



Hiddenfjord

Raised in the wild

IN HARMONY WITH NATURE

Sustainability Report 2021

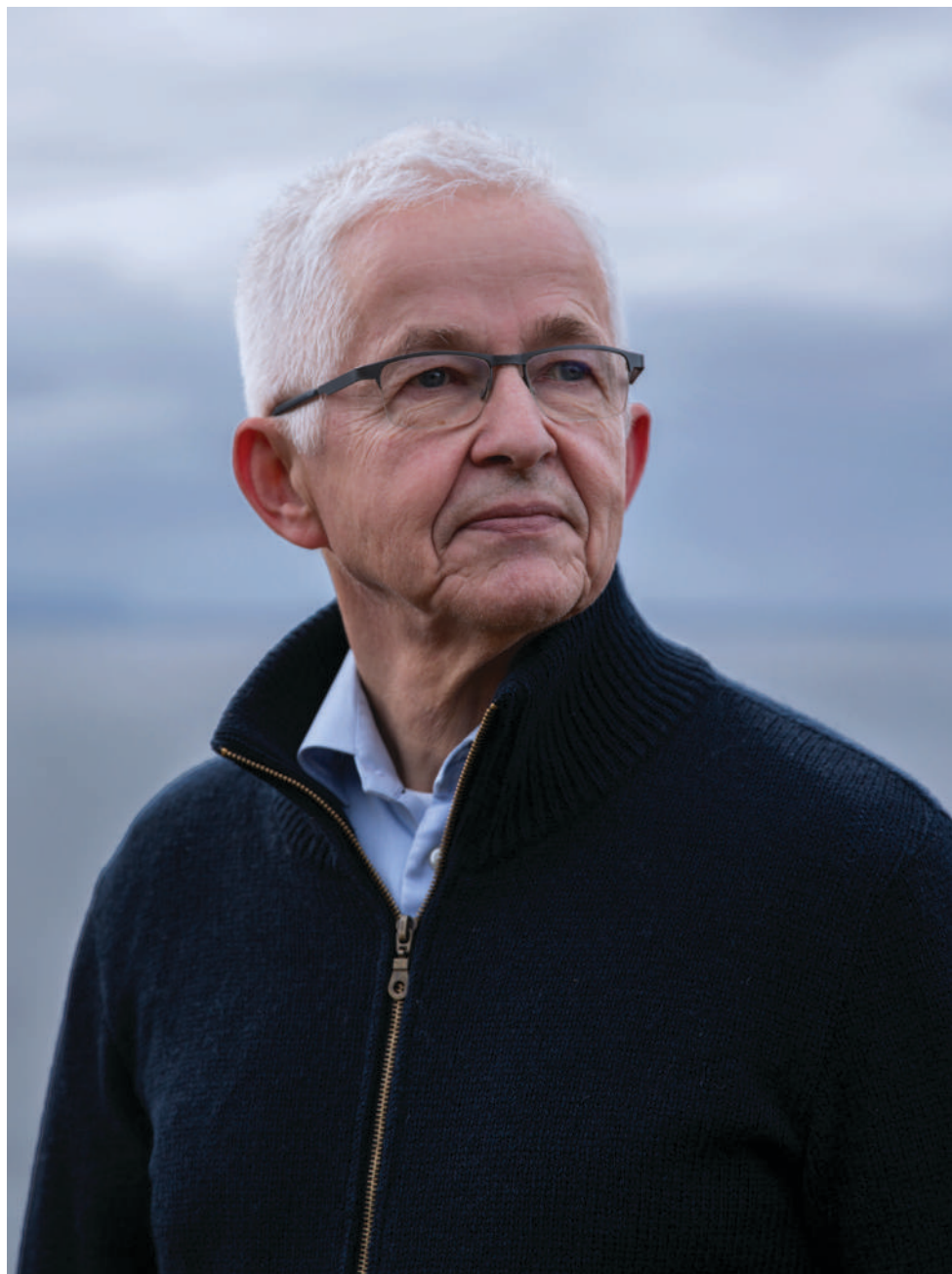


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Why report on sustainability?

Hiddenfjord is a Faroese family-owned business that farms salmon in harmony with nature.

Sustainability has always been our highest priority since we started farming salmon in the eighties. Growth comes second.

We must ensure sustainable and long-lasting farming in our own farming fjords and do all we can to ensure the same in the Faroe Islands as a whole.

It is also our responsibility to do all we can to make sure that we are not the cause of unnecessary pollution or emissions locally and globally.

This report aims to show what impact our work has on the environment and to explain exactly what we have done, and plan to do, to minimise our environmental impact. We do this in a transparent and honest way that holds us accountable. The report also includes our recommendations to Faroese authorities about how to see to it that salmon farming is as sustainable as possible.

Future generations must have the same conditions in which to thrive, together with nature, as we have today. Integrity and transparency are our cornerstones. We believe that environmental development depends on transparency, and that the industry must recognise the challenges it faces to solve them. Therefore, we believe it is our responsibility to show what impact our work has on the environment.



Atli Gregersen, CEO

About Hiddenfjord

Hiddenfjord is a salmon farming company that is one hundred percent Faroese. Brothers Atli and Regin Gregersen own and run the company.

Hiddenfjord was founded in 1929 under the name PF Fiskavirkið in the village Syðrugøta and originally produced dried salt cod. PF Fiskavirkið was run by Jóan Pauli Gregersen, paternal grandfather of the current owners and founded together with people in the village to create work and living conditions in Syðrugøta.

Hiddenfjord also has roots dating back to 1887 when S. P. Petersen (maternal great-grandfather of the current owners), ran a profitable and progressive company that produced quality products in the village of Fuglafjørður.

Both ideals continue to shape Hiddenfjord. In addition to wanting to run a progressive business, we also endeavour to support the local community and help create good living conditions in the Faroe Islands by developing the salmon farming industry. As a family-run business, we have freedom to have an idealistic focus on sustainability and to make decisions that are totally aligned with our own beliefs.

Hiddenfjord started farming salmon in 1982. Today, we generate a great deal of activity on the islands. Our smolt is produced at our freshwater facility in Fútaklettur. From there, smolt is moved to our farming sites in Sørvágsfjørður, Miðvágur, Vestmanna and Hestfjørður. All our salmon is gutted and processed at our processing factory, located in Sørvágur, and then sold worldwide.





A pioneering company

Hiddenfjord is an innovative company that has pioneered several initiatives throughout the years. At Hiddenfjord, the distance between staff and management is close; responsibilities are delegated, and our employees' opinions are heard when decisions are made. Ideas are quickly utilised, making the time from thought to action brief.

210 staff work at Hiddenfjord, and all play a role in helping us develop as a company. It is important that our employees feel a sense of responsibility and that we encourage creativity and innovative thinking amongst staff and in the company. We recognise how vital our staff are in helping our company develop and grow.

What does sustainability mean to us?

For us, sustainability means that our activities are in harmony with nature. We want to ensure a lasting future for salmon farming whilst taking care of the environment.

