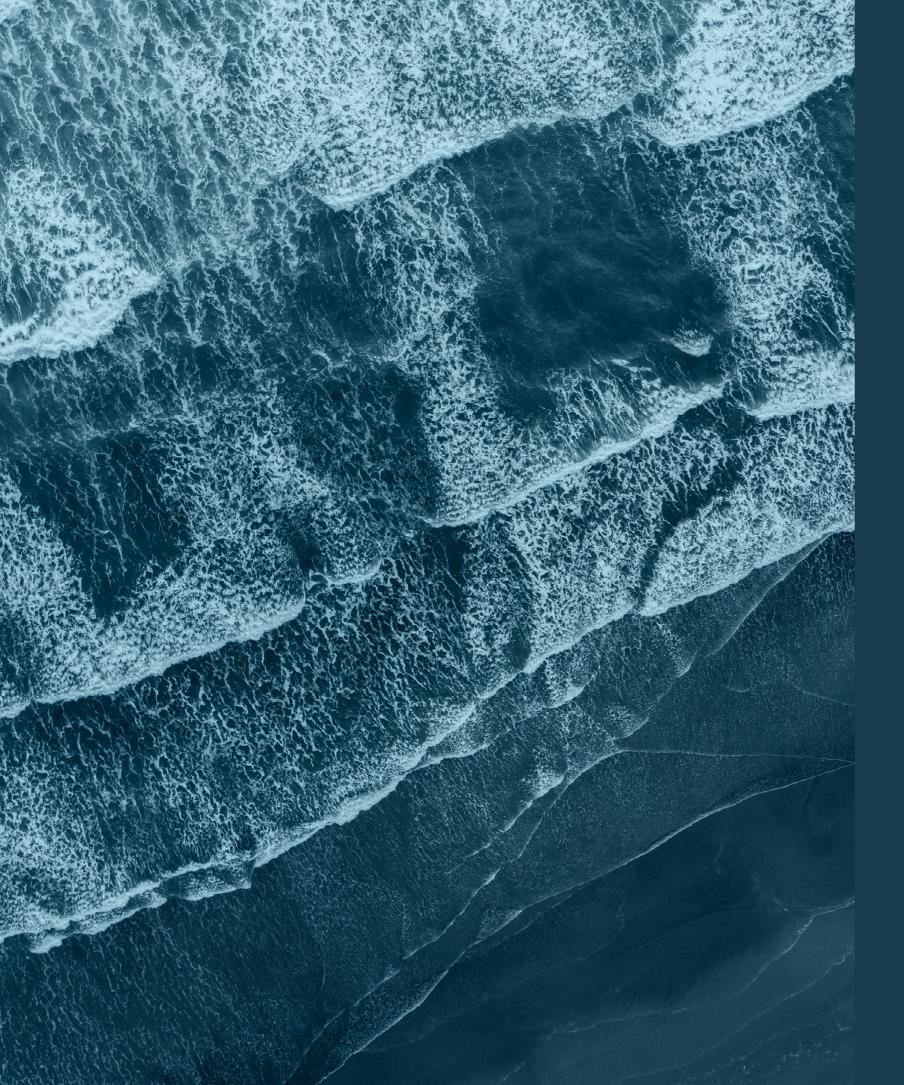




# Impact Report





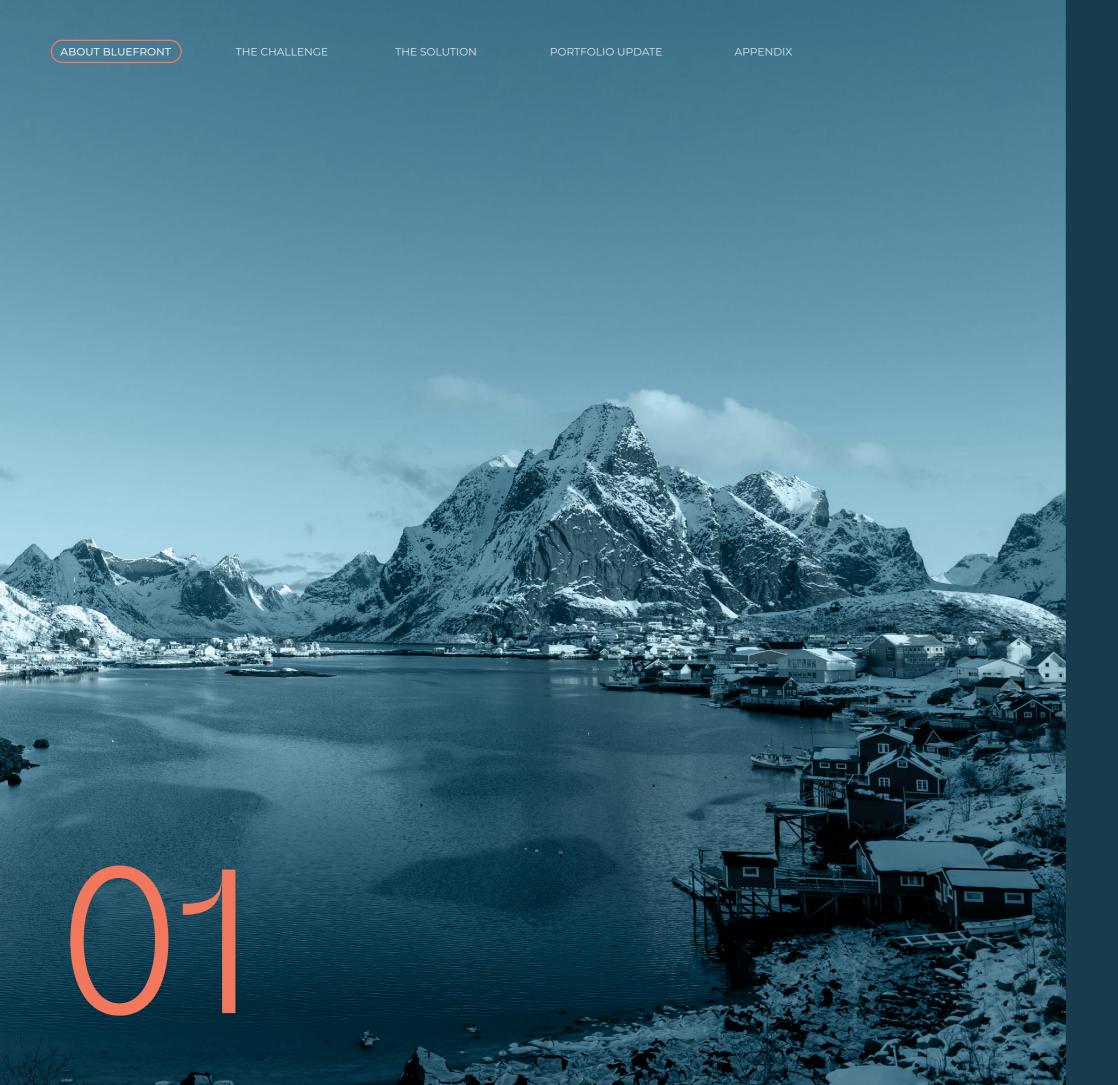
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# Letter from the CEO

2024 has been a fantastic year for Bluefront. Our Fund I portfolio companies have continued their strong trajectory of growth, we welcomed two new investments into Fund II, and we deepened our capabilities across our core focus areas - particularly in impact management and measurement. These developments reflect the continued development of our vision to create lasting value to impact the future of the blue economy.

#### Seafood as an overlooked climate opportunity

Seafood remains an overlooked climate solution. With food production responsible for ~30% of global emissions and demand expected to rise 60% by 20501, the food transition, shifting from high-emissions land-based proteins to low-emission proteins from the ocean, is essential. This is also backed by the fact that the ocean accounts for 70% of the earth but only 6% of all protein sources<sup>2</sup>. We need more (sea)food from the ocean.

At Bluefront, impact begins with a core belief: the aquaculture sector holds immense potential to address some of the planet's most pressing climate challenges. However, in order to realize this potential, the industry must first solve its own issues - starting with fish welfare and ocean health.

Subsequently, Bluefront invests in companies that tackle these two critical challenges in aquaculture. Whether it is through reducing emissions, enhancing resource efficiency, enabling better decisionmaking or improving production efficiency, each investment is a means to advance the fundamental goals of improving fish welfare and ocean health. The focus is not a supplement to our strategy - it is the strategy. Solving these core challenges in aquaculture unlocks a transformative global climate potential.

In 2024, we further formalized our theory of change, connecting the actions we can control (our inputs and investment activities) with the broader environmental and societal outcomes we seek to impact. It provides the foundation for how we evaluate, measure, and communicate impact across our portfolio to enable a more sustainable production of seafood.

#### Growth in Fund I

Our Fund I portfolio, with an average vintage of 2022, continues to show strong momentum. We are seeing firsthand how our companies are scaling their technologies across new species and markets - delivering on both growth and impact. It is inspiring to see their role in accelerating the shift toward a healthier and more resilient seafood system. The regulatory landscape in Norway further strengthens this trajectory, with increasing focus on environmental accountability. Thus, the demand is rising for solutions that not only document compliance but also deliver real improvements - in terms of escapes, diseases, and improved fish welfare. Our companies are well-positioned to support this transition.

New investments in Fund II

With the launch of Bluefront Capital II, we reinforced our commitment - backing the products, services and technologies that will shape the future of seafood. In 2024, we added two new investments aligned with our impact thesis:

- Horizon Software, a digital platform helping farmers translate biological processes into numbers and actionable insights enabling better decisions around fish welfare and operational
- **Cryogenetics,** which offers cryopreservation services that enhance breeding processes for aquaculture and conserve wild fish genetics in Norway and Canada. Their work bridges improving commercial aquaculture performance and longterm biodiversity preservation - acting as a gene bank for future

In early 2025, we completed our third investment in Fund II in the software company Piscada Aqua. The company offers a feeding software that enables the feeder to feed efficiently and optimize feeding with regards to the fish welfare and the effect on ocean



The aquaculture sector holds immense potential to address some of the planet's most pressing climate challenges

#### Partnerships in the ecosystem

As the impact space continues to evolve, collaboration and partnerships are key. Throughout 2024, we have developed relationships that enhance our thought leadership and collaborative reach. As active members of the Norwegian Impact Investment Network (NorNAB), we're connecting with impact peers and shaping the definition of impact investing across the Nordics. We have also deepened our involvement with the investor network FAIRR, engaging in research on key ESG risks in aquaculture, ensuring that our strategy is anchored in research.

#### Looking ahead

As we reflect on the progress of 2024, we remain focused on our long-term vision: to accelerate the transition towards sustainable aquaculture production by delivering measurable, lasting impact for the planet. I am proud of what we have accomplished and even more excited for what is to come!

Thank you to our investors, partners, and portfolio teams for sharing our belief in the blue economy!



**Kjetil Haga** 

Source: Food and Agriculture Organization (FAO), 2023 Source: Mowi Salmon Farming Industry Handbook, 2024

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# About Bluefront

We aim to be the world's leading seafood investor, backing companies with knowledge and capital to scale sustainable seafood production. As a low-emission, resource-efficient food source, aquaculture is central to feeding a growing global population while reducing global gas emissions.

Based in Norway, the seafood technology hub, Bluefront invests in small- and medium-sized companies offering products, services, and technologies addressing key sustainability challenges in aquaculture. We focus on scalable solutions enabling higher fish welfare and ocean health.

Our proprietary impact framework integrates impact and ESG into every step of the investment process - because we believe financial returns and positive impact go hand in hand.

We are backed by institutional investors, family offices, and industry experts who share our mission to shape the future of the blue economy.

#### **Bluefront Fund II Investment Mandate:**



Animal

welfare





Ocean stewardship



Water efficiency



Energy efficiency



Sustainable impact in the value chain

#### Vision

Impact the future of the blue economy

#### Our values

#### Impact driven:

Work to create meaningful change.

#### Friendly:

Be friendly and respectful to build trust and strong partnerships that make us the preferred partner.

#### Ahead of the curve:

Continuous focus on key future trends to shape the future of the blue economy.



### Bluefront's evolved impact strategy

At Bluefront, we believe long-term value comes from combining strong financial performance with positive impact. Impact and ESG are both core to our strategy, but they are not the same. ESG ensures that we invest responsibly and manage risk, while impact guides us in creating meaningful and lasting change in the aquaculture industry.

#### Investing for Impact

Our investment strategy is focused on solving key challenges in aquaculture: fish welfare and ocean health. These guide every decision we make, from sourcing and due diligence to ownership and exit.

We use a structured impact framework with a clear theory of change. With impact-linked carried interest in Fund II, we tie a portion of financial upside to the achievement of key impact results - ensuring alignment between our mission and performance. Through our Impact Advisory Council, we will also engage with LPs to discuss key Impact Management and Measurement (IMM) topics.

#### **ESG & Responsible Investment**

We integrate ESG at every step of the investment cycle. Both Fund I and Fund II are classified as SFDR Article 8, we align all investments with the UN SDGs and incorporate Principal Adverse Impact (PAI) indicators such as emissions, diversity, and governance topics.

As a UN PRI signatory, we are committed to responsible investment practices across sourcing, ownership, and reporting. Our Responsible Investment Policy ensures consistency, and all portfolio companies report quarterly through an ESG platform - supporting transparency and benchmarking.

This combined approach helps us scale responsibly while delivering real-world outcomes to drive impact and shaping a more sustainable aquaculture industry for the future.

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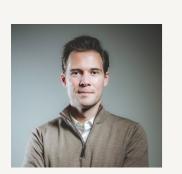
# Team



**Kjetil Haga** CEO & Founding Partner

Before launching Bluefront, Kjetil and Simen had already built a strong foundation together as co-founders of their legacy seafood investment firm. Kjetil has extensive experience from management consulting and investing in seafood service companies through hands-on experience from active ownership.

Board roles: Redox, Seaqloud, Horizon Software, Cryogenetics, Piscada Aqua Education: M.Sc. Economics (NHH), Master's in Technology Management (NTNU & MIT Sloan)



**Johan Kostveit** Investment Manager

Johan brings several years of management consulting experience, specializing in transactions and strategy during his time in Rystad Energy. At Bluefront, he works actively with sourcing, transactions and follow-up of the portfolio companies.

Board roles: Akvasafe, Seaqloud, Sematek, Spillfree, Piscada Aqua, Horizon Software Education: B.Sc. Petroleum & Process Technology (UiB), M.Sc. Financial Economics from Norwegian School of Economics



**Simen Landmark**CIO & Founding Partner

Before launching Bluefront, Kjetil and Simen had already built a strong foundation together as co-founders of their legacy seafood investment firm. Simen has extensive experience from investment banking and investing in seafood service companies through hands-on experience from active ownership.

