

RURAL ECONOMY AND CONNECTIVITY COMMITTEE

SALMON FARMING IN SCOTLAND

SUBMISSION FROM MARINE HARVEST (SCOTLAND) LTD

1. Do you have any general views on the current state of the farmed salmon industry in Scotland?

At less than 50 years old the salmon farming industry is still growing and developing but we have made huge strides in breeding, nutrition, husbandry, innovation and technology. People still tend to have very outdated ideas of what the work involves, picturing staff out on pens in the loch feeding the fish by hand. The reality is very different and, while it can still be described as a job for those who enjoy the outdoors, it is a highly skilled job using a wide and growing range of technologies, with great opportunities for progression. At Marine Harvest we have 74 different occupations which include farm technicians, veterinarians, engineers, environmental analysts and accountants, providing huge scope for our employees to specialise in a chosen area. In Scotland our total wage bill in 2017 after tax and NI contributions was £13,022,357.54.

A significant challenge in the Highlands and Islands is the so-called “lost generation”. Young people tend to leave for college and university and often don’t return. The salmon farming industry has played a key role in providing employment in remote, rural areas and has allowed many young people to stay in the Highlands and Islands where they were born and raised whilst also enjoying a well-paid career with good prospects. Our Modern Apprentice programme was introduced in 2013 to help us attract young members of staff and address our own internal challenge of an ageing workforce. We received the Investors in Young People Award in 2015 in recognition of our commitment to developing our young workforce. We offer extensive on the job training, run a wide range of in-house courses which are all industry recognised and also encourage our young members of staff to undertake formal qualifications. We currently have 15 young people studying for SVQs in Aquaculture. To date over 25 employees have completed the SVQ Level 2 or 3 modern apprentice programme and one of our apprentices has progressed through his training and gone on to become our youngest ever assistant farm manager.

Salmon farming has also helped fragile rural communities across the Highlands and Islands survive. Up and down the West Coast the children of our staff have significantly boosted the roll of the local school. Most of our operating expenditure - £235 million in 2017 - is spent in Scotland and we use local suppliers and contractors wherever possible, for example recently purchasing new boats from a firm in Arran and using a business in Fort William to fit them out to meet our requirements, buying our feed barges from Gaelforce Marine in Inverness and our nets from Knox Nets in Kilbirnie.

Our aim is always to be a good neighbour. Our business cannot survive and thrive without the support of the communities we operate in. In the Outer Isles opening new farms has provided lots of opportunities to help out local communities – on Muck we resurfaced the main road and deliver the shopping from Mallaig when the weather is too stormy for the regular ferry service, on Colonsay we provide transport

for school trips and on Rum we are about to build new houses and infrastructure, a pontoon and facilities for visiting yachts.

Over the years we have been strong supporters of shinty with one of the longest running sponsorship deals in the country still going strong after 30 years with the Camanachd Association. With our support shinty has seen a resurgence with the number of young players trebling and increasing numbers of women taking up the game.

Demand for Scottish salmon is as strong as ever both at home and overseas with farmed salmon accounting for around 40% of Scotland's food exports¹, establishing farmed salmon as the largest food export from the UK. Demand has been growing at an annual average of 7%, higher than for any other protein producing industry. At Marine Harvest from 2016 to 2017 our overall export sales increased by 87% and we export salmon to over 20 countries worldwide.

2. There have been several recent reports¹ which suggest how the farmed salmon industry might be developed. Do you have any views on action that might be taken to help the sector grow in the future?

Marine Harvest is an integrated company which means that along with growing, processing and selling salmon, we also have our own salmon breeding programme and produce our own salmon feed. We have a global R&D technical department which supports all the different parts of the company and in 2017 we spent EUR 43.6 million on research and development. In addition, each of our business units in all the countries where we operate invests 2.5% of their turnover in research and development.

Growing fish in the sea involves a range of factors that are largely outwith our control, such as pollution, weather and other sea creatures. One of our biggest challenges is the rise in sea temperatures as a result of global warming. Over the past 25 years the rate of increase in sea surface temperature in all European seas has been about ten times faster than the average rate of increase during the past century².