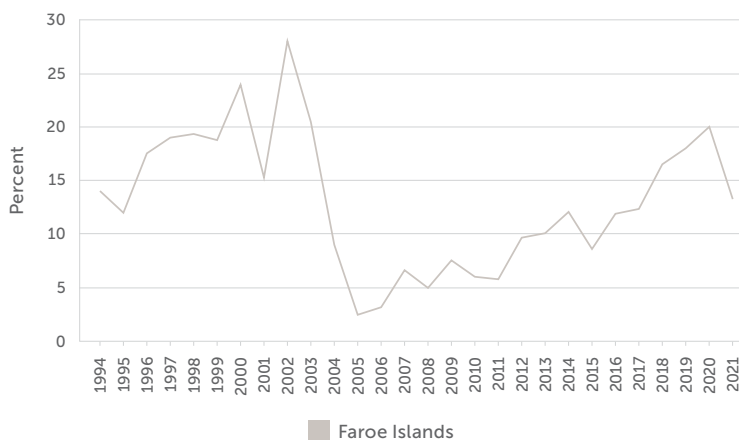
Long-lasting salmon farming

Our company started farming salmon in 1982. At the time, multiple farming companies farmed in the same fjord, and several generations of salmon were farmed simultaneously. This method of farming resulted in high numbers of sea lice and diseases, because they spread across generations and among companies operating in the same fjord. Mortality rates were high and the problem escalated. It was clear that this method of farming was not sustainable and needed to be changed if farming was to have a future.

In 1998, Hiddenfjord advocated for the introduction of a new system. After great persistence, new farming legislation was introduced in 2003. The most significant parts of the 2003 Reform were the following three core rules:

1. One farmer per fjord
2. One generation of salmon at each site at any given time
3. A fallow period between each farming cycle

Mortality rate in the Faroese salmon farming industry



Percentage of numbers put out in pens, organised according to the year the farming pens were taken in for harvesting.

Source: Kontali Analyse AS and Sp/f Avrik

These regulations, outlined in the 2003 Reform, are a major reason why the Faroese salmon farming industry makes up a significant portion of the primary source of income in the Faroe Islands today. After 2003, Faroese salmon farming developed to become the world's best. The strict regulations introduced in 2003 have inspired and influenced how sustainable farming industries have been organised all around the world. Since the reform, salmon farming in the Faroe Islands has grown significantly.

The 2003 reform notably decreased salmon illnesses that travel short distances without a host, making the problem with salmon illnesses almost disappear. The regulations, however, were not sufficient in the battle against sea lice, which travel far without a host. Problems with sea lice were managed through treatments.

The threat of sea lice to sustainability

Sea lice have become resistant to most chemical treatments, a growing problem across the industry. The handling of salmon during treatments has resulted in the emergence of multiple known diseases, and the mortality rate in the industry has grown on a yearly basis. It is clear that the system is no longer sustainable, and that fundamental changes are needed once more.

Just as the push for reform resulted in stricter regulation in 2003, we at Hiddenfjord are again advocating for stricter sea lice legislation. We want to ensure that the industry can develop on stable and sustainable foundations.

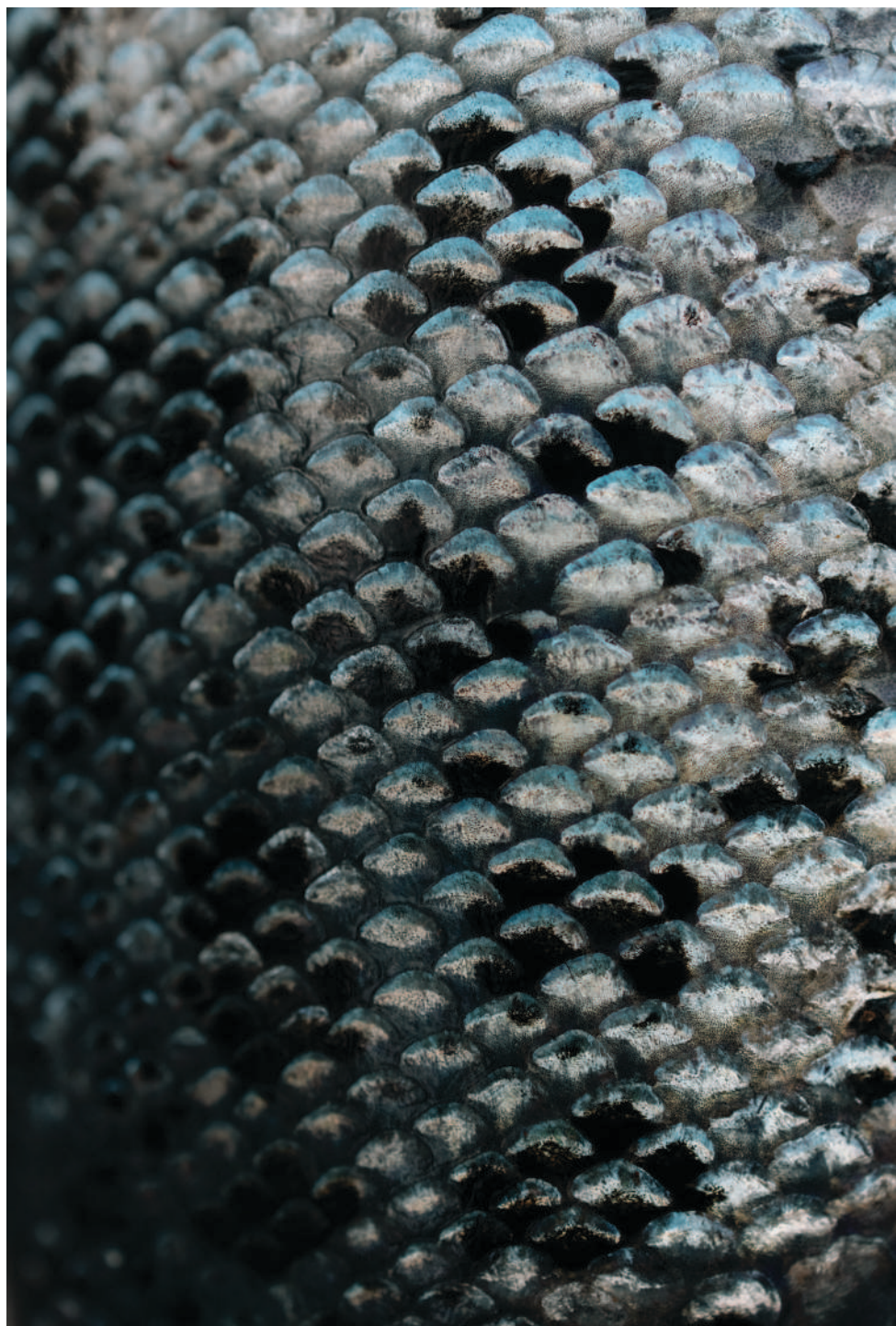
Local environment

As a production company that benefits from nature and utilises fjords in the Faroe Islands to farm salmon, we feel a great responsibility to ensure that we do not cause any lasting damage to the local environment.

Global environment

At Hiddenfjord, we are fully aware that our activities must have as little effect on the global environment as possible. Climate change poses one of the most significant challenges in the world today. Therefore, it is crucial that we limit our CO₂ emissions from production and transport as much as possible. In 2020, we stopped all distribution of our salmon by air freight. We were the first salmon producer in the world to do so. The decision was based on a desire to decrease our CO₂ emissions as much as possible. Today, we only use transportation methods that emit very small amounts of CO₂.