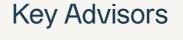
Board roles: Akvasafe, Bio Marine, Sematek, Spillfree, Tempia Education: M.Sc. Financial Economics from Norwegian School of Economics



**Karina Wessel** Impact Manager

Karina brings experience from management consulting at Accenture, where she worked with seafood clients, as well as from impact investing at a climate tech VC fund. At Bluefront, she leads the impact management work for the fund and is actively involved in the follow-up of the portfolio companies.

**Board roles:** Redox **Education:** M.Sc. Business Analysis from Norwegian School of Economics





Sondre Storli COO / CFO

Sondre brings deep financial expertise from auditing mid- to large-size companies, with a strong focus on the seafood industry. At Bluefront, he is responsible for the operations and the financial performance. He is actively involved with the follow-up of the portfolio companies.

Board roles: Bio Marine and Tempia Education: M.Sc. Accounting and Auditing from Norwegian School of Economics (NHH)



Peter Hammerich Chairman of the Board & Legal Advisor



**Alf-Helge Aarskog** Industry Partner, Aquaculture



**Arne Trondsen** Industry Partner, Private Equity



Jan Sverre Røsstad Industry Partner, Aquaculture



**Jen Lee Koss** Industry Advisor, Impact investing



Charles Høstlund Industry Advisor, Aquaculture



**Solveig Van Nes** Industry Advisor, ESG, Impact & Aquaculture



**Aino Olaisen** Industry Advisor, Aquaculture



Rami Haug Khoury Industry Advisor, Aquaculture



**Olav Jamtøy** Industry Advisor, Digital



Otto Søberg Industry Advisor, Industrial



**Tore Valderhaug** Industry Advisor, Aquaculture

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THE SOLUTION

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# Bluefront Update 2024

#### Key highlights

Employees in portfolio

8 add-on investments

5 SDG addressed

Core team

Core team

5
SDG addressed

Core team

5
SDG addressed

Core team

5
SDG addressed

Fund 1

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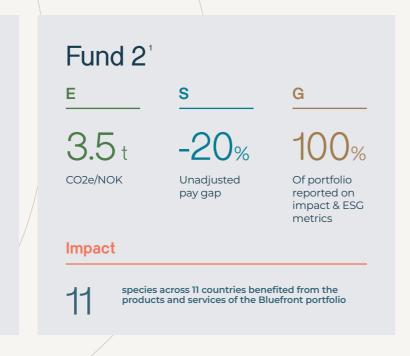
Unadjusted pay gap

Unadjusted pay gap

Of portfolio reported on impact & ESG metrics

Impact

species across 24 countries benefited from the products and services of the Bluefront portfolio



#### Bluefront contribution to portfolio

1,

Used Theory of Change to develop the impact thesis of all companies



Implemented Impact & ESG strategy for all companies



Implemented Bluefront onboarding pack with policies<sup>2</sup> for all companies







# The Challenge

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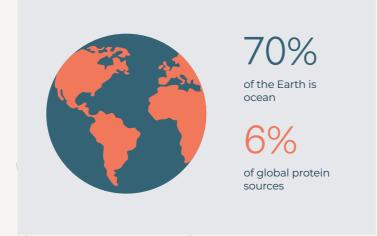


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# The Food Transition

Our planet is 70% ocean and yet the ocean accounts for just 6% of global protein sources<sup>1</sup>. Meanwhile, the available land suitable for food production is extremely limited and under growing pressure from expanding populations and climate change. The solution is clear: produce more food from the ocean.

Land-based food production, both plant- and animal-based, demands large areas of land, intensive irrigation, and freshwater use. In contrast, seafood has a far smaller environmental footprint. It requires less land and freshwater, and it provides a highly nutritious source of protein. But seafood's greatest potential lies in its climate impact.



The food transition emphasizes the need to reduce emissions while simultaneously increase total food production. This involves shifting to low-emission food sources that utilize fewer resources while feeding more people.

We need a more resource-efficient food production system.

The carbon footprint of salmon is almost 8 times lower than for cattle production and over twice the emissions for pork production<sup>1</sup>.

If global food production shifted from land-based animal sources like poultry, pork, and cattle to salmon production, it could reduce emissions by 16 million tons of CO2, achieving a 70% reduction<sup>2</sup>.

Focusing solely on salmon production is not the solution. However, technologies and products developed for the most industrialized specie, salmon, are applicable for other aquaculture species. Seafood offers a significantly lower carbon footprint compared to land-based animal production.

Aquaculture stands out for its efficiency in feed conversion ratios (FCR of 1.3), as well as minimal land and water use relative to other animal proteins. In addition, wild fisheries are increasingly at risk due to overfishing, meaning that all future growth in seafood production must come from aquaculture, which is a scalable and sustainable solution to increase global supply.

### We need a global food transition



Food systems represent

30%

of global greenhouse gas emissions, mainly from livestock<sup>2</sup>



The world will need

60% more food to feed

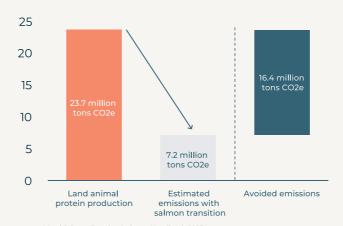
more food to feed a growing global population in 2050<sup>3</sup>

#### The food transition =

We need to increase the supply of low-emission protein and resource-efficient foods to meet the demand of a growing population in a world where climate change is a reality.

We need to start thinking of food transition in the same way we think of energy transition.

#### **Avoided Emission**



source: Mowi Salmon Farming Industry Handbook 2023



### Salmon:

 $5.1 \, kg^{CO2 \, eq \, / \, kg}$ 



#### Pork:

 $12.2 \text{ kg}^{\text{CO2 eq/kg}}$ 



### Poultry:

 $8.4 kg^{CO2 eq/kg}$ 



#### Cattle:

39 kg CO2 eq / kg

Source: Mowi Salmon Farming Industry Handbook, 20.

<sup>&</sup>lt;sup>2</sup> Food and Agriculture Organization (FAO), 2023 <sup>3</sup> Food and Agriculture Organization (FAO), 2023

<sup>&</sup>lt;sup>1</sup> Environmental performance of blue foods (Gephart et al., 2021) <sup>2</sup> Mowi Salmon Farming Industry Handbook 2023

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# To enable the transition, the aquaculture industry must resolve its own challenges

To scale responsibly, the aquaculture industry must address a range of environmental, social, and governance (ESG) challenges. The Coller FAIRR Initiative<sup>1</sup>, a leading research network focused on ESG risks in protein production, has identified ten key risk areas in aquaculture:



# Greenhouse gas emissions Effluents Habitat destruction and biodiversity loss Fish feed supply Disease management Covernance Transparency and food fraud Transparency and food fraud Antibiotic use

These risks illustrate how aquaculture impacts not only production systems but also surrounding ecosystems and communities. By addressing these risks, especially those related to fish welfare and ocean health, we can unlock aquaculture's potential as a low-emission, scalable, and responsible food solution.

Solving these challenges will require new tools and smarter practices. Technology is a critical enabler, helping producers improve control, efficiency, and sustainability across operations.

These challenges underscore the need for innovation to enable sustainable growth that prioritizes fish welfare, ocean health, and the broader ecosystem, benefiting both nature and communities.

# Building on decades of technology experience from salmon farming to scale worldwide aquaculture production

Salmon is the most industrialized specie in aquaculture<sup>1</sup>, with Norway producing 2.4% of the world's farmed fish globally and 53% its salmon<sup>2</sup>. As a result, the Nordic region has become a global hub for aquaculture innovation. But the strength of the production, but in the supplier industry that supports it.

From digital tools and sensor systems to water treatment technologies and breeding services, Nordic suppliers have developed advanced, scalable solutions designed to meet the challenges of modern aquaculture. These solutions, originally developed for salmon, are now being adapted for new species and markets around the world. Here are some recent examples:

- Automated feeding systems used in tropical finfish farms in Asia
- Oxygenation and water treatment technologies applied in landbased shrimp production
- Monitoring software expanded to farming systems in Latin America and the Mediterranean
- Water treatment technology from Sweden is used for both cold-water species such as Atlantic salmon and warm-water species such as shrimp
- Cryopreservation tools from Nordic labs are enabling advanced breeding programs in Chile and North America
- CO<sub>2</sub>-based refrigerant systems, designed in Northern Norway, are reducing emissions in seafood logistics from Spain to the Maldives
- Advanced industrial cage technologies are enabling the development of offshore and exposed sites in China, Korea and Scotland.
- Closed containment systems and land-based RAS (recirculating aquaculture systems) technologies are being exported to North America and China.

To foster sustainable aquaculture, we must improve current production methods and invest in innovative solutions.

This presents a unique business opportunity: leveraging the Nordic region's leadership in aquaculture technology to develop and expand the supplier industry for other species and markets globally.

This is where Bluefront comes in. We invest in innovative suppliers in the seafood industry that aim to address the key sustainability challenges. Being at the forefront of technological development in aquaculture, allows us to scale the companies to reach new species and geographies.

This is crucial for driving the global food transition and achieving net-zero emissions.



Leveraging the Nordic region's leadership in aquaculture technology to develop and expand the supplier industry for other species and markets globally.

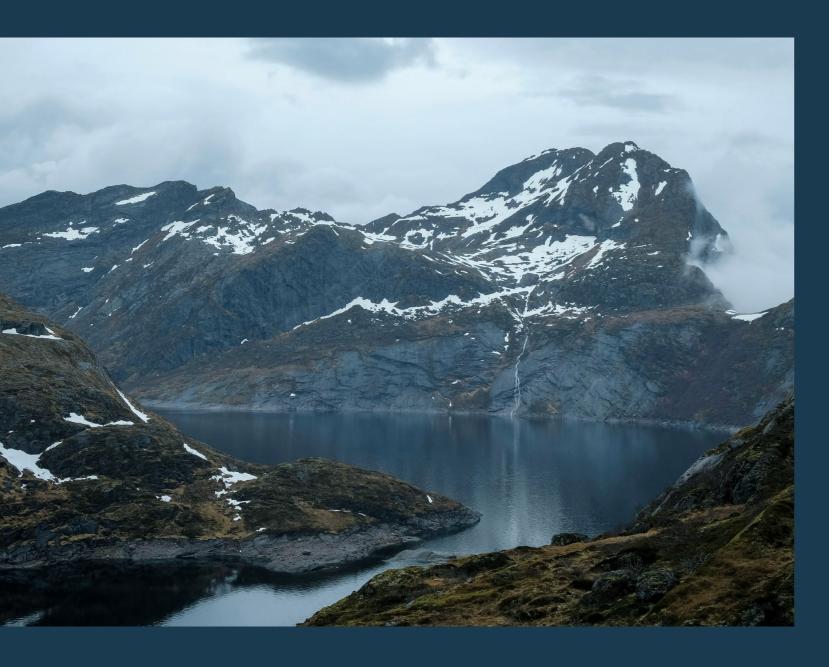
<sup>1</sup> See appendix

<sup>2</sup> Source: National Geographi

ABOUT BLUEFRONT (THE CHALLENGE) THE SOLUTION PORTFOLIO UPDATE APPENDIX Impact Report 2024

# Thought leadership

 Diving deeper into impact for our portfolio companies



### **₩**BioMarine

Facing the Heat: How climate change affects the future of aquaculture

Climate change is already making waves in Norway's fjords - quite literally. As ocean temperatures rise, the aquaculture industry faces a cascade of new challenges. For the Atlantic salmon farmed along our coast, warmer waters can initially appear beneficial. Salmon are poikilothermic animals, meaning their growth rates increase with temperature – up to a point.

Research shows that juvenile salmon grows optimally at around 15–17 °C, while larger salmon do best between 12–14 °C. Beyond these thresholds, the balance shifts. As water temperature rises, the water physically holds less oxygen – just as the salmon's oxygen needs are rising. This creates a biological mismatch: fish demand more oxygen at the very time their environment offers less.

Studies' show that salmon exposed to higher temperatures require significantly higher oxygen saturation levels just to maintain appetite and growth. At 19 °C, fish began to reduce feed intake already below 76% oxygen saturation – a level previously considered safe at cooler temperatures. Lower oxygen availability leads to reduced feed efficiency, slower growth, higher vulnerability to disease, and, in critical cases, mortality.

Warmer waters also extend the window of risk for parasites like sea lice and diseases. Earlier sexual maturation, uneven growth within cages, and the stress from more frequent handling and treatments further adds to welfare concerns – and operational costs.

At Bio Marine, we believe that climate-driven challenges require forward-thinking solutions rooted in biology, engineering, and adaptability. Our technologies are designed to actively mitigate the effects of rising temperatures and fluctuating oxygen levels – helping the industry with climate change adaptation while safeguarding fish welfare.

#### For example, Bio Marine delivers:

- Netox® Pod delivers efficient, targeted oxygenation when and where it's needed.
- Turbolift pumps oxygen-rich, cooler deepwater into the cage environment to stabilize conditions.
- Advanced light systems help control sexual maturation, preserving growth potential and harvest quality.
- Protective skirts reduce parasite pressure and shield fish from harmful organisms.

Together, these tools not only improve daily operations, but also serve as contingency tools in increasingly unstable marine conditions. As climate change accelerates, the need for adaptive technologies in aquaculture is no longer a question of if, but how fast we respond.

#### Author:



**Solveig Haglund** Impact lead / ESG & Projects, Bio Marine

<sup>1</sup> Remen et al. (2016)



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# Feeding for the Future: Unlocking sustainability in aquaculture

If you ask the man in the street what he believes to be the largest sustainability challenges in aquaculture today, there are several recurring topics he is likely to mention. Some will highlight pollution of the local environment, many will undoubtedly mention diseases, lice and escapes, along with the accompanying impact on the local wild fish populations. If anyone considers climate gas emissions, they are probably thinking first and foremost of the direct emissions from transporting the harvested fish from farm to market. Few people are aware of the huge contribution feed has in this context. Feed contributes with a staggering 75% of the carbon footprint of salmon production. Hence, if the industry is to improve its overall footprint, this is an area where there are potentially large rewards to be made.

At Spillfree our primary goal is to improve the feeding process by helping farmers make better decisions. As a result of this, more of the feed goes in the fish and less of it ends up in the environment. This is good news for nature and climate, but the icing on the cake is that it also bolsters the farmers' bottom lines. Not only do they decrease loss by avoiding wasting of precious feed, but they also reap benefits by faster growing fish when the feed goes where it is supposed to.

The local marine environment also enjoys the benefits of better feed utilisation. Fish feed is concentrated pellets of nutrients, and when large amounts of nutrients are dropped in a relatively small area it will invariably lead to eutrophication and long-lasting negative changes to the seabed environment. This will again lead to a need for longer fallowing periods between harvest and next smolt release, so once again we see that increased environmental focus is also sensible from a business perspective.

