

RURAL ECONOMY AND CONNECTIVITY COMMITTEE

SALMON FARMING IN SCOTLAND

SUBMISSION FROM SCOTTISH SEA FARMS

Scottish Sea Farms (SSF) welcome the opportunity to give evidence to the Rural Economy and Connectivity Committee as part of its inquiry into salmon farming in Scotland.

According to the Scottish Salmon Farming Economic Report (2017), farmed salmon now contributes as much as £558m to the economy in GVA every year. Included in this are the 10,000 livelihoods that the sector supports, often in remote and rural communities where every job won or lost is keenly felt, and where onward spend within the area helps keeps local services and businesses running.

Many of these livelihoods are supported directly by the sector, but many more are supported indirectly by ongoing investment with Scottish suppliers. SSF alone bought goods and services from 709 local suppliers in 2017, amounting to a total investment of over £100m and the result of a long-standing company policy to 'buy Scottish' wherever we can. Why? Because the local communities in which we farm are vital to our own success, so it seems only right that they derive maximum benefit in return.

In addition to contributing an estimated £1.4 billion in turnover to the Scottish economy, farmed salmon is also the number one most valuable food export, both here in Scotland and UK-wide, generating over £600m in 2017.

The aim of this submission is to show that these significant economic and social benefits aren't at the cost of the environment, with a clear commitment by SSF and the wider sector to farm as responsibly and sustainably as possible.

Work of the Environment, Climate Change and Land Reform Committee

Scottish Sea Farms are disappointed with the conclusions of the ECCLR Committee which we feel misrepresent the actual risk to the environment from salmon farming in Scotland, due largely to the process of evaluation not adequately considering potential impacts against the full range of regulatory controls and mitigation measures employed by the industry.

SRSL report – Review of the Environmental Impacts of Salmon Farming in Scotland

The ECCLR committee contracted SRSL to produce a report summarising the environmental impact of salmon farming in Scotland, the scale of these impacts and approaches to mitigating impact. This report was based on a review of existing scientific evidence by academics and identified a wide range of potential environmental impacts. The report however failed to adequately consider existing management, regulation and mitigation employed by the industry to tackle many of the environmental impacts discussed. It therefore did not identify actual measured and proven impacts, instead presenting an inaccurate and exaggerated picture. Where mitigation was identified it frequently failed to recognise more recent changes in management as a result of significant investment in innovation. While regulators and to a limited extent industry were invited to give evidence on regulation and management, much of this information appears not to have influenced the final recommendations of the ECCLR Committee.

ECCLR Committee report

It is disappointing that many opinions and unsubstantiated claims presented as verbal and written evidence have been presented as fact in the ECCLR report. We recognise that salmon farming has environmental impacts, as does any method of food production, but we strongly refute that these impacts are unsustainable, unmanageable or of such a scale as to prohibit further expansion.

The report considers specific areas of potential concern in relation to the marine environment in isolation from each other and outwith the wider context of sustainability. Annex 1 demonstrates that compared to other forms of protein production, salmon farming is extremely efficient in across a range of sustainability principles, including feed conversion ratios, resource use and carbon footprint.

The ECCLR report is considered misleading as it focuses on each potential environmental effect as a worst-case scenario, assuming that mitigation will not have any effect and that the impact would be constant and across the entire extent of the industry. In looking toward future growth of salmon farming and a potential doubling in production, the report also infers that significant environmental effects will be inevitable, without acknowledging that the salmon farming industry has continued to innovate and find new ways to manage existing and emerging environmental challenges. There is no basis for the conclusion of inevitability.

Comment on specific ECCLR Committee conclusions

Lack of progress in tackling concerns identified in 2002

Giving verbal evidence to the ECCLR Committee, Paul Tett (main author of the SRSR report) stated that although production almost doubled between 1996 and 2003 and has remained relatively constant since, there was no evidence in the scientific literature of an increase in environmental impacts. Significant changes that have been made to the regulatory process and measures employed by industry to mitigate impacts since 2002 and applications for development now consider a wider range of potential direct and indirect interactions with the environment and at a greater level of detail, in line with changes in planning and marine planning policy. While there will be areas where further improvement can be made, a lack of progress in tackling concerns is strongly refuted.

Too little focus on the precautionary principle

The ECCLR report concludes that there has been too little focus on the precautionary principle in the regulation and consenting of salmon farming. This is most certainly not the case and there are numerous examples of where a precautionary approach to regulation of the industry is routinely applied, including:

- Artificial biomass limit of 2500 tonnes (SEPA CAR licence);
- Highly precautionary model limits biomass and medicine usage (SEPA CAR licence);
- Environmental Quality Standards for all medicines with precautionary safety factors (SEPA CAR licence);
- Environmental Management Plans to manage interaction with wild salmonids (Planning);
- Locational guidelines for nutrient enhancement & benthic impact;
- Technical Standard for Scottish Aquaculture;
- ECE nutrient enhancement modelling; and
- Assessment of worst-case scenario impacts and cumulative impact through EIA process.