Hiddenfjord has been a pioneer of sustainable salmon farming in the Faroe Islands for decades. By choosing sustainable transportation methods, we are now also pioneers in the global salmon farming industry.



Core values

We have four core values which guide our actions, and which we apply to all areas of our company.

Sustainability

- Our farming activities must be conducted in harmony with nature to ensure sustainable and long-lasting farming
- Our activities must have as little effect on the environment as possible

Integrity and openness

- We emphasise being honest, trustworthy and transparent in all our activities

Innovation

- We value research and have the courage to blaze trails using new solutions to develop our company

Financial prudence

- The salmon farming industry is risky business. We must have the financial means to make investments and to withstand adversity

Goals

- We want to do what we can to make sure that salmon farming in the Faroe Islands is fully utilised for the benefit of the entire country
- We want to produce the world's best salmon
- We want to provide world-class customer service
- We want to create a good working environment, where all our staff feel respected





***“We must ensure
sustainable and long-
lasting farming in our
own farming fjords and
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the same in the Faroe
Islands as a whole”***







The report will touch on three main topics:



SALMON FARMING



LOCAL ENVIRONMENT



CLIMATE CHANGE



SALMON FARMING



Sea lice

The most significant problem in the Faroese salmon farming industry in recent years has been sea lice. The Faroese salmon farming industry has not been able to successfully overcome this growing problem. A direct result is that the mortality rate in the industry is far too high. At Hiddenfjord, we are deeply concerned about this ever-increasing problem, which we believe is serious and worsening.

There is a real risk of the salmon farming industry entering a crisis resembling the one prior to the 2003 Reform. Together with Faroese authorities, salmon farming companies in the Faroe Islands must do everything possible to change course and regain control of the situation.

Sea lice produce many offspring, which travel around the sea to find salmon hosts. Sea lice can easily travel by ocean current throughout the whole country, making them a collective problem for the industry. A high number of sea lice in one farming location can lead to large numbers of sea lice in another part of the country.

If sea lice numbers are too high, it can be necessary to use treatments. This can be done using chemical products (feed or bath treatment) or mechanical treatment (spraying, tepid seawater, or freshwater).

However, chemical product treatment leads to resistance, and sea lice have become resistant to most chemical treatments. Furthermore, chemical treatment can have a detrimental effect on the environment.

The mortality rate in the Faroese salmon farming industry is increasing. Mechanical treatments involve much handling of the salmon itself, which negatively affects the fish's health and heightens the risk of increased mortality and sickness. Several salmon illnesses have re-emerged in the last few years: BKD, furuncles, cardiomyopathy syndrome (CMS) and heart and skeleton myositis (HSMB)*.

**Faroese Food, Veterinary and Environmental Agency: Fish Health Barometer for the Faroese salmon farming industry 2021*

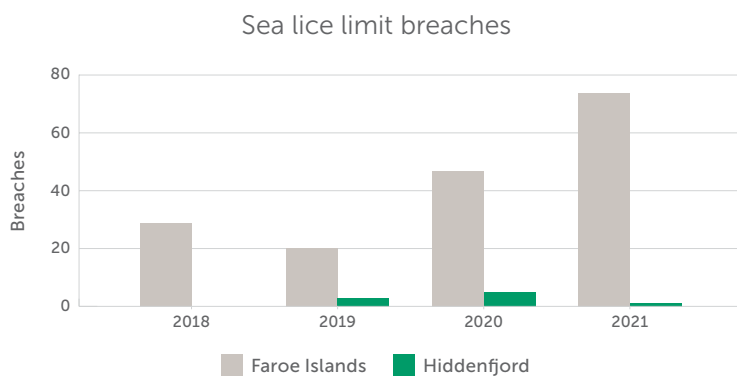
The great challenge of combating sea lice in the industry has driven us to implement several initiatives in the past many years. We have prioritised a sea lice prevention strategy by developing and improving our salmon farming methods. These methods help control our sea lice numbers and allow our salmon to grow and thrive without the threat of illness and higher mortality.

For years, we have employed people with specialist knowledge. We have also actively looked for the most up-to-date research and expertise from specialists and have participated in a great deal of sea lice research.

This methodical work on prevention has been successful and produced good results. We have remained well below the sea lice limit, seen mortality rates decrease and seen salmon living conditions improve. Our salmon mortality rate in 2021 was 4.96% (source: Sp/f Avrik).

In 2021, Hiddenfjord harvested 18,100 tons of gutted salmon, accounting for 19.3% of the total amount harvested in the Faroe Islands. In comparison, in 2021, we only had around 7% of the total amount of sea lice in the Faroe Islands.

Because sea lice are a collective issue, we are in a position where we must battle against sea lice that neither originate from our farms, nor are caused by our own farming.



Breaches of sea lice limit for the whole Faroese salmon farming industry compared to only Hiddenfjord since 2018.

Source: Faroese Food, Veterinary and Environmental Agency (Heilsufrøðiliga Starvsstovan)

Concrete initiatives

Sea lice has been the industry's greatest challenge for many years. As a result, it has also been the catalyst for much of the work we have done. We have placed great emphasis on working on initiatives that have helped us control the sea lice situation. Below, we outline some of our biggest and most successful initiatives that have resulted in fewer sea lice, greater salmon growth, a lower dependence on treatments and lower mortality.

Exposed farming

Hiddenfjord started farming at exposed sites as early as 1988 when we moved our pens from the sheltered Skálafjørður to the more exposed Gøtuvík. At the time, the decision to move pens to such an exposed site was unprecedented. We have since continued to push the boundaries for exposed farming.

At exposed farming sites, the seawater is continuously replaced by new seawater, making it more difficult for sea lice to accumulate. However, if sea lice numbers in the waters surrounding the Faroe Islands are very high, the exposed farming sites are hit the hardest. It is, therefore, very important to have strict regulations if the Faroese salmon farming industry is to develop new farming sites in exposed locations.

Hiddenfjord has pioneered farming in exposed locations and can confidently say that we farm in the most exposed sites in the world, both when it comes to current strength and wave height.

Short time at sea

When salmon are harvested from a farm site, a fallow period follows. This rest period makes sure that sea lice and other possible diseases disappear before smolt are put out in pens again. The longer salmon are in pens, the greater the struggle with sea lice.

We have implemented several initiatives to shorten the time salmon spend in the sea. We have done this to reduce the biological risk; particularly to decrease the quantity of sea lice.

Our biggest and most trailblazing initiatives in shortening the time salmon spend in the sea include production of large smolt of high quality on land and rapid growth at sea. These, and other initiatives, are discussed in more detail below.

High-quality smolt

The foundation for shortening the time salmon spend in the ocean is laid at our hatchery. Our staff have worked diligently to develop our smolt farming and quality. We have closely followed research in this area and have had the courage to try new solutions. This is clearly evident when considering how well our salmon thrive and grow at sea.