The aquaculture industry is one of Norway's most important industries, contributing significantly to an increasing demand for healthy and nutritious food. Farming of seafood is also highly resource-efficient compared to, for instance, cattle farming, which reflects in the climate impact: the carbon footprint of beef production is more than eight times higher than that of salmon farming, as an example. The natural starting point is very good, but there are still many challenges to be met and improvements to be made, with feeding being a crucial focus. At Spillfree we are confident that we can make a difference on the journey to a sustainable future.

### **TEMPIA**

The refrigeration industry has long relied on synthetic refrigerants, such as the freon-gasses R404A and R134a, for cooling solutions in various sectors, including food preservation, fisheries, and industrial processes. However, these refrigerants have a high Global Warming Potential (GWP), ranging from 1000 to 4000 times greater than the natural refrigerant CO<sub>2</sub>. This poses a significant environmental challenge, releasing substantial amounts of harmful gases into the atmosphere.

EU regulations are actively phasing out synthetic refrigerants, emphasizing the need for climate friendly alternatives. As industries seek to align with sustainability goals, the demand for efficient and climate-conscious cooling technologies is rapidly growing. This shift presents both challenges and opportunities, particularly for industries dependent on efficient and environmentally responsible refrigeration systems such as the seafood industry.

Traditional refrigeration systems using freon-based refrigerants contribute heavily to climate change due to their high GWP. When these systems leak or are decommissioned, large quantities of harmful gases are released, significantly increasing carbon footprints. Additionally, stringent regulations are driving companies to transition to greener solutions that meet both environmental standards and operational efficiency. The need for a sustainable and efficient alternative is becoming increasingly critical.

# **Conscious Cooling:** Reinventing refrigeration for the seafood industry

Tempia offers advanced cooling, freezing, and heat pump systems based on natural  $CO_2$  technology. Designed to deliver high energy efficiency and minimal environmental impact, these systems provide a sustainable alternative to traditional systems. By choosing a natural  $CO_2$ - based system, customers can reduce their carbon footprint by eliminating between 50 and 200 tons of  $CO_2$ -equivalents over the system's lifespan - comparable to the annual emissions of dozens of passenger cars.

By embracing natural refrigerants like CO<sub>2</sub>/Tempia is not only meeting the demands for a greener and more sustainable industry but also expanding the operational range of our cooling and heat pump solutions beyond the capabilities of conventional, environmentally harmful refrigerants. This commitment to innovation ensures that Tempia's systems contribute with positive impact in the seafood value chain.

#### Author:



Magnar Olsen Impact lead / Engineer, Spillfree



#### Author:



**Trond Ingebrigtsen**Impact lead / Head of projects & production, Tempia



1 SINTEF (2019)

### cryogenetics

**Sophisticated Breeding:** An enabler of high fish welfare in aquaculture

As aquaculture scales to meet global food demand, fish welfare is under pressure. External factors such as rising temperatures and disease threaten the health of farmed fish. At the same time, biodiversity loss is accelerating, with wild fish populations at risk from habitat disruption diseases and climate change.

Cryogenetics addresses both challenges through the innovative approach in cryopreservation and sophisticated breeding.

Using cryopreserved milt, Cryogenetics enables flexible, year-round breeding that supports fish health. This removes the need to synchronize the sexual maturity of male and female fish, enabling precise and flexible breeding strategies. Our technology allows farmers to integrate genomic selection for traits like faster growth, disease resistance, and robustness - leading to:

- Reduced mortality
- Fewer treatments and interventions
- Shorter grow-out cycles and less stress for fish

One study<sup>1</sup> showed a 3 kg growth gain over 11 salmon generations. By 2050, this could cut seawater grow-out time by up to 53%, reducing exposure to parasites and time the fish impacts the surroundings, in addition to significantly higher profitability.

Cryogenetics also operates gene banks in Norway and Canada, preserving wild fish genetics as a safeguard against future disruption. These genetic reserves enable the reintroduction of native species and protect the long-term health of aquatic ecosystems.

#### Our tools offer strategic value:

- Scalable innovation: Cryopreservation enables predictable, high yield breeding strategies aligned with genomic technologies.
- Reduced biological risk: Healthier, fast-growing fish reduce mortality rates and treatment costs.
- Sustainability leadership: Cryogenetics supports biodiversity and long-term resource security key to regulatory compliance and industry reputation.
- Future-focused growth: Data-backed projections show strong potential for productivity gains in the global aquaculture market

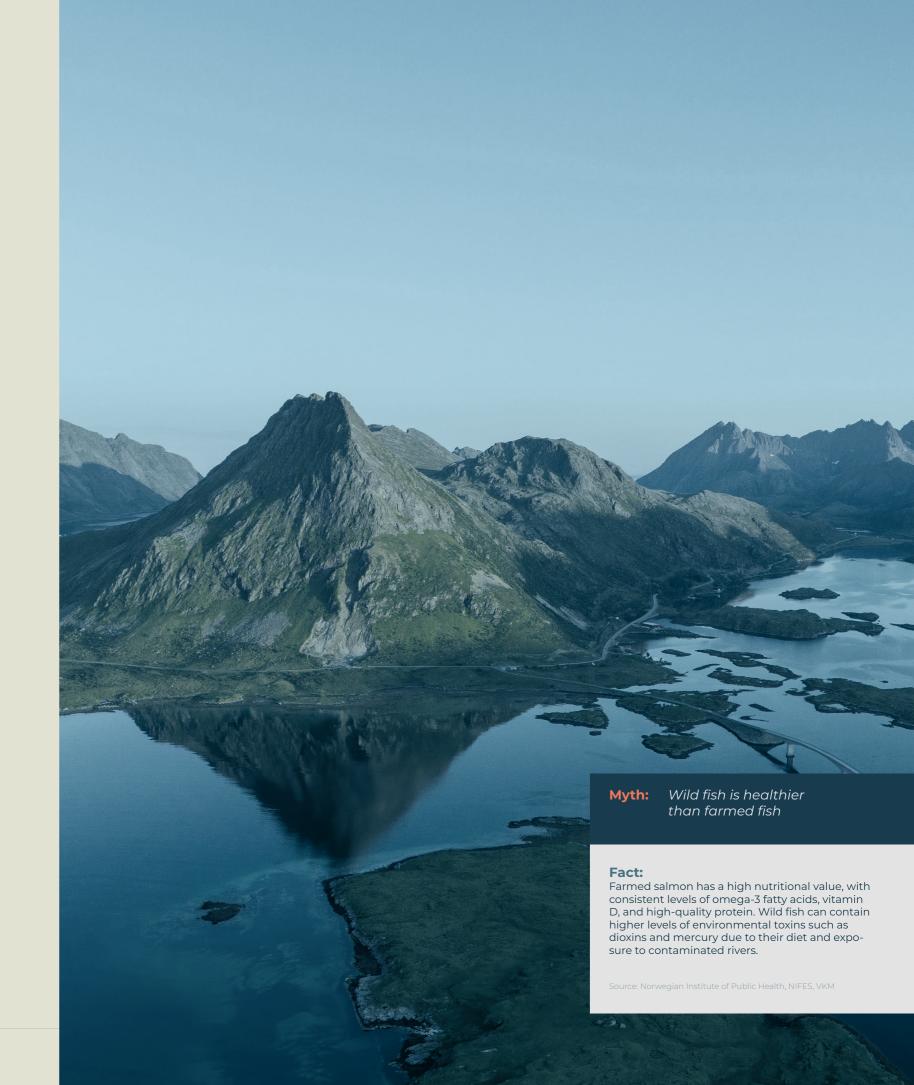
Cryogenetics is at the intersection of biotechnology, aquaculture, and sustainability - delivering tools that drive both biological resilience and economic growth.

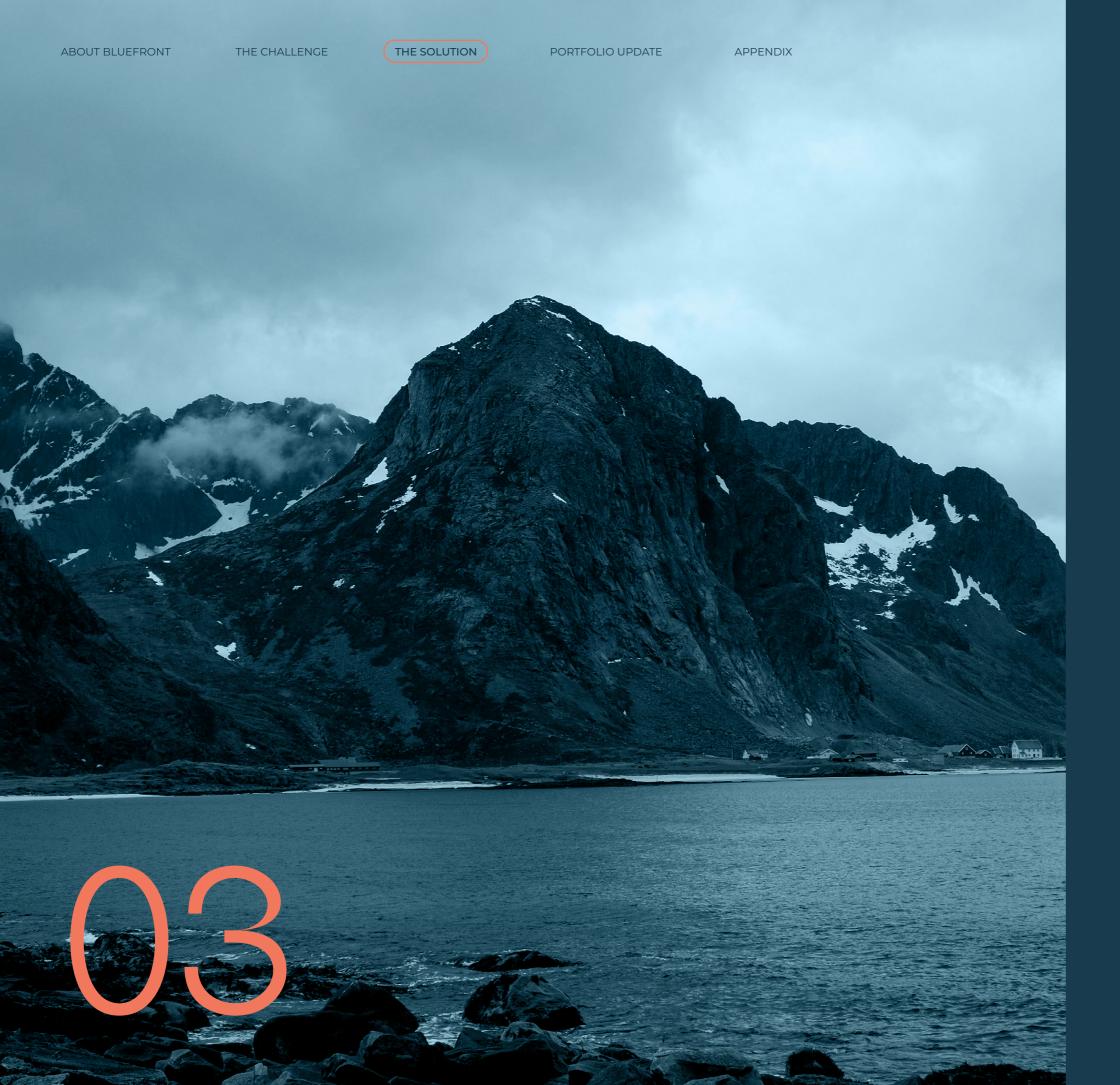
#### Author:



**Eli Sætersmoen** Impact lead / CEO, Cryogenetics

1 The Power of Genetics: Past and Future Contribution of Balanced Genetic Selection to Sustainable Growth and Productivity of the Norwegian Atlantic Salmon Industry – Næve et al





# The Solution

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# Our investment strategy

We target growth-oriented companies shaping the future of the seafood industry. Companies with innovative products, services, and technologies are key to addressing the industry sustainability challenges.

Our investment focus is on small to medium-sized enterprises (SMEs) where we can utilize our unique sector specific approach to drive financial returns and positive impact. Central to our investment strategy is the pursuit of collaborative partnerships with management and founders of the companies we invest in, creating a shared vision for success and sustainability in the seafood industry.

We offer our portfolio companies deep sector-specific knowledge, decades of private equity experience, extensive impact expertise and capital to unlock the companies' full potential.

We search for companies contributing to a sustainable seafood industry



**Profitable companies** 



Impact angle



Growth over time



Ability to innovate



History

Sustainability in the value chain

To be able to accelerate growth: Energy- and water efficiency

To be able to scale operations: Fish health and ocean health

# Impact investing to solve the challenge



For Bluefront, investing for impact and financial returns go hand in hand.

Impact Report 2024

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Bluefront has a holistic approach to impact investing through a focus on impact potential and addressing ESG risks for: our existing portfolio, new investment processes and Bluefront as a whole.

Impact investing is defined as «investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return» (GIIN¹).

Bluefront invests in companies that have the intention of creating a positive impact for the seafood value chain through their business model, which aligns profit and purpose.

The impact thesis is based on the theory of change framework that highlights how to identify the root causes and how these influence each other to be able to understand, quantify and measure impact (see Appendix). In addition, addressing ESG topics ensures that we and our portfolio companies are transparent, compliant and future proofed to be able to impact the future of aguaculture

#### What is the difference between ESG and impact?

ESG and impact are related concepts, with different viewpoints, both of which are highly relevant and important for our investment strategy. ESG embraces the effects a company's operations have on the surrounding world, while impact focuses on the intention of the company to generate positive environmental and/or social effects through its business model.



# Environmental, Social & Governance (ESG)

Environmental, Social & Governance (ESG) topics focus on the internal operations of the company and include the value chain effects. ESG reporting measures and quantifies the effects.

- Focus on operations
- Outside-in perspective



#### Impact

Impact is the intention to generate positive, measurable environmental and/or social impact through the business model of a company.

