding, and is considered a good environmental initiative, since it results in strong growth, a short circulation time and a high rate of MAB and site utilisation. At the same time it gives staff at the individual site more time for other tasks. In 2013 and 2014 development projects were undertaken in partnership with NOFIMA to optimise instrumentation (feeding and biomass control) in large, remotely fed cages.

SalMar works with its suppliers on new alternative oil raw materials that will reduce the environmental impact of SalMar's production.

## In-house production of cleaner fish

SalMar is investing heavily in the use of so-called 'cleaner fish' to control salmon lice numbers. In the experience of both ourselves and other fish farmers, the presence of lumpfish in the cages is particularly effective during the first few months that the fish are at sea. The Group therefore took an important strategic decision to build up a new, specially adapted facility for the production of lumpfish at Langstein in Trondheimsfjord. Production started in 2014, and will take place on land and at sea. The first batch of lumpfish were delivered to our fish farms towards the end of 2014. SalMar has a licence to produce 1 million lumpfish, and plans are in place to increase output to 3 million.



Remote feeding from the Feeding Centre in Valvågen



InnovaMar from dream to reality

Since SalMar's inception in 1991 harvesting and processing have been a key part of the Group's strategy. InnovaMar, one of the world's most innovative and cost-effecting facilities for the landing, harvesting and processing of salmon, went into operation in 2011. The plant covers an area of 17,500m<sup>2</sup>, and cost around NOK 550 million to build and equip.

InnovaMar comprises two departments (harvesting and processing), and a great deal of effort was made to challenge traditional solutions. Innovative production technologies increase the quality of the final product, reduce costs and improve working conditions for the staff. The plant can produce around 150,000 tonnes of salmon per year.

In 2014 SalMar started using a new arrangement of holding pens outside the harvesting plant. The facility comprises eight cages, which can each hold 350 tonnes. The facility is staffed around the clock, and features CCTV surveillance and continuous monitoring of oxygen and temperature levels in all cages. The size of the new facility has increased InnovaMar's flexibility, since fish of different sizes and from different locations can be made available to customers.

In addition to ensuring fish welfare, a good working environment, efficiency and safe food, emphasis has been placed on energy consumption, the handling and use of salmon waste, as well as reducing the need for transport through increased sales of salmon fillets

rather than whole fish. Finished products are prepared online as pre-rigor items, which affords great savings in the form of a reduced need for handling and input factors. Online production avoids the need to keep whole fish in containers filled with ice/slush in cold storage for 2-6 days. It also reduces the amount of labour and trucks needed for their internal handling and transport. The product is kept in production zones only for as long as it takes to process the finished item from whole fish. This avoids any increase in the temperature of the raw material, which is already chilled from the harvesting plant, and saves further use of ice to reduce the temperature of the finished item to the desired 2°C level. In addition to environmental benefits, online production of pre-rigor fillets is also advantageous with regard to increased freshness and maximum exploitation of the raw material. SalMar aims to turn as much as possible of the salmon into pre-rigor fillets.

By-products (head, spine, offcuts) go directly to Nutrimar via internal conveyors/pipes, which ensures a high degree of freshness and usable volume when processing this raw material. It also means that there is practically no need for input factors relating to its transport and handling.



## Product development and packaging solutions

To reduce emissions and costs associated with the transport of fish, SalMar has focused heavily on the export of pre-rigor fillets instead of whole fish. This reduces the weight by around 40 per cent, and consequently the need for transport, since only those parts of the product that the customer makes use of are sent by road. Increased processing therefore results in fewer heavy goods vehicles on the road, and fewer emissions. Since fillets are cut before distribution to the market, we live up to the principle of supplying the right quality to the right customers. Any fillets downgraded due to quality issues will be transformed internally into appropriate 'secondary products'. In addition, all offcuts from the production of fillets at SalMar's facilities InnovaMar in Frøya and Vikenco in Aukra are sent to Nutrimar for further processing. As a result 100 per cent of the raw material is exploited. See the presentation of Nutrimar AS.

Today, around 30 per cent of SalMar's finished pre-rigor products are packed in reusable crates. This provides savings in the form of a reduced need for ice and the disposal of polystyrene boxes. SalMar is working actively to increase the proportion of products transported in reusable crates. A project is currently underway to identify optimal packaging solutions in connection with the export of pre-rigor fillets. Reusable crates, shipments without ice and packaging technologies that provide complete bacteriological security are all included in the project, which will continue on into 2015. The project is also investigating recyclable cardboard packaging and transport without ice. Eliminating the ice would reduce both weight and volume, and thereby the level of emissions produced during transport.



### Nutrimar AS: Nothing is wasted

Nutrimar was set up in 2007. Its objective was to take better care of the raw material produced by SalMar AS. Traditionally, acid was added to much of the waste raw material from salmon harvesting plants and then sold on as low-grade ensilage.

Today, Nutrimar accepts and processes 100% of the production waste from InnovaMar. We also accept all the production waste from the Vikenco harvesting plant.

For more information, see: [www.nutrimar.no](http://www.nutrimar.no)

The raw material comprises day-fresh guts, heads, spines and offcuts from harvesting and processing. The products currently produced include oil, protein concentrate and flour. All these products are sold as ingredients in the commercial production of animal feeds, ie. fish feed and chicken feed.

Nutrimar has embarked upon construction of a new plant, which will go into operation in 2016. The new factory will make even more high-value oils and proteins for both human and animal consumption.

## TECHNICAL INFORMATION

A robust design that enables installation and operation of fish farming in ocean-exposed (offshore) areas with excellent aqua biological conditions.