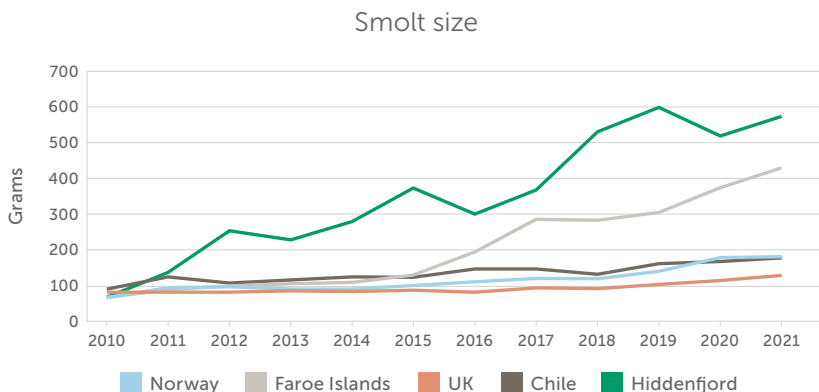
Many things have contributed to this progress. One reason is that we have continuously searched for salmon roe that has the best inherited genetics. Additionally, it is imperative to have water of the highest quality. We have, among other things, made great efforts to keep the temperature and CO₂ in the water low to ensure that the salmon grows to its full potential when placed in pens at sea.

Large smolt

In 2010, Hiddenfjord became the first salmon farming company in the world to start producing smolt sizes that were previously non-existent. Expanding our smolt production at our Fútaklettur location was a big and risky investment, particularly because this was the first project of its kind, and because it was difficult to predict how successful it would be.

The decision to produce large smolt was made with the motive of fighting sea lice. The larger the smolt, the less time it needs to spend at sea, and, subsequently, there are fewer problems with sea lice and other biological challenges. Producing large smolt on land is challenging, but the positive effect it has on animal welfare is unmistakably clear.

Our development of large smolt has drawn great interest from the global salmon farming industry. Farmers from all around the world have visited us in the Faroe Islands to learn about our work.



The size of smolt in the salmon farming industry. Organised according to the year the salmon was released at sea. Since 2015, the Faroese salmon farming companies have produced the largest smolt globally. Hiddenfjord has produced the largest smolt in the entire industry since 2010.

Source: Kontali Analyse AS and Sp/f Avrik



Rapid growth

It is imperative that salmon thrive and grow quickly to shorten the time spent at sea. This requires skilled and diligent employees.

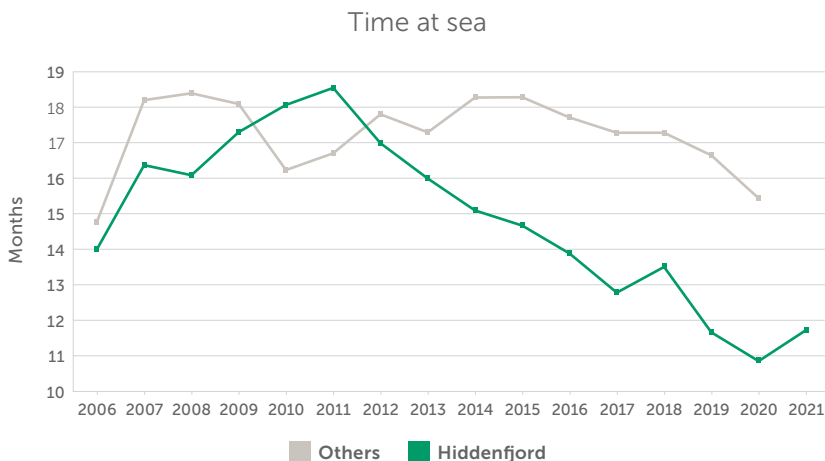
Effective feeding plays a big role in salmon growth. The feeding method must ensure that each salmon is well-nourished as well as minimise feed waste.

Since the turn of the century, we have used cameras at all our fish sites. We can keep an eye on how the feeding process takes place from a feeding centre on land. Today, we use cameras and sensors under the sea surface in our pens to identify feed pellets and to control the feeding process. A sophisticated software system ensures that each salmon is adequately fed and that very little feed goes to waste. The technology was developed by the Faroese company, FaroeSea.

To ensure good living conditions for the salmon, Faroese authorities have set a pen density limit of 25 kg/m³. We strive to always have a pen density limit in each pen that is under 20 kg/m³. Also, we keep a close eye on the oxygen levels, which play a key role in animal welfare.

Our exposed farming sites, where sea currents provide a continuous flow of new water, ensure clean and good living conditions for salmon to grow and thrive.

All the aforementioned initiatives can be observed in the salmon's growth. Hiddenfjord has had the best salmon growth at sea in the Faroe Islands each year since 2007. This is according to the Faroese consultancy company, Sp/f Avrik, which has analysed statistics in the Faroese salmon farming industry for more than 20 years. This, combined with large high-quality smolt, means that the time our salmon spend at sea is considerably shorter than at other salmon farming companies in the Faroe Islands.



The average time at sea for each farming pen. Organised according to the year the salmon were harvested. The time Hiddenfjord salmon spend at sea compared to other Faroese salmon farming companies is a clear indicator of the success of the initiatives mentioned in this chapter.

Source: Sp/f Avrik

Continuous harvest

It is important for us to have a stable, year-round harvest to ensure that our customers receive salmon every week of the year and that our staff have steady working conditions. However, with only four farm sites, we must lengthen the harvesting period for each farm site to ensure a stable harvest.

In 2021, we measured, modelled, and tested a current softener in Vestmannastrandir strait to obtain a new farm site. The purpose of the current shield is to weaken the current enough to make it possible to farm salmon in Vestmannastrandir strait, which generally has too strong currents for farming.

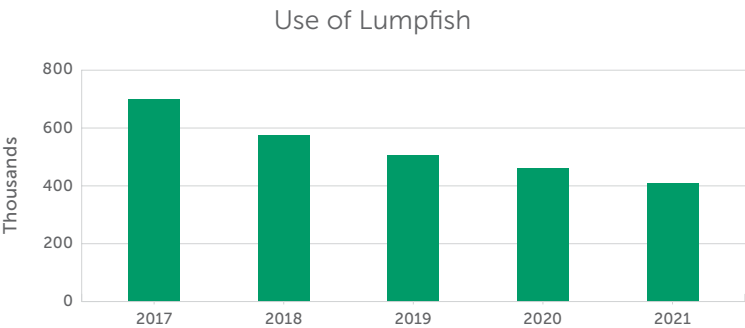
Having more salmon farm sites would allow us to significantly shorten the harvesting period for each farm site, allow for an even more stable year-round harvest and ensure a shorter period for the salmon at sea.

Lumpfish

Using lumpfish is a natural way to decrease the number of sea lice on salmon. Lumpfish eat sea lice and are a great help in the battle against sea lice. However, getting the lumpfish to thrive in the pens is a challenge.

In 2014, we became the first salmon farming company in the Faroe Islands to use lumpfish to fight sea lice. Hiddenfjord has actively taken part in lumpfish research. We believe it is our duty to continue to play our role in this research, particularly to improve the living conditions of lumpfish. As such, we put much effort into ensuring lumpfish welfare.

We have learned a lot about the needs of lumpfish at particular farm sites and in different seasons. We have learned to use lumpfish effectively and have decreased the number of lumpfish used since 2017 by 42%. Because the number of salmon harvested since 2017 has increased yearly, the number of lumpfish for each kilo of salmon produced has decreased 58%.