It is important that the application of the precautionary principle is proportionate and not used to prevent any kind of development in the marine environment.

Development taking place without a full understanding of the environmental impacts

A full or complete understanding of environmental impacts is practically and scientifically unachievable, therefore a sensible, risk-based approach should be taken to future expansion based on what is actually known and what can reasonably be predicted. This is both a precautionary and reasonable approach to licensing and consenting which is not uncommon in the regulation of other sectors. Current planning policy and marine planning policy promote such an approach including the National Marine Plan policy - Aquaculture 7, which specifically advises that operators and regulators should utilise a risk-based approach to the location of fish farms and potential impacts on wild fish.

Current consenting and regulatory framework is inadequate to address environmental issues

The ECCLR Committee concludes that the existing regulatory framework is inadequate to address the environmental issues and is not convinced that the sector is being regulated sufficiently or effectively. This is a concerning conclusion given that fish farms operate under a wide ranging and complex regulatory framework which is more tightly regulated than other sectors like commercial fishing, agriculture or forestry. The industry is currently regulated by 10 statutory bodies and any new development is required to secure at least 8 separate consents or authorisations, including planning permission which is subject to the Environmental Impact Assessment (EIA) process. We absolutely agree that growth of the industry must be sustainable, but there is no reason why this cannot be achieved without adding to the already substantial regulatory burden under which the industry is currently operating.

Continued innovation of farming practices will be key to the sustainable growth of the industry and it is therefore essential that the regulatory framework is flexible enough to allow new methods to be considered and trialled through existing regulatory processes.

Adaptive Management

The ECCLR Committee identify adaptive management as key mitigation to enable future growth, inferring it does not take place within the industry. Adaptive management has been the cornerstone of fish farming from its earliest inception and the industry has continually worked to find innovative solutions to environmental challenges, with new technologies and management strategies constantly under review and development. Examples of current adaptive management strategies include:

- Seabed impact – CAR licence and SEPA’s CAR licence review policy;
- Industry Code of Good Practice;
- Welfare and control of sea lice – FHI regime, management plans;
- Predator management – seal licence process, predator control plans; and
- Environmental Management Plans.

Marine Protected Areas

It is of significant concern that the ECCLR Committee is questioning the regulatory approach which has allowed marine fish farming to occur in Marine Protected Areas (MPA). This conclusion highlights a lack of understanding of the history and role of MPAs and the Government’s own policy for their protection. It is important to recognise that fish farm development has been in place across the west coast of Scotland and in the Northern Isles

for many years before the designation of the first European marine sites (SACs) and then subsequently additional SPAs and SACs and a suite of Marine Protected Areas. Almost all of these sites were designated because the features involved were identified to be present in significant numbers and considered to be in 'favourable' condition, despite the presence of fish farms. The recently designated Harbour Porpoise SAC is such an example where the highest distribution of porpoise in Scotland was identified by SNH across an area with a high number of fish farms. In addition, the presence of a fish farm within an MPA does not equate to an impact on the MPA feature as any interaction depends on the precise location of the feature in relation to the farm and most importantly the sensitivity of the feature to relevant pressures of salmon farming. Finally, the extent of MPAs across the inshore coastal waters of the west coast and Northern Isles has grown significantly since the first marine designated sites in 2002. This is illustrated in Annex 2 of this response. Given all of the above it would be entirely inappropriate and unnecessary to adopt an approach against fish farming in MPAs.

Closed containment onshore farming

Closed containment (RAS) has been proposed as potential mitigation for some potential environmental impacts. While RAS systems have their place in raising young fish before they go to sea, replacing marine cage farming with RAS on land is not an environmentally or economically viable option and is not proven technology anywhere in the world. The report fails to recognise a lack of suitable sites on land, detriment to fish welfare (increased stocking density/growth rate, less natural conditions, water quality), increased energy use and carbon footprint, reduced marketability and economic impact of relocating production from remote rural communities and possibly even Scotland as a whole.

Addressing environmental challenges

The milder climate conditions experienced in Scotland over the past few years have led to an increase in environmental challenges for farming Atlantic salmon. Increases in waterborne challenges to gill health (planktonic algae and jellyfish blooms) have been observed together with favourable conditions for sea lice (higher water temperatures). SSF have responded to these undesirable farming conditions through a programme of significant investments in fish health and welfare and changes in farming strategies to continue to bring high quality farmed salmon to market to meet the increasing demands on the Scottish industry.