- Overall height 67 m
- Diameter 110 m
- Volume 245.000 m<sup>3</sup>
- Weight 5.600 tonnes
- High HSE standards for fish and personnel
- Automated operations
- Central column equipped with control room, living quarter, utilities, feed silos



### Open-ocean fish farming in the best interests of the salmon

Ocean Farming AS has developed a technical concept for fish farms that are robust enough to be installed and operated in locations close to the open ocean. The concept is based on solutions deriving from both the aquaculture and Norwegian offshore industries. The new concept will allow farms to be sited further out to sea. They will be submersible, and will have a rigid structure that provides the fish with optimal living conditions.

The concept has been developed with the operations to be performed in mind. This means that the fish will be subjected to less handling than fish in conventional farms. The new cage construction will

offer significantly better water flow-through than today's facilities, and will substantially reduce the risk of escape and salmon lice infestation. SalMar has so far invested in excess of NOK 20 million in this development project. Although the company has already obtained approval for the establishment of the first 'blue sea farm' at one site in Frohavet, realisation of the project will depend on the final cost estimates and the adoption by the authorities of the framework conditions necessary for this major advance. A final investment decision may be possible by the end of 2015.

## GRI index

### Issue

<b>Strategy and analysis</b>	
Statements from senior decision-makers in the organisation	<i>Page 6</i>
<b>Organisational profile</b>	
Company name	Salmar ASA
Primary brands, products and services	Farming of Atlantic salmon, conventional and organic. High profile product: Frøyas.
Location of the company's headquarters	Kverva, 7266 Kverva, Norway
No. of countries in which the organisation operates, and name of countries with important operations or countries which are particularly relevant for the sustainability issues covered in the report	<i>Page 16</i>
Ownership and type of company	Salmar ASA is a public limited company that is listed on the Oslo Stock Exchange. For further information, see the 2014 annual report.
Markets serviced	<i>Page 16-17</i> Annual report, Note 23 to the financial statements.
Size of the business	Annual report
No. of employees by employment category and gender	<i>Page 20</i> Annual report <i>Note 24 to the consolidated financial statements</i>
Proportion of workforce covered by collective wage agreements	79.6%
The business's supply chain	<i>Page 29</i>
Material changes in size, structure, ownership and supply chain occurring during the reporting period	<i>Page 21 and 33</i> Annual report <i>Page 43-44</i>
Precautionary principle	<i>Page 18</i>
Membership of industry associations and/or national/international special interest groups	Norwegian Seafood Federation (FHL), Confederation of Norwegian Enterprise (NHO), OrAqua – Organic Aquaculture, Federation of European Aquaculture Producers (FEAP).
<b>Material aspects and delineations</b>	Annual report, Note 6 to the consolidated financial statements'
Dialogue with stakeholders	<i>Page 19</i>
<b>Reporting profile</b>	<i>Page 18 and 19</i>
<b>Organisational and environmental management</b>	<i>Page 18 and 19</i> Annual report <i>page 25 -27</i>
<b>Ethics and integrity</b>	<i>Page 22</i> Annual report <i>page 27</i>
<b>Financial status</b>	<i>Page 22</i> Annual report

### Environmental performance

EN1	Materials consumption	<i>Page 30</i>
EN3	Energy consumption	<i>Page 27</i>
EN5	Energy intensity	<i>Page 27</i>
EN6	Reduction in energy consumption	<i>Page 27</i>
EN7	Reduction in energy consumption associated with the use of our products	<i>Pages 29 and 30</i>
EN8	Water consumption	<i>Page 37</i>
EN10	Recirculation of water	<i>Page 37</i>
EN12	Impact on biodiversity	<i>Pages 24 and 34</i>
EN15	Direct greenhouse gas emissions (SCOPE 1)	<i>Page 27</i>
EN16	Indirect greenhouse gas emissions (SCOPE 2)	<i>Page 27</i>
EN18	Intensity of greenhouse gas emissions	<i>Page 27</i>
EN19	Reduction in greenhouse gas emissions	<i>Page 27</i>
EN24	Material emissions (escape of fish)	<i>Pages 18 and 24</i>
EN26	Water bodies affected by emissions from operating activities	<i>Pages 18 and 26</i>
EN27	What we do to reduce our impact on the environment	<i>Pages 23-27 and 32 - 41</i>
EN31	Disbursements and investments to protect the environment	<i>Pages 23-27 and 32 - 41</i>
EN33	Material actual and potential negative impact on the environment in the value chain, and initiatives implemented	<i>Page 29</i>

### Employees

LA5	Total workforce covered by formal HSE initiatives	<i>Pages 18, 20 and 21</i>
LA6	Injuries, occupational diseases, lost-time and deaths	<i>Pages 18, 20 and 21</i>
LA10	Programme for development of skills and lifelong learning	<i>Page 21</i>
LA11	Regular assessment of performance and career opportunities	<i>Page 21</i>

### Society

SO1	Local communities, analysis of impact and development programme	<i>Pages 21 and 22</i>
SO5	Confirmed incidents of corruption and initiatives implemented	<i>Page 22</i>
SO6	Political contributions	<i>Page 21</i>

### Product liability

PR1	Assessment of the products' impact on health and safety	<i>Pages 29 and 30</i>
PR2	Compliance with regulations covering the products' impact on health and safety	<i>Pages 29 and 30</i>



**SalMar ASA**

N-7266 Kverva - Norway

Phone +47 72 44 79 00

Fax +47 72 44 79 01

[www.salmar.no](http://www.salmar.no)



**SALMAR**

Passion for Salmon