*Hiddenfjord's use of lumpfish since 2017.
Source: Hiddenfjord*

However, we are quick to acknowledge that the use of lumpfish has not been without challenges. Even though lumpfish offer an effective way to combat sea lice, their mortality rate continues to be too high. The use of lumpfish in salmon farming is relatively new. It takes time to understand the species, get it to thrive and to farm correctly. The mortality rate can decrease substantially through improved living conditions in the pens, improvements in breeding, vaccine developments and strategic stocking.

Lumpfish struggle with bacterial diseases. At Hiddenfjord, we have spearheaded the improvement of these diseases. We have identified many bacteria. In some cases, we have eliminated bacteria by working together with roe producers. We have also spearheaded the development of vaccines for two bacteria. Since these initiatives were put in place, there have been no new disease outbreaks from these bacteria. There are currently few diseases that contribute to high levels of lumpfish mortality. We will continue to develop vaccines with the hope that they will be as successful as previous ones.

Representatives from Hiddenfjord have had invitations from all over the world to give lectures sharing our experiences and knowledge about lumpfish.

Advocate for stricter sea lice legislation

Sea lice spread among fjords. Therefore, it is beneficial for the entire industry if the sea lice limit is low and that the limit is held, so that sea lice at one farm site don't affect other farm sites. This conclusion is clearly established in research in the Faroe Islands* and abroad. More sea lice means more treatments, resulting in the risk of diseases and mortality. Therefore, every salmon farmer in the Faroese salmon farming industry benefits if every salmon farmer stays under the sea lice limit. This is important if the salmon farming industry is to change course and take control of the sea lice situation.

Stricter sea lice legislation can mean a decrease in production in the short term, but will, in time, result in larger and more reliable production with fewer sea lice, less treatment and lower mortality.

For many years, Hiddenfjord has advocated for stricter sea lice legislation, which was initially introduced in 2009 and has been made more stringent on many occasions since (in 2014, 2016, 2017, 2020 and 2021).

* Kragestein et al. 2018. Identifying salmon lice transmission characteristics between Faroese salmon farms. *Aquaculture Environment Interactions*. Vol. 10:49-60

Objectives in 2022

- We will start farming in semi-closed pens at sea in Sörvágur. These pens have a canvas that covers the net. The canvas keeps the sea lice out of the pen. Pumping of sea water and employment of oxygen will make sure that the water quality is good. This will be the first time that semi-closed pens will be used in the Faroe Islands.
- We will start farming in seawater with very high tidal currents. Our trials have shown that the current shield we have developed will be able to weaken the current enough to ensure that our salmon will thrive. The current shield will be deployed at a site called Suðuri í Bug in Vestmannastrandir strait. This is the first trial with a current shield in the global salmon farming industry.
- We will continue to encourage authorities to implement stricter sea lice legislation. Sea lice legislation must ensure that the sea lice limit is sufficiently low, and that breaches are punished more strongly than at present time. Appropriately strict sea lice legislation benefits the entire Faroese salmon farming industry.



A photograph of a salmon farming cage in the ocean. A small boat is visible near the cage. The background shows a coastline with hills under a blue sky with some clouds. The text is overlaid on the image.

***“Together with Faroese
authorities, salmon
farming companies in the
Faroe Islands must do
everything possible to
change course and regain
control of the situation”***



LOCAL ENVIRONMENT

Seabed inspections

Salmon farming activities are limited to certain areas within a fjord. The fish is placed in the pens in the ocean to grow until ready for harvest. After harvest, a fallowing period allows the site to recover before a new generation of salmon is placed in the pens.

Since 1998, the environmental authorities have constantly been monitoring the fish farming sites in the Faroe Islands to investigate whether farming activities affect nature and the fjords' ecosystems.

To date, regulations include obligatory annual seabed inspections when biomass is at its highest level – i.e., when the weighted size of the salmon is at its peak. This is the point where the amount of feed used and, consequently, the amount of organic waste dropping to the seabed, is at its peak as well. Our seabed inspections are conducted by Biofar, an independent institute.

The seabed inspections are conducted based on standards and procedures approved by the Faroese Environment Agency (Umhvørvisstovan) and include the actual seabed under the pens, as well as the area around the farming site and an idle area of the same fjord for comparison. Checks include sensory tests (smell, colour and composition) and chemical analyses (level of zinc, copper and organic matter).

The farming area in question is rated according to the sensory and chemical analyses on a scale ranging 1-4 (unpolluted to very polluted). The conclusive sensory test result is based on the average result of all farming pens. The chemical rating is based on the average result of the three most affected pens according to the sensory analysis.

According to the Faroese Environment Agency (Umhvørvisstovan), a certain level of impact on the seabed directly under the pens is permitted, and a more restrictive level of impact is accepted within the farming site. However, the impact from the farm may not show an increase, and any impact on areas outside of the farming site is prohibited.

The decision on whether the continuation of a fish farming site is approved is based on the results from these seabed inspections. In cases where the impact on nature proves to be too significant, the Faroese Environment Agency may impose changes in operation or restrict production.

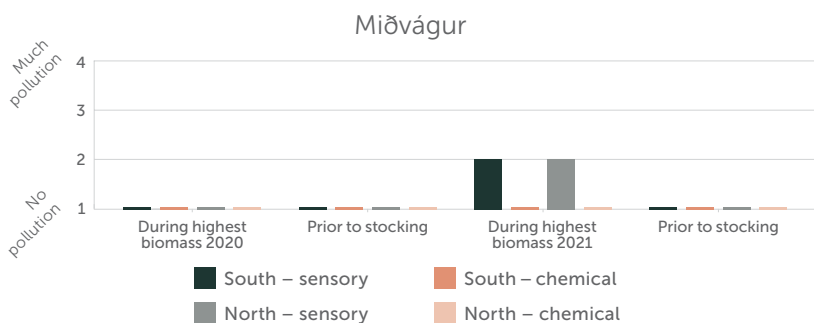
In 2021, Hiddenfjord harvested 18,100 tons of salmon (gutted weight) at four farming sites, and naturally, a certain amount of feed and waste ended up in the seabed below these sites.

The waste – organic manure waste – can pollute the local environment but does not have a harmful effect if distributed over wide areas. Farming in exposed areas with high waves and strong currents ensures that excess feed and waste drifts away from the area and is evenly distributed.

We use Faroese fjords for our farming operations. Therefore, we believe that the Faroese people and others have the right to know the impact of our business on the environment.

The following page summarises the results of all seabed inspections since January 2020 conducted at our farming sites before stocking and while carrying the greatest biomass.

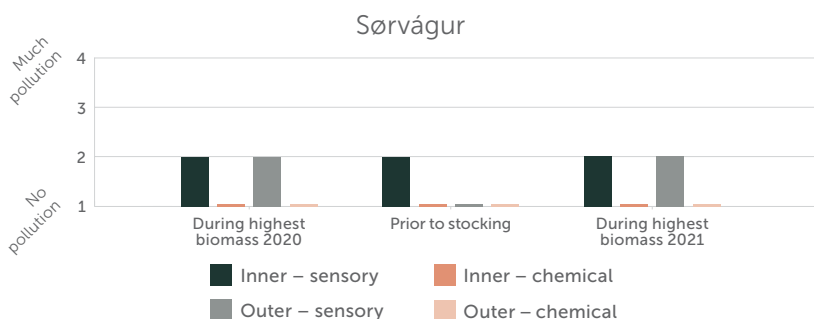




Summarised results for all pens while carrying the highest biomass compared to results prior to salmon stocking in Miðvágur since January 2020.