Whilst mortality in farmed salmon has increased in recent years due to the emergence of Amoebic Gill Disease (AGD) and other environmental challenges, we do not recognise the high mortality levels referred to in the ECCLR Committee report as they were not based on actual mortality records. In addition, comparison was made with other land animal farming sectors without qualification, whereas comparison may more appropriately be considered against the natural mortality rate of wild salmon (90-99%) and mortality of other farmed fish species (sea bream & bass 60%, cod 90%). Wild salmon produce millions of eggs as only a very small proportion will survive to adulthood whereas the farming industry have been able to successfully farm salmon within the same environment at a survival rate of around 85%. A Farmed Fish Health Framework, which is currently being developed by a partnership of industry and Scottish Government, is expected to provide clarity on this subject and deliver further improvements by setting out long term and high-level objectives to underpin the sustainable growth of Scottish aquaculture.

With prevention at the core of our fish health strategy, significant investments have been made to mitigate against the emerging environmental challenges. These mitigations include strategic decision making for farm site location and area stocking, farm site infrastructure,

selection of genetic stocks, and the construction of a state of the art freshwater smolt production facility utilising latest technologies in recirculating aquaculture systems which are highly efficient with minimal requirement for natural resources. The development of improved fish welfare-based husbandry procedures and surveillance of environmental and fish health parameters, as well as investments in the capacity for treatment intervention, have also contributed to the recognised improvements in fish health and welfare.

The Scottish salmon farming industry has made significant progress in tackling one of the key environmental challenges of sea lice with a recent reported decline in sea lice abundance at the Scottish national level, from mid-2015 to their last data point in September 2017, as highlighted in the supporting evidence submitted to the Rural Economy and Connectivity Committee by Professor James Bron, University of Stirling. These successes have been made possible due to the collaboration within industry working together with implementing a wide range of tools as part of Integrated Pest Management Strategies (IPMS). This has included non-medicinal alternative approaches such as selection of sea lice resistant genetic stocks, use of cleanerfish as biological control, physical barriers provided by lice shields and the recently developed delousing technologies as intervention. A Farmed Fish Health Framework, which is currently being developed by a partnership of industry and Scottish Government, is expected to deliver further improvements by setting out a long term and high-level objectives to underpin the sustainable growth of Scottish aquaculture.

Since 2011 SSF committed to a significant long-term investment in developing the use of cleanerfish as biological control of sea lice. These investments included co-funding of the Machrihanish wrasse hatchery and on-growing facility. This project has so far been highly successful and has attracted international acclaim. Further investment is planned for increasing the production of cleanerfish to meet our strategic objective of using only farmed cleanerfish by 2020.

SSF has a long track record in using a collaborative research approach with academia, other industry partners and public-sector bodies to find solutions to the environmental challenges our industry faces. Since 2013 SSF has committed £9.6 M to research and development expenditure on external Fish Health and Welfare projects, which have a total project value of £14.3 Million.

In recognition of the importance we place on ensuring optimal fish health there are 46 dedicated Fish Health and Welfare personnel roles throughout SSF; with fish health specialists on farm sites, regional Biologists, Health and Welfare Managers, Fish Veterinary Surgeons, and oversight provided at Senior Management. This significant investment in trained and highly qualified people shows our deep commitment to the Health and Welfare of the farmed salmon in our care.

In 2017 alone SSF invested a minimum of £11.8 Million on fish health and welfare of its salmon and reducing potential impacts on the environment, over 85% of which is being spent on non-medicinal approaches. This high sum reflects the commitment and significant efforts being made by the company to bring high quality farmed salmon to market whilst meeting the increasing demands of the ethical consumer.

In conclusion

Scottish Sea Farms welcome the Rural Economy and Connectivity Committee's Inquiry into salmon farming in Scotland as an opportunity to correct misperceptions, and consider both current challenges and future opportunities. It is essential that a balanced factual and

evidence-based approach is taken to future regulation, management and development of what is a key economic sector in the Highlands and Islands and to Scotland as a whole. This should encourage and facilitate continued improvements through investment in research and innovation, to mitigate and minimise environmental impacts and support sustainable growth.

Scottish Sea Farms
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Annex 1 – Resource efficiency comparison of different forms of protein production

	Cattle	Chicken	Pigs	Salmon
Feed conversion	4-10	2.2	3	1.2
Energy retention	27%	10%	14%	27%
Protein retention	15%	21%	18%	24%
Edible yield	41%	46%	52%	68%
Edible meat per 100kg feed	4-10kg	21kg	17kg	57kg
Carbon footprint (kg CO ₂ /kg edible meat)	Up to 30kg	3.4kg	5.9kg	2.9kg
Water consumption (litre/kg edible meat)	15400	4300	6000	1400