- Focus on product / service
- Inside-out perspective

es	Environment	
Example	Emissions	

#### Social

Talent & Organization Transparency

Governance

#### **Impact**

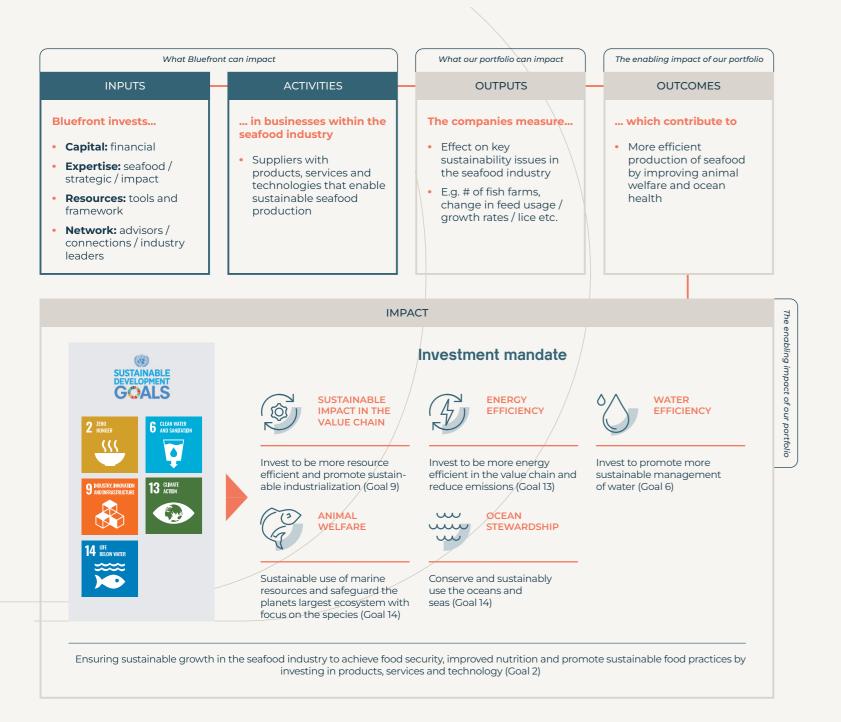
Positive effect of products

Bluefront is an impact investor that integrates ESG topics in all processes.

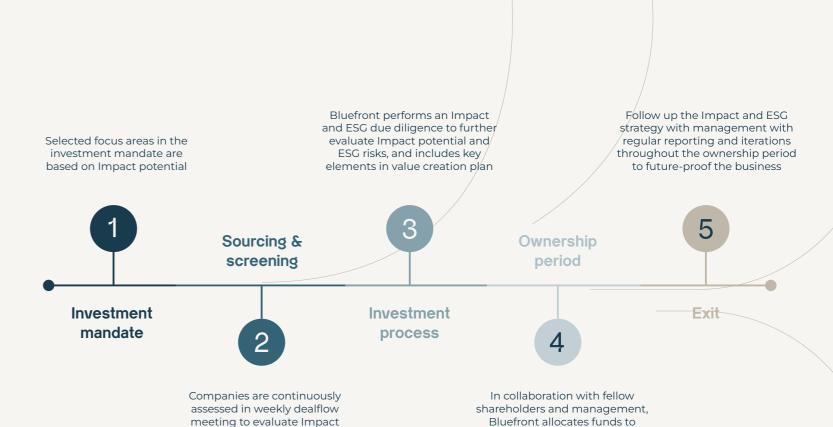
GIIN = Global Impact Investing Networ

ABOUT BLUEFRONT THE CHALLENGE (THE SOLUTION) PORTFOLIO UPDATE APPENDIX

# Our Theory of Change



### Integrating ESG and impact in our investment process



develop and implement the Impact and ESG strategy

potential and ESG risk



ABOUT BLUEFRONT THE CHALLENGE



PORTFOLIO UPDATE

APPENDIX

#### Investment mandate

We focus exclusively on the seafood sector, targeting companies with the potential to solve key sustainability challenges in the value chain. Our investment themes—such as ocean health, fish welfare, and resource efficiency—are selected based on impact potential and aligned with the UN Sustainable Development Goals (SDGs).

#### Sourcing & Screening

As an industry specific investor, we only target companies in the seafood industry that offer products, services or technologies that have the potential to contribute to a more sustainable seafood value chain. We apply our impact framework early in the process to assess potential investments. Each opportunity is evaluated weekly in a dealflow meeting for:

- Impact potential and SDG alignment
- Material ESG risks and maturity

Only companies offering scalable solutions for a more sustainable seafood system move forward.

3

#### **Investment process**

#### Due diligence phase

During due diligence, the impact potential hypothesis is further developed with associated impact metrics. This process ensures that impact considerations are at the core of our investment thesis. The material ESG risks are also addressed, including a definition of mitigating actions. In addition, legal requirements related to ESG issues are carefully considered, such as environmental permits and licenses among others.

Steps in the due diligence phase include:

- Impact and ESG due diligence to identify impact opportunities and ESG risks
- Definition of Theory of change to define impact with associated impact metrics
- Comprehensive ESG questionnaire to map ESG maturity at target company
- Legal requirements related to ESG

#### Investment decision

Findings from the impact and ESG due diligence are addressed and discussed by the Investment Committee. This ensures that the strategic impact potential and ESG risk mitigation are central to the investment decision. Results from the ESG questionnaire are cross-checked with Bluefront's investment mandate, and each new platform investment is subject to a review by a Compliance Committee. The due diligence findings and assessments are included in the development of each portfolio company's initial Impact & ESG strategy. The initial Impact & ESG strategy includes the alignment with the Sustainable Development Goals (SDG). The strategy is further adjusted and finalized together with management and co-owners. Findings, combined with the Impact & ESG strategy and allocation of growth capital for strategy implementation, are then included as a central part of the overall investment decision. At the time of the investment decision, impact metrics are anchored.

4

#### Ownership period

Our ESG and impact onboarding process begins with anchoring and implementing the strategy developed during the investment process. The first phase of the implementation includes finalizing the impact metrics for the company with concrete targets. This starts by calculating historical values to establish a meaningful baseline. Both a short-term and a long-term target is set for each KPI, and initiatives needed to reach these targets are adopted by the Board of Directors (BoD) and communicated to the company's employees. Management with support from the BoD are responsible for securing sufficient resources and competence to execute on the strategy. Impact and ESG are standard agenda item at all board meetings, ensuring frequent updates and adjustments to the strategy as needed.

The chosen KPIs for both ESG and impact are reported on by the company quarterly through our chosen ESG reporting software. This tool streamlines the reporting and enables benchmarking of

the results with other similar companies, both within and outside Bluefront's portfolio.

As part of the ESC and impact onboarding process, Bluefront also assists portfolio companies with standard governance documents, such as Code of Conduct, ESC policy, Anti-corruption policy, Whistleblower policy, GDPR policy, and instructions for the CEO and the Board of Directors.

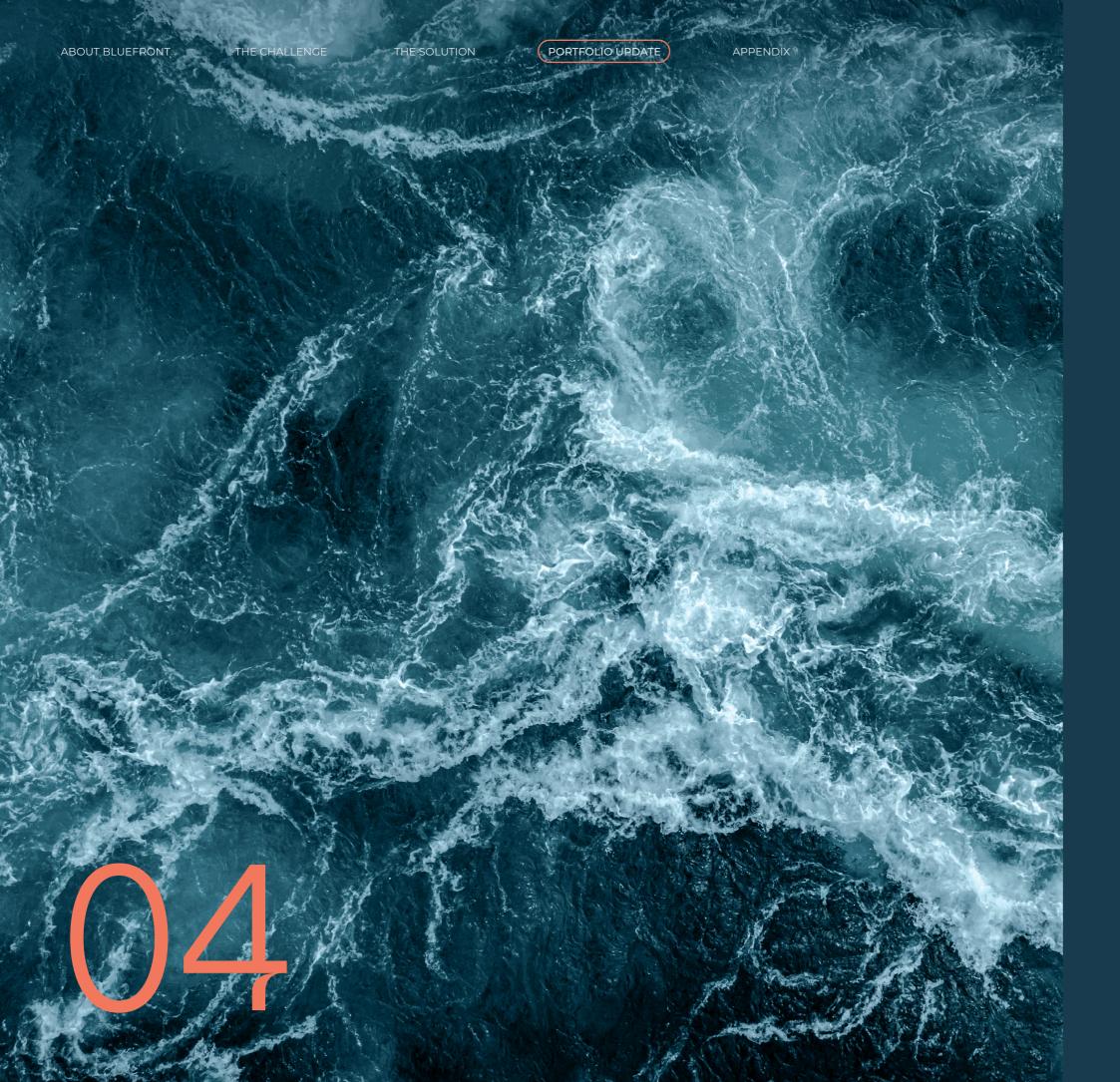
#### Continuous improvement

Bluefront, alongside our portfolio companies, continuously develops our Impact framework. At least annually, the BoD will address the overall strategy in each portfolio company, analyze potential new risks and opportunities and assess them accordingly.

5

#### Exit

Our ambition is to have a proven high impact potential and full control over potential ESG risks prior to exiting an investment in order to enhance value creation going forward. Together with the company's management, Bluefront evaluates the impact and ESG performance during the holding period by revisiting the initial strategy, comparing it with the adjusted strategy at exit, and concretizing key takeaways. This process equips the company with the knowledge needed to further improve its impact and ESG efforts.



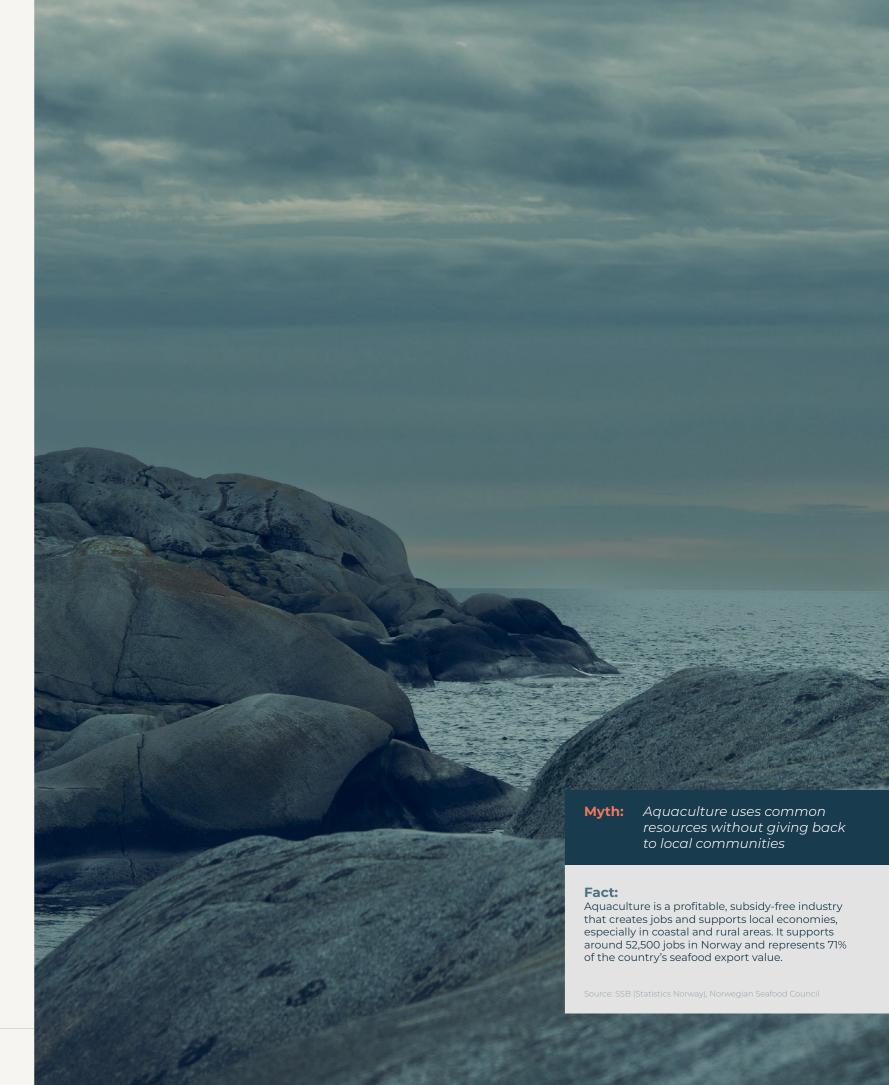
# Portfolio Update

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# Bluefront portfolio overview

COMPANY	MANDATE ALIGNMENT	KEY INDUSTRY CHALLENGE	CONTRIBUTION
Akva@safe	Traceability and sustainability	Operational failures can cause biological risks in case of incidents and fish escapes	Escapes at sites certified by Akvasafe
<b>≋</b> BioMarine	Fish and ocean health	Challenges with fish welfare and ocean health in the surrounding environment	species in 20 countries benefited from improved fish welfare
RedO <sub>3</sub> x	Hygiene	Water quality is crucial for fish welfare, but there is a lack of professional hygiene systems, and the use of harmful chemicals is still frequently used to disinfect	ozone generators delivered for chemical-free water disinfection
SEAQLOUD	Digitalization and automation	Lack of operational efficiency and control of the fish farms affects the fish welfare	6792 active data measuring points that enable higher efficiency and control
SPILLFREE 🗞	Digitalization and automation	70% of the carbon footprint per kg salmon comes from the feed	93 production sites have had optimization of their feed usage.
TEMPIA	Quality	Use of natural refrigerants in HVAC is needed to move away from harmful synthetic refrigerants	4.9M kg Co2e in actual avoided emissions
cryogenetics	Fish welfare	Fish welfare and biodiversity is a top priority for fish farmers and stakeholders, particularly because of the fish welfare potential that lies within genetic optimization	121 490 SquarePacks frozen that enable sophisticated breeding
HORIZON	Sustainability in the value chain	There is a lack a tools for making informed decisions to optimize the fish welfare.	602 000 tons of biomass has benefited from data-driven decision making



PORTFOLIO UPDATE ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION **APPENDIX** Impact Report 2024

# Akvasafe



Bluefront ownership

66%

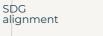
employees

26

Number of

2012

Founded



Akva safe

sustainable production

Impact summary:

Traceability and sustainability

competence to their customers.