Source: Biofar

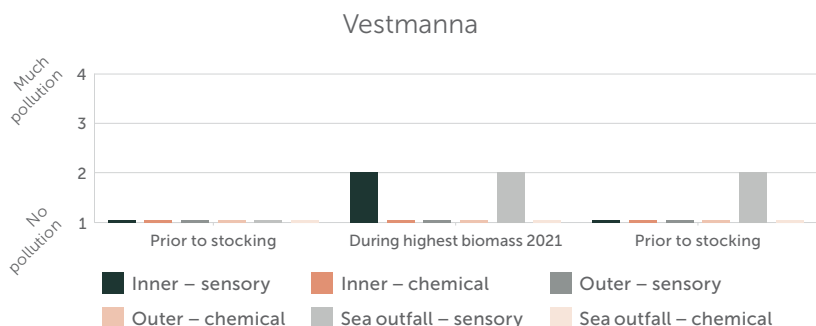
The Miðvágur seabed inspections are divided into two sections: north and south. The sections are analysed separately. The results of the Miðvágur seabed inspections over the past two years have been very positive. In 2020, no impact was found when the biomass was at its highest level. In 2021, we only saw a relatively small impact when biomass was at its highest. The inspection undertaken prior to stocking of the next generation of salmon showed that the site had fully recovered, and no impact could be measured.



Summarised results for all pens while carrying the highest biomass compared to results prior to salmon stocking in Sørvágur since January 2020.

Source: Biofar

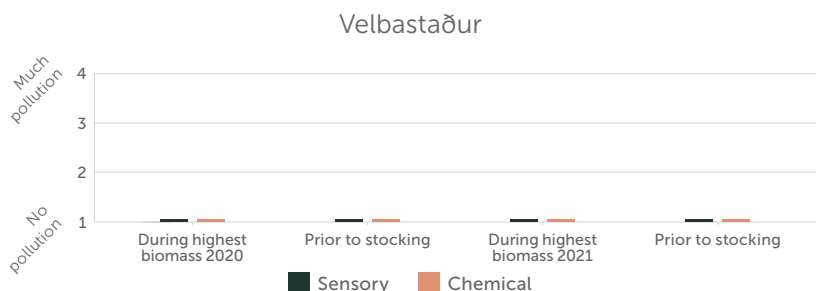
The Sørvágur seabed inspections are divided into two sections: inner and outer. The sections are analysed separately. The results of the Sørvágur seabed inspections over the past two years have been very positive. While some impact was detected in 2020, the inspection prior to stocking of the next salmon generation showed the site had recovered. In 2021, analysis when biomass was at its highest level showed some impact.



Summarised result for all pens while carrying the highest biomass compared to results prior to salmon stocking in Vestmanna since January 2020.

Source: Biofar

The Vestmanna seabed inspections are divided into three sections: inner, centre and outer. The sections are analysed separately. The results of the Vestmanna seabed inspections over the past two years have been very positive. Prior to stocking in 2020, no impact from farming activities was detected. Inspections in 2021 showed some evidence of impact when biomass was at its highest level. However, the inspection prior to stocking of the next salmon generation demonstrated the seabed had recovered.

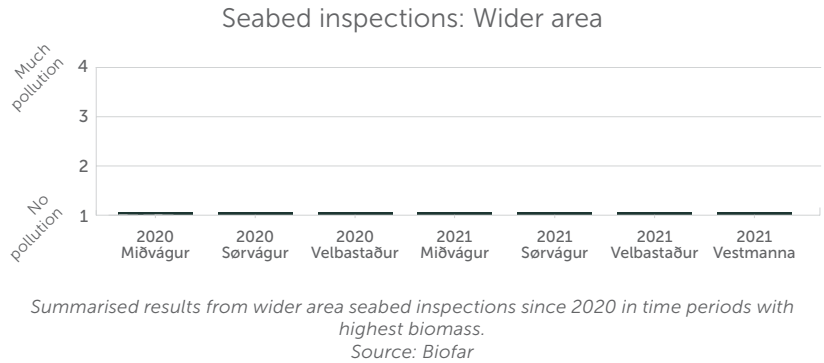


Summarised results for all pens while carrying the highest biomass compared to results prior to salmon stocking in Velbastaður since January 2020.

Source: Biofar

The results of the Velbastaður seabed inspections have been excellent over the past two years, with no evidence of farming activities impacting the seabed.

Results of the seabed inspections indicate that the impact of our farming activities on the seabed is very little. They also show that, for the most part, detected impacts reverse prior to stocking of the next salmon generation. Therefore, it is evident that the impact is marginal, limited to the time periods where a high biomass of salmon inhabit the pens and diminishing over time. The results of the wider area seabed inspections conducted on all our farming sites since 2020 show that the immediate environment remains unaffected by our farming activities. Furthermore, the inspections conducted in some distance from the farms show that the area is unaffected.



In addition to the mandatory seabed inspections when the pens carry the highest biomass which are imposed by the Faroese Environment Agency, we conduct voluntary seabed inspections at other times throughout the year to follow up on developments and to ensure our operations do not affect the fjord.

An excellent supervision system, overseen by Faroese authorities, encourages us to put necessary actions in place that ensure we do not cause lasting impact on the close environment. We are satisfied with our results, which both meet the requirements set by the Faroese Environment Agency and our own internal standards.







Use of chemicals

The use of chemicals in our fight against sea lice will always be the last option for us to consider, only after all other potential alternatives, such as the release of bigger smolt, accelerating growth, farming in more exposed areas and utilising lumpfish have been exhausted.

In some instances where above-mentioned measures are not sufficient to combat sea lice, it is necessary to treat the salmon. There are several treatments available. We have tried a number of them but given the use of chemical products is the least harmful to the salmon, we have chosen this option in the mentioned cases. They are administered via feeding treatment (such as Slice or Releeze) or bathing treatment (e.g. Salmosan Vet). These treatments are permitted by the authorities and prescribed by authorised fish health specialists.

Concrete initiatives

Although Hiddenfjord's farming activities have grown significantly – from 10,000 tons in 2014 to 18,100 tons in 2021 – we have been able to implement an extensive number of initiatives to ensure our work does not affect the seabed at our farming sites:

More exposed farming locations

We have moved our salmon farms further out at sea. Farming in exposed areas with high waves and strong currents ensures the seabed remains unaffected. Hiddenfjord farms the most exposed sites in the world.

Discontinuation of copper use

In the past, copper protection was used on nets to prevent growth of things like seaweed, and in some instances, this could lead to accumulation of a considerable amount of copper under the pens. We have stopped using copper on our nets.

Reduction in the number of salmon

We have reduced the total number of salmon in areas with an increased pressure on the seabed, resulting in less feed use and less manure waste. This initiative has had a positive impact on the seabed.

Implementation of computer-controlled feeding systems

Computer-controlled feeding systems that use cameras ensure the amount of feed waste and seabed pollution is kept to a minimum.