Warmer sea temperatures are also associated with the spread of invasive species and marine diseases. The evolution of a stable marine habitat is dependent upon a wide variety of factors, including water temperature. If an ecosystem becomes warmer, it can create an opportunity for outside species or bacteria to suddenly thrive where they were once excluded. This can lead to forced migrations and even species extinctions.³

We are working tirelessly towards ways of overcoming these challenges with advances in technology allowing us to find new and innovative solutions. One of the ways we can protect salmon from external forces is to shorten the length of time they are in the sea. To enable this, we are expanding our hatcheries to give us the ability to grow larger smolts (young fish) which will be more robust and better able to

¹ Scottish Salmon Producers Organisation

² https://www.eea.europa.eu/themes/coast_sea/sea-surface-temperature

³ <https://www.nationalgeographic.com/environment/oceans/critical-issues-sea-temperature-rise/>

withstand harsh weather, pollution and infection from other sea creatures. This will also mean that the salmon take less time to grow to full size and as a result need to spend a reduced amount of time in the sea, lessening the chance of infection.

We are also currently developing a variety of systems such as the Egg and the Marine Donut where salmon would be grown in closed conditions in the sea protecting them from sea lice and predators and allowing us to treat incoming water and outgoing waste water.

A land-based tank system (Recirculating Aquaculture System) is often quoted as a possible replacement for farming fish in the sea but our extensive research, and the experience of companies who have carried out trials, has shown that much more work needs to be done before it could be considered a viable alternative. As an example – over the last five years we have spent £47 million growing smolts from eggs in our hatcheries which are recirculating aquaculture systems. To produce 160,000 tonnes of market sized salmon using the same systems would cost the Scottish salmon industry £4.7 billion.

3. The farmed salmon industry is currently managing a range of fish health and environmental challenges. Do you have any views on how these might be addressed?

Our focus is always the health and welfare of our salmon and all our farms are audited by RSPCA Assured. Healthy, tasty, top quality salmon is in huge demand by consumers. Contrary to some media reports and claims by anti-salmon farm campaigners, it makes no commercial sense to neglect the welfare of our fish and to employ anything but the best husbandry techniques. Negligent practices lead to poor quality fish which would soon be rejected by our customers. Salmon grow best in clean unpolluted waters so it also makes sense for us to keep the environment we work in as untouched as possible. The introduction of mechanised feeding from barges where the amount of feed given to the fish is carefully monitored and worked out exactly to ensure that none falls to the sea bed has meant that any pollution around salmon pens has been largely eliminated over the years. Our food conversion ratio, the amount of fish we produce from a set quantity of feed, has dropped to 1:1.1 which means that to grow 1.0 kg of fish requires 1.1kg of feed. Salmon also need room to swim around to stay strong and fit. At our farms pens are made up of 1.5% fish and 98.5% water. SEPA takes regular samples to monitor the sea bed under our farms and the waste from our fish that falls to the sea bed is taken into account when choosing a site for a salmon farm. It is important to note that waste from fish is not the same as waste from humans and has a much smaller impact on the environment as fish do not produce the same harmful faecal coliforms as humans and fish waste is assimilated by coastal waters. It is estimated that organic waste from salmon farming accounts for less than 5% of the total organic matter reaching the sea from land. It is also estimated that in 2016 Scotland's 6.8 million sheep excreted about twice as much nitrogenous waste as farmed salmon whilst producing only a quarter as much food.⁴

Gill disease and mortality rates

⁴ Review of the Environmental Impacts of Salmon Farming in Scotland 02468_0001, Issue 01, 24\01\2017

Our main challenge is gill disease which we believe has become more common in recent years largely as a result of farming fish in water which is now significantly warmer than it was when salmon farming began. Over the years as techniques have developed we have moved towards less and less use of medicines and chemical treatments in salmon farming. Our research into non-chemical methods of treatment is ongoing with new equipment and practices being introduced all the time. In 2015 we commissioned the first well boat of its kind which makes freshwater from seawater using reverse osmosis and travels around our farms treating our salmon to help prevent AGD (Amoebic Gill Disease). We are currently running a trial of a new type of net in the Western Isles and Skye which results show has so far eliminated gill disease at what were two of our sites historically most prone to issues with gill health.

Some of the figures quoted recently give the impression that the higher levels of mortality experienced over the past year are commonplace and an accepted part of salmon farming. This is certainly not the case. 65% of the overall mortality at our farms in 2017 occurred at only 10 out of our 49 sites and we are working hard to identify the causes. Last year was a particularly challenging year but this has certainly not been the norm in the salmon farming industry – unlike in the dairy and beef industries where an average of 25-30% of cattle in UK dairy herds are removed annually due to illness⁵ and the Scottish upland sheep farming industry where between 25-50% of lambs expected by pregnant ewes are lost to unexplained causes each year.⁶

Sea lice

The salmon louse is common on wild salmonids. Salmon farmers continuously monitor sea lice levels and manage sea lice through good husbandry, non-medicinal methods and when required, veterinary medication. Sea lice is another issue which frequently attracts media attention resulting in misleading reports. Reports of infestations give the impression of fish moving with lice as can be the case with headlice in humans but this is rare. At Marine Harvest we have been at the forefront of developing new systems to treat sea lice and we treat our fish if they have an average of 0.5 gravid female lice per fish. The range of treatment methods we now use resulted in our lice levels being six times lower at the end of 2017 than at the end of 2016.