Inspections and certifications in aquaculture farming

Akvasafe aims to ensure a safer and more sustainable aguaculture industry, by providing interdisciplinary

systems contribute to moving the industry towards

Mandate:









#### **About**

Bergen

Akvasafe delivers inspection, engineering and certification services to sea and land-based fish farmers and product manufacturers to ensure safe biological and operational production. Akvasafe is accredited by the Norwegian Accreditation as an independent inspection, product certification and system certification body, and laboratory for interpretation of environmental conditions.

#### Akvasafe's services contribute to a positive impact for their customers with regards to:

- Product lifetime
- Reducing the risk for fish escapes
- Seabed quality
- Regulatory compliance
- HSE in operation
- Certification of responsible aquaculture (ASC)

#### Why Akvsafe?

- Independent third-party verifications represent a stable and non-cyclical market (licence to operate).
- Akvasafe is a leading technical auditor for the aquaculture industry located in the western Norway.
- Significant growth opportunities from national expansion and movement into environmental auditing, which is becoming increasingly important in light of ESG and the focus on limiting negative effects on the ocean health.

The platform investment also includes Sematek. They are an independent test and inspection company specializing in products and material technology services for the aquaculture industry. With over 40 years of expertise they deliver solutions such as wave dampers and sensor-based monitoring systems.



### **Impact**

### Key industry challenge

#### Theory of change

#### INPUTS

- **Expertise:** Competent team within engineering, environmental services and certification
- Technology: Independent technical expertise and accredited certification systems
- **Tools:** Environmental monitoring services and tools
- Partnerships: Close collaboration with relevant players such accreditation organs

#### **ACTIVITIES**

- Conduct inspections and certifications of aquaculture sites and equipment
- Deliver environmental surveys and site assessments

#### OUTCOMES

- Reduced fish escapes and genetic pollution
- Improved seabed and ocean health
- Increased adoption of responsible farming practices
- Scalable solutions for global aquaculture markets

#### **KPI**



fish escapes from sites certified



species across 3 countries benefited from Akvasafe's products and services

#### OUTPUTS

- Certified and compliant aquaculture operations
- Reliable environmental data and risk assessments



#### IMPACT

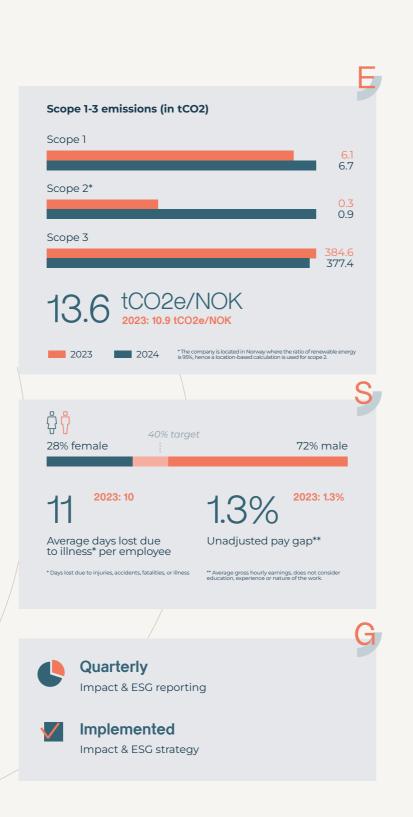
A safer and more sustainable aquaculture industry, supporting ocean health and surrounding biodiversity.

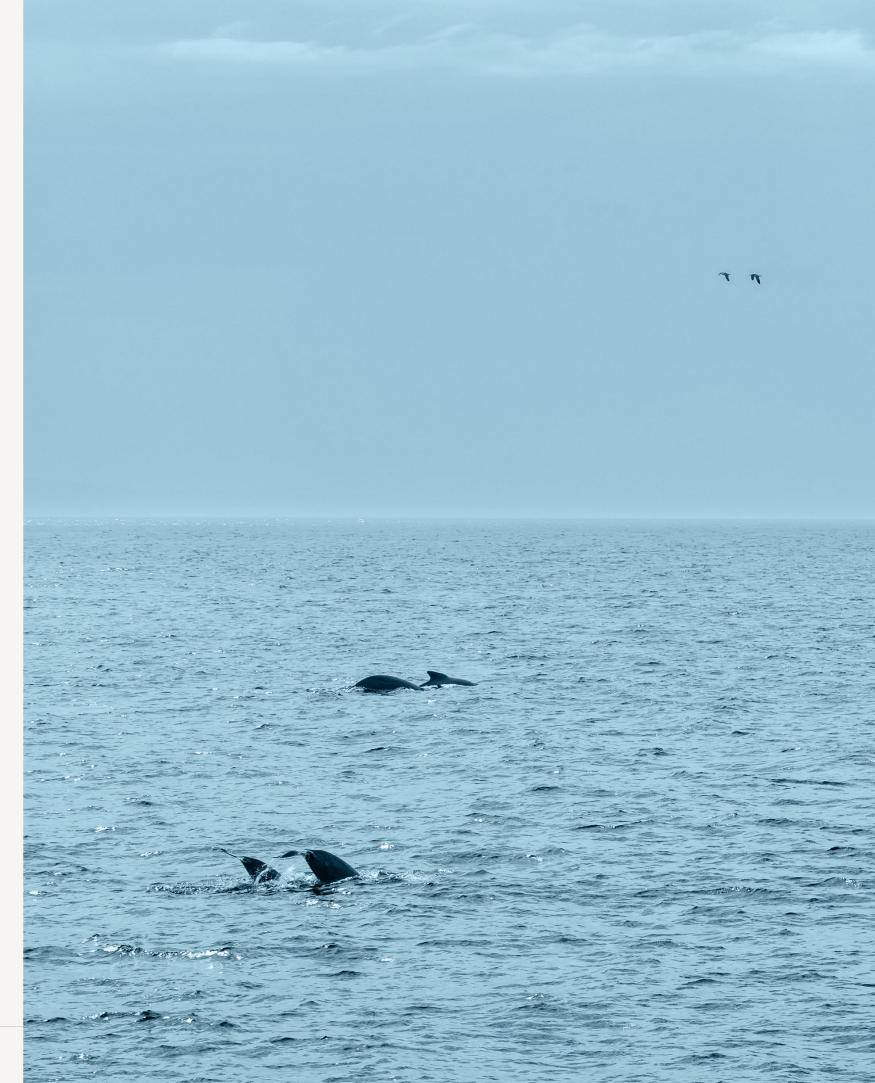
- Akvasafe expanded environmental services to 14 customers, reflecting increased demand for ocean health data.
- Maintained zero fish escapes at certified sites, protecting wild salmon stocks.
- Technical auditing supported development of advanced farming systems crucial for ocean health.
- Added marine biologists and an oceanographer to strengthen environmental expertise.
- Implemented new quality system (EQS) to ensure consistent safety and sustainability standards.



#### Focus for 2025

- Advance environmental services and Ocean Dynamics, including seabed, current measurements and 3D modelling, to support responsible site management and ocean health.
- Support transition to new production forms (e.g. closed and deepwater systems) by tailoring verification and engineering services to evolving regulatory needs.
- Continue zero-escape performance, positioning Akvasafe as a key enabler of safe and responsible aquaculture growth.





PORTFOLIO UPDATE **APPENDIX** ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION Impact Report 2024

# Bio Marine



HQ

Bluefront ownership

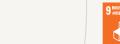
62%

30

employees

Number of

Founded 2000



• A good and stable water environment is key to reduce mortality

• Bio Marine holds market leading positions in oxygen distribu-

tion and circulation systems, water circulation and light man-

• Substantial growth opportunities from closed and semi-closed

aquaculture systems and aquaculture of other species than

Ideal oxygen conditions and light management sys-

tems contribute to better animal welfare, increased

Bio Marine aims to create ideal aquaculture conditions that improve animal welfare and ocean health, in addition to accelerate growth and reduce mortality.

**₩**BioMarine

Fish and ocean health

Impact summary:

growth and reduced mortality.

Mandate:

alignment

Why Bio Marine?

agement systems.

and optimize growth conditions.







#### **About**

Surnadal

Bio Marine develops and markets products and systems that ensure a good environment and safety for farmed fish, with particular emphasis on oxygen supply, water circulation, environmental monitoring and lighting. Bio Marine's business idea is to develop technology and solutions that make it easy to ensure optimal environmental conditions and safety for the fish, both for traditional aquaculture and new emerging forms.

Bio Marine's products contribute to a positive impact for their customers with regards to:

- Fish welfare and reduced mortality
- Optimized biomass growth
- Healthier net pen environments
- Reduced environmental impact

## Impact

#### Key industry challenge

#### Theory of change

#### INPUTS

- **Expertise:** Competent team within pen environment for aquaculture
- **Technology:** Advanced products for aquaculture including lights, oxygen solutions, skirts and sensors
- Resources: Applied aquaculture engineering and R&D expertise
- Partnerships: Circularity mindset and partnership

#### **ACTIVITIES**

- Delivering integrated systems that improve fish welfare (lights, oxygen, skirts, sensors)
- Running R&D programs targeting critical health challenges like sea lice, oxygen level and energy efficient lighting
- Supporting the transition to closed and semi-closed systems
- Initiating sustainability and circularity efforts

#### OUTCOMES

- Higher fish survival and reduced disease/mortality
- Improved water quality and net pen conditions
- Scalable solutions for emerging global aquaculture

#### **KPI**

species across 20 countries benefited from Bio Marine's products and services

#### OUTPUTS

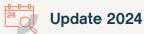
- Installed welfare-enhancing technologies at aquaculture sites
- Innovation based on research and development

KPI

active R&D

#### IMPACT

Improved fish welfare and healthier marine ecosystems through integrated solutions that enable responsible and sustainable aquaculture.



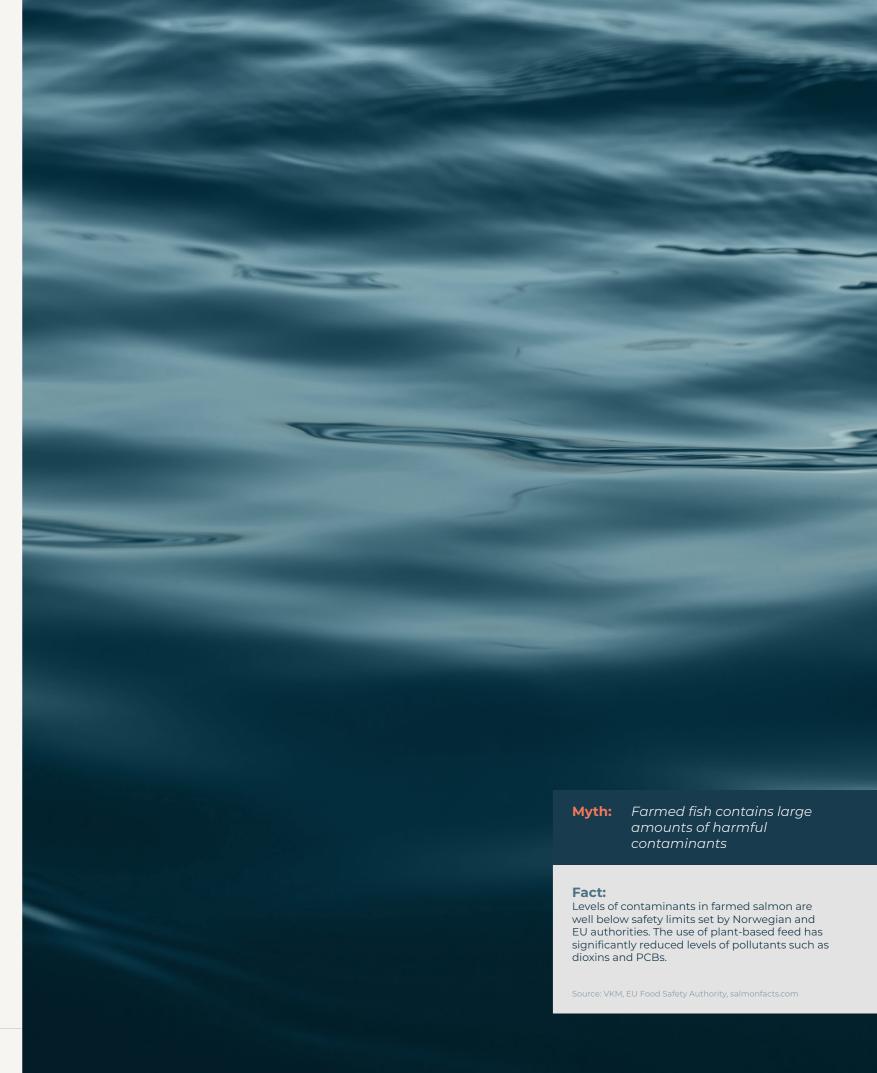
- Strong growth with ~45% increase in 2024, driven by demand for lice skirts and the proprietary Turbolift solution.
- Bio Marine delivered over 50 skirts against sealice to solve one of the key fish welfare challenges
- Skirts now addressing challenges from new predators like jellyfish, expanding application scope.
- International orders reflect the scalability and export potential of their offerings.
- Initiated an Environmental Product Declaration (EPD) and a circular partnership with Nofir to recycle old skirts.



#### Focus for 2025

- Maintain momentum in circularity, supplier verification, and environmental transparency initiatives.
- Scale and streamline skirt production
- Advance light systems by delivering energy-efficient solutions, extending product lifespan, and deepening biological research for optimal light use.
- Continue innovation through development of new technologies and submission of patent applications
- Strengthen organizational infrastructure, including new HR software and ESG reporting and internal process improvements.
- Prepare for market expansion to the UK and Chile
- Deliver climate adaptation tools to address rising sea temperatures, such as deepwater lifting systems for cooler, oxygen-rich water. This will be updated backed by scientific research from an NMBU master's thesis.





ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION PORTFOLIO UPDATE **APPENDIX** Impact Report 2024



HQ

Bluefront ownership

81%

38

Number of

employees

2004

Founded



RedO<sub>x</sub>

Mandate:

Hygiene

Impact summary:



Hygiene systems ensure higher water quality and fish

contributes to reduced use of chemicals and improves

welfare. In addition, the use of ozone as disinfectant

Redox aims to improve animal welfare, strengthen biosecurity and reduce chemical usage, through delivering environmentally friendly hygiene solutions.

biosecurity in the seafood value chain.