Objectives in 2022

- We will place salmon in semi-closed pens in Sörvágur, the most problematic farming fjord when it comes to sea lice. This will considerably shorten the time the salmon are exposed to sea lice and hopefully reduce the need for treatments at Hiddenfjord significantly.
- We will continue to move our pens to more exposed areas where they have no effect on the seabed. In 2022, we will place the first generation of salmon at our new farming site, Suðuri í Bug. We are expecting this farming site to facilitate efficiency of our farming operations. With an increased number of farming sites, it will be possible to shorten the harvest period, which will shorten the salmon's time in the ocean and reduce the need for sea lice treatment.
- We will continue to advocate for stricter sea lice legislation, so the challenges with sea lice at our farming sites decrease significantly.



“The results of our seabed inspections demonstrate that our operations have very little impact on the seabed underneath our pens”





CLIMATE CHANGE

Climate change is one of the most pressing challenges the world faces. Specialists have warned that everyone must reduce their own CO₂ emissions* before it is too late. At Hiddenfjord, we believe we have a responsibility to do everything in our power to reduce our CO₂ emissions. We have idealistic and financial freedom to walk the talk and implement initiatives now.

Therefore, we will continue to reduce our emissions in all parts of our operations and will prioritise initiatives that have the biggest effect. There is no doubt that air transportation accounts for the most significant amount of CO₂ emission.

Salmon is a food product whose production causes a negligible amount of CO₂ emission compared to other animal products. Salmon, for example, has a much smaller carbon footprint compared to pork and beef. However, the carbon emission multiplies if the salmon is transported to other markets by air. Therefore, we ask: is it ethical to fly food products?

To know where to make the biggest difference, it is essential to know how much carbon emission each activity causes. We asked an acknowledged consultancy firm, Asplan Viak AS, to conduct a comprehensive analysis of our CO₂ emissions. To ensure that exceptional events do not significantly affect the results, common practice is to look at emissions over a period of three years (Product Environment Footprint (PEF) procedure). From 2019 to 2021, all our production, including gutting and packaging, resulted in a CO₂ emission** of 5.10 kg per kilogram of gutted salmon.

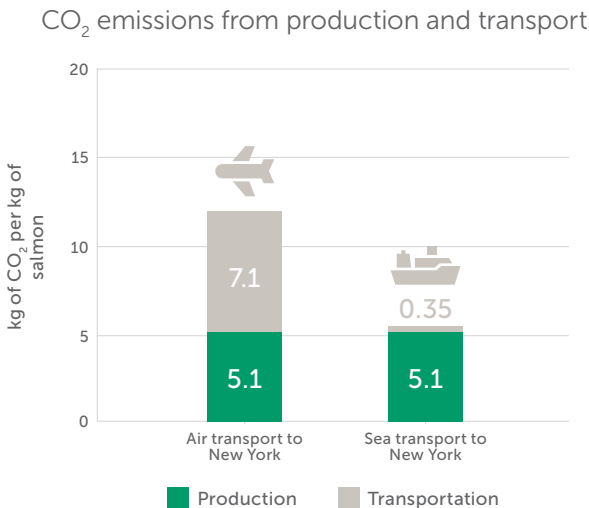
**There are different kinds of gases that each have different effects. To estimate the impact of all these gases, we have collectively measured them as CO₂ equivalents, and the stated CO₂ emission represents the collective emission of all gases.*

***CO₂ emission is based on economic allocation, which means it is allocated to different salmon products (gutted salmon, fillets, heads and backbones, off-cuts etc.) according to their sales value.*

CO₂ emission from transport

Today, a large portion of salmon products are flown to distant markets - for example, from Europe to the USA and Asia. Salmon prices in the US and the Asian markets are comparatively high, with the highest demand for the freshest salmon. Therefore, from a financial perspective, it makes sense to supply these markets via air freight. However, when using air freight, the environment pays a very high price.

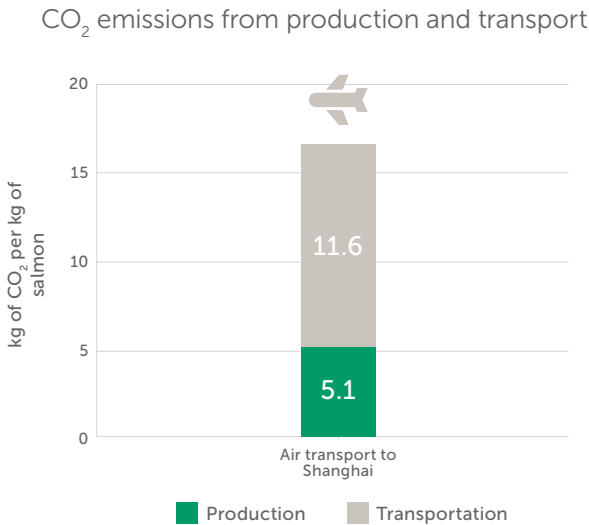
Data gathered by Asplan Viak AS shows that if Hiddenfjord uses air freight to transport salmon to New York, transport alone causes 7.1 kg of CO₂ emission per kilogram of salmon. If the fish is, instead, transported by boat, the CO₂ emission caused by transport is only 0.35 kg per kilogram of salmon.



Hiddenfjord's production emissions, including emissions caused by packaging and transport via air and sea to New York from the Faroe Islands. The CO₂ emission using air transport is more than double the amount of emission caused when using sea transport.

Source: Asplan Viak AS

As calculated by Asplan Viak AS, air transport from the Faroe Islands via Europe to Shanghai causes a total of 11.6 kg of CO₂ emission per kilogram of salmon. Consequently, air transport to Shanghai alone causes CO₂ emissions more than twice the amount used to produce the salmon.

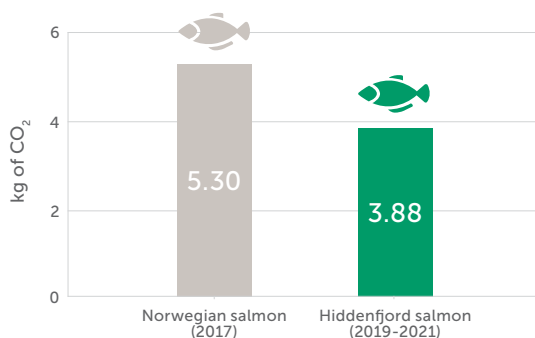


Hiddenford's production emissions, including emissions caused by packaging and transport via air to Shanghai from the Faroe Islands.
Source: Asplan Viak AS

CO₂ emission from production

The analysis of our carbon footprint caused by production shows a CO₂ emission of 3.88 kg of CO₂ per kilogram of salmon (live weight). In comparison, figures from a Norwegian assessment in 2017* show that the average production emission within the Norwegian salmon farming industry was 5.3 kg of CO₂ per kilogram of live weight. According to these calculations, our CO₂ emission is 26% lower than the average amount within the Norwegian industry (2017). These calculations exclude transportation. The main reason for our lower CO₂ emission is our mortality rate, which is lower than the industry average. This means that our efforts in producing salmon are primarily spent on saleable products rather than handling products going to waste.