In 2011 we established the first of our new “open sea” farms at off-shore sites where the weather and sea conditions are challenging but ideal for growing salmon and avoiding any potential issues of sea lice in inland sea lochs. We are constantly working to develop more innovative and sustainable practices and technologies to treat sea lice. We have introduced a range of measures including the use of cleaner fish such as wrasse and lump suckers which are natural predators of sea lice, as well as a range of other non-chemical technologies including hydro licers and thermo licers which bathe salmon in fresh and warm water to wash away the lice and skirts which create a barrier around each pen. All of these measures are helping to significantly reduce sea lice numbers and we are confident that will continue.

Marine Harvest supports the view that studies, which may or may not show a relationship between the survival of Atlantic salmon and salmon lice, should not be

⁵ Agricultural and Horticultural Development Board website, <https://ahdb.org.uk/>

⁶ Countryfile 19/3/2018

considered definitive proof and often the scale of any link is grossly exaggerated. Marine survival of salmonids is strongly impacted by other factors such as predation, warming sea temperatures, lack of available food at sea, accidental by-catch, poaching and we believe that the effect of salmon lice is most likely part of a much wider picture. There are several knowledge gaps that need clarification to dispel much of the misinformation on this subject. We know the number of salmon and sea trout is also declining in areas of Scotland where there are no salmon farms and this is also the case across Europe. This suggests that considerably more research needs to be carried out on why this is happening.

We take the concerns that salmon farming has been detrimental to wild salmon stocks very seriously and have been engaging with a range of organisations to make sure that we are part of the solution and not the problem. We are involved in a number of projects such as the River Lochy and the Upper Garry Restoration Project where we combine our expertise with wild fisheries in raising smolts at our hatcheries to help river boards and fisheries restock rivers with genetically profiled smolts indigenous to their areas.

Seals

We shoot seals only as a last resort in the same way land based farmers are allowed to shoot foxes who prey on their livestock. The Scottish Government sets a maximum number of seals which can be shot by aquaculture producers without having a detrimental impact on Scotland's large seal population⁷. We are founder members of the Salmon Aquaculture and Seals Working Group and have worked hard over several years to reduce the number of seals we need to shoot through improved procedures and investment in new technologies. We have invested in stronger nets and seal scaring devices along with improving the tension on nets which prevents seals from being able to enter the salmon pen.

4. Do you feel that the current national collection of data on salmon operations and fish health and related matters is adequate?

All salmon farm companies are legally required to submit a wide variety of data to Marine Scotland and this is often the subject of Freedom of Information enquiries. At Marine Harvest we believe that openness and transparency is vital to public confidence in the industry and we would welcome a move to making public all the data provided to Marine Scotland. Our company wide annual report is available to the public and already provides information on many aspects of our operations <http://marineharvest.com/investor/annual-reports/>.

5. Do you have any views on whether the regulatory regime which applies to the farmed salmon industry is sufficiently robust?

As the industry grows, the regulatory regime must also keep developing and be as robust as possible to maintain the high global reputation of farmed Scottish salmon for quality, food safety and the highest standards of husbandry. The new Strategic Framework for Farmed Fish Health currently being developed by the industry and the Scottish Government is a very important initiative which we fully support.

⁷ <http://www.gov.scot/Topics/marine/seamanagement/marineact/Seals>

6. Do you have any comments on how the UK's departure from the European Union might impact on the farmed salmon sector?

When exporting fresh salmon, the time it takes to reach the end user is the most critical factor. Any future regulations which would make it harder for our salmon to reach its destination would be of concern to us. We already export to several countries outside the EU so we are familiar with providing documentation, labelling, etc. in different jurisdictions but we would welcome some clarity on the impact of Brexit on companies such as ourselves who are significant exporters of fresh produce to EU countries.

We are concerned about the possibility of Protected Geographical Indication (PGI) status being removed on leaving the EU. This marque is essential in new and developing markets where consumers can have confidence that it ensures food safety, traceability and quality. The free movement of our employees from mainland Europe is also vital to maintain productivity at our Scottish processing plants in Rosyth and Fort William.

Marine Harvest Scotland Ltd
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