#### **About**

Averøy

Redox is a total supplier of solutions for regulating water quality to the fisheries and aquaculture industry. The company has 20 years of experience as a leading supplier of technology and equipment within fish welfare and biosecurity for well boats. In recent years Redox has also invested in solutions for land-based facilities and closed cages. Redox' solutions ensure optimal conditions for good growth and water quality, in addition to increased biosecurity.

#### Redox's products contribute to a positive impact:

- reduces the harmful waste in the water as the only by-product of ozone is oxygen
- Production of oxygen on site instead of purchasing individual tanks with up to 98% due to reduced transportation

## **Impact**

#### Theory of change

#### INPUTS

- **Expertise:** Competent team with ozone and oxygen
- **Technology:** Ozone and oxygen software generation technology
- Resources: R&D in hygiene, water quality, and biosecurity in addition to engineering and commissioning expertise
- Partnerships: Strong industry partnerships and long-term customer relationships

#### **ACTIVITIES**

- Designing and delivering ozone and oxygen systems for sea- and land-based aquaculture
- Promoting on-site oxygen production to reduce transportrelated emissions
- Conducting R&D to reduce chemical use and support sustainable hygiene solutions
- Supporting industry transitions to cleaner operations with higher biosecurity

#### OUTCOMES

- · Improved fish welfare and biosecurity
- Reduced use of harmful chemicals in aquaculture
- Lower operational emissions through reduced transport needs for onsite oxygen
- Greater hygiene system adoption in land-based and well-
- Scalable solutions for global aquaculture markets

#### **KPI**



species across 9 countries benefited from Redox's products and services

#### OUTPUTS

- Øzone generators delivered for chemical-free water
- Oxygen generators delivered for on-site oxygen
- Active R&D programs supporting sustainable aquaculture

CO2 reductions by producing oxygen on site vs purchasing with transportation

ozone generators delivered

#### IMPACT

Cleaner water and healthier fish through environmentally friendly hygiene systems that replace harmful chemicals, reduce emissions, and enhance biosecurity across the seafood value chain.

- Use of ozone instead of chemicals like chlorine for disinfection
- that need to be transported to site. This change reduced emissions

#### Why Redox?

- Hygiene systems in seafood are underdeveloped in all parts of the value chain.
- Redox holds a strong position in delivery of environmentally friendly biosecurity systems, particularly through its unique in-house ozone competence and oxygen experience.
- Current product offering yields strong growth prospects in closed aquaculture systems and land-based industries.

- Strong growth in both land-based and service segments, including several new project wins.
- Awarded the Veolia Innovation Award 2024 for innovative ozone-based hygiene systems.
- Ongoing expansion of ozone applications to reduce chemical use and improve water quality.
- Ongoing development of Ecomode for more efficient energy usage controlling oxygen generators.
- New CEO appointed and two service technicians hired to support increased activity and future growth.
- Increased order intake for land-based segment and strong service capacity maintained across core markets.
- Focus on standardizing products and workflows creating structure capital for optimal utilization of resources.

### Focus for 2025

- Expand clean hygiene technologies across aquaculture and food production.
- Strengthen ESG practices and increase R&D to support impact
   at scale
- Focus on standardizing projects and deliveries for efficient capacity utilisation





ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION PORTFOLIO UPDATE **APPENDIX** Impact Report 2024

# Seagloud



Bluefront ownership

52%

employees

23

Number of

2014

Founded

SDG

alignment

Why Seagloud?

average spend for other/industries.

SEAQLOUD

Impact summary:

Digitalization and automatization

profitable aquaculture environment.

Data aggregation enables informed decision-making,

ing resources, and ultimately reducing emissions.

enhancing the safety and quality of operations, optimiz-

Seagloud's dual focus on efficiency and accessibility of

data is key to fostering a safer, more sustainable and

Digital transformation is ongoing across industries and aqua-

• Seagloud holds a market leading position within infrastructure

• Significant value creation opportunities through collecting and

providing more reliable data to the aquaculture industry.

software such as technical and environmental data.

culture is significantly lagging in digital spending compared to

Mandate:







#### About

Trondheim

Seagloud is a software company delivering a variety of solutions, including cloud services and equipment (sensors) to different parts of the salmon farming industry (i.e., salmon farmers, service vessels. well boats etc.).

The company offers cloud services displaying operational datasets such as weather data and environmental data to both salmon farmers and vessel operators. Seaqloud also offers vessel integration including analysis of overall operational performance onboard. The company also provides its customers with full overview of the technical standard of the facility and/or the associated vessel fleet. They offer business systems for service vessels, including invoicing, documentation, timebank, crew calendar, etc.

#### Seagloud's products contribute to a positive impact for their customers with regards to:

- improved operational efficiency
- better decision-making
- enhanced fish welfare
- reduced environmental footprint

### **Impact**

#### Key industry challenge

#### Theory of change

#### INPUTS

- Expertise: Competent team within data gathering and
- Technology: Data integration platform enabling realtime decision support.
- Tools: Data gathering through sensors for environmental and operational monitoring and location buoys to enable data collection in remote or submersible settings.
- Partnerships: Collaborative approach with clients and other stakeholders

#### **ACTIVITIES**

- Delivering software to consolidate and analyse production data
- Delivering sensor-based systems and location buoys
- Engaging in co-development with customers through regular feedback loops
- Verifies that the facility is compliant with applicable regulations and identifies any need for certification and upgrades.

#### OUTCOMES

- Improved fish welfare via enhanced visibility and control of environmental and operational parameters
- Reduced emissions, especially from reduced site visits using remote data tools
- Higher operational efficiency, supporting sustainable growth
- Scalable solutions for global aquaculture markets

- for the fish health • Delivering location buoys to reduce site visits and
- emissions
- Ensuring sites are safe for operations both in terms of fish and humans

OUTPUTS

• Enabling data consolidation to make better decisions

Quality controls

#### **KPI**



species across 5 countries benefited from Seagloud's products and services

#### **IMPACT**

A safer, more sustainable, and efficient aquaculture industry through data-driven technologies that improve fish welfare, reduce emissions, and support responsible production.



#### Update 2024

- Seaqloud achieved 21% revenue growth, driven by demand for data-driven solutions and expanded use of sensors, supporting smarter and more efficient aquaculture operations.
- The company continued testing its sea current sensor buoys, enabling real-time environmental data collection while reducing site visits and related emissions.
- Supplier sustainability remained a priority, with continued emphasis on third-party environmental certification.
- Seaqloud retained its Eco-Lighthouse certification, reinforcing its commitment to environmentally responsible operations.

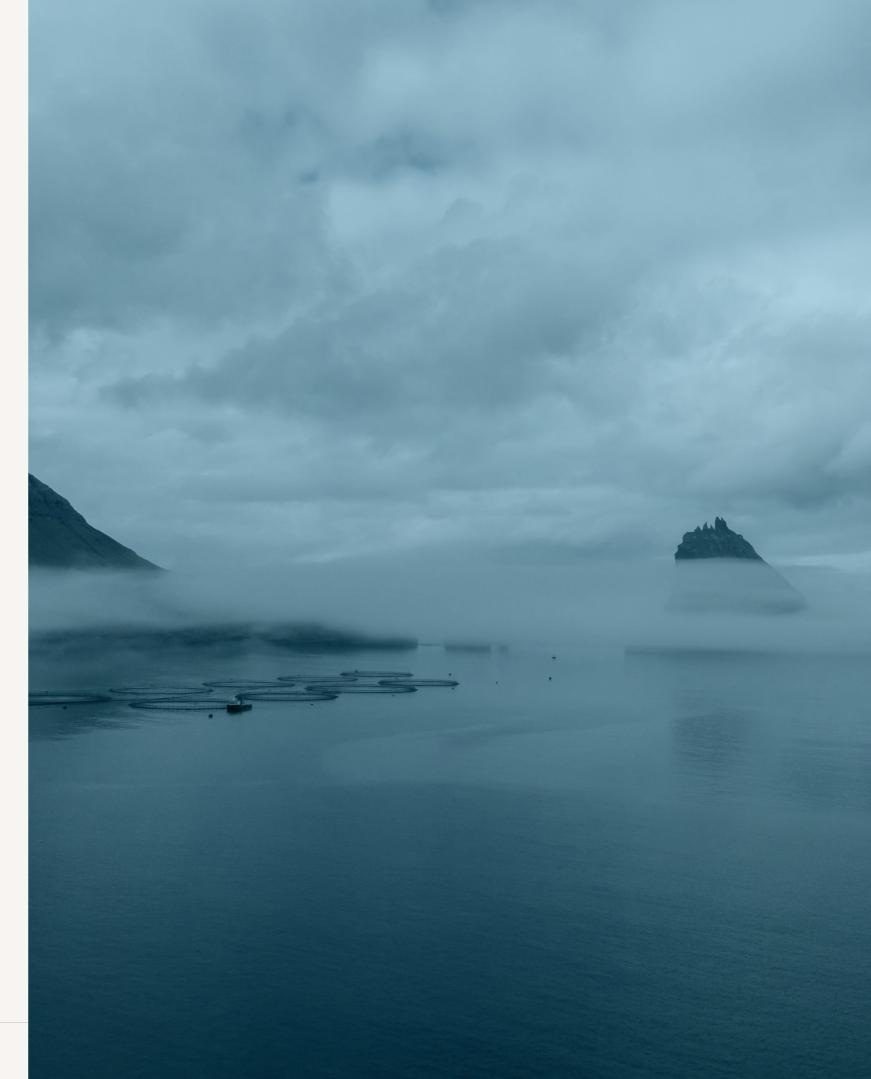


#### Focus for 2025

- Finalize and scale up real-time data solutions like the location buoy to reduce emissions and support emerging offshore production technologies.
- Expand collaboration with environmentally certified suppliers.
- Improve software functionality related to sensor data to improve decision support related to the production of fish in the sea.



PORTFOLIO UPDATE



ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION PORTFOLIO UPDATE **APPENDIX** Impact Report 2024

# Spillfree



HQ

Bluefront ownership

60%

12

Number of

employees

2016

Founded



Feeding represents ~50% of the cost and 75% of the carbon

growth, reduced mortality and emissions.

footprint for the farmer, and optimizing the feeding is key for

Spillfree holds a market leading position as a software company

delivering analyses and decision support tools for optimizing

• Large market adoption potential with a very low portion of the

aquaculture industry using software and AI to optimize their

SPILLFREE 🚫

Impact summary:

alignment

Why Spillfree?

feeding performance.

feeding today.

Digitalization and automatization

reduce feed spill and improve efficiency

spill and thereby increase ocean health

Aggregating and analyzing feeding data to enable

data driven decision-making for feeding operations to

Spillfree's aim is to enable optimal feeding which will reduce emissions, improve growth rates, reduce feed







#### **About**

Trondheim

Spillfree is a top layer software company delivering analyses and decision support tools for optimizing feeding performance. The company uses video, data analysis, and artificial intelligence to explain the fish's reaction to feed in different situations. This enables fish farmers to make better decisions resulting in reduced feeding cost, improved biological growth and reduced impact on the surrounding marine environment.

#### Spillfree contributes to a positive impact for their customers with regards to:

- Feed efficiency: reducing feed waste and improving growth
- Ocean health: minimizing overfeeding and feed spillage that has an environmental burden on local ecosystems
- Upskilling and awareness on feed as a material sustainability topic in aquaculture

# **Impact**

#### Key industry challenge

#### Theory of change

#### INPUTS

- Expertise: Competent team with feeding, Al and data
- Technology: Delivering analysis based on data and developing AI tool
- Tools: Educational tools such as the e-learning platform
- Partnerships: Partnerships with research institutions

#### **ACTIVITIES**

- Deliver feeding optimization services to fish farming
- Develop and implement AINA, a real-time AI platform for feed optimization
- Conduct research projects (e.g., OptiVekst) to reduce feed spill and improve growth
- Host feeding seminars and deliver digital training for industry stakeholders

#### OUTCOMES

- Reduced feed waste and local environmental footprint
- Increased efficiency and fish growth through precise
- Upskilled industry professionals on feed optimization
- Strengthened positioning as a sustainability leader in Al for aquaculture
- Scalable solutions for global aquaculture markets

#### KPI



species across 2 countries benefited from Spillfree's products and services

#### OUTPUTS

- Feed optimization to increase fish welfare and growth and reduce impact on the environment
- Deployment of AINA for optimized feeding
- Delivery of seminars and e-learning tools
- Internal implementation and external piloting of AINA
- Increased awareness of Al's role in sustainable aquaculture

#### **KPI**

production sites where feeding is being optimized

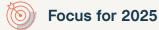
participants at

#### IMPACT

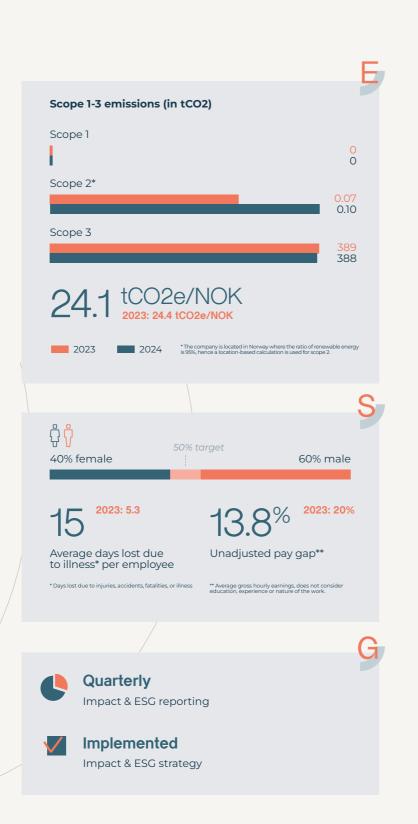
A more sustainable and efficient aquaculture industry through data-driven feeding practices that reduce emissions, minimize spillage, and support ocean health.