CO₂ emissions per kg of salmon (live weight)



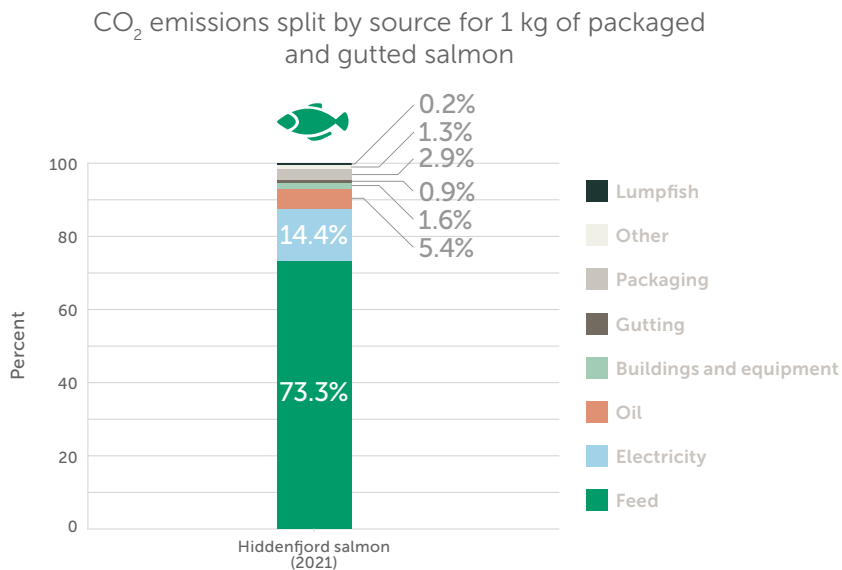
*CO₂ emission from the production of 1 kg of salmon (live weight). Average of the Norwegian salmon farming industry (2017 – latest available) and Hiddenfjord (2021).
Source: SINTEF AS and Asplan Viak AS*

The majority of CO₂ emission from production is caused by feed. In particular, raw materials used for the feed production cause relatively high CO₂ emissions. The second-highest portion is caused by the use of electricity, mainly from smolt production.

*SINTEF AS



Hiddenfjord CO₂ emission from production for 1 kg of gutted and packaged salmon (2021).
Source: Asplan Viak AS



Hiddenfjord CO₂ emissions from production for 1 kg of gutted and packaged salmon (2021)
in detail.
Source: Asplan Viak AS

Feed use

Feed is second only to air transport on the list of CO₂ emissions. Therefore, it is essential to improve both feed itself and the feed use.

Our feed utilisation is comparatively efficient due to our low mortality rate. Our mortality rate stood at 4.94% in 2021, which is considerably lower than the industry average.

At Hiddenfjord, most feed is used on salmon that becomes a saleable product. The greater the mortality rate, the higher the amount of wasted feed. Therefore, the mortality rate plays a vital role in the level of CO₂ emissions.

A low mortality rate and efficient feeding methods result in a smaller amount of feed used to produce one kilo of salmon. From 2019 to 2021, we used 1.09 kg of feed to produce 1 kg of salmon (live weight)*, which is well below the industry average.

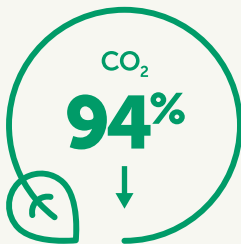
**Economic feed conversion ratio*

Concrete Initiatives

Transportation

In 2010, we started to gradually reduce the use of air transport of our products. On 10/10/2020, we became the first salmon company in the world to entirely cease transporting salmon by air. This was a big decision that bore great financial risk. A consequence of our decision to stop flying was a discontinuation of sales of fresh salmon to the Asian market, causing a significant loss of market opportunities. We also stopped transporting salmon to the USA by air, and instead started supplying the market via sea transport. Switching to sea transport without compromising quality required an extensive amount of research and testing. All our employees at the production facility play a significant role in making this work well today. We hope that more salmon farming companies will follow our example and stop using air transport.

By stopping air transportation of our salmon, we have reduced our CO₂ emission by overseas transportation by 94%.



Feed use

Our CO₂ emission from production is 26% lower than the average within the salmon farming industry.* As feeding causes the highest amount of production emissions, the level of CO₂ emission mainly depends on the amount of feed used per kilogram of salmon. The comparatively small amount of feed used by Hiddenfjord is a result of our low mortality rate and efficient feeding. Both feed use and mortality rates significantly affect CO₂ emissions. Therefore, all the initiatives targeting the improvement of our farming methods and sea lice prevention mentioned in this report have had a positive impact on Hiddenfjord's CO₂ emissions.

**Average for Norwegian fish farming industry in 2017 (latest available).
Source: SINTEF AS and Asplan Viak AS*

Objectives in 2022

- We will reduce the amount of CO₂ emission caused by feed usage. After cutting the most significant part of our carbon footprint by stopping air transport, our next project will focus on reducing CO₂ emission caused by feeding. In 2022, we will change our feed composition, which will enable us to use feed with significantly less CO₂ emission.
- We will work on reducing our CO₂ emissions caused by use of electricity, with electricity being the most significant cause of production-related CO₂ emissions after feed. In 2021, we set up a wind measurement device to explore the option of generating wind energy. In 2022, we will set up solar panels in selected areas in Miðvágur. We have recently hired a power engineer who will work on the production of green energy and implement new projects aiming at further reducing CO₂ emissions.



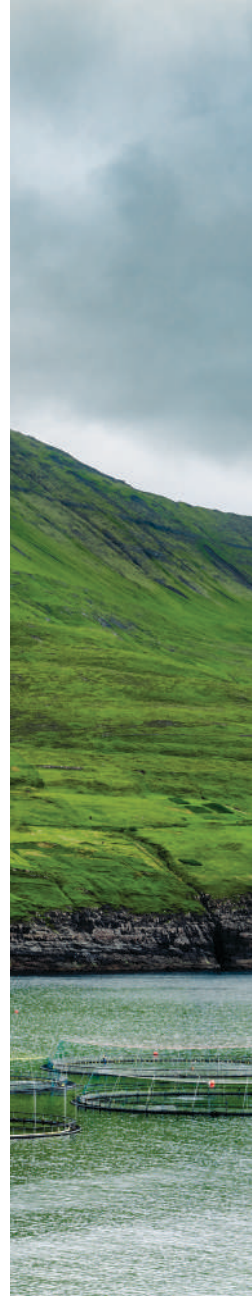
An aerial photograph of a rugged coastline. Dark, jagged rocks are visible in the lower half of the frame, with white, frothy waves crashing against them. The upper half of the image shows the deep blue, textured surface of the ocean. The overall tone is dramatic and naturalistic.

***“By stopping air
transportation of our
salmon, we have reduced our
CO₂ emission from overseas
transportation by 94%”***

Awards in 2021

In 2021, we received a SEAL Business Sustainability Award. This annual award honours new sustainable initiatives with a significant positive environmental impact around the world. We received this award for our 2020 initiative being the first salmon producer in the world to stop transporting salmon by air. SEAL stands for Sustainability Environmental Achievement and Leadership and is one of the most renowned sustainability awards in the USA.

The UK-based Business Brilliance Awards also recognised our initiative, with an award in the category of Environmental & Corporate Sustainability.







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