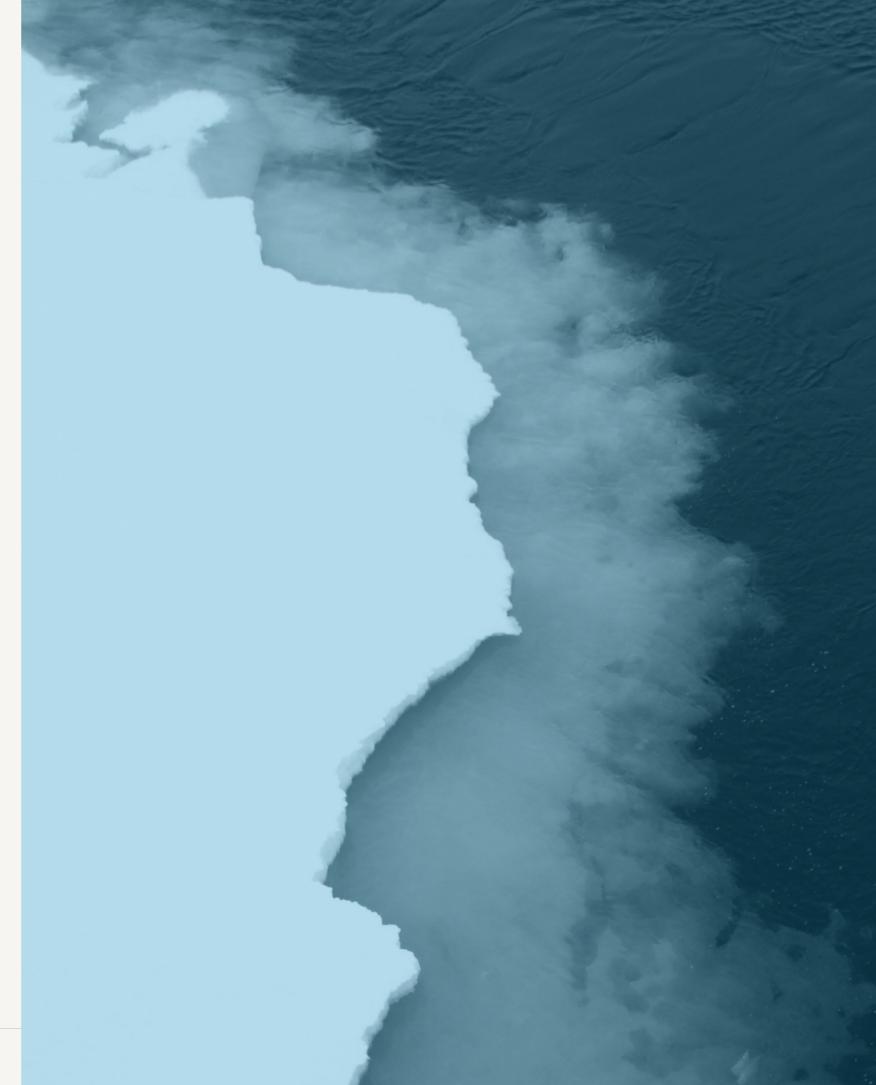
### Update 2024

- Spillfree advanced the AINA platform to further optimize feed to reduce feed waste and improve sustainable feeding, with pilots underway and internal use launched.
- Continued focus on knowledge sharing through a feeding seminar with 100+ participants and strengthened in-house tech capacity.
- Organizational streamlining supports more sustainable operations and prepares for broader rollout.



- Launch AINA to clients, enabling precision feeding and reduced environmental impact.
- Expand training and seminars to support industry-wide upskilling on feed optimization.
- Continue developing software modules improving their client's feeding performance





ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION PORTFOLIO UPDATE **APPENDIX** Impact Report 2024

# Tempia



HQ

Bluefront ownership

60%

employees

35

Number of

2012

Founded



gy efficient natural refrigerant solutions.

Adoption of natural refrigerant systems contributes to

reducing overall GHG emissions. For food production,

an efficient cooling system prolongs a product's lifetime

Tempia's aims to minimize the environmental footprint from the refrigerant industry through deliveries of ener-









#### **About**

Svolvær

aftermarket revenue.

### Tempia's products contribute to positive impact for the seafood

- Using the natural refrigerant CO2 for heating and cooling solutions,
- a refrigerant has zero Ozone Depletion Potential (ODP) and a Global Warming Potential (GWP) of 1 which is significantly lower than for
- Enhancing operational reliability and efficiency, supporting sus-
- safeguard product quality, extend shelf life, and reduce food waste.

# **Impact**

#### Key industry challenge

#### Theory of change

#### **INPUTS**

- **Expertise:** Strong internal team within engineering and **R&D** capabilities
- Technology: Patented CO<sub>2</sub>-based systems for heating, chilling, and freezing
- Infrastructure: Aftermarket hub and sales outreach
- Partnerships: Collaborations for product certification and R&D

#### **ACTIVITIES**

- Manufacture and deploy CO<sub>2</sub>-based heat, chiller, and freeze systems
- Conduct R&D with for example tropical condition testing and pursue H-modul certification
- Document avoided emissions from client installations

#### OUTCOMES

- Increased adoption of low-emission cooling technologies
- · Reduced emissions for the industry
- Scalable solutions for global aquaculture markets

species across 6 countries benefited from Tempia's products and services

#### OUTPUTS

- Commercial deployment of climate-smart cooling and heating systems
- Product certification and IP development



CO2 PRO sold

new patents granted

#### **IMPACT**

A greener HVAC industry through scalable, low-emission alternatives to harmful refrigerants -reducing climate impact in the seafood industry.

Tempia is one of few companies producing and delivering patented products using the natural refrigerant CO2. The company delivers cooler-, freezer-, and heater solutions to clients within the marine and industrial markets, where around 80% is seafood related revenue. Tempia is experiencing growing service and

Tempia has a market leading position in the seafood market in the northern part of Norway when it comes HVAC solutions.

### industry through:

- instead of traditional synthetic refrigerants such as freon
- Natural refrigerants are energy efficient and reduce costs, and CO2 as synthetic refrigerants (industry standard has GWP of 1400 CO2e)
- tainable seafood production and reducing resource consumption.
- Delivering compact, durable, and energy-efficient systems that

Why Tempia?

alignment

**TEMPIA** 

and increases its quality.

Mandate: Quality

- Increased global focus on energy efficiency combined with a significant regulatory push for low emission refrigerants represent a fast-growing refrigerant market.
- Tempia is a refrigeration expert providing climate friendly and energy efficient solutions with a particular focus on natural refrigerants (no or low emission).
- Significant growth opportunities from national and international expansion in both sea- and land-based markets.



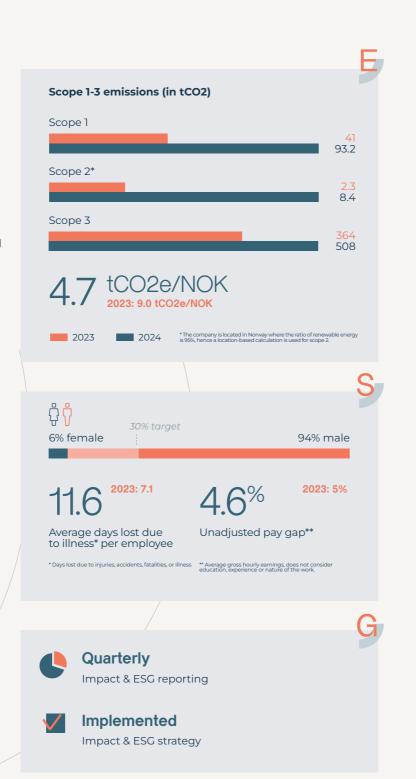
#### Update 2024

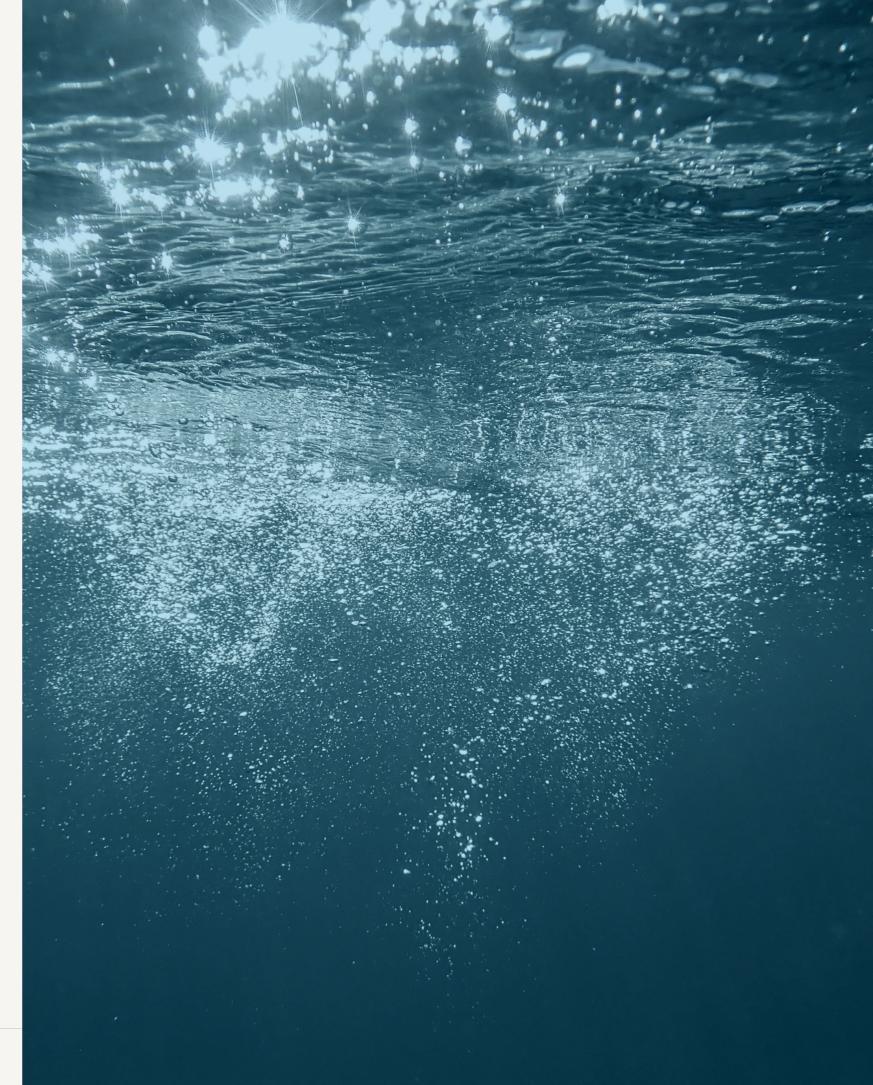
- Tempia achieved a record high 62% growth, driven by climate-friendly service and aftersales, while continuing to face margin pressure.
- Expansion of the Tromsø department and international sales breakthrough (Iceland, Spain, Maldives).
- Advanced R&D and tropical testing of CO<sub>2</sub>-based cooling technologies, with five new patents issued globally.
- Achieved 35% third-party sustainability certification and initiated H-modul process to scale low-emission solutions internationally.
- Strengthened organizational diversity with first female hire and new roles in sales, automation, and admin.



#### Focus for 2025

- Scale deployment of CO₂-based cooling systems to replace high-emission freon alternatives.
- Document and validate emissions reductions across customer installations.
- Expand third-party validation by obtaining additional certifications to strengthen quality and sustainability credentials.
- Broaden and strengthen the ISO 9001 quality management system to further support operational excellence and continuous improvement.
- Launch a new generation of RSW (Refrigerated Sea Water) Shelland-Tube Heat Exchanger designed for higher energy efficiency, increased reliability, and improved lifecycle performance.
- Develop and introduce an expanded range of Cool and Freeze products for both marine and land-based industries.





PORTFOLIO UPDATE ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION **APPENDIX** Impact Report 2024

# Horizon Software



Trondheim

Bluefront

93%

21

Number of

employees

Founded 1989









#### **About**

Horizon provides software to Norway's top salmon farmers, helping them optimize production through real-time biological and environmental data. The tools reduce disease impact and waste while improving sustainability across the value chain.

Horizon's products contribute to a positive impact for customers with regards to:

- Reducing fish mortality through early detection and improved
- Supporting compliance with biological and environmental
- Increasing yield and resource efficiency in feed, biomass, and site planning
- Strengthening fish welfare and overall farm resilience under shifting environmental conditions

#### **HORIZON**



Sustainability in the value chain

Digital tools that improve biological performance and fish welfare, enabling more sustainable salmon farming.

#### **Impact summary:**

Horizon supports more efficient and sustainable aquaculture by helping farmers make data-driven decisions that reduce mortality, improve fish welfare, and optimize resource use.







#### Why Horizon Software?

- Salmon farming faces rising biological risks, like lice, disease, and mortality, that threaten productivity, fish welfare, and overall sustainability.
- Horizon is a holistic production planning tool that allows for biological and financial optimization. It helps address the key fish health challenges with data-based decision tools that allow farmers to act proactively and efficiently.
- As fish welfare becomes a top priority, Horizon's impact grows by helping reduce waste, optimize biomass use, and enhance industry resilience.

### Impact

#### Theory of change

#### INPUTS

- Expertise: Strong internal team with competence on data analysis in aquaculture
- **Technology:** Advanced production and financial planning software that provides biological data (e.g., feed, temperature, lice levels, mortality rates) and financial data
- Infrastructure: Technical support and training for aquaculture clients
- Partnerships: Ongoing product development and R&D investment

#### **ACTIVITIES**

- Deliver decision-support software for fish farmers
- Provide data, benchmarks and reporting tools on performance and sustainability
- Engage with stakeholders to align software features with industry challenges

#### OUTCOMES

- Improved operational efficiency and strategic production planning
- Enhanced fish welfare and robustness through better farming practices
- More effective use of feed and site resources
- Greater understanding of production impact (biological and financial)
- Scalable solutions for global aquaculture markets



species across 3 countries benefited from Horizon's products and services

#### OUTPUTS

- Enabling better decision making at production sites ✓ Increased data availability and transparency for farm
- Internal invoicing and planning tools adapted to salmon tax/regulation context
- Defined impact metrics and tracking tools provided to users

individual users

tons of biomass processed through

#### IMPACT

Healthier, more resilient farmed fish populations with lower environmental footprint of salmon farming. Increased trust and transparency in seafood value chains.

#### Update 2024

- Horizon Software contributed to a more resilient aquaculture sector by launching an internal invoicing module that supports salmon farmers through regulatory shifts, including the salmon tax restructure
- Supporting long-term partnerships in key aquaculture markets in Norway and Iceland
- Completed a full company rebranding to strengthen transparency and stakeholder communication
- Developed a formal ESG and impact strategy, identifying material topics through stakeholder interviews and setting clear impact targets aligned with sector needs.
- Participated in the Salmon Health Value and contributed to descriptive datasets for populations including traceability from egg to processing in order to improve the use of data in research and process improvement.

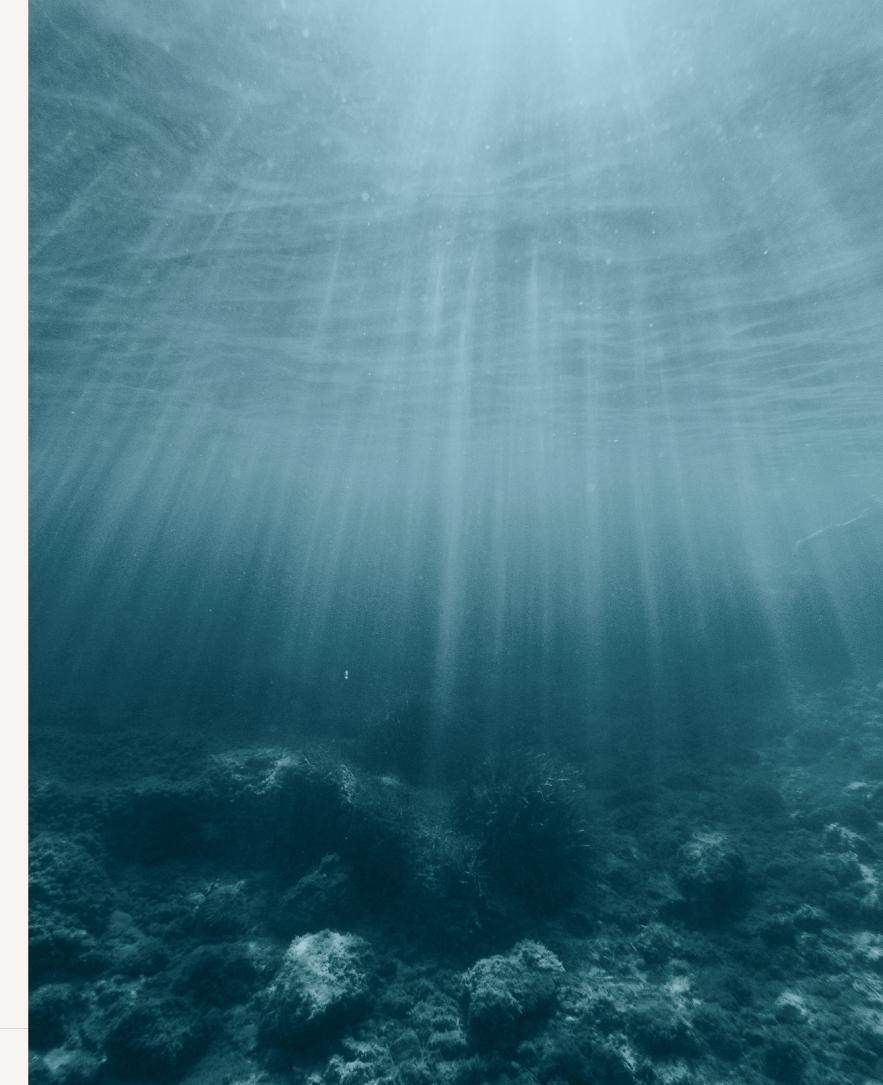
### (D)

#### Focus for 2025

- Increase participation in knowledge-sharing events (fairs/seminars) to foster ESG best practices across the industry.
- Further develop offering related to ESG reporting to assist clients with their data needs

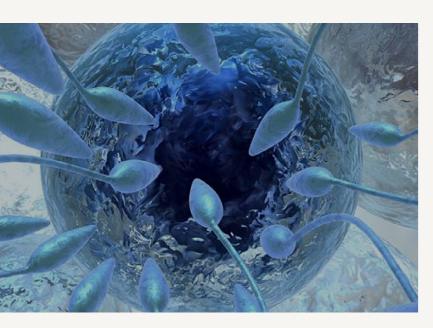


PORTFOLIO UPDATE



ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION PORTFOLIO UPDATE **APPENDIX** Impact Report 2024

# Cryogenetics



HQ

Bluefront ownership

79%

18

employees

Number of

2002

Founded









#### **About**

Hamar

of wild species.

- Improved fish welfare and genetic quality through
- accidents, or disasters

## Impact

#### Theory of change

#### INPUTS

- **Expertise:** Competent team within cryopreservation, genetics and breeding
- **Technology:** End-to-end cryopreservation services and gene-bank operations
- Processes: Technical cryomilt handling processes and
- Partnerships: R&D for automation and species expansion

#### **ACTIVITIES**

- Deliver cryopreservation services to fish farmers
- · Operate long-term wild fish gene-bank
- Research & development on key challenges within

#### OUTCOMES

- Enhanced fish welfare: reduced mortality, improved growth, and disease resistance
- Off-season production enabled through long-term milt storage
- Long-term biodiversity outcomes through wild species
- Increased efficiency and scalability via automation and digitization
- Direct benefits to farmers and indirect benefits to consumers and ecosystem
- Scalable solutions for global aquaculture markets

#### KPI

species across 11 countries benefited from Cryogenetics's products and services

#### OUTPUTS

- Enable sophisticated breeding and back-up of
- Implementation of cryopreservation in Norway and Chile
- Expanded usage from salmon to trout and other species
- · Preserving genetic material

#### IMPACT

Healthier, more resilient farmed fish populations with improved welfare and reduced environmental footprint. Sustained biodiversity in wild aquatic populations through gene-bank conservation.

Cryogenetics preserves genetic material from farmed and wild fish, offering a vital solution to fish farmers for breeding optimization and emergency preparedness. The company plays a dual role: improving aquaculture performance through higher fish welfare and contributing to conservation by securing biodiversity/

Cryogenetics's products contribute to a positive impact for their customers with regards to:

- cryopreserved milt
- Backup systems for genetic material in case of disease,
- Long-term biodiversity preservation of wild salmon and other

#### Why Cryogenetics?

alignment

cryogenetics

Mandate: Fish health

Impact summary:

Fish farming is increasingly vulnerable to disease, mortality, and changing environmental conditions.

Enabling sophisticated breeding and cryopreservation

Cryogenetics supports sustainable aquaculture and biodiversity by preserving fish genetic material, enabling off-season production, improving breeding quality, and conserving wild species. Their services enhance fish welfare by reducing disease and mortality rates while

securing a genetic backup system for emergencies.

to improve fish welfare and biodiversity.

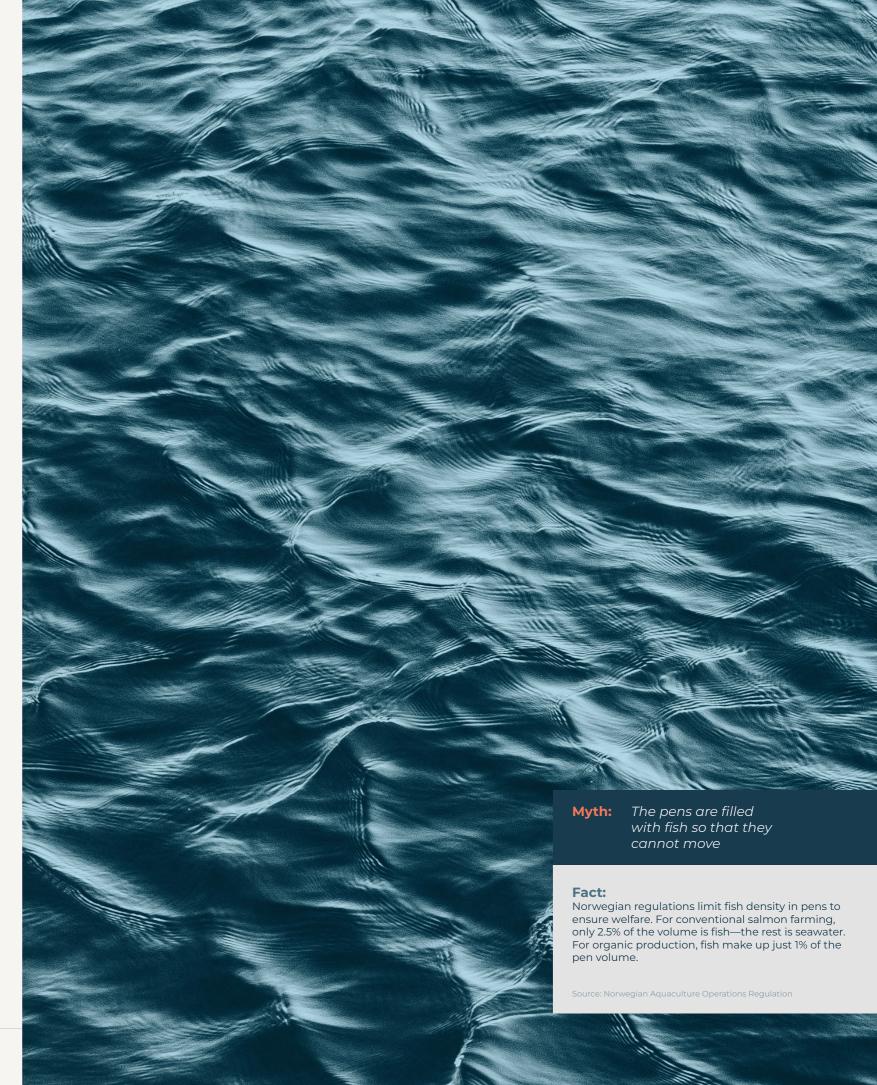
- Cryogenetics enables farmers to enhance fish robustness, improve breeding outcomes, and reduce dependence on seasonal cycles by enabling sophisticated breeding by the use of cryopreservation of the male fish milt.
- The company also conserves wild fish species, contributing to marine biodiversity and long-term ecosystem resilience.

- Continued expansion in Norway and Chile, with growing traction in trout.
- Initiated full automation of cryopreservation production (completion expected H1 2025).
- Began digitization of customer storage interface to improve usability.

### Focus for 2025

- Complete ESG & impact strategy roll-out
- Expand gene-bank role by preserving genetic material for new fish species, supporting long-term biodiversity and resilience across aquaculture.







ABOUT BLUEFRONT THE CHALLENGE THE SOLUTION PORTFOLIO UPDATE (APPENDIX)

# Portfolio ESG metrics

#### **Environment**

- The portfolio companies are located in Norway where the ratio of renewable energy is 95%, hence a location-based calculation is used for scope 2.
- Scope 3 emissions were not calculated before 2023. For 2023, the previous ESG software platform was used to estimate emissions based on company size. For 2024, the new ESG software platform has been used. The new platform estimates scope 3 based on the scope 3 categories and includes more granular data on topics including but not limited to: purchasing upstream, spend downstream, business travel and employee commuting.
- GHG intensity consists of scope 1, scope 2 and scope 3 emissions per revenue in NOK
- The portfolio companies are in a growth phase, hence absolute emissions are expected to grow as they scale and deliver more services/products to increase their impact. Although it will always be a focus to minimize emissions where possible, and track the GHG intensity closely to ensure that the net impact is positive.

#### Social

- Average days lost due to illness per employee includes injuries, accidents, fatalities or illness that has occurred both at work and outside of work. Most of the days reported are connected to illness that occurred outside of work.
- Unadjusted pay gap is calculated using the average gross hourly earnings, and does not consider education, experience or nature of the work, e.g. overtime, travel time.
- In 2022, the gender pay gap in Norway was 12% (SSB)
- The portfolio companies operate in an industry where there traditionally have been few women, however all companies are actively working to increase diversity in their teams when conducting new hires

#### Governance

- All companies report quarterly on ESG topics in the chosen ESG software platform
- All companies report at least quarterly for financial reporting
- All companies have an ESG & Impact responsible that is either in the C-suite or works closely with the CEO/CFO.

# Investment mandate Fund I

Our portfolio for Fund I is comprised of companies with strong potential to reduce some of the negative impacts from the quaculture industry. We have a targeted strategy aiming to invest capital in niches where we can make a significant impact. Fund I has five focus areas, and our portfolio companies is targeting one or several of these.



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# Theory of Change

#### What is Theory of Change?

Theory of Change is a method that explains how a given intervention is expected to lead to specific development change, drawing on a causal analysis based on available evidence.

#### Why do we use Theory of Change?

It is challenging to navigate the landscape of impact investing and in particular how to quantify effects. Using Theory of Change allows for a systematic approach to identifying the root causes and how these influence each other to be able to understand, quantify and measure impact.

#### INPUTS

#### Bluefront invests...

- Capital: Financial resources invested in target companies
- Expertise: Seafood industry knowledge, operational, strategic and impact expertise
- Resources: Market analysis, frameworks for commercial and impact strategies
- Network: Strong team of advisors and connection with industry leaders

#### **ACTIVITIES**

#### ... in businesses within the seafood industry

 Focusing on suppliers that provide products, services and technologies that enable sustainable seafood production, through improving key industry challenges such as fish welfare and ocean health

#### OUTCOMES

#### ... which contribute to

 More efficient production of seafood by improving feed efficiency, reducing mortality, increasing growth rates, reducing lice/ diseases, reduced spillage

#### OUTPUTS

#### The portfolio companies measure...

- The business model of the portfolio companies address key sustainability issues in the seafood industry and measure these output
- E.g. # of fish farms certified, tons of fish analyzed in software, # of fish escapes, change in feed usage / mortality / growth rates / lice / diseases, spillage in surrounding water etc.

#### IMPACT

#### Bluefront seeks to contribute towards:

Sustainable and innovative (Goal 9) seafood production that can scale the global supply to satisfy a growing population with low emission (Goal 13) and healthy protein (Goal 2), while taking into consideration the surrounding marine ecosystem (Goal 6 & 14).









# 14 LEE SELOW WATER

# Alignment with the UN SDG

#### GOAL DESCRIPTION



2.3: By 2030, double the agricultural productivity and incomes of small-scale food producers

2.4: By 2030, ensure sustainable food production systems and implement practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change

### We invest growth capital into small and medium sized companies

**BLUEFRONTS ALIGNMENT** 

We ensure that companies we invest in help implement practices that are sustainable and help maintain the ecosystems and adaption

who aims to increase productivity and production in the seafood



6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

- Freshwater is a scarce resource and agriculture consumes around 70% of the worlds fresh water, producing more food from the ocean is therefore a critical part of the solution
- We invest in companies working with water efficiency to make sure the seafood industry produces more food using less water, in addition to investing in companies that improve water quality through feducing pollution and minimizing releases of hazardous chemicals
- We ensure that companies we invest in contribute towards protecting water-related ecosystems, such as the areas around the fish farms



9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

- We invest growth capital into small and medium sized service businesses with the aim of developing the company in a reliable and sustainable way
- We ensure that companies we invest in help implement practices related to human well-being, operate resources efficiently and adopt clean and environmentally sound technologies
- Our companies upgrade the infrastructure and secures adaption of climate friendly solutions



13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

- We invest in products, services and technologies aiming to improve and strengthen the food system
- We use our position and the position of our companies to raise awareness on climate change



14.1: By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

- To be able to grow more food in the ocean, continuous animal welfare for marine species improvements are pre-requisites
- We invest in companies that ensure water quality improvements by reducing pollution
- We ensure that companies we invest in have proper water management processes for both their own operations and for their clients

ABOUT BLUEFRONT

THE CHALLENGE

THE SOLUTION

PORTFOLIO UPDATE



### Salmon is the most industrialized aquaculture species

